

GREEK SERIES • VOLUME 9

ATOMS AND THE HEAVENS

EPICURUS & ARISTOTLE

ΕΠΙΣΤΟΛΗ ΠΡΟΣ ΗΡΟΔΟΤΟΝ
ΕΠΙΣΤΟΛΗ ΠΡΟΣ ΠΥΘΟΚΛΕΑ
ΠΕΡΙ ΟΥΡΑΝΟΥ

Atoms and the Heavens

Epicurus on Nature, with Aristotle's On the Heavens I–II

with a word-for-word interlinear English translation

preserving the original word order

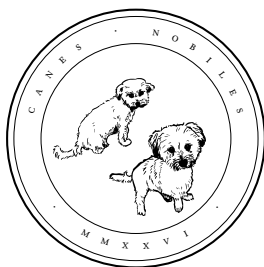


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Volume 9 of the Canes Nobiles Greek interlinear texts

The Greek text follows von der Mühl's Teubner Epicurus and Prantl's Aristotle

Set from the First Thousand Years of Greek, with corrections

Translated and composed with AI, edited by Christopher Hench
Artwork by Esther Steves

Words the editors seclude are not printed; words they supply are printed without their brackets; † marks a word von der Mühl obelizes; *** marks a gap in the text. Prantl's two lettered tables in De Caelo I.12 are not printed. The margin gives Diogenes Laertius' section numbers for the two letters.

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EPICURUS

ΕΠΙΣΤΟΛΗ ΠΡΟΣ ΗΡΟΔΟΤΟΝ

Letter to Herodotus

Ἐπίκουρος Ἡροδότῳ χαίρειν

I • WHY AN EPITOME

Epicurus tells Herodotus that he has written this summary for those who cannot work through his longer books on nature. Readers who have gone further still need an outline of the whole reduced to its elements, because the comprehensive grasp is wanted often and the detailed one less so. He asks first that what stands under each word be grasped, so that questions can be referred to it and settled.

Τοῖς μὴ δυναμένοις, ὦ Ἡρόδοτε, ἕκαστα τῶν
for-the-(ones) not being-able O Herodotus each-(thing) of-the-(things)
 περὶ φύσεως ἀναγεγραμμένων ἡμῖν ἐξακριβοῦν μηδὲ τὰς
about nature having-been-written-up by-us to-work-out-exactly nor the
 μείζους τῶν συντεταγμένων βίβλους διαθρεῖν ἐπιτομὴν τῆς
larger of-the having-been-composed books to-scan-through an-epitome of-the
 ὅλης πραγματείας εἰς τὸ κατασχεῖν τῶν ὀλοσχερωτάτων
whole treatise for the to-retain of-the most-comprehensive
 δοξῶν τὴν μνήμην ἱκανῶς αὐτοῖς παρεσκεύασα, ἵνα παρ'
doctrines the memory sufficiently for-them I-prepared so-that at
 ἐκάστους τῶν καιρῶν ἐν τοῖς κυριωτάτοις βοηθεῖν
each of-the occasions in the most-important-(matters) to-help
 αὐτοῖς δύνωνται, καθ' ὅσον ἂν ἐφάπτωνται τῆς περὶ
themselves they-may-be-able according-to as-much-as — they-lay-hold-of the about
 φύσεως θεωρίας. καὶ τοὺς προβεβηκότας δὲ ἱκανῶς ἐν τῇ
nature study and the-(ones) having-advanced and sufficiently in the
 τῶν ὅλων ἐπιβλέψει τὸν τύπον τῆς ὅλης πραγματείας τὸν
of-the wholes survey the outline of-the whole treatise the
 κατεστοιχειωμένον δεῖ μνημονεῦειν· τῆς γὰρ ἀθρόας
reduced-to-its-elements it-is-needful to-remember of-the for concentrated
 ἐπιβολῆς πυκνὸν δεόμεθα, τῆς δὲ κατὰ μέρος οὐχ ὁμοίως.
application often we-have-need of-the but according-to part not alike

35

36 βαδιστέον μὲν οὖν καὶ ἐπ' ἐκείνα συνεχῶς, ἐν δὲ τῇ
one-must-go indeed therefore also to those continuously in but the
 μνήμη τὸ τοσοῦτο ποιητέον, ἀφ' οὗ ἥ τε κυριωτάτη
memory the so-much one-must-do from which the both most-authoritative
 ἐπιβολὴ ἐπὶ τὰ πράγματα ἔσται καὶ δὴ καὶ τὸ κατὰ
application upon the things will-be and indeed also the according-to
 μέρος ἀκρίβωμα πᾶν ἐξευρήσεται, τῶν ὁλοσχερωτάτων
part exactness all will-be-found-out of-the most-comprehensive
 τύπων εὖ περιειλημμένων καὶ μνημονευομένων· ἐπεὶ
outlines well having-been-grasped and being-remembered since
 καὶ τῷ τετελεσιουργημένῳ τοῦτο κυριώτατον τοῦ
even for-the-(man) having-been-perfected this most-important of-the
 παντὸς ἀκριβώματος γίνεται, τὸ ταῖς ἐπιβολαῖς ὀξέως
whole exactness becomes the by-the applications sharply
 δύνασθαι χρῆσθαι καὶ πρὸς ἀπλὰ στοιχειώματα καὶ φωνὰς
to-be-able to-use and toward simple elements and expressions
 συναγομένοις. οὐ γὰρ οἶδόν τε τὸ πύκνωμα τῆς
for-(them)-being-brought-together not for possible — the condensation of-the
 συνεχούς τῶν ὅλων περιοδείας εἰδέναι μὴ δυνάμενον διὰ
continuous of-the wholes survey to-know not being-able through
 βραχεῶν φωνῶν ἅπαν ἐμπεριλαβεῖν ἐν αὐτῷ τὸ καὶ
brief expressions everything to-embrace-within in himself the-(thing) also
 κατὰ μέρος ἂν ἐξακριβωθέν.

according-to part would having-been-worked-out-exactly

37 ὅθεν δὴ πᾶσι χρησίμης οὔσης τοῖς ὠκειωμένοις
whence indeed for-all useful being for-those having-been-made-at-home
 φυσιολογία τῆς τοιαύτης ὁδοῦ, παρεγγυῶν τὸ συνεχές
with-natural-science the such way commending the continuous
 ἐνέργημα ἐν φυσιολογίᾳ καὶ τοιούτῳ μάλιστα ἐγγαληνίζω
activity in natural-science and by-such most bringing-calm-to

τῷ βίῳ ἐποίησά σοι καὶ τοιαύτην τινὰ ἐπιτομὴν καὶ
the life I-made for-you also such a-certain epitome and
 στοιχείωσιν τῶν ὅλων δοξῶν.

elementary-statement of-the whole doctrines

Πρῶτον μὲν οὖν τὰ ὑποτεταγμένα τοῖς φθόγοις, ὧ
first indeed therefore the things-ranged-under the utterances O
 Ἡρόδοτε, δεῖ εἰληφέναι, ὅπως ἂν τὰ δοξαζόμενα ἢ
Herodotus it-is-needful to-have-grasped so-that — the things-opined or
 ζητούμενα ἢ ἀπορούμενα ἔχωμεν εἰς ταῦτα ἀναγαγόντες
things-inquired-into or things-doubted we-may-have to these having-referred
 ἐπικρίνειν, καὶ μὴ ἄκριτα πάντα ἡμῖν ἢ εἰς ἄπειρον
to-judge and not unjudged all for-us may-be to infinity
 ἀποδεικνύουσιν ἢ κενούς φθόγγους ἔχωμεν.
proving or empty utterances we-may-have

II • NOTHING COMES FROM NOTHING

The senses and the feelings must be kept as the standards. Then the first principles follow: nothing comes to be out of what is not, and nothing that vanishes perishes into what is not, so the sum of things is now what it always was. The all is bodies and void, and the bodies are compounds and the indivisible things out of which compounds are made. The all is unlimited in body and in void alike.

ἀνάγκη γὰρ τὸ πρῶτον ἐννόημα καθ' ἕκαστον φθόγγον 38
necessary for the first notion under each utterance
 βλέπεσθαι καὶ μὴθὲν ἀποδείξεως προσδεῖσθαι, εἴπερ
to-be-seen and not-at-all of-proof to-stand-in-need if-indeed
 ἔχομεν τὸ ζητούμενον ἢ ἀπορούμενον καὶ δοξαζόμενον
we-shall-have the thing-sought or thing-doubted and thing-opined
 ἐφ' ὃ ἀνάξομεν. ἔτι τε καὶ τὰς αἰσθήσεις δεῖ
to which we-shall-refer further and also the sensations it-is-needful

πάντως τηρεῖν καὶ ἀπλῶς τὰς παρούσας ἐπιβολὰς εἴτε
altogether to-keep and simply the present applications whether
διανοίας εἴθ' ὅτου δήποτε τῶν κριτηρίων. ὁμοίως δὲ
of-thought or of-whatever soever of-the criteria likewise and
καὶ τὰ ὑπάρχοντα πάθη, ὅπως ἂν καὶ τὸ προσμένον καὶ
also the existing feelings so-that — also the thing-awaited and
τὸ ἄδηλον ἔχωμεν οἷς σημειωσόμεθα.

the unclear we-may-have by-which we-shall-infer

Ταῦτα δὲ διαλαβόντας δεῖ συννορᾶν ἤδη περὶ τῶν
these and having-distinguished it-is-needful to-survey now about the
ἀδήλων· πρῶτον μὲν ὅτι οὐδὲν γίνεται ἐκ τοῦ μὴ
unclear-(things) first indeed that nothing comes-to-be out-of the not
ὄντος. πᾶν γὰρ ἐκ παντὸς ἐγίγνετ' ἂν σπερμάτων
being everything for out-of everything would-come-to-be — of-seeds
γε οὐθὲν προσδεόμενον.

at-least not-at-all standing-in-need

39 καὶ εἰ ἐφθείρετο δὲ τὸ ἀφανιζόμενον εἰς τὸ μὴ ὄν,
and if were-destroyed and the thing-vanishing into the not being
πάντα ἂν ἀπωλώλει τὰ πράγματα, οὐκ ὄντων τῶν
all would have-perished the things not existing the-(things)
εἰς ἃ διελύετο. Καὶ μὴν καὶ τὸ πᾶν ἀεὶ τοιοῦτον
into which it-was-dissolved and indeed also the all always such
ἦν οἶον νῦν ἐστὶ, καὶ ἀεὶ τοιοῦτον ἔσται. οὐθὲν γὰρ
was as now it-is and always such it-will-be nothing for
ἐστὶν εἰς ὃ μεταβαλεῖ. παρὰ γὰρ τὸ πᾶν οὐθέν ἐστίν,
there-is into which it-will-change beside for the all nothing there-is
ὃ ἂν εἰσελθὼν εἰς αὐτὸ τὴν μεταβολὴν ποιήσαιτο.

which — having-entered into it the change might-make

Ἀλλὰ μὴν καὶ (τοῦτο καὶ ἐν τῇ Μεγάλῃ ἐπιτομῇ φησι κατ'
but indeed also this also in the Great epitome he-says at
ἀρχὴν καὶ ἐν τῇ α Περὶ φύσεως) τὸ πᾶν ἐστὶ σώματα
beginning and in the first about nature the all is bodies

καὶ κενόν· σώματα μὲν γὰρ ὡς ἔστιν, αὐτὴ ἡ αἴσθησις
 and void bodies indeed for that they-are itself the sensation
 ἐπὶ πάντων μαρτυρεῖ, καθ' ἣν ἀναγκαῖον τὸ ἄδηλον
 in all-cases testifies according-to which necessary the unclear
 τῷ λογισμῷ τεκμαίρεσθαι, ὥσπερ προείπον τὸ πρόσθεν·
 by-the reasoning to-infer as I-said-before the time-before
 εἰ δὲ μὴ ἦν ὁ κενὸν καὶ χώραν καὶ ἀναφῇ φύσιν 40
 if and not there-was which void and place and intangible nature
 ὀνομάζομεν, οὐκ ἂν εἶχε τὰ σώματα ὅπου ἦν οὐδὲ
 we-name not would have the bodies where they-were nor
 δι' οὗ ἐκινεῖτο, καθάπερ φαίνεται κινούμενα, παρὰ δὲ
 through which they-moved just-as they-appear moving beside and
 ταῦτα οὐθέν οὐδ' ἐπινοηθῆναι δύναται οὔτε περιληπτῶς
 these nothing even to-be-conceived can either comprehensively
 οὔτε ἀναλόγως τοῖς περιληπτοῖς ὡς καθ' ὅλας
 or analogously to-the comprehensible-(things) as according-to whole
 φύσεις λαμβανόμενα καὶ μὴ ὡς τὰ τούτων συμπτώματα
 natures being-taken and not as the of-these coincidents
 ἣ συμβεβηκότα λεγόμενα.

or accidents being-called
 Καὶ μὴν καὶ τῶν (τοῦτο καὶ ἐν τῇ πρώτῃ Περὶ
 and indeed also of-the this also in the first about
 φύσεως καὶ τῇ ιδ' καὶ ιε' καὶ τῇ Μεγάλῃ ἐπιτομῇ)
 nature and the fourteenth and fifteenth and the Great epitome
 σωμάτων τὰ μὲν ἔστι συγκρίσεις, τὰ δ' ἐξ ὧν
 bodies the-ones indeed are compounds the-others and out-of which
 αἱ συγκρίσεις πεπούνται·
 the compounds have-been-made

ταῦτα δὲ ἔστιν ἄτομα καὶ ἀμετάβλητα, εἴπερ μὴ μέλλει 41
 these and are indivisible and unchangeable if-indeed not is-going
 πάντα εἰς τὸ μὴ ὄν φθαρήσεσθαι, ἀλλ' ἰσχύοντα ὑπομενεῖν
 all-things into the not being to-be-destroyed but being-strong to-endure

ἐν ταῖς διαλύσεσι τῶν συγκρίσεων πλήρη τὴν φύσιν ὄντα
in the dissolutions of-the compounds full the nature being
 καὶ οὐκ ἔχοντα ὅπῃ ἢ ὅπως διαλυθήσεται. ὥστε τὰς
and not having where or how they-will-be-dissolved so-that the
 ἀρχὰς ἀτόμους ἀναγκαῖον εἶναι σωμάτων φύσεις.

beginnings indivisible necessary to-be of-bodies natures
 Ἀλλὰ μὴν καὶ τὸ πᾶν ἄπειρόν ἐστι. τὸ γὰρ πεπερασμένον
but indeed also the all infinite is the for limited
 ἄκρον ἔχει· τὸ δὲ ἄκρον παρ' ἑτερόν τι θεωρεῖται·
an-edge has the and edge beside another something is-observed
 ὥστε οὐκ ἔχον ἄκρον πέρας οὐκ ἔχει πέρας δὲ οὐκ ἔχον
so-that not having an-edge a-limit not it-has a-limit and not having
 ἄπειρον ἂν εἶη καὶ οὐ πεπερασμένον.

infinite would be and not limited
 Καὶ μὴν καὶ τῷ πλήθει τῶν σωμάτων ἄπειρόν ἐστι τὸ
and indeed also in-the multitude of-the bodies infinite is the
 πᾶν καὶ τῷ μεγέθει τοῦ κενοῦ.
all and in-the magnitude of-the void

III • THE ATOMS AND THEIR MOTION

If the void were unlimited and the bodies limited, the bodies would be scattered without anything to check them; if the void were limited, the unlimited bodies would have nowhere to stand. The atoms are past counting in the variety of their shapes, though not unlimited in it, and they move without ceasing, some far apart, some kept vibrating where they are by entanglement.

42 εἴ τε γὰρ ἦν τὸ κενὸν ἄπειρον, τὰ δὲ σώματα ὀρισμένα,
if both for were the void infinite the and bodies limited
 οὐθαμοῦ ἂν ἔμενε τὰ σώματα, ἀλλ' ἐφέρετο κατὰ τὸ
nowhere would stay the bodies but would-be-carried throughout the

ἄπειρον κενὸν διεσπαρμένα, οὐκ ἔχοντα τὰ ὑπερείδοντα
infinite void scattered not having the-(things) supporting

καὶ στέλλοντα κατὰ τὰς ἀνακοπὰς· εἴ τε τὸ κενὸν ἦν
and checking by the rebounds if and the void were
ὠρισμένον, οὐκ ἂν εἶχε τὰ ἄπειρα σώματα ὅπου ἐνέστη.

limited not would have the infinite bodies where they-might-stand

Πρὸς τε τούτοις τὰ ἄτομα τῶν σωμάτων καὶ μεστά,
in-addition-to and these the indivisible of-the bodies and solid

ἐξ ὧν καὶ αἱ συγκρίσεις γίνονται καὶ εἰς ἃ διαλύονται,
out-of which both the compounds come-to-be and into which they-are-dissolved

ἀπερίληπτά ἐστι ταῖς διαφοραῖς τῶν σχημάτων· οὐ
beyond-grasping are in-the differences of-the shapes not

γὰρ δυνατόν γενέσθαι τὰς τοσαύτας διαφορὰς ἐκ τῶν
for possible to-come-to-be the so-many differences out-of the

αὐτῶν σχημάτων περιελημμένων. Καὶ καθ' ἐκάστην
same shapes having-been-grasped and according-to each

δὲ σχημάτισιν ἀπλῶς ἄπειροί εἰσι αἱ ὅμοιαι, ταῖς δὲ
and configuration simply infinite are the similar-(atoms) in-the but

διαφοραῖς οὐχ ἀπλῶς ἄπειροι ἀλλὰ μόνον ἀπερίληπτοι,
differences not simply infinite but only beyond-grasping

(οὐδὲ γάρ φησιν ἐνδοτέρω εἰς ἄπειρον τὴν τομὴν τυγχάνειν.
and-not for he-says further-in to infinity the cutting to-happen

λέγει δέ, ἐπειδὴ αἱ ποιότητες μεταβάλλονται), εἰ μέλλει
he-says and since the qualities change if is-going

τις μὴ καὶ τοῖς μεγέθεσιν ἀπλῶς εἰς ἄπειρον αὐτὰς
one not also in-the magnitudes simply to infinity them

ἐκβάλλειν.

to-throw-out

Κινοῦνταιί τε συνεχῶς αἱ ἄτομοι (φησὶ δὲ ἐνδοτέρω καὶ
they-move and continuously the atoms he-says and further-in also

ἰσοταχῶς αὐτὰς κινεῖσθαι τοῦ κενοῦ τὴν εἴξιν ὁμοίαν
at-equal-speed them to-move of-the void the yielding alike

παρεχομένου καὶ τῇ κουφοτάτῃ καὶ τῇ βαρυτάτῃ) τὸν
 furnishing both to-the lightest and to-the heaviest (through)-the
 αἰῶνα, καὶ αἱ μὲν εἰς μακρὰν ἀπ' ἀλλήλων διστάμεναι,
 age and the-ones indeed to far from one-another standing-apart
 αἱ δὲ αὐτοῦ τὸν παλμὸν ἴσχουσιν, ὅταν τύχῃσι τῇ
 the-others and in-place the quivering keeping whenever they-happen by-the
 περιπλοκῇ κεκλειμέναι ἢ στεγαζόμεναι παρὰ τῶν πλεκτικῶν.
 entanglement shut-in or covered-over by the interlacing-(atoms)
 44 ἢ τε γὰρ τοῦ κενοῦ φύσις ἢ διορίζουσα ἐκάστην αὐτὴν
 the both for of-the void nature the separating each itself
 τοῦτο παρασκευάζει, τὴν ὑπέρεισιν οὐχ οἷα τε οὖσα
 this provides the support not able — being
 ποιέσθαι ἢ τε στερεότης ἢ ὑπάρχουσα αὐταῖς κατὰ
 to-make the and solidity the belonging to-them at
 τὴν σύγκρουσιν τὸν ἀποπαλμὸν ποιεῖ, ἐφ' ὅποσον ἂν ἡ
 the collision the rebound makes to how-far — the
 περιπλοκὴ τὴν ἀποκατάστασιν ἐκ τῆς συγκρούσεως διδῶ
 entanglement the return out-of the collision may-give
 ἀρχὴ δὲ τούτων οὐκ ἔστιν, αἰδίων τῶν ἀτόμων οὐσῶν
 a-beginning and of-these not there-is everlasting the atoms being
 καὶ τοῦ κενοῦ. (φησὶ δ' ἐνδοτέρω μηδὲ ποιότητά τινα περὶ
 and of-the void he-says and further-in not quality any about
 τὰς ἀτόμους εἶναι πλὴν σχήματος καὶ μεγέθους καὶ βάρους·
 the atoms to-be except of-shape and of-magnitude and of-weight
 τὸ δὲ χρῶμα παρὰ τὴν θέσιν τῶν ἀτόμων ἀλλάττεσθαι
 the and color according-to the position of-the atoms to-change
 ἐν ταῖς Δώδεκα στοιχειώσεσιν φησι. πᾶν τε μέγεθος μὴ
 in the Twelve Elementary-Treatises he-says every and magnitude not
 εἶναι περὶ αὐτάς· οὐδέποτε γοῦν ἄτομος ὥφθη αἰσθήσει.)
 to-be about them never at-any-rate an-atom was-seen by-sense

Worlds are unlimited in number, some like ours and some unlike, since the atoms that would make them have not been used up. Films of the same shape as solid bodies stream off them, far finer than anything visible; these Epicurus calls images. Traveling through the void without meeting anything, they cross any distance in a time no thought can conceive.

Ἡ τοσαύτη δὴ φωνὴ τούτων πάντων μνημονευομένων 45
the so-great indeed statement of-these all being-remembered
 τὸν ἰκανὸν τύπον ὑποβάλλει ταῖς περὶ τῆς τῶν ὄντων
the sufficient outline supplies to-the about the of-the things-that-are
 φύσεως ἐπινοίαις.
nature conceptions

Ἀλλὰ μὲν καὶ κόσμοι ἄπειροί εἰσιν, οἳ θ' ὅμοιοι τούτῳ
but indeed also worlds infinite are the-ones both like to-this
 καὶ ἀνόμοιοι. αἳ τε γὰρ ἄτομοι ἄπειροι οὖσαι, ὥς ἄρτι
and unlike the both for atoms infinite being as just-now
 ἀπεδείχθη, φέρονται καὶ πορρωτάτω. οὐ γὰρ κατανήλωνται
it-was-shown are-carried also very-far not for have-been-used-up
 αἱ τοιαῦται ἄτομοι, ἐξ ὧν ἂν γένοιτο κόσμος ἢ ὕψ'
the such atoms out-of which — might-come-to-be a-world or by
 ὧν ἂν ποιηθείη, οὔτ' εἰς ἓνα οὔτ' εἰς πεπερασμένους, οὔθ'
which — it-might-be-made either into one or into limited-(ones) or
 ὅσοι τοιοῦτοι οὔθ' ὅσοι διάφοροι τούτοις. ὥστε οὐδὲν
as-many-as such or as-many-as different from-these so-that nothing
 τὸ ἐμποδοστατήσόν ἐστι πρὸς τὴν ἀπειρίαν τῶν κόσμων.
the thing-that-will-stand-in-the-way is for the infinity of-the worlds

Καὶ μὲν καὶ τύποι ὁμοιοσχήμονες τοῖς στερεμνίοις εἰσὶ, 46
and indeed also imprints like-in-shape to-the solids there-are
 λεπτότησιν ἀπέχοντες μακρὰν τῶν φαινομένων. οὔτε γὰρ
in-fineness standing-off far from-the things-appearing neither for

συστάσεις ἀδυνατοῦσιν ἐν τῷ περιέχοντι γίνεσθαι τοιαῦται
formations are-unable in the surrounding to-come-to-be such
 οὐτ' ἐπιτηδειότητες πρὸς κατεργασίας τῶν κοιλωμάτων
nor aptitudes for workings-out of-the hollows
 καὶ λεπτοτήτων, οὔτε ἀπόρροιαί τὴν ἐξῆς θέσιν καὶ
and finenesses nor effluences the successive position and
 βάσιν διατηροῦσαι, ἥνπερ καὶ ἐν τοῖς στερεμνίοις εἶχον·
standing preserving which-very also in the solids they-had
 τούτους δὲ τοὺς τύπους εἶδωλα προσαγορεύομεν. καὶ μὴν
these and the imprints images we-call and indeed
 καὶ ἡ διὰ τοῦ κενοῦ φορὰ κατὰ μηδεμίαν ἀπάντησιν
also the through the void movement according-to no encounter
 τῶν ἀντικοψάντων γινομένη πᾶν μῆκος περιληπτὸν ἐν
of-the things-striking-against coming-about every length graspable in
 ἀπερινοήτῳ χρόνῳ συντελεῖ. βράδους γὰρ καὶ τάχους
inconceivable time accomplishes of-slowness for and of-swiftness
 ἀντικοπή καὶ οὐκ ἀντικοπή ὁμοίωμα λαμβάνει.
a-striking-against and not a-striking-against a-likeness takes
 οὐ μὴν οὐδ' ἅμα κατὰ τοὺς διὰ λόγου θεωρητοὺς
not indeed even at-once in the through reason contemplated
 χρόνους αὐτὸ τὸ φερόμενον σῶμα ἐπὶ τοὺς πλείους τόπους
times itself the moving body to the several places
 ἀφικνέεται — ἀδιανόητον γὰρ—, καὶ τοῦτο συναφικνούμενον
arrives unthinkable for also this arriving-together
 ἐν αἰσθητῷ χρόνῳ ὅθεν δήποθεν τοῦ ἀπείρου οὐκ ἐξ
in perceptible time from-where soever of-the infinite not out-of
 οὐ ἂν περιλάβωμεν τὴν φορὰν τόπου ἔσται ἀφιστάμενον·
which — we-may-grasp the movement of-place it-will-be setting-out
 ἀντικοπῇ γὰρ ὅμοιον ἔσται, κἂν μέχρι τοσούτου τὸ
to-a-striking-against for like it-will-be even-if up-to so-much the
 τάχος τῆς φορᾶς μὴ ἀντικοπὲν καταλίπωμεν. χρήσιμον δὴ
swiftness of-the movement not struck-against we-leave useful indeed

47

καὶ τοῦτο κατασχεῖν τὸ στοιχεῖον. εἰθ' ὅτι τὰ εἰδῶλα ταῖς
 also this to-retain the element then that the images the
 λεπτότησιν ἀνυπερβλήτοις κέχρηται, οὐθὲν ἀντιμαρτυρεῖ
 finenesses unsurpassable have-used nothing testifies-against
 τῶν φαινομένων· ὅθεν καὶ τάχῃ ἀνυπερβλήτα ἔχει,
 of-the things-appearing whence also speeds unsurpassable they-have
 πάντα πόρον σύμμετρον ἔχοντα πρὸς τὸ ἀπείροις
 every passage commensurate having for the for-infinite-(numbers)
 αὐτῶν μὴθὲν ἀντικόπτειν ἢ ὀλίγα ἀντικόπτειν, πολλαῖς
 of-them nothing to-strike-against or few-(things) to-strike-against for-many
 δὲ καὶ ἀπείροις εὐθὺς ἀντικόπτειν τι.
 but also for-infinite-(numbers) at-once to-strike-against something
 πρὸς τε τούτοις, ὅτι ἡ γένεσις τῶν εἰδώλων ἅμα
 in-addition-to and these that the coming-to-be of-the images together-with
 νοήματι συμβαίνει. καὶ γὰρ ῥεῦσις ἀπὸ τῶν σωμάτων
 a-thought happens and for a-flowing from the bodies
 τοῦ ἐπιπολῆς συνεχῆς, οὐκ ἐπίδηλος σημειώσει διὰ τὴν
 of-the surface continuous not evident by-a-sign because-of the
 ἀνταναπλήρωσιν, σῶζουσα τὴν ἐπὶ τοῦ στερεμνίου θέσιν
 refilling preserving the on the solid position
 καὶ τάξιν τῶν ἀτόμων ἐπὶ πολὺν χρόνον, εἰ καὶ ἐνίοτε
 and order of-the atoms for much time if even sometimes
 συγχεομένη ὑπάρχει, καὶ συστάσεις ἐν τῷ περιέχοντι
 being-confounded it-exists and formations in the surrounding
 ὀξεῖαι διὰ τὸ μὴ δεῖν κατὰ βάθος τὸ συμπλήρωμα
 swift because-of the not to-be-needful in depth the filling-up
 γίνεσθαι, καὶ ἄλλοι δὲ τρόποι τινὲς γεννητικοὶ τῶν
 to-come-to-be and other and ways certain generative of-the
 τοιούτων φύσεών εἰσιν. οὐθὲν γὰρ τούτων ἀντιμαρτυρεῖται
 such natures there-are nothing for of-these is-testified-against

ταῖς αἰσθήσεσιν, ἂν βλέπη τις, τίνα τρόπον τὰς ἐναργείας
by-the senses if may-look someone what way the clear-evidences
 καὶ τὰς συμπαθείας ἀπὸ τῶν ἔξωθεν πρὸς ἡμᾶς ἀνοίσει.
and the fellow-feelings from the outside-(things) to us he-will-refer

V · SIGHT, ERROR, AND HEARING

We see and think because something enters us from outside: images keep the shape and color of the solid, and arrive at the eye or the mind. The appearance itself is never false; falsehood lies in the opinion added to it, which further evidence may confirm or contradict. Hearing and smell work the same way, by streams of particles carried off from the thing that sounds or gives off the smell.

49 Δεῖ δὲ καὶ νομίζειν ἐπεισιόντος τινὸς ἀπὸ τῶν
it-is-needful and also to-hold entering something from the
 ἔξωθεν τὰς μορφὰς ὁρᾶν ἡμᾶς καὶ διανοεῖσθαι· οὐ γὰρ ἂν
outside the shapes to-see us and to-think not for —
 ἐναποσφραγίσαιτο τὰ ἔξω τὴν ἐαυτῶν φύσιν τοῦ
might-stamp-in the outside-(things) the of-themselves nature of-the
 τε χρώματος καὶ τῆς μορφῆς διὰ τοῦ ἀέρος τοῦ μεταξὺ
both color and the shape through the air the between
 ἡμῶν τε καὶ κείνων, οὐδὲ διὰ τῶν ἀκτίνων ἢ ὧν
us both and-those nor through the rays or of-which
 δῆποτε ρευμάτων ἀφ' ἡμῶν πρὸς ἐκεῖνα παραγνομένων,
soever streams from us to those coming
 οὕτως ὥς τύπων τινῶν ἐπεισιόντων ἡμῖν ἀπὸ τῶν
so as imprints certain entering us from the
 πραγμάτων ὁμοχρῶν τε καὶ ὁμοιομόρφων κατὰ τὸ
things of-like-color both and of-like-shape according-to the

ἐναρμόττον μέγεθος εἰς τὴν ὄψιν ἢ τὴν διάνοιαν, ὡκέως
fitting magnitude into the sight or the mind swiftly

ταῖς φοραῖς χρωμένων,

the movements using

εἶτα διὰ ταύτην τὴν αἰτίαν τοῦ ἐνὸς καὶ συνεχοῦς

50

then because-of this the cause of-the one and continuous

τὴν φαντασίαν ἀποδιδόντων καὶ τὴν συμπάθειαν ἀπὸ

the appearance rendering and the fellow-feeling from

τοῦ ὑποκειμένου σωζόντων κατὰ τὸν ἐκεῖθεν σύμμετρον

the underlying-thing preserving according-to the from-there commensurate

ἐπερισμὸν ἐκ τῆς κατὰ βάθος ἐν τῷ στερεμνίῳ

pressure out-of the in depth in the solid

τῶν ἀτόμων πάλσεως. καὶ ἣν ἂν λάβωμεν φαντασίαν

of-the atoms vibration and which — we-may-take appearance

ἐπιβλητικῶς τῇ διανοίᾳ ἢ τοῖς αἰσθητηρίοις εἴτε μορφῆς

by-direct-application by-the mind or by-the sense-organs whether of-shape

εἴτε συμβεβηκότων, μορφὴ ἐστὶν αὕτη τοῦ στερεμνίου,

or of-accidents shape is this of-the solid

γυνομένη κατὰ τὸ ἐξῆς πύκνωμα ἢ ἐγκατάλειμμα

coming-about according-to the successive condensation or residue

τοῦ εἰδώλου· τὸ δὲ ψεῦδος καὶ τὸ διημαρτημένον ἐν

of-the image the and falsehood and the mistaken in

τῷ προσδοξαζομένῳ αἰεὶ ἐστίν. (***) ἐπιμαρτυρηθῆσθαι

the thing-added-in-opinion always is (lacuna) to-be-going-to-be-testified-for

ἢ μὴ ἀντιμαρτυρηθῆσθαι, εἰτ' οὐκ ἐπιμαρτυρουμένου ἢ

or not to-be-going-to-be-testified-against then not being-testified-for or

ἀντιμαρτυρουμένου κατὰ τινα κίνησιν ἐν ἡμῖν αὐτοῖς

being-testified-against according-to a-certain motion in us ourselves

συνημμένην τῇ φανταστικῇ ἐπιβολῇ, διάληψιν δὲ ἔχουσαν,

joined to-the imaginative application a-distinction but having

καθ' ἣν τὸ ψεῦδος γίνεται.)

according-to which the falsehood comes-about

- 51 ἥ τε γὰρ ὁμοιότης τῶν φαντασμῶν οἷονεῖ ἐν εἰκόνι
the both for likeness of-the appearances as-it-were in an-image
 λαμβανομένων ἢ καθ' ὕπνου γινομένων ἢ κατ' ἄλλας
being-taken or in sleep coming-about or by other
 τινὰς ἐπιβολὰς τῆς διανοίας ἢ τῶν λοιπῶν κριτηρίων
certain applications of-the mind or of-the remaining criteria
 οὐκ ἂν ποτε ὑπῆρχε τοῖς οὐσί τε καὶ ἀληθείσι
not — at-any-time would-belong to-the-(things) being both and true
 προσαγορευομένοις, εἰ μὴ ἦν τινα καὶ ταῦτα πρὸς
being-called if not there-were certain also these to
 ᾧ βάλλομεν· τὸ δὲ διημαρτημένον οὐκ ἂν ὑπῆρχεν, εἰ
which we-aim the and mistaken not would belong if
 μὴ ἐλαμβάνομεν καὶ ἄλλην τινὰ κίνησιν ἐν ἡμῖν αὐτοῖς
not we-took also another certain motion in us ourselves
 συνημμένην μὲν τῇ φανταστικῇ ἐπιβολῇ, διάληψιν δὲ
joined indeed to-the imaginative application a-distinction but
 ἔχουσιν· κατὰ δὲ ταύτην, ἐὰν μὲν μὴ ἐπιμαρτυρηθῇ ἢ
having according-to and this if indeed not it-be-testified-for or
 ἀντιμαρτυρηθῇ, τὸ ψεῦδος γίνεται· ἐὰν δὲ ἐπιμαρτυρηθῇ
it-be-testified-against the falsehood comes-about if and it-be-testified-for
 ἢ μὴ ἀντιμαρτυρηθῇ, τὸ ἀληθές.
or not it-be-testified-against the truth
- 52 καὶ ταύτην οὖν σφόδρα γε δεῖ τὴν δόξαν
and this therefore very at-least it-is-needful the opinion
 κατέχειν, ἵνα μῆτε τὰ κριτήρια ἀναιρῆται τὰ
to-hold-fast so-that neither the criteria be-done-away-with the-(ones)
 κατὰ τὰς ἐναργείας μῆτε τὸ διημαρτημένον ὁμοίως
according-to the clear-evidences nor the mistaken alike
 βεβαιούμενον πάντα συνταράττη.
being-confirmed everything throw-into-confusion

Ἀλλὰ μὴν καὶ τὸ ἀκούειν γίνεται ρεύματος τινος
but indeed also the to-hear comes-about of-a-stream a-certain
 φερομένου ἀπὸ τοῦ φωνούντος ἢ ἡχούντος ἢ ψοφούντος
being-carried from the one-speaking or one-sounding or one-making-noise
 ἢ ὅπως δήποτε ἀκουστικὸν πάθος παρασκευάζοντος. τὸ
or however soever auditory feeling producing the
 δὲ ρεῦμα τοῦτο εἰς ὁμοιομερεῖς ὄγκους διασπείρεται,
and stream this into like-parted masses is-scattered
 ἅμα τινὰ διασώζοντας συμπάθειαν πρὸς ἀλλήλους καὶ
at-once a-certain preserving fellow-feeling toward one-another and
 ἐνότητα ιδιότροπον, διατείνουσιν πρὸς τὸ ἀποστεῖλαν καὶ
a-unity peculiar extending to the thing-that-sent-it and
 τὴν ἐπαίσθησιν τὴν ἐπ' ἐκείνου ὡς τὰ πολλὰ ποιοῦσαν,
the perception the of that as the many-(cases) making
 εἰ δὲ μὴ γε, τὸ ἔξωθεν μόνον ἔνδηλον παρασκευάζουσιν·
if and not at-least the outside only manifest producing
 ἄνευ γὰρ ἀναφερομένης τινὸς ἐκείθεν συμπαθείας οὐκ ἂν 53
without for being-brought-back a-certain from-there fellow-feeling not would
 γένοιτο ἢ τοιαύτη ἐπαίσθησις. οὐκ αὐτὸν οὖν δεῖ
come-about the such perception not itself therefore it-is-needful
 νομίζειν τὸν ἀέρα ὑπὸ τῆς προιεμένης φωνῆς ἢ καὶ τῶν
to-bold the air by the being-sent-forth voice or also the
 ὁμογενῶν σχηματίζεσθαι — πολλὴν γὰρ ἔνδειαν ἔξει
kindred-(sounds) to-be-shaped much for lack it-will-have
 τοῦτο πάσχων ὑπ' ἐκείνης—, ἀλλ' εὐθὺς τὴν γινομένην
this suffering by that but straightway the coming-about
 πληγὴν ἐν ἡμῖν, ὅταν φωνὴν ἀφίωμεν, τοιαύτην ἐκθλιψιν
blow in us whenever voice we-send-forth such a-squeezing-out
 ὄγκων τινῶν ρεύματος πνευματώδους ἀποτελεστικῶν
of-masses certain of-a-stream breath-like productive
 ποιέσθαι, ἢ τὸ πάθος τὸ ἀκουστικὸν ἡμῖν παρασκευάζει.
to-make which the feeling the auditory for-us produces

Καὶ μὴν καὶ τὴν ὁσμὴν νομιστέον, ὥσπερ καὶ τὴν ἀκοήν
and indeed also the smell one-must-hold as also the hearing
οὐκ ἂν ποτε οὐθὲν πάθος ἐργάσασθαι, εἰ μὴ ὄγκοι
not would at-any-time any feeling to-produce if not masses
τινὲς ἦσαν ἀπὸ τοῦ πράγματος ἀποφερόμενοι σύμμετροι
certain there-were from the thing being-carried-off commensurate
πρὸς τοῦτο τὸ αἰσθητήριον κινεῖν, οἱ μὲν τοιοῖ
for this the sense-organ to-move the-ones indeed of-this-sort
τεταραγμένως καὶ ἀλλοτρίως, οἱ δὲ τοιοῖ ἀταράχως
disturbingly and uncongenially the-others and of-that-sort undisturbingly
καὶ οἰκείως ἔχοντες.
and congenially being

VI · WHAT THE ATOMS HAVE AND HAVE NOT

The atoms bring with them none of the qualities of visible things except shape, weight, and size, since every quality changes and they do not. They vary in size, but not endlessly, since no atom is ever seen. A finite body holds no unlimited parts, and Epicurus argues for a least part within the atom, on the analogy of the least part the senses can make out.

- 54 Καὶ μὴν καὶ τὰς ἀτόμους νομιστέον μηδεμίαν ποιότητα
and indeed also the atoms one-must-hold no quality
τῶν φαινομένων προσφέρεσθαι πλὴν σχήματος καὶ βάρους
of-the things-appearing to-bring-with-them except of-shape and of-weight
καὶ μεγέθους καὶ ὅσα ἐξ ἀνάγκης σχήματος συμφυῇ
and of-magnitude and as-many-as out-of necessity with-shape congenital
ἐστι. ποιότης γὰρ πᾶσα μεταβάλλει· αἱ δὲ ἄτομοι οὐδὲν
are quality for every changes the but atoms not-at-all
μεταβάλλουσιν, ἐπειδὴ περ δεῖ τι ὑπομένειν ἐν
change since indeed it-is-needful something to-remain in

ταῖς διαλύσεσι τῶν συγκρίσεων στερεὸν καὶ ἀδιάλυτον, ὃ
the dissolutions of-the compounds solid and indissoluble which
 τὰς μεταβολὰς οὐκ εἰς τὸ μὴ ὄν ποιήσεται οὐδ' ἐκ τοῦ
the changes not into the not being will-make nor out-of the
 μὴ ὄντος, ἀλλὰ κατὰ μεταθέσεις ἐν πολλοῖς, τινῶν
not being but by transpositions in many of-certain-(atoms)
 δὲ καὶ προσόδους καὶ ἀφόδους. ὅθεν ἀναγκαῖον τὰ
and also arrivals and departures whence necessary the-(things)
 μετατιθέμενα ἄφθαρτα εἶναι καὶ τὴν τοῦ μεταβάλλοντος
being-transposed imperishable to-be and the of-the changing
 φύσιν οὐκ ἔχοντα, ὅγκους δὲ καὶ σχηματισμοὺς ἰδίους·
nature not having masses but also configurations of-their-own
 ταῦτα γὰρ καὶ ἀναγκαῖον ὑπομένειν.
these for also necessary to-remain
 καὶ γὰρ ἐν τοῖς παρ' ἡμῖν μετασχηματιζομένοις κατὰ 55
and for in the-(things) with us being-reshaped by
 τὴν περιαίρεσιν τὸ σχῆμα ἐνυπάρχον λαμβάνεται, αἱ
the stripping-away the shape inhering is-taken the
 δὲ ποιότητες οὐκ ἐνυπάρχουσαι ἐν τῷ μεταβάλλοντι,
but qualities not inhering in the changing-thing
 ὥσπερ ἐκεῖνο καταλείπεται, ἀλλ' ἐξ ὅλου τοῦ σώματος
as that is-left-behind but out-of whole the body
 ἀπολλύμεναι. ἱκανὰ οὖν τὰ ὑπολειπόμενα ταῦτα τὰς
perishing sufficient therefore the-(things) remaining these the
 τῶν συγκρίσεων διαφορὰς ποιεῖν, ἐπειδὴ περ ὑπολείπεσθαι
of-the compounds differences to-make since indeed to-be-left-over
 γέ τινα ἀναγκαῖον καὶ μὴ εἰς τὸ μὴ ὄν φθίρεσθαι.
at-least something necessary and not into the not being to-perish
 Ἀλλὰ μὴν οὐδὲ δεῖ νομίζειν πᾶν μέγεθος ἐν ταῖς
but indeed nor it-is-needful to-hold every magnitude in the
 ἀτόμοις ὑπάρχειν, ἵνα μὴ τὰ φαινόμενα ἀντιμαρτυρῇ·
atoms to-belong so-that not the things-appearing testify-against

παρλλαγὰς δέ τινας μεγεθῶν νομιστέον εἶναι. βέλτιον
variations but certain of-magnitudes one-must-hold to-be better
 γὰρ καὶ τούτου προσόντος τὰ κατὰ τὰ πάθη καὶ
for also this being-present the-(things) according-to the feelings and
 τὰς αἰσθήσεις γινόμενα ἀποδοθήσεται.

the sensations coming-about will-be-explained

- 56 πᾶν δὲ μέγεθος ὑπάρχειν οὔτε χρήσιμόν ἐστι πρὸς
every and magnitude to-belong neither useful is for
 τὰς τῶν ποιότητων διαφοράς, ἀφίχθαί τε ἅμ'
the of-the qualities differences to-have-arrived and at-the-same-time
 ἔδει καὶ πρὸς ἡμᾶς ὁρατὰς ἀτόμους· ὃ
it-would-have-been-needful also to us visible atoms which
 οὐ θεωρεῖται γινόμενον οὔθ' ὅπως ἂν γένοιτο ὁρατὴ
not is-observed coming-about nor how — might-come-to-be a-visible
 ἄτομος ἔστιν ἐπινοῆσαι. Πρὸς δὲ τούτοις οὐ δεῖ
atom it-is-possible to-conceive in-addition-to and these not it-is-needful
 νομίζειν ἐν τῷ ὀρισμένῳ σώματι ἀπείρους ὄγκους εἶναι
to-hold in the limited body infinite masses to-be
 οὐδ' ὀπηλίους οὖν. ὥστε οὐ μόνον τὴν εἰς ἄπειρον τομὴν
nor of-whatever-size soever so-that not only the to infinity cutting
 ἐπὶ τοῦλαττον ἀναιρετέον, ἵνα μὴ πάντα ἀσθενῇ
toward the-lesser one-must-do-away-with so-that not everything feeble
 ποιῶμεν κἂν ταῖς περιλήψεσι τῶν ἀθρόων εἰς τὸ μὴ
we-make and-in the graspings of-the aggregates into the not
 ὄν ἀναγκαζώμεθα τὰ ὄντα θλίβοντες καταναλίσκειν,
being we-be-forced the-(things) being crushing to-use-up
 ἀλλὰ καὶ τὴν μετάβασιν μὴ νομιστέον γίνεσθαι ἐν τοῖς
but also the passage not one-must-hold to-come-about in the
 ὀρισμένοις εἰς ἄπειρον μὴδ' ἐπὶ τοῦλαττον.
limited-(things) to infinity nor toward the-lesser

οὔτε γὰρ ὅπως, ἐπειδὰν ἅπαξ τις εἴπῃ ὅτι ἄπειροι ὄγκοι 57
neither for how when once someone says that infinite masses
 ἐν τινι ὑπάρχουσιν ἢ ὀπηλίκοι οὖν, ἔστι νοῆσαι· πῶς
in something belong or of-whatever-size soever it-is-possible to-think how
 τ' ἂν ἔτι τοῦτο πεπερασμένον εἴῃ τὸ μέγεθος; πηλίκοι γάρ
and would still this limited be the magnitude of-what-size for
 τινες δῆλον ὡς οἱ ἄπειροί εἰσιν ὄγκοι· καὶ οὗτοι ὀπηλίκοι ἂν
certain clear that the infinite are masses and these of-whatever-size —
 ποτε ὦσιν, ἄπειρον ἂν ἦν καὶ τὸ μέγεθος. ἄκρον τε ἔχοντος
soever they-be infinite would be also the magnitude an-edge and having
 τοῦ πεπερασμένου διαληπτόν, εἰ μὴ καὶ καθ' ἑαυτὸ θεωρητόν,
the limited distinguishable if not also by itself contemplable
 οὐκ ἔστι μὴ οὐ καὶ τὸ ἐξῆς τούτου τοιοῦτον νοεῖν καὶ
not it-is-possible not — also the next of-this such to-think and
 οὕτω κατὰ τὸ ἐξῆς εἰς τοῦμπροσθεν βαδίζοντα εἰς τὸ
thus according-to the succession to the-front going to the
 ἄπειρον ὑπάρχειν καὶ τὸ τοιοῦτον ἀφικνεῖσθαι τῇ ἐννοίᾳ.
infinity to-belong also the such to-arrive by-the conception
 τό τε ἐλάχιστον τὸ ἐν τῇ αἰσθήσει δεῖ κατανοεῖν ὅτι 58
the and least the in the sensation it-is-needful to-observe that
 οὔτε τοιοῦτόν ἐστιν οἶον τὸ τὰς μεταβάσεις ἔχον οὔτε
neither such is as the-(thing) the transitions having nor
 πάντῃ πάντως ἀνόμοιον, ἀλλ' ἔχον μὲν τινα κοινότητα
every-way altogether unlike but having indeed a-certain community
 τῶν μεταβατῶν, διάληψιν δὲ μερῶν οὐκ ἔχον· ἀλλ'
with-the things-that-admit-transition a-distinction but of-parts not having but
 ὅταν διὰ τὴν τῆς κοινότητος προσεμφέρειαν οἰηθῶμεν
whenever because-of the of-the community resemblance we-suppose
 διαλήψεσθαι τι αὐτοῦ, τὸ μὲν ἐπιτάδε, τὸ δὲ
to-distinguish something of-it the-(one) indeed on-this-side the-(other) and
 ἐπέκεινα, τὸ ἴσον ἡμῖν δεῖ προσπίπτειν. ἐξῆς τε
beyond the same to-us it-is-needful to-fall-upon in-succession and

- θεωροῦμεν ταῦτα ἀπὸ τοῦ πρώτου καταρχόμενοι καὶ οὐκ
we-observe these from the first beginning and not
ἐν τῷ αὐτῷ, οὐδὲ μέρεσι μερῶν ἀπτόμενα, ἀλλ' ἢ
in the same-(place) nor with-parts of-parts touching but rather
ἐν τῇ ιδιότητι τῇ ἐαυτῶν τὰ μεγέθη καταμετροῦντα, τὰ
in the peculiarity the of-themselves the magnitudes measuring-out the
πλείω πλείον καὶ τὰ ἐλάττω ἔλαττον. ταύτῃ τῇ ἀναλογίᾳ
more more and the lesser less by-this the analogy
νομιστέον καὶ τὸ ἐν τῇ ἀτόμῳ ἐλάχιστον κεχρησθαι.
one-must-hold also the in the atom least to-have-been-used
59 μικρότητι γὰρ ἐκείνο δῆλον ὡς διαφέρει τοῦ κατὰ τὴν
in-smallness for that clear that it-differs from-the according-to the
αἴσθησιν θεωρουμένου, ἀναλογία δὲ τῇ αὐτῇ κέχρηται. ἐπεὶ
sensation thing-observed analogy but the same it-has-used since
περ καὶ ὅτι μέγεθος ἔχει ἢ ἄτομος, κατὰ τὴν ἐνταῦθα
indeed also that magnitude has the atom according-to the here
ἀναλογίαν κατηγορήσαμεν, μικρόν τι μόνον μακρὰν
analogy we-asserted a-small something only far
ἐκβαλόντες. ἔτι τε τὰ ἐλάχιστα καὶ ἀμερῇ πέρατα
having-thrown-out further and the least and partless limits
δεῖ νομίζειν τῶν μηκῶν τὸ καταμέτρημα ἐξ αὐτῶν
it-is-needful to-hold of-the lengths the measure out-of of-themselves
πρώτων τοῖς μείζοσι καὶ ἐλάττοσι παρασκευάζοντα τῇ
first for-the greater and lesser providing by-the
διὰ λόγου θεωρίᾳ ἐπὶ τῶν ἀοράτων. ἡ γὰρ κοινότης
through reason contemplation upon the invisible-(things) the for community
ἢ ὑπάρχουσα αὐτοῖς πρὸς τὰ ἑαυτὰ βόλα ἱκανὴ τὸ μέχρι
the belonging to-them with the unchanging-(things) sufficient the up-to
τούτου συντελέσαι, συμφόρησιν δὲ ἐκ τούτων κίνησιν
this to-accomplish a-heaping-together but out-of these motion
ἐχόντων οὐχ οἶόν τε γίνεσθαι.
having not possible — to-come-about

In the unlimited there is no highest or lowest, but the line above our heads can be carried on forever, and so can the line below, and the upward movement and the downward are each conceived as reaching to infinity. All atoms travel at equal speed through the void when nothing checks them, the heavy no faster than the light, until something strikes them from outside or their own weight resists.

Καὶ μὴν καὶ τοῦ ἀπείρου ὡς μὲν ἀνωτάτω ἢ κατωτάτω 60
and indeed also of-the infinite as indeed uppermost or lowermost
οὐ δεῖ κατηγορεῖν τὸ ἄνω ἢ κάτω. †εἰς μέντοι τὸ
not it-is-needful to-predicate the above or below into however the
ὑπὲρ κεφαλῆς, ὅθεν ἂν στῶμεν, εἰς ἄπειρον ἄγειν †ὄν†
over head from-where — we-stand to infinity to-lead being
μηδέποτε φανείσθαι τοῦτο ἡμῖν· ἢ τὸ ὑποκάτω τοῦ νοηθέντος
never to-appear this to-us or the underneath of-the thing-conceived
εἰς ἄπειρον ἅμα ἄνω τε εἶναι καὶ κάτω πρὸς τὸ αὐτό†·
to infinity at-once above both to-be and below toward the same
τοῦτο γὰρ ἀδύνατον διανοηθῆναι. ὥστε ἔστι μίαν λαβεῖν
this for impossible to-be-thought so-that it-is-possible one to-take
φορὰν τὴν ἄνω νοουμένην εἰς ἄπειρον καὶ μίαν τὴν κάτω,
movement the upward conceived to infinity and one the downward
ἂν καὶ μυριάκις πρὸς τοὺς πόδας τῶν ἐπάνω τὸ
if even ten-thousand-times toward the feet of-the-(ones) above the-(thing)
παρ' ἡμῶν φερόμενον εἰς τοὺς ὑπὲρ κεφαλῆς ἡμῶν τόπους
from us being-carried into the over head of-us places
ἀφικνῆται ἢ ἐπὶ τὴν κεφαλὴν τῶν ὑποκάτω τὸ
arrive or upon the head of-the-(ones) underneath the-(thing)
παρ' ἡμῶν κάτω φερόμενον· ἢ γὰρ ὅλη φορὰ οὐθὲν
from us downward being-carried the for whole movement in-no-way
ἦττον ἑκάτερα ἑκάτερα ἀντικειμένη ἐπ' ἄπειρον νοεῖται.
less each to-each opposed to infinity is-conceived

- 61 Καὶ μὴν καὶ ἰσοταχεῖς ἀναγκαῖον τὰς ἀτόμους εἶναι, ὅταν
and indeed also equal-in-speed necessary the atoms to-be whenever
 διὰ τοῦ κενοῦ εἰσφέρωνται μηθενὸς ἀντικόπτουτος. οὔτε
through the void they-are-borne-in nothing striking-against neither
 γὰρ τὰ βαρέα θάττον οἰσθήσεται τῶν μικρῶν καὶ κούφων,
for the heavy faster will-be-carried than-the small and light
 ὅταν γε δὴ μὴδὲν ἀπαντᾷ αὐτοῖς· οὔτε τὰ μικρὰ τῶν
whenever at-least indeed nothing meets them nor the small than-the
 μεγάλων, πάντα πόρον σύμμετρον ἔχοντα, ὅταν μὴθὲν μὴδὲ
great every passage commensurate having whenever nothing even
 ἐκείνοις ἀντικόπτῃ· οὔθ' ἢ ἄνω οὔθ' ἢ εἰς τὸ πλάγιον διὰ
to-those strike-against nor the upward nor the into the sideways through
 τῶν κρούσεων φορά, οὔθ' ἢ κάτω διὰ τῶν ἰδίων βαρῶν.
the collisions movement nor the downward through the own weights
 ἐφ' ὅποσον γὰρ ἂν κατίσχη ἐκάτερον, ἐπὶ τοσοῦτον ἅμα
to how-far for — it-holds-out each to so-far together-with
 νοήματι τὴν φορὰν σχήσει, ἕως ἀντικόψῃ ἢ ἔξωθεν ἢ
a-thought the movement it-will-keep until it-strike-against either from-outside or
 ἐκ τοῦ ἰδίου βάρους πρὸς τὴν τοῦ πλῆξαντος δύναμιν.
out-of the own weight against the of-the thing-that-struck power
- 62 Ἀλλὰ μὴν καὶ κατὰ τὰς συγκρίσεις θάττων ἑτέρα ἑτέρας
but indeed also among the compounds swifter one than-another
 ῥηθήσεται τῶν ἀτόμων ἰσοταχῶν οὐσῶν, τῷ ἐφ' ἓνα
will-be-said the atoms equal-in-speed being by-the to one
 τόπον φέρεσθαι τὰς ἐν τοῖς ἀθροίσμασιν ἀτόμους κατὰ
place to-be-carried the in the aggregates atoms in
 τὸν ἐλάχιστον συνεχῇ χρόνον, εἰ καὶ μὴ ἐφ' ἓνα κατὰ τοὺς
the least continuous time if even not to one in the
 λόγῳ θεωρητοὺς χρόνους· ἀλλὰ πυκνὸν ἀντικόπτουσιν, ἕως
by-reason contemplated times but often they-strike-against until
 ἂν ὑπὸ τὴν αἴσθησιν τὸ συνεχὲς τῆς φορᾶς γίνηται. τὸ γὰρ
— under the sensation the continuity of-the movement comes-about the for

προσδοξαζόμενον περὶ τοῦ ἀοράτου, ὡς ἄρα καὶ οἱ διὰ
thing-added-in-opinion about the invisible that then also the through
 λόγου θεωρητοὶ χρόνοι τὸ συνεχὲς τῆς φορᾶς ἔξουσιν, οὐκ
reason contemplated times the continuity of-the movement will-have not
 ἀληθές ἐστιν ἐπὶ τῶν τοιούτων· ἐπεὶ τό γε θεωρούμενον
true is upon the such-(cases) since the at-least thing-observed
 πᾶν ἢ κατ' ἐπιβολὴν λαμβανόμενον τῇ διανοίᾳ ἀληθές ἐστι.
all or by application being-taken by-the mind true is

VIII · THE SOUL

The soul is a body of fine parts scattered through the whole aggregate, most like breath with a blend of heat, one part of it far finer than the rest. It is the chief cause of sensation, but only while housed by the body, which shares in it; when the aggregate is dissolved, the soul is scattered and senses nothing.

Μετὰ δὲ ταῦτα δεῖ συνορᾶν ἀναφέροντα ἐπὶ τὰς 63
after and these it-is-needful to-see referring to the
 αἰσθήσεις καὶ τὰ πάθη — οὕτω γὰρ ἡ βεβαιωτάτη
sensations and the feelings thus for the most-secure
 πίστις ἔσται—, ὅτι ἡ ψυχὴ σῶμά ἐστι λεπτομερὲς παρ'
conviction will-be that the soul a-body is fine-parted throughout
 ὅλον τὸ ἄθροισμα παρεσπαρμένον, προσεμφερέστατον δὲ
whole the aggregate scattered most-like but
 πνεύματι θερμοῦ τινα κρᾶσιν ἔχοντι καὶ πῇ μὲν
to-breath of-heat a-certain blending having and in-one-way indeed
 τούτῳ προσεμφερές, πῇ δὲ τούτῳ ἔστι δέ τι
to-this like in-another and to-this there-is and a-certain
 μέρος πολλὴν παραλλαγὴν εἰληφὸς τῇ λεπτομερείᾳ καὶ
part much variation having-taken in-the fineness-of-parts even
 αὐτῶν τούτων, συμπαθὲς δὲ τούτῳ μᾶλλον καὶ τῷ
than-the-very these-(things) in-fellow-feeling but with-this rather and with-the

λοιπῶ ἀθροίσματι· τοῦτο δὲ πᾶν αἰ δυνάμεις τῆς ψυχῆς
remaining aggregate this and all the powers of-the soul
 δηλοῦσι καὶ τὰ πάθη καὶ αἰ εὐκινήσῃαι καὶ αἰ διανοήσεις
make-clear and the feelings and the easy-movements and the thinkings
 καὶ ὧν στερόμενοι θνήσκομεν. Καὶ μὴν καὶ ὅτι ἔχει ἡ
and of-which being-deprived we-die and indeed also that has the
 ψυχὴ τῆς αἰσθήσεως τὴν πλείστην αἰτίαν δεῖ κατέχειν·
soul of-the sensation the greatest cause it-is-needful to-grasp
 64 οὐ μὴν εἰλήφει ἂν ταύτην, εἰ μὴ ὑπὸ τοῦ λοιποῦ
not indeed it-would-have-taken — this if not by the remaining
 ἀθροίσματος ἐστεγάζετό πως. τὸ δὲ λοιπὸν ἄθροισμα
aggregate it-was-covered somehow the and remaining aggregate
 παρασκευάσαν ἐκείνῃ τὴν αἰτίαν ταύτην μετέιληφε καὶ αὐτὸ
having-provided for-that the cause this has-shared also itself
 τοιούτου συμπτώματος παρ' ἐκείνης, οὐ μέντοι πάντων
of-such a-coincident from that not however of-all
 ὧν ἐκείνῃ κέκτηται· διὸ ἀπαλλαγείσης τῆς ψυχῆς
which that has-acquired wherefore having-departed the soul
 οὐκ ἔχει τὴν αἴσθησιν. οὐ γὰρ αὐτὸ ἐν ἑαυτῷ ταύτην
not it-has the sensation not for itself in itself this
 ἐκέκτητο τὴν δύναμιν, ἀλλ' ἐτέρῳ ἅμα συγγεγεννημένῳ
had-acquired the power but to-another together born-with
 αὐτῷ παρεσκεύαζεν, ὃ διὰ τῆς συντελεσθείσης περὶ
it it-provided which through the perfected about
 αὐτὸ δυνάμεως κατὰ τὴν κίνησιν σύμπτωμα αἰσθητικὸν
it power by the motion a-coincident sensitive
 εὐθὺς ἀποτελοῦν ἑαυτῷ ἀπεδίδου κατὰ τὴν ὁμοῦρῃσιν
straightway accomplishing for-itself it-rendered by the neighboring
 καὶ συμπάθειαν καὶ ἐκείνῳ, καθάπερ εἶπον.
and fellow-feeling also to-that just-as I-said

Διὸ δὴ καὶ ἐνυπάρχουσα ἡ ψυχὴ οὐδέποτε ἄλλου 65
wherefore indeed also inhering the soul never of-another
 τινὸς μέρους ἀπηλλαγμένου ἀναισθητεῖ· ἀλλ' ἂν καὶ
a-certain part having-departed is-without-sensation but which — also
 ταύτης ξυναπόληται τοῦ στεγάζοντος λυθέντος εἴθ'
of-this perish-together of-the covering having-been-loosed whether
 ὅλου εἴτε καὶ μέρους τινός, ἐάν περ διαμένη, σώζει τὴν
of-the-whole or also of-a-part a-certain if indeed it-remains it-preserved the
 αἴσθησιν. τὸ δὲ λοιπὸν ἄθροισμα διαμένον καὶ ὅλον καὶ
sensation the and remaining aggregate remaining both as-a-whole and
 κατὰ μέρος οὐκ ἔχει τὴν αἴσθησιν ἐκείνου ἀπηλλαγμένου,
according-to part not has the sensation of-that having-departed
 ὅσον ποτέ ἐστι τὸ συντεῖνον τῶν ἀτόμων πλῆθος εἰς
however-great ever is the contributing of-the atoms multitude to
 τὴν τῆς ψυχῆς φύσιν. Καὶ μὴν καὶ λυομένου τοῦ ὅλου
the of-the soul nature and indeed also being-loosed of-the whole
 ἀθροίσματος ἡ ψυχὴ διασπείρεται καὶ οὐκέτι ἔχει τὰς
aggregate the soul is-scattered and no-longer has the
 αὐτὰς δυνάμεις οὐδὲ κινεῖται, ὥστε οὐδ' αἴσθησιν κέκτῃται.
same powers nor is-moved so-that not-even sensation it-possesses
 οὐ γὰρ οἶόν τε νοεῖν αὐτὸ αἰσθανόμενον μὴ ἐν τούτῳ 66
not for possible — to-think it perceiving not in this
 τῷ συστήματι καὶ ταῖς κινήσεσι ταύταις χρώμενον, ὅταν
the system and the motions these using whenever
 τὰ στεγάζοντα καὶ περιέχοντα μὴ τοιαῦτα ᾖ, ἐν οἷς νῦν
the covering-(parts) and enclosing not such be in which now
 οὔσα ἔχει ταύτας τὰς κινήσεις. Ἀλλὰ μὴν καὶ τόδε (λέγει
being it-has these the motions but indeed also this he-says
 ἐν ἄλλοις καὶ ἐξ ἀτόμων αὐτὴν συγκεῖσθαι λειοτάτων
in other-(places) also out-of atoms it to-be-composed smoothest
 καὶ στρογγυλωτάτων, πολλῶ τιμι διαφερουσῶν τῶν
and roundest by-much a-certain differing from-the

τοῦ πυρός· καὶ τὸ μὲν τι ἄλογον αὐτῆς, ὃ τῷ
of-the fire and the one indeed irrational of-it which in-the
 λοιπῷ παρεσπάρθαι σώματι· τὸ δὲ λογικὸν ἐν τῷ
remaining to-be-scattered body the and rational in the
 θώρακι, ὡς δῆλον ἔκ τε τῶν φόβων καὶ τῆς χαρᾶς.
chest as clear out-of both the fears and the joy
 ὕπνον τε γίνεσθαι τῶν τῆς ψυχῆς μερῶν τῶν παρ'
sleep and to-come-about of-the of-the soul parts the throughout
 ὅλην τὴν σύγκρισιν παρεσπαρμένων ἐγκατεχομένων ἢ
whole the compound scattered being-held-in or
 διαφορουμένων, εἴτα συμπιπτόντων τοῖς ἴσχυροσιν. τό
being-dispersed then falling-together with-the pressures the
 τε σπέρμα ἀφ' ὅλων τῶν σωμάτων φέρεσθαι.)
and seed from whole the bodies to-be-carried

IX · THE INCORPOREAL, AND THE PROPERTIES OF BODIES

Nothing is incorporeal except the void, which neither acts nor is acted on, so those who call the soul incorporeal talk idly. Shapes, colors, sizes, and weights are neither natures by themselves nor parts of body: the whole body has them. Accidents, which do not always go with a body, must be taken as sensation shows them.

67 γε δεῖ προσκατανοεῖν, ὅτι τὸ ἀσώματον λέγομεν
at-least it-is-needful to-consider-besides that the incorporeal we-call
 κατὰ τὴν πλείστην ὁμιλίαν τοῦ ὀνόματος ἐπὶ τοῦ καθ'
according-to the commonest usage of-the name upon the by
 ἑαυτὸ νοηθέντος ἂν· καθ' ἑαυτὸ δὲ οὐκ ἔστι νοῆσαι τὸ
itself thing-conceived would by itself and not it-is-possible to-conceive the
 ἀσώματον πλὴν τοῦ κενοῦ. τὸ δὲ κενὸν οὔτε ποιῆσαι οὔτε
incorporeal except the void the and void neither to-act nor
 παθεῖν δύναται, ἀλλὰ κίνησιν μόνον δι' ἑαυτοῦ τοῖς
to-be-acted-on can but motion only through itself to-the

σώμασι παρέχεται. ὥστ' οἱ λέγοντες ἀσώματον εἶναι
 bodies it-furnishes so-that the-(ones) saying incorporeal to-be
 τὴν ψυχὴν ματαΐζουσιν. οὐθὲν γὰρ ἂν ἐδύνατο ποιεῖν
 the soul talk-idly nothing for would it-be-able to-do
 οὔτε πάσχειν, εἰ ἦν τοιαύτη· νῦν δ' ἐναργῶς ἀμφοτέρα
 or to-suffer if it-were such now and clearly both
 ταῦτα διαλαμβάνομεν περὶ τὴν ψυχὴν τὰ συμπτώματα.
 these we-distinguish about the soul the coincidents
 ταῦτα οὖν πάντα τὰ διαλογίσματα τὰ περὶ ψυχῆς 68
 these therefore all the reasonings the about soul
 ἀνάγων τις ἐπὶ τὰ πάθη καὶ τὰς αἰσθήσεις, μνημονεύων
 referring someone to the feelings and the sensations remembering
 τῶν ἐν ἀρχῇ ῥηθέντων, ἱκανῶς κατόψεται τοῖς
 the-(things) in beginning said sufficiently will-discern in-the
 τύποις ἐμπεριειλημμένα εἰς τὸ κατὰ μέρος ἀπὸ τούτων
 outlines things-embraced for the according-to part from these
 ἐξακριβουῖσθαι βεβαίως.

to-be-worked-out-exactly securely

Ἀλλὰ μὲν καὶ τὰ σχήματα καὶ τὰ χρώματα καὶ τὰ
 but indeed also the shapes and the colors and the
 μεγέθη καὶ τὰ βάρη καὶ ὅσα ἄλλα κατηγορεῖται
 magnitudes and the weights and as-many-as other-(things) are-predicated
 σώματος ὡσανεὶ συμβεβηκότα ἢ πᾶσιν ἢ τοῖς ὁρατοῖς
 of-body as-if accidents either of-all or of-the visible
 καὶ κατὰ τὴν αἴσθησιν ταυτοῖς γνωστοῖς, οὔθ' ὥς καθ'
 and according-to the sensation by-them known neither as by
 ἑαυτὰς εἰσι φύσεις δοξαστέον —

themselves they-are natures one-must-hold

οὐ γὰρ δυνατόν ἐπινοῆσαι τοῦτο — οὔτε ὅλως ὥς οὐκ 69
 not for possible to-conceive this either at-all that not
 εἰσίν, οὔθ' ὥς ἕτερ' ἄττα προσυπάρχοντα τούτῳ ἀσώματα,
 they-are or that other certain existing-besides in-this incorporeal

οὐθ' ὡς μόρια τούτου, ἀλλ' ὡς τὸ ὅλον σῶμα καθόλου ἐκ
nor that parts of-this but that the whole body as-a-whole out-of
τούτων πάντων τὴν ἑαυτοῦ φύσιν ἔχον αἰδίου, οὐχ οἷον
these all the of-itself nature having everlasting not as-though
δὲ εἶναι συμπεφορημένον — ὥσπερ ὅταν ἐξ αὐτῶν
but to-be having-been-heaped-together as whenever out-of these-very
τῶν ὄγκων μείζον ἄθροισμα συστήῃ ἤτοι τῶν πρώτων ἢ
the masses a-greater aggregate be-formed either of-the first or
τῶν τοῦ ὅλου μεγεθῶν τοῦδὲ τινος ἐλαττόνων—, ἀλλὰ
of-the of-the whole magnitudes than-this a-certain lesser but
μόνον, ὡς λέγω, ἐκ τούτων ἀπάντων τὴν ἑαυτοῦ φύσιν
only as I-say out-of these all the of-itself nature
ἔχον αἰδίου. καὶ ἐπιβολὰς μὲν ἔχοντα ἰδίας πάντα ταῦτα
having everlasting and applications indeed having proper all these
ἐστὶ καὶ διαλήψεις, συμπαρακολουθοῦντος δὲ τοῦ ἀθρόου
are also distinctions accompanying but the aggregate
καὶ οὐθαμῇ ἀποσχιζομένον, ἀλλὰ κατὰ τὴν ἀθρόαν ἔννοιαν
and in-no-way being-separated but by the aggregate conception
τοῦ σώματος κατηγορίαν εἰληφότος.
of-the body a-predication having-taken

- 70 Καὶ μὴν καὶ τοῖς σώμασι συμπίπτει πολλάκις καὶ οὐκ
and indeed also to-the bodies it-happens often and not
αἰδίου παρακολουθεῖν τούτ' ἐν τοῖς ἀοράτοις καὶ οὔτε
everlastingly to-accompany nor in the invisible-(things) and nor
ἀσώματα†. ὥστε δὴ κατὰ τὴν πλείστην φορὰν τούτῳ
incorporeal so-that indeed according-to the commonest usage this
τῷ ὀνόματι χρώμενοι φανερά ποιούμεν τὰ συμπτώματα
the name using clear we-make the coincidents
οὔτε τὴν τοῦ ὅλου φύσιν ἔχειν, ὃ συλλαβόντες κατὰ
neither the of-the whole nature to-have which having-gathered by

τὸ ἀθρόον σῶμα προσαγορεύομεν, οὔτε τὴν τῶν αἰδίων
the aggregate body we-call nor the of-the everlastingly
 παρακολουθούντων, ὧν ἄνευ σῶμα οὐ δυνατόν νοεῖσθαι.
accompanying-(things) which without a-body not possible to-be-conceived
 κατ' ἐπιβολὰς δ' ἂν τινες παρακολουθούντος τοῦ ἀθρόου 71
by applications and would certain accompanying of-the aggregate
 ἕκαστα προσαγορευθείη, ἀλλ' ὅτε δήποτε ἕκαστα
each-(coincident) might-be-named but whenever soever each
 συμβαίνοντα θεωρεῖται, οὐκ αἰδίων τῶν συμπτωμάτων
coming-about is-observed not everlastingly of-the coincidents
 παρακολουθούντων. καὶ οὐκ ἐξελατέον ἐκ τοῦ ὄντος
accompanying and not one-must-drive-out out-of the being
 ταύτην τὴν ἐνάργειαν, ὅτι οὐκ ἔχει τὴν τοῦ ὅλου φύσιν
this the clear-evidence that not it-has the of-the whole nature
 ᾧ συμβαίνει ὃ δὴ καὶ σῶμα προσαγορεύομεν, οὐδὲ
to-which it-happens which indeed also a-body we-call nor
 τὴν τῶν αἰδίων παρακολουθούντων, οὐδ' αὖ καθ' αὐτὰ
the of-the everlastingly accompanying-(things) nor again by themselves
 νομιστέον — οὐδὲ γὰρ τοῦτο διανοητὸν οὔτ' ἐπὶ τούτων
one-must-hold and-not for this thinkable either upon these
 οὔτ' ἐπὶ τῶν αἰδίων συμβεβηκότων—, ἀλλ' ὅπερ καὶ
or upon the everlastingly accidents but which-very also
 φαίνεται, συμπτώματα πάντα τὰ τοιαῦτα νομιστέον, καὶ
appears coincidents all the such one-must-hold and
 οὐκ αἰδίων παρακολουθούντα οὐδ' αὖ φύσεως καθ'
not everlastingly accompanying nor again of-a-nature by
 ἑαυτὰ τάγμα ἔχοντα, ἀλλ' ὃν τρόπον αὐτὴ ἡ αἴσθησις
themselves a-rank having but which way itself the sensation
 τὴν ιδιότητα ποιεῖ, θεωρεῖται.
the peculiarity makes is-observed

Time is not to be looked for as other things are, by referring it to a preconception; it is grasped in the plain fact by which we speak of a long or short time, and it goes with days and nights, with feelings, and with rest and motion. Worlds are formed out of the unlimited by their own whirls and are dissolved again, some faster and some slower.

