

THREE PREVIOUSLY UNPUBLISHED CHAPTERS
FROM ST. THOMAS AQUINAS'S COMMENTARY
ON ARISTOTLE'S *METEORA*:
SENTENCIA SUPER METEORA 2.13-15*

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INTRODUCTION

IN a study of the manuscript tradition of St. Thomas Aquinas's commentary on Aristotle's *Meteora* which was published in 1966,¹ A. Dondaine, O.P., and L. J. Bataillon, O.P., showed that this commentary includes three chapters, attested to by a number of manuscript witnesses, which have never appeared in any printed edition. Since the following first edition of these chapters—which constitute a commentary on Aristotle's discussion of earthquakes in *Meteora* 2.7-8 (365a14-369a9)—has been prepared on the basis of this study by Dondaine and Bataillon, let us begin by summarizing their argument for the authenticity of this section of Thomas's *Sentencia super Meteora*.

AUTHENTICITY

According to thirteenth- and fourteenth-century catalogues of his works, Thomas commented on "two books" or, more precisely, on "the first and second books" of the *Meteora*.² However, the early printed tradition of his

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¹ A. Dondaine and L. J. Bataillon, "Le commentaire de saint Thomas sur les Météores," *Archivum fratrum praedicatorum* 36 (1966): 81-152.

² The catalogue attributed to Reginald of Piperno has an entry "Super duos libros meteororum"; that of Nicolas Trevet says, more precisely, "Exposuit etiam libros Philosophiae plurimos, puta, . . . Meteororum, primum et secundum." See Dondaine and Bataillon, "Le

commentary, culminating in the Piana edition of 1570, presents a discussion of all four books of the *Meteora* which is indiscriminately composed of a Thomistic and a non-Thomistic part. The extent of the authentic portion of the Piana text was gradually determined, first by Jacques Échard, who in 1719 established that the commentary on books 3 and 4 was not by Thomas,³ and then by the Leonine editors of the work, who in 1886 showed that the authentic part of the Piana text ends with the tenth chapter of commentary on book 2, that is, with the discussion of *Meteora* 2.5. The Leonine editors also, however, left open the possibility that Thomas's original commentary might have gone beyond *Meteora* 2.5, citing a marginal gloss from Vatican City, Biblioteca Apostolica Vaticana Vat. lat. 2072 which attributes a comment on *Meteora* 2.8 to *Expositor*—the medieval epithet for Thomas the Aristotelian commentator—as an apparent, though not conclusive, indication that Thomas did, as the medieval cataloguers suggest, comment on the whole of book 2.⁴ In 1920, A. Pelzer drew attention to Vat. lat. 6758, which contains the commentary by Thomas to the end of 2.5, a commentary on 2.6 written in a different hand and attributed to Peter of Auvergne, and a commentary on 2.7-8 copied by the original scribe and including the glossal comment of Vat. lat. 2072 noted by the Leonine editors.⁵ Although Pelzer presented this last coincidence as conclusive evidence that the commentary on 2.7-8 is by Thomas, Dondaine and Bataillon, in their study of 1966, were more cautious, pointing out that the attribution of the glossal comment to *Expositor* in Vat. lat. 2072 merely shows that the glossator *believed* in the Thomistic origin of the remark he cites.⁶ In support of Pelzer's conclusion, however, Dondaine and Bataillon, making use of their much greater knowledge of the manuscript tradition, offered a more rigorous argument for the Thomistic authorship of the commentary on 2.7-8 in Vat. lat. 6758.

Taking advantage of researches by the Leonine Commission during the 1950s, which had identified ten principal and two occasional manuscript witnesses to the text of Thomas's *Super Meteora*,⁷ Dondaine and Bataillon

commentaire," 101; and P. Mandonnet, *Des écrits authentiques de s. Thomas d'Aquin* (Fribourg, 1910), 31 and 49.

³ See Dondaine and Bataillon, "Le commentaire," 101, which refers to J. Quétif and J. Échard, *Scriptores Ordinis Praedicatorum* (Paris, 1719), 1:284b.

⁴ See St. Thomas Aquinas, *Opera omnia*, ed. Fratres Ordinis Praedicatorum, vol. 3 (Rome, 1886), Preface, p. xxxvii; Dondaine and Bataillon, "Le commentaire," 82 and 102.

⁵ A. Pelzer, "L'édition Léonine de la Somme contre les Gentils," *Revue néoscholastique de philosophie* 22 (1920): 220-21; Dondaine and Bataillon, "Le commentaire," 102.

⁶ Dondaine and Bataillon, "Le commentaire," 102.

⁷ For a description of the codices, see *ibid.*, 83-96. Our references to the witnesses to the *Super Meteora* will conform to those of Dondaine and Bataillon, as follows:

based their argument on a minute analysis of each of the ten principal witnesses into its components. The first step consists in the identification of notable points of convergence and divergence within the tradition. Until almost the end of the commentary on 2.5—the terminus of the authentic portion of the printed text—there is no major divergence among the manuscripts: although some of the witnesses to this section are incomplete, all ten manuscripts present the same, authentically Thomistic commentary for this part of the text.⁸ Seven of the principal manuscripts (*BMNOPSV*), however, also include commentary on all or part of the remaining section of the *Meteora* (2.6-4.12), but no two of them have exactly the same text for this latter portion. The dispersal of the tradition begins with 2.6: five of the manuscripts (*BMOSV*) present four different commentaries on this chapter (*M* and *O* have the same text), one of which (that in *V*) is attributed to Peter of Auvergne and another (that in *S*) to William of Quilebec; a sixth manuscript (*P*) omits any commentary on 2.6, passing directly from 2.5 to 2.7. With respect to 2.7-8, however, there is a remarkable unity in the tradition: *all* of the six manuscripts (*BMOPSV*) which contain a commentary on these two chapters present the same text. After 2.8 there is once again dispersion. One manuscript (*V*) goes no further. Another (*P*)

B = Bruges, Bibliothèque de la Ville 496, fols. 1ra-29ra

M = Madrid, Biblioteca Nacional 1427, fols. 127ra-141vb (presents the text of the Moerbeke translation of the *Meteora* with the commentary in the margins)

N = Naples, Biblioteca Nazionale VII C 9, fols. 123vb-133vb (some folios have been removed between fols. 133 and 134)

O = Oxford, Bodleian Library Canon. Misc. 175, fols. 1ra-25va

O' = Oxford, Balliol College 278, fols. 178ra-193ra

P = Paris, Bibliothèque Nationale lat. 16097, fols. 128ra-148vb, 185ra

S = Seville, Biblioteca Capitulare y Colombina 7.7.23, fols. 2ra-34ra (the copyist of this manuscript dates the completion of his work in 1455; Fernand Columbus writes at the end of the codex that he purchased it at Padua on 4 April 1531)

T = Troyes, Bibliothèque Municipale 884, fols. 35ra-48va

V = Vatican City, Biblioteca Apostolica Vaticana Vat. lat. 6758, fols. 84ra-102va

V' = Vatican City, Biblioteca Apostolica Vaticana Vat. lat. 846, fols. 69ra-86rb

In addition to these ten continuous witnesses, two other manuscripts present the Moerbeke translation of the *Meteora* with selected marginal glosses from Thomas's commentary:

C = Cambridge, Fitzwilliam Museum McClean 155, fols. 128vb-136rb

V² = Vatican City, Biblioteca Apostolica Vaticana Vat. lat. 2072, fols. 128vb-175vb

Although much of my study of these manuscripts has been based on the microfilm collection of the Leonine Commission, I have also examined each of the originals. The only manuscript witnesses consulted by the Leonine editors of the *Super Meteora* were *O'* and *V'*.

⁸ In fact, the agreement between the manuscript tradition and the printed text stops several lines before the end of *Super Meteora* 2.10: it ends with the words "supponendo quod" in section 6 of the Leonine edition of this chapter. See Dondaine and Bataillon, "Le commentaire," 83 and 144.

includes, as a later addition, the commentary of Peter of Auvergne on 2.9-4.12. Four manuscripts (*BMOS*) present the same commentary on 2.9, a commentary which, as evidence in *S* shows, is certainly not by Thomas;⁹ in three cases (*MOS*) this commentary extends into book 3,¹⁰ and in the fourth (*B*) the commentary on 2.9 is an insertion into a manuscript that had already contained another commentary on 2.9. Finally, the lack of unanimity continues among those manuscripts (*MNOPS*) which include commentary on books 3 and 4.¹¹

Dondaine and Bataillon argue that the most plausible explanation of this pattern of divergence in 2.6, convergence in 2.7-8, and divergence once again in 2.9 ff., is that the archetype of the tradition contained a commentary on *Meteora* 1.1-2.5 and 2.7-8 only; the divergences in 2.6 and 2.9 ff. are then explained by various attempts to fill in the two lacunae for readers wishing to have a more complete discussion of the Aristotelian text. The agreement of the six witnesses to the commentary on 2.7-8 *after* the dispersal in 2.6 is particularly difficult to account for without this hypothesis. This agreement, then, points to the conclusion that the commentary on 2.7-8 in *BMOPSV* originally belonged together with the commentary on 1.1-2.5 as part of Thomas's *Sentencia super Meteora*.¹²

This conclusion is confirmed by the second step of the argument, an "internal" critique based on the identification of certain literary formulae typical of Thomas the Expositor, such as his use of *hic* to introduce a chapter of commentary, his habitual ways of presenting a *divisio textus*, and his characteristic verbs of exposition.¹³ In contrast to the various commentaries on 2.6, the commentary on 2.7-8 contains all of the typically Thomistic traits noted by Dondaine and Bataillon and no counterindication of Thomas's authorship. Thus, when added to the argument from the gloss cited by the Leonine editors and by Pelzer, and to the argument from the agreement

⁹ In *S*, fol. 34ra, this commentary begins with a "letter-preface" (transcribed by Dondaine and Bataillon, *ibid.*, 150) which reveals its author to be a "continuator" of Thomas's commentary; see *ibid.*, 122.

¹⁰ In *O* and *S* it continues to the end of book 3; in *M* it is replaced, early in book 3, by Peter of Auvergne's commentary.

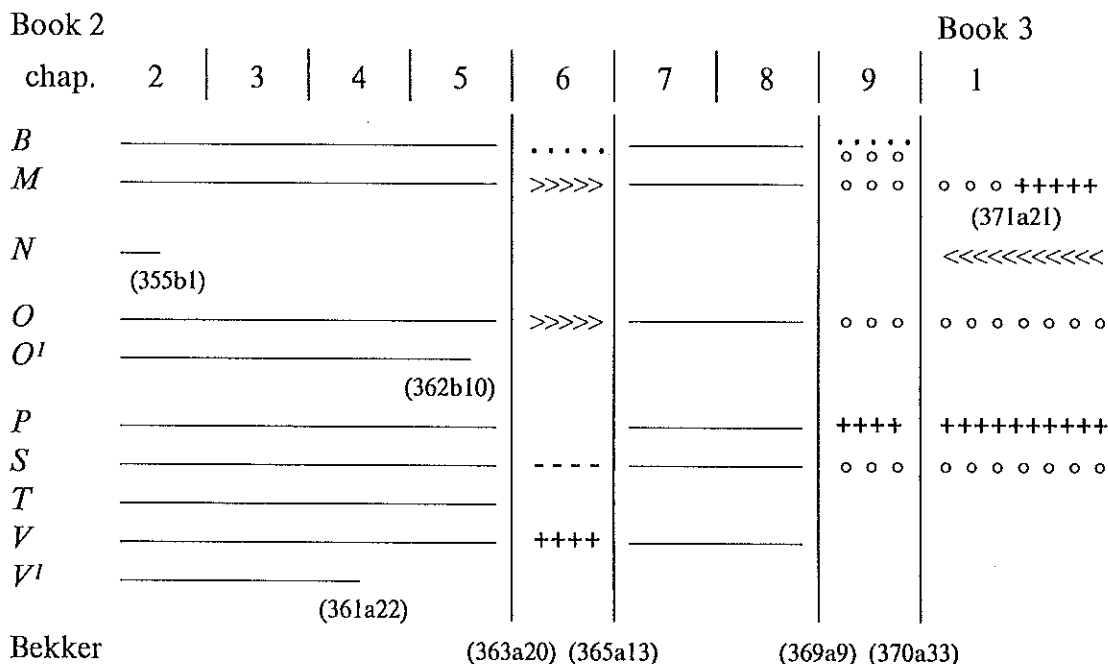
¹¹ See Dondaine and Bataillon, "Le commentaire," 117-40.

¹² *Ibid.*, 106.

¹³ Dondaine and Bataillon (*ibid.*, 113) identify the following "clefs du style" of Thomas the Expositor: the adverb *hic* in introductions to commentary-chapters; the preposition *circa*, sometimes in association with *primum*; the use of "dicit," "ponit," "ostendit," "assignat," "determinat," and "manifestat" as the most frequent verbs of exposition; certain habitual formulas of division, such as "et circa hoc duo (tria) facit: primo . . ." and "circa primum duo (tria) facit . . ."; formulas of introduction of secondary lemmas, such as "Deinde cum dicit . . . (*verb*) . . . et dicit quod . . ."; and such formulas as "Dicit ergo primo quod" and "assignat causam."

of the six witnesses to the commentary on 2.7-8, this stylistic argument provides a final confirmation that this section of the commentary is indeed by Thomas.¹⁴

Dondaine and Bataillon went on to discuss the various “continuations” of the commentary,¹⁵ but these do not concern us here. It may be useful, however, to reproduce the diagram by means of which they summarized their interpretation of the manuscript tradition as a whole:¹⁶



- _____ *Sentencia super Meteora* of St. Thomas.
- *Lectura* of William of Quilebeç, whose commentary on 2.6 in *S* is explicitly attributed to him.
- +++++ commentary of Peter of Auvergne, whose commentary on 2.6 in *V* is explicitly attributed to him.
- >>>>> anonymous commentary on 2.6 in *M* and *O*.
- <<<<<< anonymous commentary on book 3 in *N*.
- commentary by an anonymous Norman on 2.9 and book 3; in *S* this commentary is introduced by a letter indicating that it was composed during a vacation at the University of Paris on the occasion of the *regalia* of Philip, son of the deceased King Louis; Dondaine and Bataillon (*"Le commentaire,"* 123-24) tentatively suggest the identification of the author with William of Quilebeç.
- anonymous commentary on 2.6 and 2.9 in *B*.

¹⁴ *Ibid.*, 110-14. An argument against the authenticity of the commentary on 2.7-8 might be made on the basis of an abbreviation of Thomas's text which states, after presenting the lemma introducing 2.6 (*De positione autem ipsorum*), "hic finit tho" (Bruges, Bibliothèque de la Ville 482, fol. 116r); but in light of the powerful arguments in favour of Thomas's authorship of the commentary on 2.7-8, Dondaine and Bataillon (107) conclude that this remark indicates that the abbreviation is based on an incomplete witness to Thomas's text.

¹⁵ *Ibid.*, 117-40.

¹⁶ *Ibid.*, 109. The format has been slightly modified.

Although the diagram is clear enough as it stands, a number of points should be kept in mind for its interpretation. The premature terminations of Thomas's text in *O*¹ and *V*¹ are due to abrupt cessation of work by the respective scribes. In *N*, by contrast, the lacuna between 2.2 (355b1) and book 3 was caused by the removal of several folios which may well have included the commentary on 2.7-8. The second commentary on 2.9 in *B* and the continuation borrowed from Peter of Auvergne in *P* are later additions to the manuscripts. The commentary in *P* passes directly from 2.5 to 2.7 with no indication of the absence of comment on 2.6. The commentary of Peter of Auvergne in *M* and *P* continues to the end of book 4. Both *O* and *S* also include commentaries on book 4: Dondaine and Bataillon attributed that in *O* to Siger of Brabant¹⁷ and that in *S* to James of Douai.¹⁸

While it is possible that Thomas composed a commentary on 2.6 which was quickly lost or suppressed, the evidence suggests rather that he passed directly from 2.5 to 2.7 (a move reflected in *P*) and then broke off his discussion of the *Meteora* after reaching the end of 2.8. Since his text of Aristotle certainly included 2.6, to which he refers in discussing 2.5,¹⁹ this instance, unique among his Aristotelian commentaries, of jumping ahead in the text of Aristotle, calls for some explanation: perhaps he found 2.6—a technical discussion of the various winds, which constantly uses their Greek names, even in Moerbeke's translation, and refers to Aristotle's diagram of the windrose—either too uninteresting or too intricate to examine in detail. Thomas's abandonment of the commentary at the end of 2.8 might be attributed to a loss of interest in the *Meteora* as a whole, or to the pressure of other tasks, or again, in keeping with the late date assigned to the commentary by some historians,²⁰ to Thomas's complete cessation of writing towards the end of his life.

As has already been indicated, Thomas's exposition of *Meteora* 2.1-5 occupies the first ten chapters of his commentary on book 2. Since three of the four commentaries used to complete the first lacuna in Thomas's

¹⁷ Ibid., 133-40.

¹⁸ Ibid., 127-33.

¹⁹ See *Super Meteora* 2.7 n.1 (St. Thomas Aquinas, *Opera omnia* [Rome, 1882-] [= Leonine edition], 3:409): "Prima iterum dividitur in duas: in prima determinat de ventis in communi; in secunda de speciebus ventorum, ibi: *De positione* etc." *De positione* marks the beginning of *Meteora* 2.6.

