

# The Practical Prognosticator: On the use and abuse of Ptolemy's 'Geography'

Leif Isaksen  
University of Southampton

Digital Classicist Seminar, Berlin, 5 February 2013

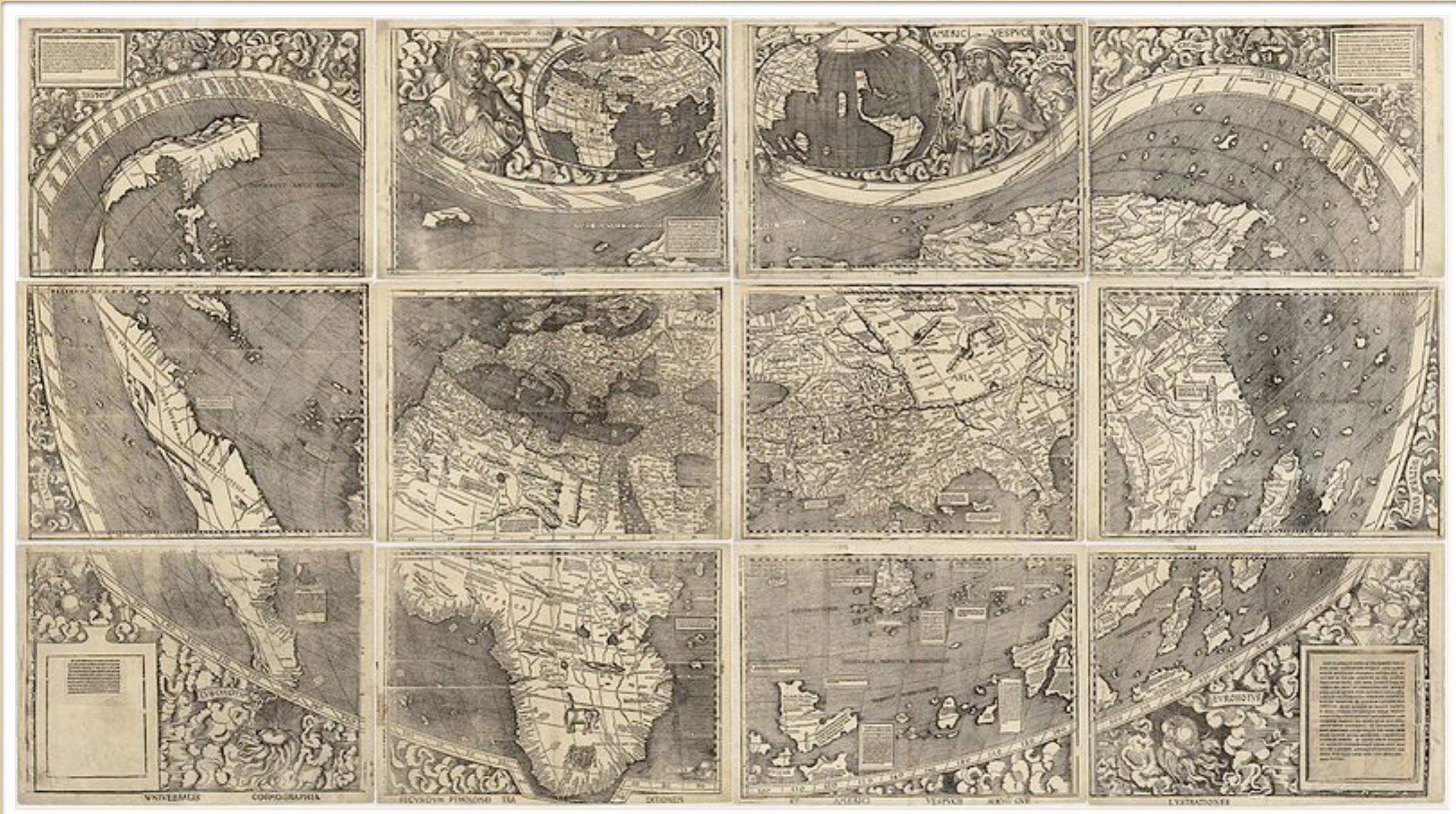
Or,  
New Perspectives on the  
Pre-History of the Map

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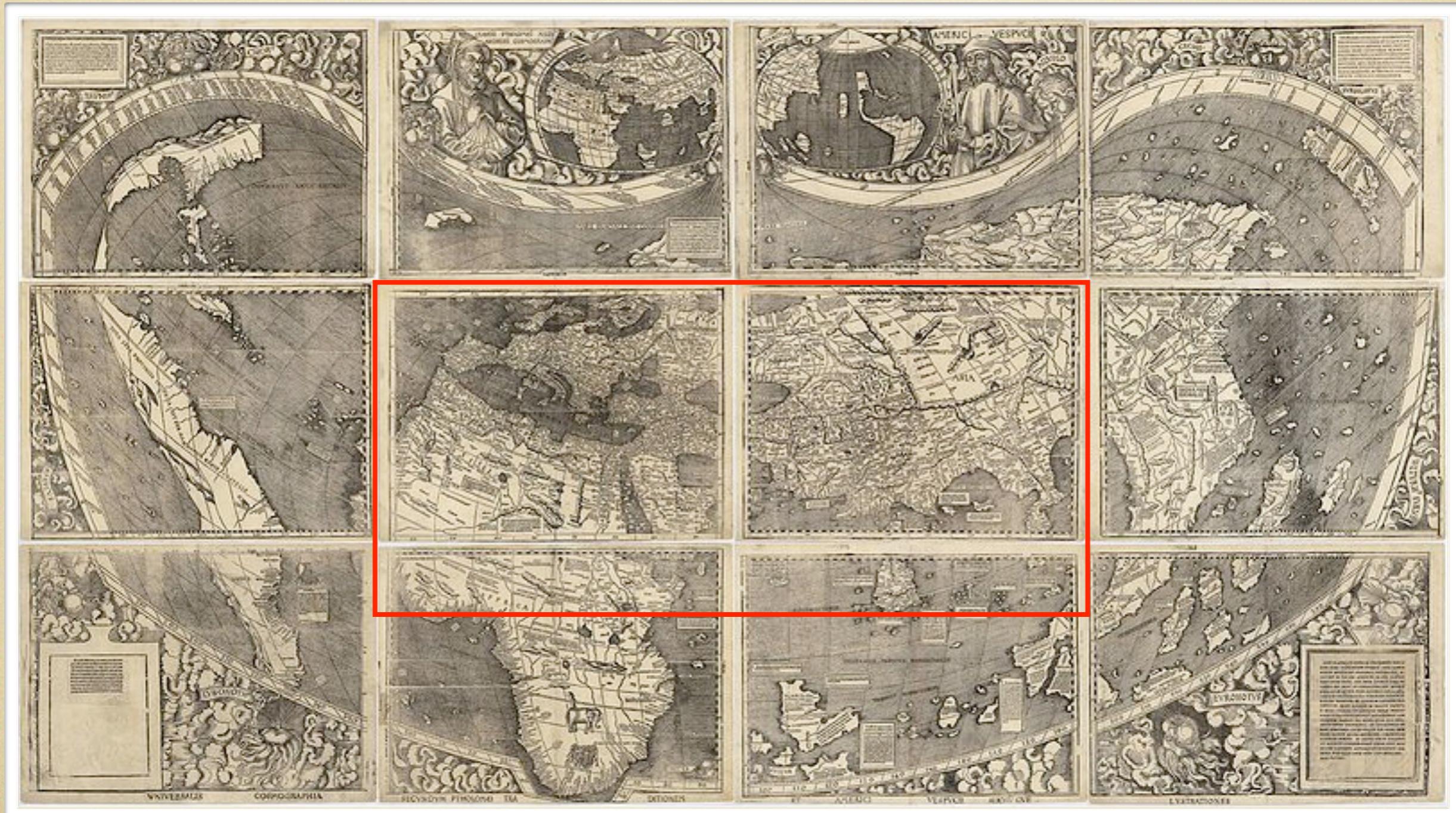
*"The Universal Cosmography according to the Tradition of  
Ptolemy and the Voyages of Amerigo Vespucci and others"*

Waldseemüller, M. (1507)



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*"The Universal Cosmography according to the Tradition of  
Ptolemy and the Voyages of Amerigo Vespucci and others"*

# Marinos

# Alexandros

# Ptolemy, C. Waldseemüller, M. (150~~X~~)



# Claudius Ptolemy

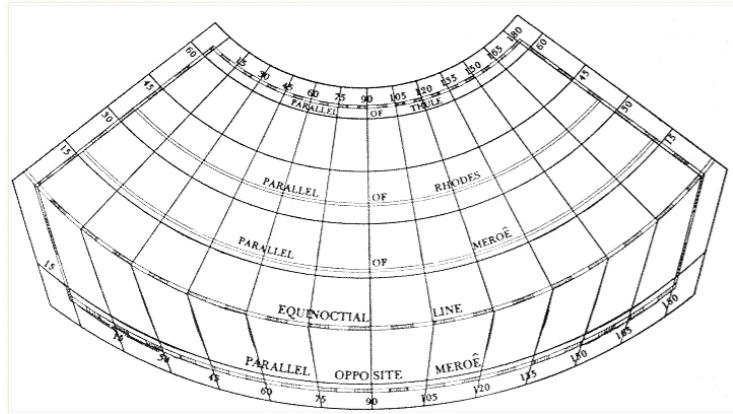


# The “Geōgraphikē Hyphēgēsis”

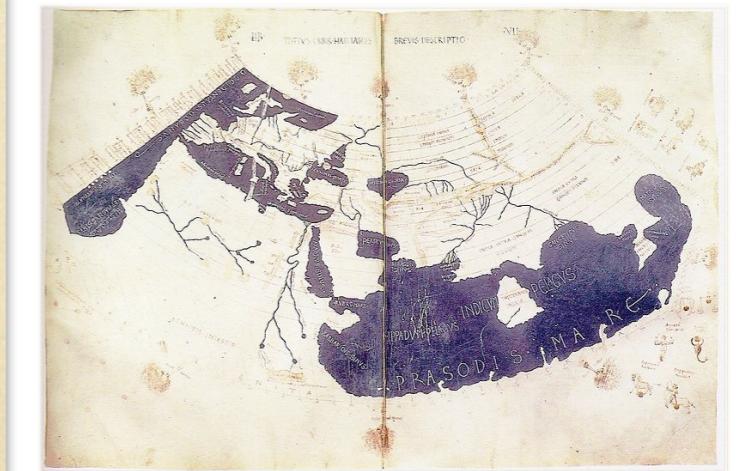
Book 1  
Theory

Books 2-7.4  
Catalogue

Books 7.4-8  
Theory,  
Captions  
[& Maps?]



MESOPOTAMIA.	
Απόστασις . . . . .	οδ 2γ λδ γ'
§. 10. ωρ ḥ τὸν Βασιλείου ποταμοῦ πρὸς τὸν	
ρεὸν συμβολὴν, ἐγγὺς [ἥ] Μέσην χώρα .	
ἐν δὲ τῇ ἀλλῃ Μίσην κύρῳ πόλεις αἵδε-	
Βιθιάς . . . . .	οδ γ' λδ γ'
Ἐδεσσα . . . . .	οδ ε' λδ ε'
Ομβρωτα . . . . .	ογ λδ ε'
Αμμαῖα . . . . .	ογ γ' λδ εγ'
Σοῦμα . . . . .	ογ ε' λδ γ'
Πλωτα . . . . .	ογ ε' λδ ε'
Ολίβερα (ἢ Οξεῖα) . . . . .	ογ ε' λδ ε'
Σαράρφα (ἢ Σαρόφαν) . . . . .	οδ λη δ'
Σακανή (ἢ Σακανῆ) . . . . .	οδ λδ εδ'
11. Αρέσπα (ἢ Άρομα) . . . . .	οδ δ' λδ γ'
Γιζέαμα . . . . .	οδ γ' λδ δ'
Σίννα . . . . .	οδ ε' λδ ε'
Μαρμούνια . . . . .	οδ εδ λδ γρ'
Νιτινής . . . . .	οε ε' λδ ε'
Βιθιγα . . . . .	οε ε' λδ γ'
Βάζαλα ἢ Βάσαλα . . . . .	οε γ' λδ ε'
Ανάδηλι . . . . .	ογ λδ γ'
Βάλλαθα . . . . .	ογ εδ λδ ε'
12. (*) Κάρβανι . . . . .	ογ δ' λδ ε'
Τιρτένα . . . . .	ογ εγ λδ δ'
Θεργονοβίς . . . . .	οδ γο λδ ε'
Ορδαγα (ἢ Οργαδα) . . . . .	οδ γο λδ ε'
Ἐληῖα . . . . .	οδ γ' λδ εδ'
Ζάμα . . . . .	οε ε' λδ γ'
Σίννα . . . . .	οε γ' λδ γ'
Σύριθασθα (ἢ Γιάρθασθα) . . . . .	οε γ' λδ ε'



# Chorography vs. Geography (GH 1.1)

Chorography	Geography
"It should be the task of chorography to present together even the most <b>minute features</b> "	"Geography should present the countries themselves along with their <b>grosser features</b> "
"Chorography <b>requires landscape drawing</b> and no one but a man skilled in drawing would do chorography."	"Geography does not require [landscape drawing] at all, since it enables one to show the positions and general configurations [of features] purely by means of <b>lines and labels</b> ."
"Chorography has <b>no need of mathematical method.</b> "	"[ <b>mathematical method</b> ] takes absolute precedence."
"Chorography deals above all with the <b>qualities rather than the quantities</b> of the things it sets down; it attends everywhere to likeness, and not so much to proportional placements"	"Geography...deals with the <b>quantities rather than the qualities</b> , since it gives consideration to the proportionality of distances for all things, but to likeness only as far as the coarser outlines [of the features], and only with respect to mere shape."
"[Chorography] sets out the <b>individual localities</b> ...(for example, harbours, towns, districts, branches of principle rivers, and so on)"	"While [Geography shows] <b>the known world as a single and continuous entity</b> , it's nature and how it is situated [including] gulfs, great cities...and the more noteworthy things of each kind"

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# Marinos of Tyre

“Marinos of Tyre seems to be the latest [author] in our time to have undertaken the subject [of Geography], and he has done it with absolute diligence.” (GH 1.6)

“We have thus taken on a twofold task: **first** to preserve [Marinos’] opinions [as expressed] through the whole of his compilation, except for those things that need some correction; **second** to see to it that *the things he did not make clear* will be inscribed as they should be, so far as is possible, using the researches of those who have visited the places, or their positions [as recorded] in *the more accurate maps*.”  
(GH 1.19)

What did Marinos ‘not make clear’?