- 72 Καὶ μὴν καὶ τόδε γε δεῖ προσκατανοῆσαι σφοδρῶς·
and indeed also this at-least it-is-needful to-consider-besides strenuously
 τὸν γὰρ δὴ χρόνον οὐ ζητητέον ὥσπερ καὶ τὰ
the for indeed time not one-must-seek as also the
 λοιπά, ὅσα ἐν ὑποκειμένῳ ζητοῦμεν ἀνάγοντες ἐπὶ
remaining-(things) as-many-as in a-subject we-seek referring to
 τὰς βλεπομένας παρ' ἡμῖν αὐτοῖς προλήψεις, ἀλλ' αὐτὸ
the seen with us ourselves preconceptions but itself
 τὸ ἐνάργημα, καθ' ὃ τὸν πολὺν ἢ ὀλίγον χρόνον
the clear-fact according-to which the much or little time
 ἀναφωνοῦμεν, συγγενικῶς τοῦτο περιφέροντες, ἀναλογιστέον.
we-call-out akin-to-it this carrying-round one-must-reckon
 καὶ οὔτε διαλέκτους ὥς βελτίους μεταληπτέον, ἀλλ'
and neither dialects as better one-must-adopt but
 αὐταῖς ταῖς ὑπαρχούσαις κατ' αὐτοῦ χρηστέον, οὔτε
the-very-ones the existing of it one-must-use nor
 ἄλλο τι κατ' αὐτοῦ κατηγορητέον, ὥς τὴν αὐτὴν
other anything of it one-must-predicate as the same
 οὐσίαν ἔχοντος τῷ ιδιώματι τούτῳ — καὶ γὰρ τοῦτο
being having as-the peculiarity this and for this
 ποιούσιν τινες—, ἀλλὰ μόνον ᾧ συμπλέκομεν τὸ
do certain-(people) but only with-which we-interweave the
 ἴδιον τοῦτο καὶ παραμετροῦμεν, μάλιστα ἐπιλογιστέον.
peculiar this and we-measure-out especially one-must-reckon-out

καὶ γὰρ τοῦτο οὐκ ἀποδείξεως προσδεῖται ἀλλ' ἐπιλογισμοῦ, 73
and for this not of-proof stands-in-need but of-reckoning
 ὅτι ταῖς ἡμέραις καὶ ταῖς νυξὶ συμπλέκομεν καὶ τοῖς
that with-the days and with-the nights we-interweave and with-the
 τούτων μέρεσιν, ὡσαύτως δὲ καὶ τοῖς πάθεσι καὶ ταῖς
of-these parts likewise and also with-the feelings and with-the
 ἀπαθείαις, καὶ κινήσει καὶ στάσεσιν, ἰδιὸν τι
freedoms-from-feeling and motions and rests a-peculiar a-certain
 σύμπτωμα περὶ ταῦτα πάλιν αὐτὸ τοῦτο ἐννοοῦντες,
coincident about these again itself this conceiving
 καθ' ὃ χρόνον ὀνομάζομεν. (φησὶ δὲ τοῦτο καὶ ἐν
according-to which time we-name he-says and this also in
 τῇ δευτέρᾳ Περὶ φύσεως καὶ ἐν τῇ Μεγάλῃ ἐπιτομῇ.)
the second about nature and in the Great epitome
 Ἐπὶ τε τοῖς προειρημένοις τοὺς κόσμους δεῖ καὶ πᾶσαν
upon and the things-said-before the worlds it-is-needful also every
 σύγκρισιν πεπερασμένην τὸ ὁμοειδὲς τοῖς θεωρουμένοις
compound limited the like-in-kind to-the things-observed
 πυκνῶς ἔχουσιν νομίζειν γεγονέναι ἀπὸ τοῦ ἀπείρου,
frequently having to-hold to-have-come-to-be from the infinite
 πάντων τούτων ἐκ συστροφῶν ἰδίων ἀποκεκριμένων καὶ
of-all these out-of whirlings proper having-been-separated-off both
 μειζόνων καὶ ἐλαττόνων· καὶ πάλιν διαλύεσθαι πάντα, τὰ
greater and lesser and again to-be-dissolved all the-ones
 μὲν θάπτον, τὰ δὲ βραδύτερον, καὶ τὰ μὲν ὑπὸ
indeed faster the-others and slower and the-ones indeed by
 τῶν τοιῶνδε, τὰ δὲ ὑπὸ τῶν τοιῶνδε τοῦτο πάσχοντα.
the such-(causes) the-others and by the such-(causes) this suffering
 δῆλον οὖν ὡς καὶ *** (καὶ ἐν τῇ *** Περὶ φύσεως 74
clear therefore that also (lacuna) and in the (lacuna) about nature
 φθαρτοὺς φησι τοὺς κόσμους, μεταβαλλόντων τῶν μερῶν.
perishable he-says the worlds changing the parts

καὶ ἐν ἄλλοις, τὴν γῆν τῷ ἀέρι ἐποχεῖσθαι.) Ἐτι δὲ
and in other-(places) the earth on-the air to-ride further and
 τοὺς κόσμους οὔτε ἐξ ἀνάγκης δεῖ νομίζειν εἶνα
the worlds neither out-of necessity it-is-needful to-hold one
 σχηματισμὸν ἔχοντας, ἀλλὰ *** (καὶ διαφόρους αὐτοὺς ἐν
configuration having but (lacuna) also different them in
 τῇ ιβ̄ Περὶ φύσεως φησιν· οὗς μὲν γὰρ σφαιροειδεῖς,
the twelfth about nature he-says which-ones indeed for spherical
 καὶ ᾠοειδεῖς ἄλλους, καὶ ἄλλοιοσχήμονας ἑτέρους· οὐ
and egg-shaped others and otherwise-shaped different-ones not
 μέντοι πᾶν σχῆμα ἔχειν. οὐδὲ ζῶα εἶναι ἀποκριθέντα
however every shape to-have nor living-beings to-be having-been-separated-off
 ἀπὸ τοῦ ἀπείρου.) *** οὐδὲ γὰρ ἂν ἀποδείξειεν οὐδεῖς,
from the infinite (lacuna) and-not for would prove anyone
 ὥς ἐν μὲν τῷ τοιούτῳ καὶ οὐκ ἂν ἐμπεριελήφθη τὰ
that in indeed the such-(place) also not would have-been-included the
 τοιαῦτα σπέρματα, ἐξ ὧν ζῶά τε καὶ φυτὰ καὶ
such seeds out-of which living-beings both and plants and
 τὰ λοιπὰ πάντα τὰ θεωρούμενα συνίσταται, ἐν δὲ τῷ
the remaining all the things-observed are-formed in and the
 τοιούτῳ οὐκ ἂν ἐδυνήθη. (ὡσαύτως δὲ καὶ ἐντραφῆναι.)
such-(place) not would it-have-been-able likewise and also to-be-nourished
 τὸν αὐτὸν δὲ τρόπον καὶ ἐπὶ γῆς νομιστέον ***
the same and way also upon earth one-must-hold (lacuna)

XI • THE BIRTH OF NAMES, AND THE GODS

Names were not laid down by agreement at first. The natures of men in each nation, feeling their own feelings and taking their own impressions, sent out air in their own way; later each nation fixed common terms to make the meaning less ambiguous. The risings and settings on high need no minister to bring them about, for business and anger do not agree with blessedness.

Ἄλλὰ μὴν ὑποληπτέον καὶ τὴν φύσιν πολλὰ καὶ 75
but indeed one-must-suppose also the nature many and
 παντοῖα ὑπὸ αὐτῶν τῶν πραγμάτων διδαχθῆναί τε
of-all-kinds by these-very the things to-have-been-taught both
 καὶ ἀναγκασθῆναι, τὸν δὲ λογισμὸν τὰ ὑπὸ ταύτης
and to-have-been-compelled the and reasoning the-(things) by this
 παρεγγυθέντα ὕστερον ἐπακριβοῦν καὶ προσεξευρίσκειν ἐν
handed-over later to-work-out-exactly and to-find-out-besides in
 μέν τισι θᾶπτον, ἐν δέ τισι βραδύτερον καὶ ἐν μέν τισι
indeed some faster in and others slower and in indeed some
 περιόδοις καὶ χρόνοις κατὰ μείζους ἐπιδόσεις, ἐν δέ τισι κατ'
periods and times by greater advances in and others by
 ἐλάττους. Ὅθεν καὶ τὰ ὀνόματα ἐξ ἀρχῆς μὴ θέσει
lesser whence also the names out-of beginning not by-convention
 γενέσθαι, ἀλλ' αὐτὰς τὰς φύσεις τῶν ἀνθρώπων καθ'
to-have-come-to-be but the-very the natures of-the men in
 ἕκαστα ἔθνη ἴδια πασχούσας πάθη καὶ ἴδια λαμβανούσας
each nations proper suffering feelings and proper receiving
 φαντάσματα ἰδίως τὸν ἀέρα ἐκπέμπειν στελλόμενον ὑφ'
impressions peculiarly the air to-send-out being-driven by
 ἐκάστων τῶν παθῶν καὶ τῶν φαντασμάτων, ὥς ἂν ποτε
each of-the feelings and of-the impressions as — soever
 καὶ ἢ παρὰ τοὺς τόπους τῶν ἐθνῶν διαφορά ᾗ
also the according-to the places of-the nations difference may-be
 ὕστερον δὲ κοινῶς καθ' ἕκαστα ἔθνη τὰ ἴδια 76
later and in-common in each nations the proper-(names)
 τεθῆναι πρὸς τὸ τὰς δηλώσεις ἡττον ἀμφιβόλους
to-have-been-laid-down toward the the significations less ambiguous
 γενέσθαι ἀλλήλοις καὶ συντομωτέως δηλουμένας·
to-become to-one-another and more-briefly being-signified
 τινὰ δὲ καὶ οὐ συνωρώμενα πράγματα εἰσφέροντας
certain and also not being-seen things introducing

τοὺς συνειδότας παρεγγυῆσαί τινας φθόγγους τοὺς
the-(ones) knowing-them to-hand-over certain utterances the-(ones)
 ἀναγκασθέντας ἀναφωνῆσαι, τοὺς δὲ τῷ λογισμῷ
having-been-compelled to-cry-out the-(others) and by-the reasoning
 ἐλομένους κατὰ τὴν πλείστην αἰτίαν οὕτως ἐρμηνεύσαι.
having-chosen according-to the commonest cause thus to-express
 Καὶ μὴν ἐν τοῖς μετεώροις φορὰν καὶ τροπὴν καὶ
and indeed in the things-on-high movement and turning and
 ἔκλειψιν καὶ ἀνατολὴν καὶ δύσιν καὶ τὰ σύστοιχα τούτοις
eclipse and rising and setting and the kindred-(things) to-these
 μήτε λειτουργούντος τινος νομίζειν δεῖ γίνεσθαι
neither of-one-ministering anyone to-hold it-is-needful to-come-about
 καὶ διατάττοντος ἢ διατάζοντος καὶ ἅμα τὴν πᾶσαν
and ordering or going-to-order and at-once the whole
 μακαριότητα ἔχοντος μετὰ ἀφθαρσίας
blessedness having with imperishability

77 — οὐ γὰρ συμφωνοῦσι πραγματεῖαι καὶ φροντίδες καὶ
not for agree businesses and cares and
 ὀργαὶ καὶ χάριτες μακαριότητι, ἀλλ' ἐν ἀσθενείᾳ καὶ φόβῳ
angers and favors with-blessedness but in weakness and fear
 καὶ προσδεῖσιν τῶν πλησίων ταῦτα γίνεται—, μήτε αὖ
and need of-the neighbors these come-about nor again
 πῦρ ἅμα ὄντα συνεστραμμένον τὴν μακαριότητα κεκτημένα
fire at-once being compacted the blessedness having-acquired
 κατὰ βούλησιν τὰς κινήσεις ταύτας λαμβάνειν· ἀλλὰ
according-to will the motions these to-take but
 πᾶν τὸ σέμνωμα τηρεῖν κατὰ πάντα ὀνόματα φερόμενα
all the majesty to-keep according-to all names being-carried
 ἐπὶ τὰς τοιαύτας ἐννοίας, ἐὰν μηδὲν ὑπεναντίον ἐξ αὐτῶν
to the such conceptions if nothing contrary out-of them
 τῷ σεμνώματι δόξῃ· εἰ δὲ μή, τὸν μέγιστον τάραχον
to-the majesty seem if and not the greatest disturbance

ἐν ταῖς ψυχαῖς αὐτὴ ἡ ὑπεναντιότης παρασκευάσει. ὅθεν
in the souls itself the contrariety will-produce whence
 δὴ κατὰ τὰς ἐξ ἀρχῆς ἐναπολήψεις τῶν συστροφῶν
indeed by the out-of beginning entrappings of-the whirlings
 τούτων ἐν τῇ τοῦ κόσμου γενέσει δεῖ δοξάζειν καὶ
these in the of-the world birth it-is-needful to-hold also
 τὴν ἀνάγκην ταύτην καὶ περίοδον συντελεῖσθαι.
the necessity this and revolution to-be-accomplished

XII · WHY THE HEAVENS ARE STUDIED

To work out exactly the cause of the most important things is the business of natural science, and blessedness in the study of things on high lies just here. Knowing the bare record of settings and risings contributes nothing; those who have it fear no less. What is wanted is that several explanations be found, so that nothing on high compels a single frightening account.

Καὶ μὴν καὶ τὴν ὑπὲρ τῶν κυριωτάτων αἰτίαν ἐξακριβῶσαι 78
and indeed also the about the most-important cause to-work-out-exactly
 φυσιολογίας ἔργον εἶναι δεῖ νομίζειν, καὶ τὸ μακάριον
of-natural-science a-work to-be it-is-needful to-hold and the blessed
 ἐν τῇ περὶ μετεώρων γνώσει ἐνταῦθα πεπτωκέναι καὶ
in the about things-on-high knowledge here to-have-fallen and
 ἐν τῷ τίνες φύσεις αἱ θεωρούμεναι κατὰ τὰ μετέωρα
in the what natures the things-observed among the things-on-high
 ταυτί, καὶ ὅσα συγγενῇ πρὸς τὴν εἰς τοῦτο ἀκρίβειαν·
these and as-many-as akin toward the to this exactness
 ἔτι τε οὐ τὸ πλεοναχῶς ἐν τοῖς τοιούτοις εἶναι καὶ
further and not the in-many-ways in the such-(cases) to-be and
 τὸ ἐνδεχόμενον καὶ ἄλλως πως ἔχειν, ἀλλ' ἀπλῶς μὴ
the admissible also otherwise somehow to-be but simply not

εἶναι ἐν ἀφθάρτῳ καὶ μακαρία φύσει τῶν διάκρισιν
to-be in an-imperishable and blessed nature of-the-(things) division
 ὑποβαλλόντων ἢ τάραχον μηθέν. καὶ τοῦτο καταλαβεῖν
suggesting or disturbance anything and this to-grasp
 τῇ διανοίᾳ ἔστιν ἀπλῶς εἶναι
by-the mind it-is-possible simply to-be

79 τὸ δ' ἐν τῇ ἱστορίᾳ πεπτωκὸς τῆς δύσεως καὶ ἀνατολῆς καὶ
the and in the inquiry having-fallen of-the setting and rising and
 τροπῆς καὶ ἐκλείψεως καὶ ὅσα συγγενῇ τούτοις μηθέν
turning and eclipse and as-many-as akin to-these nothing
 ἔτι πρὸς τὸ μακάριον τῆς γνώσεως συντείνειν, ἀλλ' ὁμοίως
further toward the blessed of-the knowledge to-contribute but alike
 τοὺς φόβους ἔχει τοὺς ταῦτα κατειδότας, τίνες δ' αἱ
the fears to-have the-(ones) these having-discerned what and the
 φύσεις ἀγνοοῦντας καὶ τίνες αἱ κυριώταται αἰτίαι, καὶ εἰ μὴ
natures not-knowing and what the most-important causes even if not
 προσήδεσαν ταῦτα· τάχα δὲ καὶ πλείους, ὅταν τὸ θάμβος
they-had-known-before these perhaps and even more whenever the astonishment
 ἐκ τῆς τούτων προσκατανοήσεως μὴ δύνηται τὴν λύσιν
out-of the of-these further-consideration not may-be-able the release
 λαμβάνειν κατὰ τὴν περὶ τῶν κυριωτάτων οἰκονομίαν.
to-take according-to the about the most-important management
 διὸ δὴ καὶ πλείους αἰτίας εὐρίσκομεν τροπῶν καὶ
wherefore indeed also more causes we-find of-turnings and
 δύσεων καὶ ἀνατολῶν καὶ ἐκλείψεων καὶ τῶν τοιουτοτρόπων
of-settings and of-risings and of-eclipses and of-the such-kind
 ὥσπερ καὶ ἐν τοῖς κατὰ μέρος γινομένοις,
as also in the according-to part things-coming-about

80 καὶ οὐ δεῖ νομίζειν τὴν ὑπὲρ τούτων χρεῖαν ἀκρίβειαν
and not it-is-needful to-hold the about these use exactness
 μὴ ἀπειληφέναι, ὅση πρὸς τὸ ἀτάραχον καὶ μακάριον
not to-have-received as-much-as toward the undisturbed and blessed

ἡμῶν συντείνει. ὥστε παραθεωροῦντας ποσαχῶς παρ'
of-us contributes so-that observing-alongside in-how-many-ways with
 ἡμῖν τὸ ὅμοιον γίνεται, αἰτιολογητέον ὑπὲρ τε τῶν
us the like comes-about one-must-assign-causes about both the
 μετεώρων καὶ παντὸς τοῦ ἀδήλου, καταφρονούντας τῶν
things-on-high and of-all the unclear despising the-(ones)
 οὔτε τὸ μοναχῶς ἔχον ἢ γινόμενον γνωρίζοντων οὔτε
neither the in-one-way being or coming-about knowing nor
 τὸ πλεοναχῶς συμβαῖνον, τὴν ἐκ τῶν ἀποστημάτων
the in-many-ways happening the out-of the distances
 φαντασίαν παριδόντων, ἔτι τε ἀγνοούντων καὶ ἐν ποίοις
appearance having-overlooked further and not-knowing both in what-sorts
 οὐκ ἔστιν ἀταρακτῆσαι καὶ ἐν ποίοις ὁμοίως ἀταρακτῆσαι.
not it-is-possible to-be-undisturbed and in what-sorts alike to-be-undisturbed
 ἂν οὖν οἰώμεθα καὶ ὡδί πως ἐνδεχόμενον αὐτὸ γίνεσθαι,
if therefore we-suppose also thus somehow admissible it to-come-about
 αὐτὸ τὸ ὅτι πλεοναχῶς γίνεται γνωρίζοντες, ὥσπερ
itself the that in-many-ways it-comes-about knowing as
 καὶ ὅτι ὡδί πως γίνεται εἰδῶμεν, ἀταρακτῆσομεν.
even-if that thus somehow it-comes-about we-know we-shall-be-undisturbed

XIII • THE GREATEST DISTURBANCE

The chief disturbance of human souls comes from thinking the heavenly bodies blessed and imperishable and at the same time crediting them with wishes and actions that conflict with this, and from expecting some eternal terror out of the myths, or else fearing the insensibility of death itself. Freedom from disturbance is release from all of that, with the feelings and the senses as the standards; the letter closes by promising whoever holds this outline a strength beyond other men.

- 81 Ἐπὶ δὲ τούτοις ὅλως ἅπασιν ἐκεῖνο δεῖ κατανοεῖν,
upon and these wholly all that it-is-needful to-observe
 ὅτι τάραχος ὁ κυριώτατος ταῖς ἀνθρωπίναις ψυχαῖς
that disturbance the most-important to-the human souls
 γίνεται ἐν τῷ ταῦτά μακάριά τε δοξάζειν εἶναι καὶ
comes-about in the the-same-things blessed both to-opine to-be and
 ἄφθαρτα καὶ ὑπεναντίας ἔχειν τούτοις ἅμα βουλήσεις καὶ
imperishable and contrary to-have to-these at-once wishes and
 πράξεις καὶ αἰτίας, καὶ ἐν τῷ αἰώνιον τι δεινὸν ἢ
actions and causes and in the eternal some terror either
 προσδοκᾶν ἢ ὑποπτεῖν κατὰ τοὺς μύθους, εἴτε καὶ
to-expect or to-suspect according-to the myths or-whether also
 αὐτὴν τὴν ἀναισθησίαν τὴν ἐν τῷ τεθνάναι φοβουμένους
itself the insensibility the in the to-have-died fearing
 ὥσπερ οὖσαν κατ' αὐτούς, καὶ ἐν τῷ μὴ δόξαις ταῦτα
as being for them and in the not by-opinions these
 πάσχειν ἀλλ' ἀλόγῳ γέ τιμι παραστάσει, ὅθεν
to-suffer but by-an-irrational at-least a-certain presentiment whence
 μὴ ὀρίζοντας τὸ δεινὸν τὴν ἴσην ἢ καὶ ἐπιτεταμένην
not defining the terrible the equal or even intensified
 ταραχὴν λαμβάνειν τῷ εἰ καὶ ἐδόξαζον ταῦτα.
disturbance to-take to-the if even they-were-opining these
- 82 ἢ δὲ ἀταραξία τῷ τούτων πάντων ἀπολελυθῆναι καὶ
the and freedom-from-disturbance in-the of-these all to-have-been-released and
 συνεχῇ μνήμῃ ἔχειν τῶν ὅλων καὶ κυριωτάτων. Ὅθεν τοῖς
continuous memory to-have of-the wholes and most-important whence to-the
 πάθει προσεκτέον τοῖς παροῦσι καὶ ταῖς αἰσθήσεσι, κατὰ
feelings one-must-attend to-the present and to-the sensations according-to
 μὲν τὸ κοινὸν ταῖς κοιναῖς, κατὰ δὲ τὸ ἴδιον ταῖς ἰδίαις,
indeed the common to-the common according-to and the proper to-the proper
 καὶ πάσῃ τῇ παρούσῃ καθ' ἕκαστον τῶν κριτηρίων ἐναργεῖα.
and to-all the present in each of-the criteria clear-evidence

ἂν γὰρ τούτοις προσέχωμεν, τὸ ὅθεν ὁ τάραχος καὶ ὁ
 if for to-these we-attend the whence the disturbance and the
 φόβος ἐγένετο ἐξαιτιολογήσομεν ὀρθῶς καὶ ἀπολύσομεν,
 fear was-arising we-shall-trace-to-its-cause rightly and we-shall-free-(ourselves)
 ὑπὲρ τε μετεώρων αἰτιολογοῦντες καὶ τῶν λοιπῶν τῶν
 about both things-on-high assigning-causes and of-the remaining of-the
 αἰὲ παρ'emπιπτόντων, ὅσα φοβεῖ τοὺς λοιποὺς ἐσχάτως.
 always befalling as-many-as frighten the rest utterly
 Ταῦτά σοι, ὦ Ἡρόδοτε, ἔστι κεφαλαιωδέστατα ὑπὲρ τῆς
 these for-you O Herodotus are most-summary about the
 τῶν ὅλων φύσεως ἐπιτετμημένα·
 of-the wholes nature abridged

ὥστ' ἐὰν γένηται οὗτος ὁ λόγος δυνατὸς κατασχεθεῖς 83
 so-that if becomes this the account able having-been-retained
 μετ' ἀκριβείας, οἶμαι, ἐὰν μὴ καὶ πρὸς ἅπαντα βαδίσῃ
 with exactness I-think if not even toward all should-go
 τις τῶν κατὰ μέρος ἀκριβομάτων, ἀσύμβλητον αὐτὸν
 someone of-the according-to part exactnesses incomparable him
 πρὸς τοὺς λοιποὺς ἀνθρώπους ἀδρότητα λήψεσθαι. καὶ
 toward the remaining men in-strength to-obtain and
 γὰρ καὶ καθαρὰ ἀφ' ἑαυτοῦ ποιήσει πολλὰ τῶν κατὰ
 for also clear from himself he-will-make many of-the according-to
 μέρος ἐξακριβουμένων κατὰ τὴν ὅλην πραγματείαν ἡμῶν,
 part things-worked-out-exactly according-to the whole treatise by-us
 καὶ αὐτὰ ταῦτα ἐν μνήμῃ τιθέμενα συνεχῶς βοηθήσει.
 and these-very these in memory being-placed continuously will-help
 τοιαῦτα γάρ ἐστιν, ὥστε καὶ τοὺς κατὰ μέρος ἥδη
 such for they-are so-that also the-(ones) according-to part already
 ἐξακριβοῦντας ἱκανῶς ἢ καὶ τελείως, εἰς τὰς τοιαύτας
 working-out-exactly sufficiently or even completely into the such
 ἀναλύοντας ἐπιβολὰς τὰς πλείους τῶν περιοδεῶν ὑπὲρ
 resolving applications the most of-the surveys about

τῆς ὅλης φύσεως ποιεῖσθαι· ὅσοι δὲ μὴ παντελῶς
the whole nature to-make as-many-as and not entirely
 αὐτῶν τῶν ἀποτελουμένων εἰσίν, ἐκ τούτων καὶ
of-these-very the things-being-perfected are out-of these and
 κατὰ τὸν ἄνευ φθόγων τρόπον τὴν ᾅμα νοήματι
according-to the without utterances way the together-with a-thought
 περίοδον τῶν κυριωτάτων πρὸς γαληνισμόν ποιοῦνται.
survey of-the most-important toward calm they-make

EPICURUS

ΕΠΙΣΤΟΛΗ ΠΡΟΣ ΠΥΘΟΚΛΕΑ

Letter to Pythocles

Ἐπίκουρος Πυθοκλεῖ χαίρειν

I · THE RULES OF CELESTIAL INQUIRY

Cleon has brought a letter from Pythocles asking for a short account of things on high. Epicurus grants it, and lays down the rule first: knowledge of things on high has no end but freedom from disturbance and firm conviction. Here, unlike in ethics and the rest of physics, where a question admits a single answer, several explanations agree with what appears, and none of them may be forced out.

Ἦνεγκέ μοι Κλέων ἐπιστολὴν παρὰ σοῦ, ἐν ᾗ
brought to-me Cleon a-letter from you in which
φιλοφρονούμενός τε περὶ ἡμᾶς διετέλεις ἀξίως τῆς
showing-kindness both toward us you-continued worthily of-the
ἡμετέρας περὶ σεαυτὸν σπουδῆς, καὶ οὐκ ἀπιθάνως
our about yourself zeal and not unpersuasively
ἐπειρῶ μνημονεύειν τῶν εἰς μακάριον βίον συντεινόντων
you-tried to-remember of-the to a-blessed life tending
διαλογισμῶν, ἐδέου τε σεαυτῷ περὶ τῶν μετεώρων
reasonings you-were-asking and for-yourself about the things-on-high
σύντομον καὶ εὐπερίγραφον διαλογισμὸν ἀποστεῖλαι,
a-concise and well-outlined reasoning to-send-off
ἵνα ῥαδίως μνημονεύης· τὰ γὰρ ἐν ἄλλοις ἡμῖν
so-that easily you-may-remember the-(things) for in other-(works) by-us
γεγραμμένα δυσμνημόνευτα εἶναι, καίτοι, ὥς ἔφης,
having-been-written hard-to-remember to-be and-yet as you-said
συνεχῶς αὐτὰ βαστάζεις. ἡμεῖς δὲ ἡδέως τέ σου τὴν
continually them you-carry we and gladly both of-you the
δέησιν ἀπεδεξάμεθα καὶ ἐλπίσω ἡδείαις συνεσχέθημεν.
request we-accepted and with-hopes pleasant we-were-held

84

85 γράψαντες οὖν τὰ λοιπὰ πάντα συντελοῦμεν ἅπερ
having-written therefore the remaining all we-accomplish the-very-things
 ἠξίωσας πολλοῖς καὶ ἄλλοις ἐσόμενα χρήσιμα τὰ
you-asked for-many and others going-to-be useful the
 διαλογίσματα ταῦτα, καὶ μάλιστα τοῖς νεωστὶ
reasonings these and especially for-those newly
 φυσιολογίας γνησίου γενομένοις καὶ τοῖς εἰς ἀσχολίας
of-natural-science genuine tasting and for-those into occupations
 βαθυτέρας τῶν ἐγκυκλίων τινὸς ἐμπεπλεγμένοις. καλῶς
deeper of-the ordinary of-some entangled well
 δὴ αὐτὰ διάλαβε, καὶ διὰ μνήμης ἔχων ὀξέως αὐτὰ
indeed them grasp and through memory having sharply them
 περιόδευε μετὰ τῶν λοιπῶν ὧν ἐν τῇ μικρᾷ ἐπιτομῇ
go-over with the remaining which in the little epitome
 πρὸς Ἡρόδοτον ἀπεστείλαμεν.

to Herodotus we-sent-off

Πρῶτον μὲν οὖν μὴ ἄλλο τι τέλος ἐκ τῆς περὶ
first indeed therefore not another any end out-of the about
 μετεώρων γνώσεως εἴτε κατὰ συναφὴν λεγομένων εἴτε
things-on-high knowledge whether by connection being-spoken-of or
 αὐτοτελῶς νομίζειν δεῖ εἶναι ἢ περ ἀταραξίαν
independently to-hold it-is-needful to-be than freedom-from-disturbance
 καὶ πίστιν βέβαιον, καθάπερ καὶ ἐπὶ τῶν λοιπῶν,
and conviction firm just-as also upon the remaining-(subjects)
 86 καὶ μήτε τὸ ἀδύνατον παραβιάζεσθαι μήτε ὁμοίαν κατὰ
and neither the impossible to-force nor like in
 πάντα τὴν θεωρίαν ἔχειν ἢ τοῖς περὶ βίων λόγοις ἢ τοῖς
all the study to-have either to-the about lives accounts or to-the
 κατὰ τὴν τῶν ἄλλων φυσικῶν προβλημάτων κάθαρσιν,
according-to the of-the other physical problems clearing-up
 οἷον ὅτι τὸ πᾶν σῶμα καὶ ἀναφῆς φύσις ἐστίν, ἢ ὅτι
such-as that the all body and intangible nature is or that

ἄτομα στοιχεῖα καὶ πάντα τὰ τοιαῦτα, ὅσα μοναχὴν ἔχει
indivisible elements and all the such-things as-many-as a-single have
 τοῖς φαινόμενοις συμφωνίαν· ὅπερ ἐπὶ τῶν μετεώρων
with-the things-appearing agreement which-very upon the things-on-high
 οὐχ ὑπάρχει, ἀλλὰ ταῦτά γε πλεοναχὴν ἔχει καὶ τῆς
not holds but these at-least a-manifold have both of-the
 γενέσεως αἰτίαν καὶ τῆς οὐσίας ταῖς αἰσθήσεσι σύμφωνον
coming-to-be cause and of-the being with-the sensations agreeing
 κατηγορίαν. οὐ γὰρ κατὰ ἀξιώματα κενὰ καὶ νομοθεσίας
predication not for by axioms empty and legislations
 φυσιολογητέον, ἀλλ' ὥς τὰ φαινόμενα ἐκκαλεῖται·
one-must-do-natural-science but as the things-appearing call-forth
 οὐ γὰρ ἰδιολογίας καὶ κενῆς δόξης ὁ βίος ἡμῶν 87
not for of-private-discourse and of-empty opinion the life of-us
 ἔχει χρείαν, ἀλλὰ τοῦ ἀθอรύβως ἡμᾶς ζῆν. πάντα μὲν
has need but of-the untroubledly us to-live all indeed
 οὖν γίνεται ἀσειστόως κατὰ πάντων κατὰ πλεοναχόν
therefore comes-about unshakenly about all according-to a-manifold
 τρόπον ἐκκαθαρομένων συμφώνως τοῖς φαινόμενοις,
way being-cleared-up agreeably to-the things-appearing
 ὅταν τις τὸ πιθανολογούμενον ὑπὲρ αὐτῶν δεόντως
whenever someone the plausible-account about them fittingly
 καταλίπη· ὅταν δέ τις τὸ μὲν ἀπολίπη, τὸ
leaves-standing whenever and someone the-(one) indeed leaves the-(other)
 δὲ ἐκβάλῃ ὁμοίως σύμφωνον ὃν τῷ φαινόμενῳ, δηλοῦν
and casts-out alike agreeing being with-the appearance clear
 ὅτι καὶ ἐκ παντὸς ἐκπίπτει φυσιολογήματος, ἐπὶ δὲ τὸν
that also out-of all he-falls of-natural-science upon and the
 μῦθον καταρρεῖ. σημεία δ' ἐπὶ τῶν ἐν τοῖς μετεώροις
myth he-slides-down signs and upon the-(things) in the things-on-high
 συντελουμένων φέρει τῶν παρ' ἡμῖν τινα φαινόμενων,
being-accomplished bring of-the with us some things-appearing

ἃ θεωρεῖται ἢ ὑπάρχει· καὶ οὐ τὰ ἐν τοῖς μετεώροις
which are-observed as it-holds and not the in the things-on-high
 φαινόμενα· ταῦτα γὰρ ἐνδέχεται πλεοναχῶς γίνεσθαι.
things-appearing these for admit in-many-ways to-come-about

II • WHAT A WORLD IS

A world is an enclosure of heaven holding stars, earth, and all that appears, cut off from the unlimited and ending in a boundary either rare or dense. Such worlds are unlimited in number, and one can arise in a world or in the space between worlds, from suitable seeds flowing in little by little. Sun, moon, and stars were not made first and enclosed afterward, but grew with the world.

- 88 τὸ μέντοι φάντασμα ἑκάστου τηρητέον καὶ ἐπὶ τὰ
the however appearance of-each one-must-keep and upon the
 συναπτόμενα τούτῳ διαιρετέον, ἃ οὐκ ἀντιμαρτυρεῖται
things-joined to-this one-must-distinguish which not is-testified-against
 τοῖς παρ' ἡμῖν γινομένοις πλεοναχῶς συντελεῖσθαι.
by-the with us things-coming-about in-many-ways to-be-accomplished
 Κόσμος ἐστὶ περιοχὴ τις οὐρανοῦ, ἄστρα τε καὶ γῆν καὶ
a-world is an-enclosure a-certain of-heaven stars both and earth and
 πάντα τὰ φαινόμενα περιέχουσα, ἀποτομὴν ἔχουσα ἀπὸ τοῦ
all the things-appearing enclosing a-cutting-off having from the
 ἀπείρου καὶ λήγουσα ἐν πέρατι ἢ ἀραιῷ ἢ πυκνῷ καὶ
infinite and ending in a-limit either rare or dense and
 οὗ λυομένου πάντα τὰ ἐν αὐτῷ σύγχυσις λήψεται—,
which being-loosed all the-(things) in it confusion will-take
 ἢ ἐν περιανομένῳ ἢ ἐν στάσει ἔχοντι καὶ στρογγύλην
either in one-revolving or in a-rest one-having and round
 ἢ τρίγωνον ἢ οἶαν δήποτε περιγραφὴν πανταχῶς
or triangular or whatever-kind soever outline in-every-way

γὰρ ἐνδέχεται· τῶν γὰρ φαινομένων οὐδὲν ἀντιμαρτυρεῖ ἐν
for it-admits of-the for things-appearing nothing testifies-against in
 τῷδε τῷ κόσμῳ, ἐν ᾧ λήγον οὐκ ἔστι καταλαβεῖν.
this the world in which an-ending not it-is-possible to-grasp
 "Ὅτι δὲ καὶ τοιοῦτοι κόσμοι εἰσὶν ἄπειροι τὸ πλῆθος ἔστι
that and also such worlds are infinite in multitude it-is-possible 89
 καταλαβεῖν, καὶ ὅτι καὶ ὁ τοιοῦτος δύναται κόσμος γίνεσθαι
to-grasp and that also the such can a-world to-come-about
 (καὶ ἐν κόσμῳ καὶ μετακοσμίῳ, ὃ λέγομεν μεταξὺ
both in a-world and in-an-intermundium which we-call between
 κόσμων διάστημα) ἐν πολυκένῳ τόπῳ καὶ οὐκ ἐν μεγάλῳ
worlds an-interval in a-much-voided place and not in a-great
 εἰλικρινεῖ καὶ κενῷ, καθάπερ τινές φασιν, ἐπιτηδείων
pure and empty just-as certain-(people) say suitable
 τινῶν σπερμάτων ρυέντων ἀφ' ἐνὸς κόσμου ἢ μετακοσμίου
certain seeds having-flowed from one world or intermundium
 ἢ ἀπὸ πλειόνων κατὰ μικρὸν προσθέσεις τε καὶ διαρθρώσεις
or from more by little additions both and articulations
 καὶ μεταστάσεις ποιούντων ἐπ' ἄλλον τόπον, ἐὰν οὕτω
and shiftings making to another place if so
 τύχῃ, καὶ ἐπαρδεύσεις ἐκ τῶν ἐχόντων ἐπιτηδείως ἕως
it-happen and irrigations out-of the-(things) having suitably until
 τελειώσεως καὶ διαμονῆς ἐφ' ὅσον τὰ ὑποβληθέντα θεμέλια
completion and endurance for as-long-as the laid-down foundations
 τὴν προσδοχὴν δύναται ποιεῖσθαι. οὐ γὰρ ἀθροισμὸν δεῖ
the reception can to-make not for a-gathering it-is-needful 90
 μόνον γενέσθαι οὐδὲ δῖνον ἐν ᾧ ἐνδέχεται κόσμον γίνεσθαι
only to-come-about nor a-whirl in which it-admits a-world to-come-about
 κενῷ κατὰ τὸ δοξαζόμενον ἐξ ἀνάγκης, αὔξεσθαι τε, ἕως
in-a-void according-to the thing-opined out-of necessity to-grow and until

ἂν ἐτέρῳ προσκρούσῃ, καθάπερ τῶν φυσικῶν καλουμένων
 — with-another it-strike just-as of-the physicists so-called
 φησί τις. τοῦτο γὰρ μαχόμενόν ἐστι τοῖς φαινομένοις.
 says someone this for at-variance is with-the things-appearing
 Ἥλιός τε καὶ σελήνη καὶ τὰ λοιπὰ ἄστρα οὐ καθ' ἑαυτὰ
 sun both and moon and the remaining stars not by themselves
 γενόμενα ὕστερον ἐμπεριλαμβάνετο ὑπὸ τοῦ κόσμου
 having-come-to-be later were-being-included by the world
 καὶ ὅσα γε δὴ σώζει, ἀλλ' εὐθὺς διεπλάττετο
 and as-many-as at-least indeed it-preserves but straightway were-being-molded
 καὶ αὐξῇσι ἐλάμβανεν (ὁμοίως δὲ καὶ γῇ καὶ θάλαττα)
 and growth were-taking likewise and also earth and sea
 κατὰ προσκρίσεις καὶ διηήσεις λεπτομερῶν τινων φύσεων,
 by accretions and whirlings of-fine-parted certain natures
 ἥτοι πνευματικῶν ἢ πυροειδῶν ἢ τὸ συναμφότερον· καὶ
 either breath-like or fire-like or the both-together and
 γὰρ ταῦτα οὕτως ἢ αἴσθησις ὑποβάλλει.
 for these thus the sensation suggests

III · THE SIZE OF THE SUN, AND ITS RISINGS

The sun, the moon, and the stars are, for us, just the size they appear; if distance had stripped away their magnitude it would have stripped away their color the sooner. In themselves they may be greater than what is seen, or a little less, or the same. Risings and settings may come about by kindling and quenching, or by appearing and being screened, and the turnings by several causes.

- 91 Τὸ δὲ μέγεθος ἡλίου τε καὶ σελήνης καὶ τῶν λοιπῶν ἄστρον
 the and magnitude of-sun both and of-moon and of-the remaining stars
 κατὰ μὲν τὸ πρὸς ἡμᾶς τηλικούτον ἐστὶν ἡλίκον φαίνεται.
 according-to indeed the toward us so-great is as-great-as it-appears

(τοῦτο καὶ ἐν τῇ ια Περὶ φύσεως· εἰ γάρ, φησί, τὸ μέγεθος
this also in the eleventh about nature if for he-says the magnitude
 διὰ τὸ διάστημα ἀποβεβλήκει, πολλῶ μᾶλλον ἂν τὴν
because-of the distance it-had-cast-off by-much rather would the
 χροάν.) ἄλλο γὰρ τούτῳ συμμετρότερον διάστημα οὐθέν
color other for with-this more-commensurate distance none
 ἐστι· κατὰ δὲ τὸ καθ' αὐτὸ ἥτοι μείζον τοῦ ὀρωμένου
there-is according-to and the by itself either greater than-the thing-seen
 ἢ μικρῶ ἔλαττον ἢ τηλικούτον (οὐχ ἅμα). οὕτω γὰρ καὶ
or by-a-little less or so-great not at-once thus for also
 τὰ παρ' ἡμῖν πυρὰ ἐξ ἀποστήματος θεωρούμενα κατὰ
the with us fires out-of a-distance being-observed according-to
 τὴν αἴσθησιν θεωρεῖται. καὶ πᾶν δὲ τὸ εἰς τοῦτο τὸ μέρος
the sensation are-observed and every and the into this the part
 ἔνστημα ῥαδίως διαλυθήσεται, ἐάν τις τοῖς ἐναργήμασι
objection easily will-be-dissolved if someone to-the clear-facts
 προσέχη, ὅπερ ἐν τοῖς περὶ φύσεως βιβλίοις δείκνυμεν.
attends which-very in the about nature books we-show
 Ἀνατολὰς καὶ δύσεις ἡλίου καὶ σελήνης καὶ τῶν λοιπῶν 92
risings and settings of-sun and of-moon and of-the remaining
 ἄστρον καὶ κατὰ ἀναψιν γίνεσθαι δυνατόν καὶ κατὰ σβέσιν,
stars also by kindling to-come-about possible and by quenching
 τοιαύτης οὕσης περιστάσεως (καὶ καθ' ἑκατέρους τοὺς
such being the-circumstance and by both the
 τρόπους), ὥστε τὰ προειρημένα ἀποτελεῖσθαι· οὐδὲν γὰρ
ways so-that the things-said-before to-be-accomplished nothing for
 τῶν φαινομένων ἀντιμαρτυρεῖ. καὶ κατ' ἐκφάνειάν τε ὑπὲρ
of-the things-appearing testifies-against and by appearing both above
 γῆς καὶ πάλιν ἐπιπρόσθησιν τὸ προειρημένον δύναιτ' ἂν
earth and again a-screening the thing-said-before might —
 συντελεῖσθαι· οὐδὲ γάρ τι τῶν φαινομένων ἀντιμαρτυρεῖ.
be-accomplished and-not for anything of-the things-appearing testifies-against

- Τάς τε κινήσεις αὐτῶν οὐκ ἀδύνατον μὲν γίνεσθαι κατὰ
the and motions of-them not impossible indeed to-come-about by
 τὴν τοῦ ὅλου οὐρανοῦ δίνην, ἣ τούτου μὲν στάσιν,
the of-the whole heaven whirl or of-this indeed a-rest
 93 αὐτῶν δὲ δίνην κατὰ τὴν ἐξ ἀρχῆς ἐν τῇ γενέσει τοῦ
of-them and a-whirl by the out-of beginning in the birth of-the
 κόσμου ἀνάγκην ἀπογεννηθείσαν (ἐπ' ἀνατολῇ τὰ τῇ
world necessity having-been-generated at rising the-(parts) by-the
 θερμασίᾳ ***) ἣ καὶ κατὰ τινα ἐπιμέμῃσι τοῦ πυρὸς
heat (lacuna) or also by a-certain distribution of-the fire
 ἀεὶ ἐπὶ τοὺς ἐξῆς τόπους ἰόντος. Τροπὰς ἡλίου καὶ
always to the successive places going turnings of-sun and
 σελήνης ἐνδέχεται μὲν γίνεσθαι κατὰ λόξωσιν οὐρανοῦ
of-moon it-admits indeed to-come-about by a-slanting of-heaven
 οὕτω τοῖς χρόνοις κατηναγκασμένου· ὁμοίως δὲ καὶ
thus by-the times constrained likewise and also
 κατὰ ἀέρος ἀντέξωσιν ἣ καὶ ὕλης ἀεὶ ἐπιτηδείας
by of-air a-thrusting-back or also of-matter always suitable
 ἐχομένης ἐμπιπραμένης, τῆς δὲ καταλειπομένης· ἣ καὶ
being-held being-set-on-fire the-(other) and being-left-behind or also
 ἐξ ἀρχῆς τοιαύτην δίνην κατειληθῆναι τοῖς ἄστροις
out-of beginning such a-whirl to-have-been-wound-about for-the stars
 τούτοις, ὥσθ' οἷόν τιν' ἔλικά κινεῖσθαι. πάντα γὰρ τὰ
these so-that as-it-were a-certain spiral to-move all for the
 τοιαῦτα καὶ τὰ τούτοις συγγενῇ οὐθεὶ τῶν ἐναργημάτων
such-things and the to-these akin with-none of-the clear-facts
 διαφωνεῖ, εἴαν τις ἀεὶ ἐπὶ τῶν τοιούτων μερῶν
disagrees if someone always upon the such parts
 ἐχόμενος τοῦ δυνατοῦ εἰς τὸ σύμφωνον τοῖς φαινομένοις
holding-to the possible into the agreeing with-the things-appearing

ἕκαστον τούτων δύνηται ἐπανάγειν, μὴ φοβούμενος τὰς
each of-these may-be-able to-bring-back not fearing the
 ἀνδραποδώδεις ἀστρολόγων τεχνιτείας.
slavish of-astronomers artifices

IV · THE MOON'S LIGHT, AND ECLIPSES

The waxing and waning of the moon may be explained by her turning, by shapes of air, by screening, and by every way in which what appears here calls for such accounts. The moon may have her light from herself or from the sun; both kinds of thing are seen near us. Eclipse may come about by quenching or by the screening of some other body.

Κένωσίς τε σελήνης καὶ πάλιν πλήρωσις καὶ κατὰ 94
an-emptying both of-moon and again a-filling also by
 στροφὴν τοῦ σώματος τούτου δύναιτ' ἂν γίνεσθαι καὶ κατὰ
a-turning of-the body of-this might — to-come-about and by
 σχηματισμοὺς ἀέρος ὁμοίως, ἔτι τε καὶ κατ' ἐπιπροσθήσεις
configurations of-air likewise further and also by screenings
 καὶ κατὰ πάντας τρόπους, καθ' οὓς καὶ τὰ παρ' ἡμῶν
and by all ways by which also the with us
 φαινόμενα ἐκκαλεῖται εἰς τὰς τούτου τοῦ εἵδους ἀποδόσεις,
things-appearing call-forth into the of-this the kind explanations
 εἰ μὴ τις τὸν μοναχῇ τρόπον κατηγαπηκῶς τοὺς ἄλλους
if not someone the in-one-way way having-grown-fond-of the others
 κενῶς ἀποδοκιμάζει, οὐ τεθεωρηκῶς τί δυνατόν ἀνθρώπῳ
emptily rejects not having-considered what possible for-a-man
 θεωρῆσαι καὶ τί ἀδύνατον, καὶ διὰ τοῦτο ἀδύνατα
to-consider and what impossible and because-of this impossible-(things)

- θεωρεῖν ἐπιθυμῶν. Ἔτι τε ἐνδέχεται μὲν τὴν σελήνην
to-consider desiring further and it-admits indeed the moon
 ἐξ ἑαυτῆς ἔχειν τὸ φῶς, ἐνδέχεται δὲ ἀπὸ τοῦ ἡλίου.
out-of herself to-have the light it-admits and from the sun
- 95 καὶ γὰρ παρ' ἡμῖν θεωρεῖται πολλὰ μὲν ἐξ ἑαυτῶν ἔχοντα,
and for with us are-observed many indeed out-of themselves having
 πολλὰ δὲ ἀφ' ἑτέρων. καὶ οὐθὲν ἐμποδοστατεῖ τῶν ἐν τοῖς
many and from others and nothing stands-in-the-way of-the in the
 μετεώροις φαινομένων, εἴαν τις τοῦ πλεοναχοῦ τρόπου
things-on-high things-appearing if someone of-the manifold way
 αἰεὶ μνήμην ἔχῃ καὶ τὰς ἀκολουθοῦσας αὐτοῖς ὑποθέσεις ἅμα
always memory has and the consequent to-them premises at-once
 καὶ αἰτίας συνθεωρῇ καὶ μὴ ἀναβλέπων εἰς τὰ ἀνακόλουθα
and causes considers-together and not looking-up to the inconsequent
 ταῦτ' ὀγκοῖ ματαίως καὶ καταρρέπῃ ἄλλοτε ἄλλως
these-(things) puffs-up vainly and inclines at-one-time in-another-way
 ἐπὶ τὸν μοναχὸν τρόπον. Ἡ δὲ ἔμφασις τοῦ προσώπου ἐν
toward the single way the and appearance of-the face in
 αὐτῇ δύναται μὲν γίνεσθαι καὶ κατὰ παραλλαγὴν μερῶν
her can indeed to-come-about both by a-variation of-parts
 καὶ κατ' ἐπιπρόσθησιν, καὶ ὅσοι ποτ' ἂν τρόποι
and by a-screening and as-many-as at-any-time — ways
 θεωροῦντο τὸ σύμφωνον τοῖς φαινομένοις κεκτημένοι.
might-be-observed the agreeing with-the things-appearing possessing
- 96 ἐπὶ πάντων γὰρ τῶν μετεώρων τὴν τοιαύτην ἵχνευσιν
upon all for the things-on-high the such tracking-down
 οὐ προετέον. ἦν γὰρ τις ἣ μαχόμενος τοῖς
not one-must-give-up if for someone be fighting with-the
 ἐναργήμασιν, οὐδέποτε μὴ δυνήσεται ἀταραξίας
clear-facts never at-all will-be-be-able of-freedom-from-disturbance
 γνησίου μεταλαβεῖν.
genuine to-partake

Ἐκλειψις ἡλίου καὶ σελήνης δύναται μὲν γίνεσθαι καὶ
an-eclipse of-sun and of-moon can indeed to-come-about both
 κατὰ σβέειν, καθάπερ καὶ παρὰ ἡμῖν τοῦτο θεωρεῖται
by quenching just-as also with us this is-observed
 γινόμενον· καὶ ἔτι κατ' ἐπιπρόσθησιν ἄλλων τινῶν, ἢ
coming-about and further by a-screening of-others certain either
 γῆς ἢ οὐρανοῦ ἢ τινος ἑτέρου τοιούτου. καὶ ὥδε
of-earth or of-heaven or of-something else such and thus
 τοὺς οἰκείους ἀλλήλοις τρόπους συνθεωρητέον, καὶ τὰς
the akin to-one-another ways one-must-consider-together and the
 ἅμα συγκυρήσεις τινῶν ὅτι οὐκ ἀδύνατον γίνεσθαι.
at-once concurrences of-certain-(things) that not impossible to-come-about
 (ἐν δὲ τῇ ιβ Περὶ φύσεως ταῦτα λέγει καὶ πρὸς,
in and the twelfth about nature the-same-things he-says and besides
 ἥλιον ἐκλείπειν σελήνης ἐπισκοτούσης, σελήνην δὲ τοῦ
the-sun to-be-eclipsed of-the-moon overshadowing the-moon and of-the
 τῆς γῆς σκιάσματος, ἀλλὰ καὶ κατ' ἀναχώρησιν.
of-the earth shadow but also by a-withdrawal

V · THE ORDER OF THE PERIODS

The regularity of the periods is to be accounted for just as ordinary things among us come about, and the divine nature is on no account to be brought in; it must be kept free of service and in its whole blessedness. Otherwise the whole study of things on high is idle, as it has already proved for some. The lengths of nights and days admit several causes.

τοῦτο δὲ καὶ Διογένης ὁ Ἐπικούρειος ἐν τῇ α τῶν 97
this and also Diogenes the Epicurean in the first of-the
 Ἐπιλέκτων.) Ἐτι τε τάξις περιόδου, καθάπερ ἔνια
Selections further and an-order of-a-period just-as some-(things)

καὶ παρ' ἡμῖν τῶν τυχόντων γίνεται, λαμβανέσθω· καὶ
 also with us of-the ordinary come-about let-it-be-taken and
 ἡ θεία φύσις πρὸς ταῦτα μηδαμῇ προσαγέσθω, ἀλλ'
 the divine nature toward these in-no-way let-be-brought but
 ἀλειτούργητος διατηρείσθω καὶ ἐν τῇ πάσῃ μακαριότητι.
 free-from-service let-it-be-kept and in the whole blessedness
 ὥς εἰ τοῦτο μὴ πραχθήσεται, ἅπανα ἡ τῶν μετεώρων
 since if this not shall-be-done all the of-the things-on-high
 αἰτιολογία ματαία ἔσται, καθάπερ τισὶν ἤδη ἐγένετο οὐ
 assigning-of-causes vain will-be just-as for-some already it-happened not
 δυνατοῦ τρόπου ἐφαισαμένοις, εἰς δὲ τὸ μάταιον ἐκπεσοῦσι
 of-a-possible way having-laid-hold into and the vain having-fallen
 τῷ καθ' ἓνα τρόπον μόνον οἷεσθαι γίνεσθαι, τοὺς
 by-the according-to one way only to-think to-come-about the
 δ' ἄλλους πάντας τοὺς κατὰ τὸ ἐνδεχόμενον ἐκβάλλειν
 and others all the according-to the admissible to-cast-out
 εἰς τε τὸ ἀδιανόητον φερομένους καὶ τὰ φαινόμενα, ἃ
 into both the unthinkable being-carried and the things-appearing which
 δεῖ σημεῖα ἀποδέχεσθαι, μὴ δυναμένους συνθεωρεῖν.
 it-is-needful signs to-accept not being-able to-consider-together

98 Μήκη νυκτῶν καὶ ἡμερῶν παραλλάττοντα *** καὶ παρὰ
 lengths of-nights and of-days varying (lacuna) and by
 τὸ ταχείας ἡλίου κινήσεις γίνεσθαι καὶ πάλιν βραδείας
 the swift of-sun motions to-come-about and again slow
 καὶ (ὑπὲρ γῆς) παρὰ τὸ μήκη τόπων παραλλάττοντα
 and above earth by the lengths of-places varying
 *** (καὶ τόπους τινὰς περαιοῦντα τάχιον), ὥς καὶ
 (lacuna) and places certain traversing more-swiftly as also
 παρὰ ἡμῖν (ἢ καὶ βραδύτερον) τινα θεωρεῖται, οἷς
 with us or also more-slowly certain are-observed with-which
 συμφώνως δεῖ λέγειν ἐπὶ τῶν μετεώρων. οἱ δὲ
 agreeably it-is-needful to-speak upon the things-on-high the-(ones) and

τὸ ἐν λαμβάνοντες τοῖς τε φαινομένοις μάχονται καὶ
the one taking with-the both things-appearing fight and

τοῦ ἧ δυνατόν ἀνθρώπῳ θεωρῆσαι διαπεπτώκασιν.

of-the how possible for-a-man to-consider they-have-fallen-away

Ἐπισημασίαι δύνανται γίνεσθαι καὶ κατὰ συγκυρήσεις

weather-signs can to-come-about both by concurrences

καιρῶν, καθάπερ ἐν τοῖς ἐμφανέσι παρ' ἡμῖν ζώοις, καὶ

of-seasons just-as in the visible with us animals and

παρ' ἑτεροιώσεις ἀέρος καὶ μεταβολάς·

by alterations of-air and changes

VI · CLOUDS, RAIN, THUNDER, AND LIGHTNING

Clouds may form by the compression of air, by the entangling of atoms, or by streams gathered from earth and water; waters can come from them where they are squeezed and where they change. Thunder may come from wind rolling in the hollows of clouds, from their bursting, or from their rubbing together. Lightning has still more causes and outruns thunder because its fiery shape is thrust out first; thunderbolts come from winds that burst the cloud downward.

ἀμφότερα γὰρ ταῦτα οὐ μάχεται τοῖς φαινομένοις. ἐπὶ
both for these not fight with-the things-appearing upon

δὲ ποίοις παρὰ τοῦτο ἢ τοῦτο τὸ αἴτιον γίνεται, οὐκ

and what-sorts because-of this or this the cause comes-about not

ἔστι συνιδεῖν.

it-is-possible to-discern

Νέφη δύνανται γίνεσθαι καὶ συνίστασθαι καὶ παρὰ πιλήσεις

clouds can to-come-about and to-be-formed both by compressions

ἀέρος πνευμάτων συνώσει καὶ παρὰ περιπλοκάς

of-air of-winds' by-a-pushing-together and by entanglements

ἀλληλούχων ἀτόμων καὶ ἐπιτηδείων εἰς τὸ τοῦτο τελέσαι

of-mutually-holding atoms and suitable for the this to-accomplish

καὶ κατὰ ρευμάτων συλλογὴν ἀπὸ τε γῆς καὶ ὑδάτων·
 and by of-streams a-gathering from both earth and waters
 καὶ κατ' ἄλλους δὲ τρόπους πλείους αἱ τῶν τοιούτων
 and by other and ways more the of-the such
 συστάσεις οὐκ ἀδυνατοῦσι συντελεῖσθαι. Ἦδη δ' ἀπ'
 formations not are-unable to-be-accomplished already and from
 αὐτῶν ἧ μὲν θλιβομένων, ἧ δὲ μεταβαλλόντων
 them where indeed being-squeezed where and changing
 ὕδατα δύναται συντελεῖσθαι,
 waters can to-be-accomplished

100 ἔτι τε (πνεύματα κατὰ ἀποφορὰν ἀπὸ ἐπιτηδείων τόπων)
 further and winds by a-carrying-off from suitable places
 καὶ δι' αἶρος κινουμένων, βαιοτέρας ἐπαρδεύσεως
 and through air being-moved a-more-violent irrigation
 γινομένης ἀπὸ τινων ἀθροισμάτων ἐπιτηδείων εἰς τὰς
 coming-about from certain aggregates suitable for the
 τοιαύτας ἐπιπέμψεις.
 such sendings-forth

Βροντὰς ἐνδέχεται γίνεσθαι καὶ κατὰ πνεύματος ἐν τοῖς
 thunders it-admits to-come-about both by of-wind in the
 κοιλώμασι τῶν νεφῶν ἀνείλησιν, καθάπερ ἐν τοῖς ἡμετέροις
 hollows of-the clouds a-rolling-round just-as in the our
 ἀγγείοις, καὶ παρὰ πυρὸς πεπνευματωμένου βόμβον ἐν
 vessels and by of-fire having-been-turned-to-breath a-booming in
 αὐτοῖς, καὶ κατὰ ῥήξεις δὲ νεφῶν καὶ διαστάσεις, καὶ
 them and by burstings and of-clouds and separations and
 κατὰ παρατρίψεις νεφῶν καὶ ἱτάξεις πῆξιν εἰληφότων
 by rubbings-together of-clouds and orderings a-freezing having-taken
 κρυσταλλοειδῇ· καὶ τὸ ὅλον καὶ τοῦτο τὸ μέρος πλεοναχῶς
 crystal-like and the whole also this the part in-many-ways
 γίνεσθαι λέγειν ἐκκαλεῖται τὰ φαινόμενα.
 to-come-about to-say calls-forth the things-appearing

Καὶ ἀστραπαὶ δ' ὡσαύτως γίνονται κατὰ πλείους τρόπους· 101
and lightnings and likewise come-about by more ways
 καὶ γὰρ κατὰ παράτριβιν καὶ σύγκρουσιν νεφῶν ὁ πυρὸς
and for by rubbing-together and collision of-clouds the of-fire
 ἀποτελεσματικὸς σχηματισμὸς ἐξολισθαίνων ἀστραπὴν γεννᾷ·
productive configuration slipping-out lightning generates
 καὶ κατ' ἐκριπισμόν ἐκ τῶν νεφῶν ὑπὸ πνευμάτων
and by a-fanning-out out-of the clouds by winds
 τῶν τοιούτων σωμάτων ἃ τὴν λαμπηδόνα ταύτην
of-the such bodies which the brightness this
 παρασκευάζει· καὶ κατ' ἐκπιασμόν, θλίψεως τῶν νεφῶν
produces and by a-squeezing-out a-pressure of-the clouds
 γινομένης εἴθ' ὑπ' ἀλλήλων εἴθ' ὑπὸ πνευμάτων· καὶ
coming-about whether by one-another or by winds and
 κατ' ἐμπερίληψιν δὲ τοῦ ἀπὸ τῶν ἀστρῶν κατεσπαρμένου
by an-enclosing and of-the from the stars scattered-about
 φωτός, εἴτα συνελαννομένου ὑπὸ τῆς κινήσεως νεφῶν
light then being-driven-together by the motion of-clouds
 τε καὶ πνευμάτων καὶ διεκπίπτοντος διὰ τῶν νεφῶν·
both and of-winds and falling-out through the clouds
 ἢ κατὰ διήθησιν διὰ τῶν νεφῶν τοῦ λεπτομερεστάτου
or by a-straining through the clouds of-the finest-parted
 φωτός (ἢ ἀπὸ τοῦ πυρὸς νέφη συνειλέχθαι καὶ τὰς
light or from the fire clouds to-have-been-gathered and the
 βροντὰς ἀποτελεῖσθαι) καὶ κατὰ τὴν τούτου κίνησιν· καὶ
thunders to-be-accomplished and by the of-this motion and
 κατὰ τὴν τοῦ πνεύματος ἐκπύρωσιν τὴν γινομένην διὰ
by the of-the wind kindling the coming-about through
 τε συντονίαν φορᾶς καὶ διὰ σφοδρὰν κατείλησιν·
both intensity of-movement and through violent winding-round

- 102 καὶ κατὰ ῥήξεις δὲ νεφῶν ὑπὸ πνευμάτων καὶ ἔκπτωσιν
and by burstings and of-clouds by winds and a-falling-out
 τῶν πυρὸς ἀποτελεσματικῶν ἀτόμων καὶ τὸ τῆς ἀστραπῆς
of-the of-fire productive atoms and the of-the lightning
 φάντασμα ἀποτελουσῶν· καὶ κατ' ἄλλους δὲ πλείους
appearance accomplishing and by other and more
 τρόπους ῥαδίως ἔσται καθορᾶν ἐχόμενον ἀεὶ τῶν
ways easily it-will-be to-discern holding-to always of-the
 φαινομένων καὶ τὸ τούτοις ὅμοιον δυνάμενον συνθεωρεῖν.
things-appearing and the to-these like being-able to-consider-together
 Προτερεῖ δὲ ἀστραπὴ βροντῆς ἐν τοιαύτῃ περιστάσει
comes-first and lightning than-thunder in such-a a-certain circumstance
 νεφῶν καὶ διὰ τὸ ἅμα τῷ τὸ πνεῦμα ἐμπίπτειν
of-clouds both because-of the together with-the the wind to-fall-in
 ἐξωθεῖσθαι τὸν ἀστραπῆς ἀποτελεσματικὸν σχηματισμόν,
to-be-thrust-out the of-lightning productive configuration
 ὕστερον δὲ τὸ πνεῦμα ἀνειλούμενον τὸν βόμβον ἀποτελεῖν
later and the wind being-rolled-round the booming to-accomplish
 τοῦτον· καὶ κατ' ἔμπτωσιν δὲ ἀμφοτέρων ἅμα, τῷ
this and by a-falling-in and of-both together by-the
 τάχει συντονωτέρῳ κεκρήσθαι πρὸς ἡμᾶς τὴν
speed more-intense to-have-been-used toward us the
 103 ἀστραπὴν, ὕστερεῖν δὲ τὴν βροντὴν, καθάπερ ἐπ'
lightning to-come-later and the thunder just-as upon
 ἐνίων ἐξ ἀποστήματος θεωρουμένων καὶ πληγὰς τινὰς
some-(things) out-of a-distance being-observed and blows certain
 ποιουμένων.
making

Κεραυνοὺς ἐνδέχεται γίνεσθαι καὶ κατὰ πλείονας πνευμάτων
thunderbolts it-admits to-come-about both by more of-winds
 συλλογὰς καὶ κατεῖλησιν ἰσχυράν τε ἐκπύρωσιν καὶ
gatherings and a-winding-round strong both a-kindling and

κατάρρηξιν μέρους καὶ ἔκπτωσιν ἰσχυροτέραν αὐτοῦ ἐπὶ
a-bursting-down of-a-part and a-falling-out stronger of-it upon
 τοὺς κάτω τόπους, τῆς ῥήξεως γινομένης διὰ τὸ τοὺς
the lower places of-the bursting coming-about because-of the the
 ἐξῆς τόπους πυκνοτέρους εἶναι διὰ πίλησιν νεφῶν·
successive places denser to-be because-of a-compression of-clouds
 καὶ κατ' αὐτὴν δὲ τὴν τοῦ πυρὸς ἔκπτωσιν ἀνειλουμένου,
and by itself and the of-the fire falling-out being-rolled-round
 καθὰ καὶ βροντὴν ἐνδέχεται γίνεσθαι, πλείονος γενομένου
just-as also thunder it-admits to-come-about more coming-about
 καὶ πνευματωθέντος ἰσχυρότερον καὶ ῥήξαντος τὸ νέφος
and having-been-turned-to-breath more-strongly and having-burst the cloud
 διὰ τὸ μὴ δύνασθαι ὑποχωρεῖν εἰς τὰ ἐξῆς, τῷ
because-of the not to-be-able to-withdraw into the successive-(parts) by-the
 πίλησιν γίνεσθαι (τὸ μὲν πολὺ πρὸς ὄρος τι ὑψηλόν,
a-compression to-come-about the indeed much toward a-mountain some high
 ἐν ᾧ μάλιστα κεραυνοὶ πίπτουσιν) ἀεὶ πρὸς ἄλληλα.
in which especially thunderbolts fall always toward one-another

VII · WHIRLWINDS, EARTHQUAKES, AND WINDS

A fiery whirlwind may come about when a cloud is driven down like a column, or when wind is crowded round into a circle; reaching the ground, it makes an eddy, and the sea a whirlpool. Earthquakes may follow from wind shut inside the earth, from small masses of it shifting, or from the ground falling into caverns. Winds arise from foreign matter slipping in little by little, and hail from a stronger or a milder freezing.