²⁰ See J. A. Weisheipl, *Friar Thomas d'Aquino: His Life, Thought, and Works*, with Corrigenda and Addenda (Washington, 1983), 317: "The unfinished commentary on the *Meteora*, terminating with Book II, 8, 369a9, might also have been written at Naples (*sc. during 1272-73*), although Mandonnet and Grabmann believe it to have been composed in Paris, 1269-72, while Pelster believes it to be of Neapolitan origin."

text consist of two chapters of commentary,²¹ we shall assume that Thomas's discussion of 2.6 would likewise have been divided into two parts, namely an eleventh and a twelfth chapter of commentary on book 2. Accordingly, although neither Thomas nor the manuscript tradition numbers the chapters of his commentary, we shall refer to the three chapters on *Meteora* 2.7-8 as *Sentencia super Meteora* 2.13-15, with the understanding that chapters 11 and 12 were probably never composed.

With the authenticity of these chapters solidly established by Dondaine and Bataillon, the following edition of them has been prepared from the six principal witnesses and the occasional testimony of the marginal glosses in *V*². In order to set this evidence in its widest possible context, however, we have also made a preliminary examination of the manuscript tradition as a whole.

PRELIMINARY CRITIQUE OF THE MANUSCRIPT TRADITION

A first indication of the remarkable unity of the manuscript tradition may be detected in two common accidents pertaining to the commentary's division into chapters. In order to facilitate rapid orientation in the commentary and coordination with the Aristotelian text, it is customary for the manuscripts of Thomas's Aristotelian commentaries to distinguish the beginning of each new commentary-chapter visually by an alinea, often together with an enlarged and decorated initial letter or paragraph sign, and/or underlining of the lemma (the first few words of the Aristotelian text to be discussed) by which Thomas begins his chapter. (In general, the initial letter was not—at least not immediately—drawn by the scribe, who simply left a small marginal indication of the correct letter and a blank space to be filled in later; in many cases this space was never filled in.) Nine of the ten principal witnesses to the *Super Meteora* (*BNOO¹PSTVV¹*)²² clearly indicate the commentary-chapter divisions in some such way. Now of these nine, only one—*V*, which, as we shall see, also distinguishes itself in other ways—presents all of the divisions indicated in the printed text, up to and including the beginning of *Super Meteora* 2.10. *All* of the eight

²¹ Of the four commentaries on 2.6 (363a20-365a13), only the *reportatio* of William of Quilebeç in *S*, fols. 27vb-30rb, does not clearly divide into two chapters. Both the commentary of Peter of Auvergne in *V*, fols. 98vb-100ra, and the anonymous commentary in *B*, fols. 23ra-24ra, divide 2.6 at 365a4: *Essendi autem plures uentos . . .* (*V*, fol. 99ra; *B*, fol. 23vb). By contrast, the anonymous commentary in *O*, fols. 20vb-22vb—which is also present, but not clearly divided, in the margins of *M*, fols. 139ra-140ra—divides 2.6 at 364a27: *Sic autem ordinatis . . .* (*O*, fol. 21vb).

²² As the preceding note suggests, the commentary chapters are not clearly distinguished in the marginal commentary in *M*.

other principal witnesses (*BNOO¹PSTV¹*), which usually indicate the chapter beginning with an alinea and a large decorated initial letter, fail to do so in both chapters 3 and 10 of *Super Meteora* 1: in chapter 3, the introductory Aristotelian words are at least set off by underlining; in chapter 10, however, the fact that both the opening words from Aristotle ("Omnibus autem hiis") and the opening words of Thomas's commentary-chapter ("Positis opinionibus") are in the ablative plural apparently led to a misreading in which Aristotle's words were taken as Thomas's (as if Thomas were saying "Omnibus autem hiis positis opinionibus"), so that the lemma is not even set off by underlining. These two points of coincidence among the eight witnesses no doubt reflect a common source which also lacked clear indications of the beginnings of chapters 3 and 10 of book 1.

Might this common source be an official University of Paris exemplar? This hypothesis is suggested by the presence in two of the eight manuscripts (*NO*) of marginal indications of a division into *peciae* and by implicit *pecia* divisions in at least one other manuscript (*O¹*). The fact that the two known Parisian stationers' lists, of 1275 and of 25 February 1304, both omit mention of the *Super Meteora*²³ may mean that the text was available for copying only sometime after the latter date. In any event, *pecia* divisions clearly occur at the following points:

Pecia 2: "propter humiditatem est quasi in potentia ad aquam; exhalatio autem propter siccitatem est quasi in potentia ut igniatur" (*Super Meteora* 1.4 n.6, Leonine edition 3:337). There are marginal indications in *N*, fol. 125vb (·:·) and in *O*, fol. 3vb (.2. p^a). (For "exhalatio," *N* has "ex alio alatio.")

Pecia 3: "temporis solis de nocte ad horizontem / propter magnitudinem decisionis" (1.10 n.5). There are marginal indications in *N*, fol. 172ra (·:·) and at the top of *O*, fol. 7ra (.3. p^a). In *O¹*, between the last line of fol. 182rb and the first line (beginning "propter magnitudinem decisionis") of fol. 182va, a passage of some forty words has been omitted, which, however, has been supplied by the scribe in the lower margin of fol. 182rb. In *T*, the twenty-first line of fol. 38va begins with a sign (—) which may be a *pecia* indication; the line, which is therefore slightly indented, reads "-ciam eius que est tunc temporis solis ad de nocte ad orizontem propter magnitudinem."

Pecia 4: "alio modo per hoc quod calor qui est in vapore extinguitur propter hoc quod longe elevatur a terra in aere qui est supra terram, ubi

²³ For a discussion of these lists and their contents, see L. J. Bataillon, "Les textes théologiques et philosophiques diffusés à Paris par *exemplar* et *pecia*" in *La production du livre universitaire au Moyen Age: Exemplar et pecia*, ed. L. J. Bataillon, B. G. Guyot, and R. H. Rouse (Paris, 1988), 155-63.

deficit calor propter hoc quod radii reverberati" (1.14 n.5). There is a marginal indication in *N*, fol. 129ra (·:·). There is *no* marginal indication .4. p^a in *O*; fol. 9va in *O* begins with "calor qui est. . ." In *O*^l, fol. 184va, fifth line from the bottom, the pen has been sharpened between "terram" and "ubi."

Pecia 5: "ut ex hoc possit accidere fluxus fluviorum. Non enim / magis possumus / dicere quod aquae, si quae collectae invenitur" (1.16 n.8). There are marginal indications in *N*, fol. 131ra (·:·) and in *O*, fol. 12ra (.5. p^a). In *O*^l, fol. 186vb, between line 38 and line 39—the latter of which begins "magis possumus dicere . . ."—a passage of about a hundred words has been omitted which the scribe has supplied in the lower margin; since "magis possumus" occurs both at the conclusion of this passage and at the beginning of line 39, it may have been a catch-phrase found both at the end of *pecia* 4 and at the beginning of *pecia* 5.

Pecia 6: "sicut et Tartarus fluctuans tendit ad omnem partem. Et sic accidet / illud quod dicitur in proverbio" (2.3 n.4). This text occurs in the section of *N* that has been removed. There is a marginal indication in *O*, fol. 14vb (6 p^a). In *V*^l, fol. 83rb, line 15, "illud" is written with a sharpened pen. In *O*^l, fol. 189ra, sixth line from the bottom, there is a point between "accidet" and "illud."

Although there are no further explicit *pecia* indications in *O* (and any which had been in *N* would have occurred in the folios that have been removed), it seems likely that there were two other divisions in the exemplar. All of the first five *peciae* are of approximately equal length. In *O*, for example, whose writing is very regular in size, *peciae* 1 and 2 take up about twelve columns each, *pecia* 3 about ten columns, and *peciae* 4 and 5 about eleven columns each. From the start of *pecia* 6 to the end of *Super Meteora* 2.10, the text in *O* occupies twenty-three and a half columns, that is, if the *peciae* are consistent in length, approximately two *peciae*, while *Super Meteora* 2.13-15 occupies eleven columns, or about the length of one *pecia*. It seems quite probable, then, that a seventh *pecia* began around the beginning of *Super Meteora* 2.10 and an eighth around the beginning of 2.13. It could even be that 2.13-15, the portion edited here, constituted a separate *pecia*, and the fact that *T* does not have this section may mean that the scribe of *T* did not have access to this *pecia*.

With a view to establishing a stemma of the manuscript tradition, I have collated all the witnesses to *pecia* 1 (which comprises nearly the first four chapters of the commentary) and to the tenth chapter of book 1 (which marks the transition from *pecia* 2 to *pecia* 3) against the Leonine text. The following are the general results of these soundings.

Taking the sounding of *pecia* 1, and momentarily setting aside the late (fifteenth-century) testimony of *S*, we are confronted by a fairly homogenous group of late thirteenth- and early fourteenth-century witnesses (*BM NOO¹PTVV¹C*).²⁴ An initial grouping of these is suggested by a series of approximately fifty-five variants which distinguish *PV* and, where present, the occasional witness of *C*, from the seven others (*BMNOO¹TV¹*). In many cases these variants are relatively insignificant and do not immediately suggest a superiority of one group over the other. There are, however, about twenty instances in which the reading of *PV(C)* is for some reason preferable to that of *BMNOO¹TV¹*, as against only five instances of the contrary. This impression of the overall superiority of *PV(C)*, together with the fact that the other group includes the two "*pecia* manuscripts" *NO*, might suggest that *PV(C)* represents an "independent" tradition as distinct from a "university" tradition represented by *BMNOO¹TV¹*. It should be noted, however, that most—but not all—instances of apparent superiority in *PV(C)* can be explained by corrections of the university tradition made on the basis of context, consultation of the Aristotelian text, or stylistic considerations. In order to illustrate these remarks, let us briefly consider four notable variants occurring in the first chapter.

The first variation between the two groups is found in the opening sentence of the commentary:

Sicut in rebus naturalibus nihil est perfectum dum est in potentia, sed solum tunc perfectum est, quando est in ultimo actu; quando vero medio modo se habens fuerit inter puram potentiam et purum actum, tunc est quidem secundum quid perfectum, non tamen simpliciter; sic et circa scientiam accidit.
(1.1 n.1. Cf. *B*, fol. 1ra; *M*, fol. 127ra; *N*, fol. 122vb; *O*, fol. 1ra; *O¹*, fol. 178ra; *P*, fol. 128ra; *T*, fol. 35ra; *V¹*, fol. 84ra; *V²*, fol. 69ra; *C*, fol. 128vb, mg.)

quando vero . . . fuerit] quando vero cum medio modo se habens fuerit
BMNOO¹TV¹: quando vero est medio modo se habens *PVC*

Although the difference between "cum" (accompanied by "fuerit") in *BM NOO¹TV¹* and "est" (without "fuerit") in *PVC* is readily explained by a scribal confusion between *c̄* ("cum") and *ē* ("est"), the problem is to determine which of the two readings represents the confusion. While both are possible, it might be argued that the "est" in *PVC* is more consistent with the five

²⁴ This dating is based on Dondaine and Bataillon, "Le commentaire," 83-96, and has been confirmed by Professor R. H. Rouse, who kindly shared his expert knowledge of codices with me in a discussion of the manuscripts.

V² is omitted from our consideration of *pecia* 1 because none of the marginal glosses in the corresponding portion of *V²* is taken from Thomas's commentary.

other occurrences of "est" in this sentence, and that the more awkward text of *BMNOO¹TV¹* is to be explained by a misreading of "cum" for "est" which left the clause in need of a verb and hence occasioned the addition of "fuerit." On the other hand, it need not be assumed that the more elegant reading corresponds to the original text: is it not also possible that the reading of *PVC* represents the effort of a corrector to make the "university" text smoother?

Another instance of stylistic variation between the two groups occurs a bit later in the text:

Unde manifestum est quod complementum scientiae requirit quod non sistatur in communibus, sed procedatur usque ad species. . . .

(1.1 n.1. Cf. *B*, fol. 1ra; *M*, fol. 127ra; *N*, fol. 122vb; *O*, fol. 1ra; *O¹*, fol. 178ra; *P*, fol. 128ra; *T*, fol. 35ra; *V*, fol. 84ra; *V¹*, fol. 69ra; *C*, fol. 128vb, mg.)

quod] ad *add. PVC* requirit] requiritur *PVC* sistatur] sistat *O¹*
 procedatur] procedat *BMNOO¹TV¹*

Where *PVC* has "ad" and the passive "requiritur," the other group has merely the active "requirit"; and where *PVC* correlates the two passive verbs "sistatur" and "procedatur," the other group has an awkward mix of passive and active verbs ("sistatur," "procedat") or, in the case of *O¹*, two active verbs ("sistat," "procedat"). Does the superior elegance of *PVC* with respect to both points signify a greater fidelity to the archetype, or can it as easily be explained as the result of a corrector's effort to provide a smoother, more readable text? As yet, it is difficult to say.

These two examples of stylistic difference between the two groups occur in the opening passage of the commentary, before the discussion of the Aristotelian text has begun. Later in the first chapter, after Thomas has taken up the exposition of the text, there is a different kind of variant concerning the explanation of Aristotle's remark, "Et quaecumque ponemus utique aeris esse communes passiones et aquae" (*Meteora* 1.1 [338b24-25]). According to the Leonine edition, the commentary on this passage is as follows:

Secundo cum dicit: *Et quaecumque ponemus* etc., enumerat ea quae sub praedictis fiunt: scilicet quaecumque ponuntur esse passiones communes aeris et aquae, quia ex materia aquea in loco aeris generantur, vaporibus in aquam transmutatis.

(1.1 n.6. Cf. *B*, fol. 1va; *M*, fol. 127ra; *N*, fol. 122vb; *O*, fol. 1ra; *O¹*, fol. 178ra; *P*, fol. 128rb; *T*, fol. 35rb; *V*, fol. 84ra; *V¹*, fol. 69rb; *C*, fol. 129ra, mg.)

passiones communes] communes passiones *BTVV¹*: 9^ocies p^oanes *P*: *spatium*
10 litt. NOO¹ (*postea supplevit* communes passiones *O¹*): *om. M* aquae]
 scilicet pluviae, nives, grandines et alia (*alia om. V*) huiusmodi quae dicuntur
 esse communes passiones aeris et aquae *add. PV* (*cf. C*: Nota quod communes
 passiones sunt pluviae, nives et grandines . . .)

The striking difference between the two groups here is that while *BM NOO¹TV¹*, like the Leonine text, passes directly from "aquae" to "quia," *PV* interposes between these two words a particularizing explanation of Aristotle's general reference to *communes passiones*, an explanation similar to that in the marginal note of *C*. Does this explanation belong to the commentary or is it an interpolation in *PV*? A number of considerations seem to favour the former interpretation. First of all, the specifying clarification of Aristotle's general remark is typical of the method of Thomas's Aristotelian commentaries. Second, Alexander of Aphrodisias's commentary on the *Meteora*, which Thomas certainly consulted in composing his own commentary,²⁵ contains a different, but similarly particularizing explanation of Aristotle's remark; but whereas Alexander takes the *passiones* which are "common to air and water" to be the visible phenomena, such as rainbows and halos (discussed in *Meteora* 3),²⁶ both the explanation in *PV* noted above and a slightly later passage in the *Super Meteora* differ, the former by interpreting the *communes passiones* as the various kinds of precipitation treated in *Meteora* 1.9-13, and the latter by indicating that it is only a few lines after the remark about *communes passiones* that Aristotle may be referring to the phenomena mentioned by Alexander.²⁷ Do not this later passage from Thomas's commentary and the explanation in *PV* go together as a tacit correction of Alexander's interpretation? Is it not likely that, having read Alexander's interpretation of *communes passiones*, Thomas would offer his own differing interpretation? In fact,

²⁵ See A. J. Smet, "Alexander van Aphrodisias en S. Thomas van Aquino: Bijdrage tot de Bronnenstudie van de Commentaar van S. Thomas op de *Meteorologica* van Aristoteles," *Tijdschrift voor Philosophie* 21 (1959): 108-41.

²⁶ See *Alexandre d'Aphrodisias: Commentaire sur les Météores d'Aristote*, ed. A. J. Smet, *Corpus latinum commentariorum in Aristotelem graecorum* 4 (Louvain and Paris, 1968), 5.44-49: "Post quae ordinem habent *quaecumque communes passiones [aeris] esse videntur aeris et aquae*. Haec autem sunt speculares imagines et perlustrationes; horum enim utrumque in aqua et aere. Per quae fiunt videlicet quae de vocatis virgis et parheliis, et de halo et iride, et si qua his similia sunt."

²⁷ See *Super Meteora* 1.1 n.8 (Leonine edition 3:327), where Thomas is discussing the lemma *Adhuc autem de fulminum casu* etc. (339a2-5): "Vel potest hoc referri ad iridem et halonem (idest circulum continentem solem et lunam et stellas), quae accidunt ex reverberatione radiorum ad aliquam materiam spissam."

would he not be more likely to do so than to omit any explanation whatsoever? And does the comment in *PV* not therefore have the appearance of a link with the archetype of the tradition which has been broken in *BMNOO¹TV¹*? It might be argued, on the other hand, that the comment in *PV* is the work of a corrector who has noticed that something is missing in his text and has filled in the lacuna on the basis of a careful consideration of the surrounding context in Thomas's commentary. However, the strong appearance of an omission by homoeoteleuton due to the repetition of "communes passiones aeris et aquae," in *BMNOO¹TV¹*, supports the simpler hypothesis that the comment did belong to Thomas's commentary and was preserved in *PV(C)* but lost in *BMNOO¹TV¹*.