What are ‘the more accurate maps’?

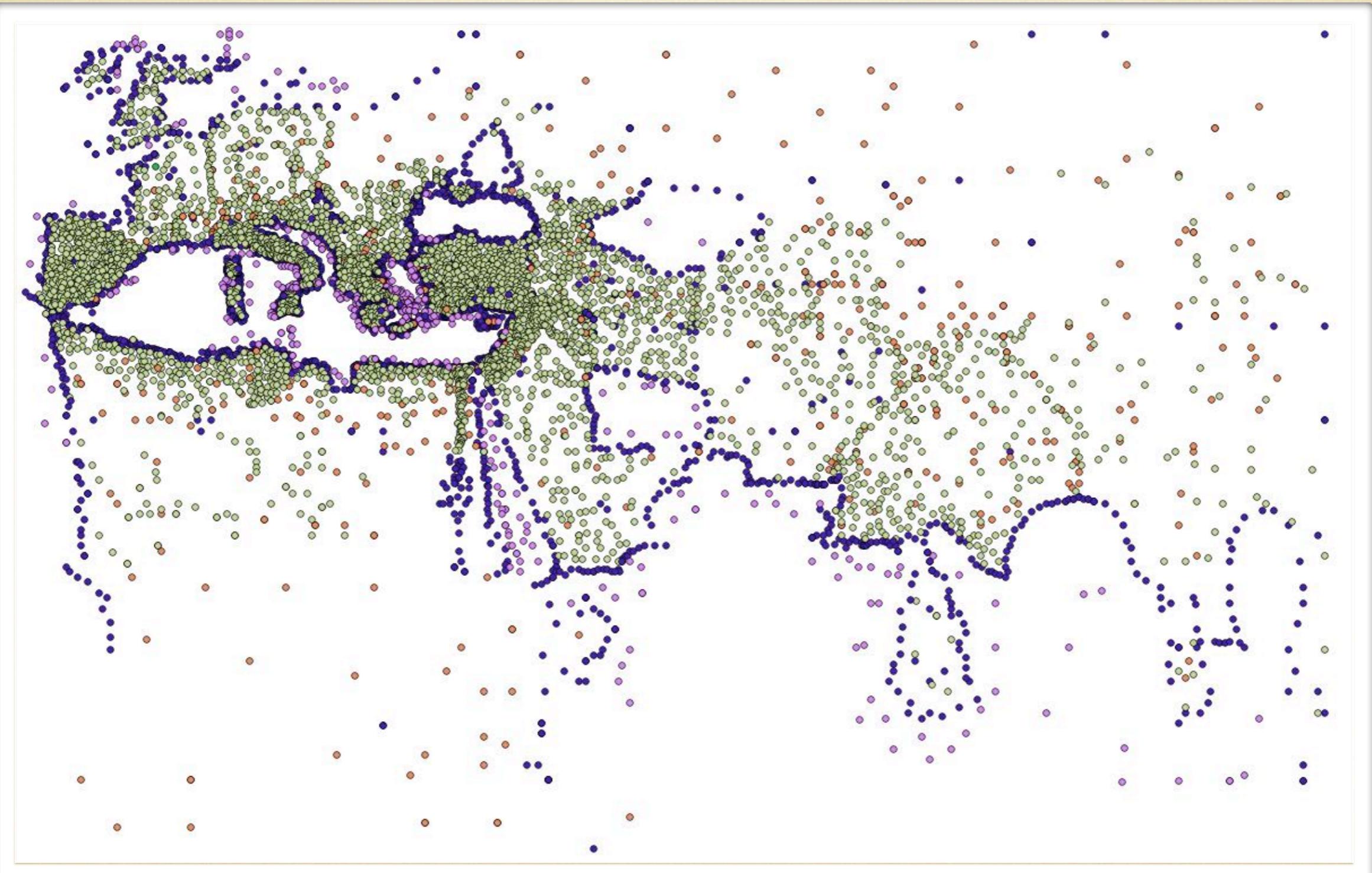
# The Missing Map

“When one is putting the cities in their positions, one might have an easier time labelling those that are **on the coast, since in general some indication of position is noted** for them, but this is **not so for the inland ones**, since their relative positions with respect to each other or with respect to the cities on the coast are not indicated, with few exceptions - and in these instances sometimes only the longitude is defined, sometimes only the latitude”  
(GH 1.18)

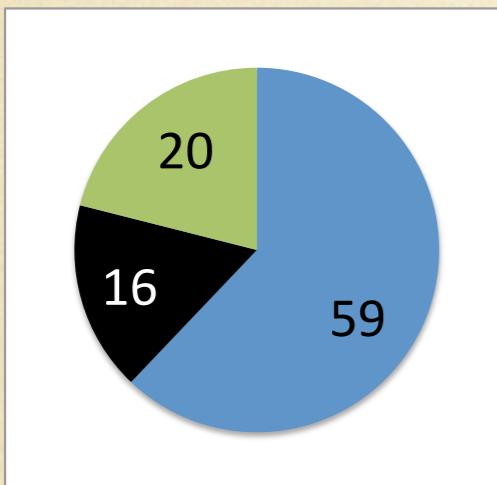


“Marinos did not have time to draw a map” (GH 1.17)

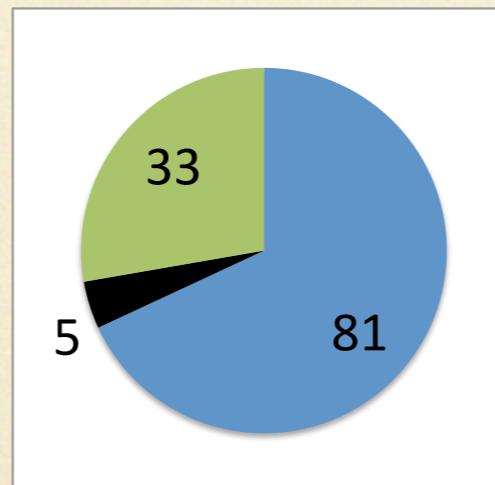
# Boundaries, Mountains, Interiors & Islands



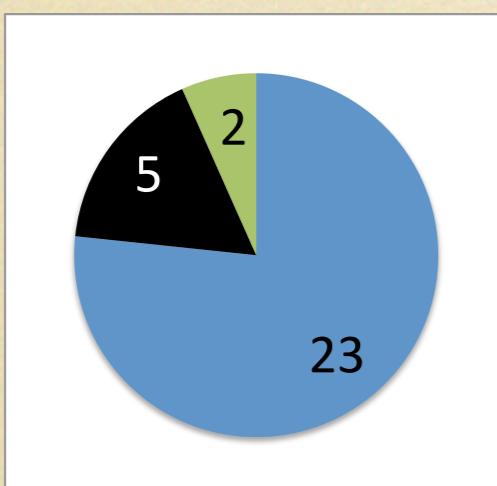
# Cities of the Interior



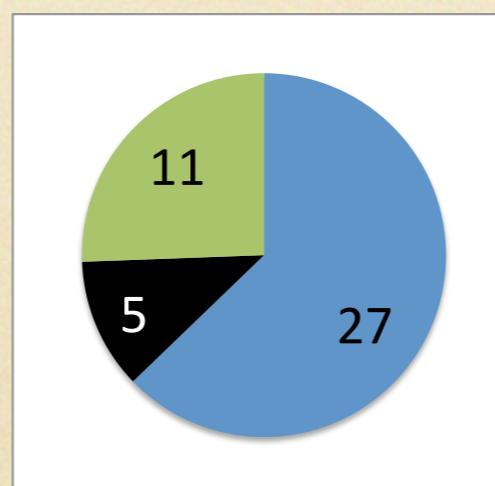
Eratosthenes



Pliny (NH 6.39)