καὶ κατ' ἄλλους δὲ τρόπους πλείονας ἐνδέχεται κεραυνοὺς 104
and by other and ways more it-admits thunderbolts
 ἀποτελεῖσθαι· μόνον ὁ μῦθος ἀπέστω· ἀπέσται δέ,
to-be-accomplished only the myth let-be-away it-will-be-away and

ἐάν τις καλῶς τοῖς φαινομένοις ἀκολουθῶν περὶ τῶν
if someone well with-the things-appearing following about the
ἀφανῶν σημειῶται.

unseen-(things) infers

Πρηστήρας ἐνδέχεται γίνεσθαι καὶ κατὰ κάθεσιν νέφους
fiery-whirlwinds it-admits to-come-about both by a-letting-down of-a-cloud
εἰς τοὺς κάτω τόπους στυλοειδῶς ὑπὸ πνεύματος ἀθροού
into the lower places column-wise by wind massed
ὡσθέντος (καὶ διὰ τοῦ πνεύματος πολλοῦ φερομένου),
having-been-pushed and through the wind much being-carried
ἅμα καὶ τὸ νέφος εἰς τὸ πλάγιον ὠθοῦντος τοῦ ἐκτὸς
at-once and the cloud into the sideways pushing of-the outside
πνεύματος· καὶ κατὰ περίστασιν δὲ πνεύματος εἰς κύκλον,
wind and by a-standing-round and of-wind into a-circle
ἀέρος τινὸς ἐπισυνωθουμένου ἄνωθεν, καὶ ῥύσεως πολλῆς
of-air a-certain being-crowded-together from-above and a-flowing much
πνευμάτων γινομένης καὶ οὐ δυναμένης εἰς τὰ πλάγια
of-winds coming-about and not being-able into the sideways
διαρρῆναι διὰ τὴν

to-flow-away because-of the

105 πέριξ τοῦ ἀέρος πύλησιν. καὶ ἕως μὲν γῆς τοῦ
round-about of-the air compression and as-far-as indeed earth of-the
πρηστήρος καθιεμένου στρόβιλοι γίνονται, ὡς ἂν καὶ ἡ
fiery-whirlwind being-let-down eddies come-about as — also the
ἀπογέννησις κατὰ τὴν κίνησιν τοῦ πνεύματος γίνηται·
generation by the motion of-the wind comes-about
ἕως δὲ θαλάττης δῖνοι ἀποτελοῦνται.

as-far-as and of-sea whirlpools are-accomplished

Σεισμούς ἐνδέχεται γίνεσθαι καὶ κατὰ πνεύματος ἐν
earthquakes it-admits to-come-about both by of-wind in
τῇ γῇ ἀπόληψιν καὶ παρὰ μικροῦς ὄγκους αὐτῆς
the earth a-shutting-in and by small masses of-it

παράθεσιν καὶ συνεχῇ κίνησιν, ὃ τὸν κραδασμὸν τῇ
a-juxtaposition and continuous motion which the shaking to-the
 γῇ παρασκευάζει. καὶ τὸ πνεῦμα τοῦτο ἢ ἔξωθεν
earth provides and the wind this either from-outside
 ἐμπεριλαμβάνει ἢ ἐκ τοῦ πίπτειν ἐδάφη εἰς ἀντροειδεῖς
(the-earth)-encloses or out-of the to-fall floors into cavernous
 τόπους τῆς γῆς ἐκπνευματοῦντα τὸν πεπιλημένον ἀέρα.
places of-the earth turning-to-breath the compressed air
 καὶ κατ' αὐτὴν δὲ τὴν διάδοσιν τῆς κινήσεως ἐκ τῶν
and by itself and the transmission of-the motion out-of the
 πτώσεων ἐδαφῶν πολλῶν καὶ πάλιν ἀνταπόδοσιν, ὅταν
falls of-floors many and again a-giving-back whenever
 πυκνώμασι σφοδροτέροις τῆς γῆς ἀπαντήσῃ, ἐνδέχεται
with-densities more-violent of-the earth it-meet it-admits
 σεισμὸν ἀποτελεῖσθαι.

earthquakes to-be-accomplished
 καὶ κατ' ἄλλους δὲ πλείους τρόπους τὰς κινήσεις ταύτας 106
and by other and more ways the motions these
 τῆς γῆς γίνεσθαι. (τὰ δὲ πνεύματα συμβαίνει γίνεσθαι
of-the earth to-come-about the and winds it-happens to-come-about
 κατὰ χρόνον ἀλλοφυλίας τινὸς αἰὲ καὶ κατὰ μικρὸν
in-course-of time of-a-foreign-substance a-certain always and by little
 παρεισδυσμένης, καὶ καθ' ὕδατος ἀφθόνου συλλογὴν· καὶ
slipping-in and by of-water abundant a-gathering and
 ὀλίγων πεσόντων εἰς τὰ πολλὰ κοιλώματα, διαδόσεως
of-few having-fallen into the many hollows a-transmission
 τούτων γινομένης.)

of-these coming-about
 Χάλαζα συντελεῖται καὶ κατὰ πῆξιν ἰσχυροτέραν, πάντοθεν
bail is-accomplished both by a-freezing stronger from-all-sides
 δὲ πνευματωδῶν περιστάσιν τινων καὶ καταμέρισιν·
and of-breath-like-(things) a-standing-round of-certain and a-distribution

καὶ κατὰ πῆξιν μετριωτέραν, ὕδατοιδῶν δέ τινων
and by a-freezing more-moderate of-water-like and certain
 ὁμούρησιν ἅμα τὴν τε σύνωσιν αὐτῶν ποιουμένην
a-bordering-together at-once the both pushing-together of-them making
 καὶ τὴν διάρρηξιν πρὸς τὸ κατὰ μέρη συνίστασθαι
and the bursting-apart toward the by parts to-be-formed
 πηγνύμενα καὶ κατὰ ἀθρότητα.
being-frozen and by a-massing

VIII • HAIL, SNOW, DEW, AND ICE

Hail's roundness may come from the extremities melting off, or from watery and windy particles standing evenly round it as it forms. Snow may fall from fine water poured out of the clouds and frozen on the way, or be struck off clouds that rub together. Dew gathers out of the air or is carried from damp places; hoar-frost is dew frozen; ice is water with its round shapes squeezed out; and the rainbow comes when the sun shines on watery air.

107 ἡ δὲ περιφέρεια οὐκ ἀδυνάτως μὲν ἔχει γίνεσθαι
the and roundness not impossibly indeed it-is to-come-about
 πάντοθεν τῶν ἄκρων ἀποτηκομένων καὶ ἐν τῇ συστάσει
from-all-sides of-the extremities being-melted-off and in the formation
 πάντοθεν, ὡς λέγεται, κατὰ μέρη ὁμαλῶς περισταμένων
from-all-sides as it-is-said by parts evenly standing-round
 εἴτε ὕδατοιδῶν τινων εἴτε πνευματωδῶν.
whether of-water-like certain or of-breath-like
 Χιόνα δὲ ἐνδέχεται συντελεῖσθαι καὶ ὕδατος λεπτοῦ
snow and it-admits to-be-accomplished both of-water fine
 ἐκχεομένου ἐκ τῶν νεφῶν (διὰ πόρων συμμετρίας καὶ
being-poured-out out-of the clouds through of-passages symmetry and
 θλίψεως ἐπιτηδείων νεφῶν καὶ ὑπὸ πνεύματος σπορᾶς),
a-pressure of-suitable clouds and by wind a-scattering

εἶτα τούτου πῆξιν ἐν τῇ φορᾷ λαμβάνοντος διὰ τινα
then of-this a-freezing in the movement taking through a-certain
 ἰσχυρὰν ἐν τοῖς κατώτερον τόποις τῶν νεφῶν ψυχρασίας
strong in the lower places of-the clouds of-coldness
 περίστασιν· καὶ κατὰ πῆξιν δ' ἐν τοῖς νέφεσιν ὁμαλῇ
a-standing-round and by a-freezing and in the clouds even
 ἀραιότητα ἔχουσιν τοιαύτη πρόεσις ἐκ τῶν νεφῶν
rarity having such an-emission out-of the clouds
 γίνοιτο ἂν πρὸς ἀλλήλα θλιβομένων, ὕδατοειδῶν
might-come-about — toward one-another being-squeezed of-water-like
 τινων συμπαρακειμένων (ᾧ οἶονεῖ σύνωσιν ποιούμενα
certain lying-alongside which as-it-were a-crowding-together making
 χάλαζαν ἀποτελεῖ, ὃ μάλιστα γίνεται ἐν τῷ ἀέρι·
hail accomplish which especially comes-about in the air
 καὶ κατὰ τρίψιν δὲ νεφῶν πῆξιν εἰληφότων ἀπόπαλσιν
and by a-rubbing and of-clouds a-freezing having-taken a-rebound
 ἂν λαμβάνοι τὸ τῆς χιόνος τοῦτο ἄθροισμα. καὶ κατ'
— might-take the of-the snow this aggregate and by
 ἄλλους δὲ τρόπους ἐνδέχεται χιόνα συντελεῖσθαι.
other and ways it-admits snow to-be-accomplished
 Δρόσος συντελεῖται καὶ κατὰ σύνοδον πρὸς ἀλλήλα
dew is-accomplished both by a-coming-together toward one-another
 ἐκ τοῦ ἀέρος τῶν τοιούτων, ᾧ τῆς τοιαύτης ὑγρασίας
out-of the air of-the such-(particles) which of-the such moisture
 ἀποτελεσματικά γίνεται· καὶ κατὰ ἀποφορὰν δὲ ἢ ἀπὸ
productive become and by a-carrying-off and either from
 νοτερῶν τόπων ἢ ὕδατα κεκτημένων (ἐν οἷς τόποις
damp places or waters possessing in which places
 μάλιστα δρόσος συντελεῖται), εἶτα σύνοδον τούτων εἰς
especially dew is-accomplished then a-coming-together of-these into
 τὸ αὐτὸ λαβόντων καὶ ἀποτελέσιν ὑγρασίας καὶ πάλιν
the same having-taken and a-producing of-moisture and again

φορὰν ἐπὶ τοὺς κάτω τόπους, καθάπερ ὁμοίως καὶ παρ'
a-movement upon the lower places just-as alike also with

ἡμῖν ἐπὶ πλειόνων τοιαῦτά τινα συντελούμενα θεωρεῖται.
us upon more-(cases) such certain things-accomplished are-observed

109 Καὶ πάχνη δὲ οὐ διαφερόντως συντελεῖται τῶν δρόσων
and hoar-frost and not differently is-accomplished of-the dews

τούτων πηξίν τινα ποιὰν λαβόντων διὰ περίστασιν
these a-freezing a-certain of-a-kind having-taken through a-standing-round
τινα αἲρος ψυχροῦ.
a-certain of-air cold

Κρύσταλλος συντελεῖται καὶ κατ' ἐκθλιψιν μὲν τοῦ
ice is-accomplished both by a-squeezing-out indeed of-the

περιφεροῦς σχηματισμοῦ ἐκ τοῦ ὕδατος, σύνωσιν
round configuration out-of the water a-crowding-together

δὲ τῶν σκαληνῶν καὶ ὀξυγωνίων τῶν ἐν τῷ ὕδατι
and of-the scalene and sharp-angled-(shapes) of-the in the water

ὑπαρχόντων καὶ κατὰ ἔξωθεν δὲ τῶν τοιούτων
being-present and by from-outside and of-the such

πρόσκρισιν, ἃ συνελασθέντα πηξιν τῷ ὕδατι
an-accretion which having-been-driven-together a-freezing to-the water

παρεσκεύασε, ποσὰ τῶν περιφερῶν ἐκθλίψαντα.
provided some of-the round having-squeezed-out

Ἴρις γίνεταί κατὰ πρόσλαμψιν τοῦ ἡλίου πρὸς αἶρα
a-rainbow comes-about by a-shining of-the sun upon air

ὕδατοειδῆ· ἢ κατὰ φύσιν ἰδίαν τοῦ τε φωτὸς καὶ τοῦ
water-like or by a-nature peculiar of-the both light and of-the

αἲρος, ἢ τὰ τῶν χρωμάτων τούτων ιδιώματα ποιήσῃ
air which the of-the colors these peculiarities will-make

εἴτε πάντα εἴτε μονοειδῶς, ἀφ' οὗ πάλιν ἀπολάμποντος
whether all or of-one-kind from which again shining-back

τὰ ὁμοροῦντα τοῦ ἀέρος χρώσιν ταύτην λήψεται, οἶαν
the bordering-(parts) of-the air a-coloring this will-take such-as
 θεωροῦμεν *** κατὰ πρόσλαμψιν πρὸς τὰ μέρη.
we-observe (lacuna) by a-shining upon the parts

IX · THE HALO, THE RAINBOW, AND COMETS

The rainbow looks round because its distance is seen equal from every side, or because the particles in the air draw together into that shape. The halo about the moon comes about when air is brought against her from all sides, or when the streams from her are checked evenly, so that the cloudy ring stands round. Comets may be fire gathering at certain times, or stars whose own motion brings them into view, and they disappear from the opposite causes.

Τὸ δὲ τῆς περιφερείας τούτου φάντασμα γίνεται διὰ τὸ 110
the and of-the roundness of-this appearance comes-about through the
 τὸ διάστημα πάντοθεν ἴσον ὑπὸ τῆς ὄψεως θεωρεῖσθαι, ἢ
the distance from-all-sides equal by the sight to-be-observed or
 σύνωσιν τοιαύτην λαμβανουσῶν τῶν ἐν τῷ ἀέρι ἀτόμων
a-crowding-together such taking of-the in the air atoms
 ἢ ἐν τοῖς νέφεσιν ἀπὸ τοῦ αὐτοῦ ἀέρος ἀποφερομένων
or in the clouds from the same air being-carried-off
 περιφέρειάν τινα καθίεσθαι τὴν σύγκρισιν ταύτην.
a-roundness a-certain to-let-down the compound this
 Ἄλως περὶ τὴν σελήνην γίνεται πάντοθεν ἀέρος
a-halo about the moon comes-about from-all-sides of-air
 προσφερομένου πρὸς τὴν σελήνην ἢ τὰ ἀπ' αὐτῆς ρεύματα
being-brought toward the moon or the from her streams
 ἀποφερόμενα ὁμαλῶς ἀναστέλλοντος ἐπὶ τοσοῦτον ἐφ'
being-carried-off evenly checking to so-much to
 ὅσον κύκλῳ περιστῆσαι τὸ νεφοειδὲς τοῦτο καὶ μὴ
as-much-as in-a-circle to-set-round the cloud-like this and not

τὸ παράπαν διακρίναι, ἢ καὶ τὸν περίξ αὐτῆς ἀέρα
the altogether to-separate or also the round-about of-her air
 ἀναστέλλοντος συμμέτρως πάντοθεν εἰς τὸ περιφερὲς τὸ
checking symmetrically from-all-sides into the round the
 περὶ αὐτὴν καὶ παχυμερὲς περιστῆσαι.

about her and thick-parted to-set-round

111 ὁ γίνεται κατὰ μέρη τινὰ ἥτοι ἔξωθεν βιασαμένου
which comes-about by parts certain either from-outside having-forced
 τινὸς ρεύματος ἢ τῆς θερμασίας ἐπιτηδείων πόρων
a-certain stream or of-the heat suitable passages
 ἐπιλαμβανομένης εἰς τὸ τοῦτο ἀπεργάσασθαι.

taking-hold-of for the this to-work-out

Κομῆται ἀστέρες γίνονται ἥτοι πυρὸς ἐν τόποις τισὶ
comets stars come-about either of-fire in places certain

διὰ χρόνων τινῶν ἐν τοῖς μετεώροις συντρεφόμενοι
through times certain in the things-on-high being-nourished-together

περιστάσεως γινομένης, ἢ ἰδίαν τινὰ κίνησιν διὰ
a-standing-round coming-about or a-peculiar a-certain motion through

χρόνων τοῦ οὐρανοῦ ἰσχοντος ὑπὲρ ἡμᾶς, ὥστε τὰ
times of-the heaven having above us so-that the

τοιαῦτα ἄστρα ἀναφανῆναι (ἢ αὐτὰ ἐν χρόνοις τισὶν
such stars to-appear or themselves in times certain

ὀρμῆσαι διὰ τινὰ περίστασιν καὶ εἰς τοὺς καθ' ἡμᾶς
to-set-out through a-certain standing-round and into the about us

τόπους ἐλθεῖν καὶ ἐκφανῆ γενέσθαι. τὴν τε ἀφάνισιν
places to-come and manifest to-become the and disappearance

τούτων γίνεσθαι παρὰ τὰς ἀντικειμένας ταύταις αἰτίας).
of-these to-come-about by the opposite to-these causes

Some stars turn in place, and of the rest some wander and some do not; several causes may be given for each. To assign one cause where the appearances call for many is the work of those who court a vain astronomy. Shooting stars may come from friction, from fire-making atoms meeting, or from winds kindled inside mist. Weather signs come by coincidence of season, not because a divine nature watches the animals, and Epicurus closes by telling Pythocles to remember these principles.

Τῶν ἄστρον τινὰ ἀναστρέφεται αὐτοῦ, ὃ συμβαίνει

112

of-the stars some turn-about in-place which happens

οὐ μόνον τῷ τὸ μέρος τοῦτο τοῦ κόσμου ἐστάναι,

not only by-the the part this of-the world to-stand

περὶ ὃ τὸ λοιπὸν στρέφεται, καθάπερ τινές

about which the rest turns just-as certain-(people)

φασιν, ἀλλὰ καὶ τῷ δίνην ἀέρος ἔγκυκλον αὐτοῖς

say but also by-the a-whirl of-air circular for-them

περιεστάναι, ἣ κωλυτικὴ γίνεται τοῦ περιπολεῖν

to-stand-round which preventive becomes of-the going-round

ὥς καὶ τὰ ἄλλα· ἣ καὶ διὰ τὸ ἐξῆς μὲν

as also the others or also because-of the next indeed

αὐτοῖς ὕλην ἐπιτηδεῖαν μὴ εἶναι, ἐν δὲ τούτῳ τῷ

for-them matter suitable not to-be in and this the

τόπῳ ἐν ᾧ κείμενα θεωρεῖται. καὶ κατ' ἄλλους

place in which lying they-are-observed and by other

δὲ πλείονας τρόπους τοῦτο δυνατόν συντελεῖσθαι,

and more ways this possible to-be-accomplished

ἐάν τις δύνηται τὸ σύμφωνον τοῖς φαινομένοις

if someone may-be-able the agreement with-the things-appearing

συλλογίζεσθαι.

to-reason-out

- 113 Τινὰ τῶν ἄστρον πλανᾶσθαι, εἰ οὕτω ταῖς κινήσει
some of-the stars to-wander if so with-the motions
 χρώμενα συμβαίνει, τινὰ δὲ μὴ ἐνδέχεται μὲν καὶ παρὰ
using it-happens some and not it-admits indeed also by
 τὸ κύκλῳ κινούμενα ἐξ ἀρχῆς οὕτω κατηναγκάσθαι,
the in-a-circle being-moved out-of beginning thus to-have-been-constrained
 ὥστε τὰ μὲν κατὰ τὴν αὐτὴν δῖναν φέρεσθαι
so-that the-ones indeed by the same whirl to-be-carried
 ὁμαλὴν οἶσαν, τὰ δὲ κατὰ τὴν ἅμα τισὶν
even being the-others and by the together with-certain
 ἀνωμαλίαις χρωμένῃ· ἐνδέχεται δὲ καὶ καθ' οὓς
irregularities using it-admits and also in which
 τόπους φέρεται οὗ μὲν παρεκτάσεις ἀέρος εἶναι
places it-is-carried where indeed extensions of-air to-be
 ὁμαλεῖς ἐπὶ τὸ αὐτὸ συνωθούσας κατὰ τὸ ἐξῆς
even to the same pushing-together by the succession
 ὁμαλῶς τε ἐκκαούσας, οὗ δὲ ἀνωμαλεῖς οὕτως
evenly and kindling where and uneven thus
 ὥστε τὰς θεωρουμένας παραλλαγὰς συντελεῖσθαι. τὸ
so-that the observed variations to-be-accomplished the
 δὲ μίαν αἰτίαν τούτων ἀποδιδόναι, πλεοναχῶς τῶν
and one cause of-these to-assign in-many-ways of-the
 φαινομένων ἐκκαλουμένων, μανικὸν καὶ οὐ καθηκόντως
things-appearing calling-forth mad and not fittingly
 πραττόμενον ὑπὸ τῶν τὴν ματαίαν ἀστρολογίαν
being-done by the-(ones) the vain astronomy
 ἐξηλωκότων καὶ εἰς τὸ κενὸν αἰτίας τινῶν
having-emulated and into the empty causes of-certain-(things)
 ἀποδιδόντων, ὅταν τὴν θείαν φύσιν μηθαμῇ λειτουργιῶν
assigning whenever the divine nature in-no-way of-ministrations
 ἀπολύωσι.
they-release

Τινὰ ἄστρον ὑπολειπόμενά τινων θεωρεῖσθαι συμβαίνει
some stars lagging-behind of-certain to-be-observed it-happens
 καὶ παρὰ τὸ βραδύτερον συμπεριφέρεσθαι τὸν αὐτὸν
both by the more-slowly to-be-carried-round the same
 κύκλον περιόντα, καὶ παρὰ τὸ τὴν ἐναντίαν κινεῖσθαι
circle going-round and by the the opposite to-move
 ἀντισπώμενα ὑπὸ τῆς αὐτῆς δίνης, καὶ παρὰ τὸ
being-drawn-back by the same whirl and by the
 περιφέρεσθαι τὰ μὲν διὰ πλείονος τόπου, τὰ
to-be-carried-round the-ones indeed through more place the-others
 δὲ δι' ἐλάττονος, τὴν αὐτὴν δῖναν περικυκλοῦντα.
and through less the same whirl circling
 τὸ δὲ ἀπλῶς ἀποφαίνεσθαι περὶ τούτων καθήκόν
the and simply to-declare about these fitting
 ἔστι τοῖς τερατεύεσθαι τι πρὸς τοὺς πολλοὺς
is for-those to-play-the-wonder-monger something toward the many
 βουλομένοις.

wishing

Οἱ λεγόμενοι ἀστέρες ἐκπίπτειν (καὶ) παρὰ μέρος
the being-said stars to-fall-out both by a-part
 (καὶ παρὰ τρῖβιν† ἐαυτῶν) δύνανται συντελεῖσθαι
and by a-rubbing of-themselves can to-be-accomplished
 (καὶ παρὰ ἔκπτωσιν οὐ ἂν ἢ ἐκπνευμάτῳσι
and by a-falling-out where — the breathing-out
 γένηται), καθάπερ καὶ ἐπὶ τῶν ἀστραπῶν
may-come-about just-as also upon the lightnings
 ἐλέγομεν.

we-were-saying

καὶ κατὰ σύνοδον δὲ ἀτόμων πυρὸς ἀποτελεστικῶν,
and by a-coming-together and of-atoms of-fire productive
 συμφυλίας γενομένης εἰς τὸ τοῦτο τελέσαι, καὶ
a-kinship having-come-about for the this to-accomplish and

κατὰ κίνησιν οὗ ἂν ἡ ὁρμή ἐξ ἀρχῆς κατὰ
 by a-motion where — the impulse out-of beginning by
 τὴν σύνοδον γένηται· καὶ κατὰ πνευμάτων
 the coming-together may-come-about and by of-winds
 δὲ συλλογὴν ἐν πυκνώμασί τισιν ὁμιχλοειδέσι καὶ
 and a-gathering in densities certain mist-like and
 ἐκπύρωσιν τούτων διὰ τὴν κατείλησιν, εἴτ' ἔκρηξιν
 a-kindling of-these through the winding-round then a-bursting-out
 ἐκ τῶν περιεχόντων, καὶ ἐφ' ὃν ἂν τόπον ἡ
 out-of the enclosing-(bodies) and toward which — place the
 ὁρμή γένηται τῆς φορᾶς, εἰς τοῦτον φερομένων.
 impulse may-come-about of-the movement into this being-carried
 καὶ ἄλλοι δὲ τρόποι εἰς τοῦτο τελέσαι ἀμύθητοί
 and other and ways for this to-accomplish countless
 εἰσιν.

are

Αἱ δ' ἐπισημασίαι αἱ γινόμεναι ἐπὶ τισι ζώοις κατὰ
 the and weather-signs the coming-about upon certain animals by
 συγκύρημα γίνονται τοῦ καιροῦ. οὐ γὰρ τὰ ζῶα
 a-coincidence come-about of-the season not for the animals
 ἀνάγκην τινὰ προσφέρεται τοῦ ἀποτελεσθῆναι χειμῶνα,
 a-necessity a-certain bring of-the to-be-accomplished a-winter
 οὐδὲ κάθηται τις θεία φύσις παρατηροῦσα τὰς τῶν
 nor sits some divine nature watching the of-the
 ζώων τούτων ἐξόδους κάπειτα τὰς ἐπισημασίας ταύτας
 animals of-these goings-out and-then the weather-signs these
 ἐπιτελεῖ.

accomplishes

οὐδὲ γὰρ ἂν εἰς τὸ τυχὸν ζῶον κἂν μικρῷ χαριέστερον 116

and-not for would into the chance animal even-if by-a-little more-refined

ἦ, ἢ τοιαύτη μωρία ἐκπέσοι, μὴ ὅτι εἰς παντελεῖ

it-be the such folly might-fall not (to-say)-that into complete

εὐδαιμονίαν κεκτημένον.

happiness

possessing

Ταῦτα δὴ πάντα, Πυθόκλεις, μνημόνευσον· κατὰ πολὺ

these indeed all Pythocles remember by much

τε γὰρ τοῦ μύθου ἐκβήσῃ καὶ τὰ ὁμογενῇ τούτοις

both for the myth you-will-escape and the akin to-these

συνορᾶν δυνήσῃ, μάλιστα δὲ σεαυτὸν ἀπόδος εἰς

to-discern you-will-be-able especially and yourself give-back to

τὴν τῶν ἀρχῶν καὶ ἀπειρίας καὶ τῶν συγγενῶν

the of-the first-principles and of-infinity and of-the kindred

τούτοις θεωρίαν, ἔτι τε κριτηρίων καὶ παθῶν, καὶ

to-these study further and of-criteria and of-feelings and

οὗ ἕνεκεν ταῦτα ἐκλογιζόμεθα. ταῦτα γὰρ μάλιστα

of-which for-sake these we-reckon-out these for especially

συνθεωρούμενα ῥαδίως τὰς περὶ τῶν κατὰ μέρος αἰτίας

being-considered-together easily the about the according-to part causes

συνορᾶν ποιήσει. οἱ δὲ ταῦτα μὴ καταγαπήσαντες

to-discern will-make the-ones and these not having-grown-fond-of

ἦ μάλιστα οὔτε ἂν αὐτὰ ταῦτα καλῶς

in-the-way-that especially neither — them-very these well

συνθεωρήσαιεν οὔτε οὗ ἕνεκεν δεῖ θεωρεῖν ταῦτα

would-consider-together nor of-which for-sake it-is-needful to-study these

περιποιήσαντο.

have-they-secured

ARISTOTLE

ΠΕΡΙ ΟΥΡΑΝΟΥ

On the Heavens

BOOK I

I · BODIES, MAGNITUDES, AND THE NUMBER THREE

Aristotle opens by saying that the science of nature is mostly about bodies and magnitudes, their affections and motions, and the principles of such being. A magnitude divisible one way is a line, two ways a plane, three ways a body, and there is no fourth, because three is all — a number the Pythagoreans make much of, and one we ourselves use in the rites of the gods. Body alone among magnitudes is therefore complete, and so is the All, of which bodies are parts.

Ἡ περὶ φύσεως ἐπιστήμη σχεδὸν ἢ πλείστη φαίνεται
the about nature science almost the greatest appears
 περὶ τε σώματα καὶ μεγέθη καὶ τὰ τούτων οὔσα πάθη
concerning both bodies and magnitudes and the of-these being affections
 καὶ τὰς κινήσεις, ἔτι δὲ περὶ τὰς ἀρχάς, ὅσαι τῆς
and the motions further and about the principles as-many-as of-the
 τοιαύτης οὐσίας εἰσὶν· τῶν γὰρ φύσει συνεστώτων τὰ
such being are of-the for by-nature having-been-constituted the-ones
 μὲν ἐστὶ σώματα καὶ μεγέθη, τὰ δ' ἔχει σῶμα καὶ
indeed are bodies and magnitudes the-others and have body and
 μέγεθος, τὰ δ' ἀρχαὶ τῶν ἐχόντων εἰσὶν. συνεχές
magnitude the-others and principles of-the-(things) having are continuous
 μὲν οὖν ἐστὶ τὸ διαιρετὸν εἰς ἀεὶ διαιρετά, σῶμα
indeed therefore is the divisible into always divisible-(parts) a-body
 δὲ τὸ πάντῃ διαιρετόν. μεγέθους δὲ τὸ μὲν ἐφ' ἓν
and the every-way divisible of-magnitude and the-(one) indeed in one
 γραμμὴ, τὸ δ' ἐπὶ δύο ἐπίπεδον, τὸ δ' ἐπὶ τρία
a-line the-(other) and in two a-plane the-(other) and in three
 σῶμα. καὶ παρὰ ταῦτα οὐκ ἔστιν ἄλλο μέγεθος διὰ
a-body and beside these not is-there another magnitude because-of
 τὸ τὰ τρία πάντα εἶναι καὶ τὸ τρὶς πάντῃ. καθάπερ γάρ
the the three all to-be and the thrice every-way just-as for

φασι καὶ οἱ Πυθαγόρειοι, τὸ πᾶν καὶ τὰ πάντα τοῖς
they-say also the Pythagoreans the all and the all-things by-the
 τρισὶν ὥρισται· τελευτὴ γὰρ καὶ μέσον καὶ ἀρχὴ τὸν
three has-been-bounded an-end for and a-middle and a-beginning the
 ἀριθμὸν ἔχει τὸν τοῦ παντός, ταῦτα δὲ τὸν τῆς τριάδος.
number has the of-the all these and the of-the triad
 διὸ παρὰ τῆς φύσεως εἰληφότες ὥσπερ νόμους ἐκείνης,
wherefore from the nature having-taken as laws of-her
 καὶ πρὸς τὰς ἀγιστείας χρώμεθα τῶν θεῶν τῷ ἀριθμῷ
also for the rites we-use of-the gods the number
 τούτῳ. ἀποδίδομεν δὲ καὶ τὰς προσηγορίας τὸν τρόπον
this we-assign and also the appellations the way
 τοῦτον· τὰ γὰρ δύο ἄμφω μὲν λέγομεν καὶ τοὺς δύο
this the for two both indeed we-call and the two
 ἀμφοτέρους, πάντας δ' οὐ λέγομεν, ἀλλὰ κατὰ τῶν τριῶν
both-of-them all but not we-call but of the three
 ταύτην τὴν προσηγορίαν εἰλήφαμεν πρῶτον. ταῦτα δ',
this the appellation we-have-taken first these and
 ὥσπερ εἴρηται, διὰ τὸ τὴν φύσιν αὐτὴν οὕτως ἐπάγειν
as it-has-been-said because-of the the nature itself thus to-lead-on
 ἀκολουθοῦμεν. ὥστ' ἐπεὶ τὰ πάντα καὶ τὸ πᾶν καὶ τὸ
we-follow so-that since the all-things and the all and the
 τέλειον οὐ κατὰ τὴν ἰδέαν διαφέρουσιν ἀλλήλων, ἀλλ'
complete not according-to the form differ from-one-another but
 εἴπερ, ἐν τῇ ὕλῃ καὶ ἐφ' ᾧ λέγονται, τὸ σῶμα μόνον
if-indeed in the matter and upon which they-are-said the body alone
 ἂν εἴη τῶν μεγεθῶν τέλειον· μόνον γὰρ ὥρισται
— would-be of-the magnitudes complete alone for it-has-been-bounded
 τοῖς τρισίν. τοῦτο δ' ἐστὶ πᾶν. τριχῇ δὲ ὄν διαιρετὸν
by-the three this and is all three-ways and being divisible
 πάντῃ διαιρετόν ἐστιν· τῶν δ' ἄλλων τὸ μὲν ἐφ' ἓν,
every-way divisible it-is of-the and others the-(one) indeed in one

τὸ δ' ἐπὶ δύο· ὡς γὰρ τοῦ ἀριθμοῦ τετυχήκασιν, οὕτω
the-(other) and in two as for the number they-have-obtained so
 καὶ τῆς διαιρέσεως καὶ τοῦ συνεχοῦς· τὸ μὲν γὰρ ἐφ'
also the division and the continuity the-(one) indeed for in
 ἐν συνεχές, τὸ δ' ἐπὶ δύο, τὸ δὲ πάντῃ τοιοῦτον.
one continuous the-(other) and in two the-(other) and every-way such
 ὅσα μὲν οὖν διαιρετὰ τῶν μεγεθῶν, καὶ συνεχῇ ταῦτα.
as-many-as indeed therefore divisible of-the magnitudes also continuous these
 εἰ δὲ καὶ τὰ συνεχῇ πάντα διαιρετά, οὕπω δῆλον ἐκ τῶν
if but also the continuous all divisible not-yet clear from the
 νῦν· ἀλλ' ἐκεῖνο μὲν δῆλον, ὡς οὐκ ἔστιν εἰς ἄλλο
present-(arguments) but that indeed clear that not there-is into another
 γένος μετάβασις, ὥσπερ ἐκ μήκους εἰς ἐπιφάνειαν, εἰς δὲ
kind a-passing-over as from length into surface into and
 σῶμα ἐξ ἐπιφανείας· οὐ γὰρ ἂν ἔτι τὸ τοιοῦτον τέλειον
a-body from surface not for — still the such complete
 εἴη μέγεθος· ἀνάγκη γὰρ γίνεσθαι τὴν ἔκβασις κατὰ
would-be a-magnitude necessity for to-come-about the going-out according-to
 τὴν ἔλλειψιν, οὐχ οἷόν τε δὲ τὸ τέλειον ἐλλείπειν· πάντῃ
the falling-short not possible — but the complete to-fall-short every-way
 γάρ ἐστιν. τῶν μὲν οὖν ἐν μορίου εἶδει σωμάτων κατὰ
for it-is of-the indeed therefore in of-a-part form bodies according-to
 τὸν λόγον ἕκαστον τοιοῦτόν ἐστιν. πάσας γὰρ ἔχει τὰς
the account each such is all for it-has the
 διαστάσεις. ἀλλ' ὥρισται πρὸς τὸ πλησίον ἀφῆ, διὸ
dimensions but it-has-been-bounded toward the neighboring by-contact wherefore
 τρόπον τινα πολλὰ τῶν σωμάτων ἕκαστόν ἐστιν. τὸ δὲ
way a-certain many of-the bodies each is the but
 πᾶν οὗ ταῦτα μόρια, τέλειον ἀναγκαῖον εἶναι καὶ καθάπερ
all of-which these parts complete necessary to-be and just-as
 τοῦνομα σημαίνει πάντῃ, καὶ μὴ τῇ μὲν τῇ δ' οὐ.
the-name signifies every-way and not in-one-way indeed in-another but not

Every natural body is movable in place, and simple motion is either straight or circular, since the straight and the curved are the only simple magnitudes. Straight motion is up or down; circular motion is about the middle. Since a simple body has a simple motion, there must be some body whose nature is to move in a circle, distinct from fire, earth, air, and water, and prior to them all.

Περὶ μὲν οὖν τῆς τοῦ παντὸς φύσεως, εἴτ' ἄπειρός
 about indeed therefore the of-the all nature whether infinite
 ἐστὶ κατὰ τὸ μέγεθος εἴτε πεπεράνται τὸν σύνολον ὄγκον,
 it-is in the magnitude or it-has-been-limited the entire bulk
 ὕστερον ἐπισκεπτέον· περὶ δὲ τῶν κατ' εἶδος αὐτοῦ
 later one-must-consider about and the according-to form of-it
 μορίων νῦν λέγωμεν ἀρχὴν ποιησάμενοι τήνδε. πάντα
 parts now let-us-speak a-beginning having-made this all
 γὰρ τὰ φυσικὰ σώματα καὶ μεγέθη καθ' αὐτὰ κινητὰ
 for the natural bodies and magnitudes by themselves movable
 λέγομεν εἶναι κατὰ τόπον· τὴν γὰρ φύσιν κινήσεως
 we-say to-be according-to place the for nature of-motion
 ἀρχὴν εἶναί φαμεν αὐτοῖς. πᾶσα δὲ κίνησις ὅση
 a-beginning to-be we-say for-them every and motion as-much-as
 κατὰ τόπον, ἣν καλοῦμεν φορὰν, ἢ εὐθεία ἢ κύκλῳ
 according-to place which we-call movement either straight or in-a-circle
 ἢ ἐκ τούτων μικτὴ· ἀπλαῖ γὰρ αὗται δύο μόναι. αἴτιον
 or out-of these mixed simple for these two only a-cause
 δ' ὅτι καὶ τὰ μεγέθη ταῦτα ἀπλαῖ μόνον, ἢ τ' εὐθεῖα καὶ
 and that also the magnitudes these simple only the both straight and
 ἡ περιφερὴς. κύκλῳ μὲν οὖν ἐστὶν ἡ περὶ τὸ μέσον,
 the curved in-a-circle indeed therefore is the about the middle
 εὐθεῖα δ' ἡ ἄνω καὶ κάτω. λέγω δ' ἄνω μὲν τὴν ἀπὸ
 straight and the upward and downward I-say and upward indeed the from

τοῦ μέσου, κάτω δὲ τὴν ἐπὶ τὸ μέσον. ὥστ' ἀνάγκη
the middle downward and the toward the middle so-that necessary
 πᾶσαν εἶναι τὴν ἀπλὴν φορὰν τὴν μὲν ἀπὸ τοῦ μέσου,
every to-be the simple movement the-(one) indeed from the middle
 τὴν δ' ἐπὶ τὸ μέσον, τὴν δὲ περὶ τὸ μέσον.
the-(other) and toward the middle the-(third) and about the middle
 καὶ ἔοικεν ἡκολουθηκέναι καὶ κατὰ λόγον τοῦτο
and it-seems to-have-followed also according-to reason this
 τοῖς ἑξ ἀρχῆς· τό τε γὰρ σῶμα ἀπετελέσθη ἐν τρισὶ
to-the-(principles) out-of beginning the both for body was-completed in three
 καὶ ἡ κίνησις αὐτοῦ. ἐπεὶ δὲ τῶν σωμάτων τὰ μὲν ἐστίν
and the motion of-it since and of-the bodies the-ones indeed are
 ἀπλᾶ τὰ δὲ σύνθετα ἐκ τούτων (λέγω δ' ἀπλᾶ ὅσα
simple the-others and composite out-of these I-say and simple as-many-as
 κινήσεως ἀρχὴν ἔχει κατὰ φύσιν, οἷον πῦρ καὶ γῆν καὶ
of-motion a-beginning have according-to nature such-as fire and earth and
 τὰ τούτων εἶδη καὶ τὰ συγγενῇ τούτοις), ἀνάγκη καὶ τὰς
the of-these kinds and the akin to-these necessary also the
 κινήσεις εἶναι τὰς μὲν ἀπλᾶς τὰς δὲ μικτάς πως, καὶ
motions to-be the-ones indeed simple the-others and mixed somehow and
 τῶν μὲν ἀπλῶν ἀπλᾶς, μικτὰς δὲ τῶν συνθέτων, κινεῖσθαι
of-the indeed simple simple mixed and of-the composite to-be-moved
 δὲ κατὰ τὸ ἐπικρατοῦν. εἴπερ οὖν ἐστὶν ἀπλὴ κίνησις,
and according-to the prevailing if-indeed therefore is simple a-motion
 ἀπλὴ δ' ἡ κύκλω κίνησις, καὶ τοῦ τε ἀπλοῦ σώματος
simple and the in-a-circle motion and of-the both simple body
 ἀπλὴ ἡ κίνησις καὶ ἡ ἀπλὴ κίνησις ἀπλοῦ σώματος
simple the motion and the simple motion of-a-simple body
 (καὶ γὰρ ἂν συνθέτου ᾗ, κατὰ τὸ ἐπικρατοῦν ἔσται),
and for if of-a-composite it-be according-to the prevailing it-will-be
 ἀναγκαῖον εἶναι τι σῶμα ἀπλοῦν ὃ πέφυκε φέρεσθαι τὴν
necessary to-be some body simple which is-natured to-be-carried the

κύκλω κίνησιν κατὰ τὴν αὐτοῦ φύσιν· βία μὲν γὰρ
in-a-circle motion according-to the of-it nature by-force indeed for
 ἐνδέχεται τὴν ἄλλου καὶ ἐτέρου, κατὰ φύσιν δὲ ἀδύνατον,
it-admits the of-another and of-a-second according-to nature and impossible
 εἴπερ μία ἐκάστου κίνησις ἢ κατὰ φύσιν τῶν ἀπλῶν.
if-indeed one of-each motion the according-to nature of-the simple-(bodies)
 ἔτι εἰ ἢ παρὰ φύσιν ἐναντία τῇ κατὰ φύσιν καὶ ἐν
further if the against nature contrary to-the according-to nature and one
 ἐνὶ ἐναντίον, ἀνάγκη, ἐπεὶ ἀπλῇ ἢ κύκλω, εἰ μὴ ἔσται
to-one contrary necessary since simple the in-a-circle if not it-will-be
 κατὰ φύσιν τοῦ φερομένου σώματος, παρὰ φύσιν αὐτοῦ
according-to nature of-the being-carried body against nature of-it
 εἶναι. εἰ οὖν πῦρ ἢ ἄλλο τι τῶν τοιούτων ἐστὶ τὸ
to-be if therefore fire or other something of-the such is the
 κύκλω φερόμενον, ἐναντία ἢ κατὰ φύσιν αὐτοῦ φορὰ
in-a-circle being-carried contrary the according-to nature of-it movement
 ἔσται τῇ κύκλω. ἀλλ' ἐν ἐνὶ ἐναντίον· ἢ δ'
will-be to-the in-a-circle but one to-one contrary the-(motions) and
 ἄνω καὶ κάτω ἀλλήλαις ἐναντία. εἰ δ' ἕτερόν τι
upward and downward to-one-another contrary if and another something
 ἐστὶ σῶμα τὸ φερόμενον κύκλω παρὰ φύσιν, ἔσται τις
is a-body the being-carried in-a-circle against nature there-will-be some
 αὐτοῦ ἄλλη κίνησις κατὰ φύσιν. τοῦτο δ' ἀδύνατον·
of-it another motion according-to nature this and impossible
 εἰ μὲν γὰρ ἢ ἄνω, πῦρ ἔσται ἢ ἀήρ, εἰ δ' ἢ κάτω,
if indeed for the upward fire it-will-be or air if and the downward
 ὕδωρ ἢ γῆ. ἀλλὰ μὴν καὶ πρώτην γε ἀναγκαῖον εἶναι
water or earth but indeed also first at-least necessary to-be
 τὴν τοιαύτην φοράν. τὸ γὰρ τέλειον πρότερον τῇ φύσει
the such movement the for complete prior in-the nature
 τοῦ ἀτελοῦς, ὃ δὲ κύκλος τῶν τελείων, εὐθεία δὲ
than-the incomplete the and circle of-the complete-(things) a-straight and

γραμμῇ οὐδεμία· οὔτε γὰρ ἡ ἄπειρος (ἔχοι γὰρ ἂν
line none neither for the infinite it-would-have for —
 πέρασ καὶ τέλος) οὔτε τῶν πεπερασμένων οὐδεμία (πασῶν
a-limit and an-end nor of-the limited any of-all
 γάρ τι ἐκτός· αὐξῆσαι γὰρ ἐνδέχεται ὅποιανούν).
for something outside to-increase for it-admits any-whatever
 ὥστ' εἴπερ ἡ μὲν προτέρα κίνησις προτέρου τῇ φύσει
so-that if-indeed the indeed prior motion of-a-prior in-the nature
 σώματος, ἡ δὲ κύκλῳ προτέρα τῆς εὐθείας, ἡ δ' ἐπ'
body the and in-a-circle prior than-the straight the and upon
 εὐθείας τῶν ἀπλῶν σωμάτων ἐστί (τό τε γὰρ πῦρ ἐπ'
a-straight of-the simple bodies is the both for fire upon
 εὐθείας ἄνω φέρεται καὶ τὰ γεῖρα κάτω πρὸς τὸ μέσον),
a-straight upward is-carried and the earthby downward toward the middle
 ἀνάγκη καὶ τὴν κύκλῳ κίνησιν τῶν ἀπλῶν τινος εἶναι
necessary also the in-a-circle motion of-the simple of-some to-be
 σωμάτων· τῶν γὰρ μικτῶν τὴν φορὰν ἔφαιμεν εἶναι κατὰ
bodies of-the for mixed the movement we-said to-be according-to
 τὸ ἐπικρατοῦν ἐν τῇ μίξει τῶν ἀπλῶν. ἔκ τε δὴ τούτων
the prevailing in the mixture of-the simple out-of both indeed these
 φανερόν ὅτι πέφυκέ τις οὐσία σώματος ἄλλη παρὰ τὰς
clear that is-natured a-certain being of-body other beside the
 ἐνταῦθα συστάσεις, θειότερα καὶ προτέρα τούτων ἀπάντων,
here formations more-divine and prior of-these all
 καὶν εἴ τις ἔτι λάβοι πᾶσαν εἶναι κίνησιν ἢ κατὰ
even if someone further should-take every to-be motion either according-to
 φύσιν ἢ παρὰ φύσιν, καὶ τὴν ἄλλῳ παρὰ φύσιν ἐτέρῳ
nature or against nature and the to-one against nature to-another
 κατὰ φύσιν, οἷον ἡ ἄνω καὶ ἡ κάτω πέπονθεν·
according-to nature such-as the upward and the downward has-fared
 ἡ μὲν γὰρ τῷ πυρί, ἡ δὲ τῇ γῇ παρὰ φύσιν
the-(one) indeed for to-the fire the-(other) and to-the earth against nature

καὶ κατὰ φύσιν· ὥστ' ἀναγκαῖον καὶ τὴν κύκλῳ κίνησιν,
and according-to nature so-that necessary also the in-a-circle motion
 ἐπειδὴ τούτοις παρὰ φύσιν, ἑτέρου τινὸς εἶναι κατὰ φύσιν.
since to-these against nature of-another of-some to-be according-to nature
 πρὸς δὲ τούτοις εἰ μὲν ἔστιν ἡ κύκλῳ τινὶ φορὰ
toward and these if indeed is the in-a-circle to-something movement
 κατὰ φύσιν, δῆλον ὡς εἴη ἄν τι σῶμα τῶν
according-to nature clear that there-would-be — some body of-the
 ἀπλῶν καὶ πρώτων, ὃ πέφυκεν, ὥσπερ τὸ πῦρ ἄνω
simple and first which is-natured as the fire upward
 καὶ ἡ γῆ κάτω, ἐκεῖνο κύκλῳ φέρεσθαι κατὰ φύσιν.
and the earth downward that in-a-circle to-be-carried according-to nature
 εἰ δὲ παρὰ φύσιν φέρεται τὰ φερόμενα κύκλῳ τὴν
if and against nature is-carried the things-carried in-a-circle the
 πέριξ φοράν, θαυμαστὸν καὶ παντελῶς ἄλογον τὸ
round-about movement astonishing and utterly unreasonable the
 μόνην εἶναι συνεχῇ ταύτην τὴν κίνησιν καὶ αἰδῖον, οὐσαν
only to-be continuous this the motion and everlasting being
 παρὰ φύσιν· φαίνεται γὰρ ἓν γε τοῖς ἄλλοις τάχιστα
against nature it-appears for in at-least the others most-quickly
 φθειρόμενα τὰ παρὰ φύσιν. ὥστ' εἴπερ ἔστι πῦρ τὸ
perishing the-(things) against nature so-that if-indeed is fire the
 φερόμενον, καθάπερ φασί τινες, οὐδὲν ἥττον αὐτῷ
thing-carried just-as say certain-(people) in-no-way less for-it
 παρὰ φύσιν ἢ κίνησίς ἐστιν αὕτη ἢ ἡ κάτω πυρὸς
against nature the motion is this than the downward of-fire
 γὰρ κίνησιν ὁρῶμεν τὴν ἀπὸ τοῦ μέσου κατ' εὐθείαν.
for a-motion we-see the from the middle along a-straight
 διόπερ ἐξ ἀπάντων ἄν τις τούτων συλλογιζόμενος
wherefore out-of all — someone of-these reasoning-together
 πιστεύσειεν ὡς ἔστι τι παρὰ τὰ σώματα τὰ δεῦρο
would-believe that there-is something beside the bodies the here

καὶ περὶ ἡμᾶς ἕτερον κεχωρισμένον, τοσούτω τιμιωτέραν
and about us other having-been-separated by-so-much more-honorable
 ἔχον τὴν φύσιν ὥσπερ ἀφέστηκε τῶν ἐνταῦθα πλείον.
having the nature by-as-much-as it-stands-off from-the here-(bodies) more

III • THE FIRST BODY HAS NEITHER WEIGHT NOR LIGHTNESS

The body that moves in a circle can have neither weight nor lightness, since it cannot move toward or away from the middle either by nature or by force. It is therefore ungenerated, imperishable, unincreasable, and unalterable, for coming to be and perishing require contraries, and circular motion has no contrary. Aristotle adds that all men, Greek and barbarian alike, give the highest place to the divine, and that the ancients handed down the name aether.

Ἐπεὶ δὲ τὰ μὲν ὑπόκειται τὰ δ' ἀποδέδεικται τῶν
since and the-ones indeed are-assumed the-others and have-been-proved of-the
 εἰρημένων, φανερόν ὅτι οὔτε κουφότητα οὔτε βάρος ἔχει
things-said clear that neither lightness nor weight has
 σῶμα ἅπαν. δεῖ δὲ ὑποθέσθαι τί λέγομεν τὸ βαρὺ
body any it-is-needful and to-assume what we-mean the heavy
 καὶ τὸ κοῦφον, νῦν μὲν ἱκανῶς πρὸς τὴν παροῦσαν χρεῖαν,
and the light now indeed sufficiently for the present use
 ἀκριβέστερον δὲ πάλιν, ὅταν ἐπισκοπῶμεν περὶ τῆς οὐσίας
more-exactly and again whenever we-consider about the being
 αὐτῶν. βαρὺ μὲν οὖν ἔστω τὸ φέρεσθαι πεφυκὸς ἐπὶ
of-them heavy indeed therefore let-it-be the to-be-carried natured toward
 τὸ μέσον, κοῦφον δὲ τὸ ἀπὸ τοῦ μέσου, βαρύτατον δὲ
the middle light and the from the middle heaviest and
 τὸ πᾶσιν ὑφιστάμενον τοῖς κάτω φερομένοις, κουφότατον
the to-all sinking-under to-the downward things-carried lightest
 δὲ τὸ πᾶσιν ἐπιπολάζον τοῖς ἄνω φερομένοις. ἀνάγκη δὲ
and the to-all floating-on to-the upward things-carried necessary and

πᾶν τὸ φερόμενον ἢ κάτω ἢ ἄνω ἢ κουφότητ' ἔχειν
every the thing-carried either downward or upward either lightness to-have
 ἢ βάρος ἢ ἄμφω, μὴ πρὸς τὸ αὐτὸ δέ· πρὸς ἀλλήλα γάρ
or weight or both not toward the same and toward one-another for
 ἐστὶ βαρέα καὶ κοῦφα, οἷον ἀήρ πρὸς ὕδωρ, καὶ πρὸς γῆν
they-are heavy and light such-as air toward water and toward earth
 ὕδωρ. τὸ δὲ κύκλῳ σῶμα φερόμενον ἀδύνατον ἔχειν βάρος
water the indeed in-a-circle body being-carried impossible to-have weight
 ἢ κουφότητα· οὔτε γὰρ κατὰ φύσιν οὔτε παρὰ φύσιν
or lightness neither for according-to nature nor against nature
 ἐνδέχεται αὐτῷ κινηθῆναι ἐπὶ τὸ μέσον ἢ ἀπὸ τοῦ μέσου.
it-admits for-it to-be-moved toward the middle or from the middle
 κατὰ φύσιν μὲν γὰρ οὐκ ἔστιν αὐτῷ ἢ ἐπ' εὐθείας
according-to nature indeed for not is for-it the upon a-straight
 φορά· μία γὰρ ἦν ἐκάστου τῶν ἀπλῶν, ὥστ' ἔσται
movement one for was of-each of-the simple-(bodies) so-that it-will-be
 τὸ αὐτὸ τῶν οὕτω τιμὴ φερομένων. παρὰ φύσιν δ'
the same of-the thus to-some things-carried against nature and
 ἐνεχθέντος, εἰ μὲν ἢ κάτω παρὰ φύσιν, ἢ ἄνω ἔσται
having-been-carried if indeed the downward against nature the upward will-be
 κατὰ φύσιν, εἰ δ' ἄνω παρὰ φύσιν, ἢ κάτω κατὰ
according-to nature if and upward against nature the downward according-to
 φύσιν· ἔθεμεν γὰρ τῶν ἐναντίων ᾧ ἢ ἑτέρα παρὰ
nature we-laid-down for of-the contraries to-which the one against
 φύσιν, τὴν ἑτέραν εἶναι κατὰ φύσιν. ἐπεὶ δ' εἰς τὸ
nature the other to-be according-to nature since and into the
 αὐτὸ φέρεται τὸ ὅλον καὶ τὸ μῦριον κατὰ φύσιν,
same is-carried the whole and the part according-to nature
 οἷον πᾶσα γῆ καὶ μικρὰ βῶλος, συμβαίνει πρῶτον μὲν
such-as all earth and a-small clod it-happens first indeed
 μήτε κουφότητ' ἔχειν αὐτὸ μηδεμίαν μήτε βάρος (ἢ
neither lightness to-have it any nor weight either

γὰρ ἂν πρὸς τὸ μέσον ἢ ἀπὸ τοῦ μέσου ἡδύνατο
for — toward the middle or from the middle it-would-be-able
 φέρεσθαι κατὰ τὴν ἑαυτοῦ φύσιν), ἔπειθ' ὅτι ἀδύνατον
to-be-carried according-to the of-itself nature then that impossible
 κινηθῆναι τὴν κατὰ τόπον κίνησιν ἢ ἄνω ἢ κάτω
to-be-moved the according-to place motion either upward or downward
 κατασπώμενον· οὔτε γὰρ κατὰ φύσιν ἐνδέχεται κινηθῆναι
being-dragged-down neither for according-to nature it-admits to-be-moved
 κίνησιν αὐτῷ ἄλλην οὔτε παρὰ φύσιν, οὔτ' αὐτῷ οὔτε τῶν
a-motion for-it another nor against nature nor for-it nor of-the
 μορίων οὐδενί· ὁ γὰρ αὐτὸς λόγος περὶ ὅλου καὶ μέρους.
parts for-any the for same account about whole and part
 ὁμοίως δ' εὐλογον ὑπολαβεῖν περὶ αὐτοῦ καὶ ὅτι ἀγένητον
alike and reasonable to-suppose about it also that ungenerated
 καὶ ἄφθαρτον καὶ ἀναυξὲς καὶ ἀναλλοιώτον, διὰ τὸ
and imperishable and unincreasable and unalterable because-of the
 γίνεσθαι μὲν ἅπαν τὸ γιγνόμενον ἐξ ἐναντίου τε καὶ
to-come-to-be indeed everything the thing-coming-to-be out-of a-contrary both and
 ὑποκειμένου τινός, καὶ φθείρεσθαι ὡσαύτως ὑποκειμένου
a-subject of-some and to-perish likewise of-a-subject
 τέ τινος καὶ ὑπ' ἐναντίου καὶ εἰς ἐναντίον, καθάπερ ἐν
both some and by a-contrary and into a-contrary just-as in
 τοῖς πρώτοις εἴρηται λόγοις· τῶν δ' ἐναντίων καὶ αἱ
the first has-been-said accounts of-the and contraries also the
 φοραὶ ἐναντίαι. εἰ δὴ τούτῳ μηδὲν ἐναντίον ἐνδέχεται
movements contrary if indeed to-this nothing contrary it-admits
 εἶναι διὰ τὸ καὶ τῇ φορᾷ τῇ κύκλῳ μὴ εἶναι
to-be because-of the also to-the movement the in-a-circle not to-be
 ἂν τιν' ἐναντίαν κίνησιν, ὀρθῶς ἔοικεν ἢ φύσις τὸ
would any contrary motion rightly it-seems the nature the
 μέλλον ἔσεσθαι ἀγένητον καὶ ἄφθαρτον ἐξελέσθαι ἐκ
going to-be ungenerated and imperishable to-have-taken-out out-of

τῶν ἐναντίων· ἐν τοῖς ἐναντίοις γὰρ ἡ γένεσις καὶ ἡ
the contraries in the contraries for the coming-to-be and the
 φθορά· ἀλλὰ μὴν καὶ τὸ αὐξανόμενον ἅπαν αὐξάνεται
perishing but indeed also the thing-increasing everything increases
 καὶ τὸ φθίνον φθίνει ὑπὸ συγγενοῦς προσιόντος καὶ
and the thing-waning wanes by a-kindred-thing approaching and
 ἀναλυομένου εἰς τὴν ὕλην· τούτῳ δ' οὐκ ἔστιν ἐξ οὗ
being-resolved into the matter to-this and not there-is out-of which
 γέγονεν· εἰ δ' ἐστὶ καὶ ἀναύξητον καὶ ἄφθιτον, τῆς
it-has-come-to-be if and it-is both unincreasable and indestructible of-the
 αὐτῆς διανοίας ἐστὶν ὑπολαβεῖν καὶ ἀναλλοιώτον εἶναι.
same thought it-is to-suppose also unalterable to-be
 ἔστι μὲν γὰρ ἡ ἀλλοίωσις κίνησις κατὰ τὸ ποιόν,
is indeed for the alteration a-motion according-to the quality
 τοῦ δὲ ποιοῦ αἱ μὲν ἕξεις καὶ διαθέσεις οὐκ ἄνευ
of-the and quality the indeed states and dispositions not without
 τῶν κατὰ πάθη γίνονται μεταβολῶν, οἷον ὑγίεια καὶ
the according-to affections come-about changes such-as health and
 νόσος· κατὰ δὲ πάθος ὅσα μεταβάλλει τῶν φυσικῶν
disease according-to and affection as-many-as change of-the natural
 σωμάτων, ἔχονθ' ὁρῶμεν πάντα καὶ αὐξησιν καὶ φθίσιν,
bodies having we-see all both increase and waning
 οἷον τὰ τε τῶν ζώων σώματα καὶ τὰ μέρη αὐτῶν καὶ
such-as the both of-the animals bodies and the parts of-them and
 τὰ τῶν φυτῶν, ὁμοίως δὲ καὶ τὰ τῶν στοιχείων· ὥστ'
the of-the plants alike and also the of-the elements so-that
 εἴπερ τὸ κύκλῳ σῶμα μήτ' αὐξησιν ἔχειν ἐνδέχεται μήτε
if-indeed the in-a-circle body neither increase to-have it-admits nor
 φθίσιν, εὐλογον καὶ ἀναλλοιώτον εἶναι.
waning reasonable also unalterable to-be

Διότι μὲν οὖν αἰδῖον καὶ οὐτ' αὖξῃσιν ἔχον οὔτε φθίσιν,
why indeed therefore everlasting and neither increase having nor waning
 ἀλλ' ἀγήρατον καὶ ἀναλλοίωτον καὶ ἀπαθές ἐστι τὸ
but ageless and unalterable and unaffected is the
 πρῶτον τῶν σωμάτων, εἴ τις τοῖς ὑποκειμένοις πιστεύει,
first of-the bodies if someone the assumptions trusts
 φανερόν ἐκ τῶν εἰρημένων ἐστίν. ἔοικε δ' ὁ τε λόγος
clear out-of the things-said it-is it-seems and the both reason
 τοῖς φαινομένοις μαρτυρεῖν καὶ τὰ φαινόμενα τῷ λόγῳ.
to-the things-appearing to-testify and the things-appearing to-the reason
 πάντες γὰρ ἄνθρωποι περὶ θεῶν ἔχουσιν ὑπόληψιν, καὶ
all for men about gods have a-supposition and
 πάντες τὸν ἀνωτάτω τῷ θείῳ τόπον ἀποδιδόασιν, καὶ
all the highest to-the divine place assign both
 βάρβαροι καὶ Ἕλληνες, ὅσοι περ εἶναι νομίζουσι θεούς,
barbarians and Greeks as-many-as indeed to-be think gods
 δῆλον ὅτι ὡς τῷ ἀθανάτῳ τὸ ἀθάνατον συνηρημένον·
clear that as to-the immortal the immortal being-attached
 ἀδύνατον γὰρ ἄλλως. εἴπερ οὖν ἔστι τι θεῖον, ὥσπερ
impossible for otherwise if-indeed therefore is something divine as
 ἔστι, καὶ τὰ νῦν εἰρημένα περὶ τῆς πρώτης οὐσίας τῶν
it-is also the-(things) now said about the first being of-the
 σωμάτων εἴρηται καλῶς. συμβαίνει δὲ τοῦτο καὶ διὰ
bodies have-been-said well it-happens and this also through
 τῆς αἰσθήσεως ἰκανῶς, ὥς γε πρὸς ἀνθρωπίνην εἰπεῖν
the sensation sufficiently as at-least toward a-human to-speak
 πίστιν· ἐν ᾧ παντὶ γὰρ τῷ παρεληλυθότῳ χρόνῳ κατὰ
conviction in all for the past time according-to
 τὴν παραδεδομένην ἀλλήλοις μνήμην οὐθὲν φαίνεται
the handed-down to-one-another memory nothing appears
 μεταβεβληκὸς οὔτε καθ' ὅλον τὸν ἔσχατον οὐρανὸν οὔτε
having-changed either in whole the outermost heaven or

κατὰ μόνιον αὐτοῦ τῶν οἰκείων οὐθέν, ἔοικε δὲ καὶ
according-to a-part of-it of-the proper-(parts) anything it-seems and also
 τοῦνομα παρὰ τῶν ἀρχαίων διαδεδοσθαι μέχρι καὶ τοῦ
the-name from the ancients to-have-been-handed-down as-far-as also the
 νῦν χρόνου, τοῦτον τὸν τρόπον ὑπολαμβανόντων ὅνπερ
now time this the way of-those-supposing which-very
 καὶ ἡμεῖς λέγομεν· οὐ γὰρ ἅπαξ οὐδὲ δις ἀλλὰ πλεονάκις
also we say not for once nor twice but more-often
 δεῖ νομίζειν τὰς αὐτὰς ἀφικνεῖσθαι δόξας εἰς ἡμᾶς.
it-is-needful to-bold the same to-arrive opinions to us
 διόπερ ὡς ἑτέρου τινὸς ὄντος τοῦ πρώτου σώματος παρὰ
wherefore as of-another something being of-the first body beside
 γῆν καὶ πῦρ καὶ ἀέρα καὶ ὕδωρ, αἰθέρα προσωνόμασαν
earth and fire and air and water aether they-named
 τὸν ἀνωτάτω τόπον, ἀπὸ τοῦ θεῖν αἰὲ τὸν αἰδίων χρόνον
the highest place from the to-run always the everlasting time
 θέμενοι τὴν ἐπωνυμίαν αὐτῷ. Ἀναξαγόρας δὲ καταχρήται τῷ
having-set the name for-it Anaxagoras and misuses the
 ὀνόματι τούτῳ οὐ καλῶς· ὀνομάζει γὰρ αἰθέρα ἀντὶ πυρός.
name this not well he-names for aether instead-of fire
 Φανερόν δ' ἐκ τῶν εἰρημένων καὶ διότι τὸν ἀριθμὸν
clear and out-of the things-said also why the number
 ἀδύνατον εἶναι πλείω τὸν τῶν λεγομένων σωμάτων
impossible to-be more the of-the being-called bodies
 ἀπλῶν· τοῦ μὲν γὰρ ἀπλοῦ σώματος ἀνάγκη τὴν κίνησιν
simple of-the indeed for simple body necessary the motion
 ἀπλῆν εἶναι, μόνας δὲ ταύτας εἶναί φαμεν ἀπλᾶς, τὴν
simple to-be only and these to-be we-say simple the
 τε κύκλῳ καὶ τὴν ἐπ' εὐθείας, καὶ ταύτης δύο μόρια,
both in-a-circle and the upon a-straight and of-this two parts
 τὴν μὲν ἀπὸ τοῦ μέσου, τὴν δ' ἐπὶ τὸ μέσον.
the-(one) indeed from the middle the-(other) and toward the middle

Aristotle argues from several sides that no movement is contrary to circular movement. The straight line, not another arc, is what stands opposed to the curved; motions along a straight line are contrary because their places are; and two circular motions run from the same point to the same point, which is not what contrariety means. If they were contrary, one of them would be pointless, and God and nature do nothing in vain.

Ὅτι δ' οὐκ ἔστι τῇ κύκλῳ φορᾷ ἐναντία ἄλλη
 that and not there-is to-the in-a-circle movement contrary another
 φορά, πλεοναχόθεν ἂν τις λάβοι τὴν πίστιν, πρῶτον
 movement from-many-quarters — someone might-take the proof first
 μὲν ὅτι τῇ περιφερεῖ τὴν εὐθείαν ἀντικεῖσθαι μάλιστα
 indeed that to-the curved the straight to-be-opposed most
 τίθεμεν. τὸ γὰρ κοῖλον καὶ τὸ κυρτὸν οὐ μόνον ἀλλήλοις
 we-lay-down the for hollow and the convex not only to-one-another
 ἀντικεῖσθαι δοκεῖ ἀλλὰ καὶ τῷ εὐθεῖ, συνδυαζόμενα καὶ
 to-be-opposed seems but also to-the straight being-paired and
 λαβόντα σύνθεσιν· ὥστ' εἴπερ ἐναντία τίς ἐστι, τὴν ἐπὶ
 having-taken a-combination so-that if-indeed contrary any is the upon
 τῆς εὐθείας μάλιστα ἀναγκαῖον ἐναντίαν εἶναι πρὸς τὴν
 the straight most necessary contrary to-be toward the
 κύκλῳ κίνησιν. αἱ δ' ἐπὶ τῆς εὐθείας ἀλλήλαις
 in-a-circle motion the-(movements) and upon the straight to-one-another
 ἀντίκεινται διὰ τοὺς τόπους· τὸ γὰρ ἄνω καὶ κάτω
 are-opposed because-of the places the for above and below
 τόπου τέ ἐστι διαφορὰ καὶ ἐναντίωσις. ἔπειτ' εἴ τις
 of-place both is a-difference and a-contrariety then if someone
 ὑπολαμβάνει τὸν αὐτὸν εἶναι λόγον ὅνπερ ἐπὶ τῆς
 supposes the same to-be account which-very upon the
 εὐθείας, καὶ ἐπὶ τῆς περιφεροῦς (τὴν γὰρ ἀπὸ τοῦ Α
 straight also upon the curved the for from the Α

πρὸς τὸ Β φορὰν ἐναντίαν εἶναι τῇ ἀπὸ τοῦ Β πρὸς
toward the B movement contrary to-be to-the from the B toward
 τὸ Α), τὴν ἐπὶ τῆς εὐθείας λέγει· αὕτη γὰρ πεπέρανται,
the A the upon the straight he-means this for has-been-limited
 περιφερεῖς δ' ἄπειροι ἂν εἶεν περὶ τὰ αὐτὰ σημεία.
curved-(lines) and infinite — would-be about the same points
 ὁμοίως δὲ καὶ ἐπὶ τοῦ ἡμικυκλίου τοῦ ενός, οἷον ἀπὸ τοῦ
alike and also upon the semicircle the one such-as from the
 Γ ἐπὶ τὸ Δ καὶ ἀπὸ τοῦ Δ ἐπὶ τὸ Γ· ἡ γὰρ αὕτη τῇ
C upon the D and from the D upon the C the for same to-the
 ἐπὶ τῆς διαμέτρου ἐστίν· αἰεὶ γὰρ ἕκαστον ἀπέχειν τὴν
upon the diameter is always for each to-be-distant the
 εὐθεῖαν τίθεμεν. ὁμοίως δὲ καὶ εἴ τις κύκλον ποιήσας
straight we-lay-down alike and even if someone a-circle having-made
 τὴν ἐπὶ θατέρου ἡμικυκλίου φορὰν ἐναντίαν θείη
the upon of-one-of-the-two semicircle movement contrary should-lay-down
 τῇ ἐπὶ θατέρου, οἷον ἐν τῷ ὅλῳ κύκλῳ τὴν ἀπὸ τοῦ
to-the upon the-other such-as in the whole circle the from the
 Ε πρὸς τὸ Ζ τοῦ Η ἡμικυκλίου τῇ ἀπὸ τοῦ Ζ πρὸς
E toward the F of-the G semicircle to-the from the F toward
 τὸ Ε ἐν τῷ Θ ἡμικυκλίῳ. εἰ δὲ καὶ αὐταὶ ἐναντίαι, ἀλλ'
the E in the H semicircle if and also these contrary but
 οὔτι γε αἱ ἐπὶ τοῦ ὅλου κύκλου φοραὶ ἀλλήλαις
not-at-all at-least the upon the whole circle movements to-one-another
 διὰ τοῦτο ἐναντίαι. ἀλλὰ μὴν οὐδ' ἡ ἀπὸ τοῦ Α
because-of this contrary but indeed nor the from the A
 ἐπὶ τὸ Β κύκλῳ φορὰ ἐναντία τῇ ἀπὸ τοῦ Α ἐπὶ τὸ
upon the B in-a-circle movement contrary to-the from the A upon the
 Γ· ἐκ ταύτου γὰρ εἰς ταὐτὸ ἡ κίνησις, ἡ δ' ἐναντία
C out-of the-same for into the-same the motion the and contrary
 διωρίσθη φορὰ ἐκ τοῦ ἐναντίου εἰς τὸ ἐναντίον.
was-defined movement out-of the contrary into the contrary

εἰ δὲ καὶ ἦν ἡ κύκλῳ τῇ κύκλῳ ἐναντία, μάτην ἂν ἦν
if and also were the in-a-circle to-the in-a-circle contrary in-vain — would-be
 ἢ ἑτέρα· ἐπὶ τὸ αὐτὸ γάρ, ὅτι ἀνάγκη τὸ κύκλῳ φερόμενον
the other upon the same for that necessary the in-a-circle being-carried
 ὁποθενοῦν ἀρξάμενον εἰς πάντας ὁμοίως ἀφικνεῖσθαι
from-whenever-soever having-begun into all alike to-arrive
 τοὺς ἐναντίους τόπους· εἰσὶ δὲ τόπου ἐναντιότητες τὸ
the contrary places there-are and of-place contraries the
 ἄνω καὶ κάτω καὶ τὸ πρόσθιον καὶ ὀπίσθιον καὶ τὸ δεξιὸν
above and below and the front and back and the right
 καὶ ἀριστερόν. αἱ δὲ τῆς φορᾶς ἐναντιώσεις κατὰ τὰς
and left the and of-the movement contraries according-to the
 τῶν τόπων εἰσὶν ἐναντιώσεις· εἰ μὲν ἄρ' ἴσαι ἦσαν, οὐκ
of-the places are contraries if indeed then equal they-were not
 ἂν ἦν κίνησις αὐτῶν, εἰ δ' ἢ ἑτέρα κίνησις ἐκράτει,
— would-be motion of-them if and the one motion prevailed
 ἑτέρα οὐκ ἂν ἦν· ὥστ' εἰ ἀμφοτέρα ἦν, μάτην ἂν
the-other not — would-be so-that if both were in-vain —
 θάτερον ἦν σῶμα μὴ κινούμενον τὴν αὐτοῦ κίνησιν·
the-other would-be a-body not being-moved the of-itself motion
 μάτην γὰρ ὑπόδημα τοῦτο λέγομεν, οὗ μή ἐστιν
in-vain for a-shoe this we-call of-which not there-is
 ὑπόδεις. ὁ δὲ θεὸς καὶ ἡ φύσις οὐδὲν μάτην ποιοῦσιν.
a-wearing the and god and the nature nothing in-vain do

V · NO BODY MOVING IN A CIRCLE CAN BE INFINITE

A small error at the beginning becomes a great one at the end, and the infinite is a beginning of that kind. If the body that moves in a circle were infinite, the lines drawn from the middle would be infinite and the distance between them infinite, so a revolution could never be completed. Aristotle argues the same from time, and from a line drawn to cut an infinite one.