Another striking variant which sets *PV* apart concerns Thomas's explanation of "typhonibus" (339a4), which is Moerbeke's rendering of the Greek τυφῶν:

Quarto ibi: *Adhuc autem de fulminum casu* etc., enumerat ea quae ex alto in infimum descendunt, ex ventis causata, dicens: *Adhuc autem dicemus de casu fulminum et typhonibus (qui dicuntur siphones)*. . . .

(1.1 n.8. Cf. *B*, fol. 1vb; *M*, fol. 127ra; *N*, fol. 122vb; *O*, fol. 1ra; *O¹*, fol. 178ra; *P*, fol. 128rb; *T*, fol. 35rb; *V*, fol. 84ra; *V¹*, fol. 69va; *C*, fol. 129rb)

qui] vulgariter add. *PV*: spatium 12 litt. add. *NOTV¹* qui . . . siphones]
spatium 12 litt. M siphones (*suppl. ed. ex commentarium Olympiodori
 super Meteora*)] sciphi *BNO¹TV¹*: sophi *O*: ciphi *P*: scyphi *V*: scyfi *C*

That some word is required between "qui" and "dicuntur" is indicated not only by *PV* but also by the blank space in *NOTV¹*. Is the "vulgariter" in *PV* correct? The answer to this question would seem to depend on the determination of the word which should follow "dicuntur." Since Thomas did not have access to the commentary of Olympiodorus, the conjecture "siphones" of the Leonine editors is unconvincing. On the other hand, the various readings in the manuscripts are also unlikely: *sciphus* (*scyphus*, *scyfus*), meaning "wine-cup," is an unlikely equivalent for *typho* ("whirlwind"), while "sophi" and "ciphi" are apparently unintelligible misreadings of "sciphi." Is it possible that "sciphi" is a misreading of *turbo*, the *sci* deriving from *tu*, the *p* from a lengthened *r*, and the *hi* from *bo*? *Turbo* is both the term corresponding to τυφῶν in the older translation of the *Meteora*²⁸

²⁸ The mention of whirlwinds by Aristotle at 1.1 (339a2), the passage we are presently considering, is not transmitted at all in Gerard of Cremona's translation: see *Aristoteles' Meteorologie in arabischer und lateinischer Übersetzung: Textkritische Ausgabe des ersten Buches*, ed. P. L. Schoonheim (Leiden, 1978), 52.15. On the other hand, the section in Albert's *Meteora* corresponding to Aristotle's thematic discussion of whirlwinds in 2.9 uses *turbo*

and, in contrast to Moerbeke's transliterated *typho*, a common Latin term for "whirlwind" found, for example, in the Vulgate Bible.²⁹ This hypothesis gives the reading "vulgariter" cogency, since Thomas would then be drawing attention to the fact that *typho* is a graecism, and explaining it by the more common Latin equivalent *turbo*. His comment would then be very similar to his explanation in the *Summa theologiae* of the Greek term *herodionen* by the more common Latin word *falco*:

Per herodionen qui vulgariter falco dicitur, significantur illi . . . (ST 1-2.102.6 ad 1).

If the foregoing hypothesis is correct, then it is unlikely that the presence of "vulgariter" in *PV* was supplied by a corrector working from context, since these manuscripts present nonsensical misreadings of the clarifying word *turbo* similar to those of the other witnesses; rather, the "vulgariter" of the archetype has been accurately transmitted to *PV*, while it is illegible or absent for the copyists of all the other manuscripts. This, then, appears to be another special link between *PV* and the archetype which has been lost in *BMNOO¹TV¹*.

Despite this initial grouping of *P* with *V(C)*, there are about twenty cases in *pecia* 1 in which *P* is associated with *BMNOO¹PV¹* against *V(C)*, as well as a number of accidents proper to *P*. Some of the latter suggest that *P* may represent an intermediate state of correction between the "university" group and *V(C)*. *PV(C)* as a whole, then, perhaps reflects a gradual correction of the "university" text made with the help of an independent source.

Within the "university" group *BMNOO¹TV¹*, a subgroup *NOO¹* may be defined not only by the presence of *pecia* indications in these three manuscripts, but also by a number of accidents proper to this group. *NOO¹* seems to represent an early state of the university exemplar, later corrections of which are reflected in *BMTV¹*.

Finally, the principal witness we have neglected so far, *S*, which is dated 1455, is a late witness to the text which is generally associated with the "university" group, but has some readings in common with *PV(C)*.

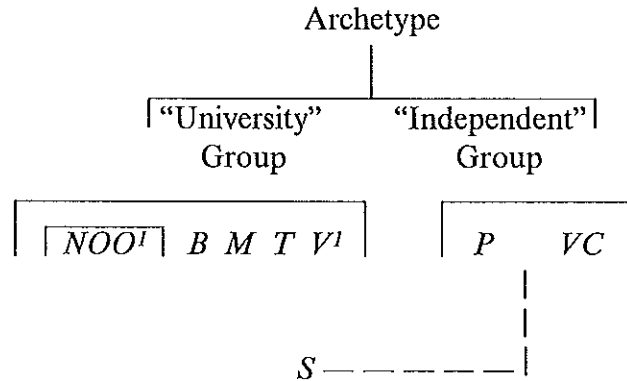
Our basic division between the groups *BMNOO¹TV¹* and *PV* is further confirmed by the sounding in *Super Meteora* 1.10: although the tradition is very homogenous at this point (which marks the transition from *pecia* 2

frequently and *typho* never: see Albert, *Meteora* 3.3.16 (*Opera omnia*, ed. A. Borgnet, 38 vols. [Paris, 1890-99], 4:655-57).

²⁹ Most notably with reference to the whirlwind in the Book of Job; see Thomas's comments in *Super Iob* 38 (Leonine edition 26:199.20-37).

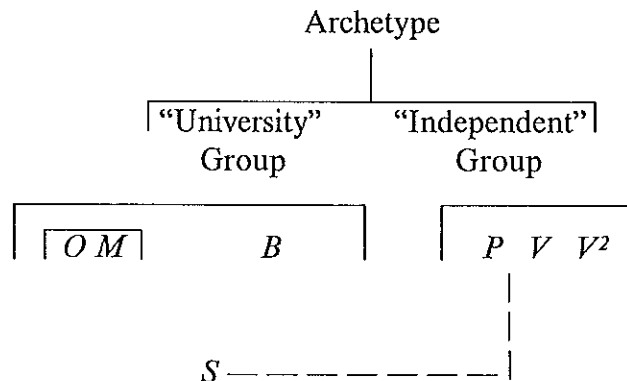
to *pecia* 3), there are ten notable accidents which distinguish *PV* from the other eight principal witnesses here.

The above observations indicate that the stemma of the manuscript tradition should be roughly as follows:



THE MANUSCRIPT TRADITION AND THE PRESENT EDITION

A collation of the six principal witnesses (*BMOPSV*) to *Super Meteora* 2.13-15 confirms the basic division between *PV* and the other manuscripts, since there are 66 variants proper to *PV* in this portion of the text. Three other points should be noted here: since there are 90 variants proper to *MO* in this section, this pair of manuscripts forms a subgroup within the "university" group here, one which seems to be further emphasized by the fact that *M* and *O* contain the same commentary on 2.6; the occasional witness of *V*² in this section suggests that it belongs with *PV* in the "independent" group; and *C* provides no witness to this part of the text. Accordingly, the stemma for the tradition of *Super Meteora* 2.13-15 will approximate the following:



As in *pecia* 1, *PV* seems to present a corrected version of the university text, but here most of the corrections can easily be explained by a consultation of the Aristotelian text or considerations of context and style.

There are about 300 instances in which *V* seems clearly superior to *P*, as against only about 50 instances of the contrary. *B* and *S* sometimes (as "university" texts) agree with *MO* against *PV*, sometimes (as representing a revised version of the university exemplar) agree with *PV* against *MO*, but often, since both were copied somewhat carelessly, each contains evident errors peculiar to itself. In establishing the text, then, *B* and *S* have generally been disregarded, *PV* is nearly always preferred to *MO*, and *V* is usually preferred to *P*—though a consultation of the *apparatus criticus* appended to Thomas's text below will show exceptions to each of these guidelines. Finally, in choosing among variants, I have also consulted the Aristotelian text and the commentary of Alexander.

THE TEXT OF ARISTOTLE

The version of the *Meteora* commented on by Thomas is that of William of Moerbeke. This translation was probably produced about the time of William's translation of Alexander's *Meteora* commentary, which was completed at Nicea on 24 April 1260.³⁰ It superseded the standard older translation, which comprised Gerard of Cremona's translation from the Arabic of books 1-3 and Henricus Aristippus's translation from the Greek of book 4,³¹ and which had been commented on by Alfred of Sareschal, Adam of Buckfeld, and Albert the Great. Thomas seems to have been the first to comment on the Moerbeke translation of the *Meteora*.

Like all of his Aristotelian commentaries, the three chapters of Thomas's *Super Meteora* edited here presuppose a reading of the text under discussion. Accordingly, since the Aristoteles Latinus series has not yet published a critical edition of the Moerbeke translation, an approximation to Thomas's copy of the Moerbeke version of *Meteora* 2.7-8 (365a14-369a9) has been prepared for the present edition. The Aristotelian text as given in the Leonine edition³² has been taken as a base text, with which the following have been compared: a few selected manuscript copies of the Moerbeke translation; the Greek text edited by F. H. Fobes (with particular attention to "J," the ninth-century manuscript which was probably Moerbeke's principal source),³³ and the commentary of Thomas as edited here.

³⁰ See Smet, *Alexandre d'Aphrodisias: Commentaire sur les Météores*, p. xi.

³¹ See B. G. Dod, "Aristoteles Latinus" in *The Cambridge History of Later Medieval Philosophy*, ed. N. Kretzmann et al. (Cambridge, 1982), 76.

³² See St. Thomas Aquinas, *Opera omnia*, vol. 3, pp. LXIX, LXXI-LXXIII, LXXVII-LXXVIII.

³³ In a letter to me dated 5 June 1988, Mme. Gudrun Vuillemin-Diem states that Moerbeke's principal Greek manuscript for the *Meteora*—as for the *Physics* and *Metaphysics*—was

There are two manuscript traditions of Moerbeke's translation: an "independent" tradition, which survives in Toledo, Biblioteca del Cabildo 47.11, fols. 1r-44r (copied at Viterbo around 1280) [*T*¹]; and a tradition stemming from the University of Paris exemplar, represented here principally by Paris, Bibl. Univ. 568, fols. 154r-174r [*P*¹].³⁴ Both of these manuscripts have been collated for the whole of 365a14-369a9, and, in addition, three other "university" manuscripts have occasionally been consulted.³⁵

Sometimes Thomas's text is evidently closer to the university exemplar than to the text copied at Viterbo: his text of *Meteora* 2.7, for example, began, like the Paris manuscript, with "De agitatione autem" rather than with the "De scissura autem" found in the Toledo manuscript; this variation perhaps comes from a double translation of *περὶ δὲ σεισμοῦ* proposed by Moerbeke, and from a misreading of "scissura" for a transliterated "seismo." Elsewhere, however, Thomas's text agrees with the Toledo manuscript against the university tradition, at least insofar as I have been able to determine the latter. The apparatus included with the Aristotelian text below gives selected variants intended to illustrate the situation of Thomas's Aristotelian text "between" these two traditions.

HISTORICAL CONTEXT

It would be interesting now to set these chapters of Thomas's *Super Meteora* in their historical context, that is, to trace in detail their sources, their relation to other texts of Thomas, and their influence. However, since our primary purpose here is to present the text itself, and since such historical considerations more properly belong to a study of the *Super Meteora* as a whole, the following brief sketch will have to suffice.

Thomas's principal source in these chapters, apart from the text of Aristotle, is the commentary of Alexander of Aphrodisias. As A. J. Smet has shown with respect to the already published portion of the *Super Meteora*, Thomas drew from Moerbeke's translation of Alexander's commentary without, however, mentioning Alexander's name.³⁶ It is not sur-

doubtless the ninth-century manuscript, Vienna, Österreichische Nationalbibliothek gr. 100, which F. H. Fobes refers to as "J" in his edition, *Aristotelis Meteorologicorum libri quattuor* (Hildesheim, 1967); see p. xl for a description of this manuscript.

³⁴ The distinction between these two traditions was pointed out by Mme. Vuillemin-Diem in the letter mentioned in the preceding note. On the Toledo manuscript, see Smet, *Alexandre d'Aphrodisias: Commentaire sur les Météores*, 1

³⁵ Two of these include, in addition to the text of Aristotle, marginal witnesses to Thomas's *Super Meteora* and have been referred to above (see n. 7) as *M* and *V*²; the third is Naples, Biblioteca Nazionale VIII E 43, fols. 215va-217ra [*N*¹].

³⁶ See n. 25 above.

prising to find this unacknowledged use of Alexander's commentary continue in these last three chapters of the *Super Meteora*. Thomas's reliance on Alexander here is most striking in his discussion of a textual ambiguity at the end of *Super Meteora* 2.14,³⁷ but there are also smaller points of detail where the influence of Alexander can be seen. Wherever they have been identified, these instances of dependence have been noted in the *apparatus locorum* to Thomas's text.

In addition to Alexander's commentary, there was also available to Thomas a tradition of Latin commentaries on the older version of the *Meteora*, represented by the *notulae* of Alfred of Sareschal (ca. 1220), the literal commentary of Adam of Buckfeld (ca. 1250), and the *Meteora* of Albert the Great.³⁸ However, apart from certain principles of *divisio textus* which Thomas may have taken from Adam, and the double explanation of the phrase *eclipses lune* (367b20) which he seems to owe to Albert,³⁹ Thomas does not appear to have relied on the commentators of the *vetus* for his own understanding and exposition of Moerbeke's translation of *Meteora* 2.7-8.

Since Thomas found it worth his while to comment on *Meteora* 2.7-8, it might be asked whether his other writings reveal any interest in earthquakes and in Aristotle's explanation of them. According to Busa's *Index Thomisticus*, there are forty-six occurrences of the word *terraemotus* in other texts of Thomas.⁴⁰ Of these, nine are found in the Aristotelian commentaries and thirty-four in the scriptural commentaries; and of the latter, a full twenty-six are in the commentaries on Job (eleven occurrences) and Psalm 17 (fifteen occurrences). As these figures indicate, Thomas's references to earthquakes were usually occasioned by a text to be commented on, and more often by a scriptural than by a philosophical text. Furthermore, while it is true that one passage in *Super Iob* and one in *Super Psalmos* 17 refer to the Aristotelian explanation of earthquakes, both passages apparently rely on Albert's *Meteora* rather than on the text of Aristotle itself.⁴¹

³⁷ See below, *Super Meteora* 2.14, lines 252-65 *cum adn.*

³⁸ For Alfred, see J. K. Otte, *Alfred of Sareschal's Commentary on the Meteora of Aristotle: Critical Edition, Introduction, and Notes*, Studien und Texte zur Geistesgeschichte des Mittelalters 19 (Leiden, 1988). I have consulted Adam's commentary on *Meteora* 2.7-8 in two manuscripts: Vat. Urb. lat. 206, fols. 229va-231vb, and Florence, Biblioteca Nazionale B.V.256, fols. 211v-213r. For Albert, see *Opera omnia*, ed. Borgnet, vol. 4.

The continuity of this older tradition may be seen from the fact that, with respect to the discussions of *Meteora* 2.7-8, Adam frequently quotes Alfred, while Albert's outline of topics seems to follow Adam's *divisio textus* closely.

³⁹ See below, *Super Meteora* 2.14, lines 229-51 *cum adn.*

⁴⁰ See *Index Thomisticus: Concordantia prima*, 23 vols. (Stuttgart, 1974), 22:151, no. 81964, "TERRAEMOTUS."

⁴¹ See Thomas Aquinas, *Super Iob* 9 (Leonine edition 26:59.147-52): "Ex corporibus autem

Finally, with respect to the influence of the three commentary-chapters edited here, it is clear that they had a number of copyists during the fifty years following Thomas's death, as well as one copyist—that of MS S—as late as 1455, and that they therefore enjoyed some readership before the authority of the printed tradition of the *Super Meteora*, starting with the *editio princeps* of 1532,⁴² consigned them to oblivion by omitting them. At least one clear case of their influence in another medieval text can be identified, namely their status as a source in the corresponding section of an early French “translation” of the *Meteora* by Mahieu le Vilain.⁴³ This work, which presents itself as a translation but is in fact a paraphrase containing considerations from outside the text of Aristotle, certainly relies on Thomas's commentary for many points in its discussion of “les terres motes,” though without mentioning Thomas's name.⁴⁴ As Rolf Edgren, the

mixtis transit ad elementa, inter quae firmissimum et stabilissimum videtur esse terra quae est immobilis sicut centrum motus totius, et tamen quandoque secundum aliquas partes suas movetur naturaliter ex vapore incluso, ut philosophi tradunt. . .” Thomas's use of the term *vapor* here, rather than Moerbeke's *exalatio*, would seem to indicate the older version or one of its commentators as his source; and his reference to the *philosophi* in general rather than to Aristotle in particular suggests that he is drawing on Albert's discussion of earthquakes, which states, “Omnia autem quae dicta sunt de terraemotu summatim colligendo, intelligimus quod omnes fere Philosophi in hoc concordant, quod terraemotus causetur a vento in terra concluso” (Albert, *Meteora* 3.2.8 [ed. Borgnet, 4:623]).