Hipparchus



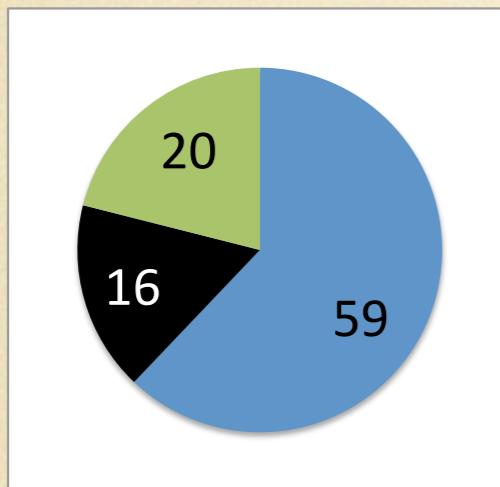
Marinos

Coastal

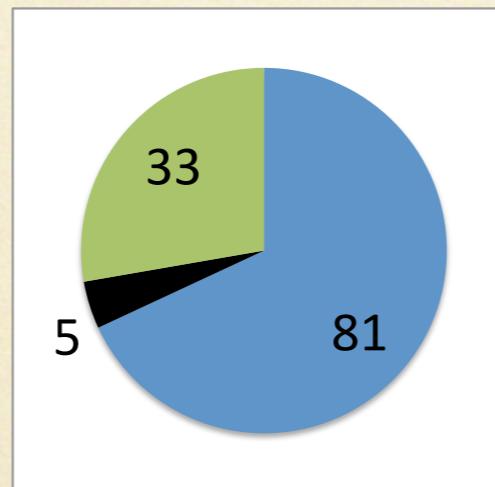
Boundary

Interior

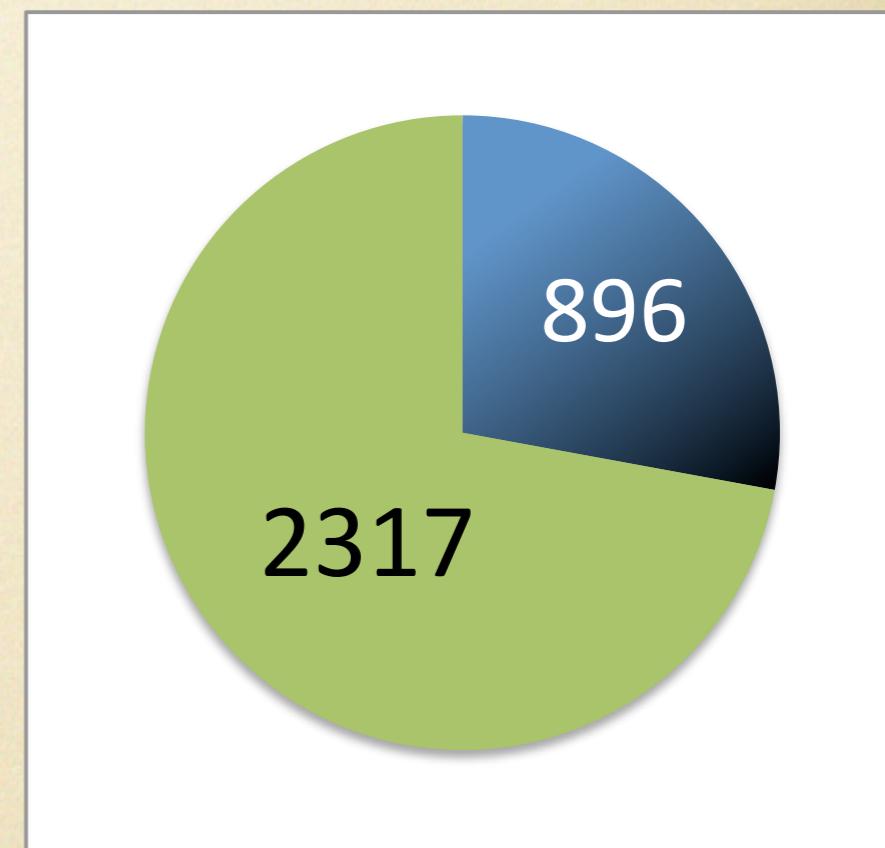
# Cities of the Interior



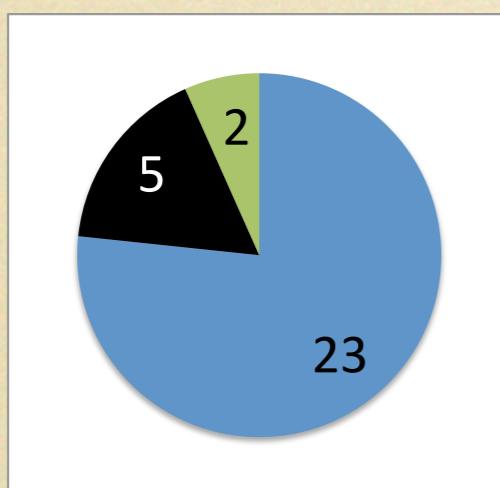
Eratosthenes



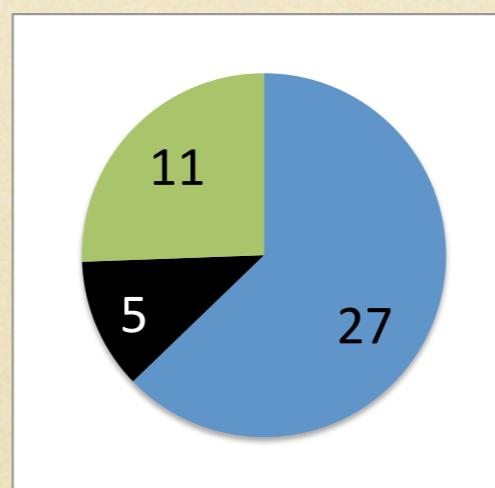
Pliny (NH 6.39)



Ptolemy



Hipparchus



Marinos

Coastal

Boundary

Interior

# Geographic Maps

**“A world map requires a large globe, so that the aforementioned section of it containing the *oikumene*, being such a small fraction of it, will be sufficient to hold the suitable parts of the *oikumene* with clarity and give an appropriate display to the spectators.**

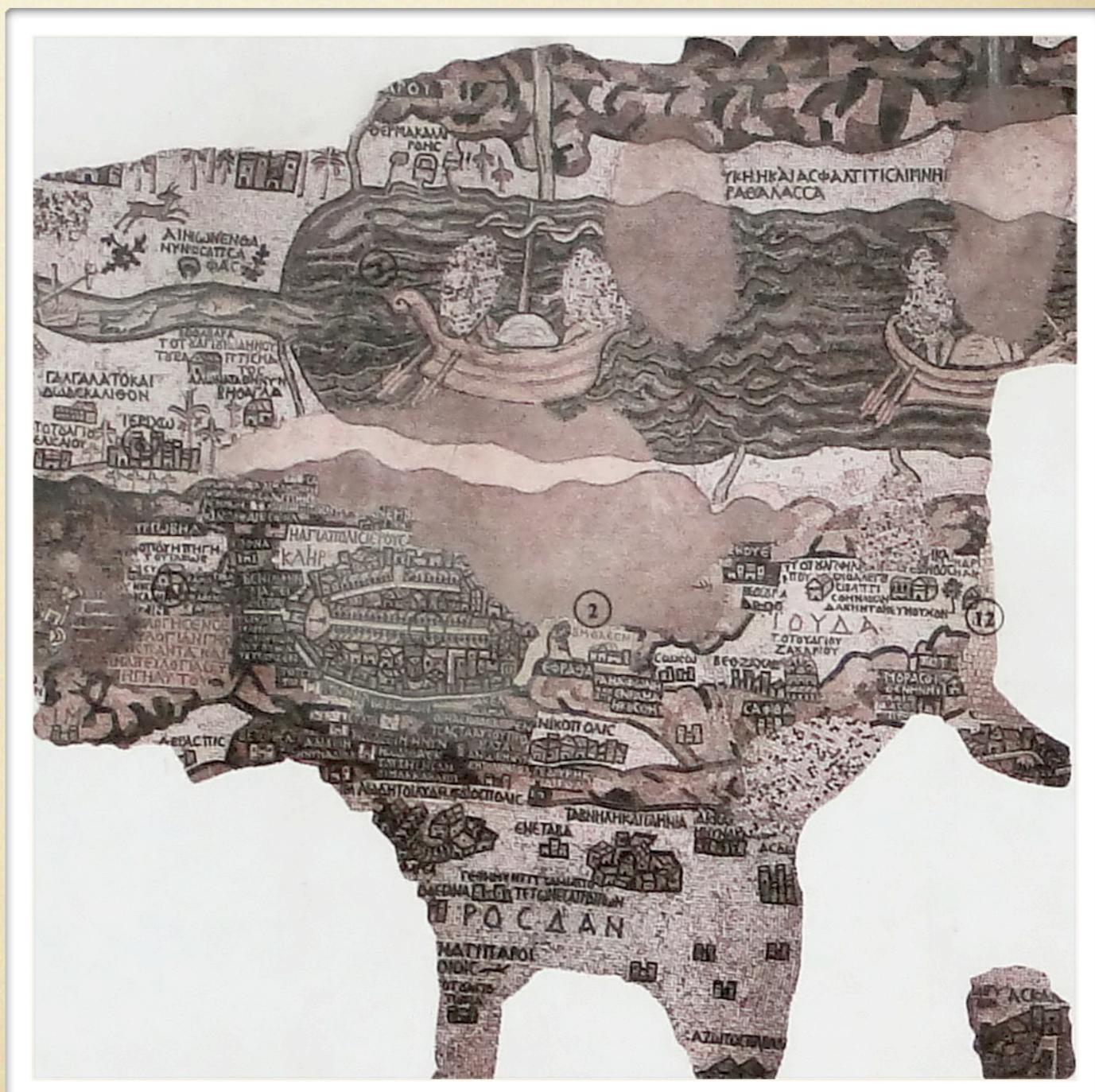
**Now if one can fashion a globe this large it is better to do it in this way, and let it not have a diameter less than 10 feet.** But if one cannot make a globe of this size or not much smaller. one ought to draw the map **on a planar surface of at least 7 feet”** (Strabo, Geo. 2.5.10)

# Geographic Maps



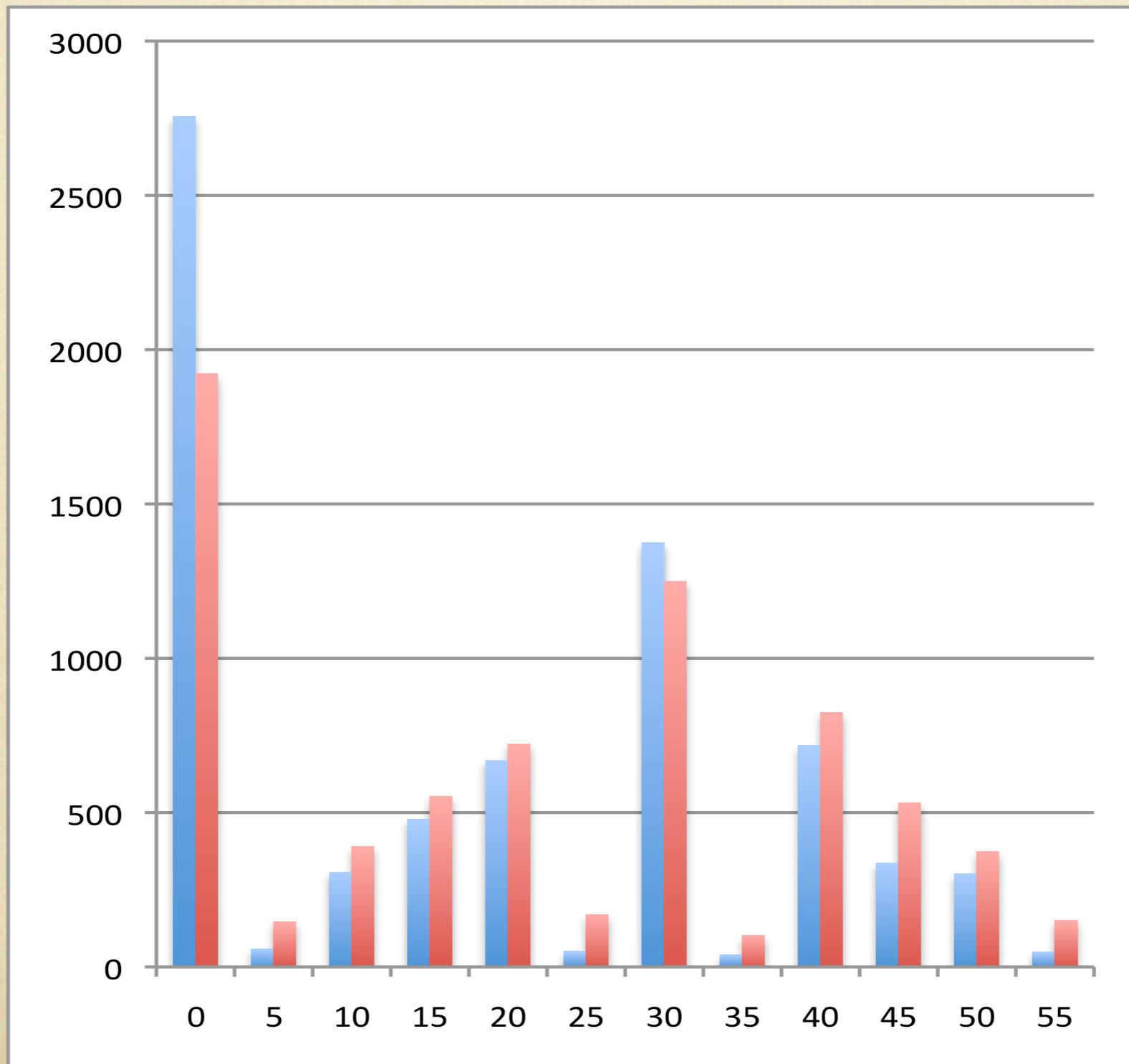
# Chorography Revisited

“The coordinates of the places that have not been so travelled, because of the sparseness and uncertainty of the research, have been estimated according to their proximity to the more trustworthily determined positions or **relative configurations**, so that none of the places that are included to make the *oikumene* complete will lack a defined position” (GH 2.1)