Ἄλλ' ἐπεὶ δῆλον περὶ τούτων, περὶ τῶν λοιπῶν σκεπτέον,
but since clear about these about the remaining one-must-consider
 καὶ πρῶτον πότερον ἔστι τι σῶμα ἄπειρον, ὥσπερ οἱ
and first whether there-is some body infinite as the
 πλείστοι τῶν ἀρχαίων φιλοσόφων ᾤθησαν, ἢ τοῦτ' ἔστιν
most of-the ancient philosophers thought or this is
 ἓν τι τῶν ἀδυνάτων· τὸ γὰρ οὕτως ἢ ἐκείνως ἔχειν
one something of-the impossible-(things) the for thus or that-way to-be
 οὐ τι μικρὸν ἀλλ' ὅλον διαφέρει καὶ πᾶν πρὸς τὴν
not at-all small but whole it-differs and all for the
 τῆς ἀληθείας θεωρίαν. σχεδὸν γὰρ αὕτη πασῶν ἀρχῇ
of-the truth study almost for this of-all a-beginning
 τῶν ἐναντιώσεων τοῖς ἀποφνηναμένοις τι περὶ τῆς
of-the contraries for-those having-declared something about the
 ὅλης φύσεως καὶ γέγονε καὶ γένοιτ' ἂν, εἴπερ καὶ
whole nature both has-become and might-become — if-indeed also
 τὸ μικρὸν παραβῆναι τῆς ἀληθείας ἀφισταμένοις γίνεται
the little to-transgress of-the truth for-those-departing becomes
 πόρρω μυριοπλάσιον, οἷον εἴ τις ἐλάχιστον εἶναι τι
far ten-thousand-fold such-as if someone a-least to-be some
 φαίη μέγεθος· οὗτος γὰρ τοῦλάχιστον εἰσαγαγὼν τὰ
should-say magnitude this-man for the-least having-introduced the
 μέγιστα κινεῖ τῶν μαθηματικῶν. τούτου δ' αἴτιον ὅτι ἡ
greatest disturbs of-the mathematical-(truths) of-this and a-cause that the
 ἀρχὴ δυνάμει μείζων ἢ μεγέθει, διόπερ τὸ ἐν ἀρχῇ
beginning in-power greater than in-magnitude wherefore the in a-beginning
 μικρὸν ἐν τῇ τελευτῇ γίνεται παμμέγεθες. τὸ δ' ἄπειρον
small in the end becomes very-great the and infinite
 καὶ ἀρχῆς ἔχει δύνανται καὶ τοῦ ποσοῦ τὴν μεγίστην,
also of-a-beginning has the-power and of-the quantity the greatest

ὥστ' οὐδὲν ἄτοπον οὐδ' ἄλογον τὸ θαυμαστὴν εἶναι τὴν
so-that nothing strange nor unreasonable the astonishing to-be the
 διαφορὰν ἐκ τοῦ λαβεῖν ὡς ἔστι τι σῶμα ἄπειρον.
difference out-of the to-assume that there-is some body infinite
 διὸ περὶ αὐτοῦ λεκτέον ἐξ ἀρχῆς ἀναλαβοῦσιν.
wherefore about it one-must-speak out-of a-beginning for-those-taking-it-up
 ἀνάγκη δὴ πᾶν σῶμα ἢ τῶν ἀπλῶν εἶναι ἢ τῶν
necessary indeed every body either of-the simple to-be or of-the
 συνθέτων, ὥστε καὶ τὸ ἄπειρον ἢ ἀπλοῦν εἶναι ἢ
composite so-that also the infinite either simple to-be or
 σύνθετον. ἀλλὰ μὴν καὶ ὅτι γε πεπερασμένων τῶν
composite but indeed also that at-least being-limited the
 ἀπλῶν ἀνάγκη πεπερασμένον εἶναι τὸ σύνθετον, δηλον·
simple-(bodies) necessary limited to-be the composite clear
 τὸ γὰρ ἐκ πεπερασμένων καὶ πλήθει καὶ μεγέθει
the for out-of limited-(things) both in-multitude and in-magnitude
 συγκείμενον πεπεράνται καὶ πλήθει καὶ μεγέθει τοσοῦτον
being-composed has-been-limited both in-multitude and in-magnitude so-much
 γὰρ ἔστιν ἐξ ὅσων ἐστὶ συγκείμενον. λοιπὸν τοῖνυν
for it-is out-of as-many-as it-is composed remaining then
 ἰδεῖν πότερον ἐνδέχεται τι τῶν ἀπλῶν ἄπειρον εἶναι
to-see whether it-admits something of-the simple infinite to-be
 τὸ μέγεθος, ἢ τοῦτ' ἀδύνατον. προχειρισάμενοι δὴ περὶ
the magnitude or this impossible having-taken-in-hand indeed about
 τοῦ πρώτου τῶν σωμάτων, οὕτω σκοπῶμεν καὶ περὶ
the first of-the bodies thus let-us-consider also about
 τῶν λοιπῶν. ὅτι μὲν τοῖνυν ἀνάγκη τὸ σῶμα τὸ κύκλῳ
the remaining that indeed then necessary the body the in-a-circle
 φερόμενον πεπεράνθαι πᾶν, ἐκ τῶνδε δηλον. εἰ γὰρ
being-carried to-have-been-limited all out-of these clear if for
 ἄπειρον τὸ κύκλῳ φερόμενον σῶμα, ἄπειροι ἔσονται αἱ
infinite the in-a-circle being-carried body infinite will-be the-(lines)

ἀπὸ τοῦ μέσου ἐκβαλλόμεναι. τῶν δ' ἀπείρων τὸ διάστημα
from the middle being-thrown-out of-the and infinite the interval
 ἄπειρον· διάστημα γὰρ λέγω τῶν γραμμῶν, οὐδὲν
infinite an-interval for I-mean of-the lines of-which nothing
 ἔστιν ἔξω λαβεῖν μέγεθος ἀπτόμενον τῶν γραμμῶν.
there-is outside to-take a-magnitude touching of-the lines
 τοῦτ' οὖν ἀνάγκη ἄπειρον εἶναι· τῶν γὰρ πεπερασμένων
this therefore necessary infinite to-be of-the for limited
 ἀεὶ ἔσται πεπερασμένον. ἔτι δ' ἀεὶ ἔστι τοῦ δοθέντος
always will-be limited further and always it-is of-the thing-given
 μείζον λαβεῖν, ὥστε καθάπερ ἀριθμὸν λέγομεν ἄπειρον,
greater to-take so-that just-as a-number we-call infinite
 ὅτι μέγιστος οὐκ ἔστιν, ὁ αὐτὸς λόγος καὶ περὶ τοῦ
because a-greatest not there-is the same argument also about the
 διαστήματος, εἰ οὖν τὸ μὲν ἄπειρον μὴ ἔστι διελθεῖν,
interval if therefore the indeed infinite not it-is-possible to-traverse
 ἀπείρου δ' ὄντος ἀνάγκη ἄπειρον τὸ διάστημα εἶναι, οὐκ
infinite and being necessary infinite the interval to-be not
 ἂν ἐνδέχοιτο κινηθῆναι κύκλῳ· τὸν δ' οὐρανὸν ὁρῶμεν
— it-would-admit to-be-moved in-a-circle the and heaven we-see
 κύκλῳ στρεφόμενον, καὶ τῷ λόγῳ δὲ διωρίσαμεν ὅτι
in-a-circle turning and by-the argument and we-determined that
 ἐστὶ τινος ἢ κύκλῳ κίνησις. ἔτι ἀπὸ πεπερασμένου
it-is of-something the in-a-circle motion further from a-limited
 χρόνου ἐὰν ἀφέλῃς πεπερασμένον, ἀνάγκη καὶ τὸν
time if you-take-away a-limited necessary also the
 λοιπὸν εἶναι πεπερασμένον καὶ ἔχειν ἀρχήν. εἰ δ' ὁ
remaining to-be limited and to-have a-beginning if and the
 χρόνος ὁ τῆς βαδίσεως ἔχει ἀρχήν, ἔστιν ἀρχὴ καὶ
time the of-the walking has a-beginning there-is a-beginning also
 τῆς κινήσεως, ὥστε καὶ τοῦ μεγέθους ὃ βεβάδικεν.
of-the motion so-that also of-the magnitude which it-has-walked

ὁμοίως δὲ τοῦτο καὶ ἐπὶ τῶν ἄλλων. ἔστω δὴ
alike and this also upon the others let-there-be indeed
 γραμμὴ ἄπειρος, ἐφ' ἣ ΑΓΕ, ἐπὶ θάτερα, ἣ τὸ Ε·
a-line infinite upon which ACE on one-side where the E
 ἣ δ' ἐφ' ἣ τὰ ΒΒ, ἐπ' ἀμφοτέρα ἄπειρος.
the-(line) and upon which the BB on both-sides infinite
 εἰ δὴ γράψει κύκλον ἣ τὸ ΑΓΕ ἀπὸ τοῦ Γ κέντρου,
if indeed will-describe a-circle the-(line) the ACE from the C center
 τέμνουσά ποτε οἰσθήσεται κύκλῳ τὴν ΒΒ ἣ τὸ ΑΓΕ
cutting at-some-time will-be-carried in-a-circle the BB the-(line) the ACE
 πεπερασμένον χρόνον· ὁ γὰρ πᾶς χρόνος ἐν ὅσῳ κύκλῳ
a-limited time the for whole time in as-much-as in-a-circle
 ἠνέχθη ὁ οὐρανός, πεπερασμένος. καὶ ὁ ἀφηρημένος
was-carried the heaven limited also the (time)-taken-away
 ἄρα, ὃν ἣ τέμνουσα ἐφέρετο. ἔσται ἄρα τις ἀρχὴ
therefore in-which the cutting-line was-carried there-will-be therefore some beginning
 ἣ πρῶτον ἣ τὸ ΑΓΕ τὴν τὰ ΒΒ ἔτεμεν. ἀλλ'
at-which first the-(line) the ACE the-(line) the BB cut but
 ἀδύνατον. οὐκ ἄρα ἔστι κύκλῳ στραφῆναι τὸ ἄπειρον.
impossible not therefore it-is-possible in-a-circle to-be-turned the infinite
 ὥστ' οὐδὲ τὸν κόσμον, εἰ ἦν ἄπειρος. Ὅτι δὲ καὶ ἐκ
so-that neither the world if it-were infinite further and also out-of
 τῶνδε φανερόν, ὅτι τὸ ἄπειρον ἀδύνατον κινηθῆναι. ἔστω
these clear that the infinite impossible to-be-moved let-there-be
 γὰρ ἣ τὸ Α φερομένη παρὰ τὴν Β, πεπερασμένη
for the-(line) the A being-carried past the B limited
 παρὰ πεπερασμένην. ἀνάγκη δὴ ἅμα τὴν τε Α τῆς
past a-limited necessary indeed at-once the both A from-the
 Β ἀπολεύσθαι καὶ τὴν Β τῆς Α· ὅσον γὰρ ἣ ἐτέρα
B to-be-released and the B from-the A as-much for the one
 ἐπιβάλλει τῆς ἐτέρας, καὶ ἣ ἐτέρα ἐκείνης τοσοῦτον.
overlaps of-the other also the other of-that so-much

εἰ μὲν οὖν ἄμφω κινοῦντο εἰς τοῦναντίον, θᾶπτον
if indeed therefore both should-move into the-opposite faster
 ἂν ἀπολύοντο, εἰ δὲ παρὰ μένουσαν παραφέροιτο,
— they-would-be-released if and past a-remaining it-should-be-carried-past
 βραδύτερον, τῷ αὐτῷ τάχει κινουμένου τοῦ παραφερομένου.
more-slowly by-the same speed moving of-the thing-carried-past
 ἀλλ' ἐκεῖνό γε φανερόν, ὅτι ἀδύνατον τὴν ἄπειρον διελθεῖν
but that at-least clear that impossible the infinite to-traverse
 ἐν πεπερασμένῳ χρόνῳ. ἐν ἀπείρῳ ἄρα· δέδεικται γὰρ
in a-limited time in an-infinite therefore it-has-been-shown for
 τοῦτο πρότερον ἐν τοῖς περὶ κινήσεως διαφέρει δέ γε
this before in the-(discussions) about motion it-differs and at-least
 οὐθὲν ἢ τὴν πεπερασμένην φέρεσθαι παρὰ τὴν ἄπειρον
in-nothing either the limited to-be-carried past the infinite
 ἢ τὴν ἄπειρον παρ' ἐκείνην· ὅταν γὰρ ἐκείνη παρ' ἐκείνην,
or the infinite past that whenever for that past that
 καὶ ἐκείνη παρ' ἐκείνην, ὁμοίως κινουμένη καὶ ἀκίνητος· πλὴν
and-that past that alike being-moved and unmoved except
 θᾶπτον, ἐὰν κινῶνται ἀμφοτέραι, ἀπολυθήσονται. καίτοι
faster if they-move both they-will-be-released and-yet
 ἐνίοτ' οὐθὲν κωλύει τὴν κινουμένην παρ' ἡρεμοῦσαν θᾶπτον
sometimes nothing prevents the thing-moving past a-thing-resting faster
 παρελθεῖν ἢ ἀντικινουμένην, ἐάν τις ποιήσῃ τὰς μὲν
to-pass-by than a-thing-moving-against if someone should-make the-ones indeed
 ἀντικινουμένας ἀμφοτέρας φερομένας βραδέως, τὴν δὲ
moving-against both being-carried slowly the-(other) and
 παρὰ τὴν ἡρεμοῦσαν πολλῷ ἐκείνων θᾶπτον φερομένην.
past the thing-resting by-much than-those faster being-carried
 οὐδὲν οὖν πρὸς τὸν λόγον ἐμπόδιον ὅτι παρ' ἡρεμοῦσαν,
nothing therefore toward the argument a-hindrance that past a-thing-resting
 ἐπείπερ κινουμένην ἐνδέχεται τὴν Α παρὰ κινουμένην
since-indeed a-thing-moving it-admits the A past a-thing-moving

τὴν Β βραδύτερον παρελθεῖν. εἰ οὖν ἄπειρος ὁ χρόνος
the B more-slowly to-pass-by if therefore infinite the time
 ὃν ἢ πεπερασμένη ἀπολύεται κινουμένη, καὶ ἐν ᾧ ἢ
in-which the limited is-released moving also in which the
 ἄπειρος τὴν πεπερασμένην ἐκινήθη, ἀνάγκη ἄπειρον εἶναι.
infinite the limited was-moved necessary infinite to-be
 ἀδύνατον ἄρα τὸ ἄπειρον κινεῖσθαι ὅλον· ἐὰν γὰρ καὶ
impossible therefore the infinite to-be-moved as-a-whole if for even
 τοῦλάχιστον κινηθῇ, ἀνάγκη ἄπειρον γενέσθαι χρόνον. ἀλλὰ
the-least it-be-moved necessary infinite to-become a-time but
 μὴν ὃ γ' οὐρανὸς περιέρχεται καὶ στρέφεται ὅλος κύκλῳ
indeed the at-least heaven goes-round and turns whole in-a-circle
 ἐν πεπερασμένῳ χρόνῳ, ὥστε περίεισιν ἅπασαν τὴν ἐντός,
in a-limited time so-that it-goes-round all the-(line) inside
 οἷον τὴν ΑΒ πεπερασμένην. ἀδύνατον ἄρα ἄπειρον εἶναι
such-as the AB limited impossible therefore infinite to-be
 τὸ κύκλῳ. ἔτι ὥσπερ γραμμὴν ἢ πέρασ ἐστὶν ἀδύνατον
the in-a-circle further as a-line to-which a-limit there-is impossible
 εἶναι ἄπειρον, ἀλλ' εἶπερ, ἐπὶ μῆκος, καὶ ἐπίπεδον ὡσαύτως
to-be infinite but if-indeed upon a-length also a-plane likewise
 ἢ πέρασ οὐκ ἐνδέχεται· ὅταν δ' ὀρισθῇ, οὐθαμῇ, οἷον
to-which a-limit not it-admits whenever and it-be-defined in-no-way such-as
 τετράγωνον ἄπειρον ἢ κύκλον ἢ σφαῖραν, ὥσπερ οὐδὲ
a-square infinite or a-circle or a-sphere as not-even
 ποδιαίαν ἄπειρον. εἰ οὖν μήτε σφαῖρα μήτε τετράγωνον
a-foot-long infinite if therefore neither a-sphere nor a-square
 μήτε κύκλος ἐστὶν ἄπειρος, μὴ ὄντος δὲ κύκλου οὐδ' ἂν
nor a-circle is infinite not being and a-circle nor —
 ἢ κύκλῳ εἴη φορά, ὁμοίως δὲ μηδ' ἀπείρου ὄντος οὐκ
the in-a-circle would-be movement alike and not of-an-infinite being not
 ἂν εἴη ἄπειρος, εἰ μηδ' ὁ κύκλος ἄπειρός ἐστιν, οὐκ
— would-be infinite if not-even the circle infinite is not

ἂν κινοῖτο κυκλικῶς ἄπειρον σῶμα. ἔτι εἰ τὸ Γ κέντρον,
 — would-move circularly an-infinite body further if the C a-center
 ἡ δὲ τὸ AB ἄπειρος καὶ ἡ τὸ Ε πρὸς ὀρθὴν
 the-(line) and the AB infinite and the-(line) the E toward a-right-angle
 ἄπειρος καὶ ἡ τὸ ΓΔ κινουμένη, οὐδέποτ' ἀπολυθήσεται
 infinite and the-(line) the CD moving never will-be-released
 τῆς Ε, ἀλλ' αἰεὶ ἔξει ὥσπερ ἡ ΓΕ· τέμνει γὰρ ἡ τὸ Ζ.
 from-the E but always will-hold as the CE it-cuts for where the F
 οὐκ ἄρα περίεσι κύκλῳ ἡ ἄπειρος. ἔτι εἴπερ ἄπειρος
 not therefore goes-round in-a-circle the infinite further if-indeed infinite
 ὁ οὐρανός, κινεῖται δὲ κύκλῳ, ἐν πεπερασμένῳ χρόνῳ
 the heaven it-moves and in-a-circle in a-limited time
 ἄπειρον ἔσται διεληλυθώς. ἔστω γὰρ ὁ μὲν μένων
 an-infinite it-will-be having-traversed let-there-be for the indeed remaining-still
 οὐρανὸς ἄπειρος, ὁ δ' ἐν τούτῳ κινούμενος ἴσος.
 heaven infinite the-(one) and in this moving equal
 ὥστ' εἴπερ περιελήλυθε κύκλῳ ἄπειρος ὢν, ἄπειρον τὸ
 so-that if-indeed it-has-gone-round in-a-circle infinite being an-infinite the
 ἴσον αὐτῷ διελήλυθεν ἐν πεπερασμένῳ χρόνῳ. ἀλλὰ τοῦτ'
 equal to-itself it-has-traversed in a-limited time but this
 ἦν ἀδύνατον. ἔστι δὲ καὶ ἀντεστραμμένως εἰπεῖν, ὅτι
 was impossible it-is and also conversely to-say that
 εἰ πεπερασμένος ὁ χρόνος ἐν ᾧ περιστράφη, καὶ τὸ
 if limited the time in which it-was-turned-round also the
 μέγεθος ὃ διελήλυθεν ἀνάγκη εἶναι πεπερασμένον· ἴσον
 magnitude which it-has-traversed necessary to-be limited equal
 δ' αὐτῷ διελήλυθεν· πεπέρανται ἄρα καὶ αὐτός. ὅτι
 and to-itself it-has-traversed it-has-been-limited therefore also itself that
 μὲν οὖν τὸ κύκλῳ κινούμενον οὐκ ἔστιν ἀτελεύτητον
 indeed therefore the in-a-circle being-moved not is unending
 οὐδ' ἄπειρον, ἀλλ' ἔχει τέλος, φανερόν.
 nor infinite but has an-end clear

Nor can the body that moves up or down be infinite, since up and down are bounded places. Aristotle then shows that an infinite body's weight cannot be finite: take a finite part of it, and the weights and magnitudes can be set in a ratio that makes the finite weigh as much as the infinite, or more. But an infinite weight is impossible too, since a finite one would then move as far in the same time; so there is no infinite body.

Ἄλλὰ μὴν οὐδὲ τὸ ἐπὶ τὸ μέσον οὐδὲ τὸ ἀπὸ τοῦ μέσου
but indeed nor the toward the middle nor the from the middle
 φερόμενον ἄπειρον ἔσται· ἐναντία γὰρ αἱ φοραὶ ἢ ἄνω καὶ
being-carried infinite will-be contrary for the movements the upward and
 ἢ κάτω, αἱ δ' ἐναντία εἰς ἐναντίους τόπους. τῶν δ'
the downward the-(movements) and contrary into contrary places of-the and
 ἐναντίων εἰ θάτερον ὥριται, καὶ θάτερον ὠρισμένον ἔσται.
contraries if one has-been-limited also the-other limited will-be
 τὸ δὲ μέσον ὥριται· εἰ γὰρ ὅποθεν οὖν φέροιτο
the and middle has-been-limited if for from-whenever-soever it-should-be-carried
 κάτω τὸ ὑφιστάμενον, οὐκ ἐνδέχεται πορρωτέρω διελθεῖν
downward the thing-sinking-under not it-admits farther to-pass-through
 τοῦ μέσου. ὠρισμένου οὖν τοῦ μέσου καὶ τὸν ἄνω
than-the middle having-been-limited therefore the middle also the upper
 τόπον ἀνάγκη ὠρίσθαι. εἰ δ' οἱ τόποι ὠρισμένοι καὶ
place necessary to-have-been-limited if and the places bounded and
 πεπερασμένοι, καὶ τὰ σώματα ἔσται πεπερασμένα. ἔτι
limited also the bodies will-be limited further
 εἰ τὸ ἄνω καὶ κάτω ὥριται, καὶ τὸ μεταξὺ ἀνάγκη
if the above and below has-been-limited also the between necessary
 ὠρίσθαι. εἰ γὰρ μὴ ὥριται, ἄπειρος ἂν εἴη
to-have-been-limited if for not it-has-been-limited infinite — would-be
 κίνησις· τοῦτο δ' ὅτι ἀδύνατον, δέδεικται πρότερον.
a-motion this and that impossible has-been-shown before

ὥρισται ἄρα τὸ μέσον, ὥστε καὶ τὸ ἐν τούτῳ σῶμα
it-has-been-limited therefore the middle so-that also the in this body
 ἢ ὄν ἢ γενέσθαι δυνατόν. ἀλλὰ μὴν τὸ ἄνω καὶ κάτω
either being or to-come-to-be possible but indeed the upward and downward
 φερόμενον σῶμα δύναται ἐν τούτῳ γενέσθαι· πέφυκε γὰρ
being-carried body can in this to-come-to-be is-natured for
 τὸ μὲν ἀπὸ τοῦ μέσου κινεῖσθαι, τὸ δ' ἐπὶ τὸ μέσον.
the-(one) indeed from the middle to-be-moved the-(other) and toward the middle
 ἔκ τε δὴ τούτων φανερόν ὅτι οὐκ ἐνδέχεται σῶμα εἶναι
out-of both indeed these clear that not it-admits a-body to-be
 ἄπειρον, καὶ πρὸς τούτοις εἰ βάρος μὴ ἐστὶν ἄπειρον, οὐδ'
infinite and toward these if weight not is infinite nor
 ἂν τούτων τῶν σωμάτων οὐθὲν εἴη ἄπειρον· ἀνάγκη γὰρ
— of-these the bodies anything would-be infinite necessary for
 τοῦ ἀπείρου σώματος ἄπειρον εἶναι καὶ τὸ βάρος. ὁ δ'
of-the infinite body infinite to-be also the weight the and
 αὐτὸς λόγος ἐστὶ καὶ ἐπὶ τοῦ κούφου· εἰ γάρ ἐστιν ἄπειρος
same argument is also upon the light if for is infinite
 βαρύτης, ἔστι καὶ κουφότης, ἂν ἄπειρον ἢ τὸ ἐπιπολάζον.
heaviness there-is also lightness if infinite be the thing-floating-on
 δηλὸν δ' ἐκ τῶνδε. ἔστω γὰρ πεπερασμένον, καὶ
clear and out-of these let-there-be for a-limited-(weight) and
 εἰλήφθω τὸ μὲν ἄπειρον σῶμα ἐφ' ᾧ τὸ ΑΒ, τὸ δὲ
let-there-be-taken the indeed infinite body upon which the AB the and
 βάρος αὐτοῦ ἐφ' ᾧ τὸ Γ. ἀφηρήσθω οὖν ἀπὸ τοῦ
weight of-it upon which the C let-there-be-taken-away therefore from the
 ἀπείρου πεπερασμένον μέγεθος ἐφ' ᾧ τὸ ΒΔ· καὶ τὸ βάρος
infinite a-limited magnitude upon which the BD and the weight
 αὐτοῦ ἔστω ἐφ' ᾧ τὸ Ε. τὸ δὴ Ε τοῦ Γ ἑλάττον ἐσται·
of-it let-it-be upon which the E the indeed E than-the C less will-be
 τὸ γὰρ τοῦ ἐλάττονος βάρος ἑλάττον. καταμετρεῖτω δὴ
the for of-the lesser weight less let-it-measure indeed

τὸ ἔλαττον ὅποσακισοῦν, καὶ ὡς τὸ βάρος τοῦλαττον
the lesser as-many-times-as-you-please and as the weight the-lesser
 πρὸς τὸ μείζον, τὸ ΒΔ πρὸς τὸ ΒΖ γεγενήσθω·
toward the greater the BD toward the BF let-it-have-been-made
 ἐνδέχεται γὰρ ἀφελεῖν τοῦ ἀπείρου ὅποσονοῦν.
it-admits for to-take-away of-the infinite as-much-as-you-please
 εἰ τοῖνυν ἀνάλογον τὰ μεγέθη τοῖς βάρεσι, τὸ δ' ἔλαττον
if then proportional the magnitudes to-the weights the and lesser
 βάρος τοῦ ἐλάττονός ἐστι μεγέθους, καὶ τὸ μείζον ἂν εἴη
weight of-the lesser is magnitude also the greater — would-be
 τοῦ μείζονος. ἴσον ἄρα ἔσται τὸ τοῦ πεπερασμένου καὶ τὸ
of-the greater equal therefore will-be the of-the limited and the
 τοῦ ἀπείρου βάρος. ἔτι εἰ τοῦ μείζονος σώματος μείζον τὸ
of-the infinite weight further if of-the greater body greater the
 βάρος, τὸ τοῦ ΗΒ μείζον ἔσται βάρος ἢ τὸ τοῦ ΖΒ, ὥστε
weight the of-the GB greater will-be a-weight than the of-the FB so-that
 τὸ τοῦ πεπερασμένου βάρος μείζον ἢ τὸ τοῦ ἀπείρου. καὶ
the of-the limited weight greater than the of-the infinite and
 τῶν ἀνίσων δὲ μεγεθῶν ταῦτόν βάρος ἔσται· ἄνισον γὰρ
of-the unequal and magnitudes the-same weight will-be unequal for
 τῷ πεπερασμένῳ τὸ ἄπειρον. οὐθὲν δὲ διαφέρει τὰ βάρη
to-the limited the infinite in-nothing and it-differs the weights
 σύμμετρα εἶναι ἢ ἀσύμμετρα· καὶ γὰρ ἀσύμμετρων ὄντων
commensurate to-be or incommensurate and for incommensurate being
 ὁ αὐτὸς ἔσται λόγος, οἷον εἰ τὸ Ε τρίτον ὑπερβάλλει
the same will-be argument such-as if the E the-third-time exceeds
 μετροῦν τὸ Γ βάρος· τῶν γὰρ ΒΔ μεγεθῶν τριῶν ὅλων
measuring the C weight of-the for BD magnitudes three whole
 ληφθέντων μείζον ἔσται τὸ βάρος ἢ τὸ ἐφ' ᾧ Γ. ὥστε
having-been-taken greater will-be the weight than the upon which C so-that
 τὸ αὐτὸ ἔσται ἀδύνατον. ἔτι δὲ καὶ ἐγχωρεῖ σύμμετρα
the same will-be impossible further and also it-is-open commensurate

λαβεῖν· οὐδὲν γὰρ διαφέρει ἄρχεσθαι ἀπὸ τοῦ βάρους ἢ ἀπὸ
to-take nothing for it-differs to-begin from the weight or from
 τοῦ μεγέθους, οἷον ἂν ληφθῇ σύμμετρον βάρους τῷ Γ τὸ
the magnitude such-as if should-be-taken commensurate a-weight to-the C the
 ἐφ' ᾧ τὸ Ε, καὶ ἀπὸ τοῦ ἀπείρου ἀφαιρεθῇ τὸ
upon which the E and from the infinite should-be-taken-away the-(magnitude)
 ἔχον τὸ ἐφ' ᾧ τὸ Ε βάρους, οἷον τὸ ΒΔ, εἶτα ὡς τὸ βάρους
having the upon which the E weight such-as the BD then as the weight
 πρὸς τὸ βάρους, τὸ ΒΔ πρὸς ἄλλο γένηται μέγεθος, οἷον,
toward the weight the BD toward another should-come magnitude such-as
 πρὸς τὸ ΒΖ· ἐνδέχεται γὰρ ἀπείρου ὄντος τοῦ μεγέθους
toward the BF it-admits for infinite being of-the magnitude
 ὅποσονοῦν ἀφαιρεθῆναι· τούτων γὰρ ληφθέντων
as-much-as-you-please to-be-taken-away of-these for having-been-taken
 σύμμετρα ἔσται καὶ τὰ μέγεθ' καὶ τὰ βάρη ἀλλήλοις.
commensurate will-be both the magnitudes and the weights to-one-another
 οὐδὲ δὴ τὸ μέγεθος ὁμοιοβαρὲς εἶναι ἢ ἀνομοιοβαρὲς
nor indeed the magnitude uniform-in-weight to-be or non-uniform-in-weight
 οὐδὲν διοίσει πρὸς τὴν ἀπόδειξιν· ἀεὶ γὰρ ἔσται
in-anything will-differ toward the demonstration always for it-will-be
 λαβεῖν· ἰσοβαρῇ σώματα τῷ ΒΔ, ἀπὸ τοῦ ἀπείρου
to-take equal-in-weight bodies to-the BD from the infinite
 ὅποσαοῦν ἢ ἀφαιροῦντας ἢ προστιθέντας. ὥστε
as-many-as-you-please either taking-away or adding so-that
 δῆλον ἐκ τῶν εἰρημένων ὅτι οὐκ ἔσται τοῦ ἀπείρου
clear out-of the things-said that not will-be of-the infinite
 σώματος πεπερασμένον τὸ βάρους. ἅπειρον ἄρα. εἰ τοῖνυν
body limited the weight infinite therefore if then
 τοῦτ' ἀδύνατον, καὶ τὸ ἅπειρόν τι εἶναι σῶμα ἀδύνατον.
this impossible also the infinite something to-be a-body impossible
 ἀλλὰ μὴν ὅτι ἅπειρον εἶναι βάρους ἀδύνατον, ἐκ τῶνδε
but indeed that infinite to-be a-weight impossible out-of these

φανερόν. εἰ γὰρ τὸ τοσονδὶ βάρος τὴν τοσήνδε ἐν τῷδε
clear if for the so-much weight the so-much in this
 τῷ χρόνῳ κινεῖται, τὸ τοσοῦτον καὶ ἔτι ἐν ἐλάττονι,
the time is-moved the so-much(-greater) and still in less
 καὶ τὴν ἀναλογίαν ἣν τὰ βάρη ἔχει, οἱ χρόνοι ἀνάπαλιν
and the proportion which the weights have the times reversely
 ἔξουσιν, οἷον εἰ τὸ ἡμισυ βάρος ἐν τῷδε, τὸ διπλάσιον
will-have such-as if the half weight in this the double
 ἐν ἡμίσει τούτου. ἔτι τὸ πεπερασμένον βάρος ἅπασαν
in half of-this further the limited weight every
 πεπερασμένην δίεισιν ἐν τινι χρόνῳ πεπερασμένῳ. ἀνάγκη
limited-(distance) goes-through in some time limited necessary
 ἄρα ἐκ τούτου, εἴ τι ἔστιν ἄπειρον βάρος, κινεῖσθαι
therefore out-of this if something is infinite a-weight to-be-moved
 μὲν ἢ τοσονδὲ ὅσον τὸ πεπερασμένον, καὶ ἔτι μὴ
indeed in-so-far-as so-much as-much-as the limited and further not
 κινεῖσθαι δέ, ἢ ἀνάλογον μὲν δεῖ κατὰ τὰς
to-be-moved and in-so-far-as proportionally indeed it-is-needful according-to the
 ὑπεροχὰς κινεῖσθαι, ἐναντίως δὲ τὸ μείζον ἐν τῷ ἐλάττονι.
excesses to-move contrariwise and the greater in the less
 λόγος δ' οὐθείς ἐστι τοῦ ἀπείρου πρὸς τὸ πεπερασμένον,
a-ratio and none there-is of-the infinite toward the limited
 τοῦ δ' ἐλάττονος χρόνου πρὸς τὸν μείζω πεπερασμένον.
of-the and lesser time toward the greater limited
 ἀλλ' αἰεὶ ἐν ἐλάττονι. ἐλάχιστος δ' οὐκ ἔστιν. οὐδ' εἰ
but always in less a-least and not there-is nor if
 ἦν, ὅφελος ἂν ἦν. ἄλλο γὰρ ἂν τι πεπερασμένον
there-were a-use — would-be another for — some limited
 ἐλήφθη ἐν τῷ αὐτῷ λόγῳ, ἐν ᾧ τὸ ἄπειρον πρὸς
would-have-been-taken in the same ratio in which the infinite toward
 ἕτερον μείζον, ὥστ' ἐν ἴσῳ χρόνῳ τὴν ἴσην ἂν ἐκινεῖτο
another greater so-that in an-equal time the equal — would-move

τὸ ἄπειρον τῷ πεπερασμένῳ. ἀλλ' ἀδύνατον. ἀλλὰ μὴν
the infinite to-the limited but impossible but indeed
 ἀνάγκη γε, εἴπερ ἐν ὅπῃλικῳ οὖν χρόνῳ πεπερασμένῳ
necessary at-least if-indeed in whatever-size time limited
 δὲ κινεῖται τὸ ἄπειρον, καὶ ἄλλο ἐν τῷ αὐτῷ τούτῳ
and moves the infinite also another in the same this
 πεπερασμένον βάρος κινεῖσθαι τινα πεπερασμένην. ἀδύνατον
a-limited weight to-be-moved some limited-(distance) impossible
 ἄρα ἄπειρον εἶναι βάρος, ὁμοίως δὲ καὶ κουφότητα.
therefore infinite to-be a-weight likewise and also lightness
 καὶ σώματα ἃ ἄπειρον βάρος ἔχοντα καὶ κουφότητα
and bodies then infinite weight having and lightness
 ἀδύνατον. Ὅτι μὲν οὖν οὐκ ἔστιν ἄπειρον σῶμα, δῆλον
impossible that indeed therefore not there-is an-infinite body clear
 διὰ τε τῶν κατὰ μέρος θεωροῦσι τοῦτον τὸν
through both the according-to part for-those-considering this the
 τρόπον, καὶ καθόλου σκοπουμένοις μὴ μόνον κατὰ τοὺς
way and universally for-those-examining not only according-to the
 λόγους τοὺς ἐν τοῖς περὶ τὰς ἀρχὰς εἰρημένους ἡμῖν
arguments the in the about the first-principles having-been-said by-us
 (διωρίσθη γὰρ καὶ καθόλου πρότερον περὶ ἀπείρου
it-was-determined for even-there universally before about the-infinite
 πῶς ἔστι καὶ πῶς οὐκ ἔστιν) ἀλλὰ καὶ νῦν ἄλλον τρόπον.
how it-is and how not it-is but also now another way
 μετὰ δὲ ταῦτ' ἐπισκεπτέον κἂν εἰ μὴ ἄπειρον μὲν τὸ
after and these one-must-consider even if not infinite indeed the
 σῶμα τὸ πᾶν, οὐ μὴν ἀλλὰ τοσοῦτόν γε ὥστ' εἶναι
body the all not however but so-much at-least so-that to-be
 πλείους οὐρανούς· τάχα γὰρ ἂν τις τοῦτ' ἀπορήσειεν, ὅτι
more heavens perhaps for — someone this might-question that
 καθάπερ ὁ περὶ ἡμᾶς κόσμος συνέστηκεν, οὐδὲν κωλύει
just-as the about us world has-been-formed nothing prevents

καὶ ἑτέρους εἶναι πλείους μὲν ἑνός, μὴ μέντοι γε
 also others to-be more indeed than-one not however at-least
 ἀπείρους. πρῶτον δ' εἴπωμεν καθόλου περὶ τοῦ ἀπείρου.
 infinite first and let-us-speak universally about the infinite

VII · NEITHER THE WHOLE BODY NOR ITS PARTS

An infinite body would have to be uniform in its parts or non-uniform, and neither is possible. If it were non-uniform, each of its parts would have to be infinite, and their places and motions infinite too. Aristotle then proves that the infinite can neither act on nor be acted on by the finite, by taking proportional times, and adds a more logical argument that an infinite body could move neither in a circle nor in a straight line.

Ἀνάγκη δὴ σῶμα πᾶν ἥτοι ἄπειρον εἶναι ἢ πεπερασμένον,
 necessary indeed a-body every either infinite to-be or limited
 καὶ εἰ ἄπειρον, ἥτοι ἀνομοιομερὲς ἅπαν ἢ ὁμοιομερές, καὶ εἰ
 and if infinite either non-uniform-in-parts wholly or uniform-in-parts even if
 ἀνομοιομερές, ἥτοι ἐκ πεπερασμένων εἰδῶν ἢ ἐξ ἀπείρων.
 non-uniform-in-parts either out-of limited kinds or out-of infinite
 ὅτι μὲν τοίνυν οὐχ οἷόν τε ἐξ ἀπείρων, φανερόν, εἴ τις
 that indeed then not possible — out-of infinite clear if someone
 ἡμῖν ἐάσει μένειν τὰς πρώτας ὑποθέσεις· πεπερασμένων
 to-us will-allow to-stand the first premises limited
 γὰρ τῶν πρώτων κινήσεων οὓτων ἀνάγκη καὶ τὰς ἰδέας τῶν
 for the first motions being necessary also the forms of-the
 ἀπλῶν σωμάτων εἶναι πεπερασμένας. ἀπλῇ μὲν γὰρ ἡ τοῦ
 simple bodies to-be limited simple indeed for the of-the
 ἀπλοῦ σώματος κίνησις, αἱ δ' ἀπλᾷ πεπερασμέναι
 simple body motion the-(motions) and simple limited
 κινήσεις εἰσὶν· ἀνάγκη δὲ αἰεὶ κίνησιν ἔχειν σῶμα πᾶν
 motions are necessary and always motion to-have body every

φυσικόν. ἀλλὰ μὴν εἴπερ γε ἐκ πεπερασμένων ἔσται
natural but indeed if-indeed at-least out-of limited will-be
 τὸ ἄπειρον, ἀνάγκη καὶ τῶν μορίων ἕκαστον εἶναι ἄπειρον,
the infinite necessary also of-the parts each to-be infinite
 λέγω δ' οἷον τὸ ὕδωρ ἢ τὸ πῦρ. ἀλλ' ἀδύνατον· δέδεικται
I-mean and such-as the water or the fire but impossible it-has-been-shown
 γὰρ ὅτι οὔτε βάρος οὔτε κουφότης ἐστὶν ἄπειρος. ἔτι
for that neither weight nor lightness is infinite further
 ἀναγκαῖον ἀπείρους τῷ μεγέθει εἶναι καὶ τοὺς τόπους
necessary infinite in-the magnitude to-be also the places
 αὐτῶν, ὥστε καὶ τὰς κινήσεις ἀπείρους εἶναι πάντων.
of-them so-that also the motions infinite to-be of-all
 τοῦτο δ' ἀδύνατον, εἰ θήσομεν ἀληθεῖς εἶναι τὰς πρώτας
this and impossible if we-shall-posit true to-be the first
 ὑποθέσεις καὶ μήτε τὸ κάτω φερόμενον εἰς ἄπειρον
premises and neither the downward being-carried into infinity
 ἐνδέχεται φέρεσθαι μήτε τὸ ἄνω κατὰ τὸν αὐτὸν λόγον.
to-admit to-be-carried nor the upward according-to the same argument
 ἀδύνατον γὰρ γίνεσθαι ὃ μὴ ἐνδέχεται γενέσθαι,
impossible for to-be-coming-to-be which not it-admits to-come-to-be
 ὁμοίως ἐπὶ τοῦ τοιόνδε καὶ τοσόνδε καὶ τοῦ ποῦ. λέγω
alike upon the of-such-a-kind and of-such-a-size and of-the where I-mean
 δ', εἰ ἀδύνατον γενέσθαι λευκὸν ἢ πηχυαῖον ἢ ἐν Αἰγύπτῳ,
and if impossible to-come-to-be white or a-cubit-long or in Egypt
 καὶ γίνεσθαι τι τούτων ἀδύνατον. ἀδύνατον ἄρα καὶ
also to-be-becoming something of-these impossible impossible therefore also
 φέρεσθαι ἐκεῖ οὐ μὴθὲν δυνατὸν ἀφικέσθαι φερόμενον. ἔτι
to-be-carried there where nothing possible to-arrive being-carried further
 εἰ καὶ διεσπασμένον ἐστίν, οὐδὲν ἥττον ἐνδέχοιτ' ἂν τὸ
if even scattered-apart it-is in-nothing less it-would-admit — the
 ἐξ ἀπάντων πῦρ ἄπειρον εἶναι. ἀλλὰ σῶμα ἦν τὸ πάντη
out-of all fire infinite to-be but a-body was the every-way

διάστασιν ἔχον· ὥστε πῶς οἶόν τε πλείω μὲν ἀνόμοια,
extension having so-that how possible — more indeed unlike
 ἕκαστον δ' αὐτῶν ἄπειρον εἶναι; πάντῃ γὰρ ἕκαστον
each and of-them infinite to-be every-way for each
 δεῖ ἄπειρον εἶναι. ἀλλὰ μὴν οὐδὲ πᾶν ὁμοιομερὲς
it-is-needful infinite to-be but indeed nor wholly uniform-in-parts
 ἐνδέχεται τὸ ἄπειρον εἶναι. πρῶτον μὲν γὰρ οὐκ ἔστιν
it-admits the infinite to-be first indeed for not there-is
 ἄλλη παρὰ ταύτας κίνησις. ἔξει οὖν μίαν τούτων.
another beside these motion it-will-have therefore one of-these
 εἰ δὲ τοῦτο, συμβήσεται ἢ βάρος ἄπειρον ἢ κουφότητα
if and this it-will-follow either weight infinite or lightness
 εἶναι ἄπειρον. ἀλλὰ μὴν οὐδ' οἶόν τε τὸ κύκλῳ σώμα
to-be infinite but indeed nor possible — the in-a-circle body
 φερόμενον ἄπειρον. ἀδύνατον γὰρ τὸ ἄπειρον φέρεσθαι
being-carried infinite impossible for the infinite to-be-carried
 κύκλῳ· οὐθὲν γὰρ διαφέρει τοῦτο λέγειν ἢ τὸ τὸν οὐρανὸν
in-a-circle nothing for it-differs this to-say or the the heaven
 φάναι ἄπειρον εἶναι, τοῦτο δὲ δέδεικται ὅτι οὐ δυνατόν.
to-declare infinite to-be this and it-has-been-shown that not possible
 ἀλλὰ μὴν οὐδ' ὅλως γε τὸ ἄπειρον ἐνδέχεται κινεῖσθαι.
but indeed nor wholly at-least the infinite it-admits to-be-moved
 ἢ γὰρ κατὰ φύσιν κινήσεται ἢ βία· καὶ εἰ βία,
either for according-to nature it-will-be-moved or by-force and if by-force
 ἔστιν αὐτῷ καὶ ἡ κατὰ φύσιν, ὥστε καὶ τόπος ἄλλος
there-is for-it also the according-to nature so-that also a-place other
 ἴδιος εἰς ὃν οἰσθήσεται. τοῦτο δ' ἀδύνατον. Ὅτι δ'
proper into which it-will-be-carried this and impossible that and
 ὅλως ἀδύνατον ἄπειρον ὑπὸ πεπερασμένου παθεῖν τι
wholly impossible an-infinite by a-limited to-suffer something
 ἢ ποιῆσαι τὸ πεπερασμένον, ἐκ τῶνδε φανερόν. ἔστω
or to-act-on the limited out-of these clear let-there-be

γὰρ ἄπειρον ἐφ' οὗ A, πεπερασμένον ἐφ' οὗ B, χρόνος
for infinite upon which A limited upon which B a-time
 ἐν ᾧ ἐκίνησέ τι ἢ ἐκινήθη Γ. εἰ δὴ ὑπὸ τοῦ B
in which it-moved something or was-moved C if indeed by the B
 τὸ A ἐθερμάνθη ἢ ὥσθη ἢ ἄλλο τι ἔπαθεν ἢ καὶ
the A was-beated or was-pushed or other something suffered or also
 ὅτιοῦν ἐκινήθη ἐν τῷ χρόνῳ ἐφ' οὗ Γ, ἔστω τὸ Δ
anything-whatever was-moved in the time upon which C let-there-be the D
 τοῦ B ἔλαττον, καὶ τὸ ἔλαττον ἐν τῷ ἴσῳ χρόνῳ ἔλαττον
than-the B less and the less in the equal time less
 κινεῖται· ἔστω δὲ τὸ ἐφ' ᾧ E ὑπὸ τοῦ Δ ἡλλοιωμένον.
let-it-move let-there-be and the upon which E by the D having-been-altered
 ὁ δὴ ἐστὶ τὸ Δ πρὸς τὸ B, τὸ E ἔσται πρὸς
which indeed is the D toward the B the E will-be toward
 πεπερασμένον τι. ἔστω δὴ τὸ μὲν ἴσον ἐν ἴσῳ
a-limited something let-it-be indeed the indeed equal in an-equal
 χρόνῳ ἴσον ἀλλοιοῦν, τὸ δ' ἔλαττον ἐν τῷ ἴσῳ ἔλαττον,
time an-equal to-alter the and less in the equal less
 τὸ δὲ μείζον μείζον, τοσοῦτον δὲ ὅσον ἀνάλογον ἔσται
the and greater greater so-much and as-much-as proportional it-will-be
 ὅπερ τὸ μείζον πρὸς τὸ ἔλαττον. οὐκ ἄρα τὸ ἄπειρον
which-very the greater toward the less not therefore the infinite
 ὑπ' οὐδενὸς πεπερασμένου κινήσεται ἐν οὐθενὶ χρόνῳ·
by any limited will-be-moved in any time
 ἔλαττον γὰρ ἄλλο ἐν τῷ ἴσῳ ὑπὸ ἐλάττονος κινήσεται,
less for another in the equal by a-less will-be-moved
 πρὸς ὃ τὸ ἀνάλογον πεπερασμένον ἔσται· τὸ γὰρ ἄπειρον
toward which the proportional limited will-be the for infinite
 πρὸς τὸ πεπερασμένον ἐν οὐθενὶ λόγῳ ἐστίν. ἀλλὰ μὴν
toward the limited in no ratio is but indeed
 οὐδὲ τὸ ἄπειρον ἐν οὐθενὶ χρόνῳ κινήσει τὸ πεπερασμένον.
nor the infinite in any time will-move the limited

ἔστω γὰρ ἐφ' ᾧ τὸ Α ἄπειρον, καὶ τὸ Β πεπερασμένον,
let-there-be for upon which the A infinite and the B limited
 χρόνος ἐν ᾧ τὸ Γ. οὐκοῦν τὸ Δ ἐν τῷ Γ ἔλαττον τοῦ
a-time in which the C therefore the D in the C less than-the
 Β κινήσει· ἔστω τὸ Ζ. ὃ δὴ ἐστὶ τὸ ΒΖ ὅλον πρὸς
B will-move let-there-be the F which indeed is the BF whole toward
 τὸ Ζ, τὸ Ε ἔχον τὸν λόγον τοῦτον ἔστω πρὸς τὸ Δ.
the F the E having the ratio this let-it-be toward the D
 κινήσει ἄρα τὸ Ε τὸ ΒΖ ἐν τῷ Γ. τὸ πεπερασμένον
it-will-move therefore the E the BF in the C the limited
 τοῖνυν καὶ τὸ ἄπειρον ἐν ἴσῳ χρόνῳ ἀλλοιώσει. ἀλλ'
then also the infinite in an-equal time will-alter but
 ἀδύνατον· ἐν ἐλάττωι γὰρ τὸ μείζον ὑπέκειτο. ἀλλ' αἰεὶ ὁ
impossible in a-less for the greater was-assumed but always the
 ληφθεὶς χρόνος ταὐτὸ ποιήσει, ὥστ' οὐκ ἔσται χρόνος
having-been-taken time the-same will-do so-that not will-be a-time
 οὐτεὶς ἐν ᾧ κινήσει. ἀλλὰ μὴν ἐν ἀπείρῳ γε οὐκ
any in which it-will-move but indeed in an-infinite at-least not
 ἐστὶ κινήσαι οὐδὲ κινήθηναι· πέρας γὰρ οὐκ ἔχει, ἡ δὲ
it-is to-move nor to-be-moved a-limit for not it-has the and
 ποίησις καὶ τὸ πάθος ἔχει. οὐδ' ἄπειρον δὴ ὑπ' ἀπείρου
doing and the affection has nor an-infinite indeed by an-infinite
 ἐνδέχεται οὐθὲν παθεῖν. ἔστω γὰρ τὸ ἄπειρον καὶ τὸ Β,
it-admits anything to-suffer let-there-be for the infinite and the B
 χρόνος δ' ἐν ᾧ ἔπαθε τὸ Β ὑπὸ τοῦ Α, ἐφ' ᾧ ΓΔ.
a-time and in which suffered the B by the A upon which CD
 τὸ δὴ ἐφ' ᾧ τὸ Ε τοῦ ἀπείρου μέρος, ἐπεὶ ὅλον
the indeed upon which the E of-the infinite a-part since the-whole
 πέπονθε τὸ Β, οὐκ ἐν ἴσῳ χρόνῳ τὸ αὐτό· ὑποκείσθω
has-suffered the B not in an-equal time the same let-it-be-assumed
 γὰρ ἐν ἐλάττωι κινεῖσθαι τὸ ἔλαττον χρόνῳ. ἔστω τὸ
for in a-less to-be-moved the less in-time let-there-be the

Ε κεκινημένον ὑπὸ τοῦ Α ἐν τῷ Δ. ὃ δὴ τὸ Δ πρὸς
E having-been-moved by the A in the D which indeed the D toward
 τὸ ΓΔ, τὸ Ε ἐστὶ πρὸς τι τοῦ Β πεπερασμένον.
the CD the E is toward something of-the B limited
 τοὔτο τοίνυν ἀνάγκη ὑπὸ τοῦ Α κινηθῆναι ἐν τῷ ΓΔ
this then necessary by the A to-be-moved in the CD
 χρόνῳ· ὑπὸ γὰρ τοῦ αὐτοῦ ὑποκείσθω ἐν τῷ πλείονι καὶ
time by for the same let-it-be-assumed in the greater and
 ἐλάττωι χρόνῳ τὸ μείζον καὶ τὸ ἔλαττον πάσχειν, ὅσα
less time the greater and the less to-suffer as-many-as
 ἀνάλογον χρόνῳ διήρηται. ἐν οὐδενὶ ἄρα χρόνῳ δυνατόν
proportionally in-time have-been-divided in no therefore time possible
 πεπερασμένῳ ἄπειρον ὑπ' ἀπείρου κινηθῆναι ἐν ἀπείρῳ
limited an-infinite by an-infinite to-be-moved in an-infinite
 ἄρα. ἀλλ' ὁ μὲν ἄπειρος χρόνος οὐκ ἔχει τέλος, τὸ δὲ
therefore but the indeed infinite time not has an-end the and
 κεκινημένον ἔχει. εἰ τοίνυν πᾶν σῶμα αἰσθητὸν ἔχει δύναμιν
thing-moved has if then every body perceptible has a-power
 ποιητικὴν ἢ παθητικὴν ἢ ἄμφω, ἀδύνατον σῶμα ἄπειρον
active or passive or both impossible a-body infinite
 αἰσθητὸν εἶναι. ἀλλὰ μὴν καὶ ὅσα γε σώματα ἐν
perceptible to-be but indeed also as-many-as at-least bodies in
 τόπῳ, πάντα αἰσθητά. οὐκ ἔστιν ἄρα σῶμα ἄπειρον ἔξω
a-place all perceptible not there-is therefore a-body infinite outside
 τοῦ οὐρανοῦ οὐθέν. ἀλλὰ μὴν οὐδὲ μέχρι τινός. οὐθέν
of-the heaven any but indeed nor as-far-as some-point no
 ἄρα ὅλως σῶμα ἔξω τοῦ οὐρανοῦ. εἰ μὲν γὰρ νοητόν,
therefore at-all a-body outside of-the heaven if indeed for intelligible
 ἔσται ἐν τόπῳ· τὸ γὰρ ἔξω καὶ ἔσω τόπον σημαίνει.
it-will-be in a-place the for outside and inside a-place signifies
 ὥστ' ἔσται αἰσθητόν. αἰσθητὸν δ' οὐθέν μὴ ἐν τόπῳ.
so-that it-will-be perceptible perceptible and nothing not in a-place

Λογικώτερον δ' ἔστιν ἐπιχειρεῖν καὶ ὧδε, οὔτε γὰρ κύκλω
more-logically and it-is to-argue also thus neither for in-a-circle
 οἶόν τε κινεῖσθαι τὸ ἄπειρον ὁμοιομερὲς ὄν· μέσον μὲν
possible — to-be-moved the infinite uniform-in-parts being a-middle indeed
 γὰρ τοῦ ἀπείρου οὐκ ἔστι, τὸ δὲ κύκλω περὶ τὸ μέσον
for of-the infinite not there-is the and in-a-circle about the middle
 κινεῖται. ἀλλὰ μὴν οὐδ' ἐπ' εὐθείας οἶόν τε φέρεσθαι
is-moved but indeed nor upon a-straight-(line) possible — to-be-carried
 τὸ ἄπειρον· δεήσει γὰρ ἕτερον εἶναι τοσοῦτον τόπον
the infinite it-will-be-needful for another to-be so-great a-place
 ἄπειρον εἰς ὃν οἰσθήσεται κατὰ φύσιν, καὶ ἄλλον
infinite into which it-will-be-carried according-to nature and another
 τοσοῦτον εἰς ὃν παρὰ φύσιν. ἔτι εἴτε φύσει ἔχει κίνησιν
so-great into which against nature further whether by-nature it-has a-motion
 τοῦ εἰς εὐθὺ εἴτε βία κινεῖται, ἀμφοτέρως δεήσει
of-the into straight or by-force it-is-moved in-both-ways it-will-be-needful
 ἄπειρον εἶναι τὴν κινουσαν ἰσχύ· ἢ τε γὰρ ἄπειρος
infinite to-be the moving strength the both for infinite
 ἀπείρου καὶ τοῦ ἀπείρου ἄπειρος ἢ ἰσχύς· ὥστ' ἔσται καὶ
of-an-infinite also of-the infinite infinite the strength so-that it-will-be also
 τὸ κινουν ἄπειρον (λόγος δ' ἐν τοῖς περὶ κινήσεως ὅτι
the moving-thing infinite an-account and in the about motion that
 οὐθὲν ἔχει ἄπειρον δύναμιν τῶν πεπερασμένων, οὐδὲ τῶν
nothing has infinite power of-the limited nor of-the
 ἀπείρων πεπερασμένην). εἰ οὖν τὸ κατὰ φύσιν καὶ
infinite limited if therefore the according-to nature and
 παρὰ φύσιν ἐνδέχεται κινήθηναι, ἔσται δύο ἄπειρα,
against nature it-admits to-be-moved there-will-be two infinite-(things)
 τό τε κινουν οὕτω καὶ τὸ κινούμενον.
the both moving thus and the thing-moved

ἔτι τὸ κινοῦν τὸ ἄπειρον τί ἐστίν; εἰ μὲν γὰρ αὐτὸ
further the moving the infinite what is-it if indeed for it
 ἑαυτό, ἔμψυχον ἔσται. τοῦτο δὲ πῶς δυνατόν ἄπειρον εἶναι
itself ensouled it-will-be this and how possible infinite to-be
 ζῶον; εἰ δ' ἄλλο τι τὸ κινοῦν, δύο ἔσται ἄπειρα, τό
an-animal if and other something the moving two will-be infinite-(things) the
 τε κινοῦν καὶ τὸ κινούμενον, διαφέροντα τὴν μορφήν καὶ
both moving and the thing-moved differing the shape and
 τὴν δύναμιν. εἰ δὲ μὴ συνεχὲς τὸ πᾶν, ἀλλ' ὥσπερ λέγει
the power if and not continuous the all but as says
 Δημόκριτος καὶ Λεύκιππος, διωρισμένα τῷ κενῷ, μίαν
Democritus and Leucippus having-been-separated by-the void one
 ἀναγκαῖον εἶναι πάντων τὴν κίνησιν. διώριται μὲν
necessary to-be of-all the motion it-has-been-separated indeed
 γὰρ τοῖς σχήμασιν· τὴν δὲ φύσιν εἶναί φασιν αὐτῶν μίαν,
for by-the shapes the and nature to-be they-say of-them one
 ὥσπερ ἂν εἰ χρυσὸς ἕκαστον εἴη κεχωρισμένος. τούτων
as — if gold each should-be having-been-separated of-these
 δέ, καθάπερ λέγομεν, ἀναγκαῖον εἶναι τὴν αὐτὴν κίνησιν·
and just-as we-say necessary to-be the same motion
 ὅπου γὰρ μία βῶλος, καὶ ἡ σύμπασα γῆ φέρεται, καὶ τό
where for one clod also the whole earth is-carried and the
 τε πᾶν πῦρ καὶ σπινθὴρ εἰς τὸν αὐτὸν τόπον. ὥστ' οὔτε
both all fire and a-spark into the same place so-that neither
 κοῦφον ἀπλῶς οὐθὲν ἔσται τῶν σωμάτων, εἰ πάντ' ἔχει
light simply anything will-be of-the bodies if all-(things) have
 βάρος· εἰ δὲ κουφότητα, βαρὺ οὐδέν. ἔτι εἰ βάρος ἔχει ἢ
weight if and lightness heavy nothing further if weight it-has or
 κουφότητα, ἔσται ἢ ἔσχατόν τι τοῦ παντός ἢ μέσον.
lightness there-will-be either an-extremity some of-the all or a-middle

τοῦτο δ' ἀδύνατον ἀπείρου γ' ὄντος. ὅλως δ', οὐ μή
this and impossible infinite at-least being wholly and of-which not
 ἐστὶ μέσον μηδ' ἔσχατον, μηδὲ τὸ μὲν ἄνω τὸ δὲ κάτω,
there-is a-middle nor an-extremity nor the indeed above the and below
 τόπος οὐθεὶς ἔσται τοῖς σώμασι τῆς φορᾶς. τούτου δὲ μή
a-place none will-be for-the bodies of-the movement of-this and not
 ὄντος κίνησις οὐκ ἔσται· ἀνάγκη γὰρ κινεῖσθαι ἢτοι κατὰ
being a-motion not will-be necessary for to-be-moved either according-to
 φύσιν ἢ παρὰ φύσιν, ταῦτα δ' ὥρισται τοῖς τόποις τοῖς
nature or against nature these and have-been-defined by-the places the
 οἰκείοις καὶ τοῖς ἀλλοτρίοις. ἔτι οὐ παρὰ φύσιν τι
proper and the alien further where against nature something
 μένει ἢ φέρεται, ἀνάγκη τινὸς ἄλλου εἶναι τοῦτον τὸν
remains or is-carried necessary of-something other to-be this the
 τόπον κατὰ φύσιν (τοῦτο δὲ πιστὸν ἐκ τῆς ἐπαγωγῆς),
place according-to nature this and trustworthy out-of the induction
 ἀνάγκη δὴ μή πάντα ἢ βάρος ἔχειν ἢ κουφότητα,
necessary indeed not all-(things) either weight to-have or lightness
 ἀλλὰ τὰ μὲν τὰ δ' οὐ. ὅτι μὲν τοίνυν οὐκ ἔστι
but the-(ones) indeed the-(others) and not that indeed then not is
 τὸ σῶμα τοῦ παντὸς ἄπειρον, ἐκ τούτων φανερόν.
the body of-the all infinite out-of these clear

VIII • THERE CANNOT BE MORE THAN ONE HEAVEN

If there were other worlds, they would be made of the same bodies with the same powers, so earth there would move toward this middle and fire toward this extremity, which is absurd. The middle and the extremity must therefore be one, and so must the heaven. Aristotle then argues from the three bodily elements that there are three places, and offers earth's increasing speed as it nears the middle as proof that it is not carried to infinity.