Thomas's commentary on Job is dated 1261-64 (see, Weisheipl, *Friar Thomas d'Aquino*, 368). In his much later commentary on the Psalms, composed (according to Weisheipl, *ibid.*) in 1272-73, there is another Aristotelian discussion of earthquakes (see *Super Psalmos* 17.6 [ed. Parma, 197]) which also apparently relies on Albert (see Albert, *Meteora* 3.2.6, 3.2.15, 3.2.9, 3.2.12 [ed. Borgnet, 4:620-21, 632, 625, 629]); other sections in Thomas's discussion of Psalm 17 also seem to depend on Albert's *Meteora*.

⁴² See Dondaine and Bataillon, “Le commentaire,” 81 and 99.

⁴³ Mahieu le Vilain, *Les Metheores d'Aristote: Traduction du XIII^e siècle publiée pour la première fois*, ed. Rolf Edgren (Uppsala, 1945).

⁴⁴ Compare, for example, *Super Meteora* 2.13, lines 23-28 below, with Mahieu, *Metheores* 2.7, p. 112.6-10: “Et en parla Anaxagoras ainsi et dit que ‘desous’ et ‘desus’ estoit el monde selonc nous percie et nos pies. Car il dit que tout ce qui est sous [terre] aval est desous, et que tout qui est desus la terre en amont est desus. Et si dist que le ciel estoit feu”; and *Super Meteora* 2.14, lines 126-33 with Mahieu, *Metheores* 2.8, p. 117.21-33: “Or semble, sire conte, que ceste parole soit contraire a ce que il avoit dit devant. Car il avoit dit devant que les terres motes qui aviennent de jour sont greignieurs et plus [fors] a l'eure de midi pour la chaleur du soleil, qui adonc degaste les buees qu'ijl ne puissent venter en l'air. Car il dit ci que terre mote n'est pas fait volentiers en esté pour la chaleur du soleil, qui la terre deseiche trop. Mes ce n'est pas contrarieté. Car, ja soit il voir que la chaleur du soleil, a l'eure de midi, en autre temps que en esté, degaste les buees qui sont sus terre, non pour quant, elle n'est pas si grande que elle puist degaster les buees dedens terre, anchois les fait lever et ne les peut pas degaster. Mais la chaleur du soleil est si grant en esté que elle degaste les buees dedens la terre et dehors en grant quantité. Par quoi sa parole n'a point de contrarieté.” Although not noted in Edgren's edition of the *Metheores*, the influence of Thomas's commentary seems to be present throughout Mahieu's translation-paraphrase of *Meteora* 1.1-2.5 and 2.7-8.

modern editor of Mahieu's *Metheores*, notes, there is some dispute concerning the date of this work due to an ambiguity in the dedication. Edgren himself seems to conclude, though without great certainty, that it should be dated between 1260 (or more precisely, the date of Moerbeke's translation of the *Meteora* on which Mahieu's work is based) and 1270,⁴⁵ a conclusion which, if accepted, would make 1270 a *terminus ante quem* for Thomas's commentary. However, since the arguments for the dating of Mahieu's work are tenuous, and those concerning Thomas's commentary no less so, no firm conclusion can be drawn about the chronology of either, except that Thomas's work must have been composed first.

PRINCIPLES OF THE EDITION

In presenting the texts of Thomas and Aristotle and the apparatus for these texts, I have endeavoured to follow the principles of presentation and orthography established by the Leonine editions of Thomas's commentaries on the *Ethics*, *Politics*, *De anima*, and *De sensu et sensato*.

The *apparatus criticus* for the text of Thomas is intended to provide the reader with selected representative variants demonstrating both the distinction between *PV* and the "university" group and, within the latter, the existence of the subgroup *MO* representing an early stage of the university text. Some of my choices among variants are open to dispute: for greater control of the text, the reader should refer to the *apparatus criticus* and to the stemma presented above (p. 63).

Since the witness of *V*² is merely occasional, only its positive contributions to the establishing of the text are noted; consequently, references in the apparatus to *codd.* or *cett.* will *not* include *V*².

⁴⁵ See Mahieu, *Metheores*, pp. viii-xvi.

CAPITULUM XIII

De agitatione autem et motu terre post hec dicendum: ¹⁵causa autem passionis 365a14
habita huic generi est.

Sunt autem / tradita usque ad presens tempus tria et a / tribus: Anaxagoras 365a15
enim Clazomenius, et prius / Anaximenes Milesius annunciauerunt, et hiis posterius
Democritus / Abderites.

Anaxagoras quidem igitur ait etherem ²⁰natum ferri sursum, incidentem autem 365a19
in inferiora / terre concaua mouere ipsam: que quidem enim sursum conseruntur
/ propter ymbres, quoniam natura omnem similiter esse / somfam, tanquam
existente hoc quidem sursum, hoc autem deorsum tocus spere, / et sursum quidem
hac existente parte in qua habitamus, ²⁵deorsum autem altera.

Ad hanc quidem autem causam / nichil forte oportet dicere, tanquam ualde 365a25
simpliciter dictam: sursum / enim et deorsum putare sic habere ut non ad terram
quidem / undique ferantur grauitatem habencia corporum, sursum autem / leuia
et ignis, stultum.

Et hoc uidentes orizontem ³⁰habitatam quantam nos scimus alterum semper 365a29
factum / translatis, tanquam existente gibbosa et sperica.

Et dicere / quidem quod propter magnitudinem in aere manet, agitari autem 365a31
/ dicere percussam desubtus sursum per totam.

Adhuc autem / nullum reddunt accidencium circa terremotus: neque ³⁵enim 365a33
regiones neque tempora quecunque participant hac passione.

Democritus autem ait terram plenam aqua existentem et suscipientem / multam 365b1
aliam pluuialem aquam ab hac moueri: ampliori / enim facta, quia non possunt
suscipere uentres / uim inferentem, facere terremotum, et exsiccata ⁵trahentem
in uacua loca ex repletioribus transeuntem / incidentem mouere.

Anaximenes autem ait plutam / terram et exsiccata rumpi, et ab hiis / ruptis 365b6
frustis incidentibus concuti; propter quod et / fieri terremotus in siccitatibus et
iterum in ¹⁰pluuiosis: in siccitatibus enim, sicut dictum est, / exsiccata rumpi et
ab aquis superhumectata / decidere.

Oportebat autem hoc accidente subuersam / multipliciter apparere terram. 365b12

Adhuc autem propter quam causam / circa quedam loca sepe fit hec passio 365b13
nullo ¹⁵differencia excessu tali ad alia? Et quidem / oportebat.

Omnino autem sic existimantibus necessarium dicere minus / semper terremotus 365b16
fieri et tandem cessare / aliquando concussa: sic enim decidens talem habet
naturam; / quare si hoc impossibile, palam quod impossibile et hanc esse ²⁰causam.

365a14 agitatione] scissura *T*¹ 15 autem] enim *T*¹ 18 annunciauerunt] enun-
ciauerunt *T*¹ 21 conseruntur] et conserta esse *T*¹ 22 quoniam] quantum *T*¹
23 autem *T*¹*N*¹: quidem *P*¹*MV*¹ 30 habitatam *T*¹*V*²: habitatiuam *P*¹*MN*¹ nos
scimus *N*¹*MV*²: noscimus *T*¹*P*¹ 33 sursum *T*¹*V*²: desursum *P*¹*MN*¹ b5 transeun-
tem *M*: transcidentem *P*¹*N*¹*V*² 8 frustis] fristris *N*¹ 14 quedam loca] quedam
add. *T*¹ fit om. *T*¹

365a14 *De agitatione autem et motu terre* etc. Postquam Philosophus determinauit de uentis in aere flantibus, hic determinat de effectibus uentorum. Et primo de terremotu, qui causatur ex uento infra terram generato; secundo de tonitruo, qui causatur ex uento in nubibus, ibi: *De coruscatione autem et tonitruo* etc. 5

Circa primum duo facit. Primo dicit de quo est intentio. Et dicit quod *post uentos dicendum est de motu et agitatione terre*. Et rationem ordinis assignat quia *causa* huius *passionis*, scilicet terremotus, *est habita*, id est consequens et proxima, *huic generi*, scilicet uentorum: quod enim uentum causat in aere, hoc causat infra terram terre agitationem. 10

365a15 Secundo cum dicit, *Sunt autem tradita* <etc.>, exequitur propositum. Et primo secundum opinionem aliorum; secundo secundum ueritatem, ibi: *Set quoniam manifestum* <etc.>

Circa primum duo facit. Primo enumerat opiniones et opinantes. Et dicit quod *usque ad tempus* suum tres opiniones fuerant de terremotu trium 15 philosophorum, quorum unus fuit *Anaxagoras*, alius fuit *Anaximenes* predecessor eius, qui et magister ipsius fuisse dicitur, tercius autem post eos fuit *Democritus*; et nominat eos a locis unde fuerunt.

365a19 Secundo ibi: *Anaxagoras quidem igitur* etc., prosequitur opiniones. Et primo opinionem Anaxagore; secundo opinionem Democriti, ibi: *Democritus* 20 *autem ait* etc.; tercio opinionem Anaximenes, ibi: *Anaximenes autem ait* etc.

Circa primum duo facit. Primo ponit opinionem. Circa quam sciendum est quod Anaxagoras estimauit quod sursum et deorsum distinguerentur in uniuerso secundum positionem hominis, ut scilicet quicquid est in uniuerso 25 supra caput nostrum sit sursum, quicquid autem est uersus pedes nostros totum sit deorsum; et secundum hoc sequitur quod sicut terra est inferior ad unam partem celestis spere, ita sit superior respectu partis opposite.

3 terram] terras *MO B* generato] *9cūatō M: 9cōcco O* 4 qui] quod *MO: quid V*
 9 huic generi (cf. *Arist., 365a15*) cum *V (gnⁱ man. corr.), O (h^c gni), et Arist. nova transl.:*
 huic *P: huius generis M: hui gnōni B: huic scilicet g^ani S* 13 manifestum] maximum
MO 15 fuerant *PV: fuerunt MO S: fiunt ante opiniones B* terremotu] motu
 terre *MO S* 17 ipsius] suus *P: eius OS* 18 fuit *V: om. cett.* 23 quam
PV B: quod MO S

7-8 Et . . . assignat: cf. Alexander (ed. Smet, 180.9-10): "Dicit autem et causam, propter quam post sermonem de uentis dicit de terraemotibus."

9-10 quod . . . agitationem: cf. Alexander (ed. Smet, 180.12-14): "eadem enim exhalatio, ut procedens ostendit, uentorum et terraemotuum est causa."

17 qui . . . dicitur: cf. Thomas, *In libros Metaphysicorum* 1.4 n.90 (ed. Cathala-Spiazzi): "Hic ponit opinionem *Anaxagorae*, qui fuit alter discipulus *Anaximenes*."

Quia igitur ether, quem dicebat Anaxagoras ignem ex quo ponebat totum
 30 celum consistere, naturaliter fertur *sursum*, terra autem est sursum respectu
 alicuius partis celi, sequitur quod ether naturaliter feratur uersus terram.
 Et ita dicebat quod incidit *in* concauitates que sunt in inferiori parte *terre*,
 et sic ether inclusus in terram mouet *ipsam*; dicebat enim quod naturaliter
 tota terra est sompha, id est concaua et spongiosa, set ista concauitas non
 35 apparet ita in superiori parte terre, quoniam partes terre superiores
 concluduntur et non sunt concaue *propter ymbres* humefacientes terram:
 manifestum est enim quod propter siccitates fiunt yatus et concauitates in
 terra, unde propter ymbres huiusmodi concauitates impediuntur. Et hoc idem
 dicebat Anaxagoras ac si una pars *tocius spere* mundialis sit inferior, que
 40 est uersus pedes nostros, et alia superior, scilicet *in qua nos habitamus*.

Secundo ibi: *Ad hanc quidem autem causam* <etc.>, inprobat hanc 365a25
 opinionem quatuor rationibus. Circa quarum primam dicit quod cum ista
 causa sit *simpliciter* et irrationabiliter assignata, non esset multum oportunum
 aliquid contra eam *dicere* eo quod manifeste continet inconueniens: *stultum*
 45 *enim* est *putare* quod sursum et deorsum determinentur *sic* in uniuerso quod
non dicatur esse deorsum respectu tocium uniuersi locus terre, *ad* quem
 feruntur grauia, et *sursum* locus oppositus, ad quem feruntur *leuia*, cuius
 contrarium ipse ponit.

Secundam rationem ponit ibi: *Et hoc uidentes* etc. Ad cuius intelligenciam 365a29
 50 considerandum est quod cum Anaxagoras poneret ignem naturaliter ferri
 ad terram ex alia parte spere uelud sursum cogebatur, eadem ratione ponere
 quod tota terra naturaliter tenderet uersus celum quasi deorsum; set dicebat
 hoc impediri propter latitudinem terre, unde non ponebat terram esse sperice
 figure, set late, ut quasi nataret in aere ad modum quo corpora lata natant
 55 in aqua, rotunda uero submerguntur.

Hoc autem dicere stultum est, cum uideamus in tota terra quam *nos*
scimus habitam quod transeuntibus de loco ad locum *semper* orizon

29 ignem] igne B: om. MO 30 est sursum PV: est deorsum B: sit deorsum O:
 om. M: est S 31 celi, sequitur] consequitur O: om. M feratur PV: fertur cett.
 33 in PV: om. cett. 34 et om. MO 35 ita PV: om. cett. 36 et non P:
 ut non MOV: eorum B: non S 37 manifestum PVS: quantum MOB siccitates
 P (corr. ex cicitates): siccitatem O BVS: scientem (?) M 38 impediuntur V:
 ipse diuiduntur BP: ipse clñtur M: ipse canitur O: ipse dicuntur S 39 ac om. MO
 mundialis PV B: mundi MO: meridionalis S 42 quarum primam MOB: primam
 quarum inv. VS: quarum prima (est add., exp.) P 43 sit PV: om. MOS: exp. B
 44 contra] qua MO 49 Secundam ... ponit V: om. cett. (homoeotel.) hoc] hec
 PV 57 transeuntibus PV: transeuntentes cett.

29-30 quem ... consistere: cf. Aristoteles, *De celo* 1.3 (270b24-25), 3.3 (302b4-5).

53-55 unde ... submerguntur: cf. Aristoteles, *De celo* 2.13 (294b13-23).

- uariatur, quia semper polus articus uel magis uel minus eleuatur super
 horizontem, et hoc non esset si terra esset late figure uel concaue, set per
 hoc ostenditur quod est sperice figure et gibbose ex parte nostra. 60
- 365a31 Terciam rationem ponit ibi: *Et dicere quidem* <etc.> Et dicit quod etiam
 stultum est *dicere quod* terra quiescat *in aere propter* suam *magnitudinem*,
 et quod tamen ab ethere agitetur totaliter uersus *sursum* quasi *desubtus*
 percussa: hec enim uidentur esse contraria, quod quiescat et moueatur.
- 365a33 Quartam rationem ponit ibi: *Adhuc autem nullum reddunt* <etc.> Et 65
 dicit quod per hanc causam quam assignant de terremotu non potest
 assignari ratio eorum que accidunt *circa terremotus*: non enim omnes
regiones nec omnia *tempora participant hac passione*, quod oporteret si
 terremotus accideret ex causa predicta.
- 365b1 Deinde cum dicit: *Democritus autem ait* <etc.>, ponit opinionem 70
 Democriti. Et dicit eum dixisse quod terra intrinsecus erat plena *aqua*, et
 tamen ab extrinseco superuenit ei multa alia aqua pluuiialis a qua mouetur:
 dum enim aqua crescit, uoragines que sunt sub terra, quas *uentres* uocat,
non possunt faciliter *suscipere* aquam superuenientem cum quadam uiolencia,
 et ex hoc accidit terremotus; et simul etiam aqua superueniens trahit partes 75
 terre que propter siccitatem inueniuntur aperte; et sic dum tam aqua quam
 terra superueniens *ex plenis locis tendit in uacua*, facit agitationem terre.
- Hanc autem opinionem specialiter non reprobat, tum quia eius reprobatio
 apparet ex hiis que supra dicta sunt de fluminum generatione et fontium,
 tum etiam quia quantum ad aliquid conuenit cum sequenti opinione. 80
- 365b6 Deinde cum dicit: *Anaximenes autem* <etc.>, ponit opinionem Anaxi-
 menis. Et circa hoc duo facit. Primo narrat eam. Et dicit eum dixisse quod
 terra postquam fuerit compluta desiccatur et rumpitur ita quod apparent
 quedam aperture, *et ab hiis* aperturis cadunt quedam frusta inferius a quibus
 terra concutitur. Et huius signum accipiebat ex hoc quod terremotus fiunt 85

60 ostenditur] ostendet *M*: ostendere *O* figure *P*: *om. cett.* 66 assignant *PV*:
 assignat *cett.* 68 hac passione *BV*: hanc passionem *cett.* oporteret] oportet *MO*
 72 ei *PVS*: *om. cett.* 73 crescit] et *add. MOVS* sub] super *MO* 74 cum]
 nisi *praem. MO* 75 simul *PS*: similiter *MOV*: similis *B* 76 dum tam *PV*: dicatur
M: de tota *O*: cum tam *B*: dicitur tam *S* 80 cum sequenti *VS*: sequenti *MO*:
 consequenti *B*: cum sequente *P* opinione *PV*: operi *M*: operatione *OBVS* 84 ab
V: de *cett.* aperturis] aperturis *P*: ruptis *M*: rupturis *OBVS* frusta] frustra
codd. 85 accipiebat *PV*: accipitur *M*: est accipi *O*: accipiat *BS*

58-59 quia . . . horizontem: cf. Aristoteles, *De celo* 2.14 (297b30-298a6).