## Madaba Mosaic (*mid-6th C.*)

# ‘Precision’

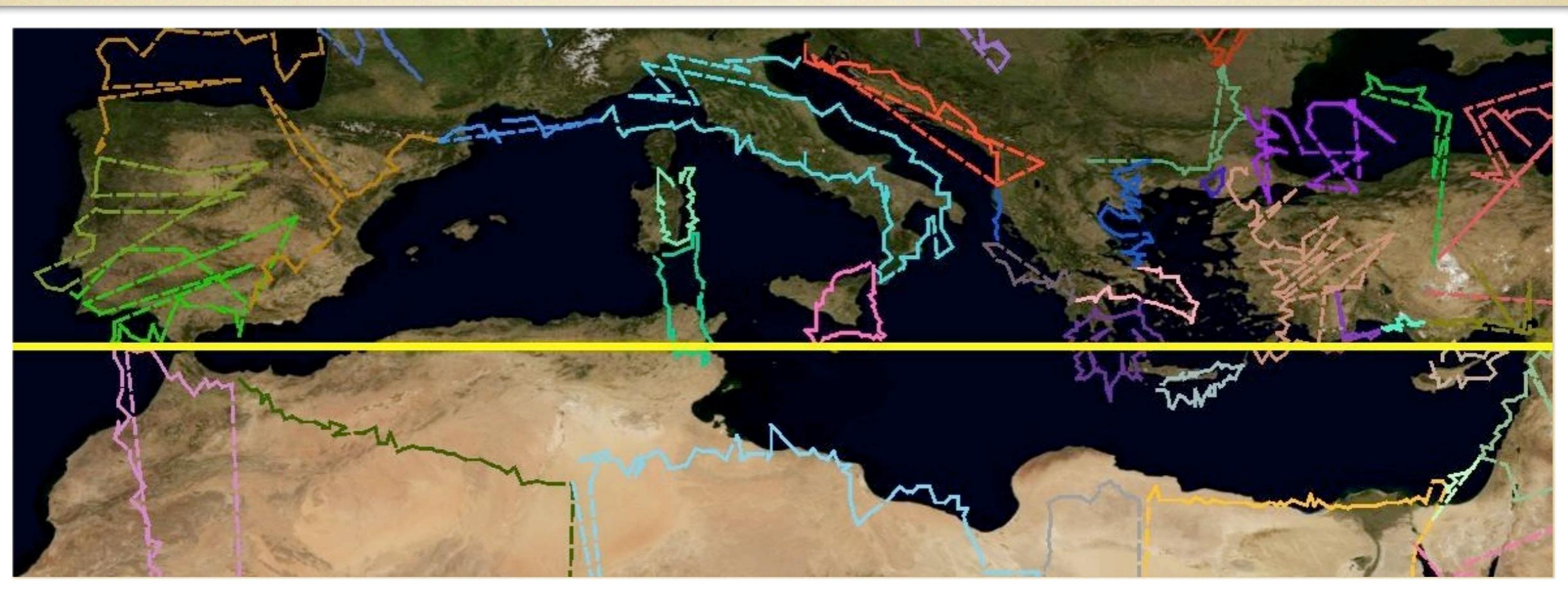


lat  
long

# ‘Precision’ Distribution



# The Diaphragm



# The Diaphragm

Sacred Cape  
 $38 \frac{1}{4}, 2 \frac{1}{2}$

Baetis Mouth (W)  
 $37 \frac{1}{6}, 5 \frac{1}{12}$

Pillars of Hercules  
 $36 \frac{1}{4}, 7 \frac{1}{2}$

Caralis  
 $36, 32 \frac{1}{2}$

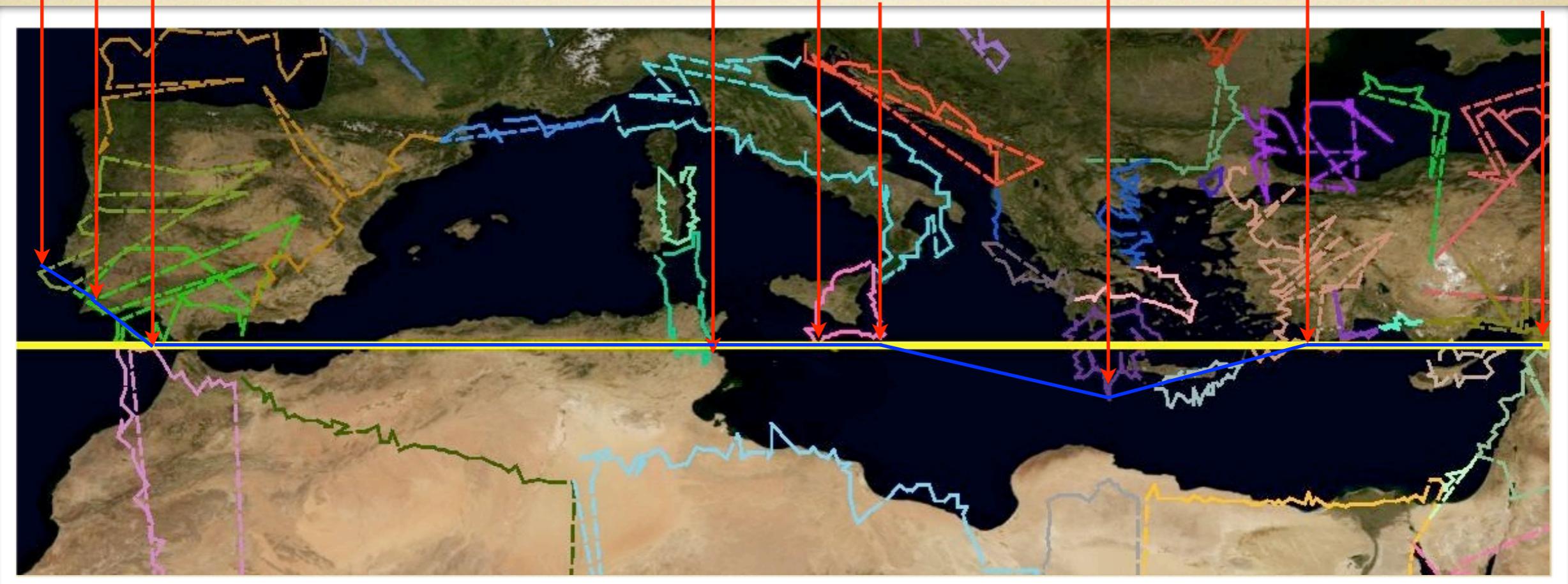
Lilybaeum  
 $36, 37$

Pachynus  
 $36 \frac{1}{3}, 40$

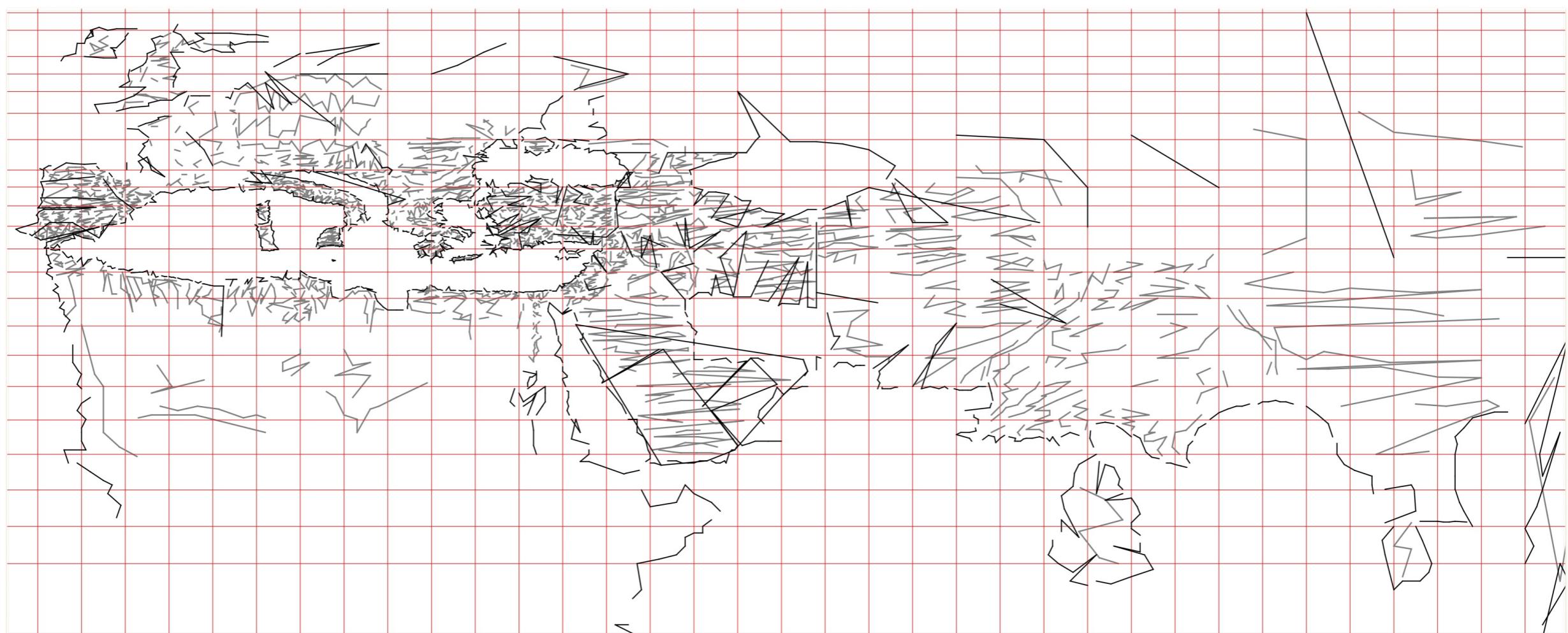
Tainaros  
 $34 \frac{3}{4}, 50$

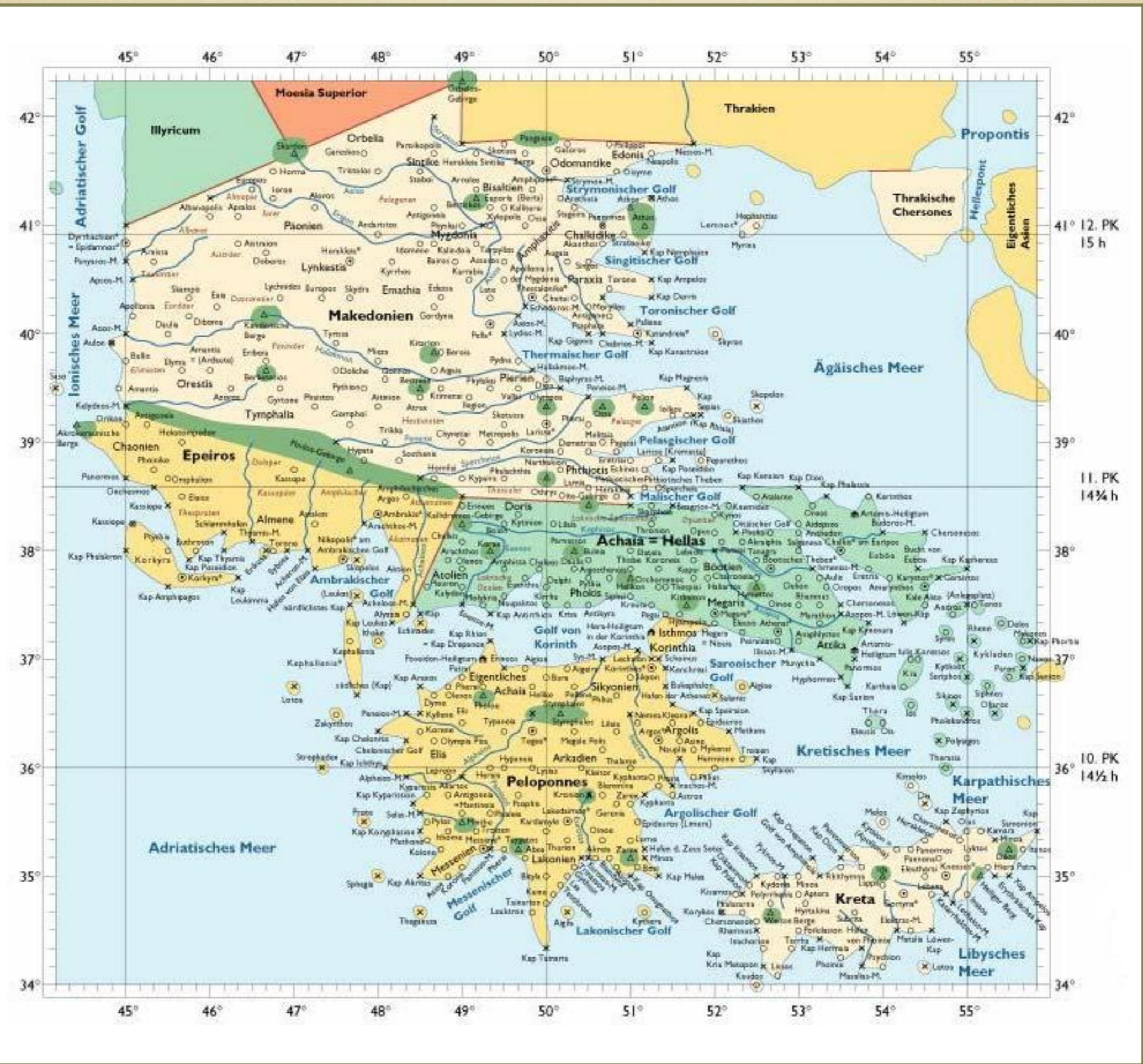
Rhodes  
 $36, 58 \frac{2}{3}$

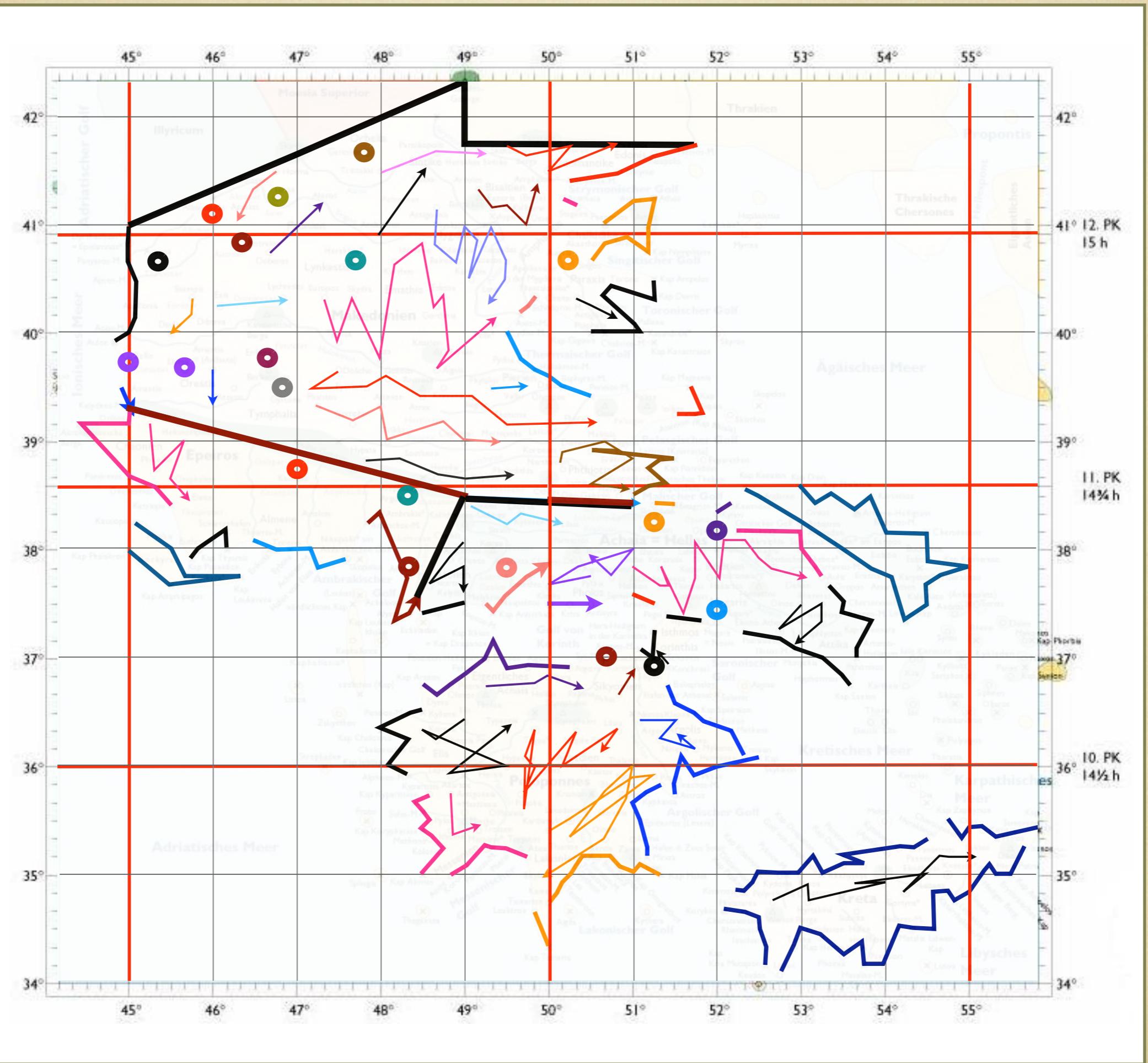
Issos  
 $36 \frac{1}{4}, 69 \frac{1}{3}$