Διότι δ' οὐδὲ πλείους οἶόν τ' οὐρανούς εἶναι, λέγωμεν·
why and nor more possible — heavens to-be let-us-say
 τοῦτο γὰρ ἔφαμεν ἐπισκεπτέον, εἴ τις μὴ νομίζει καθόλου
this for we-said one-must-consider if someone not thinks universally
 δεδεῖχθαι περὶ τῶν σωμάτων ὅτι ἀδύνατον ἐκτὸς εἶναι
to-have-been-shown about the bodies that impossible outside to-be
 τοῦ κόσμου τοῦδε ὅτιοῦν αὐτῶν, ἀλλὰ μόνον ἐπὶ τῶν
of-the world this any-whatever of-them but only upon the
 ἀορίστως κειμένων εἰρησθαι τὸν λόγον. ἅπαντα γὰρ
indeterminately lying to-have-been-said the argument everything for
 καὶ μένει καὶ κινεῖται βία καὶ κατὰ φύσιν, καὶ κατὰ
both remains and is-moved by-force and according-to nature and according-to
 φύσιν μὲν, ἐν ᾧ μένει μὴ βία, καὶ φέρεται, καὶ εἰς ὃν
nature indeed in which it-remains not by-force also is-carried and into which
 φέρεται, καὶ μένει, ἐν ᾧ δὲ βία, καὶ φέρεται βία, καὶ
it-is-carried also it-remains in which and by-force also it-is-carried by-force and
 εἰς ὃν βία φέρεται, βία καὶ μένει. ἔτι εἰ βία ἤδε
into which by-force it-is-carried by-force also it-remains further if by-force this
 ἡ φορά, ἡ ἐναντία κατὰ φύσιν. ἐπὶ δὴ τὸ μέσον
the movement the contrary according-to nature toward indeed the middle
 τὸ ἐνταῦθα εἰ βία οἰσθήσεται ἡ γῆ ἐκεῖθεν, ἐντεῦθεν
the here if by-force will-be-carried the earth from-there from-here
 οἰσθήσεται ἐκεῖ κατὰ φύσιν· καὶ εἰ μένει ἐνταῦθα ἡ
it-will-be-carried there according-to nature and if it-remains here the-(earth)
 ἐκεῖθεν μὴ βία, καὶ οἰσθήσεται κατὰ φύσιν δεῦρο. μία δ'
from-there not by-force also it-will-be-carried according-to nature hither one and
 ἡ κατὰ φύσιν. ἔτι ἀνάγκη πάντας τοὺς κόσμους ἐκ
the according-to nature further necessary all the worlds out-of
 τῶν αὐτῶν εἶναι σωμάτων, ὁμοίους γ' ὄντας τὴν φύσιν.
the same to-be bodies alike at-least being the nature

ἀλλὰ μὴν καὶ τῶν σωμάτων ἕκαστον ἀναγκαῖον τὴν αὐτὴν
but indeed also of-the bodies each necessary the same
 ἔχειν δύναμιν, οἷον λέγω πῦρ καὶ γῆν καὶ τὰ μεταξὺ
to-have power such-as I-mean fire and earth and the between
 τούτων· εἰ γὰρ ὁμώνυμα ταῦτα καὶ μὴ κατὰ τὴν αὐτὴν
these if for homonymous these and not according-to the same
 ἰδέαν λέγονται τὰ κεῖ τοῖς παρ' ἡμῖν, καὶ τὸ πᾶν
form are-called the-there-(bodies) to-the with us also the all
 ὁμωνύμως ἂν λέγοιτο κόσμος. δῆλον τοίνυν ὅτι τὸ μὲν
homonymously — would-be-called a-world clear then that the-(one) indeed
 ἀπὸ τοῦ μέσου φέρεσθαι πέφυκε, τὸ δ' ἐπὶ τὸ μέσον
from the middle to-be-carried is-natured the-(other) and toward the middle
 αὐτῶν, εἴπερ πᾶν ὁμοειδὲς τὸ πῦρ τῷ πυρὶ καὶ τῶν ἄλλων
of-them if-indeed all one-in-kind the fire to-the fire and of-the others
 ἕκαστον, ὥσπερ καὶ τὰ ἐν τούτῳ μόρια τοῦ πυρός. ὅτι δ'
each as also the in this parts of-the fire that and
 ἀνάγκη οὕτως ἔχειν, ἐκ τῶν περὶ τὰς κινήσεις ὑποθέσεων
necessary thus to-be out-of the about the motions premises
 φανερόν· αἱ τε γὰρ κινήσεις πεπερασμένα, ἕκαστόν τε
clear the both for motions limited each and
 τῶν στοιχείων λέγεται καθ' ἑκάστην τῶν κινήσεων.
of-the elements is-called according-to each of-the motions
 ὥστ' εἴπερ καὶ αἱ κινήσεις αἱ αὐταί, καὶ τὰ στοιχεῖα
so-that if-indeed also the motions the same also the elements
 ἀνάγκη εἶναι πανταχοῦ ταῦτά. πέφυκεν ἄρα φέρεσθαι καὶ
necessary to-be everywhere the-same is-natured therefore to-be-carried also
 ἐπὶ τὸδε τὸ μέσον τὰ ἐν ἄλλῳ κόσμῳ τῆς γῆς μόρια, καὶ
toward this the middle the in another world of-the earth parts and
 πρὸς τὸδε τὸ ἔσχατον τὸ ἐκεῖ πῦρ· ἀλλ' ἀδύνατον· τούτου
toward this the extremity the there fire but impossible of-this
 γὰρ συμβαίνοντος ἀνάγκη φέρεσθαι ἄνω μὲν τὴν γῆν ἐν
for happening necessary to-be-carried upward indeed the earth in

τῷ οἰκείῳ κόσμῳ, τὸ δὲ πῦρ ἐπὶ τὸ μέσον, ὁμοίως δὲ καὶ
the proper world the and fire toward the middle alike and also
 τὴν ἐντεῦθεν γῆν ἀπὸ τοῦ μέσου φέρεσθαι κατὰ φύσιν,
the from-here earth from the middle to-be-carried according-to nature
 πρὸς τὸ ἐκεῖ φερομένην μέσον διὰ τὸ τοὺς κόσμους
toward the there being-carried middle because-of the the worlds
 οὕτω κείσθαι πρὸς ἀλλήλους. ἢ γὰρ οὐ θετέον τὴν
thus to-lie toward one-another either for not one-must-posit the
 αὐτὴν εἶναι φύσιν τῶν ἀπλῶν σωμάτων ἐν τοῖς πλείοσιν
same to-be nature of-the simple bodies in the several
 οὐρανοῖς, ἢ λέγοντας οὕτως τὸ μέσον ἐν ποιεῖν ἀνάγκη
heavens or for-those-saying thus the middle one to-make necessary
 καὶ τὸ ἔσχατον· τούτου δ' ὄντος ἀδύνατον εἶναι κόσμους
also the extremity of-this and being impossible to-be worlds
 πλείους ἑνός. τὸ δ' ἀξιοῦν ἄλλην εἶναι φύσιν τῶν ἀπλῶν
more than-one the and to-claim another to-be nature of-the simple
 σωμάτων, ἂν ἀποσχῶσιν ἔλαττον ἢ πλεῖον τῶν οἰκείων
bodies if they-stand-off less or more of-the proper
 τόπων, ἄλογον· τί γὰρ διαφέρει τοσονδὶ φάναι μῆκος
places unreasonable what for it-differs so-much to-say a-length
 ἀπέχειν ἢ τοσονδί; διοίσει γὰρ κατὰ λόγον, ὅσῳ
to-be-distant or so-much it-will-differ for according-to ratio by-as-much
 πλεῖον μᾶλλον, τὸ δ' εἶδος τὸ αὐτό. ἀλλὰ μὴν ἀνάγκη γ'
more rather the and form the same but indeed necessary at-least
 εἶναί τινα κίνησιν αὐτῶν· ὅτι μὲν γὰρ κινεῖνται, φανερόν.
to-be some motion of-them that indeed for they-move clear
 πότερον οὖν βία πάσας ἐροῦμεν κινεῖσθαι καὶ τὰς
whether therefore by-force all we-shall-say to-be-moved also the
 ἐναντίας; ἀλλ' ὁ μὴ πέφυκεν ὅλως κινεῖσθαι, ἀδύνατον
contrary but which not is-natured at-all to-be-moved impossible
 τοῦτο κινεῖσθαι βία. εἰ τοίνυν ἐστὶ τις κίνησις αὐτῶν
this to-be-moved by-force if then there-is some motion of-them

κατὰ φύσιν, ἀνάγκη τῶν ὁμοειδῶν καὶ τῶν καθ'
according-to nature necessary of-the same-in-kind also of-the according-to
ἕκαστον πρὸς ἓνα ἀριθμῷ τόπον ὑπάρχειν τὴν κίνησιν,
each toward one in-number a-place to-belong the motion
οἷον πρὸς τόδε τι μέσον καὶ πρὸς τόδε τι ἔσχατον.
such-as toward this some middle and toward this some extremity
εἰ δὲ πρὸς εἶδει ταῦτά, πλείω δέ, διότι καὶ τὰ καθ'
if and toward in-form the-same more and because also the according-to
ἕκαστα πλείω μὲν, εἶδει δ' ἕκαστον ἀδιάφορον, οὐ τῷ
each more indeed in-form and each indifferent not to-the-one
μὲν τῷ δ' οὐ τοιοῦτον ἔσται τῶν μορίων, ἀλλ'
indeed to-the-other and not such will-be of-the parts but
ὁμοίως πᾶσιν· ὁμοίως γὰρ ἅπαντα κατ' εἶδος ἀδιάφορα
alike for-all alike for all according-to form indifferent
ἀλλήλων, ἀριθμῷ δ' ἕτερον ὅτιοῦν ὅπουοῦν. λέγω
from-one-another in-number and other any-whatever from-any-whatever I-mean
δὲ τοῦτο, ὅτι εἰ τὰ ἐνταῦθα μόρια πρὸς ἀλλήλα καὶ τὰ
and this that if the here parts toward one-another also the
ἐν ἑτέρῳ κόσμῳ ὁμοίως ἔχει, καὶ τὸ ληφθὲν ἐντεῦθεν
in another world alike are-related also the thing-taken from-here
οὐδὲν διαφερόντως πρὸς τῶν ἐν ἄλλῳ τινὶ κόσμῳ μορίων
in-nothing differently toward the in another some world parts
καὶ πρὸς τῶν ἐν τῷ αὐτῷ, ἀλλ' ὡσαύτως· διαφέρουσι
also toward the-(parts) in the same but likewise they-differ
γὰρ οὐθὲν εἶδει ἀλλήλων. ὥστ' ἀναγκαῖον ἢ κινεῖν
for in-nothing in-form from-one-another so-that necessary either to-unsettle
ταύτας τὰς ὑποθέσεις, ἢ τὸ μέσον ἐν εἶναι καὶ τὸ ἔσχατον.
these the premises or the middle one to-be and the extremity
τούτου δ' ὄντος ἀνάγκη καὶ τὸν οὐρανὸν εἶνα μόνον εἶναι
of-this and being necessary also the heaven one only to-be
καὶ μὴ πλείους, τοῖς αὐτοῖς τεκμηρίοις τούτοις καὶ ταῖς
and not more by-the same proofs these and by-the

αὐταῖς ἀνάγκαις. ὅτι δ' ἔστι τι οὗ πέφυκεν ἡ
same necessities that and there-is something whither is-natured the
 γῇ φέρεσθαι καὶ τὸ πῦρ, δῆλον καὶ ἐκ τῶν ἄλλων.
earth to-be-carried and the fire clear also out-of the others
 ὅλως γὰρ τὸ κινούμενον ἔκ τινος εἰς τι μεταβάλλει,
generally for the thing-moved out-of something into something changes
 καὶ ταῦτα ἐξ οὗ καὶ εἰς ὃ εἶδει διαφέρει. πᾶσα δὲ
and these out-of which and into which in-form differ every and
 πεπερασμένη μεταβολή, οἷον τὸ ὑγιαζόμενον ἐκ νόσου εἰς
limited change such-as the thing-being-healed out-of disease into
 ὑγίειαν καὶ τὸ αὐξανόμενον ἐκ μικρότητος εἰς μέγεθος. καὶ
health and the thing-increasing out-of smallness into magnitude and
 τὸ φερόμενον ἄρα· καὶ γὰρ τοῦτο γίνεταιί ποθέν ποῖ.
the thing-carried then and for this comes-about from-somewhere to-somewhere
 δεῖ ἄρα εἶδει διαφέρειν ἐξ οὗ καὶ εἰς ὃ πέφυκε
it-is-needful then in-form to-differ out-of which and into which is-natured
 φέρεσθαι, ὥσπερ τὸ ὑγιαζόμενον, οὐχ οὗ ἔτυχεν, οὐδ' οὗ
to-be-carried as the thing-being-healed not where it-chanced nor where
 βούλεται ὁ κινῶν. καὶ τὸ πῦρ ἄρα καὶ ἡ γῇ οὐκ εἰς ἄπειρον
wishes the mover and the fire then and the earth not into infinity
 φέρονται, ἀλλ' εἰς ἀντικείμενα. ἀντίκειται δὲ κατὰ τόπον
are-carried but into opposites is-opposed and according-to place
 τὸ ἄνω τῷ κάτω, ὥστε ταῦτα ἔσται πέρατα τῆς φορᾶς, ἐπεὶ
the above to-the below so-that these will-be limits of-the movement since
 καὶ ἡ κύκλῳ ἔχει πως ἀντικείμενα τὰ κατὰ διάμετρον·
also the in-a-circle has somehow opposites the-(points) along a-diameter
 τῇ δ' ὅλη οὐκ ἔστιν ἐναντίον οὐδέν. ὥστε καὶ τούτοις
to-the and whole not there-is contrary anything so-that also for-these
 τρόπον τινὰ ἡ κίνησις εἰς τὰ ἀντικείμενα καὶ πεπερασμένα.
a-way a-certain the motion into the opposites and limited
 ἀνάγκη ἄρα εἶναι τι τέλος καὶ μὴ εἰς ἄπειρον φέρεσθαι.
necessary then to-be some end and not into infinity to-be-carried

τεκμήριον δὲ τοῦ μὴ εἰς ἄπειρον φέρεσθαι καὶ τὸ τὴν γῆν
a-proof and of-the not into infinity to-be-carried also the the earth
 μέν, ὅσῳ ἂν ἐγγυτέρω ἢ τοῦ μέσου, θᾶττον φέρεσθαι,
indeed by-as-much — nearer it-be of-the middle faster to-be-carried
 τὸ δὲ πῦρ, ὅσῳ ἂν τοῦ ἄνω. εἰ δ' ἄπειρον ἦν, ἄπειρος
the and fire by-as-much — of-the above if and infinite it-were infinite
 ἂν ἦν καὶ ἡ ταχυτής, εἰ δ' ἡ ταχυτής, καὶ τὸ βάρος
— would-be also the speed if and the speed also the weight
 καὶ ἡ κουφότης· ὥς γὰρ τὸ κατωτέρω ταχυτήτι ἐτέρου
and the lightness as for the lower in-speed than-another
 τῷ βάρει ἂν ἦν ταχύ, οὕτως εἰ ἄπειρος ἦν ἡ τούτου
by-the weight — would-be swift thus if infinite were the of-this
 ἐπίδοσις, καὶ ἡ τῆς ταχυτήτος ἐπίδοσις ἄπειρος ἂν ἦν.
increase also the of-the speed increase infinite — would-be
 ἀλλὰ μὴν οὐδ' ὑπ' ἄλλου φέρεται αὐτῶν τὸ μὲν ἄνω
but indeed nor by another is-carried of-them the-(one) indeed upward
 τὸ δὲ κάτω· οὐδὲ βία, ὥσπερ τινὲς φασὶ τῇ
the-(other) and downward nor by-force as certain-(people) say by-the
 ἐκθλίβει. βραδύτερον γὰρ ἂν ἐκινεῖτο τὸ πλεῖον πῦρ ἄνω καὶ
squeezing-out more-slowly for — would-move the more fire upward and
 ἡ πλείων γῆ κάτω· νῦν δὲ τοῦναντίον ἀεὶ τὸ πλεῖον πῦρ
the more earth downward now and the-contrary always the more fire
 θᾶττον φέρεται καὶ πλείων γῆ εἰς τὸν αὐτῆς τόπον. οὐδὲ
faster is-carried and more earth into the of-itself place nor
 θᾶττον ἂν πρὸς τῷ τέλει ἐφέρετο, εἰ τῇ βίᾳ καὶ τῇ
faster — toward the end would-it-be-carried if by-the force and by-the
 ἐκθλίβει· πάντα γὰρ τοῦ βιαζομένου πορρωτέρω γιγνόμενα
squeezing-out all-(things) for of-the thing-forcing farther becoming
 βραδύτερον φέρεται, καὶ ὅθεν βία, ἐκεῖ φέρεται οὐ βία.
more-slowly are-carried and from-where by-force there they-are-carried not by-force

ὥστ' ἐκ τούτων θεωροῦσιν ἔστι λαβεῖν τὴν πίστιν
so-that out-of these for-those-considering it-is-possible to-take the conviction
 περὶ τῶν λεγομένων ἱκανῶς. ἔτι δὲ καὶ διὰ τῶν ἐκ
about the things-said sufficiently further and also through the out-of
 τῆς πρώτης φιλοσοφίας λόγων δειχθείη ἄν, καὶ ἐκ
the first philosophy arguments it-might-be-shown — also out-of
 τῆς κύκλῳ κινήσεως ἣν ἀναγκαῖον αἰδῖον ὁμοίως ἐνταυθά
the in-a-circle motion which necessary everlasting alike here
 τ' εἶναι καὶ ἐν τοῖς ἄλλοις κόσμοις. δῆλον δὲ καὶ ὧδε
both to-be and in the other worlds clear and also thus
 γένοιτο σκοπομένοις ὅτι ἀνάγκη εἶνα εἶναι τὸν οὐρανόν.
it-might-become to-those-examining that necessary one to-be the heaven
 τριῶν γὰρ ὄντων τῶν σωματικῶν στοιχείων, τρεῖς ἔσονται
three for being the bodily elements three will-be
 καὶ οἱ τόποι τῶν στοιχείων, εἷς μὲν ὁ τοῦ ὑφισταμένου
also the places of-the elements one indeed the of-the sinking-under
 σώματος ὁ περὶ τὸ μέσον, ἄλλος δὲ ὁ τοῦ κύκλῳ
body the about the middle another and the of-the in-a-circle
 φερομένου, ὅσπερ ἐστὶν ἔσχατος, τρίτος δ' ὁ μεταξὺ
being-carried which-very is outermost a-third and the between
 τούτων ὁ τοῦ μέσου σώματος. ἀνάγκη γὰρ ἐν τούτῳ εἶναι τὸ
these the of-the middle body necessary for in this to-be the
 ἐπιπολάζον· εἰ γὰρ μὴ ἐν τούτῳ, ἔξω ἔσται. ἀλλ' ἀδύνατον
thing-floating-on if for not in this outside it-will-be but impossible
 ἔξω τὸ μὲν γὰρ ἀβαρὲς τὸ δ' ἔχον βάρος, κατωτέρω
outside the-(one) indeed for weightless the-(other) and having weight lower
 δὲ ὁ τοῦ βάρους ἔχοντος σώματος τόπος, εἴπερ ὁ πρὸς τῷ
and the of-the weight having body place if-indeed the near the
 μέσῳ τοῦ βαρέος. ἀλλὰ μὴν οὐδὲ παρὰ φύσιν· ἄλλω γὰρ
middle of-the heavy but indeed nor against nature to-another for
 ἔσται κατὰ φύσιν, ἄλλο δ' οὐκ ἦν. ἀνάγκη ἄρα ἐν τῷ
it-will-be according-to nature another and not was necessary then in the

μεταξὺ εἶναι. τούτου δ' αὐτοῦ τίνες εἰς διαφοραί, ὕστερον
between to-be of-this and itself what are differences later
 ἐροῦμεν. περὶ μὲν οὖν τῶν σωματικῶν στοιχείων, ποιά
we-shall-say about indeed then the bodily elements what-sort
 τ' ἐστὶ καὶ πόσα, καὶ τίς ἐκάστου τόπος, ἔτι δ' ὅλως
both is and how-many and what of-each a-place further and generally
 πόσοι τὸ πλῆθος οἱ τόποι, δῆλον ἡμῖν ἐκ τῶν εἰρημένων.
how-many the multitude the places clear to-us out-of the things-said

IX · ONE HEAVEN, AND NOTHING OUTSIDE IT

The form of a thing differs from that same form in matter, and since the heaven is perceptible it is a particular, so one might expect that there could be many. But this heaven is formed out of the whole of the natural and perceptible body, and no matter is left over. Aristotle distinguishes three senses of the word heaven, and argues that outside the outermost revolution there is no body, no place, no void, and no time, but a life that continues for the whole age.

Ὅτι δ' οὐ μόνον εἷς ἐστὶν οὐρανός, ἀλλὰ καὶ ἀδύνατον
that and not only one is a-heaven but also impossible
 γενέσθαι πλείους, ἔτι δ' ὥς αἰδῖος ἄφθαρτος ὢν καὶ
to-come-to-be more further and that everlasting imperishable being and
 ἀγέννητος, λέγωμεν, πρῶτον διαπορήσαντες περὶ αὐτοῦ.
ungenerated let-us-say first having-raised-the-difficulty about it
 δόξειε γὰρ ἂν ὥδι σκοπούμενοι ἀδύνατον ἓνα καὶ
it-might-seem for — thus to-those-examining impossible one and
 μόνον εἶναι αὐτόν· ἐν ᾗ πασι γὰρ καὶ τοῖς φύσει καὶ
only to-be it in all for both the by-nature and
 τοῖς ἀπὸ τέχνης συνεστῶσι καὶ γεγενημένοις ἕτερόν ἐστιν
the from art formed and generated other is
 αὐτὴ καθ' αὐτὴν ἢ μορφὴ καὶ μεμιγμένη μετὰ τῆς ὕλης,
itself by itself the shape and mixed with the matter

οἶον τῆς σφαίρας ἕτερον τὸ εἶδος καὶ ἡ χρυσῇ καὶ ἡ
such-as of-the sphere other the form and the golden and the
χαλκῇ σφαίρα, καὶ πάλιν τοῦ κύκλου ἕτερα ἡ μορφή
bronze sphere and again of-the circle other the shape
καὶ ὁ χαλκοῦς καὶ ὁ ξύλινος κύκλος· τὸ γὰρ τί ἦν
and the bronze and the wooden circle the for what it-was
εἶναι λέγοντες σφαίρα ἢ κύκλω οὐκ ἐροῦμεν ἐν τῷ λόγῳ
to-be saying for-a-sphere or for-a-circle not we-shall-say in the account
χρυσὸν ἢ χαλκόν, ὥς οὐκ ὄντα ταῦτα τῆς οὐσίας· ἐὰν
gold or bronze as not being these of-the being if
δὲ τὴν χαλκῇ ἢ χρυσῇ, ἐροῦμεν, καὶ ἐὰν μὴ δυνώμεθα
and the bronze or golden we-shall-say even if not we-be-able
νοῆσαι μηδὲ λαβεῖν ἄλλο τι παρὰ τὸ καθ' ἕκαστον.
to-conceive nor to-take another something beside the according-to each
ἐνίοτε γὰρ οὐθὲν κωλύει τοῦτο συμβαίνειν, οἶον εἰ μόνος εἷς
sometimes for nothing prevents this to-happen such-as if alone one
ληφθείη κύκλος· οὐθὲν γὰρ ἦττον ἄλλο ἔσται τὸ κύκλω
should-be-taken a-circle none for the-less another will-be the for-a-circle
εἶναι καὶ τῷδε τῷ κύκλω, καὶ τὸ μὲν εἶδος, τὸ δ'
to-be and for-this the circle and the-(one) indeed form the-(other) and
εἶδος ἐν τῇ ὕλῃ καὶ τῶν καθ' ἕκαστον. ἐπεὶ οὖν ἐστὶν
form in the matter and of-the according-to each since therefore is
ὁ οὐρανὸς αἰσθητός, τῶν καθ' ἕκαστον ἂν εἴη·
the heaven perceptible of-the according-to each — it-would-be
τὸ γὰρ αἰσθητὸν ἅπαν ἐν τῇ ὕλῃ ὑπῆρχεν. εἰ δὲ τῶν
the for perceptible everything in the matter belonged if and of-the
καθ' ἕκαστον, ἕτερον ἂν εἴη τῷδε τῷ οὐρανῷ εἶναι
according-to each other — would-be for-this the heaven to-be
καὶ οὐρανῷ ἀπλῶς. ἕτερον ἄρα ὅδε ὁ οὐρανὸς καὶ οὐρανὸς
and for-a-heaven simply other then this the heaven and a-heaven
ἀπλῶς, καὶ τὸ μὲν ὥς εἶδος καὶ μορφή τὸ δ' ὥς
simply and the-(one) indeed as form and shape the-(other) and as

τῇ ὕλῃ μεμιγμένον. ὧν δ' ἐστὶ μορφή τις καὶ εἶδος,
with-the matter having-been-mixed of-which and there-is a-shape some and a-form
 ἥτοι ἔστιν ἢ ἐνδέχεται πλείω γενέσθαι τὰ καθ' ἕκαστα.
either there-are or it-admits more to-come-to-be the according-to each
 εἴτε γὰρ ἔστιν εἶδη, καθάπερ φασὶ τινες, ἀνάγκη τοῦτο
whether for there-are forms just-as say certain-(people) necessary this
 συμβαίνειν, εἴτε καὶ μὴ χωριστὸν μηθὲν τῶν τοιούτων,
to-happen or-whether also not separable anything of-the such-things
 οὐθὲν ἦττον· ἐπὶ πάντων γὰρ οὕτως ὁρῶμεν, ὅσων ἡ
nothing less upon all for thus we-see of-as-many-as the
 οὐσία ἐν ὕλῃ ἐστίν, πλείω καὶ ἄπειρα ὄντα τὰ ὁμοιοειδῆ.
being in matter is more and infinite being the same-in-form
 ὥστε ἥτοι εἰσὶ πλείους οἱ οὐρανοὶ ἢ ἐνδέχεται πλείους
so-that either there-are more the heavens or it-admits more
 εἶναι. ἐκ μὲν οὖν τούτων ὑπολάβοι τις ἂν καὶ εἶναι
to-be out-of indeed therefore these might-suppose someone — both to-be
 καὶ ἐνδέχεσθαι πλείους εἶναι οὐρανοῦς· σκεπτέον δὲ
and to-admit more to-be heavens one-must-consider and
 πάλιν τί τούτων λέγεται καλῶς καὶ τί οὐ καλῶς. τὸ μὲν
again what of-these is-said well and what not well the indeed
 οὖν ἕτερον εἶναι τὸν λόγον τὸν ἄνευ τῆς ὕλης καὶ τὸν
therefore other to-be the account the without the matter and the
 ἐν τῇ ὕλῃ τῆς μορφῆς καλῶς τε λέγεται, καὶ ἔστω τοῦτ'
in the matter of-the shape well both is-said and let-it-be this
 ἀληθές. ἀλλ' οὐδὲν ἦττον οὐδεμία ἀνάγκη διὰ τοῦτο
true but none the-less no necessity because-of this
 πλείους εἶναι κόσμους, οὐδ' ἐνδέχεται γενέσθαι πλείους,
more to-be worlds nor it-admits to-come-to-be more
 εἴπερ οὗτος ἐξ ἀπάσης ἐστὶ τῆς ὕλης, ὥσπερ ἔστιν. ὥδὲ
if-indeed this out-of all is the matter as it-is thus
 δὲ μᾶλλον ἴσως τὸ λεγόμενον ἔσται δῆλον. εἰ γὰρ ἔστιν
and rather perhaps the thing-said will-be clear if for is

ἡ γρυπότης καμπυλότης ἐν ῥινὶ ἢ σαρκί, καὶ ἔστιν ὕλη
the hooked-shape a-curvature in a-nose or flesh and there-is matter
 τῇ γρυπότητι ἢ σάρξ, εἰ ἐξ ἀπασῶν τῶν σαρκῶν μία
to-the hooked-shape the flesh if out-of all the flesh one
 γένοιτο σὰρξ καὶ ὑπάρξειεν ταύτῃ τὸ γρυπὸν, οὐθὲν
should-come-to-be flesh and should-belong to-this the hooked nothing
 ἂν ἄλλ' οὐτ' εἴη γρυπὸν οὐτ' ἐνδέχοιτο γενέσθαι.
— other either would-be hooked or it-would-admit to-come-to-be
 ὁμοίως δὲ καὶ εἰ τῷ ἀνθρώπῳ ἐστὶν ὕλη σάρκες καὶ
alike and also if for-the man is matter flesh and
 ὅστᾱ, εἰ ἐκ πάσης τῆς σαρκὸς καὶ πάντων τῶν ὀστέων
bones if out-of all the flesh and all the bones
 ἀνθρωπος γένοιτο ἀδυνάτων ὄντων διαλυθῆναι, οὐκ ἂν
a-man should-come-to-be impossible being to-be-dissolved not —
 ἐνδέχοιτο εἶναι ἄλλον ἀνθρωπον. ὡσαύτως δὲ καὶ ἐπὶ τῶν
it-would-admit to-be another man likewise and also upon the
 ἄλλων· ὅλως γὰρ ὅσων ἐστὶν ἡ οὐσία ἐν ὑποκειμένῃ
others generally for of-as-many-as is the being in an-underlying
 τινὶ ὕλῃ, τούτων οὐδὲν ἐνδέχεται γίγνεσθαι μὴ ὑπαρχούσης
some matter of-these nothing it-admits to-come-to-be not being-present
 ὕλης. ὁ δ' οὐρανὸς ἔστι μὲν τῶν καθ' ἕκαστα καὶ τῶν
matter the and heaven is indeed of-the according-to each and of-the
 ἐκ τῆς ὕλης· ἀλλ' εἰ μὴ ἐκ μορίου αὐτῆς συνέστηκεν
out-of the matter but if not out-of a-part of-it it-has-been-formed
 ἀλλ' ἐξ ἀπάσης, τὸ μὲν εἶναι αὐτῷ οὐρανῷ καὶ τῷδε τῷ
but out-of all the indeed to-be for-it for-a-heaven and for-this the
 οὐρανῷ ἕτερόν ἐστιν, οὐ μέντοι οὐτ' ἂν εἴη ἄλλος οὐτ'
heaven other is not however either — would-be another or
 ἂν ἐνδέχοιτο γενέσθαι πλείους διὰ τὸ πᾶσαν τὴν ὕλην
— it-would-admit to-come-to-be more because-of the all the matter
 περιελιφέναι τοῦτον. λείπεται ἄρα τοῦτο δεῖξαι, ὅτι ἐξ
to-have-encompassed this it-remains then this to-show that out-of

ἅπαντος τοῦ φυσικοῦ καὶ αἰσθητοῦ συνέστηκε σώματος.
all the natural and perceptible it-has-been-formed body
 εἰπώμεν δὲ πρῶτον τί λέγομεν εἶναι τὸν οὐρανὸν καὶ
let-us-say and first what we-mean to-be the heaven and
 ποσαχῶς, ἵνα μᾶλλον ἡμῖν δῆλον γένηται τὸ ζητούμενον.
in-how-many-ways so-that more to-us clear may-become the thing-sought
 ἓνα μὲν οὖν τρόπον οὐρανὸν λέγομεν τὴν οὐσίαν τὴν τῆς
one indeed therefore way a-heaven we-call the being the of-the
 ἐσχάτης τοῦ παντός περιφορᾶς, ἢ σῶμα φυσικὸν τὸ ἐν τῇ
outermost of-the all revolution or a-body natural the in the
 ἐσχάτῃ περιφορᾷ τοῦ παντός· εἰώθαμεν γὰρ τὸ ἔσχατον
outermost revolution of-the all we-are-accustomed for the outermost
 καὶ τὸ ἄνω μάλιστα καλεῖν οὐρανόν, ἐν ᾧ καὶ τὸ θεῖον πᾶν
and the above especially to-call heaven in which also the divine all
 ἰδρῦσθαί φαμεν, ἄλλον δ' αὖ τρόπον τὸ συνεχὲς σῶμα τῇ
to-be-seated we-say another and again way the continuous body to-the
 ἐσχάτῃ περιφορᾷ τοῦ παντός, ἐν ᾧ σελήνη καὶ ἥλιος καὶ
outermost revolution of-the all in which moon and sun and
 ἓνα τῶν ἄστρον· καὶ γὰρ ταῦτα ἐν τῷ οὐρανῷ εἶναι φαμεν.
some of-the stars also for these in the heaven to-be we-say
 ἔτι δ' ἄλλως λέγομεν οὐρανὸν τὸ περιεχόμενον σῶμα ὑπὸ
further and otherwise we-call heaven the being-enclosed body by
 τῆς ἐσχάτης περιφορᾶς· τὸ γὰρ ὅλον καὶ τὸ πᾶν εἰώθαμεν
the outermost revolution the for whole and the all we-are-accustomed
 λέγειν οὐρανόν. τριχῶς δὲ λεγομένου τοῦ οὐρανοῦ, τὸ ὅλον
to-speak-of heaven three-ways indeed being-said the heaven the whole
 τὸ ὑπὸ τῆς ἐσχάτης περιεχόμενον περιφορᾶς ἔξ ἅπαντος
the by the outermost being-enclosed revolution out-of all
 ἀνάγκη συνεστάναι τοῦ φυσικοῦ καὶ αἰσθητοῦ σώματος
necessary to-have-been-formed of-the natural and perceptible body
 διὰ τὸ μήτ' εἶναι μηδὲν ἔξω σῶμα τοῦ οὐρανοῦ μήτ'
because-of the neither to-be any outside a-body of-the heaven nor

ἐνδέχεσθαι γενέσθαι. εἰ γὰρ ἔστιν ἔξω τῆς ἐσχάτης περιφορᾶς
to-admit to-come-to-be if for there-is outside the outermost revolution
σῶμα φυσικόν, ἀνάγκη αὐτὸ ἥτοι τῶν ἀπλῶν εἶναι σωμάτων
a-body natural necessary it either of-the simple to-be bodies
ἢ τῶν συνθέτων, καὶ ἢ κατὰ φύσιν ἢ παρὰ φύσιν ἔχειν.
or of-the composite and either according-to nature or against nature to-be
τῶν μὲν οὖν ἀπλῶν οὐθὲν ἂν εἴη. τὸ γὰρ κύκλω
of-the indeed therefore simple nothing — would-be the for in-a-circle
φερόμενον δέδεικται ὅτι οὐκ ἐνδέχεται μεταλλάξαι τὸν
being-carried it-has-been-shown that not it-admits to-change the
αὐτοῦ τόπον. ἀλλὰ μὴν οὐδὲ τὸ ἀπὸ τοῦ μέσου δυνατόν,
of-itself place but indeed nor the from the middle possible
οὐδὲ τὸ ὑφιστάμενον. κατὰ φύσιν μὲν γὰρ οὐκ ἂν
nor the sinking-under according-to nature indeed for not —
εἴησαν (ἄλλοι γὰρ αὐτῶν οἰκεῖοι τόποι), παρὰ φύσιν δ'
they-would-be other for of-them proper places against nature and
εἴπερ εἰσὶν, ἄλλω τινὶ ἔσται κατὰ φύσιν ὁ ἔξω τόπος·
if-indeed they-are to-another some it-will-be according-to nature the outside place
τὸν γὰρ τούτῳ παρὰ φύσιν ἀναγκαῖον ἄλλω εἶναι κατὰ
the for to-this against nature necessary to-another to-be according-to
φύσιν. ἀλλ' οὐκ ἦν ἄλλο σῶμα παρὰ ταῦτα. οὐκ ἄρ' ἔσται
nature but not was another body beside these not therefore will-be
δυνατόν οὐθὲν τῶν ἀπλῶν ἔξω εἶναι τοῦ οὐρανοῦ σῶμα.
possible any of-the simple outside to-be of-the heaven a-body
εἰ δὲ μὴ τῶν ἀπλῶν, οὐδὲ τῶν μικτῶν· ἀνάγκη γὰρ εἶναι
if and not of-the simple nor of-the mixed necessary for to-be
καὶ τὰ ἀπλᾶ τοῦ μικτοῦ ὄντος. ἀλλὰ μὴν οὐδὲ γενέσθαι
also the simple of-the mixed being but indeed nor to-come-to-be
δυνατόν· ἥτοι γὰρ κατὰ φύσιν ἔσται ἢ παρὰ φύσιν, καὶ
possible either for according-to nature it-will-be or against nature and

ἢ ἀπλοῦν ἢ μικτόν, ὥστε πάλιν ὁ αὐτὸς ἤξει λόγος·
either simple or mixed so-that again the same will-come argument
 οὐδὲν γὰρ διαφέρει σκοπεῖν εἰ ἔστιν ἢ εἰ γενέσθαι δυνατόν.
in-nothing for it-differs to-consider if it-is or if to-come-to-be possible
 φανερόν τοίνυν ἐκ τῶν εἰρημένων ὅτι οὔτ' ἔστιν ἔξω οὔτ'
clear then out-of the things-said that neither there-is outside nor
 ἐγχωρεῖ γενέσθαι σώματος ὄγκον οὐθενός· ἐξ ἀπάσης ἄρ'
it-is-open to-come-to-be of-body a-bulk of-any out-of all then
 ἐστὶ τῆς οἰκείας ὕλης ὁ πᾶς κόσμος· ὕλη γὰρ ἦν αὐτῷ
is the proper matter the whole world matter for was for-it
 τὸ φυσικὸν σῶμα καὶ αἰσθητόν. ὥστ' οὔτε νῦν εἰσὶ πλείους
the natural body and perceptible so-that neither now are more
 οὐρανοὶ οὔτ' ἐγένοντο, οὔτ' ἐνδέχεται γενέσθαι πλείους·
heavens nor came-to-be nor it-admits to-come-to-be more
 ἀλλ' εἷς καὶ μόνος καὶ τέλειος οὗτος οὐρανός ἐστιν. ἅμα
but one and only and complete this a-heaven is at-once
 δὲ δῆλον ὅτι οὐδὲ τόπος οὐδὲ κενὸν οὐδὲ χρόνος ἐστὶν
and clear that neither a-place nor a-void nor a-time is
 ἔξω τοῦ οὐρανοῦ· ἐν ἅπαντι γὰρ τόπῳ δυνατόν ὑπάρξει
outside of-the heaven in all for a-place possible to-be-present
 σῶμα· κενὸν δ' εἶναί φασιν ἐν ᾧ μὴ ἐνυπάρχει σῶμα,
a-body a-void and to-be they-say in which not inheres a-body
 δυνατόν δ' ἐστὶ γενέσθαι· χρόνος δὲ ἀριθμὸς κινήσεως·
possible and it-is to-come-to-be a-time and a-number of-motion
 κίνησις δ' ἄνευ φυσικοῦ σώματος οὐκ ἔστιν. ἔξω δὲ τοῦ
a-motion and without a-natural body not there-is outside and of-the
 οὐρανοῦ δέδεικται ὅτι οὔτ' ἔστιν οὔτ' ἐνδέχεται γενέσθαι
heaven it-has-been-shown that neither there-is nor it-admits to-come-to-be
 σῶμα. φανερόν ἄρα ὅτι οὔτε τόπος οὔτε κενὸν οὔτε χρόνος
a-body clear then that neither a-place nor a-void nor a-time
 ἐστὶν ἔξωθεν· διόπερ οὔτ' ἐν τόπῳ τὰ κεῖ πέφυκεν,
is outside wherefore neither in a-place the-things-there are-natured

οὔτε χρόνος αὐτὰ ποιεῖ γηράσκειν, οὐδ' ἔστιν οὐδενὸς
 nor time them makes to-grow-old nor there-is of-anything
 οὐδεμία μεταβολὴ τῶν ὑπὲρ τὴν ἐξωτάτω τεταγμένων
 any change of-the-(things) beyond the outermost having-been-ranked
 φορὰν, ἀλλ' ἀναλλοιώτα καὶ ἀπαθὴ τὴν ἀρίστην ἔχοντα
 movement but unalterable and unaffected the best having
 ζωὴν καὶ αὐταρκεστάτην διατελεῖ τὸν ἅπαντα αἰῶνα.
 life and most-self-sufficient it-continues the whole age
 καὶ γὰρ τοῦτο τοῦνομα θεῖως ἔφθεγκται παρὰ τῶν
 and for this the-name divinely has-been-uttered by the
 ἀρχαίων. τὸ γὰρ τέλος τὸ περιέχον τὸν τῆς ἐκάστου ζωῆς
 ancients the for end the enclosing the of-the of-each life
 χρόνον, οὗ μὴθ' ἔξω κατὰ φύσιν, αἰὼν ἐκάστου
 time of-which nothing outside according-to nature an-age of-each
 κέκληται. κατὰ τὸν αὐτὸν δὲ λόγον καὶ τὸ τοῦ παντὸς
 has-been-called according-to the same and account also the of-the whole
 οὐρανοῦ τέλος καὶ τὸ τὸν πάντα χρόνον καὶ τὴν ἀπειρίαν
 heaven end and the the whole time and the infinity
 περιέχον τέλος αἰὼν ἔστιν, ἀπὸ τοῦ αἰεὶ εἶναι εἰληφὼς
 enclosing end an-age is from the always to-be having-taken
 τὴν ἐπωνυμίαν, ἀθάνατος καὶ θεῖος. ὅθεν καὶ τοῖς ἄλλοις
 the name immortal and divine whence also for-the others
 ἐξήρτηται, τοῖς μὲν ἀκριβέστερον τοῖς δ' ἀμαυρῶς,
 depends for-the-ones indeed more-exactly for-the-others and dimly
 τὸ εἶναι τε καὶ ζῆν. καὶ γὰρ καθάπερ ἐν τοῖς ἐγκυκλίοις
 the to-be both and to-live and for just-as in the popular
 φιλοσοφήμασι περὶ τὰ θεῖα πολλάκις προφαίνεται τοῖς
 discussions about the divine often it-appears in-the
 λόγοις ὅτι τὸ θεῖον ἀμετάβλητον ἀναγκαῖον εἶναι πᾶν
 arguments that the divine unchangeable necessary to-be all
 τὸ πρῶτον καὶ ἀκρότατον· ὃ οὕτως ἔχον μαρτυρεῖ τοῖς
 the first and highest which thus being testifies to-the

εἰρημένοις. οὔτε γὰρ ἄλλο κρείττον ἐστὶν ὃ τι κινήσει
things-said neither for another stronger is which anything will-move
 (ἐκείνο γὰρ ἂν εἴη θειότερον) οὔτ' ἔχει φαῦλον οὐδέν, οὔτ'
that for — would-be more-divine nor it-has base anything nor
 ἐνδεές τῶν αὐτοῦ καλῶν οὐδενός ἐστιν. καὶ ἄπυστον
lacking of-the of-itself beautiful-(things) of-any it-is and unceasing
 δὴ κίνησιν κινεῖται εὐλόγως· πάντα γὰρ παύεται κινούμενα
indeed a-motion it-moves reasonably all-(things) for cease being-moved
 ὅταν ἔλθῃ εἰς τὸν οἰκεῖον τόπον. τοῦ δὲ κύκλῳ σώματος
whenever they-come into the proper place of-the and in-a-circle body
 ὁ αὐτὸς τόπος ὅθεν ἤρξατο καὶ εἰς ὃν τελευτᾷ.
the same place from-where it-began and into which it-ends

X · UNGENERATED OR GENERATED?

Aristotle turns to whether the heaven came to be, first setting out what others have said: that it came to be and is everlasting, that it came to be and will perish, or that it is formed and dissolved by turns. The first is impossible, and the defense that the account of its genesis is only for teaching, as with a diagram, does not hold. Forming and dissolving by turns is only a change in the world's dispositions, not its perishing.

Τούτων δὲ διωρισμένων λέγωμεν μετὰ ταῦτα πότερον
these and having-been-determined let-us-say after these whether
 ἀγέννητος ἢ γενητὸς καὶ ἀφθαρτος ἢ φθαρτός, διεξελθόντες
ungenerated or generated and imperishable or perishable having-gone-through
 πρότερον τὰς τῶν ἄλλων ὑπολήψεις· αἱ γὰρ τῶν ἐναντίων
first the of-the others suppositions the for of-the contraries
 ἀποδείξεις ἀπορίαι περὶ τῶν ἐναντίων εἰσίν. ἅμα δὲ
demonstrations difficulties about the contraries are at-once and
 καὶ μᾶλλον ἂν εἴη πιστὰ τὰ μέλλοντα λεχθήσεσθαι
also more — would-be credible the things-going to-be-said

προακηκοόσι τὰ τῶν ἀμφισβητούντων λόγων
to-those-having-heard-beforehand the of-the disputing arguments
 δικαιώματα. τὸ γὰρ ἐρήμην καταδικάζεσθαι δοκεῖν ἦττον
pleas the for by-default to-be-condemned to-seem less
 ἂν ἡμῖν ὑπάρχοι· καὶ γὰρ δεῖ διαιτητὰς ἀλλ' οὐκ
— for-us would-belong and for it-is-needful arbitrators but not
 ἀντιδίκους εἶναι τοὺς μέλλοντας τἀληθὲς κρίνειν ἱκανῶς.
opponents to-be the-(ones) going the-truth to-judge sufficiently
 γενόμενον μὲν οὖν ἅπαντες εἶναί φασιν, ἀλλὰ γενόμενον
having-come-to-be indeed therefore all to-be say but having-come-to-be
 οἱ μὲν αἰδίων, οἱ δὲ φθαρτὸν ὥσπερ ὅτιοῦν
the-ones indeed everlasting the-others and perishable as anything-whatever
 ἄλλο τῶν συνισταμένων, οἱ δ' ἐναλλάξ ὅτε μὲν
other of-the things-formed the-others and alternately at-one-time indeed
 οὕτως ὅτε δὲ ἄλλως ἔχειν φθειρόμενον, καὶ τοῦτο αἰεὶ
thus at-another and otherwise to-be perishing and this always
 διατελεῖν οὕτως, ὥσπερ Ἐμπεδοκλῆς ὁ Ἀκραγαντῖνος καὶ
to-continue thus as Empedocles the Acragantine and
 Ἡράκλειτος ὁ Ἐφέσιος. τὸ μὲν οὖν γενέσθαι μὲν
Heraclitus the Ephesian the indeed therefore to-have-come-to-be indeed
 αἰδίων δ' ὅμως εἶναι φάναι τῶν ἀδυνάτων. μόνα γὰρ
everlasting and nevertheless to-be to-say of-the impossible-(things) only for
 ταῦτα θετέον εὐλόγως ὅσα ἐπὶ πολλῶν ἢ πάντων
these one-must-posit reasonably as-many-as in-the-case-of many or all
 ὁρῶμεν ὑπάρχοντα, περὶ δὲ τούτου συμβαίνει τοῦναντίον·
we-see belonging about and this it-happens the-contrary
 ἅπαντα γὰρ τὰ γινόμενα καὶ φθειρόμενα φαίνεται.
all for the things-coming-to-be and perishing appear
 ἔτι δὲ τὸ μὴ ἔχον ἀρχὴν τοῦ ὧδὲ ἔχειν, ἀλλ' ἀδύνατον
further and the not having a-beginning of-the thus to-be but impossible
 ἄλλως ἔχειν πρότερον τὸν ἅπαντα αἰῶνα ἀδύνατον καὶ
otherwise to-be before the whole age impossible also

μεταβάλλειν· ἔσται γάρ τι αἴτιον, ὃ εἰ ὑπῆρχε
to-change there-will-be for some cause which if belonged
 πρότερον, δυνατὸν ἂν ἦν ἄλλως ἔχειν τὸ ἀδύνατον
before possible — would-be otherwise to-be the impossible
 ἄλλως ἔχειν. εἰ δὲ πρότερον ἐξ ἄλλως ἐχόντων συνέστη
otherwise to-be if and before out-of otherwise being was-formed
 ὁ κόσμος, εἰ μὲν ἀεὶ οὕτως ἐχόντων καὶ ἀδυνάτων
the world if indeed always thus being and impossible
 ἄλλως ἔχειν, οὐκ ἂν ἐγένετο. εἰ δὲ γέγονεν,
otherwise to-be not — it-would-have-come-to-be if and it-has-come-to-be
 ἀνάγκη δηλονότι κακεῖνα δυνατὰ εἶναι ἄλλως ἔχειν καὶ μὴ
necessary clearly those-also possible to-be otherwise to-be and not
 ἀεὶ οὕτως ἔχειν, ὥστε καὶ συνεστῶτα διαλυθήσεται καὶ
always thus to-be so-that also having-been-formed they-will-be-dissolved and
 διαλελυμένα συνέστη ἔμπροσθεν, καὶ τοῦτ' ἀπειράκις
having-been-dissolved they-were-formed before and this infinitely-often
 ἢ οὕτως εἶχεν ἢ δυνατὸν ἦν. εἰ δὲ τοῦτ', οὐκ ἂν εἴη
either thus it-was or possible it-was if and this not — it-would-be
 ἄφθαρτος, οὐτ' εἰ ἄλλως εἶχέ ποτε οὐτ' εἰ δυνατὸν ἄλλως
imperishable either if otherwise it-was at-some-time or if possible otherwise
 ἔχειν. ἦν δέ τινες βοήθειαν ἐπιχειροῦσι φέρειν ἑαυτοῖς
to-be which and certain-(people) a-help attempt to-bring to-themselves
 τῶν λεγόντων ἀφθαρτον μὲν εἶναι γενόμενον δέ, οὐκ
of-the-(ones) saying imperishable indeed to-be having-come-to-be and not
 ἔστιν ἀληθής· ὁμοίως γάρ φασι τοῖς τὰ διαγράμματα
is true alike for they-say to-those the diagrams
 γράφουσι καὶ σφᾶς εἰρηκέναι περὶ τῆς γενέσεως, οὐχ ὥς
drawing also themselves to-have-spoken about the coming-to-be not as
 γενομένου ποτέ, ἀλλὰ διδασκαλίας χάριν ὥς μᾶλλον
having-come-to-be at-some-time but of-teaching for-sake as more
 γνωρίζοντων, ὥσπερ τὸ διάγραμμα γιγνόμενον θεασαμένους.
of-those-knowing as the diagram coming-to-be having-beheld

τοῦτο δ' ἐστίν, ὥσπερ λέγομεν, οὐ τὸ αὐτό· ἐν μὲν γὰρ
this and is as we-say not the same in indeed for
 τῇ ποιήσει τῶν διαγραμμάτων πάντων τεθέντων εἶναι
the construction of-the diagrams all having-been-positd to-be
 ἅμα τὸ αὐτὸ συμβαίνει, ἐν δὲ ταῖς τούτων ἀποδείξεσιν οὐ
at-once the same it-happens in and the of-these demonstrations not
 ταυτόν. ἀλλ' ἀδύνατον· τὰ γὰρ λαμβανόμενα πρότερον
the-same but impossible the-(things) for being-taken before
 καὶ ὕστερον ὑπεναντία ἐστίν· ἐξ ἀτάκτων γὰρ τεταγμένα
and after opposite are out-of disordered for ordered
 γενέσθαι φασίν, ἅμα δὲ τὸ αὐτὸ ἄτακτον εἶναι καὶ
to-have-come-to-be they-say at-once and the same disordered to-be and
 τεταγμένον ἀδύνατον, ἀλλ' ἀνάγκη γένεσιν εἶναι τὴν
ordered impossible but necessary a-coming-to-be to-be the
 χωρίζουσαν καὶ χρόνον· ἐν δὲ τοῖς διαγράμμασιν οὐδὲν
separating and a-time in and the diagrams nothing
 τῷ χρόνῳ κεχώριται. ὅτι μὲν οὖν ἀδύνατον αὐτὸν
by-the time has-been-separated that indeed therefore impossible it
 ἅμ' αἰδίου εἶναι καὶ γενέσθαι, φανερόν. τὸ δ' ἐναλλάξ
at-once everlasting to-be and to-have-come-to-be clear the and alternately
 συνιστάναι καὶ διαλύειν οὐδὲν ἄλλοιότερον ποιεῖν ἐστὶν ἢ
to-compose and to-dissolve nothing different to-do is than
 τὸ κατασκευάζειν αὐτὸν αἰδίου μὲν ἀλλὰ μεταβάλλοντα
the to-establish it everlasting indeed but changing
 τὴν μορφήν, ὥσπερ εἴ τις ἐκ παιδὸς ἄνδρα γινόμενον
the shape as if someone out-of a-boy a-man becoming
 καὶ ἐξ ἀνδρὸς παῖδα ὅτε μὲν φθίρεσθαι ὅτε δ'
and out-of a-man a-boy at-one-time indeed to-perish at-another and
 εἶναι οἴοιτο· δηλὸν γὰρ ὅτι καὶ εἰς ἄλληλα τῶν στοιχείων
to-be should-think clear for that also into one-another of-the elements
 συνιόντων οὐχ ἡ τυχοῦσα τάξις γίγνεται καὶ σύστασις, ἀλλ'
coming-together not the chance order comes-about and formation but

ἡ αὐτή, ἄλλως τε καὶ κατὰ τοὺς τοῦτον τὸν λόγον
the same otherwise both and according-to the-(ones) this the account
 εἰρηκότας, οἱ τῆς διαθέσεως ἐκατέρας αἰτιῶνται τὸ ἐναντίον.
having-stated who of-the disposition of-each assign-as-cause the contrary
 ὥστ' εἰ τὸ ὅλον σῶμα συνεχές ὃν ὅτε μὲν οὕτως
so-that if the whole body continuous being at-one-time indeed thus
 ὅτε δ' ἐκείνως διατίθεται καὶ διακεκόσμηται, ἡ δὲ τοῦ
at-another and that-way is-disposed and has-been-ordered the and of-the
 ὅλου σύστασις ἐστὶ κόσμος καὶ οὐρανός, οὐκ ἂν ὁ κόσμος
whole formation is a-world and a-heaven not — the world
 γίγνοιτο καὶ φθείροιτο, ἀλλ' αἱ διαθέσεις αὐτοῦ. τὸ δ'
would-come-to-be and would-perish but the dispositions of-it the and
 ὅλως γενομένον φθαρῆναι καὶ μὴ ἀνακάμπτειν ὄντος μὲν
wholly having-come-to-be to-perish and not to-return-again being indeed
 ἐνὸς ἀδύνατόν ἐστιν· πρὶν γὰρ γενέσθαι αἰεὶ ὑπῆρχεν ἡ
one impossible it-is before for to-come-to-be always existed the
 πρὸ αὐτοῦ σύστασις, ἣν μὴ γενομένην οὐχ οἷόν τ' εἶναι
before it formation which not having-come-to-be not possible — to-be
 φάμεν μεταβάλλειν· ἀπείρων δ' ὄντων ἐνδέχεται μᾶλλον.
we-say to-change infinite and being it-admits rather
 ἀλλὰ μὴν καὶ τοῦτο πότερον ἀδύνατον ἢ δυνατόν, ἔσται
but indeed also this whether impossible or possible will-be
 δῆλον ἐκ τῶν ὕστερον· εἰσὶ γὰρ τινες οἷς
clear out-of the later-(discussions) there-are for certain-(people) to-whom
 ἐνδέχεσθαι δοκεῖ καὶ ἀγένητόν τι ὃν φθαρῆναι καὶ
to-admit it-seems also ungenerated something being to-perish and
 γενομένον ἀφθαρτον διατελεῖν, ὥσπερ ἐν τῷ Τιμαίῳ.
having-come-to-be imperishable to-continue as in the Timaeus
 ἐκεῖ γάρ φησι τὸν οὐρανὸν γενέσθαι μὲν, οὐ μὴν
there for he-says the heaven to-have-come-to-be indeed not however
 ἀλλ' ἔσεσθαι γε τὸν αἰεὶ χρόνον. πρὸς οὓς φυσικῶς
but to-be-going-to-be at-least the always time toward whom physically

μὲν περὶ τοῦ οὐρανοῦ μόνον εἴρηται, καθόλου δὲ περὶ
indeed about the heaven only it-has-been-said universally and about
ἅπαντος σκεψαμένοις ἔσται καὶ περὶ τούτου δῆλον.
everything for-those-considering it-will-be also about this clear

XI · WHAT 'UNGENERATED' MEANS

Aristotle first distinguishes the senses of ungenerated, generated, perishable, and imperishable, since a word used in many ways leaves the thought indefinite. A thing is called ungenerated if it now is without having come to be, if it could come to be but is not, or if it cannot come to be at all; perishable and imperishable are marked off in the same way. He then asks what possible means, and defines a power by its maximum: what can lift a hundred talents can lift two.

Πρῶτον δὲ διαιρετέον πῶς ἀγένητα καὶ γενητά φαμεν
first and one-must-distinguish how ungenerated and generated we-say
καὶ φθαρτὰ καὶ ἄφθαρτα· πολλαχῶς γὰρ λεγομένων, κἂν
and perishable and imperishable in-many-ways for being-said even-if
μηδὲν διαφέρει πρὸς τὸν λόγον, ἀνάγκη τὴν διάνοιαν
in-nothing it-differ toward the argument necessary the thought
ἀορίστως ἔχειν, ἂν τις τῷ διαιρουμένῳ πολλαχῶς ὥς
indefinite to-be if someone the thing-divided in-many-ways as
ἀδιαιρέτῳ χρήται· ἄδηλον γὰρ κατὰ ποίαν φύσιν αὐτῷ
undivided uses unclear for according-to what-sort nature to-it
συμβαίνει τὸ λεχθέν. λέγεται δ' ἀγένητον ἓνα μὲν τρόπον
belongs the thing-said it-is-said and ungenerated one indeed way
εἰάν ἢ τι νῦν πρότερον μὴ ὃν ἄνευ γενέσεως καὶ
if there-be something now before not being without a-coming-to-be and
μεταβολῆς, καθάπερ ἔνιοι τὸ ἄπτεσθαι καὶ τὸ κινεῖσθαι
change just-as some the to-touch and the to-be-moved
λέγουσιν· οὐ γὰρ εἶναι γίνεσθαι φασὶν ἀπτόμενον, οὐδὲ
say not for to-be to-come-to-be they-say a-thing-touching nor

κινούμενον. ἓνα δ' εἴ τι ἐνδεχόμενον γίνεσθαι ἢ
a-thing-moving one and if something admitting to-come-to-be or
 γενέσθαι μή ἐστίν· ὁμοίως γὰρ καὶ τοῦτο ἀγέννητον,
to-have-come-to-be not is alike for also this ungenerated
 ὅτι ἐνδέχεται γενέσθαι. ἓνα δ' εἴ τι ὅλως ἀδύνατον
because it-admits to-have-come-to-be one and if something wholly impossible
 γενέσθαι, ὥσθ' ὅτε μὲν εἶναι ὅτε δὲ μή. τὸ δ'
to-have-come-to-be so-that at-one-time indeed to-be at-another and not the and
 ἀδύνατον λέγεται διχῶς. ἢ γὰρ τῷ μὴ ἀληθὲς εἶναι εἰπεῖν
impossible is-said two-ways either for by-the not true to-be to-say
 ὅτι γένοιτ' ἂν, ἢ τῷ μὴ ῥαδίως μηδὲ ταχὺ ἢ καλῶς.
that it-might-come-to-be — or by-the not easily nor quickly or well
 τὸν αὐτὸν δὲ τρόπον καὶ τὸ γενητὸν ἓνα μὲν εἰ μὴ ὄν
the same and way also the generated one indeed if not being
 πρότερον ὕστερον ἔστιν, εἴτε γενόμενον εἴτ' ἄνευ τοῦ
before later it-is whether having-come-to-be or without the
 γίνεσθαι, ὅτε μὲν μὴ ὄν, πάλιν δ' ὄν· ἓνα δ' εἰ
to-come-to-be at-one-time indeed not being again and being one and if
 δυνατόν, εἴτε τῷ ἀληθεῖ διορισθέντος τοῦ δυνατοῦ εἴτε
possible whether by-the true having-been-defined of-the possible or
 τῷ ῥαδίως· ἓνα δ' εἰ ἂν ἡ γένεσις αὐτοῦ ἐκ τοῦ μὴ ὄντος
by-the easily one and if the coming-to-be of-it out-of the not being
 εἰς τὸ ὄν, εἴτ' ἤδη ὄντος, διὰ τοῦ γίνεσθαι δ' ὄντος,
into the being whether already being through the to-come-to-be and being
 εἴτε καὶ μήπω ὄντος, ἀλλ' ἐνδεχομένου. καὶ φθαρτὸν δὲ καὶ
or also not-yet being but admitting and perishable and also
 ἄφθαρτον ὡσαύτως· εἴτε γὰρ πρότερόν τι ὄν ὕστερον
imperishable likewise whether for before something being later
 ἢ μή ἐστίν ἢ ἐνδέχεται μὴ εἶναι, φθαρτὸν εἶναί φαμεν, εἴτε
either not is or it-admits not to-be perishable to-be we-say or
 φθειρόμενόν ποτε καὶ μεταβάλλον, εἴτε μή. ἔστι δ' ὅτε
perishing at-some-time and changing or not it-is and when

καὶ τὸ διὰ τοῦ φθείρεσθαι ἐνδεχόμενον μὴ εἶναι φθαρτὸν
 also the through the to-perish admitting not to-be perishable
 εἶναί φαμεν, καὶ ἔτι ἄλλως τὸ ῥαδίως φθειρόμενον, ὃ
 to-be we-say and further otherwise the easily perishing which
 εἴποι ἂν τις εὐφθαρτον. καὶ περὶ τοῦ ἀφθάρτου ὁ αὐτὸς
 might-call — someone easily-destroyed and about the imperishable the same
 λόγος· ἢ γὰρ τὸ ἄνευ φθορᾶς ὅτε μὲν ὄν ὅτε δὲ
 account either for the without perishing at-one-time indeed being at-another and
 μὴ ὄν, οἷον τὰς ἀφάς, ὅτι ἄνευ τοῦ φθείρεσθαι πρότερον
 not being such-as the contacts because without the to-perish before
 οὔσαι ὕστερον οὐκ εἰσίν, ἢ τὸ ὄν μὲν δυνατὸν δὲ μὴ
 being later not they-are or the being indeed possible and not
 εἶναι, ἢ οὐκ ἐσόμενόν ποτε, νῦν δ' ὄν· σὺ γὰρ εἶ, καὶ
 to-be or not going-to-be at-some-time now and being you for are and
 ἢ ἀφή νῦν· ἀλλ' ὅμως φθαρτόν, ὅτι ἔσται ποτὲ
 the contact now but nevertheless perishable because there-will-be at-some-time
 ὅτε οὐκ ἀληθές σε εἰπεῖν ὅτι εἶ, οὐδὲ ταῦτα ἅπτεσθαι.
 when not true you to-say that you-are nor these to-touch
 τὸ δὲ μάλιστα κυρίως, τὸ ὄν μὲν, ἀδύνατον δὲ φθαρῆναι
 the and most properly the being indeed impossible and to-perish
 οὕτως ὥστε νῦν ὄν ὕστερον μὴ εἶναι ἢ ἐνδέχεσθαι μὴ εἶναι,
 thus so-that now being later not to-be or to-admit not to-be
 ἢ καὶ τὸ μήπω ἐφθαρμένον, οὐκ ἐνδεχόμενον δ' ὕστερον μὴ
 or also the not-yet having-perished not admitting and later not
 εἶναι. λέγεται δ' ἀφθαρτον καὶ τὸ μὴ ῥαδίως φθειρόμενον. εἰ
 to-be it-is-said and imperishable also the not easily perishing if
 δὴ ταῦθ' οὕτως ἔχει, σκεπτέον πῶς λέγομεν τὸ δυνατὸν
 indeed these thus are one-must-consider how we-mean the possible
 καὶ ἀδύνατον· τό τε γὰρ κυριώτατα λεγόμενον ἀφθαρτον
 and impossible the both for most-properly being-called imperishable
 τῷ μὴ δύνασθαι φθαρῆναι ἂν, μηδ' ὅτε μὲν εἶναι
 by-the not to-be-able to-perish would nor at-one-time indeed to-be

ὅτε δὲ μή· λέγεται δὲ καὶ τὸ ἀγέννητον τὸ ἀδύνατον, καὶ
at-another and not it-is-said and also the ungenerated the impossible and
 τὸ μὴ δυνάμενον γενέσθαι οὕτως ὥστε πρότερον μὲν
the not being-able to-have-come-to-be thus so-that before indeed
 μὴ εἶναι ὕστερον δὲ εἶναι, οἷον τὴν διάμετρον σύμμετρον.
not to-be later and to-be such-as the diameter commensurate
 εἰ δὴ τι δύναται κινηθῆναι στάδια ἑκατὸν ἢ ἄραι
if indeed something can to-be-moved stades a-hundred or to-lift
 βάρος, ἀεὶ πρὸς τὸ πλείστον λέγομεν, οἷον τάλαντα ἄραι
a-weight always toward the most we-say such-as talents to-lift
 ἑκατὸν ἢ στάδια βαδίσαι ἑκατόν (καίτοι καὶ τὰ μόρια
a-hundred or stades to-walk a-hundred and-yet also the parts
 δύναται τὰ ἐντός, εἴπερ καὶ τὴν ὑπεροχὴν), ὥς δέον
it-can the within if-indeed also the excess as being-needful
 ὀρίζεσθαι πρὸς τὸ τέλος καὶ τὴν ὑπεροχὴν τὴν δύναμιν.
to-be-defined toward the end and the excess the power
 ἀνάγκη μὲν οὖν τὸ δυνατὸν καθ' ὑπεροχὴν τοσαυτὴ καὶ
necessary indeed therefore the possible according-to excess so-much also
 τὰ ἐντός δύνασθαι, οἷον εἰ τάλαντα ἑκατὸν ἄραι, καὶ δύο, καὶ
the within to-be-able such-as if talents a-hundred to-lift also two even
 εἰ στάδια ἑκατόν, καὶ δύο δύνασθαι βαδίσαι. ἡ δὲ δύναμις
if stades a-hundred also two to-be-able to-walk the and power
 τῆς ὑπεροχῆς ἐστίν· καὶ εἴ τι ἀδύνατον τοσονδὲ καθ'
of-the excess is even if something impossible so-much according-to
 ὑπερβολὴν εἰπόντων, καὶ τὰ πλείω ἀδύνατον, οἷον ὁ
excess having-said also the more impossible such-as the-(one)
 χίλια βαδίσαι στάδια μὴ δυνάμενος δῆλον ὅτι καὶ χίλια
a-thousand to-walk stades not being-able clear that also a-thousand
 καὶ ἓν. μηδὲν δ' ἡμᾶς παρενοχλείτω· διωρίσθω
and one nothing and us let-it-disturb let-it-have-been-determined
 γὰρ κατὰ τῆς ὑπεροχῆς τὸ τέλος λεγόμενον τὸ κυρίως
for according-to the excess the end being-called the properly

δυνατόν. τάχα γὰρ ἐνσταίη τις ἂν ὥς οὐκ ἀνάγκη τὸ
possible perhaps for might-object someone — that not necessary the
 λεχθέν· ὁ γὰρ ὁρῶν στάδιον οὐ καὶ τὰ ἐντὸς ὄψεται μεγέθη,
thing-said the for seeing a-stade not also the within will-see magnitudes
 ἀλλὰ τὸναντίον μᾶλλον ὁ δυνάμενος ἰδεῖν στιγμήν ἢ
but the-contrary rather the-man being-able to-see a-point or
 ἀκοῦσαι μικροῦ ψόφου καὶ τῶν μειζόνων ἔξει αἴσθησιν.
to-hear of-a-small sound also of-the greater will-have perception
 ἀλλ' οὐδὲν διαφέρει πρὸς τὸν λόγον· διωρίσθω
but nothing it-differs toward the argument let-it-have-been-determined
 γὰρ ἥτοι ἐπὶ τῆς δυνάμεως ἢ ἐπὶ τοῦ πράγματος ἢ
for either upon the power or upon the thing the
 ὑπερβολή. τὸ γὰρ λεγόμενον δηλον· ἡ μὲν γὰρ ὄψις ἡ
excess the for thing-said clear the indeed for sight the
 τοῦ ἐλάττονος ὑπερέχει, ἡ δὲ ταχυτῆς ἡ τοῦ πλείονος.
of-the lesser exceeds the and speed the of-the greater

XII · EVERLASTING, UNGENERATED, IMPERISHABLE

What can both be and not be must have a greatest fixed time for each of the two. Aristotle argues from this that anything which always is cannot be generated or perish, and that the generated and the perishable follow each other; a thing that held both capacities over an infinite time would have to be and not be at once. Lettered terms set the relations out, and the chapter ends by ruling out an everlasting thing that perishes.

Διωρισμένων δὲ τούτων λεκτέον τὸ ἐφεξῆς. εἰ δὴ
having-been-determined and these one-must-say the next if indeed
 ἔστιν ἔνια δυνατὰ καὶ εἶναι καὶ μή, ἀνάγκη χρόνον τινὰ
there-are some possible both to-be and not necessary a-time some
 ὠρίσθαι τὸν πλείστον καὶ τοῦ εἶναι καὶ τοῦ μή,
to-have-been-defined the greatest both of-the to-be and of-the not

λέγω δ' ὃν δυνατόν τὸ πρᾶγμα εἶναι καὶ ὃν δυνατόν
I-mean and which possible the thing to-be and which possible
 μὴ εἶναι καθ' ὅποιαν οὖν κατηγορίαν, οἷον ἀνθρωπον
not to-be according-to any-whatever category such-as a-man
 ἢ λευκὸν ἢ τρίπηχυ ἢ ἄλλ' ὅτιοῦν τῶν τοιούτων.
or white or three-cubits or another anything-whatever of-the such-things
 εἰ γὰρ μὴ ἔσται ποσὸς τις, ἀλλ' αἰεὶ πλείων τοῦ
if for not it-will-be quantity a-certain but always greater than-the
 προτεθέντος καὶ οὐκ ἔστιν οὗ ἐλάττων, ἄπειρον ἔσται
thing-proposed and not there-is than-which less an-infinite it-will-be
 χρόνον τὸ αὐτὸ δυνατόν εἶναι καὶ μὴ εἶναι ἄλλον ἄπειρον.
time the same possible to-be and not to-be another infinite
 ἀλλὰ τοῦτ' ἀδύνατον. ἀρχὴ δ' ἔστω ἐντεῦθεν· τὸ
but this impossible a-beginning and let-there-be from-here the
 γὰρ ἀδύνατον καὶ τὸ ψεῦδος οὐ ταὐτὸ σημαίνει. ἔστι
for impossible and the false not the-same signifies is
 δὲ τὸ ἀδύνατον καὶ τὸ δυνατόν καὶ τὸ ψεῦδος καὶ τὸ
and the impossible and the possible and the false and the
 ἀληθὲς τὸ μὲν ἐξ ὑποθέσεως (λέγω δ', οἷον καὶ
true the-(one) indeed out-of a-hypothesis I-mean and such-as also
 τὸ τρίγωνον ἀδύνατον δύο ὀρθὰς ἔχειν, εἰ τὰδε, καὶ
the triangle impossible two right-angles to-have if these and
 ἢ διάμετρος σύμμετρος, εἰ τὰδε), ἔστι δ' ἀπλῶς καὶ
the diameter commensurate if these there-are and simply both
 δυνατὰ καὶ ἀδύνατα καὶ ψευδῆ καὶ ἀληθῆ.
possible and impossible and false and true
 οὐ δὴ ταὐτόν ἐστι ψευδὸς τέ τι εἶναι ἀπλῶς
not indeed the-same is false both something to-be simply
 καὶ ἀδύνατον ἀπλῶς. τὸ γὰρ σε μὴ ἐστῶτα φάναι
and impossible simply the for you not standing to-declare
 ἐστάναι ψεῦδος μὲν, οὐκ ἀδύνατον δέ. ὁμοίως δὲ τὸν
to-stand false indeed not impossible and alike and the-man

καθαρίζοντα μὲν μὴ ᾄδοντα δὲ ᾄδειν φάναι ψεῦδος, ἀλλ'
playing-the-lyre indeed not singing and to-sing to-declare false but
 οὐκ ἀδύνατον. τὸ δ' ἅμα ἐστάναι καὶ καθῆσθαι, καὶ
not impossible the and at-once to-stand and to-sit and
 τὴν διάμετρον σύμμετρον εἶναι, οὐ μόνον ψεῦδος ἀλλὰ
the diameter commensurate to-be not only false but
 καὶ ἀδύνατον, οὐ δὴ ταυτόν ἐστιν ὑποθέσθαι ψεῦδος καὶ
also impossible not indeed the-same is to-assume a-falsehood and
 ἀδύνατον. συμβαίνει δ' ἀδύνατον ἐξ ἀδυνατοῦ. τοῦ μὲν
an-impossibility it-follows and an-impossibility out-of an-impossibility of-the indeed
 οὖν καθῆσθαι καὶ ἐστάναι ἅμα ἔχει τὴν δύναμιν, ὅτι
therefore to-sit and to-stand at-once it-has the power because
 ὅτε ἔχει ἐκείνην, καὶ τὴν ἑτέραν· ἀλλ' οὐχ ὥστε ἅμα
when it-has that also the other but not so-that at-once
 καθῆσθαι καὶ ἐστάναι, ἀλλ' ἐν ἄλλῳ χρόνῳ. εἰ δὴ τι
to-sit and to-stand but in another time if indeed something
 ἄπειρον χρόνον ἔχει πλειόνων δύναμιν, οὐκ ἔστιν ἐν ἄλλῳ
an-infinite time has of-more a-power not it-is in another
 χρόνῳ, ἀλλὰ τοῦθ' ἅμα. ὥστ' εἴ τι ἄπειρον χρόνον
time but this at-once so-that if something an-infinite time
 ὄν φθαρτόν ἐστι, δύναμιν ἔχει ἂν τοῦ μὴ εἶναι. εἰ
being perishable is a-power it-would-have — of-the not to-be if
 δὴ ἄπειρον χρόνον ἐστίν, ἔσται ὑπάρχον ὃ δύναται.
indeed an-infinite time it-is it-will-be belonging which it-can
 ἅμα ἂρ' ἔσται τε καὶ οὐκ ἔσται κατ' ἐνέργειαν. ψεῦδος
at-once then it-will-be both and not it-will-be in actuality a-falsehood
 μὲν οὖν συμβαίνει ἂν, ὅτι ψεῦδος ἐτέθη. ἀλλ' εἰ μὴ
indeed therefore might-follow — because a-falsehood was-positd but if not
 ἀδύνατον ἦν, οὐκ ἂν καὶ ἀδύνατον ἦν τὸ συμβαῖνον.
impossible it-was not — also impossible would-be the thing-following
 ἅπαν ἄρα τὸ ἀεὶ ὄν ἀπλῶς ἀφθαρτον. ὁμοίως δὲ καὶ
everything then the always being simply imperishable alike and also

ἀγένητον· εἰ γὰρ γενητόν, ἔσται δυνατὸν χρόνον τινὰ μὴ
 ungenerated if for generated it-will-be possible a-time some not
 εἶναι. φθαρτὸν μὲν γάρ ἐστι τὸ πρότερον μὲν ὄν, νῦν δὲ
 to-be perishable indeed for is the before indeed being now and
 μὴ ὄν ἢ ἐνδεχόμενόν ποτε ὕστερον μὴ εἶναι· γενητὸν
 not being or admitting at-some-time later not to-be generated
 δὲ ὃ ἐνδέχεται πρότερον μὴ εἶναι, ἀλλ' οὐκ ἔστιν ἐν ᾧ
 and which it-admits before not to-be but not there-is in which
 χρόνῳ δυνατὸν τὸ ἀεὶ ὄν ὥστε μὴ εἶναι οὔτ' ἄπειρον
 time possible the always being so-that not to-be either infinite
 οὔτε πεπερασμένον· καὶ γὰρ τὸν πεπερασμένον χρόνον
 or limited also for the limited time
 δύναται εἶναι, εἴπερ καὶ τὸν ἄπειρον. οὐκ ἄρα ἐνδέχεται
 it-can to-be if-indeed also the infinite not then it-admits
 τὸ αὐτὸ καὶ ἐν αἰεί τε δύνασθαι εἶναι καὶ μὴ εἶναι.
 the same and one always both to-be-able to-be and not to-be
 ἀλλὰ μὴν οὐδὲ τὴν ἀπόφασιν, οἷον λέγω μὴ αἰεὶ εἶναι.
 but indeed nor the negation such-as I-mean not always to-be
 ἀδύνατον ἄρα καὶ αἰεὶ μὲν τι εἶναι, φθαρτὸν δ' εἶναι.
 impossible then also always indeed something to-be perishable and to-be
 ὁμοίως δ' οὐδὲ γενητόν. δυοῖν γὰρ ὅροι ἐῖ ἀδύνατον τὸ
 alike and nor generated of-two for terms if impossible the
 ὕστερον ἄνευ τοῦ προτέρου ὑπάρξαι, ἐκεῖνο δ' ἀδύνατον
 later without the earlier to-belong that and impossible
 ὑπάρξαι, καὶ τὸ ὕστερον. ὥστ' ἐῖ τὸ ἀεὶ ὄν μὴ ἐνδέχεται
 to-belong also the later so-that if the always being not it-admits
 ποτε μὴ εἶναι, ἀδύνατον καὶ γενητὸν εἶναι. ἐπεὶ δ'
 at-some-time not to-be impossible also generated to-be since and
 ἡ ἀπόφασις τοῦ μὲν αἰεὶ δυναμένου εἶναι τὸ μὴ αἰεὶ
 the negation of-the indeed always being-able to-be the not always
 δυνάμενον εἶναι, τὸ δ' αἰεὶ δυνάμενον μὴ εἶναι ἐναντίον,
 being-able to-be the and always being-able not to-be contrary

οὐ ἀπόφασις τὸ μὴ ἀεὶ δυνάμενον μὴ εἶναι, ἀνάγκη
of-which a-negation the not always being-able not to-be necessary
 τὰς ἀποφάσεις ἀμφοῖν τῷ αὐτῷ ὑπάρχειν, καὶ εἶναι μέσον
the negations of-both to-the same to-belong and to-be a-middle
 τοῦ ἀεὶ ὄντος καὶ τοῦ ἀεὶ μὴ ὄντος τὸ δυνάμενον εἶναι
of-the always being and of-the always not being the being-able to-be
 καὶ μὴ εἶναι· ἢ γὰρ ἑκατέρου ἀπόφασίς ποτε ὑπάρξει,
and not to-be the for of-each negation at-some-time will-belong
 εἰ μὴ εἴη ἀεὶ. ὥστε καὶ τὸ μὴ ἀεὶ μὴ ὄν ἔσται
if not it-should-be always so-that also the not always not being will-be
 ποτὲ καὶ οὐκ ἔσται, καὶ τὸ μὴ ἀεὶ δυνάμενον εἶναι
at-some-time and not will-be and the not always being-able to-be
 δηλονότι, ἀλλὰ ποτε ὄν· ὥστε καὶ μὴ εἶναι. τὸ αὐτὸ ἄρ'
clearly but at-some-time being so-that also not to-be the same then
 ἔσται δυνατόν εἶναι καὶ μή, καὶ τοῦτ' ἔστιν ἀμφοῖν μέσον.
will-be possible to-be and not and this is of-both a-middle
 λόγος δὲ καθόλου ὅδε. ἔστω γὰρ τὸ Α καὶ τὸ Β
an-argument and universal this let-there-be for the A and the B
 μηδενὶ τῷ αὐτῷ δυνάμενα ὑπάρχειν, ἅπαντι δὲ τὸ Α ἢ
to-nothing the same being-able to-belong to-everything and the A or
 τὸ Γ καὶ τὸ Β ἢ τὸ Δ. ἀνάγκη δὴ ᾧ μήτε τὸ Α
the C and the B or the D necessary indeed to-which neither the A
 ὑπάρχει μήτε τὸ Β, παντὶ ὑπάρχειν τὰ ΓΔ. ἔστω δὴ τὸ
belongs nor the B to-all to-belong the CD let-there-be indeed the
 Ε τὸ μεταξὺ τῶν ΑΒ· ἐναντίων γὰρ τὸ μηθέτερον μέσον.
E the between the AB of-contraries for the neither-of-the-two a-middle
 τούτῳ δὴ ἀνάγκη ἄμφω ὑπάρχειν τό τε Γ καὶ τὸ Δ.
to-this indeed necessary both to-belong the both C and the D
 παντὶ γὰρ ἢ τὸ Α ἢ τὸ Γ, ὥστε καὶ τῷ Ε· ἐπεὶ οὖν
to-all for either the A or the C so-that also to-the E since therefore
 τὸ Α ἀδύνατον, τὸ Γ ὑπάρξει. ὁ δ' αὐτὸς λόγος καὶ ἐπὶ
the A impossible the C will-belong the and same argument also upon