64 hec . . . moueatur: cf. Alexander (ed. Smet, 182.48-49): "Qui enim dicit sic moveri ipsam non seruat quod ipsa quiescat in aere."

79 ex . . . fontium: cf. Aristoteles, *Meteora* 1.13 (349b2-351a18).

tam *in* temporibus siccis quam *pluuiosis*: *in* siccis quidem quia terra per exsiccationem rumpitur, in pluuiosis autem quia aque humectantes terram faciunt terram decidere inferius; et quantum ad hoc concordabat etiam Democritus.

90 Secundo ibi: *Oportebat autem* etc., inprobat predictam opinionem tri- 365b12
pliciter. Primo quidem quia si ex hac causa accideret terremotus, oporteret quod in multis locis appareret terre subuersio propter partes terre que iam ceciderunt inferius in precedentibus terremotibus.

95 Secundo ibi: *Adhuc autem* etc., inprobat per hoc quod in quibusdam 365b13
locis *sepe fit* terremotus in quibus tamen non apparet excessus talis rupturæ per differentiam *ad alia* loca, quod tamen oporteret si hoc quod dictum est esset causa terremotus, quia multiplicatio effectus ex multiplicatione cause procedit.

100 Tercio ibi: *Omnino autem* etc., inprobat per hoc quod oporteret *semper* 365b16
minus et *minus fieri terremotus, et tandem omnino aliquando* cessaret, quia si partes superiores decidunt inferius, oportet quod quandoque repleant partes inferiores ut non sit ultra decidere; unde *si hoc est impossibile, impossibile* est hoc quod dictum est *esse causam* terremotus.

95 fit] sit *MO* 100 quia] quod *MO B* 101 superiores] terre superiores *V*²:
inferiores *cett.* decidunt *V*: decidentes *V*²: incidunt *S*: scindunt *cett.*

97-98 quia ... procedit: cf. Thomas, *Sentencia libri De sensu et sensato* 2.3 (Leonine edition 45.2:116.270 *cum adnotationibus*).

CAPITULUM XIV

- 365b21 Set quoniam manifestum quod necessarium et ab humido et / a sicco fieri exalationem, sicut diximus in / prioribus, necesse hiis existentibus fieri terremotus. /
- 365b24 Existit enim terra per se quidem sicca, propter ymbres autem ²⁵habens in se ipsam humiditatem multam, ut et a sole / et ab eo qui in ipsa igne calefacta, multus quidem extra, multus autem / intra fiat spiritus; et hic aliquando quidem continuus extra / fluit omnis, aliquando autem intra omnis, aliquando autem et partitur.
- 365b28 Si itaque / hoc impossibile aliter habere, quod post hoc considerandum utique erit ³⁰quale maxime motium erit corporum: necesse enim quod / ad plurimum natum ire et uehementissimum maxime / tale esse. Vehementissimum quidem igitur ex necessitate quod citissime / fertur: percutit enim maxime propter uelocitatem; ad plurimum / autem natum est pertransire quod per omne ire maxime potest, ³⁵tale autem quod subtilissimum. Quare si quidem spiritus ^{a1}natura talis, maxime corporum spiritus motiuus. / Et enim ignis quando cum spiritu fuerit, fit / flamma et fertur celeriter.
- 366a3 Non igitur aqua neque terra causa utique / erit, set spiritus motus, cum intus fluxerit qui ⁵extra exalatus.
- 366a5 Propter quod fiunt tranquillitate plurimi et / maximi terremotuum: continua enim existens exalatio / consequitur ut in pluribus impetum principii, quare aut intus / simul aut extra fertur omnis.
- 366a8 Quosdam autem fieri et spiritu / existente nichil irrationabile: uidemus enim aliquando simul plures ¹⁰flantes uentos quorum cum in terram feratur alter erit / spiritu ente terremotus. Minores autem hii magnitudine fiunt / propter quod diuisum est principium et causa ipsorum. /
- 366a13 Nocte autem plures et maiores fiunt terremotuum, qui / autem de die circa meridiem: tranquillissimum enim est ut ¹⁵in pluribus diei meridies. Sol enim cum / maxime optineat, declinat exalationem in terram; / optinet autem maxime circa meridiem. Et noctes autem / diebus tranquilliores propter absenciam solis; quare / intus fit iterum fluxus, sicut recursus, in contrarium ²⁰eius que extra diffusionis, et ad diluculum maxime: tunc / enim et spiritus nati sunt incipere flare. / Si igitur intus extiterit permutatum principium ipsorum sicut / Euripus, propter multitudinem fortiolem facit terremotum.

365b21 quoniam] quantum *T*¹ 22 a *T*; om. *P*¹*N*¹*V*² 25 se ipsam] se ipsa *T*¹
 27 fiat spiritus *T*¹: spiritus fiat *inv.* *P*¹*MN*¹*V*² 30 motium erit *P*¹*N*¹*V*²: erit motium
*T*¹ 366a4 qui] *q*¹ *T*¹ 5 plurimi *T*¹(*N*?): plura *P*¹*MV*² 6 maximi *T*¹: ma-
 xime *P*¹*MN*¹*V*² enim *T*¹: om. *P*¹*N*¹*V*² 12 propter quod] propterea quod *T*¹
 14 est] et *T*¹ 19 sicut recursus *T*¹: recursus *corr.* ex reculsus *M*: sic reculsus *P*¹: sic
 reclusus *V*²: sicut reclusus *N*¹ 22 permutatum *T*¹: est *add.* *P*¹*MN*¹*V*²

Adhuc / autem circa loca talia fortissimi fiunt terremotuum ²⁵ubi mare fluxile 366a23
 aut regio spongiosa et subantrosa; / propter quod et circa Elispontum et circa
 Achaiam et Siciliam, / et Euboie circa hec loca: uidetur enim penetrare / sub terra
 mare; propter quod et therme que circa / Edipsum a tali causa facte sunt. Circa
 dicta autem ³⁰loca terremotus fiunt maxime propter angustiam: / spiritus enim factus
 uehemens, et propter multitudinem maris / allati repellitur iterum in terram quod
 / natum erat efflare ex terra. Regionesque quecunque inania ^{b1}habent que subtus
 loca, multum suscipientes spiritum concuciantur / magis.

Et uere autem et autumpno maxime, et in / pluuiosis et in siccitatibus fiunt 366b2
 propter eandem causam: / tempora enim hec maxime spumosa; estas enim et
⁵hyemps, hoc quidem propter gelu, hoc autem propter estum facit / immobilitatem:
 hoc quidem enim ualde frigidum, hoc autem ualde siccum / est. Et in siccitatibus
 quidem spumosus aer: hoc / enim ipsum est achimos quando amplior exalatio
 / sicca facta fuerit quam humida; in pluuiosis autem ampliorem ¹⁰facit eam que
 intus exalationem, et eo quod intercipiatur / in angustioribus locis et compellatur
 in minorem locum / talis segregatio, repletis concauitatibus aqua, / cum inceperit
 optinere, eo quod multa in paruum locum comprimatur, / fortiter mouet fluens
 uentus et offendens.

Oportet enim ¹⁵intelligere quod sicut in corpore nostro et tremorum et pulsuum 366b14
 / causa est spiritus intercepti uirtus, / sic et in terra spiritum simile facere, et /
 hunc quidem terremotuum uelut tremorem esse, hunc autem uelut pulsum, / et
 sicut accidit sepe post urinationem: ²⁰per corpus enim fit uelut tremor quidam contra
 translato / spiritu de foris intus subito; talia enim fieri / et circa terram. Quantam
 autem habeat spiritus uirtutem, non solum / ex hiis que in aere fiunt oportet
 speculari (hic quidem / enim propter magnitudinem existimabit utique aliquis talia
 posse ²⁵facere), set et in corporibus animalium: tetani / enim et spasmi spiritus
 quidem sunt motus, tantum / autem uigorem habent ut multi simul temptantes
 ui tenere / non possint optinere motum infirmantium. / Tale itaque oportet
 intelligere factum et in terra, ut comparetur ad ³⁰paruum maius.

Signa autem horum et ad nostrum sensum / sepe facta sunt: iam enim terremotus 366b30
 in quibusdam locis / factus non prius desiit antequam erumpens in eum qui super
 terram / locum manifeste ut ecnefias exiuit qui mouit uentus, ^{a1}quale et circa
 Eracleam eam que in Ponto nuper factum fuit, / et prius circa sacram insulam:
 hec enim est una / uocatarum Eoli insularum. In hac enim intumuit aliquid terre,
 / et ascendit uelut collis moles cum sono; tandem autem rupta ⁵exiuit spiritus multus,
 et fauillam et cinerem / eleuauit, et Lipareorum ciuitatem existentem non longe

366a25 fluxile T: fluxibile P¹MN¹V² 28 therme T¹: ch'me P¹: th'me N¹: creme M:
 st^rme V² que] qui T¹ 30 fiunt] et add. T¹ 33 quecunque T¹MV²: quicunque
 P¹N¹ b4 enim¹ T¹: autem P¹MN¹V² 5 facit T¹: fci P¹MN¹V² 8 enim ipsum
 T¹: ipsum enim P¹N¹V² achimos V²: achinos P¹N¹: achmos M: auchmos T¹ 10 et
 eo] ex eo T¹ 17 simile T¹: similem P¹MN¹V² 20 9t^a translato T¹: coicans lato
 P¹V²: cütans lato MN¹ (contra translato? corr. N¹): translato M 24 enim T¹: om.
 P¹MV² talia posse T¹: posse talia P¹MV² 25 et T¹: om. P¹V² 26 enim
 P¹V²: om. T¹ 33 ecnefias T¹: emefias P¹M: enefias V² 367a2 circa T¹: om. P¹MV²
 3 uocatarum] uocatorum T¹ 5 spiritus multus T¹: multus spiritus inv. P¹V²

/ omnem incineravit, et ad quasdam in Ytalia ciuitatum / uenit. Et nunc ubi
exsufflatio hec facta fuit palam / est: et enim facti ignis in terra hanc putandum
¹⁰esse causam, cum decisum accendatur primo in / parua discerpto aere.

367a11 Argumentum autem est quod fluant / sub terra spiritus et quod fit circa has
/ insulas: cum enim uentus debeat flare auster, presignificat / prius: sonant enim
loca ex quibus fiunt ¹⁵exsufflationes, propterea quod mare propellatur iam / de
longe, ab hoc autem quod ex terra exsufflans repellatur / iterum intus, quam quidem
supergreditur mare hac. Facit / autem sonum sine seismo propter amplitudinem
locorum / (effunditur enim in inmensum extra) et propter paucitatem ²⁰repulsi aeris.

367a20 Adhuc fieri solem caliginosum et / obscuriorem sine nube, et ante matutinos
terremotus aliquando / tranquillitatem et frigus forte, signum dicte cause / est.
Solem enim caliginosum et obscurum necessarium / esse incipiente spiritu progredi
in terram dissolvente ²⁵aerem et disgregante, et ad auroram et / matutinos
tranquillitatemque et frigus: tranquillitatem quidem enim / necessarium ut in
plurimum accidere, quemadmodum dictum est / et prius, uelut regressu intro facto
spiritus, / et magis ante maiores terremotus: non discerptum ³⁰enim hoc quidem
extra, hoc autem intus, set simul totum latum / necessarium ualere magis. Frigus
autem accidit / propterea quod exalatio intro uertitur, natura calida / existens
secundum se. Non uidentur autem uenti esse calidi quia / mouent aerem existentem
plenum multo et frigido uapore, ^{b1}sicut spiritus per os exsufflatus: et enim / hic
de prope quidem est calidus, sicut et cum hyamus, / set propter paucitatem non
similiter manifestum, de longe autem frigidus / propter causam eandem uentis.
Deficiente autem in ⁵terra tali uirtute, conueniens propter humiditatem / uaporosus
defluxus facit frigus, in quibus accidit locis / fieri hanc passionem.

367b7 Idem autem causa et signi / consueti aliquando fieri ante terremotus: aut enim
per / diem aut parum post occasum serenitate existente, nubecula subtilis ¹⁰apparet
porrecta et longa uelut lineae longitudo / quamplurimum recta, spiritu deficiente
propter / translationem. Simile autem accidit et in mari / circa litora: quando
quidem enim fluctuans incidet, uehementer / grosse et distorte fiunt regmines;
quando autem ¹⁵placor fuerit, propterea quod parua fit segregatio, subtiles sunt
/ et recte. Quod quidem igitur mare facit circa terram, hoc / spiritus circa eam
que in aere caliginem, ut quando fuerit facta / tranquillitas, omnis recta et subtilis
derelinquatur, tanquam / nubecula sit regmis aeris.

367b19 Propter eandem causam autem et circa ²⁰eclipses aliquando lune accidit fieri
terremotum: / quando enim iam prope fuerit interpositio, et nondum / quidem
sit omnino deficiens lumen et quod a sole / calidum ex aere, iam autem marcefactum,

367a10 decisum *T*¹: densum *P*¹*MV*² 11 parua discerpto *T*¹: paruo discerpto *P*¹*M*:
paruo discreto *V*² 14 loca *T*¹: om. *P*¹*MV*² 16 ab] ad *T*¹ 27 necessarium]
est *praem.* *P*¹*MV*² 28 et om. *T*¹ 29 discerptum *T*¹: discreptum *P*¹: disceptum
*V*²: discretum *M* b13 litora] litora *T*¹ incidet] incident *T*¹ 14 regmines
*T*¹: regmines *P*¹*MV*² 15 placor fuerit] fuerit placor *inv.* *T*¹ fit] sit *T*¹ 19 sit
regmis *T*¹: fit regmis *P*¹: fit regimis *V*²: fit reginis *M* propter eandem causam] propter
quod *T*¹ 21 enim] autem *T*¹

tranquillitas fit, / contra translato spiritu in terram, qui facit ²⁵terremotum ante eclipses: fiunt enim et uenti ante / eclipses sepe, in principio quidem noctis ante eclipses / medie noctis, in media autem nocte ante diluculares. Accidit / autem hoc propter marcescere calidum quod a luna, / cum prope quidem fuerit facta latio in quo factis erit ³⁰eclipsis: remisso igitur quo detinebatur aer et quiescebat, iterum / mouetur et fit spiritus, tardioris eclipsis / tardior.

Set quoniam manifestum etc. Postquam Philosophus reprobauit opiniones 365b21 aliorum de terremoto, hic determinat de eo secundum suam opinionem.

Et primo assignat causam terremotus; secundo causam quorundam accidencium circa ipsum, ibi: *Cum autem fortis factus fuerit* etc.

5 Circa primum duo facit: primo assignat causam terremotus; secundo ostendit causam esse bene assignatam, ibi: *Existit enim terra* <etc.>

Dicit ergo primo quod dictum est in precedentibus duplicem esse *exalationem*: unam uaporosam que resoluitur *ab humido*, alteram fumosam que resoluitur *a sicco*, et ex hac causatur terremotus.

10 Secundo ibi: *Existit enim terra* etc., probat causam bene esse assignatam. 365b24 Et primo per rationem; secundo per signa, ibi: *Propter quod fiunt* etc.

Vtitur autem tali ratione: exalatio sicca uentum causat, unde cum infra terram retinetur causat uentum infra terram; uentus autem maxime est motuius corporum; a uento igitur rationabile est fieri terremotum.

15 Circa hanc rationem tria facit. Primo manifestat quod exalatio sicca causet uentum infra terram. Et dicit quod licet *terra per se* sit *sicca*, tamen *propter ymbres* quos recipit *multam humiditatem* habet, *ut* sic tum ex calore solis, tum ex calore incluso *in* terra qui est a sole et stellis, causatur multa fumositas exalata ex terra ex qua multum de uento causatur. *Et aliquando* tota materia
20 uenti a terra eleuatur et causatur uentus in aere; *aliquando autem* tota materia retinetur intus infra terram et causat infra terram uentum; *aliquando autem* partim retinetur infra terram et partim eleuatur supra, et sic utrobique uentus causatur.

Secundo ibi: *Si itaque hoc* etc., ostendit quod uentus maxime habet 365b28
25 uirtutem ad mouendum corpora. Et dicit quod cum predictae *impossibile* sit

367b24 contra translato] 9translato T¹

7 duplicem VS: dupliciter cett. 9 a PV: ex cett. 10 bene esse V: esse bene
inv. P: bene BS: om. MO 11 signa PV: signum cett. 13 maxime V: rationabile
B: om. cett. 14 motuius PV: motus cett. igitur rationabile est V: autem (ergo
O) est rationabile cett. 16 licet terra P: terra licet inv. cett. 18 qui PV: quod
MO B: om. S est P: etiam (et praem. M) cett. 18-19 multa . . . causatur om.
MO (homoeotel.) 19 tota materia PV: circa M: corpora quando O: tonitruo magis
B: de tota quando S 20 uenti a terra V: terram M: terra OS: om. B: terre P
25 mouendum PV: quasi add. MO B S corpora] corpus MO S

aliter se habere, oportet considerare quid sit maxime motuum corporum. Ad quod duo requiruntur, quorum unum est *quod* possit *ad* multam distanciam moueri: cum enim corporalia mouencia non moueant nisi moueantur, oportet quod maxime motuum est ad multum moueri; secundo oportet quod sit uehemens et uiolentum ad hoc quod fortiter impellat. Set 30 quod aliquid sit *uehementissimum* ad uiolenter impellendum conuenit ex uelocitate motus, quia quod uelociter fertur fortiter *percutit*; set quod aliquid *ad* magnam distanciam possit transire conuenit ex subtilitate ratione cuius *potest per* omnia penetrare. Hec autem duo conueniunt uento, scilicet uelocitas motus et subtilitas, unde sequitur quod uentus *maxime* possit 35 mouere corpora. Et hoc non solum per rationem, set etiam ad sensum apparet, quia *quando* igni adhibetur uentus, *fit* inflammatio et uelociter fertur.