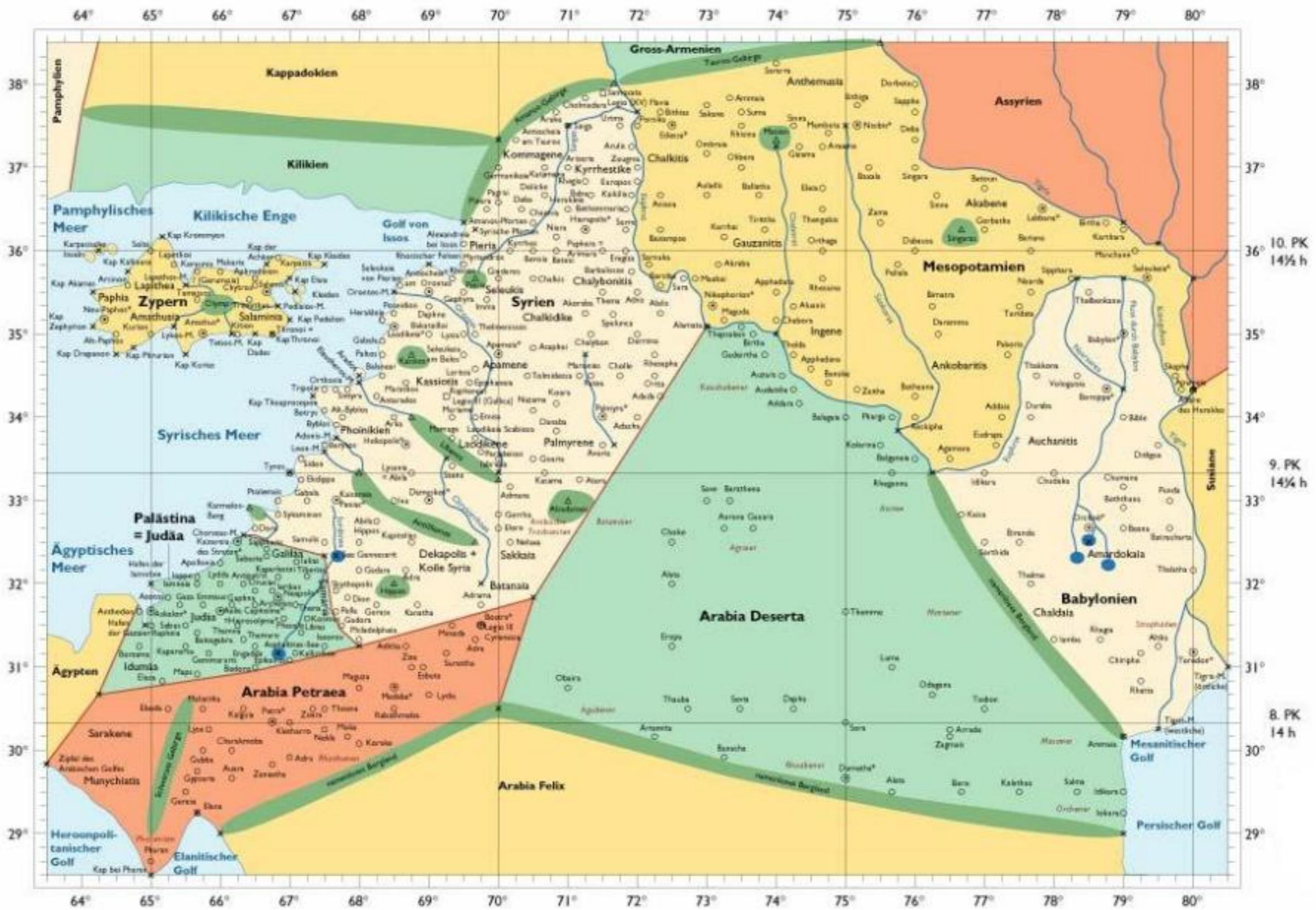


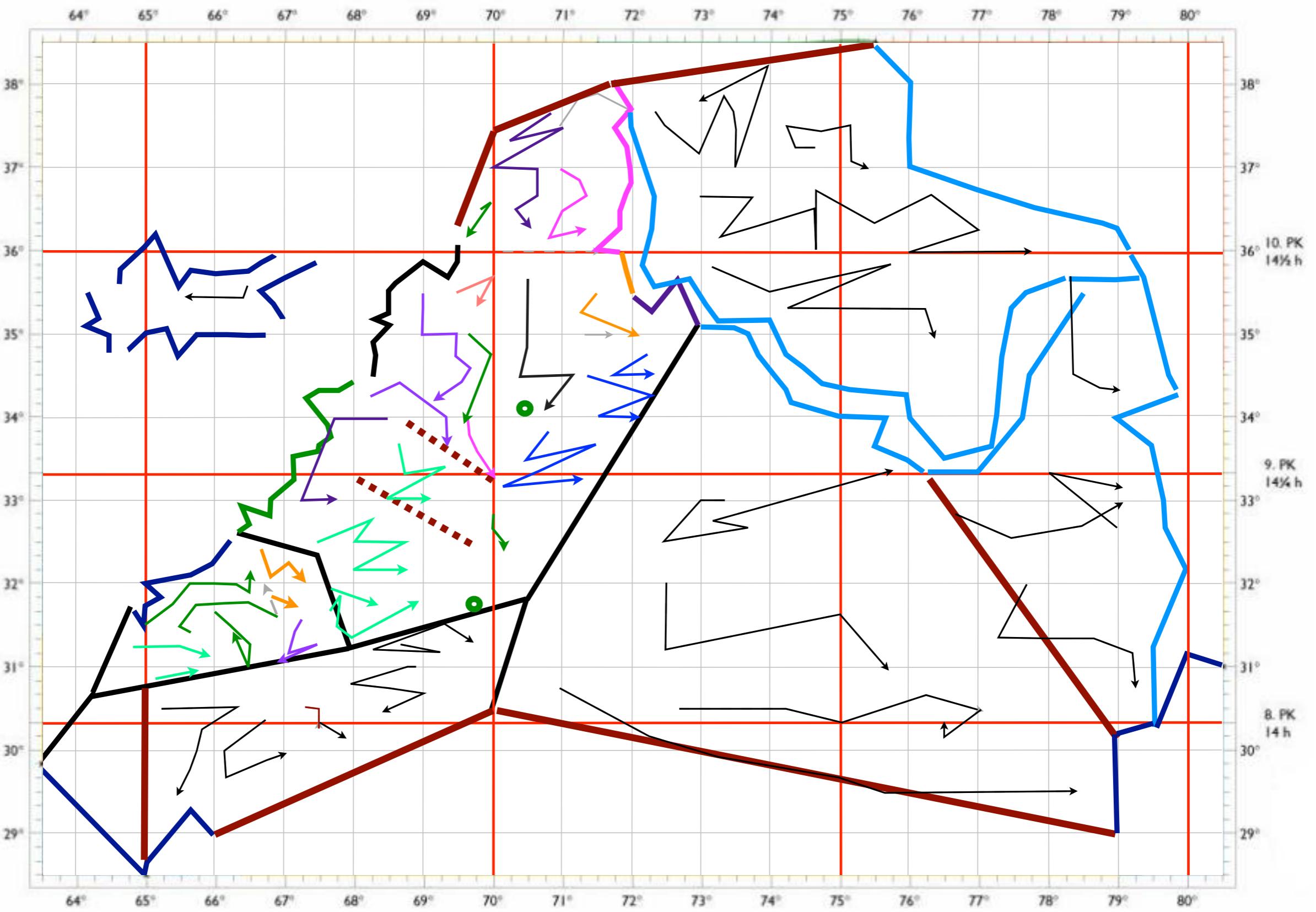
# Temporal Coordinates



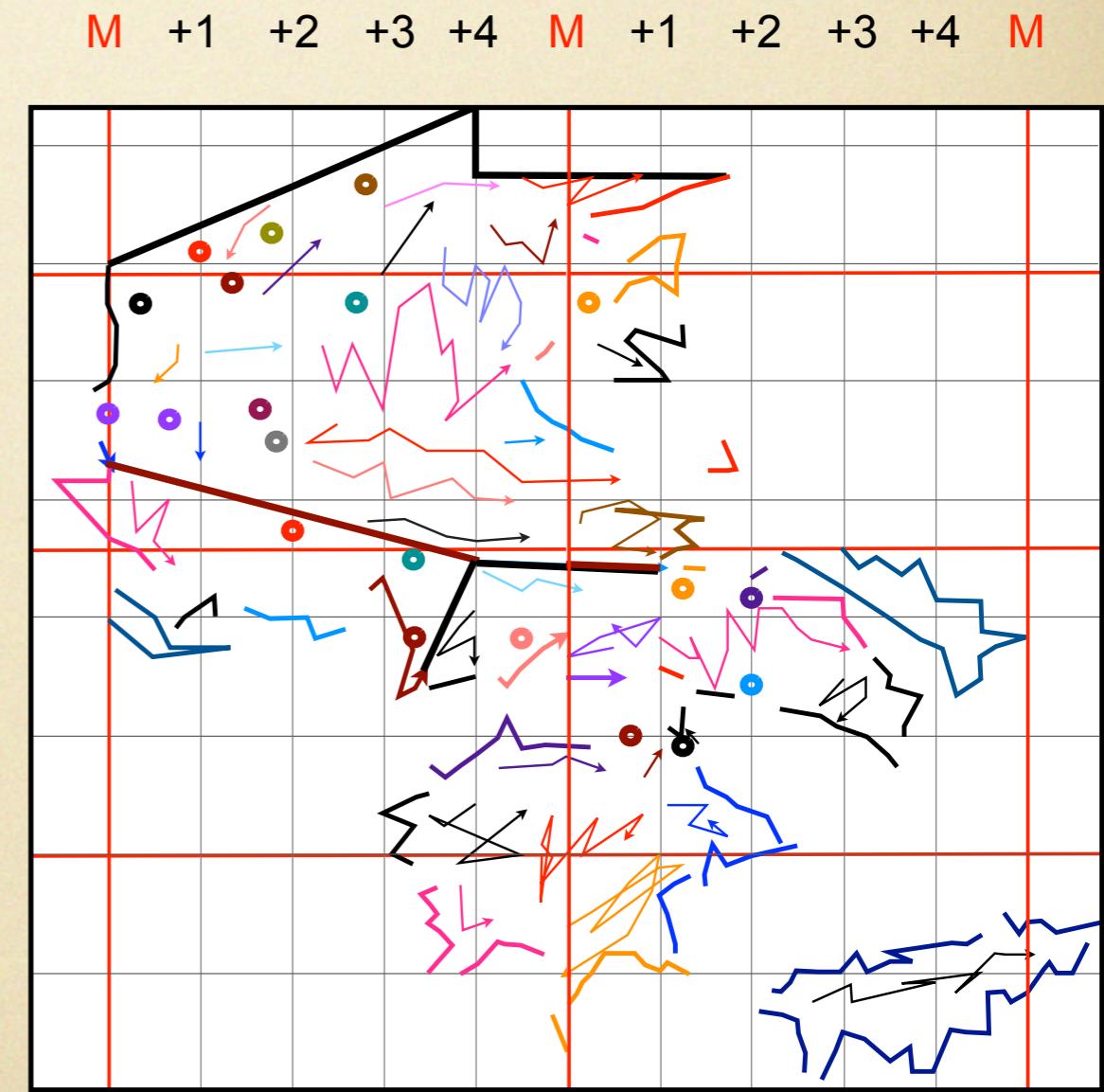