τοῦ Δ. οὔτε δὴ τὸ ἀεὶ ὄν γενητὸν οὐδὲ φθαρτόν, οὔτε
the D neither indeed the always being generated nor perishable nor
 τὸ ἀεὶ μὴ ὄν. δηλον δ' ὅτι καὶ εἰ γενητὸν ἢ φθαρτόν, οὐκ
the always not being clear and that also if generated or perishable not
 αἰδίου. ἅμα γὰρ ἔσται δυνάμενον ἀεὶ εἶναι καὶ δυνάμενον
everlasting at-once for it-will-be being-able always to-be and being-able
 μὴ ἀεὶ εἶναι· τοῦτο δ' ὅτι ἀδύνατον, δέδεικται πρότερον.
not always to-be this and that impossible has-been-shown before
 ἄρ' οὖν εἰ καὶ ἀγένητον, ὃν δέ, τοῦτ' ἀνάγκη αἰδίου
(is-it) therefore if also ungenerated being and this necessary everlasting
 εἶναι; ὁμοίως δὲ καὶ εἰ ἄφθαρτον, ὃν δέ. λέγω δὲ τὸ
to-be alike and also if imperishable being and I-mean and the
 ἀγένητον καὶ ἄφθαρτον τὰ κυρίως λεγόμενα, ἀγένητον μὲν
ungenerated and imperishable the properly being-said ungenerated indeed
 ὃ ἔστι νῦν, καὶ πρότερον οὐκ ἀληθὲς ἦν εἰπεῖν τὸ μὴ
which is now and before not true it-was to-say the not
 εἶναι, ἄφθαρτον δὲ ὃ νῦν ὄν ὕστερον μὴ ἀληθὲς ἔσται
to-be imperishable and which now being later not true it-will-be
 εἰπεῖν μὴ εἶναι. ἢ εἰ μὲν ταῦτα ἀλλήλοις ἀκολουθεῖ καὶ τό
to-say not to-be or if indeed these to-one-another follow also the
 τε ἀγένητον ἄφθαρτον καὶ τὸ ἄφθαρτον ἀγένητον, ἀνάγκη
both ungenerated imperishable and the imperishable ungenerated necessary
 καὶ τὸ αἰδίου ἐκατέρω ἀκολουθεῖν, καὶ εἴτε ἀγένητον,
also the everlasting to-each to-follow and whether ungenerated
 αἰδίου, εἴτε ἄφθαρτον, αἰδίου. δηλον δὲ καὶ ἐκ τοῦ ὀρισμοῦ
everlasting or imperishable everlasting clear and also out-of the definition
 αὐτῶν· καὶ γὰρ ἀνάγκη, εἰ φθαρτόν, γενητόν. ἢ γὰρ
of-them and for necessary if perishable generated either for
 ἀγένητον ἢ γενητόν· εἰ δὲ ἀγένητον, ἄφθαρτον ὑπόκειται.
ungenerated or generated if and ungenerated imperishable it-is-assumed
 καὶ εἰ γενητὸν δὴ, φθαρτόν ἀνάγκη· ἢ γὰρ φθαρτόν ἢ
and if generated indeed perishable necessary either for perishable or

ἄφθαρτον· ἀλλ' εἰ ἄφθαρτον, ἀγέννητον ὑπέκειτο. εἰ δὲ μὴ
imperishable but if imperishable ungenerated it-was-assumed if and not
 ἀκολουθοῦσιν ἀλλήλοις τὸ ἄφθαρτον καὶ τὸ ἀγέννητον, οὐκ
they-follow to-one-another the imperishable and the ungenerated not
 ἀνάγκη οὔτε τὸ ἀγέννητον οὔτε τὸ ἄφθαρτον αἰδίου εἶναι.
necessary either the ungenerated or the imperishable everlasting to-be
 ὅτι δ' ἀνάγκη ἀκολουθεῖν, ἐκ τῶνδε φανερόν. τὸ γὰρ
that and necessary to-follow out-of these clear the for
 γενητὸν καὶ τὸ φθαρτὸν ἀκολουθοῦσιν ἀλλήλοις. δῆλον δὲ
generated and the perishable follow to-one-another clear and
 καὶ τοῦτο ἐκ τῶν πρότερον· τοῦ γὰρ αἰὲ ὄντος καὶ τοῦ
also this out-of the earlier-(arguments) of-the for always being and of-the
 αἰὲ μὴ ὄντος ἐστὶ μεταξὺ ᾧ μῆδέτερον ἀκολουθεῖ, τοῦτο
always not being is a-middle to-which neither-of-the-two follows this
 δ' ἐστὶ τὸ γενητὸν καὶ φθαρτόν. δυνατόν γὰρ καὶ εἶναι καὶ
and is the generated and perishable possible for both to-be and
 μὴ εἶναι ὠρισμένον χρόνον ἑκάτερον· λέγω δ' ἑκάτερον καὶ
not to-be a-defined time each I-mean and each both
 εἶναι ποσόν τινα χρόνον καὶ μὴ εἶναι. εἰ τοίνυν ἐστὶ τι
to-be a-quantity a-certain time and not to-be if then is something
 γενητὸν ἢ φθαρτόν, ἀνάγκη τοῦτο μεταξὺ εἶναι. ἔστω γὰρ
generated or perishable necessary this a-middle to-be let-there-be for
 τὸ Α τὸ αἰὲ ὄν, τὸ δὲ Β τὸ αἰὲ μὴ ὄν, τὸ δὲ Γ γενητόν,
the A the always being the and B the always not being the and C generated
 τὸ δὲ Δ φθαρτόν. ἀνάγκη δὴ τὸ Γ μεταξὺ εἶναι τοῦ Α
the and D perishable necessary indeed the C a-middle to-be of-the A
 καὶ τοῦ Β. τῶν μὲν γὰρ οὐκ ἔστι χρόνος ἐπ' οὐδέτερον τὸ
and of-the B of-the indeed for not there-is a-time upon either the
 πέρασ ἐν ᾧ ἢ τὸ Α οὐκ ἦν ἢ τὸ Β ἦν· τῷ δὲ γενητῷ
limit in which either the A not was or the B was to-the and generated
 ἀνάγκη ἢ ἐνεργεῖα εἶναι ἢ δυνάμει, τοῖς δὲ ΑΒ οὐδετέρως.
necessary either in-actuality to-be or in-potency to-the and AB in-neither-way

ποσὸν ἄρα τινὰ καὶ ὠρισμένον χρόνον καὶ ἔσται καὶ
a-quantity then a-certain and defined time both it-will-be and
 πάλιν οὐκ ἔσται τὸ Γ. ὁμοίως δὲ καὶ ἐπὶ τοῦ Δ φθαρτοῦ.
again not it-will-be the C alike and also upon the D perishable
 γενητὸν ἄρα καὶ φθαρτὸν ἑκάτερον. ἀκολουθοῦσιν ἄρα
generated then and perishable each they-follow then
 ἀλλήλοις τὸ γενητὸν καὶ τὸ φθαρτόν. ἔστω δὴ τὸ ἐφ'
to-one-another the generated and the perishable let-there-be indeed the upon
 ᾧ Ε ἀγένητον, τὸ δ' ἐφ' ᾧ Ζ γενητόν, τὸ δ' ἐφ' ᾧ Η
which E ungenerated the and upon which F generated the and upon which G
 ἄφθαρτον, τὸ δ' ἐφ' ᾧ Θ φθαρτόν. τὰ δὴ ΖΘ δέδεικται
imperishable the and upon which H perishable the indeed FH it-has-been-shown
 ὅτι ἀκολουθεῖ ἀλλήλοις. ὅταν δ' ἦ οὕτω κείμενα ὡς
that follow to-one-another whenever and they-be thus lying as
 ταῦτα, οἷον τὸ μὲν Ζ καὶ τὸ Θ ἀκολουθοῦντα, τὸ δὲ Ε
these such-as the indeed F and the H following the and E
 καὶ τὸ Ζ μητιενὶ τῷ αὐτῷ, ἅπαντι δὲ θάτερον, ὁμοίως δὲ
and the F to-nothing the same to-everything and one-of-the-two alike and
 καὶ τὰ ΗΘ, ἀνάγκη καὶ τὰ ΕΗ ἀκολουθεῖν ἀλλήλοις. ἔστω
also the GH necessary also the EG to-follow to-one-another let-there-be
 γὰρ τῷ Η τὸ Ε μὴ ἀκολουθοῦν. τὸ ἄρα Ζ ἀκολουθήσει·
for to-the G the E not following the then F will-follow
 παντὶ γὰρ τὸ Ε ἢ τὸ Ζ. ἀλλὰ μὴν ᾧ τὸ Ζ, καὶ τὸ Θ.
to-everything for the E or the F but indeed to-which the F also the H
 τῷ ἄρα Η τὸ Θ ἀκολουθήσει. ἀλλ' ὑπέκειτο ἀδύνατον
to-the then G the H will-follow but it-was-assumed impossible
 εἶναι. ὁ δ' αὐτὸς λόγος καὶ ὅτι τὸ Η τῷ Ε. ἀλλὰ μὴν
to-be the and same argument also that the G to-the E but indeed
 οὕτως ἔχει τὸ ἀγένητον, ἐφ' ᾧ Ε, πρὸς τὸ γενητόν,
thus is-related the ungenerated upon which E toward the generated
 ἐφ' ᾧ Ζ, καὶ τὸ ἄφθαρτον, ἐφ' ᾧ Η, πρὸς τὸ φθαρτόν,
upon which F and the imperishable upon which G toward the perishable

ἐφ' ᾧ Θ. τὸ δὴ φάναι μηδὲν κωλύειν γινόμενόν
upon which H the indeed to-say nothing to-prevent coming-to-be
τι ἀφθαρτον εἶναι καὶ ἀγέννητον ὃν φθαρῆναι, ἅπαξ
something imperishable to-be and ungenerated being to-perish once
ὑπαρχούσης τῷ μὲν τῆς γενέσεως τῷ δὲ τῆς
belonging to-the-(one) indeed of-the coming-to-be to-the-(other) and of-the
φθορᾶς, ἀναιρεῖν ἐστι τῶν δεδομένων τι. ἢ γὰρ
perishing to-do-away-with is of-the things-granted something either for
ἄπειρον ἢ ποσόν τινα ὠρισμένον χρόνον δύναται ἅπαντα
an-infinite or a-quantity a-certain defined time can everything
ἢ ποιεῖν ἢ πάσχειν, ἢ εἶναι ἢ μὴ εἶναι, καὶ τὸν ἄπειρον
either to-act or to-suffer or to-be or not to-be also the infinite
διὰ τοῦτο, ὅτι ὠρισταί πως ὁ ἄπειρος χρόνος,
because-of this because it-has-been-defined somehow the infinite time
οὐδ' οὐκ ἔστι πλείων. τὸ δὲ πῇ ἄπειρον οὐτ' ἄπειρον
than-which not there-is greater the and in-a-way infinite neither infinite
οὐθ' ὠρισμένον. Ἐτι τί μᾶλλον ἐπὶ τῷδε τῷ σημείῳ
nor defined further why rather upon this the point
ἀεὶ ὃν πρότερον ἐφθάρη ἢ μὴ ὃν ἄπειρον ἐγένετο;
always being before perished or not being an-infinite-(time) came-to-be
εἰ γὰρ μηθὲν μᾶλλον, ἄπειρα δὲ τὰ σημεία, δῆλον ὅτι
if for in-nothing more infinite and the points clear that
ἄπειρον χρόνον ἦν τι γενητὸν καὶ φθαρτόν. δύναται ἄρα
an-infinite time was something generated and perishable it-can then
μὴ εἶναι ἄπειρον χρόνον· ἅμα γὰρ ἔξει δύναμιν τοῦ μὴ
not to-be an-infinite time at-once for it-will-have a-power of-the not
εἶναι καὶ εἶναι, τὸ μὲν πρότερον, εἰ φθαρτόν, τὸ δ'
to-be and to-be the-(one) indeed earlier if perishable the-(other) and
ὕστερον, εἰ γενητόν. ὥστ' ἐὰν ὑπάρχειν θῶμεν ἃ δύνανται,
later if generated so-that if to-belong we-posit which they-can
τὰ ἀντικείμενα ἅμα ὑπάρξει. ἔτι δὲ καὶ τοῦθ' ὁμοίως
the opposites at-once will-belong further and also this alike

ἐν ᾧπαντι σημείῳ ὑπάρξει, ὥστ' ἄπειρον χρόνον τοῦ μὴ
in every point will-belong so-that an-infinite time of-the not
 εἶναι καὶ τοῦ εἶναι ἔξει δύναμιν· ἀλλὰ δέδεικται ὅτι,
to-be and of-the to-be it-will-have a-power but it-has-been-shown that
 ἀδύνατον τοῦτο. ἔτι εἰ πρότερον ἢ δύναμις ὑπάρχει τῆς
impossible this further if before the power belongs than-the
 ἐνεργείας, ᾧπανθ' ὑπάρξει τὸν χρόνον, καὶ ὃν ἀγένητον
actuality all will-belong the time also which ungenerated
 ἦν καὶ μὴ ὄν, τὸν ἄπειρον χρόνον γίνεσθαι δυνάμενον.
it-was and not being the infinite time to-come-to-be being-able
 ἅμα δὴ οὐκ ἦν καὶ τοῦ εἶναι δύναμιν εἶχε, καὶ τοῦ τότε
at-once indeed not it-was and of-the to-be a-power it-had and of-the then
 εἶναι καὶ ὕστερον ἄπειρον ἄρα χρόνον. φανερόν δὲ καὶ
to-be and later an-infinite then time clear and also
 ἄλλως ὅτι ἀδύνατον φθαρτὸν ὃν μὴ φθαρῆναί ποτε.
otherwise that impossible perishable being not to-perish at-some-time
 ἀεὶ γὰρ ἔσται ἅμα καὶ φθαρτὸν καὶ ἀφθαρτον ἐντελεχεία,
always for it-will-be at-once both perishable and imperishable in-full-actuality
 ὥστε ἅμα ἔσται δυνατὸν αἰεὶ τε εἶναι καὶ μὴ αἰεί.
so-that at-once it-will-be possible always both to-be and not always
 φθείρεται ἄρα ποτὲ τὸ φθαρτόν, καὶ εἰ γενητόν,
it-perishes then at-some-time the perishable and if generated
 γέγονεν· δυνατὸν γὰρ γεγόνειν, καὶ μὴ αἰεὶ ἄρα εἶναι.
it-has-come-to-be possible for to-have-come-to-be and not always then to-be
 ἔστι δὲ καὶ ὧδε θεωρῆσαι ὅτι ἀδύνατον ἢ γενόμενον
it-is and also thus to-observe that impossible either having-come-to-be
 ποτε ἀφθαρτον τι διατελεῖν, ἢ ἀγένητον ὃν καὶ
at-some-time imperishable something to-continue or ungenerated being and
 ἀεὶ πρότερον ὃν φθαρῆναι. οὐδὲν γὰρ ἀπὸ τοῦ αὐτομάτου
always before being to-perish nothing for from the spontaneous
 οὔτ' ἀφθαρτον οὔτ' ἀγένητον οἶόν τ' εἶναι. τὸ μὲν γὰρ
either imperishable or ungenerated possible — to-be the indeed for

αὐτόματόν ἐστι καὶ τὸ ἀπὸ τύχης παρὰ τὸ ἀεὶ καὶ τὸ
spontaneous is and the from chance beside the always and the
 ὡς ἐπὶ τὸ πολὺ ἢ ὄν ἢ γινόμενον· τὸ δ' ἄπειρον
as for the most-part either being or coming-to-be the and an-infinite
 χρόνον ἢ ἀπλῶς ἢ ἀπὸ τινος χρόνου ἢ ἀεὶ ἢ ὡς ἐπὶ
time either simply or from some time either always or as for
 τὸ πολὺ ὑπάρχει ὄν. ἀνάγκη τοίνυν φύσει τὰ τοιαῦτα
the most-part belongs being necessary then by-nature the such
 ὅτε μὲν εἶναι ὅτε δὲ μή. τῶν δὲ τοιούτων ἡ αὐτὴ
at-one-time indeed to-be at-another and not of-the and such the same
 δύναμις τῆς ἀντιφάσεως, καὶ ἡ ὕλη αἰτία τοῦ εἶναι καὶ μή.
power of-the contradiction and the matter a-cause of-the to-be and not
 ὥστ' ἀνάγκη καὶ ἅμα ὑπάρχειν ἐνεργείᾳ ἀντικείμενα.
so-that necessary also at-once to-belong in-actuality opposites
 ἀλλὰ μὴν οὐδέν γ' ἀληθὲς εἰπεῖν νῦν ὅτι ἔστι πέρυσιν,
but indeed nothing at-least true to-say now that it-is last-year
 οὐδὲ πέρυσιν ὅτι νῦν ἔστιν. ἀδύνατον ἄρα μὴ ὄν ποτε
nor last-year that now it-is impossible then not being at-some-time
 ὕστερον αἰδίων εἶναι· ἔξει γὰρ ὕστερον καὶ τὴν τοῦ
later everlasting to-be it-will-have for later also the of-the
 μὴ εἶναι δύναμιν. πλὴν οὐ τοῦ τότε μὴ εἶναι ὅτε ἔστιν
not to-be power only not of-the then not to-be when it-is
 (ὑπάρχει γὰρ ἐνεργείᾳ ὄν), ἀλλὰ τοῦ πέρυσιν καὶ ἐν τῷ
it-belongs for in-actuality being but of-the last-year and in the
 παρελθόντι χρόνῳ. ἔστω δὴ οὗ ἔχει τὴν δύναμιν
past time let-there-be indeed of-which it-has the power
 ὑπάρχον ἐνεργείᾳ· ἔσται ἄρα ἀληθὲς εἰπεῖν νῦν ὅτι οὐκ
belonging in-actuality it-will-be then true to-say now that not
 ἔστι πέρυσιν. ἀλλ' ἀδύνατον· οὐδεμία γὰρ δύναμις τοῦ
it-is last-year but impossible no for power of-the
 γεγονέναι ἐστίν, ἀλλὰ τοῦ εἶναι ἢ ἔσεσθαι. ὁμοίως
to-have-come-to-be is but of-the to-be or to-be-going-to-be alike

δὲ καὶ εἰ πρότερον ὄν αἰδῖον ὕστερον μὴ ἔστιν· ἔξει
and also if before being everlasting later not it-is it-will-have
 γὰρ δύναμιν οὗ ἐνεργεία οὐκ ἔστιν. ὥστ' ἂν θῶμεν τὸ
for a-power of-which in-actuality not it-is so-that if we-posit the
 δυνατόν, ἀληθὲς ἔσται εἰπεῖν νῦν ὅτι τοῦτ' ἔστι πέρυσιν
possible true it-will-be to-say now that this is last-year
 καὶ ὅλως ἐν τῷ παρελθόντι χρόνῳ. καὶ φυσικῶς δὲ καὶ μὴ
and generally in the past time and naturally and and not
 καθόλου σκοποῦσιν ἀδύνατον ἢ αἰδῖον ὄν πρότερον
universally for-those-examining impossible either everlasting being before
 φθαρῆναι ὕστερον, ἢ πρότερον μὴ ὄν ὕστερον αἰδῖον
to-perish later or before not being later everlasting
 εἶναι. τὰ γὰρ φθαρτὰ καὶ γενητὰ καὶ ἀλλοιωτὰ πάντα·
to-be the for perishable and generated also alterable all
 ἀλλοιούται δὲ τοῖς ἐναντίοις καὶ ἐξ ὧν συνίσταται τὰ
it-is-altered and by-the contraries and out-of which are-formed the
 φύσει ὄντα, καὶ ὑπὸ τῶν αὐτῶν τούτων φθείρεται.
by-nature being and by the same these it-perishes

BOOK II

I • THE HEAVEN NEEDS NO ATLAS

That the whole heaven neither came to be nor can perish is confirmed by the accounts of those who say otherwise. The ancients gave the upper place to the gods, and the argument agrees: the heaven is unwearied, since it needs no force to hold it where it naturally moves. Aristotle rejects the myth of Atlas, and the notion that a soul keeps it turning against its nature.

"Ὅτι μὲν οὖν οὔτε γέγονεν ὁ πᾶς οὐρανὸς οὔτ'
that indeed therefore neither has-come-to-be the whole heaven nor
 ἐνδέχεται φθαρῆναι, καθάπερ τινές φασιν αὐτόν, ἀλλ'
it-admits to-perish just-as certain-(people) say it but
 ἔστιν εἷς καὶ αἰδῖος, ἀρχὴν μὲν καὶ τελευτὴν οὐκ ἔχων
it-is one and everlasting a-beginning indeed and an-end not having
 τοῦ παντὸς αἰῶνος, ἔχων δὲ καὶ περιέχων ἐν αὐτῷ τὸν
of-the whole age having and also enclosing in itself the
 ἄπειρον χρόνον, ἔκ τε τῶν εἰρημένων ἔξεστι λαμβάνειν
infinite time out-of both the things-said it-is-possible to-take
 τὴν πίστιν, καὶ διὰ τῆς δόξης τῆς παρὰ τῶν ἄλλως
the conviction and through the opinion the from the-(ones) otherwise
 λεγόντων καὶ γεννώντων αὐτόν· εἰ γὰρ οὕτως μὲν ἔχειν
saying and generating it if for thus indeed to-be
 ἐνδέχεται, καθ' ὃν δὲ τρόπον ἐκείνοι γενέσθαι
it-admits according-to which and way those to-have-come-to-be
 λέγουσιν οὐκ ἐνδέχεται, μεγάλην ἂν ἔχοι καὶ τοῦτο
say not it-admits great — it-would-have also this
 ῥοπήν εἰς πίστιν περὶ τῆς ἀθανασίας αὐτοῦ καὶ αἰδιότητος.
weight toward conviction about the immortality of-it and everlastingness
 διόπερ καλῶς ἔχει συμπεῖθειν ἑαυτὸν τοὺς ἀρχαίους καὶ
wherefore well it-is to-persuade oneself the ancient and

μάλιστα πατρίους ἡμῶν ἀληθεῖς εἶναι λόγους, ὡς ἔστιν
especially ancestral of-us true to-be accounts that there-is
 ἀθάνατόν τι καὶ θεῖον τῶν ἔχόντων μὲν κίνησιν,
immortal something and divine of-the-(things) having indeed motion
 ἔχόντων δὲ τοιαύτην ὥστε μηθὲν εἶναι πέρας αὐτῆς, ἀλλὰ
having and such so-that nothing to-be a-limit of-it but
 μᾶλλον ταύτην τῶν ἄλλων πέρας· τό τε γὰρ πέρας τῶν
rather this of-the others a-limit the both for limit of-the
 περιεχόντων ἐστί, καὶ αὕτη ἡ κυκλοφορία τέλειος οὐσα
enclosing-(things) is and this the circular-revolution complete being
 περιέχει τὰς ἀτελεῖς καὶ τὰς ἐχούσας πέρας καὶ παύλαν,
encloses the incomplete and the having a-limit and a-stopping
 αὕτη μὲν οὐδεμίαν οὐτ' ἀρχὴν ἔχουσα οὔτε τελευτήν, ἀλλ'
itself indeed none either a-beginning having or an-end but
 ἄπαυστος οὐσα τὸν ἄπειρον χρόνον, τῶν δ' ἄλλων τῶν
unceasing being the infinite time of-the and others of-the-ones
 μὲν αἰτία τῆς ἀρχῆς, τῶν δὲ δεχομένη τὴν παύλαν.
indeed a-cause of-the beginning of-the-others and receiving the stopping
 τὸν δ' οὐρανὸν καὶ τὸν ἄνω τόπον οἱ μὲν ἀρχαῖοι
the and heaven and the upper place the indeed ancients
 τοῖς θεοῖς ἀπένευμαν ὥς ὄντα μόνον ἀθάνατον· ὁ δὲ
to-the gods assigned as being alone immortal the and
 νῦν μαρτυρεῖ λόγος ὡς ἀφθαρτος καὶ ἀγέννητος, ἔτι δ'
now testifies argument that imperishable and ungenerated further and
 ἀπαθὴς πάσης θνητῆς δυσχερείας ἐστίν, πρὸς δὲ τούτοις
unaffected of-all mortal difficulty it-is toward and these
 ἄπρονος διὰ τὸ μηδεμιᾶς προσδεῖσθαι βιαίας ἀνάγκης,
effortless because-of the of-no to-stand-in-need violent necessity
 ἣ κατέχει κωλύουσα φέρεσθαι πεφυκῶτα αὐτὸν ἄλλως·
which holds preventing to-be-carried naturally-disposed it otherwise
 πᾶν γὰρ τὸ τοιοῦτον ἐπίπονον, ὅσῳ περ ἂν αἰδιώτερον
everything for the such laborious by-as-much — more-everlasting

ἦ, καὶ διαθέσεως τῆς ἀρίστης ἄμοιρον. διόπερ οὔτε
it-be and of-a-disposition the best without-share wherefore neither
 κατὰ τὸν τῶν παλαιῶν μῦθον ὑποληπτέον ἔχειν, οἳ
according-to the of-the ancients myth one-must-suppose to-be who
 φασιν Ἄτλαντός τινος αὐτῷ προσδεῖσθαι τὴν σωτηρίαν·
say of-an-Atlas a-certain for-it to-stand-in-need the safety
 εὐόκασι γὰρ καὶ τοῦτον οἱ συστήσαντες τὸν λόγον
they-seem for also this the-ones having-framed the account
 τὴν αὐτὴν ἔχειν ὑπόληψιν τοῖς ὕστερον· ὥς γὰρ περὶ
the same to-have supposition to-those later as for about
 βάρος ἐχόντων καὶ γεγρῶν ἀπάντων τῶν ἄνω σωμάτων
weight having and earthy all the upper bodies
 ὑπέστησαν αὐτῷ μυθικῶς ἀνάγκην ἔμφυχον. οὔτε δὴ
they-set-under for-it mythically a-necessity ensouled nor indeed
 τοῦτον τὸν τρόπον ὑποληπτέον, οὔτε διὰ τὴν δίνησιν
this the way one-must-suppose nor because-of the whirling
 θάπτοντος τυγχάνοντα φορᾶς τῆς οἰκείας ῥοπῆς ἔτι
of-a-swifter obtaining movement than-the proper inclination still
 σώζεσθαι τοσοῦτον χρόνον, καθάπερ Ἐμπεδοκλῆς φησιν.
to-be-preserved so-long a-time just-as Empedocles says
 ἀλλὰ μὴν οὐδ' ὑπὸ ψυχῆς εὐλογον ἀναγκαζούσης μένειν
but indeed nor by a-soul reasonable compelling to-remain
 αἰδίδιον· οὐδὲ γὰρ τῆς ψυχῆς οἶόν τ' εἶναι τὴν τοιαύτην
everlasting nor for of-the soul possible — to-be the such
 ζωὴν ἄλυπον καὶ μακαρίαν· ἀνάγκη γὰρ καὶ τὴν κίνησιν
life painless and blessed necessary for also the motion
 μετὰ βίας οὔσαν, εἴπερ κινεῖ φέρεσθαι πεφυκός τοῦ
with force being if-indeed it-moves to-be-carried being-natured of-the
 πρώτου σώματος ἄλλως κινεῖ συνεχῶς, ἄσυχον εἶναι καὶ
first body otherwise it-moves continuously unisured to-be and
 πάσης ἀπηλλαγμένην ῥαστώνης ἔμφρονος, εἴ γε μὴδ'
of-all deprived of-ease intelligent if at-least not-even

ὥσπερ τῇ ψυχῇ τῇ τῶν θνητῶν ζώων ἐστὶν ἀνάπαυσις
as for-the soul the of-the mortal animals there-is a-rest
 ἢ περὶ τὸν ὕπνον γινομένη τοῦ σώματος ἀνεσις, ἀλλ'
the about the sleep coming-about of-the body a-relaxing but
 ἀναγκαῖον Ἰξίωνός τινος μοῖραν κατέχειν αὐτὴν αἰδίου καὶ
necessary of-an-Ixion a-certain lot to-hold it everlasting and
 ἄτρυτον. εἰ δὴ, καθάπερ εἵπομεν, ἐνδέχεται τὸν εἰρημένον
unwearied if indeed just-as we-said it-admits the aforesaid
 ἔχειν τρόπον περὶ τῆς πρώτης φορᾶς, οὐ μόνον αὐτοῦ
to-be way about the first movement not only of-it
 περὶ τῆς αἰδιότητος οὕτως ὑπολαβεῖν ἐμμελέστερον, ἀλλὰ
about the everlastingness thus to-suppose more-fitting but
 καὶ τῇ μαντείᾳ τῇ περὶ τὸν θεὸν μόνως ἂν ἔχοιμεν
also to-the divination the about the god only — we-might-be-able
 οὕτως ὁμολογουμένως ἀποφαίνεσθαι συμφώνους λόγους.
thus consistently to-declare agreeing accounts
 ἀλλὰ τῶν μὲν τοιούτων λόγων ἅλις ἔστω τὰ νῦν.
but of-the indeed such accounts enough let-it-be the now

II · RIGHT AND LEFT IN THE HEAVEN

The Pythagoreans say the heaven has a right and a left. Aristotle answers that such distinctions belong only to things with a source of motion in themselves, and that the three dimensions give six principles — above and below, front and back, and right and left — rather than the two the Pythagoreans named. Since the heaven is ensouled, it has them all: its right is where the stars rise, its top is the unseen pole, and we live in its lower half, not as the Pythagoreans place us.

Ἐπειδὴ δέ τινές εἰσιν οἳ φασιν εἶναί τι δεξιὸν καὶ
since and certain are who say to-be something right and
 ἀριστερόν τοῦ οὐρανοῦ, καθάπερ οἱ καλούμενοι Πυθαγόρειοι
left of-the heaven just-as the so-called Pythagoreans

(ἐκείνων γὰρ οὗτος ὁ λόγος ἐστίν), σκεπτέον πότερον
of-those for this the account is one-must-consider whether
 τοῦτον ἔχει τὸν τρόπον ὡς ἐκείνοι λέγουσιν, ἢ μᾶλλον
this it-has the way as those say or rather
 ἑτέρως, εἴπερ δεῖ προσάπτειν τῷ τοῦ παντὸς σώματι
otherwise if-indeed it-is-needful to-attach to-the of-the all body
 ταύτας τὰς ἀρχάς. εὐθύς γὰρ πρῶτον, εἰ τὸ δεξιὸν
these the principles straightway for first if the right
 ὑπάρχει καὶ τὸ ἀριστερόν, ἔτι πρότερον τὰς προτέρας
belongs and the left further before the prior
 ὑποληπτέον ὑπάρχειν ἀρχὰς ἐν αὐτῷ. διώρισται μὲν
one-must-suppose to-belong principles in it it-has-been-determined indeed
 οὖν περὶ τούτων ἐν τοῖς περὶ τὰς τῶν ζώων
therefore about these in the-(treatises) about the of-the animals
 κινήσεις διὰ τὸ τῆς φύσεως οἰκεῖα τῆς ἐκείνων εἶναι.
motions because-of the of-the nature proper of-the of-those to-be
 φανερώς γὰρ ἐν γε τοῖς ζώοις ὑπάρχοντα φαίνεται
manifestly for in at-least the animals belonging appear
 τοῖς μὲν πάντα τὰ τοιαῦτα μόρια, λέγω δ' οἷον τό τε
to-the-ones indeed all the such parts I-mean and such-as the both
 δεξιὸν καὶ τὸ ἀριστερόν, τοῖς δ' ἑνία, τοῖς δὲ φυτοῖς
right and the left to-the-others and some to-the and plants
 τὸ ἄνω καὶ κάτω μόνον. εἰ δὲ δεῖ καὶ τῷ οὐρανῷ
the above and below only if and it-is-needful also to-the heaven
 προσάπτειν τι τῶν τοιούτων, καὶ τὸ πρῶτον, καθάπερ
to-attach something of-the such-things also the first just-as
 εἵπομεν, ἐν τοῖς ζώοις ὑπάρχον εὐλογον ὑπάρχειν ἐν
we-said in the animals belonging reasonable to-belong in
 αὐτῷ· τριῶν γὰρ ὄντων ἕκαστον οἷον ἀρχή τις ἐστίν.
it three for being each as-it-were a-principle some is

λέγω δὲ τὸ τρία τὸ ἄνω καὶ κάτω, καὶ τὸ πρόσθιον καὶ
I-mean and the three the above and below and the front and
τὸ ἀντικείμενον, καὶ τὸ δεξιὸν καὶ τὸ ἀριστερόν· ταύτας
the opposite and the right and the left these
γὰρ τὰς διαστάσεις εὐλογον ὑπάρχειν τοῖς σώμασι τοῖς
for the dimensions reasonable to-belong to-the bodies to-the
τελείοις πάσας. ἔστι δὲ τὰ μὲν ἄνω τοῦ μήκους ἀρχή,
complete all it-is and the indeed above of-the length a-beginning
τὸ δὲ δεξιὸν τοῦ πλάτους, τὸ δὲ πρόσθεν τοῦ βάθους.
the and right of-the breadth the and front of-the depth
ἔτι δ' ἄλλως κατὰ τὰς κινήσεις· ἀρχὰς γὰρ ταύτας
further and otherwise according-to the motions beginnings for these
λέγω ὅθεν ἄρχονται πρῶτον αἱ κινήσεις τοῖς ἔχουσιν.
I-mean whence begin first the motions for-the-(things) having
ἔστι δὲ ἀπὸ μὲν τοῦ ἄνω ἡ αὔξισις, ἀπὸ δὲ τῶν δεξιῶν
it-is and from indeed the above the growth from and the right
ἡ κατὰ τόπον, ἀπὸ δὲ τῶν ἔμπροσθεν ἡ κατὰ τὴν
the according-to place from and the front the according-to the
αἴσθησιν· ἔμπροσθεν γὰρ λέγω ἐφ' ὃ αἱ αἰσθήσεις. διὸ
perception front for I-mean toward which the perceptions wherefore
οὐκ ἐν ἅπαντι σώματι τὸ ἄνω καὶ κάτω καὶ τὸ δεξιὸν καὶ
not in every body the above and below and the right and
ἀριστερόν καὶ τὸ ἔμπροσθεν καὶ ὀπίσθεν ζητητέον, ἀλλ'
left and the front and back one-must-see but
ὅσα ἔχει κινήσεως ἀρχὴν ἐν αὐτοῖς ἐμψυχα ὄντα· τῶν
as-many-as have of-motion a-beginning in themselves ensouled being of-the
γὰρ ἀψύχων ἐν οὐθενὶ ὁρῶμεν ὅθεν ἡ ἀρχὴ τῆς κινήσεως.
for soulless in none we-see whence the beginning of-the motion
τὰ μὲν γὰρ ὅλως οὐ κινεῖται, τὰ δὲ κινεῖται μὲν
the-ones indeed for wholly not are-moved the-others and are-moved indeed
ἀλλ' οὐ πανταχόθεν ὁμοίως, οἷον τὸ πῦρ ἄνω μόνον
but not from-every-side alike such-as the fire upward only

καὶ ἡ γῆ ἐπὶ τὸ μέσον. ἀλλ' ἐν μὲν τούτοις λέγομεν
and the earth toward the middle but in indeed these we-say
 τὸ ἄνω καὶ κάτω καὶ τὸ δεξιὸν καὶ ἀριστερόν πρὸς
the above and below and the right and left toward
 ἡμᾶς ἐπαναφέροντες· ἢ γὰρ κατὰ τὰ ἡμέτερα δεξιά,
us referring either for according-to the our right-parts
 ὥσπερ οἱ μάντις, ἢ καθ' ὁμοιότητα τοῖς ἡμετέροις,
as the seers or according-to likeness to-the ours
 ὥσπερ τὰ τοῦ ἀνδριάντος, ἢ τὰ ἐναντίως ἔχοντα
as the-(parts) of-the statue or the-(parts) contrarily being
 τῇ θέσει, δεξιὸν μὲν τὸ κατὰ τὸ ἡμέτερον ἀριστερόν,
in-the position right indeed the according-to the our left
 ἀριστερόν δὲ τὸ κατὰ τὸ ἡμέτερον δεξιόν, καὶ ὅπισθεν
left and the according-to the our right and back
 τὸ κατὰ τὸ ἡμέτερον ἔμπροσθεν, ἐν αὐτοῖς δὲ τούτοις
the according-to the our front in these-very and these
 οὐδεμίαν ὁρῶμεν διαφορὰν· ἐὰν γὰρ ἀνάπαλιν στραφῇ, τὰ
no we-see difference if for back-again it-be-turned the
 ἐναντία ἐροῦμεν δεξιά καὶ ἀριστερά καὶ ἄνω καὶ κάτω καὶ
contrary we-shall-call right and left and above and below and
 ἔμπροσθεν καὶ ὅπισθεν. διὸ καὶ τῶν Πυθαγορείων ἄν
front and back wherefore also of-the Pythagoreans —
 τις θαυμάσειεν ὅτι δύο μόνας ταύτας ἀρχὰς ἔλεγον, τὸ
someone might-wonder that two only these principles they-called the
 δεξιὸν καὶ ἀριστερόν, τὰς δὲ τέτταρας παρέλιπον οὐθὲν
right and left the and four they-left-out not-at-all
 ἥττον κυρίας οὔσας· οὐθὲν γὰρ ἐλάττω διαφορὰν ἔχει
less authoritative being not-at-all for a-less difference has
 τὰ ἄνω πρὸς τὰ κάτω καὶ τὰ ἔμπροσθεν πρὸς τὰ ὅπισθεν
the above toward the below and the front toward the back
 ἢ τὰ δεξιά πρὸς τὰ ἀριστερά ἐν ἅπασιν τοῖς ζώοις.
than the right-parts toward the left-parts in all the animals

τὰ μὲν γὰρ τῇ δυνάμει διαφέρει μόνον, τὰ δὲ καὶ
the-ones indeed for by-the power differ only the-others and also
 τοῖς σχήμασι, καὶ τὸ μὲν ἄνω καὶ τὸ κάτω πᾶσι τοῖς
by-the shapes and the indeed above and the below to-all the
 ἐμψύχοις ἐστὶν ὁμοίως ζώοις καὶ φυτοῖς, τὸ δὲ δεξιὸν
ensouled is alike to-animals and to-plants the and right
 καὶ ἀριστερὸν οὐκ ἐνυπάρχει τοῖς φυτοῖς. ἔτι δ' ὡς τὸ
and left not inheres to-the plants further and as the
 μῆκος τοῦ πλάτους πρότερον, εἰ τὸ μὲν ἄνω τοῦ μήκους
length than-the breadth prior if the indeed above of-the length
 ἀρχή, τὸ δὲ δεξιὸν τοῦ πλάτους, ἢ δὲ τοῦ προτέρου
a-beginning the and right of-the breadth the and of-the prior
 ἀρχὴ προτέρα, πρότερον ἂν εἴη τὸ ἄνω τοῦ δεξιοῦ
beginning prior prior — would-be the above than-the right
 κατὰ γένεσιν, ἐπειδὴ πολλαχῶς λέγεται τὸ πρότερον.
according-to generation since in-many-ways is-said the prior
 πρὸς δὲ τούτοις, εἰ τὸ μὲν ἄνω ἐστὶ τὸ ὅθεν ἡ κίνησις,
toward and these if the indeed above is the whence the motion
 τὸ δὲ δεξιὸν ἀφ' οὗ, τὸ δ' εἰς τὸ πρόσθεν ἐφ'
the and right from which the-(other) and into the front toward
 ὅ, καὶ οὕτως ἂν ἔχοι τινὰ δύναμιν ἀρχῆς τὸ
which also thus — it-would-have a-certain power of-a-beginning the
 ἄνω πρὸς τὰς ἄλλας ιδέας. διὰ τε δὴ τὸ παραλείπειν
above toward the other forms through both indeed the to-leave-out
 τὰς κυριωτέρας ἀρχὰς δίκαιον αὐτοῖς ἐπιτιμᾶν, καὶ διότι
the more-authoritative principles just them to-censure and because
 ταύτας ἐν ᾗπασιν ὁμοίως ἐνόμιζον ὑπάρχειν.
these in all alike they-thought to-belong
 ἡμῖν δ' ἐπειδὴ ὠρισταί πρότερον ὅτι ἐν τοῖς
for-us and since it-has-been-determined before that in the-(things)
 ἔχουσιν ἀρχὴν κινήσεως αἱ τοιαῦται δυνάμεις ὑπάρχουσιν,
having a-beginning of-motion the such powers belong

ὁ δ' οὐρανὸς ἔμφυχος καὶ ἔχει κινήσεως ἀρχήν, δηλον ὅτι
the and heaven ensouled and has of-motion a-beginning clear that
 ἔχει καὶ τὸ ἄνω καὶ τὸ κάτω καὶ τὸ δεξιὸν καὶ τὸ ἀριστερόν.
it-has also the above and the below and the right and the left
 οὐ δὲ γὰρ ἀπορεῖν διὰ τὸ σφαιροειδὲς εἶναι τὸ
not it-is-needful for to-be-at-a-loss because-of the spherical to-be the
 σχῆμα τοῦ παντός, ὅπως ἔσται τούτου τὸ μὲν δεξιὸν τὸ
shape of-the all how there-will-be of-this the indeed right the
 δὲ ἀριστερὸν ὁμοίων γ' ὄντων τῶν μορίων ἀπάντων καὶ
and left alike at-least being the parts all and
 κινουμένων τὸν ἅπαντα χρόνον, ἀλλὰ νοεῖν ὥσπερ ἂν εἴ
being-moved the whole time but to-conceive as — if
 τις, ἐν οἷς ἔχει τὸ δεξιὸν πρὸς τὸ ἀριστερὸν διαφορὰν
someone in which-(things) it-has the right toward the left a-difference
 καὶ τοῖς σχήμασιν, εἴτα περιθίη σφαῖραν· ἔξει μὲν
also in-the shapes then should-put-round a-sphere it-will-have indeed
 γὰρ τὴν δύναμιν διαφέρουσιν, δόξει δ' οὐ διὰ τὴν
for the power differing it-will-seem and not because-of the
 ὁμοιότητα τοῦ σχήματος. τὸν αὐτὸν δὲ τρόπον καὶ περὶ τῆς
likeness of-the shape the same and way also about the
 ἀρχῆς τοῦ κινεῖσθαι· καὶ γὰρ εἰ μηδέποτε ἤρξατο, ὅμως
beginning of-the to-be-moved and for if never it-began nevertheless
 ἔχει ἀναγκαῖον ἀρχήν, ὅθεν ἂν ἤρξατο, εἰ ἤρχετο
to-have necessary a-beginning whence — it-would-have-begun if it-were-beginning
 κινούμενον, κἂν εἰ σταίη, κινήθει ἂν πάλιν.
being-moved even if it-should-stand it-might-be-moved — again
 λέγω δὲ μήκος μὲν αὐτοῦ τὸ κατὰ τοὺς πόλους διάστημα,
I-mean and a-length indeed of-it the according-to the poles interval
 καὶ τῶν πόλων τὸν μὲν ἄνω τὸν δὲ κάτω διαφορὰν
and of-the poles the-one indeed above the-other and below a-difference
 γὰρ ἐν τούτοις μόνοις ὁρῶμεν τῶν ἡμισφαιρίων, τῷ μὴ
for in these only we-see of-the hemispheres by-the not

κινεῖσθαι τοὺς πόλους. ἅμα δὲ καὶ εἰώθαμεν λέγειν τὰ
to-be-moved the poles at-once and also we-are-accustomed to-call the
 πλάγια ἐν τῷ κόσμῳ οὐ τὸ ἄνω καὶ τὸ κάτω, ἀλλὰ τὸ
sideways-(parts) in the world not the above and the below but the
 παρὰ τοὺς πόλους, ὡς τούτου μήκους ὄντος· τὸ γὰρ εἰς τὸ
beside the poles as of-this a-length being the for into the
 πλάγιόν ἐστι τὸ παρὰ τὸ ἄνω καὶ τὸ κάτω. τῶν δὲ πόλων.
sideways is the beside the above and the below of-the and poles
 ὁ μὲν ὑπὲρ ἡμᾶς φαινόμενος τὸ κάτω μέρος ἐστίν,
the-one indeed above us appearing the below part is
 ὁ δ' ἡμῖν ἄδηλος τὸ ἄνω. δεξιὸν γὰρ ἐκάστου λέγομεν,
the-other and to-us unseen the above right for of-each we-call
 ὅθεν ἡ ἀρχὴ τῆς κατὰ τόπον κινήσεως· τοῦ δ' οὐρανοῦ
whence the beginning of-the according-to place motion of-the and heaven
 ἀρχὴν τῆς περιφορᾶς, ὅθεν αἱ ἀνατολαὶ τῶν ἀστρων, ὥστε
a-beginning of-the revolution whence the risings of-the stars so-that
 τοῦτ' ἂν εἴη δεξιόν, οὗ δ' αἱ δύσεις, ἀριστερόν. εἰ οὖν
this — would-be right where and the settings left if therefore
 ἄρχεται ἀπὸ τῶν δεξιῶν καὶ ἐπὶ τὰ δεξιὰ περιφέρεται,
it-begins from the right-parts and toward the right-parts is-carried-round
 ἀνάγκη τὸ ἄνω εἶναι τὸν ἀφανῆ πόλον· εἰ γὰρ ἔσται ὁ
necessary the above to-be the unseen pole if for it-will-be the
 φανερός, ἐπ' ἀριστερὰ ἔσται ἡ κίνησις, ὅπερ οὐ φαμεν.
visible toward left-parts will-be the motion which-very not we-say
 δῆλον τοίνυν ὅτι ὁ ἀφανὴς πόλος ἐστὶ τὸ ἄνω. καὶ οἱ
clear then that the unseen pole is the above and the-ones
 μὲν ἐκεῖ οἰκοῦντες ἐν τῷ ἄνω εἰσὶν ἡμισφαιρίῳ καὶ πρὸς
indeed there dwelling in the above are hemisphere and toward
 τοῖς δεξιοῖς, ἡμεῖς δ' ἐν τῷ κάτω καὶ πρὸς τοῖς ἀριστεροῖς,
the right-parts we and in the below and toward the left-parts
 ἐναντίως ἢ ὡς οἱ Πυθαγόρειοι λέγουσιν· ἐκείνοι γὰρ ἡμᾶς
contrarily than as the Pythagoreans say those for us

ἄνω ποιοῦσι καὶ ἐν τῷ δεξιῷ μέρει, τοὺς δ' ἐκεῖ κάτω καὶ
above make and in the right part the-ones and there below and
 ἐν τῷ ἀριστερῷ. συμβαίνει δὲ τοῦναντίον. ἀλλὰ τῆς μὲν
in the left it-happens and the-contrary but of-the indeed
 δευτέρας περιφορᾶς, οἷον τῆς τῶν πλανήτων, ἡμεῖς μὲν ἐν
second revolution such-as of-the of-the planets we indeed in
 τοῖς ἄνω καὶ τοῖς δεξιοῖς ἔσμεν, ἐκεῖνοι δὲ ἐν τοῖς κάτω καὶ
the above and the right-parts are those and in the below and
 τοῖς ἀριστεροῖς· ἀνάπαλιν γὰρ τούτοις ἡ ἀρχὴ τῆς κινήσεως
the left-parts back-again for for-these the beginning of-the motion
 ἐστὶ διὰ τὸ ἐναντίας εἶναι τὰς φορὰς, ὥστε συμβαίνειν
is because-of the contrary to-be the movements so-that to-happen
 ἡμᾶς μὲν εἶναι πρὸς τῇ ἀρχῇ ἐκείνους δὲ πρὸς τῷ τέλει.
us indeed to-be toward the beginning those and toward the end
 περὶ μὲν οὖν τῶν κατὰ τὰς διαστάσεις μορίων καὶ
about indeed therefore the according-to the dimensions parts and
 τῶν κατὰ τόπον ὠρισμένων τοσαῦτα εἰρήσθω.
the according-to place having-been-determined so-much let-it-have-been-said

III · WHY THERE ARE MANY MOTIONS

Since circular motion has no contrary, Aristotle asks why there are several revolutions rather than one. His answer starts from the divine: everlasting activity requires everlasting motion, and the body that carries it must have something at rest at the middle, which is earth. Given earth there must be fire, and given contraries there must be coming to be, and coming to be requires more motions than one.

Ἐπεὶ δ' οὐκ ἔστιν ἐναντία κίνησις ἢ κύκλῳ τῇ κύκλῳ,
since and not there-is contrary a-motion the in-a-circle to-the in-a-circle
 σκεπτέον διὰ τί πλείους εἰσὶ φοραί, καίπερ πόρρωθεν
one-must-consider through what more are movements although from-afar

πειρωμένοις ποιείσθαι τὴν ζήτησιν, πόρρω δ' οὐχ οὕτω τῷ
for-those-trying to-make the inquiry far and not so by-the
τόπῳ, πολὺ δὲ μᾶλλον τῷ τῶν συμβεβηκότων αὐτοῖς περὶ
place much and rather by-the of-the accidents to-them about
πάμπαν ὀλίγων ἔχειν αἴσθησιν. ὅμως δὲ λέγωμεν. ἡ δ'
altogether few to-have perception nevertheless and let-us-speak the and
αἰτία περὶ αὐτῶν ἐνθένδε ληπτέα. Ἐκαστόν ἐστιν, ὧν
cause about them from-here is-to-be-taken each is of-which
ἐστὶν ἔργον, ἕνεκα τοῦ ἔργου. θεοῦ δ' ἐνέργεια ἀθανασία·
is a-work for-the-sake of-the work of-god and an-activity immortality
τοῦτο δ' ἐστὶ ζωὴ αἰδῖος. ὥστ' ἀνάγκη τῷ θεῷ κίνησιν
this and is a-life everlasting so-that necessary to-the divine a-motion
αἰδῖον ὑπάρχειν. ἐπεὶ δ' ὁ οὐρανὸς τοιοῦτος (σῶμα γάρ
everlasting to-belong since and the heaven such a-body for
τι θεῖον), διὰ τοῦτο ἔχει τὸ ἐγκύκλιον σῶμα, ὃ
something divine because-of this it-has the circular body which
φύσει κινεῖται κύκλῳ αἰεί. διὰ τί οὖν οὐχ ὅλον τὸ
by-nature is-moved in-a-circle always through what therefore not whole the
σῶμα τοῦ οὐρανοῦ τοιοῦτον; ὅτι ἀνάγκη μένειν τι
body of-the heaven such because necessary to-remain something
τοῦ σώματος τοῦ φερομένου κύκλῳ τὸ ἐπὶ τοῦ μέσου,
of-the body of-the being-carried in-a-circle the upon the middle
τούτου δ' οὐθὲν οἶόν τε μένειν μόνιον, οὔθ' ὅλως οὔτ'
of-this and nothing possible — to-remain a-part either wholly or
ἐπὶ τοῦ μέσου. καὶ γὰρ ἂν ἡ κατὰ φύσιν κίνησις ἦν
upon the middle also for — the according-to nature motion would-be
αὐτοῦ ἐπὶ τὸ μέσον· φύσει δὲ κύκλῳ κινεῖται· οὐ γὰρ
of-it toward the middle by-nature and in-a-circle it-is-moved not for
ἂν ἦν αἰδῖος ἡ κίνησις· οὐθὲν γὰρ παρὰ φύσιν αἰδῖον.
— would-be everlasting the motion nothing for against nature everlasting

ὕστερον δὲ τὸ παρὰ φύσιν τοῦ κατὰ φύσιν, καὶ
later and the against nature than-the according-to nature and
 ἔκστασις τίς ἐστίν ἐν τῇ γενέσει τὸ παρὰ φύσιν τοῦ
a-departure a-certain is in the coming-to-be the against nature from-the
 κατὰ φύσιν. ἀνάγκη τοίνυν γῆν εἶναι· τοῦτο γὰρ ἡρεμεῖ
according-to nature necessary then earth to-be this for rests
 ἐπὶ τοῦ μέσου. νῦν μὲν οὖν ὑποκείσθω τοῦτο, ὕστερον
upon the middle now indeed therefore let-it-be-assumed this later
 δὲ δειχθήσεται περὶ αὐτοῦ. ἀλλὰ μὴν εἰ γῆν, ἀνάγκη καὶ
and it-will-be-shown about it but indeed if earth necessary also
 πῦρ εἶναι· τῶν γὰρ ἐναντίων εἰ θάτερον φύσει, ἀνάγκη καὶ
fire to-be of-the for contraries if the-one by-nature necessary also
 θάτερον εἶναι φύσει, ἐάν περ ἢ ἐναντίον, καὶ εἶναί τινα
the-other to-be by-nature if indeed it-be contrary and to-be some
 αὐτοῦ φύσιν (ἡ γὰρ αὕτη ὕλη τῶν ἐναντίων)· καὶ τῆς
of-it a-nature the for same matter of-the contraries and than-the
 στερήσεως πρότερον ἢ κατάφασις (λέγω δ' οἷον τὸ θερμὸν
privation prior the affirmation I-mean and such-as the hot
 τοῦ ψυχροῦ), ἡ δ' ἡρεμία καὶ τὸ βαρὺ λέγονται κατὰ
than-the cold the and rest and the heavy are-called according-to
 στέρησιν κουφότητος καὶ κινήσεως. ἀλλὰ μὴν εἴπερ ἔστι
a-privation of-lightness and of-motion but indeed if-indeed there-is
 πῦρ καὶ γῆ, ἀνάγκη καὶ τὰ μεταξὺ αὐτῶν εἶναι σώματα·
fire and earth necessary also the between them to-be bodies
 ἐναντίωσιν γὰρ ἔχει ἕκαστον τῶν στοιχείων πρὸς ἕκαστον.
a-contrariety for has each of-the elements toward each
 ὑποκείσθω δὲ καὶ τοῦτο νῦν, ὕστερον δὲ πειρατέον δεῖξαι.
let-it-be-assumed and also this now later and one-must-try to-show
 τούτων δ' ὑπαρχόντων φανερόν ὅτι ἀνάγκη γένεσιν εἶναι
these and being-the-case clear that necessary a-coming-to-be to-be
 διὰ τὸ μηδὲν οἷόν τ' αὐτῶν εἶναι αἰδίων· πάσχει γὰρ καὶ
because-of the nothing possible — of-them to-be everlasting they-suffer for and

ποιεῖ τὰναντία ὑπ' ἀλλήλων, καὶ φθαρτικὰ ἀλλήλων ἐστίν.
they-do the-contraries by one-another and destructive of-one-another they-are
 ἔτι δ' οὐκ εὐλογον εἶναί τι κινήτὸν αἰδίων, οὐ μὴ
further and not reasonable to-be something movable everlasting of-which not
 ἐνδέχεται εἶναι κατὰ φύσιν τὴν κίνησιν αἰδίων· τούτων
it-admits to-be according-to nature the motion everlasting of-these
 δ' εἰς τι ἢ κίνησις. ὅτι μὲν τοίνυν ἀναγκαῖον εἶναι
and toward something the motion that indeed then necessary to-be
 γένεσιν, ἐκ τούτων δῆλον. εἰ δὲ γένεσιν, ἀναγκαῖον
a-coming-to-be out-of these clear if and a-coming-to-be necessary
 καὶ ἄλλην εἶναι φοράν, ἢ μίαν ἢ πλείους· κατὰ γὰρ
also another to-be a-movement either one or more according-to for
 τὴν τοῦ ὅλου ὡσαύτως ἀναγκαῖον ἔχει τὰ στοιχεῖα
the of-the whole likewise necessary to-be-related the elements
 τῶν σωμάτων πρὸς ἄλληλα. λεχθήσεται δὲ καὶ περὶ
of-the bodies toward one-another it-will-be-said and also about
 τούτου ἐν τοῖς ἐπομένοις σαφέστερον. Νῦν δὲ τοσοῦτόν
this in the following-(discussions) more-clearly now and so-much
 ἐστὶ δῆλον, διὰ τίνα αἰτίαν πλείω τὰ ἐγκύκλια ἐστὶ
is clear because-of what cause more the circular are
 σώματα, ὅτι ἀνάγκη γένεσιν εἶναι, γένεσιν δ', εἴπερ
bodies because necessary a-coming-to-be to-be a-coming-to-be and if-indeed
 καὶ πῦρ, τοῦτο δὲ καὶ τὰλλα, εἴπερ καὶ γῆν· ταύτην δ'
also fire this and also the-rest if-indeed also earth this and
 ὅτι ἀνάγκη μένειν τι αἰεί, εἴπερ κινεῖσθαι τι αἰεί.
because necessary to-remain something always if-indeed to-be-moved something always

The circle is the first of plane figures and the sphere the first of solids, each bounded by a single line or surface. The first body therefore has the first shape. Aristotle adds that a rectilinear heaven turning in a circle would need place and void outside it, that the swiftest motion belongs to the shortest line, and that the surface of water, which settles into the hollow, is spherical.

Σχήμα δ' ἀνάγκη σφαιροειδὲς ἔχειν τὸν οὐρανόν· τοῦτο
a-shape and necessary spherical to-have the heaven this
 γὰρ οἰκειότατον τῇ οὐσίᾳ καὶ τῇ φύσει πρῶτον. εἵπωμεν
for most-proper to-the being and to-the nature first let-us-say
 δὲ πρῶτον καθόλου περὶ τῶν σχημάτων, τὸ ποῖόν ἐστι
and first universally about the shapes the what-sort is
 πρῶτον, καὶ ἐν ἐπιπέδοις καὶ ἐν στερεοῖς. ἅπαν δὴ σχῆμα
first both in planes and in solids every indeed shape
 ἐπίπεδον ἢ εὐθύγραμμὸν ἐστὶν ἢ περιφερόγραμμον. καὶ
plane either rectilinear is or curvilinear and
 τὸ μὲν εὐθύγραμμον ὑπὸ πλείονων περιέχεται γραμμῶν,
the indeed rectilinear by more is-enclosed lines
 τὸ δὲ περιφερόγραμμον ὑπὸ μιᾶς. ἐπεὶ δὲ πρότερον τῇ
the and curvilinear by one since and prior in-the
 φύσει ἐν ἐκάστῳ γένει τὸ ἐν τῶν πολλῶν καὶ τὸ ἀπλοῦν
nature in each kind the one than-the many and the simple
 τῶν συνθέτων, πρῶτον ἂν εἴη τῶν ἐπιπέδων σχημάτων
than-the composite first — would-be of-the plane shapes
 ὁ κύκλος. ἔτι δὲ εἴπερ τέλειόν ἐστιν οὐ μὴδὲν ἔξω
the circle further and if-indeed complete is of-which nothing outside
 λαβεῖν αὐτοῦ δυνατόν, ὥσπερ ὥρισται πρότερον, καὶ
to-take of-it possible as it-was-defined before and
 τῇ μὲν εὐθείᾳ πρόσθεσίς ἐστιν αἰεί, τῇ δὲ τοῦ κύκλου
to-the indeed straight an-addition is always to-the and of-the circle

οὐδέποτε, φανερόν ὅτι τέλειος ἂν εἴη περιέχουσα τὸν
never clear that complete — would-be enclosing the
κύκλον· ὥστ' εἰ τὸ τέλειον πρότερον τοῦ ἀτελοῦς, καὶ
circle so-that if the complete prior than-the incomplete also
διὰ ταῦτα πρότερον ἂν εἴη τῶν σχημάτων ὁ κύκλος.
because-of these prior — would-be of-the shapes the circle
ὡσαύτως δὲ καὶ ἡ σφαῖρα τῶν στερεῶν· μόνη γὰρ
likewise and also the sphere of-the solids alone for
περιέχεται μιᾷ ἐπιφανείᾳ, τὰ δ' εὐθύγραμμα πλείουσιν· ὥς
is-enclosed by-one surface the and rectilinear-(solids) by-more as
γὰρ ἔχει ὁ κύκλος ἐν τοῖς ἐπιπέδοις, οὕτως ἡ σφαῖρα
for is-related the circle in the planes thus the sphere
ἐν τοῖς στερεοῖς. ἔτι δὲ καὶ οἱ διαιροῦντες εἰς ἐπίπεδα
in the solids further and also the-ones dividing into planes
καὶ ἐξ ἐπιπέδων τὰ σώματα γεννῶντες μεμαρτυρηκέναι
and out-of planes the bodies generating to-have-testified
φαίνονται τούτοις· μόνη γὰρ τῶν στερεῶν οὐ διαιροῦσι τὴν
appear to-these alone for of-the solids not they-divide the
σφαῖραν ὥς οὐκ ἔχουσιν πλείους ἐπιφανείας ἢ μίαν· ἡ
sphere as not having more surfaces than one the
γὰρ εἰς τὰ ἐπίπεδα διαίρεσις οὐχ ὥς ἂν τέμνων τις εἰς
for into the planes division not as — cutting someone into
τὰ μέρη διέλοι τὸ ὅλον, τοῦτον διαιρεῖται τὸν τρόπον,
the parts might-divide the whole this is-divided the way
ἀλλ' ὥς εἰς ἕτερα τῷ εἶδει. ὅτι μὲν οὖν πρῶτόν
but as into others in-the form that indeed therefore first
ἐστὶν ἡ σφαῖρα τῶν στερεῶν σχημάτων, δηλόν. ἔστι δὲ
is the sphere of-the solid shapes clear it-is and
καὶ κατὰ τὸν ἀριθμὸν τὴν τάξιν ἀποδιδούσιν οὕτω
also according-to the number the order for-those-assigning thus
τιθεμένοις εὐλογώτατον, τὸν μὲν κύκλον κατὰ τὸ ἓν, τὸ
for-those-positing most-reasonable the indeed circle according-to the one the

δὲ τρίγωνον κατὰ τὴν δυάδα, ἐπειδὴ δύο ὀρθαί· ἐὰν δὲ
and triangle according-to the dyad since two right-angles if and
 τὸ ἓν κατὰ τὸ τρίγωνον, ὁ κύκλος οὐκέτι ἔσται σχῆμα.
the one according-to the triangle the circle no-longer will-be a-shape
 ἐπεὶ δὲ τὸ μὲν πρῶτον σχῆμα τοῦ πρώτου σώματος,
since and the indeed first shape of-the first body
 πρῶτον δὲ σῶμα τὸ ἐν τῇ ἐσχάτῃ περιφορᾷ, σφαιροειδὲς ἂν
first and a-body the in the outermost revolution spherical —
 εἴη τὸ τὴν κύκλῳ περιφερόμενον φοράν. καὶ τὸ συνεχὲς
would-be the the in-a-circle being-carried-round movement and the continuous
 ἄρα ἐκεῖν· τὸ γὰρ τῷ σφαιροειδεῖ συνεχὲς σφαιροειδές.
then to-that the for to-the spherical continuous spherical
 ὡσαύτως δὲ καὶ τὰ πρὸς τὸ μέσον τούτων· τὰ γὰρ ὑπὸ
likewise and also the-(bodies) toward the middle of-these the for by
 τοῦ σφαιροειδοῦς περιεχόμενα καὶ ἀπτόμενα ὅλα σφαιροειδῆ
the spherical being-enclosed and touching whole spherical
 ἀνάγκη εἶναι· τὰ δὲ κάτω τῆς τῶν πλανήτων ἄπτεται
necessary to-be the-(bodies) and below the of-the planets touch
 τῆς ἐπάνω σφαίρας. ὥστε σφαιροειδὴς ἂν εἴη πᾶσα·
the above sphere so-that spherical — would-be the-whole
 πάντα γὰρ ἄπτεται καὶ συνεχῇ ἐστὶ ταῖς σφαίραις. ἔτι δὲ
all-things for touch and continuous are to-the spheres further and
 ἐπεὶ φαίνεται καὶ ὑπόκειται κύκλῳ περιφέρεσθαι τὸ πᾶν,
since it-appears and it-is-assumed in-a-circle to-be-carried-round the all
 δέδεικται δ' ὅτι τῆς ἐσχάτης περιφορᾶς οὔτε κενόν ἐστὶν
it-has-been-shown and that of-the outermost revolution neither a-void is
 ἔξωθεν οὔτε τόπος, ἀνάγκη καὶ διὰ ταῦτα σφαιροειδῆ εἶναι
outside nor a-place necessary also because-of these spherical to-be
 αὐτόν. εἰ γὰρ ἔσται εὐθύγραμμος, συμβήσεται καὶ τόπον
it if for it-will-be rectilinear it-will-follow both a-place
 ἔξω εἶναι καὶ σῶμα καὶ κενόν, κύκλῳ γὰρ στρεφόμενον
outside to-be and a-body and a-void in-a-circle for being-turned

τὸ εὐθύγραμμον οὐδέποτε τὴν αὐτὴν ἐφέξει χώραν, ἀλλ'
the rectilinear never the same will-occupy space but
 ὅπου πρότερον ἦν σῶμα, νῦν οὐκ ἔσται, καὶ οὐ νῦν οὐκ
where before was a-body now not it-will-be and where now not
 ἔστι, πάλιν ἔσται διὰ τὴν παράλλαξιν τῶν γωνιῶν.
it-is again it-will-be because-of the shifting of-the angles
 ὁμοίως δὲ καὶ εἴ τι ἄλλο σχῆμα γένοιτο μὴ ἴσας ἔχον
alike and even if some other shape should-come-to-be not equal having
 τὰς ἐκ τοῦ μέσου γραμμάς, οἷον φακοειδὲς ἢ ὠοειδές·
the out-of the middle lines such-as lentil-shaped or egg-shaped
 ἐν ᾧ αὖσι γὰρ συμβήσεται καὶ τόπον ἔξω καὶ κενὸν εἶναι
in all for it-will-follow also a-place outside and a-void to-be
 τῆς φορᾶς διὰ τὸ μὴ τὴν αὐτὴν χώραν κατέχειν τὸ
of-the movement because-of the not the same space to-occupy the
 ὅλον. ἔτι δ' εἰ τῶν μὲν κινήσεων τὸ μέτρον ἢ τοῦ
whole further and if of-the indeed motions the measure the of-the
 οὐρανοῦ φορὰ διὰ τὸ εἶναι μόνη συνεχὴς καὶ ὁμαλὴς
heaven movement because-of the to-be alone continuous and even
 καὶ αἰδιος, ἐν ἐκάστῳ δὲ μέτρον τὸ ἐλάχιστον, ἐλαχίστη
and everlasting in each and a-measure the least least
 δὲ κίνησις ἢ ταχίστη, δῆλον ὅτι ταχίστη ἂν εἴη πασῶν
and a-motion the swiftest clear that swiftest — would-be of-all
 τῶν κινήσεων ἢ τοῦ οὐρανοῦ κίνησις. ἀλλὰ μὴν τῶν
the motions the of-the heaven motion but indeed of-the-(lines)
 ἀπὸ τοῦ αὐτοῦ ἐπὶ τὸ αὐτὸ ἐλαχίστη ἐστὶν ἢ τοῦ κύκλου
from the same to the same least is the of-the circle
 γραμμῇ· κατὰ δὲ τὴν ἐλαχίστην ταχίστη ἢ κίνησις·
line according-to and the least swiftest the motion
 ὥστ' εἰ ὁ οὐρανὸς κύκλῳ φέρεται καὶ τάχιστα κινεῖται,
so-that if the heaven in-a-circle is-carried and swiftest is-moved

σφαιροειδῇ αὐτὸν ἀνάγκη εἶναι. λάβοι δ' ἄν τις καὶ ἐκ
spherical it necessary to-be might-take and — someone also out-of
 τῶν περὶ τὸ μέσον ἰδρυμένων σωμάτων ταύτην τὴν πίστιν.
the about the middle established bodies this the conviction
 εἰ γὰρ τὸ μὲν ὕδωρ ἐστὶ περὶ τὴν γῆν, ὃ δ' αἶρ περὶ τὸ
if for the indeed water is about the earth the and air about the
 ὕδωρ, τὸ δὲ πῦρ περὶ τὸν ἀέρα, καὶ τὰ ἄνω σώματα κατὰ
water the and fire about the air and the upper bodies according-to
 τὸν αὐτὸν λόγον (συνεχῇ μὲν γὰρ οὐκ ἔστιν, ἅπτεται
the same account continuous indeed for not they-are touch
 δὲ τούτων), ἡ δὲ τοῦ ὕδατος ἐπιφάνεια σφαιροειδής
and of-these the and of-the water surface spherical
 ἐστίν, τὸ δὲ τῷ σφαιροειδεῖ συνεχές ἢ κείμενον περὶ τὸ
is the and to-the spherical continuous or lying about the
 σφαιροειδές καὶ αὐτὸ τοιοῦτον ἀναγκαῖον εἶναι· ὥστε καὶ
spherical also itself such necessary to-be so-that also
 διὰ τοῦτο φανερόν ἐστι ὅτι σφαιροειδής ἐστίν ὁ
because-of this clear it-would-be that spherical is the
 οὐρανός. ἀλλὰ μὴν ὅτι γε ἡ τοῦ ὕδατος ἐπιφάνεια
heaven but indeed that at-least the of-the water surface
 τοιαύτη, φανερόν, ὑπόθεσιν λαμβάνουσιν ὅτι πέφυκεν αἰεὶ
such clear a-premise for-those-taking that it-is-natured always
 συρρεῖν τὸ ὕδωρ εἰς τὸ κοιλότερον· κοιλότερον δὲ ἐστὶ
to-flow-together the water into the more-hollow more-hollow and is
 τὸ τοῦ κέντρου ἐγγύτερον. ἤχθωσαν οὖν ἐκ τοῦ
the of-the center nearer let-there-have-been-drawn therefore out-of the
 κέντρου ἡ ΑΒ καὶ ΑΓ, καὶ ἐπεζεύχθω ἐφ' ἧς ΒΓ. ἡ
center the AB and AC and let-it-have-been-joined upon which BC the
 οὖν ἀχθεῖσα ἐπὶ τὴν βάσιν, ἐφ' ἧς ΑΔ, ἐλάττων
therefore having-been-drawn upon the base upon which AD less
 ἐστὶ τῶν ἐκ τοῦ κέντρου· κοιλότερος ἄρα ὁ τόπος.
is than-the out-of the center more-hollow then the place

ὥστε περιρρέυσεται τὸ ὕδωρ, ἕως ἂν ἰσασθῇ. ἴση δὲ ταῖς
so-that will-flow-round the water until — it-be-made-equal equal and to-the
 ἐκ τοῦ κέντρου ἢ ΑΕ. ὥστ' ἀνάγκη πρὸς ταῖς ἐκ τοῦ
out-of the center the AE so-that necessary toward the out-of the
 κέντρου εἶναι τὸ ὕδωρ· τότε γὰρ ἡρεμήσει. ἡ δὲ τῶν ἐκ
center to-be the water then for it-will-rest the and of-the out-of
 τοῦ κέντρου ἀπτομένη περιφερής· σφαιροειδής ἄρα ἡ τοῦ
the center touching curved spherical then the of-the
 ὕδατος ἐπιφάνεια, ἐφ' ἧς ΒΕΓ. ὅτι μὲν οὖν σφαιροειδής
water surface upon which BEC that indeed therefore spherical
 ἐστίν ὁ κόσμος, δῆλον ἐκ τούτων, καὶ ὅτι κατ'
is the world clear out-of these and that according-to
 ἀκρίβειαν ἔντονος οὕτως ὥστε μηθὲν μήτε χειρόκμητον ἔχειν
exactness rounded thus so-that nothing either hand-wrought to-have
 παραπλησίως μήτ' ἄλλο μηθὲν τῶν παρ' ἡμῖν ἐν ὀφθαλμοῖς
comparably or other anything of-the with us in eyes
 φαινομένων. ἐξ ὧν γὰρ τὴν σύνθεσιν εἰληφεν, οὐδὲν οὕτω
appearing out-of which for the composition it-has-taken nothing thus
 δυνατόν ὁμαλότητα δέξασθαι καὶ ἀκρίβειαν ὡς ἡ τοῦ πέριξ
possible evenness to-receive and exactness as the of-the surrounding
 σώματος φύσις· δῆλον γὰρ ὡς ἀνάλογον ἔχει, καθάπερ ὕδωρ
body nature clear for that proportionally it-is just-as water
 πρὸς γῆν, καὶ τὰ πλεῖον αἰεὶ ἀπέχοντα τῶν στοιχείων.
toward earth also the-(ones) more always standing-off of-the elements

Since nothing among everlasting things happens by chance, Aristotle asks why the heaven is carried one way rather than the other. He grants that trying to pronounce on everything and to leave nothing out might look like either great simplicity or great eagerness, but says the apparent answer should still be given. Nature always does the best of what is open to it, and motion toward the front, like motion upward, is the more honorable.