366a3 Tercio ibi: *Non igitur aqua* <etc.>, inducit conclusionem principaliter intentam, scilicet quod *causa* terremotus non est neque *aqua*, ut dixit 40 Democritus, *neque terra*, ut dixit Anaximenes, *set* uentus, quando scilicet fluxus exalationis infra terram retinetur.

366a5 Deinde cum dicit: *Propter quod fiunt* etc., manifestat causam assignatam per signa. Et primo per signa accepta ab ipsis uentis; secundo per signa accepta ab inferioribus rebus, ibi: *Adhuc autem circa loca* <etc.>; tercio 45 <per signa accepta> a rebus in alto existentibus, ibi: *Adhuc solem fieri caliginosum* <etc.>

Circa primum tria facit. Primo ponit signum a uentis sumptum generaliter. Et dicit quod quia terremotus fit a uento infra terram retento, *plurimi et 50 maximi terremotuuum fiunt* quando aer est tranquillus a uentis, quia cum tota *exalatio* que resoluitur a terra et est materia uenti sit quasi aliquid unum continuum, *ut in pluribus* sequitur *impetum principii*; unde si id quod primo exalat feratur infra terram, tota exalatio infra terram continebitur, et sic omnes uenti erunt infra terram causantes terremotum et extra erit tranquillitas; e conuerso autem erit si principium exalationis feratur *extra.* 55

31 uiolenter *V*: aliquid *MBS*: alico *O*: uiolentum *P* impellendum *BV*: compellendum *M*: expellendum *OPS* 36 per rationem *V* s.v.: ratione *cett.* 37 igni *PV*: *om.* *M*: igitur *O*: igitat *B*: terre *S* fit] sit *MO* 49 uento *PV*: uentis *cett.* retento *V*: retentem *MO*: retinentis *B*: recepto *P*: receptam *S* 51 aliquid *V*: ad *cett.* 53 tota . . . terram *V*: *om.* *cett.* 54 terram *om.* *MO*

28-29 cum . . . moueantur: cf. Aristoteles, *Physica* 8.4-5; J. A. Weisheipl, "The Principle *Omne quod movetur ab alio movetur* in Medieval Physics" in *Nature and Motion in the Middle Ages*, Studies in Philosophy and the History of Philosophy 11 (Washington, 1985), 75-97.

40-41 ut dixit Democritus . . . ut dixit Anaximenes: cf. Alexander (ed. Smet, 184.5-6): "ut DEMOCRITUS putabat . . . ut ANAXIMENES existimabat."

Secundo ibi: *Quosdam autem fieri* <etc.>, excludit quandam obiectionem 366a8
 que posset fieri ex hoc quod aliquando terremotus accidunt etiam uentis
 in aere existentibus. Et dicit quod hoc non est *irrationabile: uidemus enim*
 quod etiam in aere quandoque flant plures uenti *simul*, sicut ex superioribus
 60 patet, unde *cum* causentur duo uenti *quorum* unus feratur *infra terram*
 faciens terremotum et alius sit in aere, sequetur quod *terremotus* sit simul
 cum uento in aere. Set tamen necesse est quod huiusmodi terremotus sint
minores, quia exalatio que est *causa et principium est* diuisa, partim fluens
 extra et partim retenta intus.

65 Tercio ibi: *Nocte autem* <etc.>, prosequitur istud signum quod a uentis 366a13
 assumpsit in quibusdam specialibus. Et dicit quod in *nocte fiunt plures et*
maiores terremotus quam in die, set illi *qui* fiunt *de die* sunt maiores qui
 sunt *circa meridiem*. Et assignat causam quare diurnorum terremotuum sunt
 maximi qui sunt circa meridiem, quia scilicet hec hora *diei ut in pluribus*
 70 *est* maxime tranquilla a uentis, quia quando *sol maxime* habet uictoriam
 super terram, facit *exalationem* causantem uentos declinare *infra terram*:
 illud enim quod tunc eleuatur in altum propter uictoriam solis rarefactum
 consumitur et dispergitur; set quia non habet tantam uictoriam infra terram,
 resoluit quidem exalationem, set non consumit eam; et inde est quod quando
 75 maxime sol obtinet super terram, maxime exalatio includitur infra terram.
 Vnde cum *maxime* habeat uictoriam in hora meridiei, tunc maxime exalatio
 declinat infra terram tranquillitate in aere existente, et ideo diurnorum
 terremotuum maximi fiunt in meridie. Set in nocte fiunt adhuc magis, quia
 in nocte fit tranquillitas in aere, quia exalationes causantes uentos non ita
 80 eleuantur *propter absenciam solis* sicut in die, etsi aliquando contingant in
 nocte uenti propter exalationes prius eleuatas; et ideo facta resolutione
 exalationum in die apud presenciam solis, quia cessat causa eleuans in nocte,
 recurrunt exalationes *in contrarium*, scilicet infra terram, et ideo terremotus
 causantur in noctibus; *et maxime* circa *diluculum*, quia de nocte exalationes
 85 infra terram retente quasi congelantur, set circa diluculum propter appropin-
 quationem solis resoluuntur exalationes et excitantur uenti; unde *si*
principium uentorum inueniatur sub terra, faciet *fortiorem* terremotum

57 accidunt PV: fiunt cett. 58 est om. MO 59 etiam om. MO simul
 om. MO 66-67 Et . . . terremotus om. MO 67 quam] scilicet MO 69 ut
 V: om. cett. 72 illud PV: id MO: ideo B: om. S rarefactum PVV²: rarefactam
 M: rarefacit O S: calefacit B 74 resoluit PVV²: resoluitur cett. quidem PVV²:
 per M: in O: quod B: quoad S 75 infra PVV²: super MO B: supra S 76 habeat
 P: om. S: habet cett. 78 magis PV S: magni MO: maximi B 84 et PV S: om.
 cett. nocte PV: die cett. 86 excitantur PV S: excitant MO: exitant B

59-60 sicut . . . patet: Aristoteles, *Meteora* 2.6 (364a27-32).

propter multitudinem materie recurrentis infra terram, *sicut* accidit de motu Eurippi, qui propter recursum aque fortiter mouetur.

366a23 Deinde cum dicit: *Adhuc autem circa loca* <etc.>, manifestat predictam causam terremotus per signa a rebus inferioribus accepta. Et primo ponit signa generalia; secundo quedam signa specialia, ibi: *Signa autem horum* <etc.>

Circa primum tria facit: primo ponit signa accepta a locis; secundo signa accepta a temporibus, ibi: *Et uere autem et autumpno* <etc.>; tercio signa accepta a nostris corporibus, ibi: *Oportet enim intelligere* <etc.>

Dicit ergo primo quod quia terremotus causantur ex uento infra terram retento, inde est quod *circa illa loca fiunt* maximi terremotus in quibus uel *mare* habet magnum fluxum uel terra est *spongiosa et cauernosa*. Et ponit exemplum de quibusdam locis, sicut est in Ellesponto *et* in Achaia *et* in Sicilia, *et circa* quedam alia loca in quibus *uidetur mare penetrare sub terra* propter cauernositatem terre. Et ex ista *causa*, quia scilicet terra est subantrosa et mare fortiter impellit, dicit esse factas in quodam loco thermas, id est emanationes aquarum calidarum: nam propter impulsionem que fit ex motu maris infra terram, excitatur calor et ignitio interius, et maxime si sint loca cauernosa in quibus aer contineatur, et per huiusmodi adustionem redditur terra sulfurea. Dicit autem quod *circa loca* predicta que sunt uicina mari fluxili maximi *fiunt terremotus propter* angustationem interioris uenti ab impulsu maris ipsum exalare non permittentis, quia uentus *uehemens* qui natus erat exire a terra *repellitur iterum in terram propter multitudinem maris* que impellitur a uento exteriori uersus terram. Assignat etiam causam quare in locis cauernosis fiunt terremotus. Et dicit quod *quecunque regiones habent sub terra loca* cauernosa que dicuntur *inania*, quia non sunt plena corpore solido, *magis concutiuntur* per terremotus, quia in huiusmodi cauernis recipiunt *multum* de uento.

366b2 Deinde cum dicit: *Et uere autem et autumpno* <etc.>, ponit signa sumpta ex temporibus. Et dicit quod *maxime* fiunt terremotus in *uere et* in *autumpno*, *et fiunt* etiam in *siccitatibus et* in temporibus *pluuiosis propter*

89 aque *V: om. cett.* 92 signa² *V: om. cett.* 97 quia *V: om. cett.* 99 uel²
PVS: et MOB et *V: uel cett.* 100 Ellesponto] elles ponto *V: melle sponto*
MO PS: moles pō B 101 loca *V: om. cett.* penetrare *V S: penetratum MOB:*
 penetrari *P* 103 et *om. MO* factas] factus *MO* 104 thermas *V man. corr.:*
 stremas *MBS: foremas O: stemas P* 105 excitatur *V: exsiccat MO: exiccat*
BS: exitatur P 106 aer *om. MO* 107 adustionem *V: ustionem MOB S:*
 husionem *P* 108 que *PV: iam cett.* mari fluxili *PV: maris fluxisti MO:*
 mare fluxisti *B: mare fluxibili S* fiunt *PV: om. cett.* 110 erat] est *MO*
 110-11 repellitur . . . exteriori *om. MO* 113 loca *om. MOB* 114 quia¹ *PV: que*
MO: quare BS 117 terremotus *PV: om. cett.* 118 in² *PV: om. cett.*

eandem causam, scilicet quia terremotus ex uentis causantur, unde maxime
 120 fiunt in uere et in autumpno: in hyeme enim *propter* frigiditatem et *gelu*
 immobilitantur uenti quia frigiditas impedit resolutionem exalationum que
 est materia uentorum; in estate uero *propter* inmensum *estum* et siccitatem,
 ita quod non est materia in terra ex qua exalatio resoluatur (sicut ex lignis
 ualde siccis resoluitur modicus fumus), quia tunc maxime obtinet sol super
 125 terram.

* * *

Posset autem obici de hoc quod supra dixit quod in meridie maximi
 fiunt terremotus quia tunc maxime obtinet sol super terram, unde si in estate
 maxime obtinet, uidetur quod tunc maxime debeant fieri terremotus.

Set non est simile, quia uictoria solis que est in meridie licet sufficiat
 130 ad desiccandum superficiales humiditates terre ut non possint exalationes
 congregari ad exalationem uenti, non tamen sufficit ad totalem desiccationem
 terre qualis accidit in estate, per quam etiam nec interiores humiditates
 supersunt ex quibus materia uentorum resolui possit.

* * *

Assignat etiam causam quare *in* temporibus siccis fiunt terremotus, quia
 135 tunc *aer* est uentosus: *hoc enim*, scilicet *aer*, *est achimos*, id est sine humore,
quando plus fit de exalatione sicca *quam* de humida, que quidem exalatio
 sicca est uentorum materia; set tamen intelligendum est: quando non est
 tanta siccitas que humiditatem terre consumat ut exalatio impediatur, ut
 accidit aliquando in estate. Set *in* temporibus *pluuiosis* fit terremotus propter
 140 multitudinem exalationis que concluditur *in locis* artis sub terra *et* constrin-
 gitur *in minorem locum* propter hoc quod concauitates terre temporibus
 pluuiosis replete sunt *aqua*; et ideo *cum* exalatio multiplicata *inceperit* habere
 uictoriam, *uentus* ex ea generatus propter constrictionem impingit ad partes
 terre *et fortiter mouet*.

145 Deinde cum dicit: *Oportet enim intelligere* <etc.>, ponit signa que 366b14
 accipiuntur ex corporibus nostris. Et dicit quod *sicut in corpore nostro*

119-20 maxime . . . gelu *om. MO* 120 in² *V: om. cett.* 122 uero *PV: om.*
cett. 128 tunc *PV: om. cett.* 129 licet] non *add. MO B P S* 132 terre *V:*
om. cett. etiam *PV S: om. MO B* nec *V: om. cett.* 138 impediatur] impeditur
MO 142 cum] quando *P: enim V* 146 sicut *V: om. cett.*

123-24 sicut . . . fumus: cf. Aristoteles, *Meteora* 2.4 (361a17-19): "ubi autem plurimam
 aquam terra suscipit, hic plurimam necessarium fieri exhalationem, simili modo ut ex viridibus
 lignis fumum"; Thomas, *Super Meteora* 2.7 n.10 (Leonine edition 3:411): "sicut ex lignis
 viridibus et humidis maior exhalat fumus quam ex siccis."

tremor *et* pulsus accidit ex spiritu incluso qui non habet liberum exitum, similiter facit spiritus inclusus in terram; unde aliquis terremotus est sicut tremor et aliquis sicut pulsus. Et dicit quod *sicut post urinationem* frequenter accidit in corpore *tremor* eo quod *subito* uentus ab exteriori intrat interius permeatus unde exit *urina*, sic accidit *et circa terram*, nam uentus inclusus facit terre tremorem. Quod *autem* uentus *habeat* magnam *uirtutem* ad mouendum apparet *non solum ex hiis que facit in aere*, ubi potest dici quod magna facit *propter* suam *magnitudinem*, *set* etiam ex hiis que facit in corporibus nostris modicus spiritus in nobis inclusus: manifestum est enim quod *spasmi et tetani*, qui accidunt ex contractione neruorum, *sunt* propter motus *spiritus* qui retrahitur et retractus retrahit neruos; huiusmodi *autem* spasmi tam uiolentum motum *habent ut multi* congregati aliquando temptauerunt per uiolenciam retinere ne nerui contraherentur, et tamen *non* potuerunt uincere *motum infirmantium*. Et sic *oportet intelligere, ut fiat* comparatio minoris ad maius, quod uentus inclusus in terra cum magna uiolencia terram mouet.

366b30 Deinde cum dicit: *Signa autem horum* <etc.>, ponit signa ex quibusdam particularibus accidentibus. Quorum primum est quod dicit quendam terremotum in aliquibus locis factum fuisse qui *non desiit* quousque erumperet *uentus qui* mouebat terram *manifeste* extra terram ad modum quo uentus qui uocatur *enefias*, de quo infra dicetur, exit a nube. Et hoc dicit suo tempore accidisse in *Ponto circa Eracleam*, et prius dicit hoc accidisse in insula sacra, hoc est Vulcani, in qua *intumuit* quandoque terra et eleuata est *cum sono* quedam *moles* ad modum collis, que *tandem* propter uiolenciam uenti interioris rupta fuit, et *exiuit* inde *multus* uentus eleuans *fauillam et cinerem*, propter quod repleta fuit ciuitas *Lipareorum* cinere, et cinis ille peruenit *ad* multas ciuitates Ytalie. Et dicit apparuisse illius facti uestigia usque ad tempus suum: causa enim est illius *ignis* qui in illa insula apparet, uel in aliqua alia terra, quod aer infra terram in paruas partes diuiditur, et ex motu ignitur, et ex tali ignitione *primo* terra accenditur, et istius accensionis diu durat effectus.

150-51 eo . . . permeatus *om. MO* 154 que facit *PV: om. cett.* 157 qui] quod
MO 158 tam *V: om. cett.* 166 qui *om. MO* 167 enefias *M: enefaias*
OP: anofalas B: et nefias V: enestuosas S 168 dicit¹ *PV: om. M: ostendit OBS*
Eracleam] erat in eam MO 169 Vulcani] uel cani *MO* intumuit *V: interimit*
MO: intumuit BPS 174 causa . . . illius *V man. corr.: quia iste M: quia ille O: quia*
illam B: quia illius P 175 uel] et *MO* 176 accenditur] accensior *MO*

167 de . . . dicetur: Aristoteles, *Meteora* 2.9 (369a20), 3.1 (370b4-10).

Secundum autem signum particulare ponit ibi: *Argumentum autem est* 367a11
 <etc.> Et dicit quod possumus accipere argumentum *quod uenti fluant sub*
 180 *terra* illud quod accidit *circa has insulas*, scilicet Vulcanum et alias insulas
 dictas Eoli, quia huiusmodi insule presignant quando *debeat auster flare*
 quodam sono qui causatur ex *hoc quod* quando modicum incipit auster
 flare a remotis et a mari, illud quod debebat extra terram exsufflare de
 uento *iterum* repellitur *intus* propter *mare* quod superuenit, et sic fit sonus,
 185 tamen quandoque *sine seismo*, id est terremotu, tum *propter* hoc quod loca
 cauernosa infra terram sunt ampla ita quod uentus interius conclusus
 dispergitur *in immensum*, tum etiam *propter paucitatem* que est exalationis
 repulse, que quandoque pauca est et non sufficit facere terremotum.