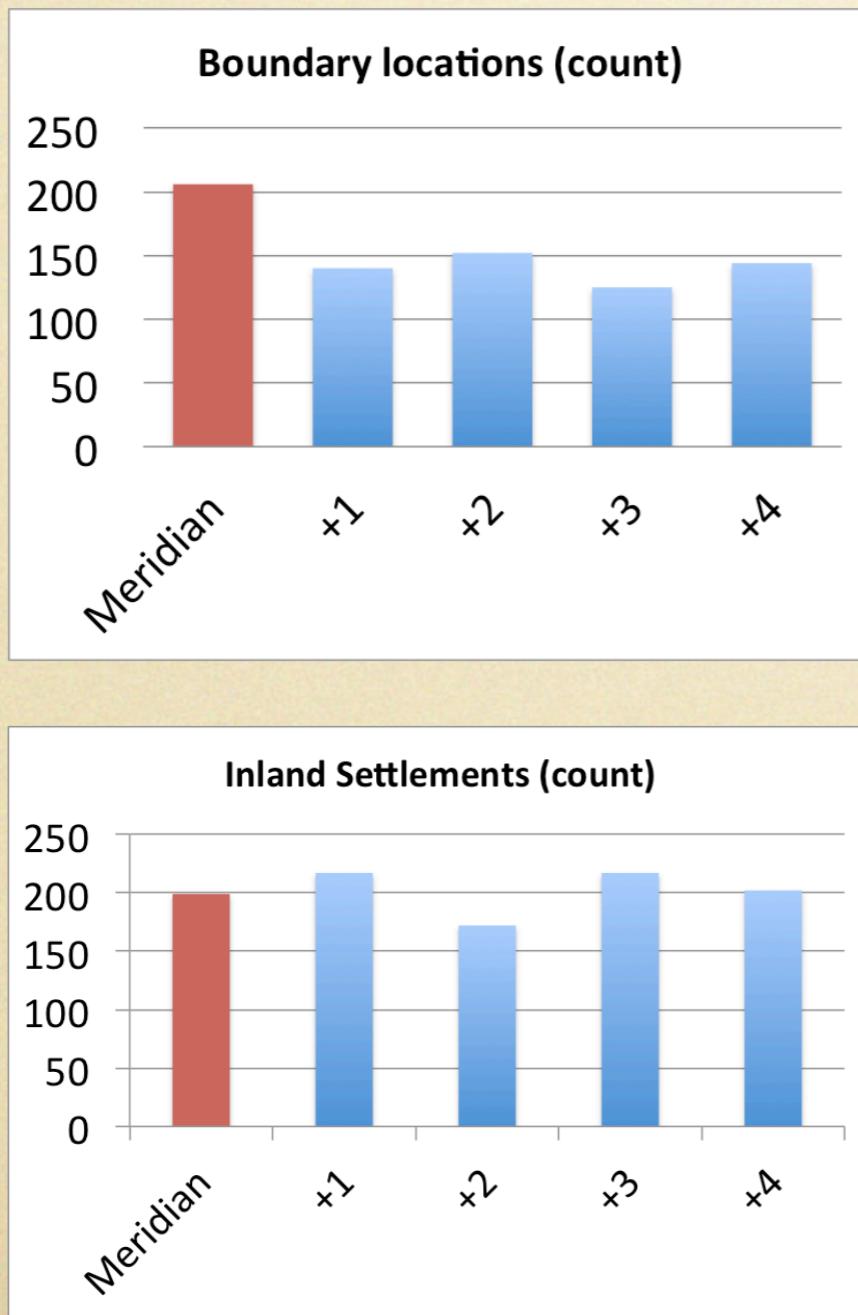






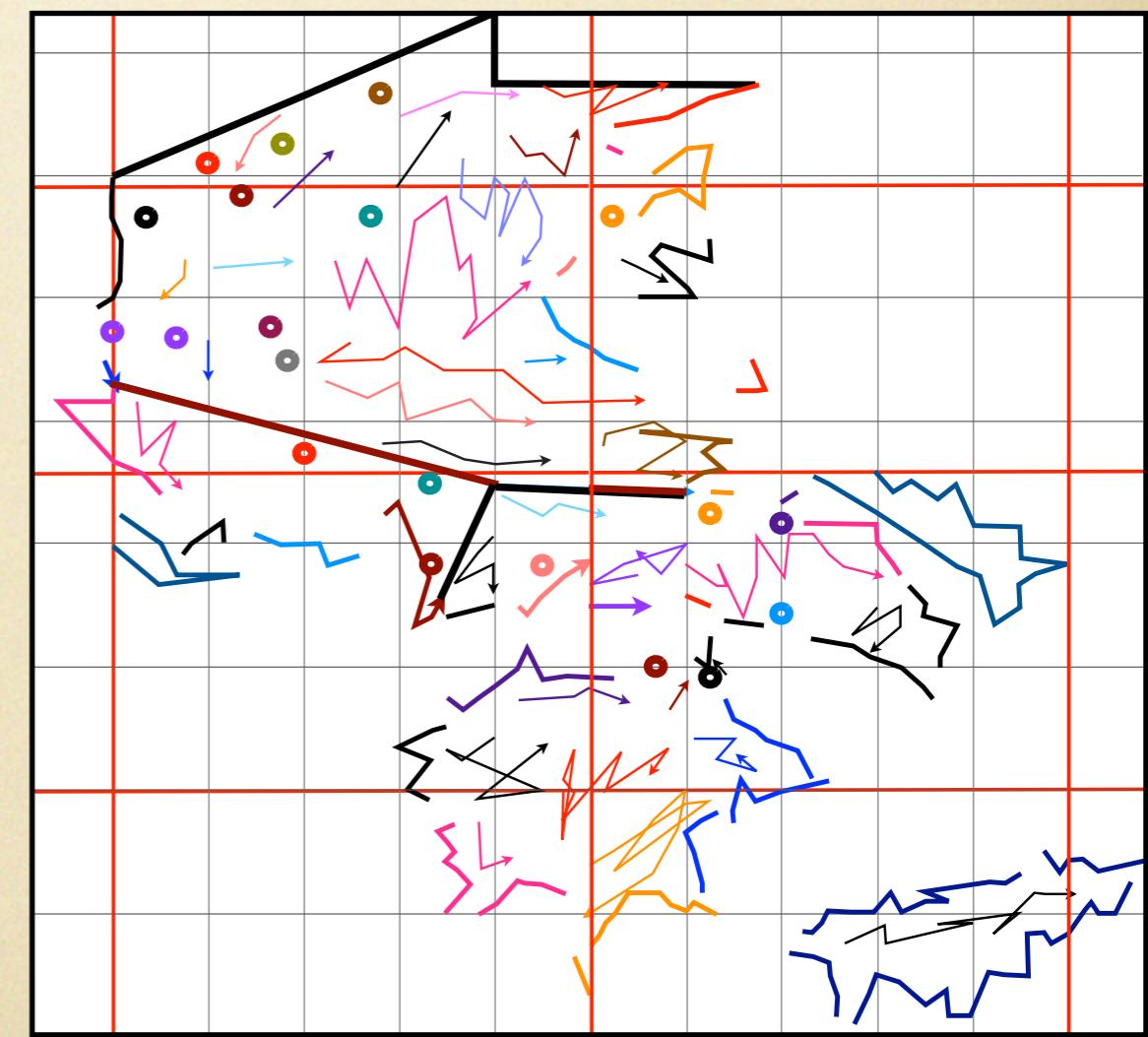
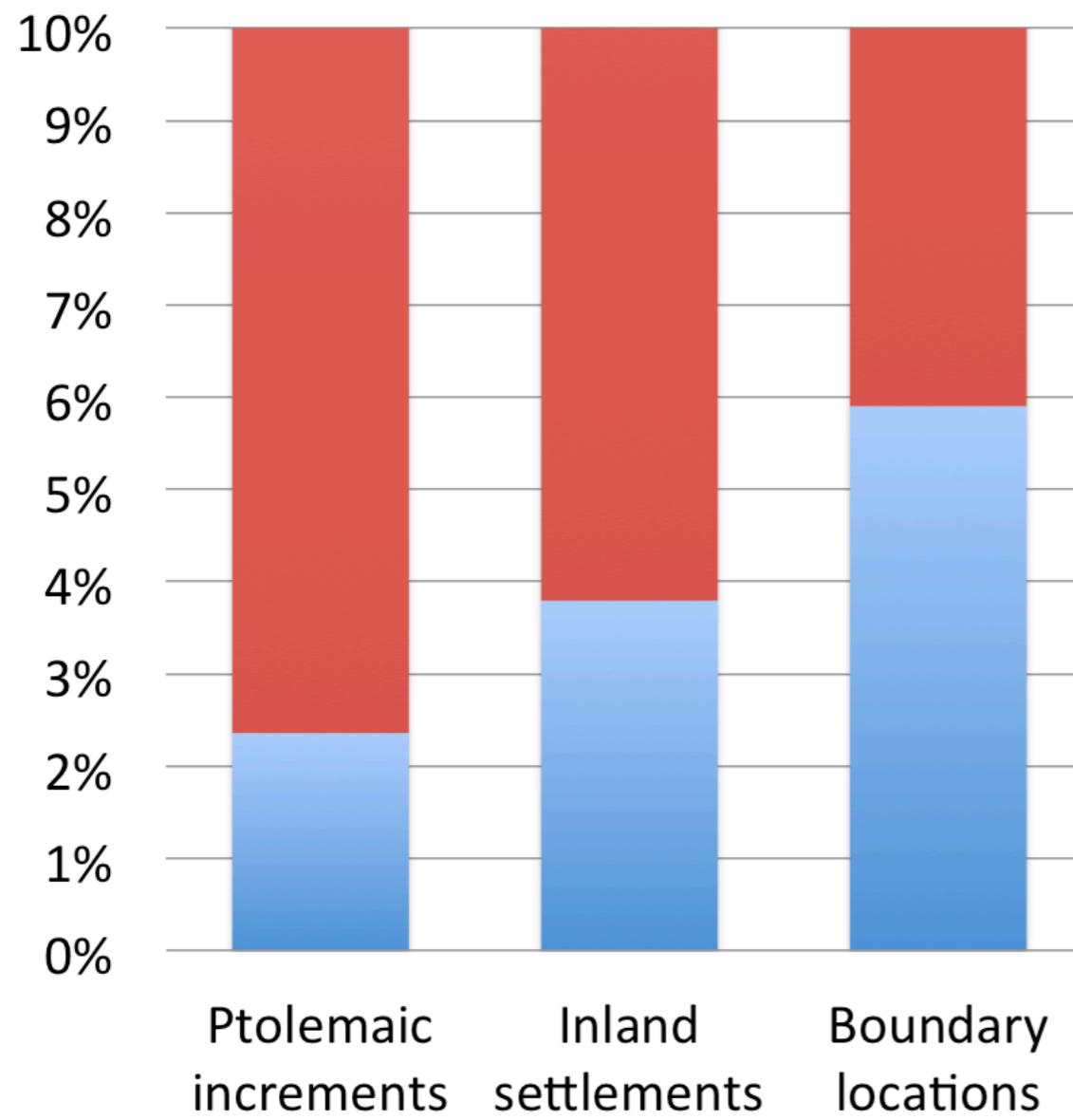