Ἐπεὶ δ' ἔστι διχῶς ἐπὶ τοῦ κύκλου κινηθῆναι, οἷον ἀπὸ
since and it-is two-ways upon the circle to-be-moved such-as from
τοῦ Α τὴν μὲν ἐπὶ τὸ Β τὴν δ' ἐπὶ τὸ Γ, ὅτι μὲν
the Α the-(one) indeed toward the Β the-(other) and toward the Γ that indeed
οὖν οὐκ εἰσὶν ἐναντία αὗται, πρότερον εἴρηται. ἀλλ' εἰ
therefore not are contrary these before it-has-been-said but if
μηδὲν ὡς ἔτυχε μηδ' ἀπὸ ταυτομάτου ἐνδέχεται ἐν τοῖς
nothing as it-chanced nor from the-spontaneous it-admits in the
αἰδίοις εἶναι, ὃ δ' οὐρανὸς αἰδῖος καὶ ἡ κύκλω φορά,
everlasting-(things) to-be the and heaven everlasting and the in-a-circle movement
διὰ τίνα ποτ' αἰτίαν ἐπὶ θάτερα φέρεται, ἀλλ' οὐκ ἐπὶ
through what ever cause toward one-side is-carried but not toward
θάτερα; ἀνάγκη γὰρ καὶ τοῦτο ἢ ἀρχὴν εἶναι ἢ εἶναι
the-other necessary for also this either a-beginning to-be or to-be
αὐτοῦ ἀρχήν. ἴσως μὲν οὖν τὸ περὶ ἐνίων ἀποφαίνεσθαι
of-it a-beginning perhaps indeed therefore the about some to-declare
τι πειρᾶσθαι καὶ τὸ περὶ πάντων καὶ τὸ παρίεναι
something to-try and the about all and the to-pass-over
μηθὲν τάχ' ἂν δόξειεν εἶναι σημείον ἢ πολλῆς εὐηθείας
nothing quickly — might-seem to-be a-sign either of-much simplicity
ἢ πολλῆς προθυμίας. οὐ μὲν δίκαιόν γε πᾶσιν ὁμοίως
or of-much eagerness not however just at-least for-all alike
ἐπιτιμᾶν, ἀλλ' ὁρᾶν δεῖ τὴν αἰτίαν τοῦ λέγειν τίς ἐστίν,
to-censure but to-see it-is-needful the cause of-the to-speak what is

ἔτι δὲ πῶς ἔχον τῷ πιστεύειν, πότερον ἀνθρωπίνως
further and how being-disposed in-the to-believe whether humanly
 ἢ καρτερικώτερον. ταῖς μὲν οὖν ἀκριβεστέραις ἀνάγκαις
or more-stoutly to-the indeed therefore more-exact necessities
 ὅταν τις ἐπιτύχη, τότε χάριν ἔχειν δεῖ τοῖς
whenever someone hits then thanks to-have it-is-needful to-the
 εὐρίσκουσι, νῦν δὲ τὸ φαινόμενον ῥητέον.
finders now and the apparent one-must-state
 εἰ γὰρ ἡ φύσις ἀεὶ ποιεῖ τῶν ἐνδεχομένων τὸ βέλτιστον,
if for the nature always does of-the admissible the best
 ἔστι δὲ καθάπερ τῶν ἐπὶ τῆς εὐθείας φορῶν ἢ πρὸς τὸν ἄνω
it-is and just-as of-the upon the straight movements the toward the upper
 τόπον τιμιωτέρα (θειότερος γὰρ ὁ ἄνω τόπος τοῦ κάτω),
place more-honorable more-divine for the upper place than-the lower
 τὸν αὐτὸν τρόπον καὶ ἡ εἰς τὸ πρόσθεν τῆς εἰς τοῦπίσθεν,
the same way also the into the front than-the into the-back
 ἔχει δὴ, εἴπερ καὶ τὸ δεξιὸν καὶ τὸ ἀριστερόν, καθάπερ
it-is-so indeed if-indeed also the right and the left just-as
 ἐλέχθη πρότερον (καὶ μαρτυρεῖ δ' ἡ ῥηθεῖσα ἀπορία, ὅτι
it-was-said before and testifies and the stated difficulty that
 ἔχει), τὸ πρότερον καὶ ὕστερον· αὕτη γὰρ ἡ αἰτία λύει τὴν
it-has the prior and later this for the cause solves the
 ἀπορίαν. εἰ γὰρ ἔχει ὥς ἐνδέχεται βέλτιστα, αὕτη ἂν εἴη
difficulty if for it-is as it-admits best this — would-be
 αἰτία καὶ τοῦ εἰρημένου· βέλτιστον γὰρ κινεῖσθαι ἀπλῆν
a-cause also of-the thing-said best for to-be-moved a-simple
 τε κίνησιν καὶ ἄπανστον, καὶ ταύτην ἐπὶ τὸ τιμιώτερον.
both motion and unceasing and this toward the more-honorable

An uneven motion would have a slackening, a peak, and an intensifying, but circular motion has no point it starts from, ends at, or passes through. Unevenness would have to come from the mover or the moved, and neither changes. The parts cannot move unevenly, since the stars would have drawn apart over infinite time, and the whole cannot, since slackening is a weakness and nothing against nature lasts forever.

Περὶ δὲ τῆς κινήσεως αὐτοῦ, ὅτι ὁμαλῆς ἐστὶ καὶ οὐκ
 about and the motion of-it that even is and not
 ἀνώμαλος, ἐφεξῆς ἂν εἴη τῶν εἰρημένων διελθεῖν. λέγω
 uneven next — would-be of-the things-said to-go-through I-mean
 δὲ τοῦτο περὶ τοῦ πρώτου οὐρανοῦ καὶ περὶ τῆς πρώτης
 and this about the first heaven and about the first
 φορᾶς· ἐν γὰρ τοῖς ὑποκάτω πλείους ἤδη αἱ φοραὶ
 movement in for the lower-(spheres) more already the movements
 συνελγύθασιν εἰς ἓν. εἰ γὰρ ἀνωμάλως κινήσεται, δηλον
 have-come-together into one if for unevenly it-will-be-moved clear
 ὅτι ἐπίτασις ἔσται καὶ ἀκμὴ καὶ ἄνεσις τῆς φορᾶς·
 that an-intensifying will-be and a-peak and a-slackening of-the movement
 ἅπαντα γὰρ ἢ ἀνώμαλος φορὰ καὶ ἄνεσιν ἔχει καὶ
 all for the uneven movement both a-slackening has and
 ἐπίτασιν καὶ ἀκμὴν. ἀκμὴ δ' ἐστὶν ἢ ὅθεν φέρεται ἢ
 an-intensifying and a-peak a-peak and is either whence it-is-carried or
 οἷ ἢ ἀνὰ μέσον, οἷον ἴσως τοῖς μὲν κατὰ φύσιν
 whither or in the-middle such-as perhaps for-the-(things) indeed according-to nature
 οἷ φέρονται, τοῖς δὲ παρὰ φύσιν ὅθεν, τοῖς
 whither they-are-carried for-the-(things) and against nature whence for-the-(things)
 δὲ ριπτομένοις ἀνὰ μέσον. τῆς δὲ κύκλῳ φορᾶς οὐκ ἔστιν
 and being-thrown in the-middle of-the and in-a-circle movement not there-is
 οὔτε ὅθεν οὔτε οἷ οὔτε μέσον· οὔτε γὰρ ἀρχὴ οὔτε
 either whence or whither or a-middle neither for a-beginning nor

πέρας οὔτε μέσον ἐστὶν αὐτῆς ἀπλῶς· τῷ τε γὰρ χρόνῳ
a-limit nor a-middle is of-it simply in-the both for time
αἰδῖος καὶ τῷ μήκει συνηγμένη καὶ ἄκλαστος· ὥστ' εἰ μὴ
everlasting and in-the length gathered and unbroken so-that if not
ἐστὶν ἀκμὴ αὐτοῦ τῆς φορᾶς, οὐδ' ἂν ἀνωμαλία εἴη· ἡ
there-is a-peak of-it of-the movement nor — an-unevenness would-be the
γὰρ ἀνωμαλία γίγνεται διὰ τὴν ἄνεσιν καὶ ἐπίτασιν, ἔτι
for unevenness comes-about because-of the slackening and intensifying further
δ' ἐπεὶ πᾶν τὸ κινούμενον ὑπὸ τινος κινεῖται, ἀνάγκη
and since everything the thing-moved by something is-moved necessary
τὴν ἀνωμαλίαν γίγνεσθαι τῆς κινήσεως ἢ διὰ τὸ
the unevenness to-come-about of-the motion either because-of the
κινοῦν ἢ διὰ τὸ κινούμενον ἢ δι' ἄμφω· εἴτε γὰρ
thing-moving or because-of the thing-moved or because-of both whether for
τὸ κινοῦν μὴ τῇ αὐτῇ δυνάμει κινεῖ, εἴτε τὸ κινούμενον
the moving not by-the same power should-move or the thing-moved
ἀλλοιοῖτο καὶ μὴ διαμένει τὸ αὐτό, εἴτε ἄμφω μεταβάλλοι,
should-be-altered and not should-remain the same or both should-change
οὐθὲν κωλύει ἀνωμάλως κινεῖσθαι τὸ κινούμενον.
nothing prevents unevenly to-be-moved the thing-moved
οὐθὲν δὲ τούτων δυνατὸν περὶ τὸν οὐρανὸν γενέσθαι· τὸ
nothing and of-these possible about the heaven to-come-about the
μὲν γὰρ κινούμενον δέδεικται ὅτι πρῶτον καὶ ἀπλοῦν
indeed for thing-moved it-has-been-shown that first and simple
καὶ ἀγένητον καὶ ἄφθαρτον καὶ ὅλως ἀμετάβλητον, τὸ δὲ
and ungenerated and imperishable and wholly unchangeable the and
κινοῦν πολὺ μᾶλλον εὐλογον εἶναι τοιοῦτον· τὸ γὰρ πρῶτον
moving much more reasonable to-be such the for first
τοῦ πρώτου καὶ τὸ ἀπλοῦν τοῦ ἀπλοῦ καὶ τὸ ἄφθαρτον
of-the first and the simple of-the simple and the imperishable
καὶ ἀγένητον τοῦ ἀφθάρτου καὶ ἀγενήτου κινητικόν.
and ungenerated of-the imperishable and ungenerated productive-of-motion

ἐπεὶ οὖν τὸ κινούμενον οὐ μεταβάλλει σῶμα ὄν, οὐδ' ἂν
since therefore the thing-moved not changes a-body being nor —
 τὸ κινοῦν μεταβάλλοι ἀσώματον ὄν. ὥστε καὶ τὴν φορὰν
the moving should-change incorporeal being so-that also the movement
 ἀδύνατον ἀνώμαλον εἶναι. καὶ γὰρ εἰ γίνεται ἀνώματος,
impossible uneven to-be also for if it-becomes uneven
 ἥτοι ὅλη μεταβάλλει καὶ ὅτε μὲν γίνεται θάπτων
either whole it-changes and at-one-time indeed becomes swifter
 ὅτε δὲ βραδυτέρα πάλιν, ἢ τὰ μέρη αὐτῆς. τὰ μὲν
at-another and slower again or the parts of-it the indeed
 οὖν μέρη ὅτι οὐκ ἔστιν ἀνώμαλα, φανερόν· ἤδη γὰρ ἂν
therefore parts that not are uneven clear already for —
 γεγόνει διάστασις τῶν ἀστρων ἐν τῷ ἀπείρῳ χρόνῳ,
would-have-come-about a-separation of-the stars in the infinite time
 τοῦ μὲν θάπτον κινουμένου τοῦ δὲ βραδυτέρον. οὐ
of-the-one indeed faster being-moved of-the-other and slower not
 φαίνεται δ' οὐθὲν ἄλλως ἔχον τοῖς διαστήμασιν.
appears and anything otherwise being in-the intervals
 ἀλλὰ μὴν οὐδὲ τὴν ὅλην ἐγχωρεῖ μεταβάλλειν· ἡ γὰρ ἄνεσις
but indeed nor the whole it-is-open to-change the for slackening
 ἐκάστου γίνεται δι' ἀδυναμίαν, ἡ δ' ἀδυναμία παρὰ
of-each comes-about through weakness the and weakness against
 φύσιν· καὶ γὰρ αἱ ἐν τοῖς ζώοις ἀδυναμίαι πᾶσαι παρὰ φύσιν
nature and for the in the animals weaknesses all against nature
 εἰσὶν, οἷον γῆρας καὶ φθίσις. ὅλη γὰρ ἴσως ἡ σύστασις τῶν
are such-as old-age and decay whole for perhaps the constitution of-the
 ζώων ἐκ τοιούτων συνέστηκεν ἃ διαφέρει τοῖς οἰκείοις
animals out-of such-(things) has-been-formed which differ in-the proper
 τόποις· οὐθὲν γὰρ τῶν μερῶν ἔχει τὴν αὐτοῦ χώραν. εἰ οὖν
places none for of-the parts has the of-itself space if therefore
 ἐν τοῖς πρώτοις μὴ ἔστι τὸ παρὰ φύσιν (ἀπλῶ γὰρ καὶ
in the first-(bodies) not there-is the against nature simple for and

ἄμικτα καὶ ἐν τῇ οἰκείᾳ χώρᾳ, καὶ οὐθὲν αὐτοῖς ἐναντίον),
unmixed and in the proper space and nothing to-them contrary
 οὐδ' ἂν ἀδυναμία εἴη, ὥστ' οὐδ' ἄνεσις οὐδ' ἐπίτασις· εἰ
nor — weakness would-be so-that nor slackening nor intensifying if
 γὰρ ἐπίτασις, καὶ ἄνεσις. ἔτι δὲ καὶ ἄλογον ἄπειρον
for an-intensifying also a-slackening further and also unreasonable an-infinite
 χρόνον ἀδύνατον εἶναι τὸ κινεῖν, καὶ πάλιν ἄλλον ἄπειρον
time unable to-be the moving and again another infinite
 δυνατόν· οὐθὲν γὰρ φαίνεται ὄν ἄπειρον χρόνον παρὰ φύσιν
able nothing for appears being an-infinite time against nature
 (ἢ δ' ἀδυναμία παρὰ φύσιν), οὐδὲ τὸν ἴσον χρόνον παρὰ
the and weakness against nature nor the equal time against
 φύσιν καὶ κατὰ φύσιν, οὐδ' ἄλλως δυνατόν καὶ ἀδύνατον.
nature and according-to nature nor otherwise able and unable
 ἀνάγκη δ', εἰ ἀνέησιν ἢ κίνησις, ἄπειρον ἀνιέναι χρόνον.
necessary and if slackens the motion an-infinite to-slacken time
 ἀλλὰ μὴν οὐδ' ἐπιτείνειν αἰεὶ ἢ πάλιν ἀνιέναι δυνατόν·
but indeed nor to-intensify always or again to-slacken possible
 ἄπειρος γὰρ ἂν εἴη καὶ ἀόριστος ἢ κίνησις, ἅπασαν
infinite for — would-be and undefined the motion every
 δέ φαμεν ἔκ τινος εἰς τι εἶναι καὶ ὠρισμένην.
and we-say out-of something into something to-be and defined
 ἔτι δ' εἴ τις λάβοι εἶναί τινα χρόνον ἐλάχιστον,
further and if someone should-take to-be some time least
 οὐ οὐκ ἐνδέχεται ἐν ἐλάττονι κινηθῆναι τὸν οὐρανόν
than-which not it-admits in less to-be-moved the heaven
 (ὥσπερ γὰρ οὐδὲ βαδίσαι οὐδὲ κιθαρίσαι ἐν ὅτῳ
as for neither to-walk nor to-play-the-lyre in any-whatever
 χρόνῳ δυνατόν, ἀλλ' ἐκάστης ἐστὶ πράξεως ὠρισμένος
time possible but of-each is action defined
 ὁ ἐλάχιστος χρόνος κατὰ τὸ μὴ ὑπερβάλλειν, οὕτως
the least time according-to the not to-exceed thus

οὐδὲ κινηθῆναι τὸν οὐρανὸν ἐν ὅτῳ οὖν χρόνῳ δυνατόν).
 nor to-be-moved the heaven in any-whatever time possible
 εἰ οὖν τοῦτ' ἀληθές, οὐκ ἂν εἴη ἀεὶ ἐπίτασις τῆς
 if therefore this true not — would-be always an-intensifying of-the
 φορᾶς, εἰ δὲ μὴ ἐπίτασις, οὐδ' ἄνεσις· ὁμοίως γὰρ ἄμφω
 movement if and not an-intensifying nor a-slackening alike for both
 καὶ θάτερον, εἴπερ τῷ αὐτῷ τε ἐπιτείνεται τάχει ἢ
 also one-of-the-two if-indeed by-the same both it-intensifies in-speed or
 μείζονι, καὶ ἄπειρον χρόνον. λείπεται δὴ λέγειν ἐναλλάξ
 by-a-greater also an-infinite time it-remains indeed to-say alternately
 εἶναι τῇ κινήσει τὸ θᾶττον καὶ τὸ βραδύτερον· τοῦτο
 to-be in-the motion the swifter and the slower this
 δὲ παντελῶς ἄλογον καὶ πλάσματι ὅμοιον. ἔτι δὲ καὶ
 and utterly unreasonable and to-a-fiction like further and also
 τὸ μὴ λανθάνειν ἐπὶ τούτων εὐλογώτερον· εὐαισθητότερα
 the not to-escape-notice upon these more-reasonable more-easily-perceived
 γὰρ τὰ παρ' ἄλληλα τιθέμενα. ὅτι μὲν οὖν εἰς τε
 for the-(things) beside one-another being-placed that indeed therefore one both
 μόνος ἐστὶν οὐρανός, καὶ οὗτος ἀγέννητος καὶ αἰδώς, ἔτι
 only is a-heaven and this ungenerated and everlasting further
 δὲ κινούμενος ὁμαλῶς, ἐπὶ τοσοῦτον ἡμῖν εἰρήσθω.
 and being-moved evenly to so-much for-us let-it-have-been-said

VII • THE STARS ARE NOT FIRE

Each star is made of the body in which it happens to travel, not of fire. The heat and light come from the air below being rubbed by their movement, as missiles are set alight in flight and melt the lead on them. The stars themselves are carried in their spheres and are not kindled; the air beneath the circling body is, and most where the sun is fixed.

Περὶ δὲ τῶν καλουμένων ἄστρον ἐπόμενον ἂν εἶη
about and the so-called stars following — would-be
 λέγειν, ἐκ τίνων τε συνεστᾶσι καὶ ἐν ποίοις σχήμασι
to-say out-of what both they-are-composed and in what-sort shapes
 καὶ τίνες αἱ κινήσεις αὐτῶν. εὐλογώτατον δὴ καὶ τοῖς
and what the motions of-them most-reasonable indeed and to-the
 εἰρημένοις ἐπόμενον ἡμῖν τὸ ἕκαστον τῶν ἄστρον ποιεῖν
things-said following for-us the each of-the stars to-make
 ἐκ τούτου τοῦ σώματος ἐν ᾧ τυγχάνει τὴν φορὰν ἔχον,
out-of this the body in which it-happens the movement having
 ἐπειδὴ ἔφαμέν τι εἶναι ὃ κύκλῳ φέρεσθαι πέφυκεν·
since we-said something to-be which in-a-circle to-be-carried is-natured
 ὥσπερ γὰρ οἱ πύρινα φάσκοντες εἶναι διὰ τοῦτο
as for the-ones fiery declaring to-be because-of this
 λέγουσιν, ὅτι τὸ ἄνω σῶμα πῦρ εἶναι φασιν, ὡς εὐλογον
say that the upper body fire to-be they-say as reasonable
 ὄν ἕκαστον συνεστάναι ἐκ τούτων ἐν οἷς ἕκαστόν
being each to-have-been-composed out-of these in which each
 ἐστίν, ὁμοίως καὶ ἡμεῖς λέγομεν. ἡ δὲ θερμότης ἀπ' αὐτῶν
is alike also we say the and heat from them
 καὶ τὸ φῶς γίνεται παρεκτριβομένου τοῦ ἀέρος ὑπὸ τῆς
and the light comes-about being-rubbed of-the air by the
 ἐκείνων φορᾶς. πέφυκε γὰρ ἡ κίνησις ἐκπυροῦν καὶ ξύλα
of-those movement is-natured for the motion to-set-on-fire both wood
 καὶ λίθους καὶ σιδηρον· εὐλογώτερον οὖν τὸ ἐγγύτερον
and stones and iron more-reasonable therefore the nearer
 τοῦ πυρός, ἐγγύτερον δὲ ἀήρ οἶον καὶ ἐπὶ τῶν φερομένων
to-the fire nearer and air such-as also upon the being-carried
 βελῶν· ταῦτα γὰρ αὐτὰ ἐκπυροῦται οὕτως ὥστε τήκεσθαι
missiles these for themselves are-set-on-fire thus so-that to-melt

τὰς μολυβδίδας, καὶ ἐπεὶ περ αὐτὰ ἐκπυροῦται, ἀνάγκη
the lead-weights and since-indeed they-themselves are-set-on-fire necessary
 καὶ τὸν κύκλῳ αὐτῶν ἀέρα τὸ αὐτὸ τοῦτο πάσχειν.
also the round-about of-them air the same this to-undergo
 ταῦτα μὲν οὖν ἐκθερμαίνεται διὰ τὸ ἐν ἀέρι φέρεσθαι,
these indeed therefore are-heated because-of the in air to-be-carried
 ὃς διὰ τὴν πλῆγην τῇ κινήσει γίγνεται πῦρ· τῶν δὲ
which because-of the blow by-the motion becomes fire of-the and
 ἄνω ἕκαστον ἐν τῇ σφαίρᾳ φέρεται, ὥστ' αὐτὰ μὲν μὴ
upper each in the sphere is-carried so-that they indeed not
 ἐκπυροῦσθαι, τοῦ δ' ἀέρος ὑπὸ τὴν τοῦ κυκλικοῦ σώματος
to-be-set-on-fire of-the and air under the of-the circular body
 σφαῖραν ὄντος ἀνάγκη φερομένης ἐκείνης ἐκθερμαίνεσθαι, καὶ
sphere being necessary being-carried of-that to-be-heated and
 ταύτῃ μάλιστα ἢ ὃ ἥλιος τετύχηκεν ἐνδεδεμένος. διὸ
here especially where the sun happens having-been-bound wherefore
 δὴ πλησιάζοντός τε αὐτοῦ καὶ ἀνίσχοντος καὶ ὑπὲρ ἡμᾶς
indeed approaching both of-it and rising and above us
 ὄντος γίγνεται ἡ θερμότης. ὅτι μὲν οὖν οὔτε πύρινά ἐστιν
being comes-about the heat that indeed therefore neither fiery they-are
 οὔτ' ἐν πυρὶ φέρεται, ταῦθ' ἡμῖν εἰρήσθω περὶ αὐτῶν.
nor in fire are-carried these for-us let-it-have-been-said about them

VIII • THE CIRCLES MOVE, NOT THE STARS

Either the stars move, or their circles, or both. If both, it is unreasonable that the speeds of the stars should keep the same ratio as the sizes of their circles. Aristotle concludes that the circles move and the stars are carried fixed in them; and he denies the stars both motions a sphere can have, the spin because a spinning body would stay in one place, and the roll because a rolling body must turn while the moon always shows us the same face.

Ἐπεὶ δὲ φαίνεται καὶ τὰ ἄστροι μεθιστάμενα καὶ ὁλος ὁ
 since and it-appears also the stars shifting-position and whole the
 οὐρανός, ἀναγκαῖον ἥτοι ἡρεμούντων ἀμφοτέρων γίνεσθαι
 heaven necessary either resting of-both to-come-about
 τὴν μεταβολήν, ἢ κινουμένων, ἢ τοῦ μὲν ἡρεμούντος
 the change or moving or of-the-one indeed resting
 τοῦ δὲ κινουμένου. ἀμφότερά μὲν τοίνυν ἡρεμεῖν
 of-the-other and moving both indeed then to-rest
 ἀδύνατον ἡρεμούσης γε τῆς γῆς· οὐ γὰρ ἂν ἐγίγνετο τὰ
 impossible resting at-least of-the earth not for — would-come-about the
 φαινόμενα. τὴν δὲ γῆν ὑποκείσθω ἡρεμεῖν. λείπεται δὲ ἢ
 things-appearing the and earth let-it-be-assumed to-rest it-remains indeed either
 ἀμφότερά κινεῖσθαι, τὸ μὲν κινεῖσθαι τὸ δ' ἡρεμεῖν. εἰ
 both to-be-moved the-one indeed to-be-moved the-other and to-rest if
 μὲν οὖν ἀμφότερά κινήσεται, ἄλογον τὸ ταυτὰ τάχῃ τῶν
 indeed therefore both will-be-moved unreasonable the the-same speeds of-the
 ἄστρον εἶναι καὶ τῶν κύκλων· ἕκαστον γὰρ δὴ ὁμοταχὲς
 stars to-be and of-the circles each for indeed equal-in-speed
 ἔσται τῷ κύκλῳ καθ' ὃν φέρεται. φαίνεται γὰρ
 will-be to-the circle according-to which it-is-carried it-appears for
 ἅμα τοῖς κύκλοις καθιστάμενα πάλιν εἰς τὸ αὐτό.
 at-the-same-time with-the circles being-restored again into the same
 συμβαίνει οὖν ἅμα τό τε ἄστρον διεληλυθέναι τὸν κύκλον
 it-follows therefore at-once the both star to-have-traversed the circle
 καὶ τὸν κύκλον ἐννέχθαι τὴν αὐτοῦ φοράν, διεληλυθότα
 and the circle to-have-been-carried the of-itself movement having-traversed
 τὴν αὐτοῦ περιφέρειαν. οὐκ ἔστι δ' εὐλογον τὸ τὸν αὐτὸν
 the of-itself circumference not it-is and reasonable the the same
 λόγον ἔχειν τὰ τάχῃ τῶν ἄστρον καὶ τὰ μεγέθη τῶν κύκλων.
 ratio to-have the speeds of-the stars and the magnitudes of-the circles

τοὺς μὲν γὰρ κύκλους οὐθὲν ἄτοπον ἀλλ' ἀναγκαῖον
the indeed for circles nothing strange but necessary
 ἀνάλογον ἔχειν τὰ τάχῃ τοῖς μεγέθεσι, τῶν δ' ἄστρον
proportionally to-have the speeds to-the magnitudes of-the and stars
 ἕκαστον τῶν ἐν τούτοις οὐδαμῶς εὐλογον· εἴτε γὰρ ἐξ
each of-the in these in-no-way reasonable whether for out-of
 ἀνάγκης τὸ τὸν μείζω κύκλον φερόμενον θάττον ἔσται,
necessity the the greater circle being-carried faster will-be
 δηλὸν ὅτι καὶ μετατεθῇ τὰ ἄστρα εἰς τοὺς ἀλλήλων
clear that even-if should-be-transposed the stars into the of-one-another
 κύκλους, τὸ μὲν ἔσται θάττον τὸ δὲ βραδύτερον·
circles the-one indeed will-be faster the-other and slower
 οὕτω δ' οὐκ ἂν ἔχοιεν οἰκείαν κίνησιν, ἀλλὰ φέροντ'
thus and not — they-would-have a-proper motion but would-be-carried
 ἂν ὑπὸ τῶν κύκλων. εἴτε ἀπὸ ταῦτομάτου συνέπεσεν, οὐδ'
— by the circles or from the-spontaneous it-fill-together not-even
 οὕτως εὐλογον ὥστ' ἐν ἅπασιν ἅμα τὸν τε κύκλον εἶναι
thus reasonable so-that in all at-once the both circle to-be
 μείζω καὶ τὴν φορὰν θάττω τοῦ ἐν αὐτῷ ἄστρον· τὸ
greater and the movement swifter than-the in it star the
 μὲν γὰρ ἐν ἣ δύο τοῦτον τὸν τρόπον ἔχειν οὐθὲν ἄτοπον,
indeed for one or two this the way to-be nothing strange
 τὸ δὲ πάνθ' ὁμοίως πλάσματι ἔοικεν. ἅμα δὲ καὶ οὐκ
the and all alike to-a-fiction it-resembles at-once and also not
 ἔστιν ἐν τοῖς φύσει τὸ ὥς ἔτυχεν, οὐδὲ τὸ πανταχοῦ καὶ
it-is in the by-nature the as it-chanced nor the everywhere and
 πᾶσιν ὑπάρχον τὸ ἀπὸ τύχης. ἀλλὰ μὴν πάλιν εἰ οἱ μὲν
to-all belonging the from chance but indeed again if the indeed
 κύκλοι μένουσιν, αὐτὰ δὲ τὰ ἄστρα κινεῖται, ταῦτα καὶ
circles remain themselves and the stars are-moved the-same and

ὁμοίως ἔσται ἄλογα· συμβήσεται γὰρ θᾶπτον κινεῖσθαι τὰ
alike will-be unreasonable it-will-follow for faster to-be-moved the
 ἔξω, καὶ τὰ τάχῃ εἶναι κατὰ τὰ μεγέθη τῶν κύκλων.
outer and the speeds to-be according-to the magnitudes of-the circles
 ἐπεὶ τοῖνυν οὐτ' ἀμφότερα κινεῖσθαι εὐλογον οὔτε τὸ
since then neither both to-be-moved reasonable nor the
 ἄστρον μόνον, λείπεται τοὺς μὲν κύκλους κινεῖσθαι, τὰ δὲ
star alone it-remains the indeed circles to-be-moved the and
 ἄστρα ἡρεμεῖν καὶ ἐνδεδεμένα τοῖς κύκλοις φέρεσθαι μόνως
stars to-rest and being-bound to-the circles to-be-carried only
 γὰρ οὕτως οὐθὲν ἄλογον συμβαίνει· τό τε γὰρ θᾶπτον
for thus nothing unreasonable follows the both for faster
 εἶναι τοῦ μείζονος κύκλου τὸ τάχος εὐλογον περὶ τὸ αὐτὸ
to-be of-the greater circle the speed reasonable about the same
 κέντρον ἐνδεδεμένων (ὥσπερ γὰρ ἐν τοῖς ἄλλοις τὸ μείζον
center of-things-bound as for in the others the greater
 σῶμα θᾶπτον φέρεται τὴν οἰκείαν φοράν, οὕτως καὶ ἐν
body faster is-carried the proper movement thus also in
 τοῖς ἐγκυκλίοις· μείζον γὰρ τῶν ἀφαιρουμένων ὑπὸ
the circular-(bodies) greater for of-the-(segments) being-cut-off by
 τῶν ἐκ τοῦ κέντρου τὸ τοῦ μείζονος κύκλου τμήμα,
the-(lines) out-of the center the of-the greater circle segment
 ὥστ' εὐλόγως ἐν τῷ ἴσῳ χρόνῳ ὁ μείζων περιιοσθήσεται
so-that reasonably in the equal time the greater will-be-carried-round
 κύκλος), τό τε μὴ διασπᾶσθαι τὸν οὐρανὸν διὰ τε
circle the both not to-be-torn-apart the heaven because-of both
 τοῦτο συμβήσεται καὶ ὅτι δέδεκται συνεχὲς ὄν τὸ
this it-will-follow and because it-has-been-shown continuous being the
 ὅλον. ἔτι δ' ἐπεὶ σφαιροειδῇ τὰ ἄστρα, καθάπερ οἱ τ'
whole further and since spherical the stars just-as the both
 ἄλλοι φασὶ καὶ ἡμῖν ὁμολογούμενον εἰπεῖν, ἐξ ἐκείνου
others say and to-us agreed to-say out-of that

γε τοῦ σώματος γεννώσιν, τοῦ δὲ σφαιροειδοῦς δύο
at-least the body they-generate of-the and spherical two
 κινήσεις εἰςὶ καθ' αὐτό, κύλισις καὶ δίνησις, εἴπερ
motions there-are according-to itself a-rolling and a-spinning if-indeed
 οὖν κινοῖτο τὰ ἄστρα δι' αὐτῶν, τὴν ἑτέραν
therefore should-be-moved the stars through themselves the one-of-the-two
 ἂν κινοῖτο τούτων· ἀλλ' οὐδετέραν φαίνεται.
— would-be-moved of-these but neither-of-the-two appears
 δινούμενα μὲν γὰρ ἔμμενεν ἂν ἐν ταύτῳ καὶ οὐ
spinning indeed for it-would-remain — in the-same and not
 μετέβαλλε τὸν τόπον, ὅπερ φαίνεται τε καὶ πάντες
it-was-changing the place which-very appears both and all
 φασίν. ἔτι δὲ πάντα μὲν εὐλογον τὴν αὐτὴν κίνησιν
say further and all indeed reasonable the same motion
 κινεῖσθαι, μόνος δὲ δοκεῖ τῶν ἄστρον ὁ ἥλιος τοῦτο δρᾶν,
to-be-moved alone and seems of-the stars the sun this to-do
 ἀνατέλλων ἢ καὶ οὗτος οὐ δι' αὐτὸν ἀλλὰ διὰ τὴν
rising or also this not through itself but through the
 ἀπόστασιν τῆς ἡμετέρας ὀψεως· ἢ γὰρ ὀψις ἀποτεينوμένη
distance of-the our sight the for sight being-stretched
 μακρὰν ἐλίσσεται διὰ τὴν ἀσθένειαν. ὅπερ αἷτιον ἴσως
far is-coiled through the weakness which-very a-cause perhaps
 καὶ τοῦ στίλβειν φαίνεσθαι τοὺς ἀστέρας τοὺς ἐνδεδεμένους,
also of-the to-twinkle to-appear the stars the being-bound
 τοὺς δὲ πλάνητας μὴ στίλβειν· οἱ μὲν γὰρ πλάνητες ἐγγύς
the and planets not to-twinkle the indeed for planets near
 εἰσιν, ὥστ' ἐγκρατὴς οὖσα πρὸς αὐτοὺς ἀφικνεῖται ἢ ὀψις·
are so-that in-control being toward them arrives the sight
 πρὸς δὲ τοὺς μένοντας κραδαίνεται διὰ τὸ μῆκος,
toward and the-(ones) remaining it-quivers because-of the length
 ἀποτεينوμένη πόρρω λίαν. ὁ δὲ τρόμος αὐτῆς ποιεῖ τοῦ
being-stretched far exceedingly the and trembling of-it makes of-the

ἄστρου δοκεῖν εἶναι τὴν κίνησιν· οὐθὲν γὰρ διαφέρει κινεῖν
star to-seem to-be the motion nothing for it-differs to-move
 τὴν ὄψιν ἢ τὸ ὁρώμενον. ἀλλὰ μὴν ὅτι οὐδὲ κυλίεται τὰ
the sight or the thing-seen but indeed that nor rolls the
 ἄστρα, φανερόν· τὸ μὲν γὰρ κυλιόμενον στρέφεσθαι ἀνάγκη,
stars clear the indeed for thing-rolling to-turn necessary
 τῆς δὲ σελήνης αἰὲν δηλόν ἐστι τὸ καλούμενον πρόσωπον.
of-the and moon always clear is the so-called face
 ὥστ' ἐπεὶ κινούμενα μὲν δι' αὐτῶν τὰς οἰκείας κινεῖσθαι
so-that since being-moved indeed through themselves the proper to-be-moved
 κινήσεις εὐλογον, ταύτας δ' οὐ φαίνεται κινούμενα, δηλον
motions reasonable these and not appears being-moved clear
 ὅτι οὐκ ἂν κινοῖτο δι' αὐτῶν. πρὸς δὲ τούτοις ἄλογον
that not — would-be-moved through themselves toward and these unreasonable
 τὸ μηθὲν ὄργανον αὐτοῖς ἀποδοῦναι τὴν φύσιν πρὸς τὴν
the no instrument to-them to-have-assigned the nature toward the
 κίνησιν· οὐθὲν γὰρ ὡς ἔτυχε ποιεῖ ἡ φύσις, οὐδὲ τῶν
motion nothing for as it-chanced does the nature nor of-the
 μὲν ζώων φροντίσαι, τῶν δ' οὕτω τιμίων ὑπεριδεῖν,
indeed animals to-have-taken-thought of-the and thus honorable to-have-overlooked
 ἀλλ' ἔοικεν ὥσπερ ἐπίτηδες ἀφελεῖν πάντα δι' ὧν
but it-seems as-it-were on-purpose to-have-taken-away all through which
 ἐνεδέχeto προῖέναι καθ' αὐτά, καὶ ὅτι πλείστον ἀποστήσαι
it-was-admitting to-go-forward by themselves and as far-as-possible to-have-set-apart
 τῶν ἐχόντων ὄργανα πρὸς κίνησιν. διὸ καὶ
from-the-(things) having instruments toward motion wherefore also
 εὐλόγως ἂν δόξειεν ὃ τε ὅλος οὐρανὸς σφαιροειδὴς εἶναι
reasonably — might-seem the both whole heaven spherical to-be
 καὶ ἕκαστον τῶν ἄστρον. πρὸς μὲν γὰρ τὴν ἐν τῷ αὐτῷ
and each of-the stars toward indeed for the in the same
 κίνησιν ἢ σφαῖρα τῶν σχημάτων χρησιμώτατον (οὕτω γὰρ
motion the sphere of-the shapes most-useful thus for

ἂν καὶ τάχιστα κινοῖτο καὶ μάλιστα κατέχοι τὸν αὐτὸν
 — both most-quickly it-would-move and most it-would-keep the same
 τόπον), πρὸς δὲ τὴν εἰς τὸ πρόσθεν ἀχρηστότατον· ἥκιστα
 place toward and the into the front most-useless least
 γὰρ ὅμοιον τοῖς δι' αὐτῶν κινητικοῖς· οὐδὲν γὰρ
 for like to-the-(things) through themselves capable-of-moving nothing for
 ἀπηρτημένον ἔχει οὐδὲ προέχον, ὥσπερ τὸ εὐθύγραμμον,
 detached it-has nor projecting as the rectilinear
 ἀλλὰ πλείστον ἀφέστηκε τῷ σχήματι τῶν πορευτικῶν
 but most stands-apart in-the shape from-the traveling
 σωμάτων. ἐπεὶ οὖν δεῖ τὸν μὲν οὐρανὸν κινεῖσθαι
 bodies since therefore it-is-needful the indeed heaven to-be-moved
 τὴν ἐν ταύτῳ κίνησιν, τὰ ἄλλα δ' ἄστρα μὴ προϊέναι
 the in the-same motion the other and stars not to-go-forward
 δι' αὐτῶν, εὐλόγως ἂν ἐκάτερον εἴη σφαιροειδές·
 through themselves reasonably — each would-be spherical
 οὕτω γὰρ μάλιστα τὸ μὲν κινήσεται τὸ δ' ἡρεμήσει.
 thus for especially the-one indeed will-be-moved the-other and will-rest

IX • THERE IS NO MUSIC OF THE SPHERES

Some hold that bodies so great and so swift must make a sound, and that their speeds, taken from their distances, have the ratios of the concords. We do not hear it, they say, because it has been sounding since we were born, and there is no silence to set against it. Aristotle answers that a sound of that force would shatter bodies, as thunder splits stones, and that what is carried inside a moving thing, like the parts of a ship, makes no sound.

Φανερόν δ' ἐκ τούτων ὅτι καὶ τὸ φάναι γίνεσθαι
 clear and out-of these that also the to-declare to-come-about
 φερομένων ἁρμονίαν, ὥς συμφώνων γινομένων τῶν ψόφων,
 of-things-carried a-harmony as concordant coming-about of-the sounds

κομψῶς μὲν εἴρηται καὶ περιττῶς ὑπὸ τῶν εἰπόντων,
elegantly indeed it-has-been-said and remarkably by the-ones having-said
οὐ μὴν οὕτως ἔχει τᾱληθές. δοκεῖ γάρ τισιν ἀναγκαῖον
not however thus is the-truth it-seems for to-some necessary
εἶναι τηλικούτων φερομένων σωμάτων γίνεσθαι ψόφον,
to-be of-so-great being-carried bodies to-come-about a-sound
ἐπεὶ καὶ τῶν παρ' ἡμῖν οὔτε τοὺς ὄγκους ἐχόντων ἴσους
since also of-the with us neither the bulks having equal
οὔτε τοιούτῳ τάχει φερομένων· ἡλίου δὲ καὶ σελήνης,
nor with-such speed being-carried of-sun but and of-moon
ἔτι τε τοσούτων τὸ πλῆθος ἄστρων καὶ τὸ μέγεθος
further and of-so-many in-the multitude stars and in-the magnitude
φερομένων τῷ τάχει τοιαύτην φορὰν ἀδύνατον μὴ
being-carried in-the speed such a-movement impossible not
γίνεσθαι ψόφον ἀμήχανόν τινα τὸ μέγεθος. ὑποθέμενοι
to-come-about a-sound irresistible a-certain in-the magnitude having-assumed
δὲ ταῦτα καὶ τὰς ταχυτήτας ἐκ τῶν ἀποστάσεων ἔχειν
and these and the speeds out-of the distances to-have
τοὺς τῶν συμφωνιῶν λόγους, ἐναρμόνιον φασὶ γίνεσθαι
the of-the concords ratios harmonious they-say to-come-about
τὴν φωνὴν φερομένων κύκλῳ τῶν ἄστρων. ἐπεὶ δ' ἄλογον
the sound being-carried in-a-circle of-the stars since and unreasonable
δοκεῖ τὸ μὴ συνακουεῖν ἡμᾶς τῆς φωνῆς ταύτης, αἴτιον
it-seems the not to-hear-together us of-the sound of-this a-cause
τούτου φασὶν εἶναι τὸ γιγνομένους εὐθὺς ὑπάρχειν τὸν
of-this they-say to-be the to-those-coming-to-be straightway to-belong the
ψόφον, ὥστε μὴ διάδηλον εἶναι πρὸς τὴν ἐναντίαν σιγὴν·
sound so-that not distinguishable to-be toward the contrary silence
πρὸς ἄλληλα γὰρ φωνῆς καὶ σιγῆς εἶναι τὴν διάγνωσιν,
toward one-another for of-sound and of-silence to-be the discrimination

ὥστε καθάπερ τοῖς χαλκοτύποις διὰ συνήθειαν οὐθὲν
so-that just-as to-the coppersmiths through habit not-at-all
 δοκεῖ διαφέρειν, καὶ τοῖς ἀνθρώποις ταὐτὸ συμβαίνειν.
seems to-differ also to-the men the-same to-happen
 ταῦτα δὴ, καθάπερ εἴρηται πρότερον, ἐμμελῶς μὲν
these indeed just-as it-has-been-said before tunelessly indeed
 λέγεται καὶ μουσικῶς, ἀδύνατον δὲ τοῦτον ἔχειν τὸν
is-said and musically impossible and this to-be the
 τρόπον. οὐ γὰρ μόνον τὸ μηθὲν ἀκούειν ἄτοπον, περὶ οὗ
way not for only the nothing to-hear strange about which
 λύειν ἐγχειροῦσι τὴν αἰτίαν, ἀλλὰ καὶ τὸ μηδὲν πάσχειν
to-solve they-undertake the cause but also the nothing to-suffer
 χωρὶς αἰσθήσεως. οἱ γὰρ ὑπερβάλλοντες ψόφοι διακναίουσι
apart-from perception the for excessive sounds shatter
 καὶ τῶν ἀψύχων σωμάτων τοὺς ὄγκους, οἷον ὁ τῆς
even of-the soulless bodies the bulks such-as the-(sound) of-the
 βροντῆς διόστῃσι λίθους καὶ τὰ καρτερώτατα τῶν σωμάτων.
thunder splits stones and the strongest of-the bodies
 τοσούτων δὲ φερομένων, καὶ τοῦ ψόφου διόντος πρὸς
of-so-many and being-carried and of-the sound passing-through toward
 τὸ φερόμενον μέγεθος, πολλαπλάσιον μέγεθος ἀναγκαῖον
the being-carried magnitude many-times-over a-magnitude necessary
 ἀφικνεῖσθαι τε δεῦρο καὶ τὴν ἰσχὺν ἀμήχανον εἶναι τῆς
to-arrive both hither and the strength irresistible to-be of-the
 βίας. ἀλλ' εὐλόγως οὐτ' ἀκούομεν οὔτε πάσχοντα φαίνεται
violence but reasonably neither we-hear nor suffering appear
 τὰ σώματα βίαιον οὐδὲν πάθος, διὰ τὸ μὴ ψοφεῖν.
the bodies violent any affection because-of the not to-sound
 ἅμα δ' ἐστὶ τό τ' αἷτιον τούτων δηλόν, καὶ
at-the-same-time and is the both cause of-these clear and
 μαρτύριον τῶν εἰρημένων ἡμῖν λόγων, ὥς εἰσὶν ἀληθεῖς.
a-testimony of-the having-been-said by-us arguments that they-are true

τὸ γὰρ ἀπορηθὲν καὶ ποιῆσαν τοὺς Πυθαγορείους φάναι
the for thing-questioned and having-made the Pythagoreans to-declare
 γίνεσθαι συμφωνίαν τῶν φερομένων ἡμῖν ἐστὶ τεκμήριον.
to-come-about a-concord of-the things-carried for-us is a-proof
 ὅσα μὲν γὰρ αὐτὰ φέρεται, ποιεῖ ψόφον καὶ πληγὴν·
as-many-as indeed for themselves are-carried make a-sound and a-blow
 ὅσα δ' ἐν φερομένῳ ἐνδέδεται ἢ ἐνυπάρχει, καθάπερ
as-many-as and in a-thing-carried have-been-bound or inhere just-as
 ἐν τῷ πλοίῳ τὰ μέρη, οὐχ οἷόν τε ψοφεῖν, οὐδ' αὖ τὸ
in the ship the parts not possible — to-sound nor again the
 πλοῖον, εἰ φέροιτο ἐν ποταμῷ. καίτοι τοὺς αὐτοὺς
ship if it-should-be-carried in a-river and-yet the same
 λόγους ἂν ἐξείη λέγειν, ὥς ἄτοπον εἰ μὴ φερόμενος
arguments — it-would-be-possible to-say as strange if not being-carried
 ὁ ἰστὸς καὶ ἡ πρύμνα ποιεῖ ψόφον πολὺν τηλικαύτης νεώς,
the mast and the stern makes a-sound much of-so-great a-ship
 ἢ πάλιν αὐτὸ τὸ πλοῖον κινούμενον. τὸ δ' ἐν μὴ φερομένῳ
or again itself the ship being-moved the and in not a-thing-carried
 φερόμενον ποιεῖ ψόφον· ἐν φερομένῳ δὲ συνεχὲς καὶ μὴ
being-carried makes a-sound in a-thing-carried and continuous and not
 ποιοῦντι πληγὴν ἀδύνατον ψοφεῖν. ὥστ' ἐνταῦθα λεκτέον
making a-blow impossible to-sound so-that here one-must-say
 ὥς εἴπερ ἐφέρετο τὰ σώματα τούτων εἴτ' ἐν ἀέρος πλήθει
that if-indeed were-carried the bodies of-these whether in of-air a-mass
 κεχυμένῳ κατὰ τὸ πᾶν εἴτε πυρός, ὥσπερ πάντες φασίν,
poured-out throughout the whole or of-fire as all say
 ἀναγκαῖον ποιεῖν ὑπερφυῖα τῷ μεγέθει ψόφον, τούτου δὲ
necessary to-make prodigious in-the magnitude a-sound of-this and
 γινομένου καὶ δεῦρ' ἀφικνεῖσθαι καὶ διακναίειν. ὥστ' ἐπεὶπερ
coming-about also hither to-arrive and to-shatter so-that since-indeed
 οὐ φαίνεται τοῦτο συμβαῖνον, οὐτ' ἂν ἔμψυχον οὔτε βίαιον
not appears this happening neither — ensouled nor violent

φέροιτο φορὰν οὐθὲν αὐτῶν, ὥσπερ τὸ μέλλον ἔσεσθαι
would-be-carried a-movement any of-them as the going to-be
 προνοούσης τῆς φύσεως, ὅτι μὴ τοῦτον τὸν τρόπον
foreseeing of-the nature that not this the way
 ἐχούσης τῆς κινήσεως οὐθὲν ἂν ἦν τῶν περὶ τὸν
having of-the motion nothing — would-be of-the-(things) about the
 δεῦρο τόπον ὁμοίως ἔχον. ὅτι μὲν οὖν σφαιροειδῇ τὰ
hither place alike being that indeed therefore spherical the
 ἄστρα καὶ ὅτι οὐ κινεῖται δι' αὐτῶν, εἴρηται.
stars and that not they-are-moved through themselves it-has-been-said

X · THE ORDER OF THE PLANETS

Aristotle refers the order and the distances of the heavenly bodies to the astronomers, and notes only that the motions fall out in proportion to the distances. The outermost revolution is single and swiftest; each of the others runs counter to it in its own circle. The one nearest that revolution takes longest to complete its circle and the farthest least, the ones between in proportion.

Περὶ δὲ τῆς τάξεως αὐτῶν, ὃν μὲν τρόπον ἕκαστον
about and the order of-them which indeed way each
 κεῖται τῷ τὰ μὲν εἶναι πρότερα τὰ δ' ὕστερα,
lies by-the the-ones indeed to-be prior the-others and later
 καὶ πῶς ἔχει πρὸς ἄλληλα τοῖς ἀποστήμασιν, ἐκ
and how it-is-related toward one-another in-the distances out-of
 τῶν περὶ ἀστρολογίαν θεωρεῖσθω· λέγεται γὰρ
the-(writings) about astronomy let-it-be-studied it-is-said for
 ἱκανῶς. συμβαίνει δὲ κατὰ λόγον γίνεσθαι τὰς
sufficiently it-happens and according-to ratio to-come-about the
 ἐκάστου κινήσεις τοῖς ἀποστήμασι τῷ τὰς μὲν εἶναι
of-each motions to-the distances by-the the-ones indeed to-be

θάττους τὰς δὲ βραδυτέρας· ἐπεὶ γὰρ ὑπόκειται τὴν
swifter the-others and slower since for it-is-assumed the
 μὲν ἐσχάτην τοῦ οὐρανοῦ περιφορὰν ἀπλὴν τ' εἶναι
indeed outermost of-the heaven revolution simple both to-be
 καὶ ταχίστην, τὰς δὲ τῶν ἄλλων βραδυτέρας τε καὶ
and swiftest the-ones and of-the others slower both and
 πλείους (ἕκαστον γὰρ ἀντιφέρεται τῷ οὐρανῷ κατὰ
more each for is-carried-against to-the heaven according-to
 τὸν αὐτοῦ κύκλον), εὖλογον ἤδη τὸ μὲν ἐγγυτάτω τῆς
the of-itself circle reasonable already the-one indeed nearest of-the
 ἀπλῆς καὶ πρώτης περιφορᾶς ἐν πλείστῳ χρόνῳ διεῖναι
simple and first revolution in most time to-traverse
 τὸν αὐτοῦ κύκλον, τὸ δὲ πορρωτάτω ἐν ἐλαχίστῳ,
the of-itself circle the-other and farthest in least
 τῶν δ' ἄλλων τὸ ἐγγύτερον αἰεὶ ἐν πλείονι, τὸ δὲ
of-the and others the nearer always in more the-other and
 πορρωτέρων ἐν ἐλάττω. τὸ μὲν γὰρ ἐγγυτάτω μάλιστα
farther in less the-one indeed for nearest most
 κρατεῖται, τὸ δὲ πορρωτάτω πάντων ἥκιστα διὰ
is-controlled the-other and farthest of-all least because-of
 τὴν ἀπόστασιν· τὰ δὲ μετὰ κατὰ λόγον ἤδη τῆς
the distance the-ones and between according-to ratio already of-the
 ἀποστάσεως, ὥσπερ καὶ δεικνύουσιν οἱ μαθηματικοί.
distance as also show the mathematicians

XI · THE STARS ARE SPHERICAL

Since the stars do not move by themselves, and nature does nothing in vain, they were given the shape least fitted for motion, which is the sphere. That the moon is spherical is shown by its shapes as it waxes and wanes — mostly crescent or gibbous, and only once half — and by the crescent shape of solar eclipses; and if one star is spherical the rest will be.

Τὸ δὲ σχῆμα τῶν ἄστρον ἐκάστου σφαιροειδὲς μάλιστ'
the and shape of-the stars of-each spherical most
 ἂν τις εὐλόγως ὑπολάβοι. ἐπεὶ γὰρ δέδεικται ὅτι
 — *someone reasonably might-suppose since for it-has-been-shown that*
 οὐ πεφύκασιν κινεῖσθαι δι' αὐτῶν, ἡ δὲ φύσις οὐδὲν
not they-are-natured to-be-moved through themselves the and nature nothing
 ἀλόγως οὐδὲ μάτην ποιεῖ, δηλὸν ὅτι καὶ σχῆμα τοιοῦτον
unreasonably or in-vain does clear that also a-shape such
 ἀπέδωκε τοῖς ἀκινήτοις ὃ ἥκιστα ἐστὶ κινητικόν.
it-assigned to-the motionless which least is productive-of-motion
 ἥκιστα δὲ κινητικὸν ἡ σφαῖρα διὰ τὸ μηδὲν ἔχειν
least and productive-of-motion the sphere because-of the nothing to-have
 ὄργανον πρὸς τὴν κίνησιν. ὥστε δηλὸν ὅτι σφαιροειδῇ
an-instrument toward the motion so-that clear that spherical
 ἂν εἴη τὸν ὄγκον. ἔτι δ' ὁμοίως μὲν ἅπαντα καὶ ἔν,
 — *would-be the bulk further and alike indeed all also one*
 ἡ δὲ σελήνη δείκνυται διὰ τῶν περὶ τὴν ὄψιν ὅτι
the and moon is-shown through the-(arguments) about the sight that
 σφαιροειδής· οὐ γὰρ ἂν ἐγίνετο αὐξανομένη καὶ φθίνουσα
spherical not for — it-would-become waxing and waning
 τὰ μὲν πλείστα μηνοειδής ἢ ἀμφίκυρτος ἅπαξ δὲ
the-(times) indeed most crescent-shaped or gibbous once and
 διχότομος. καὶ πάλιν διὰ τῶν ἀστρολογικῶν, ὅτι οὐκ
half-cut and again through the astronomical-(arguments) that not
 ἂν ἦσαν αἱ τοῦ ἡλίου ἐκλείψεις μηνοειδεῖς. ὥστ' εἴπερ
 — *would-be the of-the sun eclipses crescent-shaped so-that if-indeed*
 ἐν τοιοῦτον, δηλὸν ὅτι καὶ τᾶλλα ἂν εἴη σφαιροειδῇ.
one such clear that also the-rest — would-be spherical

Aristotle raises two difficulties. Why do the bodies farthest from the first movement not have the most motions, when the ones between have the most, and why does the first movement carry stars past counting while each of the others carries one? He answers that the stars share in action and life: the best needs no action, the nearest one, those farther more, and the farthest give up: the earth does not move. And the first movement, being one, moves many divine bodies, while the many others move one each; so nature equalizes.

Δυοῖν δ' ἀπορίαιν οὔσαιν, περὶ ὧν εἰκότως ἂν ὅστισιν
of-two and difficulties being about which reasonably — anyone-whatever
 ἀπορήσειε, πειρατέον λέγειν τὸ φαινόμενον, αἰδοῦς ἀξίαν
might-be-at-a-loss one-must-try to-say the apparent of-respect worthy
 εἶναι νομίζοντας τὴν προθυμίαν μᾶλλον ἢ θράσους, εἴ τις
to-be thinking the eagerness rather than of-boldness if someone
 διὰ τὸ φιλοσοφίας διψῆν καὶ μικρὰς εὐπορίας ἀγαπᾷ
because-of the for-philosophy to-thirst even small resources is-content
 περὶ ὧν τὰς μεγίστας ἔχομεν ἀπορίας. ἔστι δὲ πολλῶν
about which the greatest we-have difficulties it-is and of-many
 ὄντων τοιούτων οὐχ ἥκιστα θαυμαστόν, διὰ τίνα ποτ'
being such not least astonishing because-of what ever
 αἰτίαν οὐκ αἰεὶ τὰ πλείον ἀπέχοντα τῆς πρώτης φορᾶς
cause not always the-(bodies) more standing-off of-the first movement
 κινεῖται πλείους κινήσεις, ἀλλὰ τὰ μεταξὺ πλείστας.
are-moved more motions but the-(bodies) between most
 εὐλογον γὰρ ἂν δόξειεν εἶναι τοῦ πρώτου σώματος
reasonable for — it-might-seem to-be of-the first body
 μίαν κινουμένου φορὰν τὸ πλησιαίτατον ἐλαχίστας
one being-moved a-movement the nearest fewest
 κινεῖσθαι κινήσεις, οἷον δύο, τὸ δ' ἐχόμενον τρεῖς ἢ
to-be-moved motions such-as two the-other and next three or

τινα ἄλλην τοιαύτην τάξιν. νῦν δὲ συμβαίνει τὸναντίον·
some other such order now and it-happens the-contrary
 ἐλάττους γὰρ ἥλιος καὶ σελήνη κινοῦνται κινήσεις ἢ τῶν
fewer for sun and moon are-moved motions than of-the
 πλανωμένων ἄστρον ἓνα· καίτοι πορρώτερον τοῦ μέσου
wandering stars some and-yet farther of-the middle
 καὶ πλησιαιότερον τοῦ πρώτου σώματος εἰσιν αὐτῶν.
and nearer of-the first body they-are than-they
 δῆλον δὲ τοῦτο περὶ ἐνίων καὶ τῇ ὄψει γέγονεν· τὴν γὰρ
clear and this about some also to-the sight has-become the for
 σελήνην ἐωράκαμεν διχότομον μὲν οὖσαν, ὑπελθοῦσαν δὲ
moon we-have-seen half-cut indeed being having-gone-under and
 τὸν ἀστέρα τὸν Ἄρεος, καὶ ἀποκρυφθέντα μὲν κατὰ τὸ
the star the of-Ares and having-been-hidden indeed at the
 μέλαν αὐτῆς, ἐξελθόντα δὲ κατὰ τὸ φανὸν καὶ λαμπρόν.
dark of-her having-come-out and at the bright and shining
 ὁμοίως δὲ καὶ περὶ τοὺς ἄλλους ἀστέρας λέγουσιν οἱ
alike and also about the other stars say the-ones
 πάλαι τετηρηκότες ἐκ πλείστων ἐτῶν Αἰγύπτιοι καὶ
long-ago having-watched out-of very-many years Egyptians and
 Βαβυλώνιοι, παρ' ὧν πολλὰς πίστεις ἔχομεν περὶ ἐκάστου
Babylonians from whom many proofs we-have about each
 τῶν ἄστρον, τοῦτό τε δὴ δικαίως ἀπορήσειεν ἂν τις,
of-the stars this both indeed justly might-be-at-a-loss — someone
 καὶ διὰ τίνα ποτ' αἰτίαν ἐν μὲν τῇ πρώτῃ φορᾷ
and because-of what ever cause in indeed the first movement
 τοσοῦτόν ἐστιν ἄστρον πλῆθος ὥστε τῶν ἀναριθμήτων
so-great is of-stars a-multitude so-that of-the innumerable
 εἶναι δοκεῖν τὴν πᾶσαν τάξιν, τῶν δ' ἄλλων ἐν χωρὶς
to-be to-seem the whole order of-the and others one apart
 ἕκαστον, δύο δ' ἢ πλείω οὐ φαίνεται ἐν τῇ αὐτῇ
each two and or more not appear in the same

ἐνδεδεμένα φορᾶ. περὶ δὴ τούτων ζητεῖν μὲν καλῶς
having-been-bound movement about indeed these to-inquire indeed well
 ἔχει καὶ τὴν ἐπὶ πλείον σύνεσιν, καίπερ μικρὰς ἔχοντας
it-is also the toward more understanding although small having
 ἀφορμὰς καὶ τοσαύτην ἀπόστασιν ἀπέχοντας τῶν περὶ αὐτὰ
starting-points and so-great a-distance being-distant of-the about them
 συμβαινόντων· ὅμως δ' ἐκ τῶν τοιούτων θεωροῦσιν
things-happening nevertheless and out-of the such for-those-considering
 οὐδὲν ἄλογον ἂν δόξειεν εἶναι τὸ νῦν ἀπορούμενον. ἀλλ'
not-at-all unreasonable — might-seem to-be the now thing-questioned but
 ἡμεῖς ὡς περὶ σωμάτων αὐτῶν μόνον, καὶ μονάδων τάξιν
we as about bodies of-them only and units an-order
 μὲν ἔχόντων, ἀψύχων δὲ πάμπαν, διανοοῦμεθα· δεῖ
indeed having soulless and altogether we-think it-is-needful
 δ' ὡς μετεχόντων ὑπολαμβάνειν πράξεως καὶ ζωῆς· οὕτω
and as partaking to-suppose of-action and of-life thus
 γὰρ οὐθὲν δόξει παράλογον εἶναι τὸ συμβαῖνον.
for not-at-all will-seem paradoxical to-be the thing-happening
 ἔοικε γὰρ τῷ μὲν ἄριστα ἔχοντι ὑπάρχειν τὸ εὖ ἄνευ
it-seems for to-the indeed best being to-belong the well without
 πράξεως, τῷ δ' ἐγγύτατα διὰ ὀλίγης καὶ μιᾶς, τοῖς δὲ
action to-the and nearest through a-little and one to-the and
 πορρωτέρω διὰ πλείονων, ὥσπερ ἐπὶ σώματος τὸ μὲν
further through more as upon a-body the-one indeed
 οὐδὲ γυμναζόμενον εὖ ἔχει, τὸ δὲ μικρὰ περιπατήσαν,
not-even exercising well is the-other and a-little having-walked
 τῷ δὲ καὶ δρόμου δεῖ καὶ πάλης καὶ κονίσσεως, πάλιν
to-the and also of-running there-is-need and of-wrestling and of-the-dust again
 δ' ἐτέρῳ οὐδ' ὅποσαοῦν πονοῦντι τοῦτό γ' ἂν ἔτι
and for-another not-even however-much toiling this at-least — further
 ὑπάρξαι τὰγαθόν, ἀλλ' ἕτερόν τι. ἔστι δὲ τὸ κατορθοῦν
would-belong the-good but another something it-is and the to-succeed

χαλεπὸν ἢ τὸ πολλὰ ἢ τὸ πολλάκις, οἷον μυρίους
hard either the many or the often such-as ten-thousand
 ἀστραγάλους Κώους βαλεῖν ἀμήχανον, ἀλλ' ἓνα ἢ δύο ῥᾶον.
knuckle-bones Coan to-throw impossible but one or two easier
 καὶ πάλιν ὅταν τοδὶ μὲν δέῃ τοῦδ' ἔνεκα ποιῆσαι,
and again whenever this indeed it-be-needful of-this for-sake to-do
 τοῦτο δ' ἄλλου καὶ τοῦτο ἑτέρου, ἐν μὲν ἐνὶ ἢ δυσὶ ῥάδιον
this and of-another and this of-another in indeed one or two easy
 ἐπιτυχεῖν, ὅσῳ δ' ἂν διὰ πλείονων, χαλεπώτερον.
to-hit by-how-much and — through more harder
 διὸ δεῖ νομίζειν καὶ τὴν τῶν ἀστρων πράξιν εἶναι
wherefore it-is-needful to-hold also the of-the stars action to-be
 τοιαύτην οἷα περ ἢ τῶν ζώων καὶ φυτῶν· καὶ γὰρ ἐνταῦθα
such as-that indeed the of-the animals and of-plants also for here
 αἱ τοῦ ἀνθρώπου πλείσται πράξεις (πολλῶν γὰρ τῶν εὖ
the of-the man most actions of-many for of-the well
 δύναται τυχεῖν, ὥστε πολλὰ πράττειν, καὶ ἄλλων ἔνεκα· τῷ
he-can to-attain so-that many to-do and of-others for-sake to-the
 δ' ὡς ἄριστα ἔχοντι οὐθέν δεῖ πράξεως· ἔστι γὰρ αὐτὸ
and as best being not-at-all there-is-need of-action it-is for itself
 τὸ οὗ ἔνεκα, ἢ δὲ πράξις αἰεὶ ἐστὶν ἐν δυσὶν, ὅταν καὶ
the of-which for-sake the and action always is in two whenever both
 οὗ ἔνεκα ἢ καὶ τὸ τούτου ἔνεκα). τῶν δ' ἄλλων ζώων
of-which for-sake it-be and the of-this for-sake of-the and other animals
 ἐλάττους, τῶν δὲ φυτῶν μικρά τις καὶ μία ἴσως· ἢ
fewer of-the and plants small a-certain and one perhaps either
 γὰρ ἓν τί ἐστὶν οὗ τύχοι ἂν, ὥσπερ καὶ ἄνθρωπος,
for one something is which it-might-attain — as also a-man
 ἢ καὶ τὰ πολλὰ πάντα πρὸ ὁδοῦ ἐστὶ πρὸς τὸ ἄριστον.
or also the many all onward of-the-way is toward the best

τὸ μὲν οὖν ἔχει καὶ μετέχει τοῦ ἀρίστου, τὸ δ'
the-one indeed therefore has and shares of-the best the-other and
 ἀφικνεῖται ἐγγὺς δι' ὀλίγων, τὸ δὲ διὰ πολλῶν,
arrives near through few the-other and through many
 τὸ δ' οὐδ' ἐγχειρεῖ, ἀλλ' ἱκανὸν εἰς τὸ ἐγγὺς τοῦ
the-other and not-even attempts but sufficient into the near of-the
 ἐσχάτου ἐλθεῖν (οἷον εἰ ὑγία τέλος, τὸ μὲν δὴ ἀεὶ
last to-come such-as if health an-end the-(one) indeed then always
 ὑγιαίνει, τὸ δ' ἰσχνανθέν, τὸ δὲ δραμὸν καὶ
is-healthy the-other and having-been-reduced the-other and having-run and
 ἰσχνανθέν, τὸ δὲ καὶ ἄλλο τι πράξαν τοῦ δραμεῖν
having-been-reduced the-other and also another something having-done of-the to-run
 ἔνεκα, ὥστε πλείους αἱ κινήσεις, ἕτερον δ' ἀδυνατεῖ πρὸς
for-sake so-that more the motions another and is-unable toward
 τὸ ὑγιαίνει ἐλθεῖν, ἀλλὰ πρὸς τὸ δραμεῖν μόνον ἢ
the to-become-healthy to-come but toward the to-run only or
 ἰσχνανθῆναι). καὶ τούτων θάτερον τέλος αὐτοῖς. μάλιστα
to-be-reduced and of-these one-of-the-two an-end for-them especially
 μὲν γὰρ ἐκείνου τυχεῖν ἄριστον πᾶσι τοῦ τέλους· εἰ δὲ μή,
indeed for that to-attain best for-all of-the end if and not
 ἀεὶ ἄμεινόν ἐστιν ὅσω ἂν ἐγγύτερον ἢ τοῦ ἀρίστου.
always better it-is by-how-much — nearer it-be of-the best
 καὶ διὰ τοῦτο ἢ μὲν γῇ ὅλως οὐ κινεῖται, τὰ δ'
also because-of this the indeed earth wholly not is-moved the-(bodies) and
 ἐγγὺς ὀλίγας κινήσεις· οὐ γὰρ ἀφικνεῖται πρὸς τὸ ἐσχάτον,
near few motions not for arrive toward the last
 ἀλλὰ μέχρι ὅτου δύναται τυχεῖν τῆς θειοτάτης ἀρχῆς. ὁ
but as-far-as of-which it-can to-attain of-the most-divine principle the
 δὲ πρῶτος οὐρανὸς εὐθὺς τυγχάνει διὰ μιᾶς κινήσεως.
and first heaven straightway attains through one motion

τὰ δ' ἐν τῷ μέσῳ τοῦ πρώτου καὶ τῶν ἐσχάτων
the-(bodies) and in the middle of-the first and of-the last
 ἀφικνεῖται μὲν, διὰ πλειόνων δ' ἀφικνεῖται κινήσεων.
arrive indeed through more and arrive motions
 περὶ δὲ τῆς ἀπορίας ὅτι κατὰ μὲν τὴν πρώτην μίαν
about and the difficulty that according-to indeed the first one
 οὖσαν φορὰν πολὺ πλῆθος συνέστηκεν ἄστρον, τῶν δ'
being movement much a-multitude has-been-formed of-stars of-the and
 ἄλλων χωρὶς ἕκαστον εἴληφεν ἰδίας κινήσεις, δι' ἐν μὲν
others apart each has-taken proper motions through one indeed
 ἂν τις πρῶτον εὐλόγως οἰηθείη τοῦθ' ὑπάρχειν νοῆσαι
— someone first reasonably might-think this to-belong to-conceive
 γὰρ δεῖ τῆς ζωῆς καὶ τῆς ἀρχῆς ἐκάστης πολλὴν
for it-is-needful of-the life and of-the principle of-each much
 ὑπεροχὴν εἶναι τῆς πρώτης πρὸς τὰς ἄλλας, εἴη δ'
a-superiority to-be of-the first toward the others it-would-be and
 ἂν ἥδε συμβαίνουσα κατὰ λόγον· ἡ μὲν γὰρ πρώτη
— this happening according-to reason the indeed for first
 μία οὖσα πολλὰ κινεῖ τῶν σωμάτων τῶν θείων, αἱ
one being many moves of-the bodies of-the divine the-ones
 δὲ πολλαὶ οὖσαι ἐν μόνον ἐκάστη· τῶν γὰρ πλανωμένων
and many being one only each of-the for wandering-(stars)
 ἐν ὅτιοῦν πλείους φέρεται φοράς. ταύτη τε οὖν
one anything-whatever more is-carried movements in-this-way both therefore
 ἀνισάζει ἢ φύσις καὶ ποιεῖ τινὰ τάξιν, τῇ μὲν μιᾷ φορᾷ
equalizes the nature and makes a-certain order to-the indeed one movement
 πολλὰ ἀποδοῦσα σώματα, τῷ δ' ἐνὶ σώματι πολλὰς
many having-assigned bodies to-the and one body many
 φοράς· καὶ ἔτι διὰ τόδε ἐν ἔχουσι σῶμα αἱ ἄλλαι φοραί,
movements and further through this one they-have a-body the other movements
 ὅτι πολλὰ σώματα κινοῦσιν αἱ πρὸ τῆς τελευταίας
because many bodies move the-ones before of-the last

καὶ τῆς ἐν ἄστρον ἐχούσης· ἐν πολλαῖς γὰρ σφαίραις ἡ
and of-the one star having in many for spheres the
 τελευταία σφαῖρα ἐνδεδεμένη φέρεται, ἐκάστη δὲ σφαῖρα
last sphere having-been-bound is-carried each and sphere
 σῶμά τι τυγχάνει ὄν. ἐκείνης ἂν οὖν κοινὸν εἴη τὸ
a-body some happens being of-that — therefore common would-be the
 ἔργον· αὐτῇ μὲν γὰρ ἐκάστη ἡ ἴδιος φύσει φορά, αὕτη
work to-it indeed for to-each the proper by-nature movement this
 δὲ οἶον πρόσκειται, παντὸς δὲ πεπερασμένου σώματος
and as-it-were is-added-on of-every and limited body
 πρὸς πεπερασμένον ἡ δύναμις ἐστίν. ἀλλὰ περὶ μὲν
toward a-limited the power is but about indeed
 τῶν τὴν ἐγκύκλιον φερομένων κίνησιν ἄστρον εἴρηται
the-(stars) the circular being-carried motion stars it-has-been-said
 ποῖ ἅττα κατὰ τε τὴν οὐσίαν ἐστὶ καὶ κατὰ
what-sort things according-to both the being they-are and according-to
 τὸ σχῆμα, καὶ περὶ τῆς φορᾶς καὶ τῆς τάξεως αὐτῶν.
the shape and about the movement and the order of-them

XIII • WHERE THE EARTH LIES

Most place the earth at the middle; the Italians called Pythagoreans put fire there and make the earth a star, adding a counter-earth. Others say it rests on water, or is held by the whirl, or is kept up by its breadth on the air beneath. Aristotle reviews these and objects to each, including Anaximander's argument from likeness, which would keep fire at the middle too.