Deinde cum dicit: *Adhuc solem fieri caliginosum* <etc.>, ponit signa 367a20
 190 accepta a rebus que fiunt in alto. Et diuiditur in tres partes secundum tria
 signa que ponit: secunda pars incipit ibi: *Idem autem causa* <etc.>; tertia
 ibi: *Propter eandem autem* <etc.>

Dicit ergo primo quod oportet pro signo accipere *cause* assignate de
 terremotu hoc quod circa terremotum fit sol caliginosus *et obscurus sine*
 195 *nube* manifesta, *et quod ante terremotus* qui fiunt de mane *aliquando* accidit
 tranquillitas in aere *et magnum frigus*. Ideo *enim* sol circa terremotum
 apparet caliginosus *et obscurus*, quia uentus qui poterat rarefacere *aerem*
et disgregare exalationes incipit subintrare *terram* circa tempus terremotus.
 Similiter etiam ante *matutinos* terremotus fit tranquillitas, quia sicut *dictum*
 200 *est, ut plurimum* accidit tranquillitas ante terremotus uento incluso infra
 terram, *et maxime hoc accidit circa magnos terremotus*, quia quando
 principium uenti *non* diuiditur ut una pars eius procedat infra terram et
 alia *extra* terram, *set totum simul* feratur, tunc necesse est quod *magis* ualeat
 uentus ad mouendum uel aerem uel terram. Ideo *autem accidit frigus* ante
 205 terremotus, quia *exalatio* que secundum naturam suam *calida* est, utpote
 adhuc aliquid retinens de uirtute caloris resoluentis ipsam, non est in aere,
 set conuertitur infra terram. Licet autem exalatio *secundum se* sit calida,
 tamen *uenti non uidentur esse calidi*, quia commouent *aerem plenum multo*
uapore frigido cuius uaporis frigiditas magis sentitur per huiusmodi com-
 210 motionem, *sicut etiam spiritus per os exsufflatus* secundum se *calidus est*

180 scilicet *V S*: idest *MO*: om. *B P* 181 Eoli] eloy *M*: eloi *O* 183 debebat] de-
 beat *MO* 184 uento] et *add. MO* 187 que] quandoque *add. PV* 188 est *PV*:
 sunt *M*: om. *cett.* non *PV*: om. *cett.* 194 quod *V*: quidem *cett.* 201-2 et . . .
 terram om. *MO* (*homoeotel.*) 206 aliquid om. *MO* 208 plenum *PV*: om. *cett.*
 209 uaporis] sapor *MO* 210 etiam *PV*: et *MO B*: om. *S*

199-200 sicut . . . *est*: Aristoteles, *Meteora* 2.8 (366a5-8).

et sic sentitur *de prope, sicut cum hyamus, set de longe frigidus* sentitur *propter eandem causam*, scilicet propter uaporem frigidum quem commouet, licet *non sit similiter manifestum* de flatu nostro sicut de uento *propter paucitatem*. Quando igitur talis exalatio concluditur infra terram terremotu 215 instante, rationabile est quod circa illa loca *in quibus accidit* terremotus 215 uapores humidi resoluti in aere existentes faciant *frigus*.

367b7 Deinde cum dicit: *Idem autem causa* etc., ponit aliud signum. Et dicit quod hoc quidem, scilicet uentum concludi infra terram et cessare in aere, est *causa* eius quod consueuit accipi ut signum precedens terremotum, quia ante terremotum de nocte, *per diem* uel *post solis occasum*, si sit serenitas, 220 *apparet* quedam *nubecula subtilis* in longum *porrecta* et directa, per quod significatur quod uentus defecerit in aere et sit inclusus infra terram. Sicut enim *circa litora* maris, *quando* fuerit magnus uentus fluctuare faciens mare, *fiunt grosse et distorte regmines*, id est undositates, cum *autem* mare fuerit placatum, fiunt *subtiles et recte* propter paruam commotionem maris a 225 uento; sic accidit *in aere circa caliginem* quod *quando* est *tranquillitas* in aere, derelinquitur *recta et subtilis, tanquam* talis *nubecula* sic se habeat ad aerem sicut regmis ad mare.

367b19 Deinde cum dicit: *Propter eandem autem* <etc.>, ponit tertium signum. Et dicit quod *propter eandem causam*, scilicet tranquillitatem existentem 230 in aere, *aliquando* fit terremotus *circa eclipsim lune*, id est quam luna facit per sui interpositionem inter nos et solem, quod fit in eclipsi solis, quia *quando iam prope* est tempus quod luna interponatur inter nos et solem, *et lumen et caliditas solis nondum* est *deficiens ex aere*, set *iam* est *marcefactum*, id est debilitatum, tunc *fit tranquillitas* in aere, quia cum calor 235 debilis non possit eleuare exalationes in altum, feruntur infra *terram*, et tunc spiritus intra terram retentus *facit terremotum ante eclipses*. Set *et* *aliquando fiunt uenti ante eclipses* lunares, *in principio quidem noctis ante eclipses* que fiunt in media nocte, *in media autem nocte ante eclipses* que fiunt diluculo. Et *hoc accidit propter* hoc quod calor qui est in aere *a luna* 240 debilitatur *cum* luna appropinquat loco eclipsidis; uirtute autem caloris lunaris

211 frigidus *V*: et frigus *MO B*: frigus *P* 212 causam *om. MO* 213 licet *PV*: similiter *cett. (del. M)* 220 per diem uel] de nocte per diem uel *MO VS*: de nocte post diem uel *B*: per diem uel (uel *exp.*) de nocte uel *P* 223 circa *om. MO*
 224 regmines *V*: regiones *M*: regimines *O* (regiones *praem., exp.*): regiēs *B*: regrames *P*: ueguñtes *S* undositates *V*: uentositates *cett.* 225 maris] magis *MO* 227 et *om. MO B* talis *PV*: quedam *MO S*: quod *B* 231 quam *PV* (*corr. ex* quas *V?*): quas *cett.* 234 lumen *PV*: lunam *MO S*: lunum *B* iam *PV*: *om. cett.*
 235 marcefactum *PV*: m^a acephanum *M*: m^a acefanum *O*: factum *B*: no^a a se factum *S* 238 noctis] rectus *M*: rectis *O B P*: notis *V*: *om. S* 239-40 in^l . . . fiunt *PV* (et aliquando fiunt uenti *post nocte^l add. V*): *om. cett. (homoeotel.)* 240 Et hoc] non *MO*

detinetur *aer* ne perturbetur *et* quiescit: luna enim habet manifestum effectum in conseruatione rerum inferiorum et precipue humidarum; et ideo diminuto calore lune turbatur *aer et fit* uentus. Et si *eclipsis* fit *tardior*, id est maiorem
 245 moram habens, uentus etiam est durabilior.

Vel potest aliter exponi ut hoc etiam quod supra dictum est, quod *circa eclipses lune accidit fieri terremotum*, intelligatur de eclipsibus lunaribus; et quod dicit quod cum *iam prope fuerit interpositio*, non intelligatur de interpositione lune inter nos et solem, set de interpositione umbre terre;
 250 et quod dicit *lumen et calidum quod est a sole nondum deficere ex aere*, intelligendum est de lumine et calido quod luna recipit a sole.

* * *

244 *tardior*] candidior *MO* 245 etiam est *P*: est etiam *inv. V*: et est *cett.*
 247 *eclipses . . . de om. MO (homoeotel.)* 248 quod¹ *om. MO* 249 interpositione¹
V: interpositionibus *cett.* 250 et² *V*: *om. cett.* quod est *V*: *om. cett.*

242-43 luna . . . humidarum: cf. Thomas, *Super Meteora* 2.1 n.7 (Leonine edition 3:338): "Aqua autem maris saepe movetur huc et illuc, et maxime secundum consequentiam ad motum lunae, quae secundum naturam propriam habet commovere humidum"; *Summa theologiae* 1.115.5 ad 1 (Leonine edition 5:546): "Manifestum est autem quod cerebrum humidissimum est omnium partium corporis, ut Aristoteles dicit: et ideo maxime subiicitur operationi lunae, quae ex sua proprietate habet movere humorem"; *ST* 1.102.1 ad 1 (Leonine edition 5:448-49): "Quidam autem dicunt quod Paradisus pertingebat usque ad lunarem globum, idest usque ad medium aeris interstitium, in quo generantur pluviae et venti et huiusmodi: quia dominium super huiusmodi evaporationes maxime attribuitur lunae." Cf. Thomas Litt, *Les corps célestes dans l'univers de saint Thomas d'Aquin*, Philosophes Médiévaux 7 (Louvain, 1963), 232-33.

246-51 Vel . . . sole: This is the interpretation of Alexander (ed. Smet, 190.36-191.43): "Dicit autem *circa eclipses lunae fieri terraemotum* frequenter *propter eandem causam. Quando enim iam prope fuerit umbra terrae*, obsistens et obtegens lumen quod a sole incidens ad lunam, ut neque quidem omnino relinquatur *lumen et calidum quod a sole*, quod exhibet luna aeri a sole accipiens, iam autem propter propinquitatem diligentis umbraculi marcescat, *tranquillitas fit*. Quia enim in frigidatur locus qui super terram econtra transfertur spiritus in terram et *terraemotus ante eclipses facit*." Albert, like Thomas, suggests both interpretations; cf. Albert, *Meteora* 3.2.14 (*Opera omnia*, ed. Borgnet, 4:630-31): "Signum autem terraemotus praecedens ipsum, quod est signum et causa ipsius, est eclipsis solis in conjunctione lunae ad solem. . . . Si autem quis quaerat, utrum idem sit de eclipsi lunae intelligendum, quae fit ex umbra terrae? Dicendum quod in veritate subtractio luminis lunae aliquid cooperatur ad terraemotum: quia dicit Aristoteles quod luna est secundus sol, et movet lumine solis: attamen raro contingit ex eclipsi lunae, ideo quia luna in natura habet movere vaporem aquae et maris potius quam terrestrem vaporem et terram: solis autem motus fortior est in terra, et ideo eclipsis solis plus operatur ad hoc quam eclipsis lunae."

Set tunc uidetur duo contraria dicere: primo quidem enim dixit quod ante eclipses lunares fit tranquillitas deficiente calido, postea uero dixit quod ante eclipses lunares diminuto eius calido fit turbatio aeris.

Potest autem ad hoc dici quod diminutio calidi quod est a luna quandoque facit tranquillitatem, quando scilicet calor lune erat moderatus et temperatus ad mouendum exalationes ad generationem uentorum, unde diminutio caloris facit uentos cessare; quando autem caliditas lune erat maior, quasi uincens exalationes et disgregans eas, tunc calor lune facit tranquillitatem et diminutio eius caloris facit uentos. 255

Potest etiam dici quod parum ante eclipses lunares fit tranquillitas propter magnam diminutionem lunaris caliditatis; dicit autem Philosophus uentos fieri non inmediate ante eclipses, set per mediam noctem ante, quia tunc aliquantulum remissus est calor lune, et non totaliter marcefactus, id est debilitatus. 260

252 tunc *om. MO* primo *om. MO* quidem enim *V*: quidem quod *MO*:
autem quod *B*: quidem quia *P*: enim quod *S* quod *V*: enim *MO*: *om. cett.*
255 Potest] primo *MO* quandoque *V*: quando *cett.* 256 calor lune] lune calor
inv. MO 257 mouendum exalationes *PVS*: modum exalationis *MO B* 258 lune
om. V 262 lunaris caliditatis *PV*: lunarem caliditatis *M*: lunarem caliditas *O*: lunarem
caliditatis *B*: lunarem claritatis *S* 264 non *PV*: ideo *MO S*: uero *B* 264-65 id
est debilitatus *V*: *om. cett.*

252-65 Set . . . debilitatus: cf. Alexander (ed. Smet, 191.55-192.80): "Dubitabit autem utique quis, qualiter quod nunc dictum est non repugnat prius dicto: tunc quidem enim dixit tranquillitatis causam fieri frigiditatem factam propter futuram eclipsim, nunc autem uentorum. Aut quando quidem amplior a luna fuerit caliditas, ita ut obtineat exhalationes, diminutio calidi remittit ipsas, quando autem fuerit moderata, diminutio cessare facit; et sic aliquando quidem tranquillitas, aliquando autem venti prius fiunt. Et non ante aequale tempus eclipsis tranquillitatem dicit fieri et uentos, sed in alio quidem uentos, in alio autem tranquillitatem; longe quidem enim distante adhuc eclipsi calidi temperies uentos movet, prope autem iam eclipsi existente eosdem hos uentos econtra transferri facit propter frigiditatem. Et cum uoluisset ostendere quod ante eclipses tranquillitas propter antiperistasin spiritus fit, ostendit quia ante spiritus motos existentes tranquillitas fit, illis translatis alibi. Et quod hoc dicat ipse signum quia non dicit: fiunt autem et venti *ante eclipses multotiens*, sed: *fiunt enim et venti*; dicens enim quod transferuntur, intulit hoc: *fiunt enim*."

Et cum ostendisset qui sunt qui transferuntur, adhuc serenitatem quidem dixit fieri, quando iam prope fuerit obstructio et nondum quidem fuerit totum amissum lumen et calidum quod a sole ex aere, iam autem marcescat. In generatione autem uentorum non hoc iam tempus dicit, sed in extremitatibus noctis quidem generationem uentorum ante eclipses factas in media nocte, media autem nocte ante illas quae in aurora. Et in tranquillitate quidem eo quod est marceferi calidum usus est, in generatione autem uentorum eo quod est attenuari calidum, intensio autem attenuationis marcefacit."

252-53 primo . . . calido: Aristoteles, *Meteora* 2.8 (367b19-25).

253-54 postea . . . aeris: Aristoteles, *Meteora* 2.8 (367b25-31).

CAPITULUM XV

Cum autem fortis factus fuerit terremotus, non mox neque ad / semel cessat 367b32
 agitans, set quod primo quidem usque ad circa / quadraginta dies agitatur, posterius
 autem et ad ^aunum et ad duos annos notatur secundum eadem loca. Causa /
 autem magnitudinis quidem multitudo spiritus et / locorum figure per qualia utique
 fluxerit: qua quidem enim repulsus fuerit / et non facile pertranseat, maximeque
 concutit et intus retinere ⁵necessarium in resistentibus, uelut aqua non potens /
 pertransire. Propter quod, sicut in corpore pulsus non repente / cessant neque cito,
 set per moram marcefacta / passione, et principium a quo exalatio / facta fuit
 et ortus spiritus palam quod non mox ¹⁰omnem expendit materiam ex qua fecit
 uentum quem / uocamus seismum. Quousque igitur consumatur reliquias horum,
 / necesse agitare, debilius autem et usque ad hoc donec utique / minus sit exalatum
 quam non possit mouere manifeste. /

Facit autem et sonos qui sub terra fiunt ¹⁵spiritus, et eos qui ante terremotus; 368a14
 et sine autem terremotibus / iam alicubi facti sunt sub terra. Sicut enim et percussus
 aer / omnimodos emittit sonos, sic et percutiens ipse: nichil / enim differt: uerberans
 enim simul et ipsum uerberatur omne. / Preuenit autem sonus motum, quia
 subtiliorum parciū ²⁰est et quia magis per omne penetrat sonus spiritu. / Cum
 autem minor fuerit quam ut moueat terram propter subtilitatem, / propter facile
 quidem penetrare non potest mouere, quia / autem offendit ad solidas moles et
 concauas et omnimodas / figuras omnimodum emittit sonum, ut aliquando uideatur
²⁵quod quidem dicunt prodigia uulgantes mugire terram. /

Iam autem et aque eruperunt factis terremotibus, set non / propter hoc aqua 368a26
 causa motus, set si fuerit ex superficie / aut desubtus uim inferat spiritus, illam
 mouens / est, sicut fluctuum uenti, set non fluctus ³⁰uentorum. Quoniam et terram
 sic utique quis causet / passionis: euertitur enim agitata, quemadmodum aqua: /
 effusio enim euersio quedam est. Set hec ambo quidem / causa ut materia: paciuntur
 enim, set non agunt; spiritus autem / ut principium.

Vbi autem simul cum terremotu fluctus factus fuit, causa quando ³⁵contrarii facti 368a34
 fuerunt spiritus. Hoc autem fit cum ^bagitans terram spiritus latum ab alio spiritu
 / mare repellere quidem omnino non possit, propellens autem et / coartans ad
 idem congregauerit multum: tunc enim necessarium / uicto hoc spiritu simul multum
 pulsum a ⁵contrario spiritu erumpere et facere cataclismum. / Fuit autem factum
 hoc et circa Achaiam: extra quidem enim / erat auster, ibi autem boreas, tran-
 quillitate autem facta et fluente / intro uento factus fuit et fluctus et terremotus

367b32 fortis om. T¹ 33 set] si T¹ 368a2 multitudo] et add. T¹ 13 quam
 non P¹M: quod non V²: quam ut T¹ 16 iam T¹: 9iā P¹V² facti sunt] fci^s T¹
 22 quidem penetrare] penetrare quidem inv. T¹ 26 eruperunt] erumpunt T¹ 27 si
 om. T¹ 28 desubtus T¹: desumptus P¹V² 30 quoniam] quantum T¹

simul, et / magis propter mare non dare perflationem ¹⁰impetum facienti sub terra spiritui, set obsistere: uim enim inferencia / inuicem spiritus quidem terremotum fecit, / ypostasis autem spiritus cataclismum.