# Boundaries & Temporal

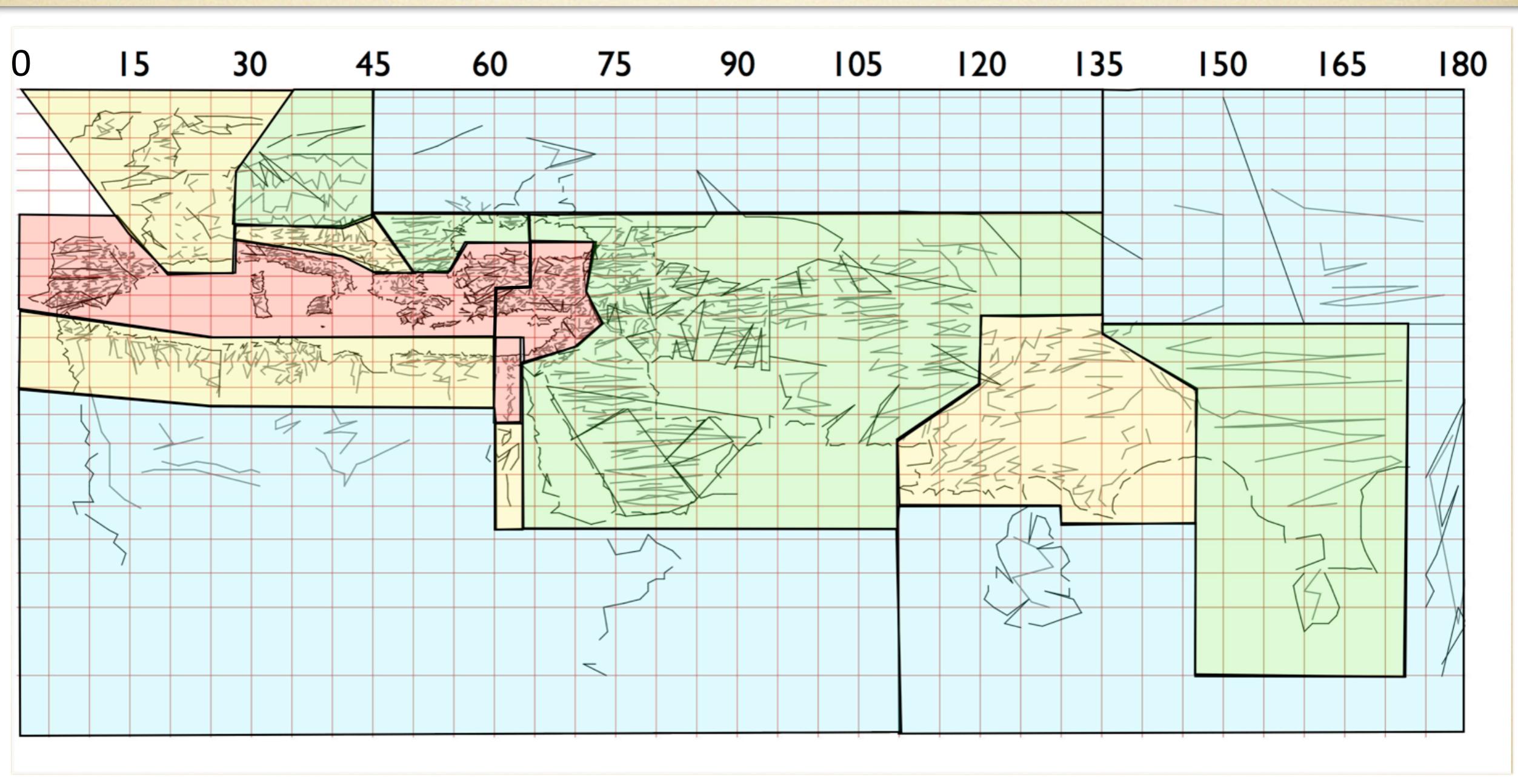


# Boundaries & Temporal

Ptolemaic locations on solar parallels

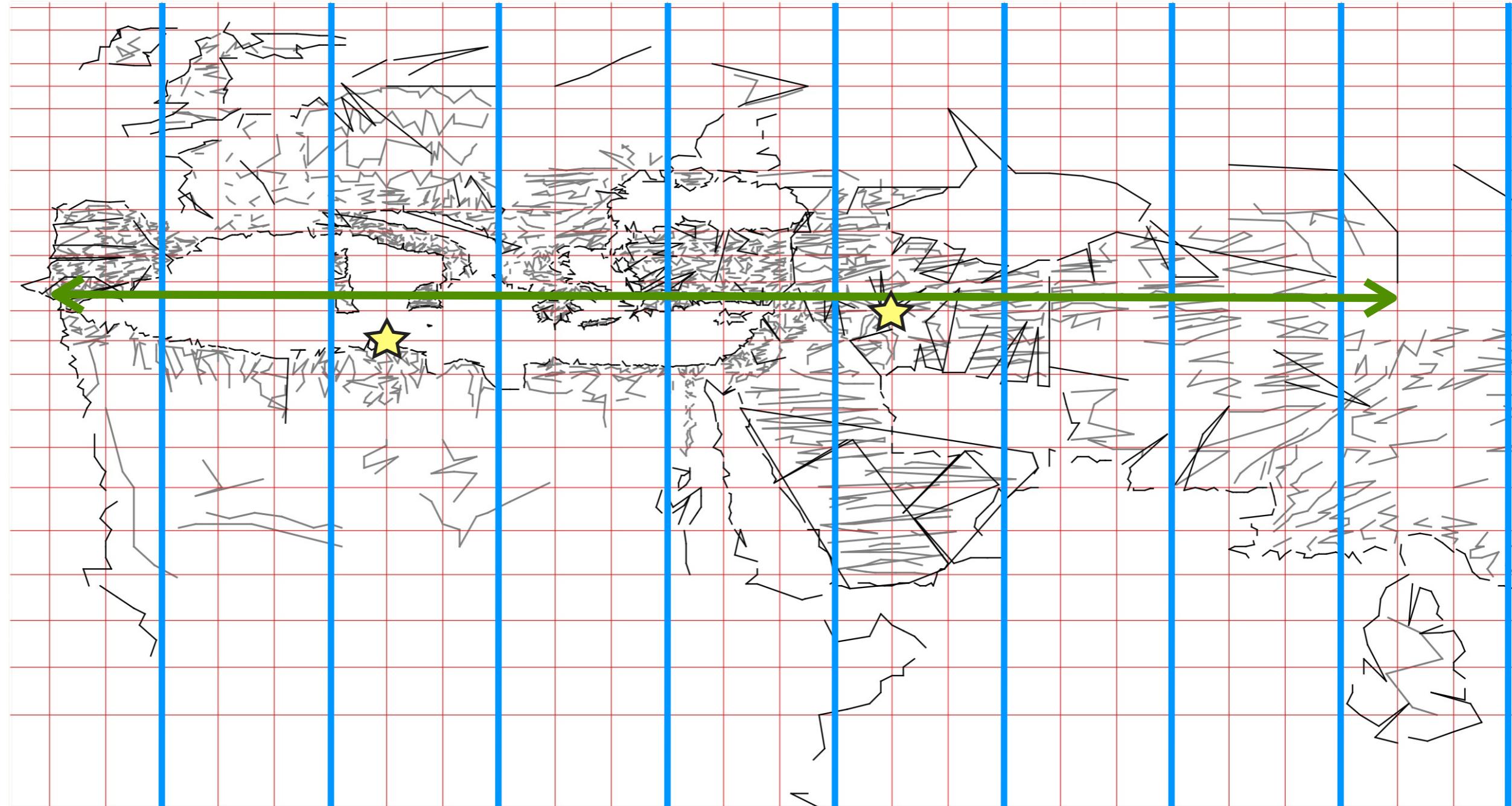


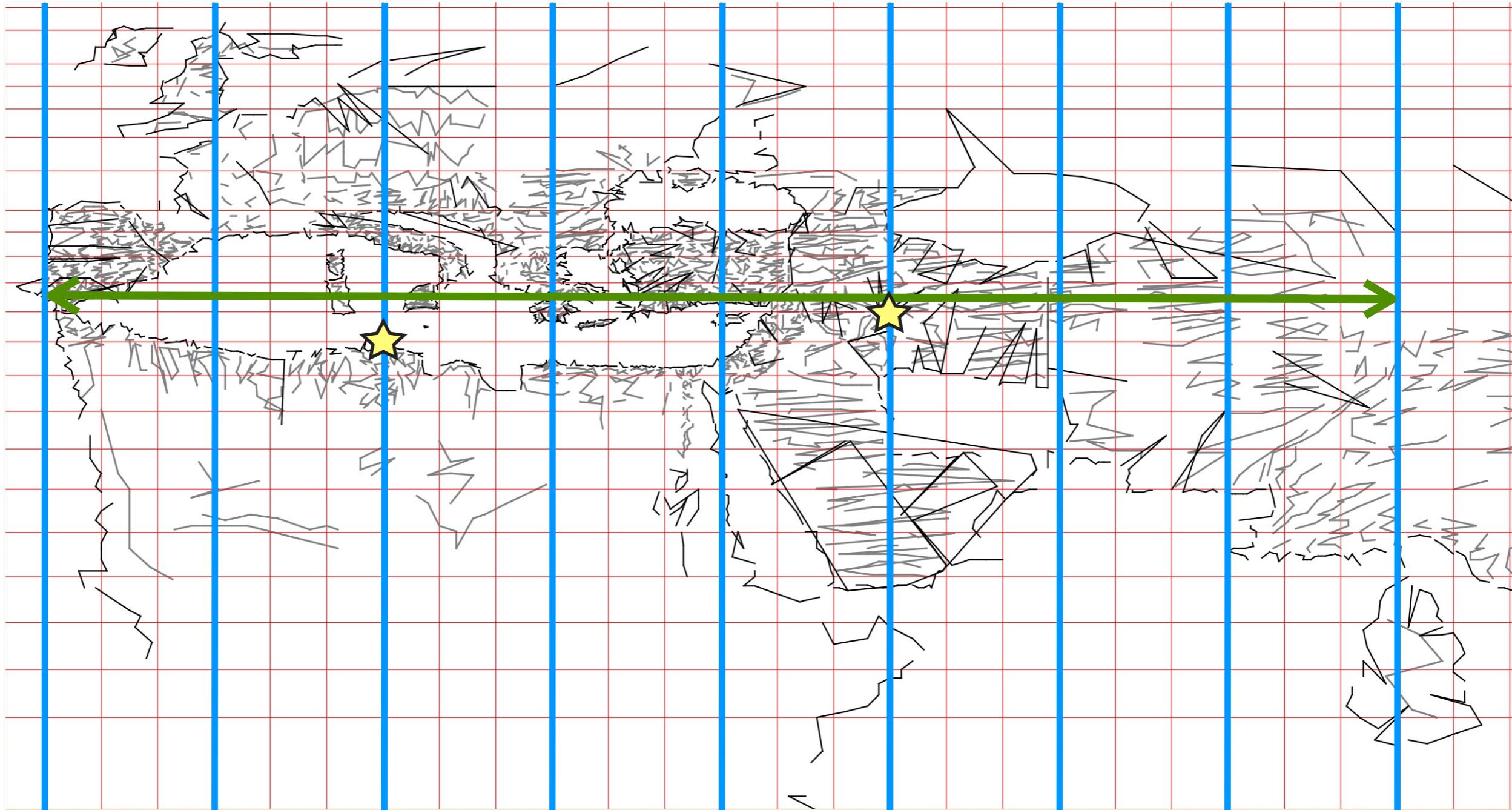
# Ptolemy's chorographic sources?