Λοιπὸν δὲ περὶ τῆς γῆς εἰπεῖν, οὗ τε τυγχάνει κειμένη,
remaining and about the earth to-say where both it-happens lying
 καὶ πότερον τῶν ἡρεμούντων ἐστὶν ἢ τῶν κινουμένων, καὶ
and whether of-the resting it-is or of-the moving and

περὶ τοῦ σχήματος αὐτῆς. περὶ μὲν οὖν τῆς θέσεως οὐ
about the shape of-it about indeed therefore the position not
 τὴν αὐτὴν ἅπαντες ἔχουσι δόξαν, ἀλλὰ τῶν πλείστων ἐπὶ
the same all have opinion but of-the most upon
 τοῦ μέσου κεῖσθαι λεγόντων, ὅσοι τὸν ὅλον οὐρανὸν
the middle to-lie saying as-many-as the whole heaven
 πεπερασμένον εἶναί φασιν, ἐναντίως οἱ περὶ τὴν Ἰταλίαν,
limited to-be say contrarily the-ones about — Italy
 καλούμενοι δὲ Πυθαγόρειοι λέγουσιν· (ἐπὶ μὲν γὰρ τοῦ μέσου
called and Pythagoreans say upon indeed for the middle
 πῦρ εἶναί φασιν, τὴν δὲ γῆν ἐν τῶν ἀστρων οὖσαν, κύκλῳ
fire to-be they-say the and earth one of-the stars being in-a-circle
 φερομένην περὶ τὸ μέσον νύκτα τε καὶ ἡμέραν ποιεῖν. ἔτι
being-carried about the middle night both and day to-make further
 δ' ἐναντίαν ἄλλην ταύτη κατασκευάζουσι γῆν, ἣν ἀντίχθονα
and a-contrary another to-this they-construct earth which counter-earth
 ὄνομα καλοῦσιν) οὐ πρὸς τὰ φαινόμενα τοὺς λόγους καὶ τὰς
a-name they-call not toward the appearances the accounts and the
 αἰτίας ζητοῦντες, ἀλλὰ πρὸς τινὰς λόγους καὶ δόξας αὐτῶν
causes seeking but toward certain accounts and opinions of-themselves
 τὰ φαινόμενα προσέλκοντες καὶ πειρώμενοι συγκοσμεῖν.
the appearances dragging and trying to-arrange-together
 πολλοῖς δ' ἂν καὶ ἑτέροις συνδόξειε μὴ δεῖν τῇ
for-many and — also others it-would-seem-good not to-be-needful to-the
 γῇ τὴν τοῦ μέσου χώραν ἀποδιδόναι, τὸ πιστὸν οὐκ ἐκ
earth the of-the middle space to-assign the credible not out-of
 τῶν φαινομένων ἀθροῦσιν ἀλλὰ μᾶλλον ἐκ τῶν λόγων.
the appearances gathering but rather out-of the arguments
 τῷ γὰρ τιμιωτάτῳ οἴονται προσήκειν τὴν τιμιωτάτην
to-the for most-honorable they-think to-be-fitting the most-honorable
 ὑπάρχειν χώραν, εἶναι δὲ πῦρ μὲν γῆς τιμιώτερον,
to-belong space to-be and fire indeed than-earth more-honorable

τὸ δὲ πέρασ τῶν μεταξύ, τὸ δ' ἔσχατον καὶ τὸ μέσον
the and limit than-the in-between the and extremity and the middle
 πέρασ· ὥστ' ἐκ τούτων ἀναλογιζόμενοι οὐκ οἴονται ἐπὶ
a-limit so-that out-of these reckoning not they-think upon
 τοῦ μέσου κεῖσθαι τῆς σφαίρας αὐτήν, ἀλλὰ μᾶλλον
the middle to-lie of-the sphere it but rather
 τὸ πῦρ. ἔτι δ' οἷ γε Πυθαγόρειοι καὶ διὰ
the fire further and the-ones at-least Pythagoreans also because-of
 τὸ μάλιστα προσήκειν φυλάττεσθαι τὸ κυριώτατον τοῦ
the most to-be-fitting to-be-guarded the most-authoritative of-the
 παντός· τὸ δὲ μέσον εἶναι τοιοῦτον· ὃ Διὸς φυλακὴν
all the and middle to-be such which of-Zeus a-guard-house
 ὀνομάζουσι, τὸ ταύτην ἔχον τὴν χώραν πῦρ, ὥσπερ τὸ
they-name the this having the space fire as the
 μέσον ἀπλῶς λεγόμενον, καὶ τὸ τοῦ μεγέθους μέσον καὶ
middle simply being-said also the of-the magnitude middle and
 τοῦ πράγματος ὃν μέσον καὶ τῆς φύσεως. καίτοι καθάπερ
of-the thing being a-middle and of-the nature and-yet just-as
 ἐν τοῖς ζώοις οὐ ταῦτόν τοῦ ζώου καὶ τοῦ σώματος μέσον,
in the animals not the-same of-the animal and of-the body a-middle
 οὕτως ὑποληπτέον μᾶλλον καὶ περὶ τὸν ὅλον οὐρανόν.
thus one-must-suppose rather also about the whole heaven
 διὰ μὲν οὖν ταύτην τὴν αἰτίαν οὐθὲν αὐτοὺς δεῖ
through indeed therefore this the cause not-at-all them it-is-needful
 θορυβεῖσθαι περὶ τὸ πᾶν, οὐδ' εἰσάγειν φυλακὴν ἐπὶ τὸ
to-be-troubled about the all nor to-introduce a-guard-house upon the
 κέντρον, ἀλλ' ἐκεῖνο ζητεῖν τὸ μέσον, ποῖόν τι καὶ ποῦ
center but that to-see the middle what-sort a-thing and where
 πέφυκεν. ἐκεῖνο μὲν γὰρ ἀρχὴ τὸ μέσον καὶ τίμιον, τὸ
it-is-natured that indeed for a-beginning the middle and honorable the

δὲ τοῦ τόπου μέσον ἔοικε τελευτῇ μᾶλλον ἢ ἀρχῇ·
and of-the place middle resembles an-end rather than a-beginning
 τὸ μὲν γὰρ ὀριζόμενον τὸ μέσον, τὸ δ' ὀρίζον τὸ πέρασ.
the indeed for being-bounded the middle the and bounding the limit
 τιμιώτερον δὲ τὸ περιέχον καὶ τὸ πέρασ ἢ τὸ περαινόμενον·
more-honorable and the enclosing and the limit than the thing-bounded
 τὸ μὲν γὰρ ὕλη τὸ δ' οὐσία τῆς συστάσεώς ἐστιν.
the-one indeed for matter the-other and being of-the constitution is
 περὶ μὲν οὖν τοῦ τόπου τῆς γῆς ταύτην ἔχουσί τινας
about indeed therefore the place of-the earth this have some
 τὴν δόξαν, ὁμοίως δὲ καὶ περὶ μονῆς καὶ κινήσεως· οὐ
the opinion alike and also about rest and motion not
 γὰρ τὸν αὐτὸν τρόπον ἅπαντες ὑπολαμβάνουσιν, ἀλλ'
for the same way all suppose but
 ὅσοι μὲν μὴδ' ἐπὶ τοῦ μέσου κεῖσθαι φασιν αὐτήν,
as-many-as indeed not-even upon the middle to-lie say it
 κινεῖσθαι κύκλῳ περὶ τὸ μέσον, οὐ μόνον δὲ ταύτην,
to-be-moved in-a-circle about the middle not only and this
 ἀλλὰ καὶ τὴν ἀντίχθονα, καθάπερ εἶπομεν πρότερον. ἐνίοις
but also the counter-earth just-as we-said before to-some
 δὲ δοκεῖ καὶ πλείω σώματα τοιαῦτα ἐνδέχεσθαι φέρεσθαι
and it-seems also more bodies such to-admit to-be-carried
 περὶ τὸ μέσον ἡμῖν ἄδηλα διὰ τὴν ἐπιπρόσθησιν τῆς
about the middle to-us unseen because-of the screening of-the
 γῆς. διὸ καὶ τὰς τῆς σελήνης ἐκλείψεις πλείους ἢ τὰς
earth wherefore also the of-the moon eclipses more than the
 τοῦ ἡλίου γίνεσθαι φασιν· τῶν γὰρ φερομένων ἕκαστον
of-the sun to-come-about they-say of-the for being-carried each
 ἀντιφράττει αὐτήν, ἀλλ' οὐ μόνον τὴν γῆν. ἐπεὶ γὰρ οὐκ
to-block it but not only the earth since for not
 ἔστιν ἡ γῆ κέντρον, ἀλλ' ἀπέχει τὸ ἡμισφαίριον αὐτῆς
is the earth a-center but is-distant the hemisphere of-it

ὅλον, οὐθὲν κωλύειν οἴονται τὰ φαινόμενα συμβαίνειν
whole nothing to-prevent they-think the appearances to-happen
 ὁμοίως μὴ κατοικοῦσιν ἡμῖν ἐπὶ τοῦ κέντρου, ὥσπερ καὶ
alike not dwelling for-us upon the center as even
 εἰ μὴ ἐπὶ τοῦ μέσου ἦν ἡ γῆ· οὐθὲν γὰρ οὐδὲ νῦν
if not upon the middle were the earth nothing for even now
 ποιεῖν ἐπίδηλον τὴν ἡμίσειαν ἀπέχοντας ἡμᾶς διάμετρον.
to-make evident the half being-distant us a-diameter
 ἔνιοι δὲ καὶ κειμένην ἐπὶ τοῦ κέντρου φασὶν αὐτὴν
some and also lying upon the center say it
 ἵλλεσθαι καὶ κινεῖσθαι περὶ τὸν διὰ παντὸς τεταμένον
to-be-rolled and to-be-moved about the through all stretched
 πόλον, ὥσπερ ἐν τῷ Τιμαίῳ γέγραπται. παραπλησίως
pole as in the Timaeus it-has-been-written similarly
 δὲ καὶ περὶ τοῦ σχήματος ἀμφισβητεῖται τοῖς μὲν
and also about the shape it-is-disputed to-the-ones indeed
 γὰρ δοκεῖ εἶναι σφαιροειδῆς, τοῖς δὲ πλατεῖα καὶ τὸ
for it-seems to-be spherical to-the-others and flat and the
 σχῆμα τυμπανοειδῆς· ποιοῦνται δὲ τεκμήριον ὅτι δύνων
shape drum-like they-make and a-proof that setting
 καὶ ἀνατέλλων ὁ ἥλιος εὐθεῖαν καὶ οὐ περιφερῆ τὴν
and rising the sun a-straight and not curved the
 ἀπόκρυψιν φαίνεται ποιούμενος ὑπὸ τῆς γῆς, ὡς δέον,
concealment appears making by the earth as being-needful
 εἴπερ ἦν σφαιροειδῆς, περιφερῆ γίνεσθαι τὴν ἀποτομὴν,
if-indeed it-were spherical curved to-come-about the section
 οὐ προσλογιζόμενοι τό τε ἀπόστημα τοῦ ἡλίου πρὸς τὴν
not reckoning-besides the both distance of-the sun toward the
 γῆν καὶ τὸ τῆς περιφερείας μέγεθος ὡς ἐν τοῖς φαινομένοις
earth and the of-the circumference magnitude as in the appearing
 μικροῖς κύκλοις εὐθεῖα φαίνεται πόρρωθεν. διὰ μὲν
small circles a-straight-line appears from-afar through indeed

οὖν ταύτην τὴν φαντασίαν οὐδὲν αὐτοὺς ἀπιστεῖν
 therefore this the appearance not-at-all them to-disbelieve
 δεῖ μὴ κυκλοτερῇ τὸν ὄγκον εἶναι τῆς γῆς· ἀλλ' ἔτι
 it-is-needful — circular the bulk to-be of-the earth but further
 προστιθέασι, καὶ φασὶ διὰ τὴν ἡρεμίαν ἀναγκαῖον τὸ
 they-add and say because-of the rest necessary the
 σχῆμα τοῦτ' ἔχειν αὐτήν. καὶ γὰρ δὴ οἱ περὶ τῆς κινήσεως
 shape this to-have it and for indeed the about the motion
 καὶ τῆς μονῆς εἰρημένοι τρόποι πολλοὶ τυγχάνουσιν.
 and the rest having-been-said ways many happen-to-be
 τὸ μὲν οὖν ἀπορῆσαι πᾶσι ἀναγκαῖον ἐπελθεῖν·
 the indeed therefore to-have-been-at-a-loss for-all necessary to-have-occurred
 τάχα γὰρ ἀλυποτέρας διανοίας τὸ μὴ θαυμάζειν πῶς ποτὲ
 perhaps for of-a-less-troubled thought the not to-wonder how ever
 μικρὸν μὲν μόνιον τῆς γῆς, ἂν μετεωρισθὲν ἀφεθῇ, φέρεται
 a-small indeed part of-the earth if having-been-raised it-be-let-go is-carried
 καὶ μένειν οὐκ ἐθέλει, καὶ τὸ πλεῖον ἀεὶ θάττον, πᾶσαν δὲ
 and to-remain not it-wishes and the more always faster whole and
 τὴν γῆν εἴ τις ἀφείη μετεωρίσας, οὐκ ἂν φέροιτο.
 the earth if someone should-let-go having-raised not — it-would-be-carried
 νῦν δ' ἡρεμεῖ τοσοῦτον βάρος. ἀλλὰ μὴν καὶ εἴ τις τῶν
 now and rests so-great a-weight but indeed also if someone of-the
 φερομένων μορίων αὐτῆς, πρὶν πεσεῖν, ὑφαιροίη τὴν γῆν,
 being-carried parts of-it before to-fall should-take-away the earth
 οἰσθήσεται κάτω μηθενὸς ἀντερείσαντος. ὥστε τὸ μὲν
 it-will-move downward of-nothing resisting so-that the indeed
 ἀπορεῖν εἰκότως ἐγένετο φιλοσόφημα πᾶσι· τὸ δὲ τὰς
 to-be-at-a-loss reasonably became a-philosophic-problem for-all the and the
 περὶ τούτου λύσεις μὴ μᾶλλον ἀτόπους εἶναι δοκεῖν τῆς
 about this solutions not rather strange to-be to-seem than-the
 ἀπορίας θαυμάσειεν ἂν τις. οἱ μὲν γὰρ διὰ ταῦτα
 difficulty might-wonder — someone the-ones indeed for because-of these

ἄπειρον τὸ κάτω τῆς γῆς εἶναί φασιν, ἐπ' ἄπειρον αὐτὴν
infinite the below of-the earth to-be say to infinity it
 ἐρριζῶσθαι λέγοντες, ὥσπερ Ξενοφάνης ὁ Κολοφώνιος,
to-have-been-rooted saying as Xenophanes the Colophonian
 ἵνα μὴ πράγματ' ἔχωσι ζητοῦντες τὴν αἰτίαν διὸ καὶ
so-that not troubles they-may-have seeking the cause wherefore also
 Ἐμπεδοκλῆς οὕτως ἐπέπληξεν, εἰπὼν ὡς “εἴ περ ἀπείρονα
Empedocles thus rebuked saying as if indeed infinite
 γῆς τε βάθῃ καὶ δαισιλὸς αἰθήρ, ὡς διὰ πολλῶν
of-earth both depths and abundant aether as through many
 δὴ γλώσσης ῥηθέντα ματαίως ἐκκέχυται στομάτων,
indeed of-tongue having-been-said vainly has-been-poured-out of-mouths
 ὀλίγον τοῦ παντὸς ἰδόντων.” οἱ δ' ἐφ' ὕδατος κεῖσθαι.
a-little of-the all having-seen the-ones and upon water to-lie
 τοῦτον γὰρ ἀρχαιότατον παρελήφαμεν τὸν λόγον, ὃν
this for most-ancient we-have-received the account which
 φασιν εἰπεῖν Θαλῆν τὸν Μιλήσιον, ὡς διὰ τὸ πλωτὴν
they-say to-have-said Thales the Milesian as because-of the floating
 εἶναι μένουσαν ὥσπερ ξύλον ἢ τι τοιοῦτον ἕτερον (καὶ
to-be remaining as wood or something such other also
 γὰρ τούτων ἐπ' αἰέρος μὲν οὐθὲν πέφυκε μένειν, ἀλλ' ἐφ'
for of-these upon air indeed nothing is-natured to-remain but upon
 ὕδατος), ὥσπερ οὐ τὸν αὐτὸν λόγον ὄντα περὶ τῆς γῆς καὶ
water as not the same account being about the earth and
 τοῦ ὕδατος τοῦ ὀχοῦντος τὴν γῆν· οὐδὲ γὰρ τὸ ὕδωρ πέφυκε
the water the carrying the earth nor for the water is-natured
 μένειν μετέωρον, ἀλλ' ἐπὶ τινός ἐστιν. ἔτι δ' ὥσπερ ἀῆρ
to-remain aloft but upon something is further and as air
 ὕδατος κουφότερον, καὶ γῆς ὕδωρ, ὥστε πῶς οἴονται τὸ
than-water lighter and than-earth water so-that how they-think the
 κουφότερον κατωτέρω κεῖσθαι τοῦ βαρυτέρου τὴν φύσιν;
lighter lower to-lie than-the heavier in-the nature

ἔτι δ' εἴπερ ὅλη πέφυκε μένειν ἐφ' ὕδατος, δῆλον ὅτι
further and if-indeed whole is-natured to-remain upon water clear that
 καὶ τῶν μορίων ἕκαστον αὐτῆς· νῦν δ' οὐ φαίνεται τοῦτο
also of-the parts each of-it now and not appears this
 γιγνόμενον, ἀλλὰ τὸ τυχὸν μόριον φέρεται εἰς βυθόν, καὶ
coming-about but the chance part is-carried into a-deep and
 θάπτον τὸ μείζον· ἀλλ' εἰκόασι μέχρι τινὸς ζητεῖν, ἀλλ' οὐ
faster the greater but they-seem as-far-as some to-inquire but not
 μέχρι περ οὗ δυνατὸν τῆς ἀπορίας. πᾶσι γὰρ ἡμῖν τοῦτο
as-far-as indeed of-which possible of-the difficulty for-all for us this
 σύνηθες, μὴ πρὸς τὸ πρᾶγμα ποιείσθαι τὴν ζήτησιν ἀλλὰ
customary not toward the matter to-make the inquiry but
 πρὸς τὸν τάναντία λέγοντα· καὶ γὰρ αὐτὸς ἐν αὐτῷ ζητεῖ
toward the-one the-contrary saying also for oneself in oneself one-seeks
 μέχρι περ ἂν οὐ μηκέτι ἔχῃ ἀντιλέγειν αὐτὸς αὐτῷ.
as-far-as indeed — of-which no-longer one-may-have to-object oneself to-oneself
 διὸ δεῖ τὸν μέλλοντα καλῶς ζητήσῃ ἐνστατικὸν
wherefore it-is-needful the-one intending well to-inquire objection-making
 εἶναι διὰ τῶν οἰκείων ἐνστάσεων τῷ γένει, τοῦτο δ' ἐστὶν
to-be through the proper objections to-the kind this and is
 ἐκ τοῦ πάσας τεθεωρηκέναι τὰς διαφοράς. Ἀναξιμένης δὲ
out-of the all to-have-observed the differences Anaximenes and
 καὶ Ἀναξαγόρας καὶ Δημόκριτος τὸ πλάτος αἴτιον εἶναί φασι
and Anaxagoras and Democritus the breadth a-cause to-be say
 τοῦ μένειν αὐτήν. οὐ γὰρ τέμνειν ἀλλ' ἐπιπωματίζει τὸν
of-the to-remain it not for to-cut but to-cover-like-a-lid the
 ἀέρα τὸν κάτωθεν, ὅπερ φαίνεται τὰ πλάτος ἔχοντα
air the from-below which-very appears the-(ones) breadth having
 τῶν σωμάτων ποιεῖν· ταῦτα γὰρ καὶ πρὸς τοὺς ἀνέμους
of-the bodies to-do these for also toward the winds
 ἔχει δυσκινήτως διὰ τὴν ἀντέρεισιν. ταῦτ' οὖν δὴ τοῦτο
are hard-to-move because-of the resistance the-same indeed this

ποιεῖν τῷ πλάτει φασὶ τὴν γῆν πρὸς τὸν ὑποκείμενον
to-do by-the breadth they-say the earth toward the underlying
 ἀέρα· τὸν δ' οὐκ ἔχοντα μεταστῆναι τόπον ἱκανὸν ἀθρόον
air the-(air) and not having to-shift-to a-place sufficient massed
 τῷ κάτωθεν ἡρεμεῖν, ὥς πρὸς τὸ ἐν ταῖς κλεψύδραις
by-the from-below to-rest as toward the in the water-clocks
 ὕδωρ. ὅτι δὲ δύναται πολὺ βάρος φέρειν ἀπολαμβανόμενος
water that and it-can much weight to-bear being-confined
 καὶ μένων ὁ ἀήρ, τεκμήρια πολλὰ λέγουσιν. πρῶτον μὲν
and remaining the air proofs many they-give first indeed
 οὖν εἰ μὴ πλατὺ τὸ σχῆμα τῆς γῆς ἐστὶ, διὰ τοῦτο
therefore if not flat the shape of-the earth is because-of this
 μὲν οὐκ ἂν ἡρεμοῖ. καίτοι τῆς μονῆς οὐ τὸ πλάτος
indeed not — it-would-rest and-yet of-the rest not the breadth
 αἵτιον ἐξ ὧν λέγουσιν, ἀλλὰ τὸ μέγεθος μᾶλλον.
a-cause out-of which they-say but the magnitude rather
 διὰ γὰρ τὴν στενοχωρίαν οὐκ ἔχων τὴν πάροδον ὁ
because-of for the narrowness not having the passage the
 ἀήρ μένει διὰ τὸ πλήθος· πολὺς δ' ἐστὶ διὰ τὸ ὑπὸ
air remains because-of the multitude much and it-is because-of the by
 μεγέθους πολλοῦ ἐναπολαμβάνεσθαι τοῦ τῆς γῆς. ὥστε τοῦτο
a-magnitude much to-be-confined of-the of-the earth so-that this
 μὲν ὑπάρξει, κἂν σφαιροειδὴς μὲν ἢ γῆ ἦ, τηλικαύτη
indeed will-belong even-if spherical indeed the earth it-be so-great
 δὲ τὸ μέγεθος· μενεῖ γὰρ κατὰ τὸν ἐκείνων λόγον.
and in-the magnitude it-will-remain for according-to the of-those account
 ὅλως δὲ πρὸς γε τοὺς οὕτω λέγοντας περὶ τῆς κινήσεως
generally and toward at-least the-ones thus speaking about the motion
 οὐ περὶ μορίων ἐστὶν ἢ ἀμφισβήτησις, ἀλλὰ περὶ ὅλου
not about parts is the dispute but about a-whole
 τινὸς καὶ παντός. ἐξ ἀρχῆς γὰρ διοριστέον πότερόν
some and all out-of a-beginning for one-must-determine whether

ἐστὶ τις τοῖς σώμασι φύσει κίνησις ἢ οὐδεμία, καὶ πότερον
is some to-the bodies by-nature a-motion or none and whether
 φύσει μὲν οὐκ ἔστι, βία δ' ἔστιν. ἐπεὶ δὲ περὶ τούτων
by-nature indeed not it-is by-force and it-is since and about these
 διώρισται πρότερον ὅσα κατὰ τὴν παρούσαν
it-has-been-determined before as-much-as according-to the present
 δύναμιν εἶχομεν, χρηστέον ὡς ὑπάρχουσιν. εἰ γὰρ μηδεμία
power we-had one-must-use as belonging if for no
 φύσει κίνησις ἔστιν αὐτῶν, οὐδὲ βίαιος ἔσται· εἰ δὲ μή ἐστι
by-nature motion is of-them nor forced will-be if and not is
 μήτε φύσει μήτε βία, ὅλως οὐδὲν κινηθήσεται· περὶ γὰρ
either by-nature or by-force generally nothing will-be-moved about for
 τούτων ὅτι ἀναγκαῖον συμβαίνειν, διώρισται πρότερον,
these that necessary to-follow it-has-been-determined before
 καὶ πρὸς τούτοις ὅτι οὐδ' ἡρεμεῖν ἐνδέχεται· ὥσπερ γὰρ
and toward these that nor to-rest it-is-possible as for
 κίνησις ὑπάρχει ἢ βία ἢ φύσει, οὕτω καὶ ἡρεμία.
a-motion belongs either by-force or by-nature thus also a-rest
 ἀλλὰ μὴν εἴ γέ ἐστι κίνησις τις κατὰ φύσιν, οὐκ
but indeed if at-least is a-motion some according-to nature not
 ἂν ἢ βίαιος εἴη φορὰ μόνον οὐδ' ἡρέμῃσις· ὥστ'
— the forced would-be a-movement only nor a-resting so-that
 εἰ βία νῦν ἢ γῇ μένει, καὶ συνῆλθεν ἐπὶ τὸ μέσον
if by-force now the earth remains and came-together upon the middle
 φερομένη διὰ τὴν δίνησιν· ταύτην γὰρ τὴν αἰτίαν
being-carried because-of the whirling this for the cause
 πάντες λέγουσιν ἐκ τῶν ἐν τοῖς ὑγροῖς καὶ περὶ τὸν
all say out-of the-(things) in the liquids and about the
 αέρα συμβαινόντων· ἐν τούτοις γὰρ αἰεὶ φέρεται τὰ μείζω
air happening in these for always are-carried the greater
 καὶ τὰ βαρύτερα πρὸς τὸ μέσον τῆς δίνης. διὸ δὴ τὴν
and the heavier toward the middle of-the whirl wherefore indeed the

γῆν πάντες ὅσοι τὸν οὐρανὸν γεννῶσιν, ἐπὶ τὸ μέσον
earth all as-many-as the heaven generate upon the middle
 συνελθεῖν φασίν· ὅτι δὲ μένει, ζητοῦσι τὴν αἰτίαν, καὶ
to-have-come-together they-say that and it-remains they-seek the cause and
 λέγουσιν οἱ μὲν τοῦτον τὸν τρόπον, ὅτι τὸ πλάτος καὶ
say the-ones indeed this the way that the breadth and
 τὸ μέγεθος αὐτῆς αἷτιον, οἱ δ' ὥσπερ Ἐμπεδοκλῆς,
the magnitude of-it a-cause the-others and as Empedocles
 τὴν τοῦ οὐρανοῦ φορὰν κύκλῳ περιθέουσιν καὶ θάττον
the of-the heaven movement in-a-circle running-round and faster
 φερομένην τὴν τῆς γῆς φορὰν κωλύειν, καθάπερ τὸ ἐν
being-carried the of-the earth movement to-prevent just-as the in
 τοῖς κυάθοις ὕδωρ· καὶ γὰρ τοῦτο κύκλῳ τοῦ κυάθου
the cups water also for this in-a-circle of-the cup
 φερομένου πολλάκις κάτω τοῦ χαλκοῦ γινόμενον ὅμως οὐ
being-carried often below of-the bronze becoming nevertheless not
 φέρεται κάτω πεφυκὸς φέρεσθαι διὰ τὴν αὐτὴν αἰτίαν.
is-carried downward being-natured to-be-carried because-of the same cause
 καίτοι μήτε τῆς δίνης κωλυούσης μήτε τοῦ πλάτους,
and-yet neither of-the whirl preventing nor of-the breadth
 ἀλλ' ὑπελθόντος τοῦ ἀέρος, ποῖ ποτ' οἰσθήσεται; πρὸς
but having-gone-under of-the air whither ever will-it-move toward
 μὲν γὰρ τὸ μέσον βία, καὶ μένει βία· κατὰ φύσιν
indeed for the middle by-force and it-remains by-force according-to nature
 δέ γε ἀναγκαῖον εἶναί τινα αὐτῆς φοράν. αὕτη οὖν
and at-least necessary to-be some of-it a-movement this therefore
 πότερον ἄνω ἢ κάτω, ἢ ποῦ ἐστίν; εἶναι μὲν γὰρ τινα
whether upward or downward or where is to-be indeed for some
 ἀναγκαῖον· εἰ δὲ μηδὲν μᾶλλον κάτω ἢ ἄνω, ὁ δ' ἄνω
necessary if and in-nothing rather downward than upward the and upper
 ἀὴρ μὴ κωλύει τὴν ἄνω φοράν, οὐδ' ἂν ὁ ὑπὸ τῇ γῇ
air not prevents the upward movement nor — the under the earth

κωλύοι τὴν κάτω· τὰ γὰρ αὐτὰ τῶν αὐτῶν ἀναγκαῖον
would-prevent the downward the for same of-the same necessary
 εἶναι αἷτια τοῖς αὐτοῖς. ἔτι δὲ πρὸς Ἐμπεδοκλέα καὶ
to-be causes to-the same further and toward Empedocles also
 ἐκεῖνό τις εἴπειεν. ὅτε γὰρ τὰ στοιχεῖα διευστήκει χωρὶς
that someone might-say when for the elements had-stood-apart separately
 ὑπὸ τοῦ νείκους, τίς αἰτία τῇ γῇ τῆς μονῆς ἦν; οὐ
by the strife what a-cause to-the earth of-the rest was not
 γὰρ δὴ καὶ τότε αἰτιάσεται τὴν δίνην. ἄτοπον δὲ καὶ
for indeed also then be-will-blame the whirl strange and also
 τὸ μὴ συννοεῖν ὅτι πρότερον μὲν διὰ τὴν δίνησιν
the not to-perceive that before indeed because-of the whirling
 ἐφέρετο τὰ μέρη τῆς γῆς πρὸς τὸ μέσον· νῦν δὲ διὰ
were-carried the parts of-the earth toward the middle now and through
 τίν' αἰτίαν πάντα τὰ βάρος ἔχοντα φέρεται πρὸς αὐτήν;
what cause all the weight having are-carried toward it
 οὐ γὰρ ἢ γε δίνη πλησιάζει πρὸς ἡμᾶς. ἔτι δὲ καὶ τὸ
not for the at-least whirl comes-near toward us further and also the
 πῦρ ἄνω φέρεται διὰ τίν' αἰτίαν; οὐ γὰρ διὰ γε τὴν
fire upward is-carried through what cause not for through at-least the
 δίνην. εἰ δὲ τοῦτο φέρεσθαί που πέφυκεν, δῆλον ὅτι καὶ
whirl if and this to-be-carried somewhere is-natured clear that also
 τὴν γῆν οἰητέον. ἀλλὰ μὴν οὐδὲ τῇ δίνη γε τὸ βαρὺ
the earth one-must-think but indeed nor to-the whirl at-least the heavy
 καὶ κοῦφον ὥρισται, ἀλλὰ τῶν πρότερον ὑπαρχόντων
and light has-been-defined but of-the before existing
 βαρέων καὶ κοῦφων τὰ μὲν εἰς τὸ μέσον ἔρχεται,
heavy and light the-ones indeed into the middle come
 τὰ δ' ἐπιπολάζει διὰ τὴν κίνησιν. ἦν ἄρα καὶ
the-others and float because-of the motion there-was then also
 πρὶν γενέσθαι τὴν δίνην βαρὺ τε καὶ κοῦφον, ἃ τίνι
before to-come-about the whirl heavy both and light which by-what

διώριστο καὶ πῶς ἐπεφύκει φέρεσθαι ἢ ποῦ; ἀπείρου
had-been-defined and how they-were-natured to-be-carried or where infinite
 γὰρ ὄντος ἀδύνατον εἶναι ἄνω ἢ κάτω, διώριστα δὲ
for being impossible to-be above or below it-has-been-defined and
 τούτοις τὸ βαρὺ καὶ κοῦφον. οἱ μὲν οὖν πλείστοι περὶ
by-these the heavy and light the-ones indeed therefore most about
 τὰς αἰτίας ταύτας διατρίβουσιν· εἰσὶ δέ τινες οἱ διὰ
the causes these spend-time there-are and some who because-of
 τὴν ὁμοιότητά φασιν αὐτὴν μένειν, ὥσπερ τῶν ἀρχαίων
the likeness say it to-remain as of-the ancients
 Ἀναξίμανδρος· μᾶλλον μὲν γὰρ οὐθέν ἄνω ἢ κάτω ἢ εἰς
Anaximander rather indeed for in-nothing upward or downward or into
 τὰ πλάγια φέρεσθαι προσήκειν τὸ ἐπὶ τοῦ μέσου ἰδρυμένον
the sideways to-be-carried to-be-fitting the upon the middle established
 καὶ ὁμοίως πρὸς τὰ ἔσχατα ἔχον· ἅμα δ' ἀδύνατον εἰς τὸ
and alike toward the extremities being at-once and impossible into the
 ἐναντίον ποιεῖσθαι τὴν κίνησιν· ὥστ' ἐξ ἀνάγκης μένειν.
contrary to-make the motion so-that out-of necessity to-remain
 τοῦτο δὲ λέγεται κομψῶς μὲν, οὐκ ἀληθῶς δέ· κατὰ
this and is-said elegantly indeed not truly and according-to
 γὰρ τοῦτον τὸν λόγον ἀναγκαῖον ἅπαν, ὃ τι ἂν
for this the account necessary everything which anything —
 τεθῇ ἐπὶ τοῦ μέσου, μένειν, ὥστε καὶ τὸ πῦρ ἡρεμήσει·
be-placed upon the middle to-remain so-that also the fire will-rest
 τὸ γὰρ εἰρημένον οὐκ ἴδιόν ἐστι τῆς γῆς. ἀλλὰ μὴν οὐδ'
the for thing-said not proper is of-the earth but indeed nor
 ἀναγκαῖον. οὐ γὰρ μόνον φαίνεται μένουσα ἐπὶ τοῦ μέσου,
necessary not for only appears remaining upon the middle
 ἀλλὰ καὶ φερομένη πρὸς τὸ μέσον. ὅπου γὰρ ὅτιοῦν
but also being-carried toward the middle where for anything-whatever
 φέρεται μόριον αὐτῆς, ἀναγκαῖον ἐνταῦθα φέρεσθαι καὶ τὴν
is-carried a-part of-it necessary there to-be-carried also the

ὅλην· οὗ δὲ φέρεται κατὰ φύσιν, καὶ μένει ἐνταυθοῖ
whole where and it-is-carried according-to nature also it-remains there
 κατὰ φύσιν. οὐκ ἄρα διὰ τὸ ὁμοίως ἔχειν πρὸς
according-to nature not then because-of the alike to-be-related toward
 τὰ ἔσχατα· τοῦτο μὲν γὰρ πᾶσι κοινόν, τὸ δὲ φέρεσθαι
the extremities this indeed for to-all common the and to-be-carried
 πρὸς τὸ μέσον ἴδιον τῆς γῆς. ἄτοπον δὲ καὶ τοῦτο μὲν
toward the middle proper of-the earth strange and also this indeed
 ζητεῖν, διὰ τί ποτε μένει ἡ γῆ ἐπὶ τοῦ μέσου, τὸ
to-seek through what ever remains the earth upon the middle the
 δὲ πῦρ μὴ ζητεῖν διὰ τί ἐπὶ τοῦ ἐσχάτου. εἰ μὲν γὰρ
and fire not to-seek through what upon the extremity if indeed for
 καὶ κείνῳ φύσει τόπος ὁ ἔσχατος, δῆλον ὅτι ἀναγκαῖον
even-for-that by-nature a-place the outermost clear that necessary
 εἶναί τινα καὶ τῇ γῇ φύσει τόπον· εἰ δὲ μὴ ταύτῃ
to-be some also to-the earth by-nature a-place if and not for-this
 οὗτος ὁ τόπος, ἀλλὰ διὰ τὴν ἀνάγκην μένει τὴν τῆς
this the place but because-of the necessity it-remains the of-the
 ὁμοιότητος, ὥσπερ ὁ περὶ τῆς τριχὸς λόγος τῆς ἰσχυρῶς
likeness as the about the hair account of-the strongly
 μὲν ὁμοίως δὲ πάντῃ τεινομένης, ὅτι οὐ διαρραγήσεται,
indeed alike and every-way being-stretched that not it-will-be-torn-apart
 καὶ τοῦ πεινῶντος καὶ διψῶντος σφόδρα μὲν ὁμοίως
and of-the-(man) hungering and thirsting exceedingly indeed alike
 δὲ καὶ τῶν ἐδωδύμων καὶ ποτῶν ἴσον ἀπέχοντος (καὶ
and also of-the edibles and drinks equally being-distant also
 γὰρ τοῦτον ἡρεμεῖν ἀναγκαῖον), ζητητέον αὐτοῖς περὶ τῆς
for this-man to-rest necessary one-must-seek for-them about the
 τοῦ πυρὸς μονῆς ἐπὶ τῶν ἐσχάτων. Θαυμαστὸν δὲ καὶ
of-the fire rest upon the extremities astonishing and also
 τὸ περὶ μὲν τῆς μονῆς ζητεῖν, περὶ δὲ τῆς φορᾶς αὐτῶν
the about indeed the rest to-seek about and the movement of-them

μὴ ζητεῖν, διὰ τίν' αἰτίαν τὸ μὲν ἄνω φέρεται τὸ
not to-seek through what cause the-one indeed upward is-carried the-other
 δ' ἐπὶ τὸ μέσον μηδενὸς ἐμποδίζοντος.
and toward the middle of-nothing hindering
 ἀλλὰ μὴν οὐδ' ἀληθές ἐστι τὸ λεγόμενον. κατὰ συμβεβηκὸς
but indeed nor true is the thing-said according-to accident
 μέντοι τοῦτ' ἀληθές, ὡς ἀναγκαῖον μένειν ἐπὶ τοῦ μέσου
however this true that necessary to-remain upon the middle
 πᾶν ᾧ μὴθὲν μᾶλλον δεῦρο ἢ δεῦρο κινεῖσθαι
everything to-which in-nothing rather hither or thither to-be-moved
 προσήκει. ἀλλὰ διὰ γε τοῦτον τὸν λόγον οὐ μενεῖ
is-fitting but through at-least this the account not it-will-remain
 ἀλλὰ κινηθήσεται, οὐ μέντοι ὅλον ἀλλὰ διεσπασμένον. ὁ
but it-will-be-moved not however whole but scattered-apart the
 γὰρ αὐτὸς ἀρμόσει λόγος καὶ ἐπὶ τοῦ πυρός· ἀνάγκη γὰρ
for same will-fit account also upon the fire necessary for
 τεθὲν μένειν ὁμοίως ὥσπερ τὴν γῆν· ὁμοίως γὰρ
having-been-placed to-remain alike as the earth alike for
 ἕξει πρὸς τῶν σημείων τῶν ἐσχάτων ὅτιοῦν·
it-will-be-related toward the points the outermost anything-whatever
 ἀλλ' ὅμως οἰσθήσεται ἀπὸ τοῦ μέσου, ὥσπερ καὶ φαίνεται
but nevertheless it-will-move from the middle as also appears
 φερόμενον, ἂν μὴ τι κωλύῃ, πρὸς τὸ ἔσχατον· πλὴν
being-carried if not something prevent toward the extremity except
 οὐχ ὅλον πρὸς ἓν σημεῖον (τοῦτο γὰρ ἀναγκαῖον μόνον
not whole toward one point this for necessary only
 συμβαίνειν ἐκ τοῦ λόγου τοῦ περὶ τῆς ὁμοιότητος) ἀλλὰ
to-follow out-of the account the about the likeness but
 τὸ ἀνάλογον μῶριον πρὸς τὸ ἀνάλογον τοῦ ἐσχάτου, λέγω
the proportional part toward the proportional of-the extremity I-mean
 δ' οἷον τὸ τέταρτον μέρος πρὸς τὸ τέταρτον μέρος τοῦ
and such-as the fourth part toward the fourth part of-the

περιέχοντος· οὐθὲν γὰρ στιγμή τῶν σωμάτων ἐστίν. ὥσπερ
 enclosing nothing for a-point of-the bodies is as
 δὲ καὶ ἐκ μεγάλου συνέλθαι πυκνούμενον εἰς ἐλάττω
 and also out-of a-great it-might-come-together being-condensed into a-lesser
 τόπον, οὕτω καὶ ἐξ ἐλάττονος εἰς μείζω μανότερον
 place thus also out-of a-lesser into a-greater rarer
 γιγνόμενον· ὥστε καὶ ἡ γῆ τοῦτον τὸν τρόπον ἐκινεῖτο
 becoming so-that also the earth this the way were-moved
 ἀπὸ τοῦ μέσου διὰ γε τὸν τῆς ὁμοιότητος λόγον,
 from the middle through at-least the of-the likeness account
 εἰ μὴ φύσει τῆς γῆς οὗτος τόπος ἦν. ὅσα μὲν οὖν
 if not by-nature of-the earth this a-place were as-many-as indeed therefore
 τυγχάνει περί τε τοῦ σχήματος αὐτῆς ὑπολαμβάνόμενα καὶ
 happen about both the shape of-it being-supposed and
 περὶ τόπου καὶ μονῆς καὶ κινήσεως, σχεδὸν ταύτ' ἐστίν.
 about place and rest and motion nearly these are

XIV • THE EARTH IS AT REST, AND A SPHERE

If the earth moved, the fixed stars would show passings and turnings, and they do not. Its parts travel toward the middle of the whole, and falling weights meet it at like angles rather than in parallel, which is why it rests there. The same tendency makes it spherical: the greater parts push the lesser forward until the outer surface is everywhere equally distant from the middle. Eclipses of the moon, and the change of the visible stars as one travels, confirm this and show that the earth is not large.

Ἡμεῖς δὲ λέγωμεν πρῶτον πότερον ἔχει κίνησιν ἢ μένει·
 we and let-us-say first whether it-has motion or remains
 καθάπερ γὰρ εἶπομεν, οἱ μὲν αὐτὴν ἐν τῶν ἀστρῶν
 just-as for we-said the-ones indeed it one of-the stars
 ποιῶσιν, οἱ δ' ἐπὶ τοῦ μέσου θέντες ἵλλεσθαι καὶ
 make the-others and upon the middle having-placed to-be-rolled and

κινεῖσθαι φασι περὶ τὸν πόλον μέσον. ὅτι δ' ἐστὶν ἀδύνατον,
to-be-moved say about the pole central that and it-is impossible
 ἄλλον λαβοῦσιν ἀρχὴν ὥς εἴπερ φέρεται εἴτ' ἐκτὸς
clear for-those-taking a-starting-point that if-indeed it-is-carried whether outside
 οὔσα τοῦ μέσου εἴτ' ἐπὶ τοῦ μέσου, ἀναγκαῖον αὐτὴν βίαια
being of-the middle or upon the middle necessary it by-force
 κινεῖσθαι ταύτην τὴν κίνησιν· οὐ γὰρ αὐτῆς γε τῆς γῆς
to-be-moved this the motion not for of-itself at-least of-the earth
 ἐστίν· καὶ γὰρ ἂν τῶν μορίων ἕκαστον ταύτην εἶχε τὴν
it-is also for — of-the parts each this would-have the
 φορὰν· νῦν δ' ἐπ' εὐθείας πάντα φέρεται πρὸς τὸ μέσον.
movement now and upon a-straight-(line) all is-carried toward the middle
 διόπερ οὐχ οἷόν τ' αἰδῖον εἶναι, βίαιόν γ' οὔσαν καὶ παρὰ
wherefore not possible — everlasting to-be forced at-least being and against
 φύσιν· ἡ δέ γε τοῦ κόσμου τάξις αἰδῖος. ἔτι πάντα τὰ
nature the and at-least of-the world order everlasting further all the
 φερόμενα τὴν φορὰν τὴν ἐγκύκλιον ὑπολειπόμενα φαίνεται
being-carried the movement the circular lagging-behind appear
 καὶ κινούμενα πλείους μιᾶς φορᾶς ἔξω τῆς πρώτης
and being-moved more than-one movement outside of-the first
 σφαίρας, ὥστε καὶ τὴν γῆν ἀναγκαῖον, εἴτε περὶ τὸ μέσον
sphere so-that also the earth necessary whether about the middle
 εἴτ' ἐπὶ τοῦ μέσου κεκμένη φέρεται, δύο κινεῖσθαι φοράς.
or upon the middle lying it-is-carried two to-be-moved movements
 τούτου δὲ συμβαίνοντος ἀναγκαῖον γίνεσθαι παρόδους καὶ
of-this and happening necessary to-come-about passages and
 τροπὰς τῶν ἐνδεδεμένων ἀστρων. τοῦτο δ' οὐ φαίνεται
turnings of-the having-been-bound stars this and not appears
 γιγνόμενον, ἀλλ' αἰεὶ ταῦτά κατὰ τοὺς αὐτοὺς ἀνατέλλει
coming-about but always the-same according-to the same rises
 τε καὶ δύεται τόπους αὐτῆς. ἔτι δ' ἡ φορὰ τῶν
both and sets places of-it further and the movement of-the

μορίων καὶ ὅλης αὐτῆς ἢ κατὰ φύσιν ἐπὶ τὸ μέσον
parts and of-whole of-it the according-to nature toward the middle
 τοῦ παντός ἐστιν διὰ τοῦτο γὰρ καὶ τυγχάνει κειμένη
of-the all is because-of this for also it-happens lying
 νῦν ἐπὶ τοῦ κέντρου· διαπορήσειε δ' ἄν τις, ἐπεὶ ταυτὸν
now upon the center might-be-perplexed and — someone since the-same
 ἀμφοτέρων ἐστὶ τὸ μέσον, πρὸς πότερον φέρεται τὰ
of-both is the middle toward which is-carried the-(things)
 βάρος ἔχοντα καὶ τὰ μόρια τῆς γῆς κατὰ φύσιν· πότερον
weight having and the parts of-the earth according-to nature whether
 ὅτι τοῦ παντός ἐστι μέσον, ἢ διότι τῆς γῆς. ἀνάγκη
because of-the all is a-middle or because of-the earth necessary
 δὴ πρὸς τὸ τοῦ παντός· καὶ γὰρ τὰ κοῦφα καὶ τὸ πῦρ
indeed toward the of-the all also for the light and the fire
 εἰς τὸναντίον φερόμενα τοῖς βάρεσι πρὸς τὸ ἔσχατον
into the-contrary being-carried to-the weights toward the extremity
 φέρεται τοῦ περιέχοντος τόπου τὸ μέσον. συμβέβηκε δὲ
is-carried of-the enclosing place the middle it-has-happened and
 ταυτὸ μέσον εἶναι τῆς γῆς καὶ τοῦ παντός· φέρεται γὰρ
the-same a-middle to-be of-the earth and of-the all is-carried for
 καὶ ἐπὶ τὸ τῆς γῆς μέσον, ἀλλὰ κατὰ συμβεβηκός,
also toward the of-the earth middle but according-to accident
 ἢ τὸ μέσον ἔχει ἐν τῷ τοῦ παντός μέσῳ.
in-so-far-as the middle it-has in the of-the all middle
 ὅτι δὲ φέρεται πρὸς τὸ τῆς γῆς μέσον, σημεῖον ὅτι τὰ
that and it-is-carried toward the of-the earth middle a-sign that the
 φερόμενα βάρη ἐπὶ ταύτην οὐ παρ' ἄλληλα φέρεται ἀλλὰ
being-carried weights upon this not beside one-another are-carried but
 πρὸς ὁμοίας γωνίας, ὥστε πρὸς ἓν τὸ μέσον φέρεται, καὶ τὸ
toward like angles so-that toward one the middle it-is-carried also the
 τῆς γῆς. φανερόν τοίνυν ὅτι ἀνάγκη ἐπὶ τοῦ μέσου εἶναι τὴν
of-the earth clear then that necessary upon the middle to-be the

γῆν καὶ ἀκίνητον, διὰ τε τὰς εἰρημένας αἰτίας, καὶ διότι
earth and motionless because-of both the said causes and because
 τὰ βία ριπτούμενα ἄνω βάρη κατὰ στάθμην πάλιν φέρεται
the by-force being-thrown upward weights along a-plumb-line again are-carried
 εἰς ταυτό, κἂν εἰς ἄπειρον ἢ δύναμις ἐκριπτῇ. ὅτι μὲν
into the-same even-if into infinity the power should-throw-out that indeed
 οὖν οὔτε κινεῖται οὔτ' ἐκτὸς κεῖται τοῦ μέσου, φανερόν
therefore neither it-is-moved nor outside it-lies of-the middle clear
 ἐκ τούτων· πρὸς δὲ τούτοις δῆλον ἐκ τῶν εἰρημένων τὸ
out-of these besides and these clear out-of the things-said the
 αἴτιον τῆς μονῆς. εἰ γὰρ φύσει πέφυκε φέρεσθαι πάντοθεν
cause of-the rest if for by-nature it-is-natured to-be-carried from-all-sides
 πρὸς τὸ μέσον, ὥσπερ φαίνεται, καὶ τὸ πῦρ ἀπὸ τοῦ μέσου
toward the middle as appears also the fire from the middle
 πάλιν πρὸς τὸ ἔσχατον, ἀδύνατον ἐνεχθῆναι ὅτιοῦν
again toward the extremity impossible to-be-borne anything-whatever
 μόριον αὐτῆς ἀπὸ τοῦ μέσου μὴ βιασθέν· μία γὰρ
part of-it from the middle not having-been-forced one for
 φορὰ τοῦ ἐνὸς καὶ ἀπλῆ τοῦ ἀπλοῦ, ἀλλ' οὐχ αἱ ἐναντίαι·
a-movement of-the one and simple of-the simple but not the contrary
 ἢ δ' ἀπὸ τοῦ μέσου τῇ ἐπὶ τὸ μέσον ἐναντία.
the-(one) and from the middle to-the toward the middle contrary
 εἰ τοῖνυν ὅτιοῦν μόριον ἀδύνατον ἐνεχθῆναι ἀπὸ
if then anything-whatever part impossible to-be-borne from
 τοῦ μέσου, φανερόν ὅτι καὶ τὴν ὅλην ἔτι ἀδυνατώτερον·
the middle clear that also the whole still more-impossible
 εἰς ὃ γὰρ τὸ μόριον πέφυκε φέρεσθαι, καὶ τὸ ὅλον
into which for the part is-natured to-be-carried also the whole
 ἐνταῦθα πέφυκεν· ὥστ' εἴπερ ἀδύνατον κινηθῆναι μὴ ὑπὸ
there is-natured so-that if-indeed impossible to-be-moved not by
 κρείττονος ἰσχύος, ἀναγκαῖον ἂν εἴη αὐτὴν μένειν ἐπὶ
a-stronger force necessary — would-be it to-remain upon

τοῦ μέσου. μαρτυρεῖ δὲ τούτοις καὶ τὰ παρὰ τῶν
the middle testifies and to-these also the-(things) from the
 μαθηματικῶν λεγόμενα περὶ τὴν ἀστρολογίαν· τὰ γὰρ
mathematicians being-said about the astronomy the for
 φαινόμενα συμβαίνει μεταβαλλόντων τῶν σχημάτων οἷς
appearances follow of-the-changing the figures by-which
 ὥρισταί τῶν ἀστρῶν ἡ τάξις, ὡς ἐπὶ τοῦ μέσου
has-been-determined of-the stars the order as upon the middle
 κειμένης τῆς γῆς. περὶ μὲν οὖν τοῦ τόπου καὶ μονῆς
lying of-the earth about indeed therefore the place and rest
 καὶ κινήσεως, ὃν τρόπον ἔχει, τοσαῦτα εἰρήσθω
and motion which way it-is so-much let-it-have-been-said
 περὶ αὐτῆς. σχῆμα δ' ἔχει σφαιροειδὲς ἀναγκαῖον αὐτήν·
about it a-shape and to-have spherical necessary it
 ἕκαστον γὰρ τῶν μορίων βάρος ἔχει μέχρι πρὸς τὸ
each for of-the parts weight has as-far-as toward the
 μέσον, καὶ τὸ ἑλαττον ὑπὸ τοῦ μείζονος ὠθούμενον
middle and the lesser by the greater being-pushed
 οὐχ οἷόν τε κυμαίνειν, ἀλλὰ συμπιέζεσθαι μᾶλλον καὶ
not possible — to-swell but to-be-pressed-together rather and
 συγχωρεῖν ἕτερον ἑτέρῳ, ἕως ἂν ἔλθῃ ἐπὶ τὸ μέσον.
to-give-way one to-another until — it-come upon the middle
 δεῖ δὲ νοῆσαι τὸ λεγόμενον ὥσπερ ἂν εἰ γιγνομένης τὸν
it-is-needful and to-conceive the thing-said as — if coming-to-be the
 τρόπον ὃν καὶ τῶν φυσιολόγων λέγουσί τινες γενέσθαι.
way which also of-the natural-philosophers say some to-have-come-to-be
 πλὴν ἐκείνοι μὲν βίαν αἰτιῶνται τῆς κάτω φορᾶς· βέλτιον
except those indeed force allege-as-cause of-the downward movement better
 δὲ τιθέναι τὰληθές, καὶ φάναι τοῦτο συμβαίνειν διὰ τὸ
and to-lay-down the-truth and to-say this to-follow because-of the
 φύσιν ἔχειν φέρεσθαι τὸ βάρος ἔχον πρὸς τὸ μέσον. ἐν
a-nature to-have to-be-carried the-(thing) weight having toward the middle in

δυνάμει οὖν ὄντος τοῦ μίγματος τὰ διακρινόμενα ἐφέρετο
potency therefore being of-the mixture the things-being-separated were-carried
 ὁμοίως πάντοθεν πρὸς τὸ μέσον. εἴτ' οὖν ὁμοίως ἀπὸ
alike from-all-sides toward the middle whether therefore alike from
 τῶν ἐσχάτων διηρημένα τὰ μόρια συνήχθη πρὸς τὸ
the extremities having-been-divided the parts were-brought-together toward the
 μέσον, εἴτ' ἄλλως ἔχοντα, ποιήσει ταυτόν. ὅτι μὲν οὖν
middle or otherwise being it-will-make the-same that indeed therefore
 ὁμοίως γε πανταχόθεν ἀπὸ τῶν ἐσχάτων φερομένων
alike at-least from-everywhere from the extremities of-things-carried
 πρὸς ἓν τὸ μέσον ἀναγκαῖον ὅμοιον γίνεσθαι πάντη
toward one the middle necessary like to-become every-way
 τὸν ὄγκον, φανερόν· ἴσου γὰρ πάντη προστιθεμένου ἴσον
the bulk clear of-equal for every-way being-added equally
 ἀνάγκη ἀπέχειν τοῦ μέσου τὸ ἔσχατον· τοῦτο δὲ τὸ σχῆμα
necessary to-be-distant of-the middle the extremity this and the shape
 σφαίρας ἐστίν. οὐδὲν δὲ διοίσει πρὸς τὸν λόγον, οὐδ' εἰ μὴ
of-a-sphere is not-at-all and will-differ as-regards the argument even if not
 πανταχόθεν ὁμοίως συνέθει πρὸς τὸ μέσον τὰ μόρια αὐτῆς.
from-everywhere alike ran-together toward the middle the parts of-it
 τὸ γὰρ πλεῖον αἰὲν τὸ πρὸ αὐτοῦ ἔλαττον προωθεῖν
the for greater always the before itself lesser to-push-forward
 ἀναγκαῖον μέχρι τοῦ μέσου τὴν ῥοπὴν ἐχόντων ἀμφοῖν,
necessary as-far-as of-the middle the inclination having of-both
 καὶ τοῦ βαρυτέρου προωθοῦντος μέχρι τούτου τὸ ἔλαττον
and of-the heavier pushing-forward as-far-as of-this the lesser
 βάρος. ὃ γὰρ ἂν τις ἀπορήσειε, τὴν αὐτὴν ἔχει τούτοις
weight which for — someone might-question the same has as-these
 λύσιν· εἰ γὰρ οὔσης ἐπὶ τοῦ μέσου καὶ σφαιροειδοῦς τῆς γῆς
a-solution if for being upon the middle and spherical of-the earth
 πολλαπλάσιον βάρος ἐπιγένοιτο πρὸς θάτερον ἡμισφαίριον,
a-many-times-greater weight should-be-added toward one hemisphere

οὐκ ἔσται τὸ αὐτὸ μέσον τοῦ ὅλου καὶ τὸ τῆς γῆς· ὥστε
not will-be the same middle of-the whole and the of-the earth so-that
 ἢ οὐ μενεῖ ἐπὶ τοῦ μέσου, ἢ εἴπερ, ἡρεμήσει γε
either not it-will-remain upon the middle or if-indeed it-will-rest at-least
 καὶ μὴ τὸ μέσον ἔχουσα, ἢ πέφυκε κινεῖσθαι καὶ
even not the middle having in-so-far-as it-is-natured to-be-moved also
 νῦν. τὸ μὲν οὖν ἀπορούμενον τοῦτ' ἔστιν· ἰδεῖν δ' οὐ
now the indeed therefore thing-questioned this is to-see and not
 χαλεπὸν μικρὸν ἐπιτείναντας, καὶ διελόντας πῶς ἀξιούμεν
hard a-little having-pressed and having-divided how we-claim
 ὅποσονοῦν μέγεθος φέρεσθαι πρὸς τὸ μέσον, βάρος ἔχον.
any-size-whatever a-magnitude to-be-carried toward the middle weight having
 δῆλον γὰρ ὡς οὐχὶ μέχρι τοῦ ἄψασθαι τοῦ κέντρου τὸ
clear for that not as-far-as of-the to-touch of-the center the
 ἔσχατον, ἀλλὰ δεῖ κρατεῖν τὸ πλεον ἕως ἂν λάβῃ τῷ
extremity but it-is-needful to-prevail the more until — it-take by-the
 αὐτοῦ μέσῳ τὸ μέσον· μέχρι τούτου γὰρ ἔχει τὴν ῥοπήν.
of-itself middle the middle as-far-as of-this for it-has the inclination
 οὐδὲν τοίνυν διαφέρει τοῦτο λέγειν ἐπὶ βώλου καὶ
not-at-all then it-differs this to-say upon a-clod and
 μορίου τοῦ τυχόντος ἢ ἐπὶ ὅλης τῆς γῆς· οὐ γὰρ διὰ
a-part the chance-(one) or upon whole the earth not for because-of
 μικρότητα ἢ μέγεθος εἴρηται τὸ συμβαῖνον, ἀλλὰ κατὰ
smallness or magnitude has-been-said the thing-happening but about
 παντὸς τοῦ ῥοπήν ἔχοντος ἐπὶ τὸ μέσον· ὥστε
all the-(thing) an-inclination having toward the middle so-that
 εἴτε ὅλη ποθὲν ἐφέρετο εἴτε κατὰ μέρος, ἀναγκαῖον
whether whole from-somewhere was-carried or according-to part necessary
 μέχρι τούτου φέρεσθαι ἕως ἂν πανταχόθεν ὁμοίως λάβῃ
as-far-as of-this to-be-carried until — from-everywhere alike it-take
 τὸ μέσον, ἀνισαζομένων τῶν ἐλαττόνων ὑπὸ τῶν μειζόνων
the middle being-made-equal of-the lesser by the greater

τῇ προώσει τῆς ῥοπῆς. εἴτ' οὖν ἐγένετο, τοῦτον
by-the pushing-forward of-the inclination whether therefore it-came-to-be this
 ἀναγκαῖον γενέσθαι τὸν τρόπον, ὥστε φανερόν ὅτι
necessary to-have-come-to-be the way so-that clear that
 σφαιροειδῆς ἢ γένεσις αὐτῆς, εἴτ' ἀγένητος ἀεὶ μένουσα,
spherical the coming-to-be of-it or ungenerated always remaining
 τὸν αὐτὸν τρόπον ἔχειν ὅνπερ κἂν εἰ γιγνομένη τὸ
the same way to-be which-very even if coming-to-be the
 πρῶτον ἐγένετο. κατὰ τοῦτόν τε δὴ τὸν λόγον
first it-came-to-be according-to this both indeed the argument
 ἀναγκαῖον εἶναι τὸ σχῆμα σφαιροειδὲς αὐτῆς, καὶ ὅτι
necessary to-be the shape spherical of-it and because
 πάντα φέρεται τὰ βαρέα πρὸς τὰς ὁμοίας γωνίας, ἀλλ' οὐ
all is-carried the heavy toward the like angles but not
 παρ' ἄλληλα· τοῦτο δὲ πέφυκε πρὸς τὸ φύσει σφαιροειδές.
beside one-another this and is-natured toward the by-nature spherical
 ἢ οὖν ἐστι σφαιροειδής, ἢ φύσει γε σφαιροειδής.
either therefore it-is spherical or by-nature at-least spherical
 δεῖ δ' ἕκαστον λέγειν τοιοῦτον εἶναι ὃ φύσει
it-is-needful and each to-say such to-be which by-nature
 βούλεται εἶναι καὶ ὃ ὑπάρχει, ἀλλὰ μὴ ὃ βία καὶ
it-wants to-be and which belongs but not which by-force and
 παρὰ φύσιν. ἔτι δὲ καὶ διὰ τῶν φαινομένων κατὰ τὴν
against nature further and also through the appearances according-to the
 αἴσθησιν· οὔτε γὰρ ἂν αἱ τῆς σελήνης ἐκλείψεις τοιαύτας ἂν
perception neither for — the of-the moon eclipses such —
 εἶχον τὰς ἀποτομάς· νῦν γὰρ ἐν μὲν τοῖς κατὰ μῆνα
would-have the sections now for in indeed the according-to a-month
 σχηματισμοῖς πάσας λαμβάνει τὰς διαιρέσεις (καὶ γὰρ εὐθεῖα
figures all it-takes the divisions and for straight
 γίνεται καὶ ἀμφίκυρτος καὶ κοίλη), περὶ δὲ τὰς ἐκλείψεις
it-becomes and gibbous and hollow about and the eclipses

αἰὲν κυρτὴν ἔχει τὴν ὀρίζουσαν γραμμὴν, ὥστ' ἐπείπερ
always convex it-has the bounding line so-that since-indeed
 ἐκλείπει διὰ τὴν τῆς γῆς ἐπιπρόσθησιν, ἢ τῆς γῆς ἂν
it-is-eclipsed because-of the of-the earth screening the of-the earth —
 εἴη περιφέρεια τοῦ σχήματος αἰτία σφαιροειδῆς οὔσα.
would-be circumference of-the shape a-cause spherical being
 ἔτι δὲ διὰ τῆς τῶν ἄστρον φαντασίας οὐ μόνον φανερόν
further and through the of-the stars appearance not only clear
 ὅτι περιφερὴς, ἀλλὰ καὶ τὸ μέγεθος οὐκ οὔσα μεγάλη·
that curved but also in-the magnitude not being great
 μικρᾶς γὰρ γιγνομένης μεταστάσεως ἡμῖν πρὸς μεσημβρίαν
of-a-small for coming-about a-shifting for-us toward south
 καὶ ἄρκτον ἐπιδήλως ἕτερος γίγνεται ὁ ὀρίζων κύκλος,
and north evidently another becomes the bounding circle
 ὥστε τὰ ὑπὲρ κεφαλῆς ἄστρα μεγάλην ἔχειν τὴν μεταβολήν,
so-that the above head stars a-great to-have the change
 καὶ μὴ ταυτὰ φαίνεσθαι πρὸς ἄρκτον τε καὶ μεσημβρίαν
and not the-same to-appear toward north both and south
 μεταβαίνουσιν· ἔνιοι γὰρ ἐν Αἰγύπτῳ μὲν ἀστέρες ὁρῶνται
for-those-moving some for in Egypt indeed stars are-seen
 καὶ περὶ Κύπρον, ἐν τοῖς πρὸς ἄρκτον δὲ χωρίοις οὐχ
and about Cyprus in the toward north and regions not
 ὁρῶνται, καὶ τὰ διὰ παντὸς ἐν τοῖς πρὸς ἄρκτον
are-seen and the-(ones) through all in the toward north
 φαινόμενα τῶν ἄστρον ἐν ἐκείνοις τοῖς τόποις ποιεῖται δύσιν.
appearing of-the stars in those the places make a-setting
 ὥστ' οὐ μόνον ἐκ τούτων δηλὸν περιφερὲς ὂν τὸ σχῆμα
so-that not only out-of these clear curved being the shape
 τῆς γῆς, ἀλλὰ καὶ σφαίρας οὐ μεγάλης· οὐ γὰρ ἂν οὕτω
of-the earth but also of-a-sphere not great not for — thus
 ταχὺ ἐπιδήλῳ ἐποίει μεθισταμένους οὕτω βραχύ· διὸ
quickly evident it-would-make for-those-shifting thus a-little wherefore

τοὺς ὑπολαμβάνοντας συνάπτειν τὸν περὶ τὰς Ἡρακλείας
the-ones supposing to-join the about the Heracleean
 στήλας τόπον τῷ περὶ τὴν Ἰνδικήν, καὶ τοῦτον τὸν τρόπον
pillars place to-the about the Indian-(land) and this the way
 εἶναι τὴν θάλατταν μίαν, μὴ λίαν ὑπολαμβάνειν ἄπιστα
to-be the sea one not exceedingly to-suppose incredible
 δοκεῖν· λέγουσι δὲ τεκμαιρόμενοι καὶ τοῖς ἐλέφασιν, ὅτι
to-seem they-say and inferring also by-the elephants that
 περὶ ἀμφοτέρους τοὺς τόπους τοὺς ἐσχάτους ὄντας τὸ γένος
about both the places the outermost being the kind
 αὐτῶν ἐστίν, ὡς τῶν ἐσχάτων διὰ τὸ συνάπτειν ἀλλήλοις
of-them is as of-the outermost because-of the to-join to-one-another
 τοῦτο πεπονθότων. καὶ τῶν μαθηματικῶν ὅσοι τὸ μέγεθος
this having-undergone and of-the mathematicians as-many-as the magnitude
 ἀναλογίζεσθαι πειρῶνται τῆς περιφερείας, εἰς τετταράκοντα
to-reckon-out try of-the circumference up-to forty
 λέγουσιν εἶναι μυριάδας σταδίων· ἐξ ὧν τεκμαιρομένοις οὐ
they-say to-be myriads of-stades out-of which for-those-inferring not
 μόνον σφαιροειδῆ τὸν ὄγκον ἀναγκαῖον εἶναι τῆς γῆς, ἀλλὰ
only spherical the bulk necessary to-be of-the earth but
 καὶ μὴ μέγαν πρὸς τὸ τῶν ἄλλων ἀστρῶν μέγεθος.
also not great compared-with the of-the other stars magnitude