368b12 Secundum partem / autem fiunt terremotus terre, et sepe ad modicum / locum, uenti autem non; secundum partem quidem, cum ¹⁵exalationes que secundum locum ipsum et uicinantem / conuenerint in unum, sicut et siccitates diximus fieri / et pluuias secundum partem. Et terremotus / quidem fiunt propter hunc modum, uenti autem non: hii / quidem enim in terra principium habent, ut ad unum omnes impetuentur, ²⁰sol autem non similiter potest; in aere autem suspensa magis / ut fluant, cum principium acceperint a solis latone, / iam secundum differencias locorum ad unum.

368b22 Quando quidem / igitur fuerit multus spiritus, mouet terram, ut autem tremor, / ad latum; fit autem raro et secundum aliqua loca ²⁵uelut pulsus, sursum desubtus; propter quod et minus / agitat hoc modo: non enim facile sic multum / conuenire principium: ad longitudinem enim multiplex eius que a / profundo exalatio. Vbicunque autem factus fuerit talis seismus, / egreditur multitudo lapidum sicut bulliencium in caldariis; ³⁰hoc enim modo facto seismo que / circa Sipolim euersa sunt, et campus uocatus Flegreum, / et que circa Ligusticam regionem.

368b32 In insulis autem / ponticis minus fiunt terremotus quam in hiiis que ad terram: multitudo enim / maris infrigidat exalationes et prohibet ³⁵pondere et uim infert; adhuc autem fluit et non agitur ^{a1}obtenta a spiritibus; et quia multum occupat / locum, non in hanc, set ex hac exalationes fiunt, / et has consequuntur que ex terra. Que autem prope / terram pars sunt terre: intermedium enim propter ⁵paruitatem nullam habet uirtutem. Ponticas autem non contingit moueri / sine mari toto a quo contente existunt. /

369a7 De terremotibus quidem igitur, et que natura et / propter quam causam fiunt, et de aliis accidentibus / circa ipsos, dictum est fere de maximis.

367b32 *Cum autem fortis factus fuerit* etc. Postquam Philosophus assignauit causam terremotus, hic assignat causam accidencium circa ipsos. Et circa hoc duo facit: primo assignat causam generalium accidencium; secundo causam quorundam particularium, ibi: *In insulis autem ponticis* <etc.>

Circa primum tria facit: primo assignat causam durationis terremotuum; 5 secundo causam quorundam effectuum eius, ibi: *Facit autem et sonos*

368b10 spiritui *T*¹: sp̄m *P*¹*V*² 20 suspensa] suspense *T*¹ 31 Sipolim] sypilon
*T*¹ euersa] conuersa *T*¹ Flegreum] flegreus *T*¹ 369a1 obtenta] obtentum
*T*¹ 2 hanc] hoc *T*¹ 4 enim *T*¹: autem *P*¹*V*² 5 moueri (cf. *Arist.*, κινῆσαι,
and Thomas, ad loc.): mou'e *T*¹*P*¹*V*² 9 ipsos *T*¹: ipsas *P*¹*V*²

<etc.>; tercio assignat causam diuersimode habitudinis ipsius ad terram, ibi: *Secundum autem partem* <etc.>

Dicit ergo primo quod quando fuerit fortis terremotus, non statim cessat,
 10 *neque ad* primam agitationem, *set* aliquando quod est primum in eius
 duratione *agitatur usque ad quadraginta dies* interpolatis noctibus, et post
 hoc usque *ad unum* uel *duos annos*. Cuius *causa* ex duobus sumitur, scilicet
 ex multitudine uenti *et* ex figura *locorum* per que fluit uentus. Quando
 15 *enim* loca subterranea sunt arta et solida ut spiritus *repulsus non facile*
pertranseat, tunc *maxime concutitur et intus* maxime retinetur, sicut *aqua non*
potens transire. Et ideo *sicut* quando ab aliqua passione, puta ire, incitatur
pulsus in corpore humano, *non repente* cessat, *neque* in paruo tempore,
set post magnam horam debilitata *passione*, sic accidit in uento mouente
 terram. Sic igitur accidit duratio terremotus propter figuram loci. Accidit
 20 etiam propter multitudinem materie, quia illud *principium ex quo facta fuit*
exalatio ex qua natus est uentus concutiens terram *non* statim totam
materiam exalationis *expendit* per resolutionem; *quousque* ergo illa materia
consumatur, reliquie illius materie faciunt agitationem, *set* semper *debilius*,
 quousque ueniat *ad hoc* quod *sit* ita modica exalatio quod *non possit mouere*
 25 terram.

Deinde cum dicit: *Facit autem et sonos* <etc.>, assignat causam quorundam effectuum terremotus. Et primo sonorum qui causantur in terra; secundo aquarum que erumpunt a terra propter terremotum, ibi: *Iam autem et aque* <etc.>; tercio fluctuum qui fiunt in mari, ibi: *Vbi autem simul* <etc.>

30 Dicit ergo primo quod uentus inclusus *sub terra* qui causat terremotum
 aliquando *facit sonos ante* terremotum, *et* aliquando etiam fiunt soni *sine*
 terremotu. *Sicut enim aer percussus*, utpote uirga uel corrigia discussa in
 aere, *facit sonos*, ita etiam quando *ipse* percutit ad aliquod corporum: *non*
enim est differentia quantum ad hoc utrum ipse uerberet uel uerberetur,

12 unum PV: annum cett. 13 ex² V: a P: om. cett. 16 potens] potest MO
 ire V: in re MOS: int'e B: om. P incitatur V: indicatur MO PS: mendicatur B
 18 sic] sicut MO 19 propter V: per cett. 20 etiam] et MO 23 reliquie
 PV: relique cett. illius] scilicet MO 27 terremotus V: om. cett. 31 sonos
 ante PV: om. cett. 32 percussus] percussit MO

16 puta ire: cf. Aristoteles, *De memoria et reminiscencia* 2 (453a26-28): "Vnde et ire et timores cum contra mouerint et contra mouentibus iterum hiis, non sedatur, set ad eadem contra mouent"; Thomas, *Sentencia libri De sensu et sensato* 2.8 (Leonine edition 45.2:132.106-12): "Et dicit quod quando ira uel timor uel concupiscencia uel si quid huiusmodi mouetur contra aliquod obiectum, etiam si homines uelint in contrarium mouere retrahendo se ab ira uel a timore, non sedatur passio, set adhuc contra idem mouetur. Quod contingit quia commotio corporalis organi non statim quietatur."

32-33 utpote . . . aere: cf. Alexander (ed. Smet, 193.5-6): "ut est videre in flagellis et in virgis."

quia *omne* quod uerberat uerberatur propter resistenciam uerberati. Huius- 35
 modi *autem sonus* a spiritu infra terram incluso causatus precedit terre-
 motum, licet simul fiat cum ipso, *quia est subtiliorum parcium, et quia sonus*
magis potest penetrare *per* totum quam spiritus, id est uentus. Quod non
 est sic intelligendum quasi sonus sit corpus partes et subtilitatem habens,
 set quia in subtiliori aere potest fieri sonus quam uentus. Et ideo etiam 40
 fiunt aliquando huiusmodi soni sine terremotu, quia aliquando uentus est
minor causans sonum *quam* sufficiat ad mouendum *terram*, et *propter*
subtilitatem de facili potest *penetrare* ut perueniat ad auditum nostrum, licet
non possit *mouere*. Ideo autem causantur diuerse maneries sonorum, *quia*
 spiritus inclusus impingit *ad moles solidas et concauas* et diuersis figuris 45
 figuratas, ex qua diuersitate causatur diuersus modus sonorum, ita quod
aliquando uideatur terra *mugire*, secundum quod *dicunt* illi qui antiquitus
 uulgabant *prodigia*, ut aliquibus sacrificiis expiarentur: consuetum enim erat
 apud antiquos ut quando inconsueta acciderent in aliqua regione, principibus
 regionis nunciarentur ut a diuinis perquirerent quid pretenderent. 50

368a26 Deinde cum dicit: *Iam autem et aque eruperunt* <etc.>, assignat ratio-
 nem de alio effectu terremotus. Et dicit quod aliquando *factis terre-*
motibus eruperunt aque de terra. *Non* tamen *propter hoc* credendum est
 quod *aqua* sit *causa* terremotus, sicut Democritus dixit, *set* uentus inclusus
 in terra qui cum quadam uiolencia mouet aquam, *si* sit in *superficie* terre, 55
 uel etiam sub terra et subuertendo terram, facit eam apparere, *sicut* et
 fluctuatio accidit in mari propter uentos, *non* tamen *fluctus* sunt *causa*
uentorum: hac enim ratione posset aliquis etiam *terram* dicere *causam*
 terremotus, quia terra *agitata eueritur* propter terremotum, sicut *aqua*
 effunditur: *effusio enim* aque est *quedam euersio* ipsius. *Set* tamen *hec* duo, 60
 scilicet terra et aqua, in hoc se habent *ut materia*, quia *paciantur* et *non*
agunt < . . >.

368a34 Deinde cum dicit: *Vbi autem simul* <etc.>, assignat causam alterius
 effectus. Et dicit quod quando *simul cum terremotu* fiunt *fluctus* in mari,
causa est contrarietas uentorum: *hoc enim fit* quando uentus inclusus in 65
 terra qui agit *terram non* potest *repellere* totaliter *mare* quod contrafertur

37 licet PV: neque cett. 39 sic PV: om. cett. et om. MO 42 minor]
 maior MO causans sonum PV: tamen solum M: causam solum O: sonum cau-
 sans B: causans solium S 43-44 licet non PVS: neque M: neque uero O: nec-
 non B 45 inclusus V: om. cett. 47 mugire M PV: tangore O: mugiri B: mugo-
 rum S 50 pretenderent V (e^l man. corr.): precederent MOS: accederunt B: pro-
 tenderent P 52 alio V: aliquo cett. 58 etiam] in MO 59 propter V: per cett.
 61 scilicet PV: om. cett. ut materia om. MO 62 Forsitan quicquid deest in
 codicibus post agunt; cf. Arist., 368a33-34: spiritus autem / ut principium. 64 quod
 om. MO 66 repellere] impellere MO

a contrario uento, set tamen impellendo *et* coartando congregatur *multum* de aqua maris circa eundem locum. Cum ergo interior uentus uincatur ab exteriori, *tunc* necesse est quod mare erumpat super terram *et* faciat quasi diluuium. Et *hoc* dicit fuisse *factum circa Achaiam*, quia in mari flabat *auster*, infra terram *autem* erat quasi uentus borealis, set quando fuit facta tranquillitas, scilicet contraria impugnatione uentorum *et uento* boreali recurrente infra terram quasi repulso, accidit *simul et* fluctuatio *et terremotus*, *et maxime propter* hoc quod mare obsistebat *et non* dabat locum perflandi uento subterraneo qui *impetum* faciebat; *et sic* dum contra se *inuicem uim* inferent mare *et* subterraneus uentus, uentus *quidem* subterraneus *fecit terremotum*, set *ypostasis spiritus*, id est mare quod subsistebat interiorem uentum, obtinendo *fecit cataclismum*.

Deinde cum dicit: *Secundum partem autem* <etc.>, assignat rationem 368b12
 80 quorundam accidencium terremotus ex habitudine ipsius ad terram. Et primo quantum ad hoc quod terremotus accidunt secundum partem; secundum quantum ad diuersos motus quibus terra mouetur, ibi: *Quando quidem igitur* <etc.>

Dicit ergo primo quod *terremotus non fiunt* ita quod tota terra com-
 85 moueatur, set *secundum aliquam partem*, *et* frequenter usque *ad modicum locum*, set *non* est ita de uentis. Ideo autem terremotus accidit *secundum partes*, quia *exalationes que* fiunt in illo loco *et* in uicinis locis conueniunt *in unum*, *sicut et supra diximus* quod siccitates aliquando accidunt in aliqua parte, uel etiam pluuię, propter congregationem exalationum humidarum
 90 in unum locum, *et eadem ratione terremotus fiunt* in aliqua modica parte terre. Set de uentis qui flant in aere *non* est sic, quia magis exalationes causantes eos disperguntur; uenti *enim* qui causant terremotus *habent* sub *terra principium*, ita quod *omnes* faciunt impetum *ad unum* locum; *sol enim non tantum potest* infra terram quantum potest supra terram, ut scilicet
 95 possit impedire dissoluendo congregationem exalationum sub terra sicut impedit supra terram; set super exalationes suspensas, id est eleuatas, *in aere*

67 coartando] 9canda M: 9cādo O 70 circa PV: contra cett. 71 infra] in terra MO erat om. MO 72 uento boreali inv. MO 75-76 uim . . . mare] idem et lacuna 9 litt. M: inde ferent mare O 77 subsistebat BS: subiciebat M: sub sisbat O: sb'tiebat P: sistebat V 78 cataclismum] calidissimum MO 81 partem PV: partes cett. 84-85 commoueatur PV: moueatur MOS: contra moueatur B 89 parte om. MO 90 fiunt om. MOS 94 potest² P: scilicet B: om. cett.

88 *sicut . . . diximus*: Aristoteles, *Meteora* 2.4 (360b5 ff.).

96 id . . . eleuatas: cf. Alexander (ed. Smet, 197.91): "elevatas tamen exhalationes."

magis potest sol, ita ut cum acceperint principium a motu solis resoluente et eleuante eas, tunc fluant ad aliquod unum secundum differentiam locorum; et sic quandoque fit boreas, quandoque auster, quandoque autem aliquis alius uentus. Fluxus autem subterranei uenti, cum confluit ad unum ut post congregationem possit facere terremotum, non est nobis manifestus sicut fluxus uenti in aere ad unum tendentis; unde uenti apparent diffusi et ad longum spatium flantes, terremotus autem ad modicum.

368b22 Deinde cum dicit: *Quando quidem igitur <etc.>*, assignat causam de diuerso modo agitationis terre. Et dicit quod *quando fuerit multus spiritus congregatus, tunc mouet terram*, et si sit motus in *latum*, fit quasi *tremor*; aliquando *autem fit*, set *raro*, in aliquibus locis motus terre per modum pulsus, quasi aliquid *desubtus* impellat terram *sursum*. Set hoc *minus* fit, quia *non est facile* quod tantum de exalatione conueniat in unum locum ut possit *sic* terram sursum impellere: multo *enim* est maior *exalatio* que colligitur secundum *longitudinem* et *latitudinem* terre quam *que* potest colligi *a profundo*. Set *ubicunque factus fuerit* terremotus per modum pulsus, *egreditur ibi multitudo lapidum bulliencium sicut bulliencium in caldariis*, eo quod propter uehementiam motus causatur interius aliqua ignitio; et *hoc modo* dicit accidisse in subuersione quarundam terrarum.

368b32 Deinde cum dicit: *In insulis autem ponticis <etc.>*, assignat causam quorundam particularium accidencium. Et dicit quod *in insulis ponticis*, id est que sunt in profundo maris, *minus fiunt terremotus quam in insulis que sunt prope terram*, quia *multitudo maris infrigidat exalationes* ut non resoluantur ad generationem uentorum; *et iterum mare suo pondere prohibet et uim infert* terre subsidenti ne possit moueri; iterum mare *fluit* propter uentos hac et illac, *et sic non agitur* terra ei subposita a uentis;

97 acceperint PV: acceperit MOB: aere parte S 97-98 resoluente et eleuante V: resoluat in eleuando M: resoluunt in eleuando OS: resoluunt congelatione B: resoluuntur in eleuando P 98 fluant PV: fluunt M: fluent OBS 100 alius om. MO 101 possit] posset MO 107 autem] non MO 108 sursum V man. corr.: desubtus MO: om. cett. 111 colligitur BPV: tollitur MOB man. corr. S 112 ubicunque PV B: illitata M: lacuna 6 litt. O: om. S 117 quorundam om. MO 120 resoluantur PV B: resoluatur MOS 122 hac et illac PV B: huc et illuc MOS

99-103 et . . . modicum: cf. Alexander (ed. Smet, 197.94-198.00): "ad has quidem boreas, ad has autem auster, et alius aliud aliquid; fluentes autem sic non latent quemadmodum exhalationes sub terra confluentes ad idem, sed totus locus per quem fluunt habet uentum. Scismus quidem enim et siccitas et inundatio non est exhalationis fluxus; uentus autem et spiritus est ipsius talis exhalationis existentis super terram fluentem, neque fluere in parua parte terrae."

117-18 id . . . maris: cf. Alexander (ed. Smet, 198.19-20): "in insulis quae in medio pelagorum (quas dicit pontias)."

122 hac et illac: cf. Alexander (ed. Smet, 199.25): "ut hac et illac feratur."

et quia etiam mare multum locum occupat secundum altitudinem et profunditatem, exalationes maris non concluduntur in terra, set eleuantur
 125 sursum, exalationes autem terre subsidentis mare consequuntur etiam
 exalationes maris in tendendo sursum, et ita non inclusis exalationibus sub
 terra non fiunt ibi terremotus. Set insule que sunt prope terram sunt quasi
 partes terre, unde eadem ratio est et de illis et de terra, ut in eis possit
 accidere terremotus: mare enim quod est intermedium propter suam
 130 paruitatem nullam habet uirtutem ad impediendum terremotum. Set insulas
 que sunt infra mare multum non contingit moueri nisi totum mare moueretur
 quod eas circumstat, et hoc est difficile propter causas predictas.

Vltimo recapitulat quod dictum est; et est manifestum in littera.

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131 moueretur *PVS*: mouetur (*mo^r*) *M*: moueatur *OB* 132 quod eas circumstat
BV: in eis cum circumstat *M*: circumstans eas *O*: in eas circumstans *P*: in eas circum-
 stat *S*