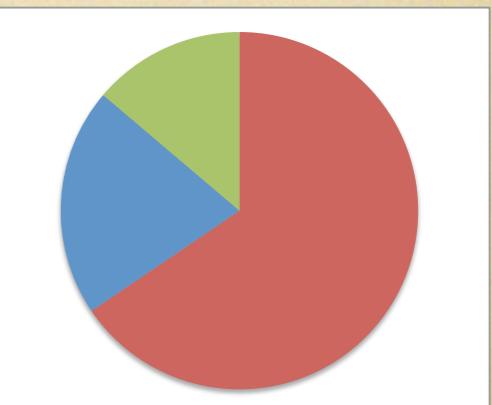
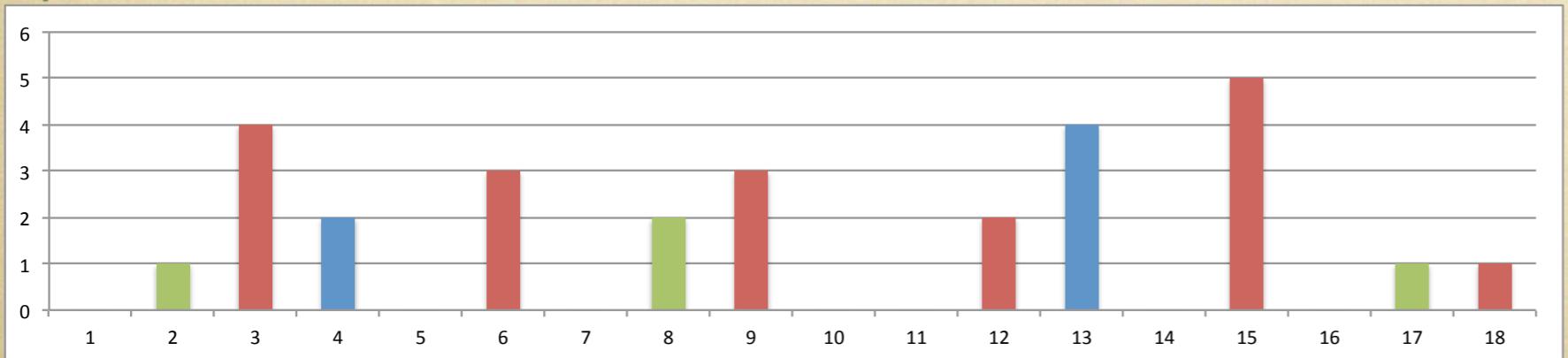
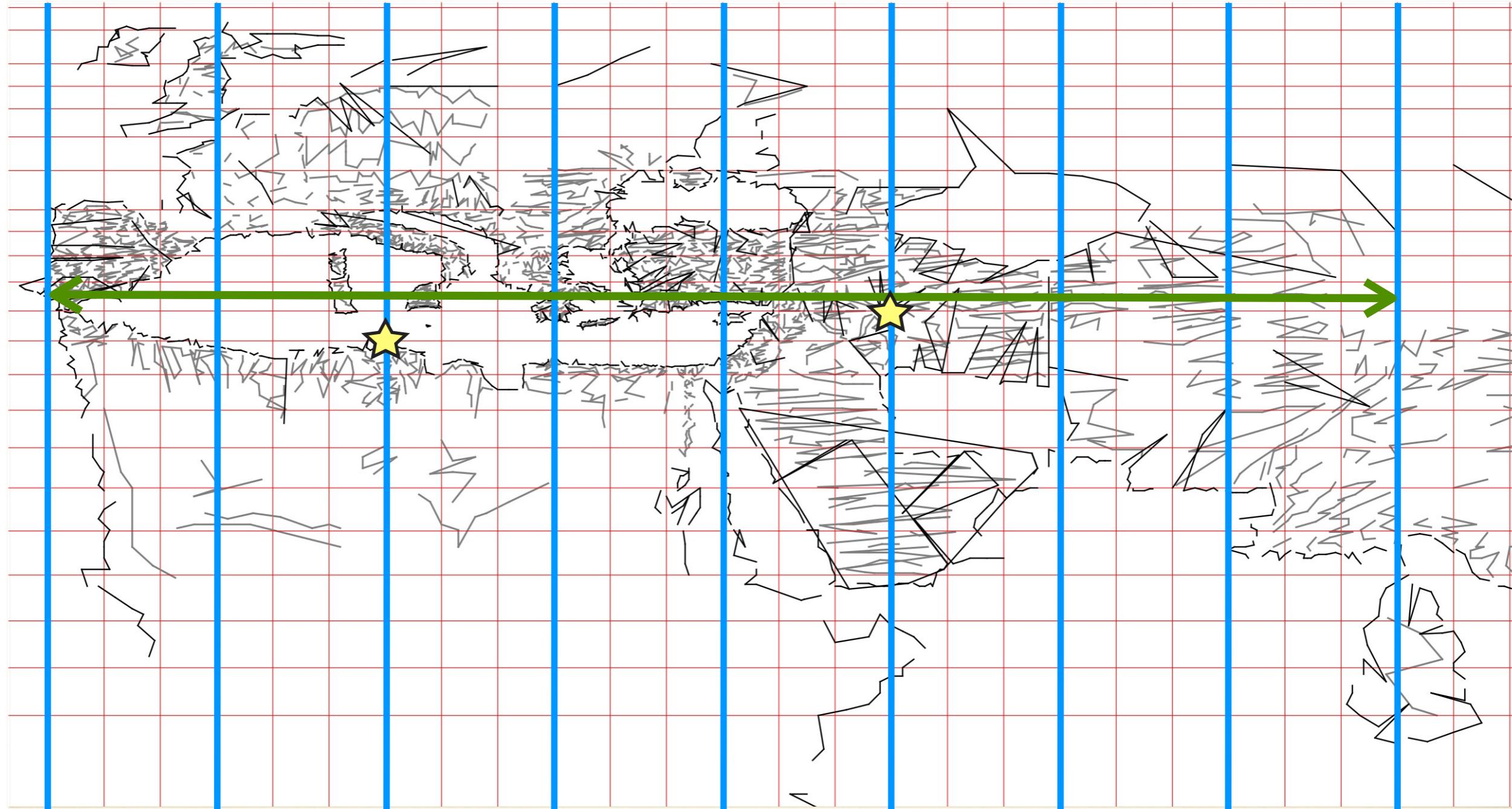


# A New Pre-history

1. The GH's purpose is to set terrestrial localities within their wider cosmological setting.
2. Geography and chorography are individually insufficient. Geography is too sparse, chorography unrelated to the earth's surface, and thus astronomical phenomena.
3. The GH is an entirely original composition, pegging rich chorographic content to the sparse geo-temporal framework of Marinus.
4. The traces of these source materials may still be identified, providing a new window on the (pre-)history of mapping







# Acknowledgments

## Special thanks to:

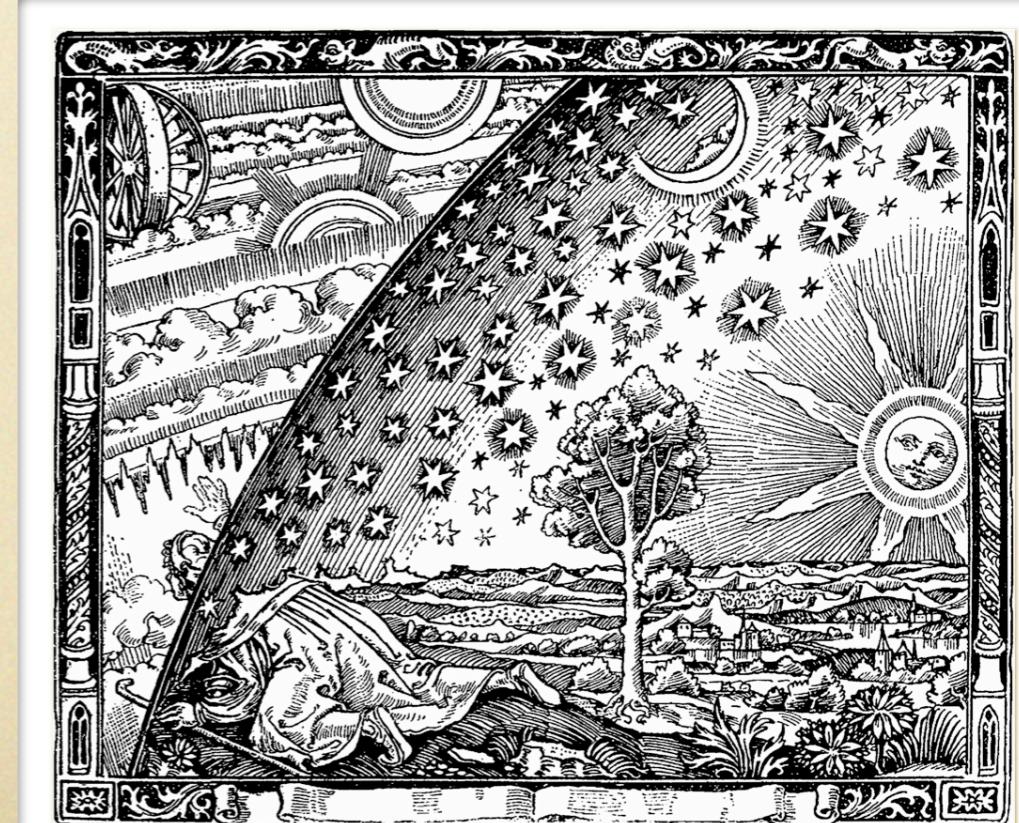
- Pascal Arnaud
- Martin Austwick
- Catherine Delano-Smith
- Matthew Edney
- Gunther Goertz
- Alexander Jones
- Matt Jones
- Joel Phillips
- Yossef Rapoport
- Luis Robles Macías
- Dmitry Shcheglov
- Neel Smith

## Translations, Maps & Data:

Berggren, J. L. & Jones, A. 2000. *Ptolemy's Geography*. Princeton

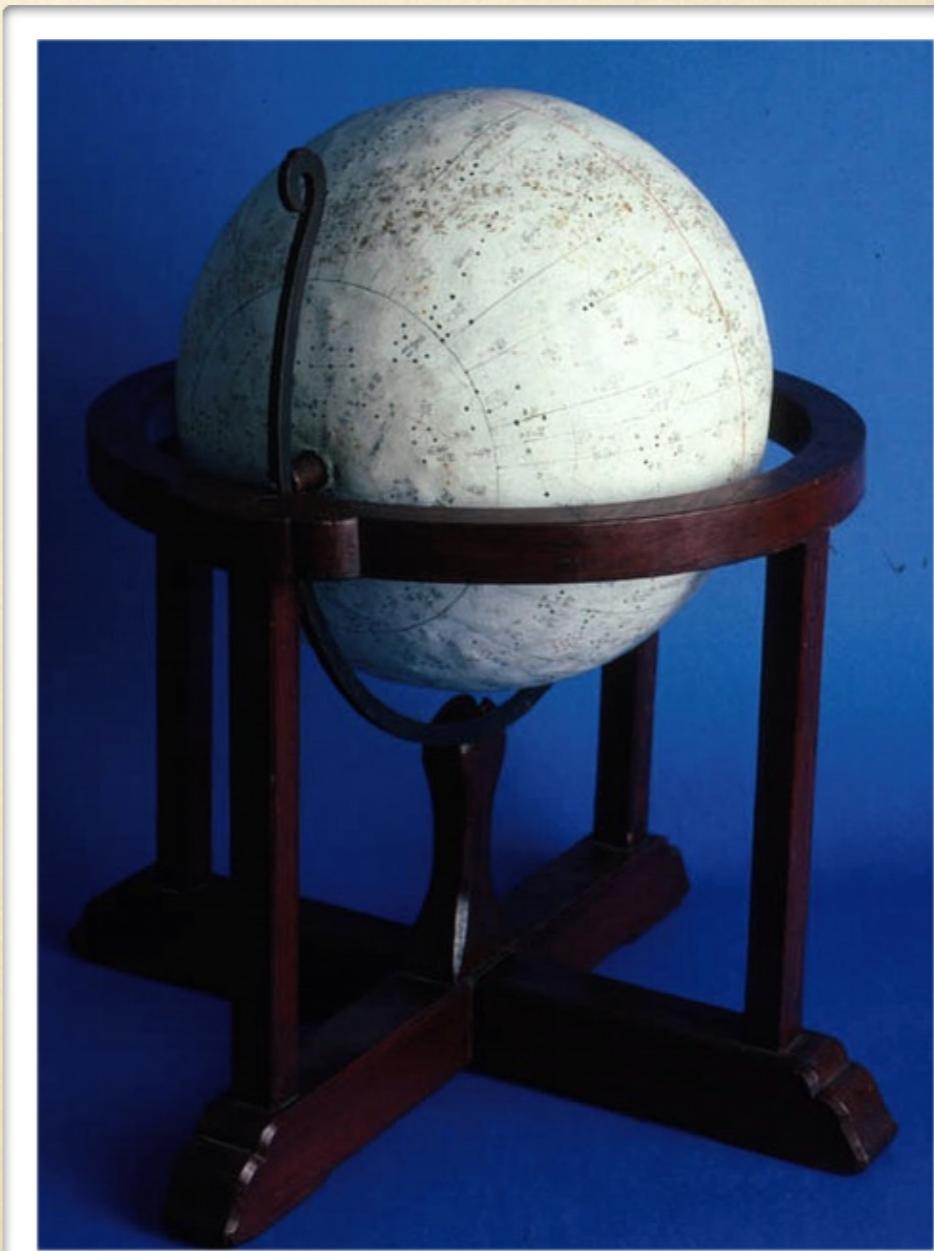
Stückelberger A. & Graßhof G., 2006.  
*Ptolemaios: Handbuch der Geographie*. Basel

Wikimedia Commons.



# The Almagest

“The only remaining topic...is to determine the coordinates in latitude and longitude of the cities...which deserve note, **in order to calculate the [astronomical] phenomena for those cities.** However, the discussion of this subject belongs to a separate geographical treatise...in which we shall use the accounts of those who have elaborated this field to the extent which is possible. We shall [there] list for each of the cities its distance in degrees from the equator, measured along its meridian through Alexandria, to the east or west, measured along the equator (for [Alexandria] is the meridian for which we establish the times of the positions [of the heavenly bodies])” (Almagest 2.13)



Star Globe (*Almagest* 8.3)

# The Tetrabiblos

“If...a man knows accurately the movements of all the stars, the sun, and the moon, so that neither the place nor the time of any of their configurations escapes his notice, and if he has distinguished...their natures...such as the sun's heating and the moon's moistening, and so on...and if he is capable of determining in view of all these data...the distinctive mark of quality resulting from the combination of all the factors, what is to prevent him from being able to tell on each given occasion the characteristics of the air from the relations of the phenomena at the time, for instance, that it will be warmer or wetter? Why can he not, too, with respect to an individual man, perceive the general quality of his temperament from the ambient at the time of his birth...and predict occasional

# Geōgraphikē Hyphēgēsis

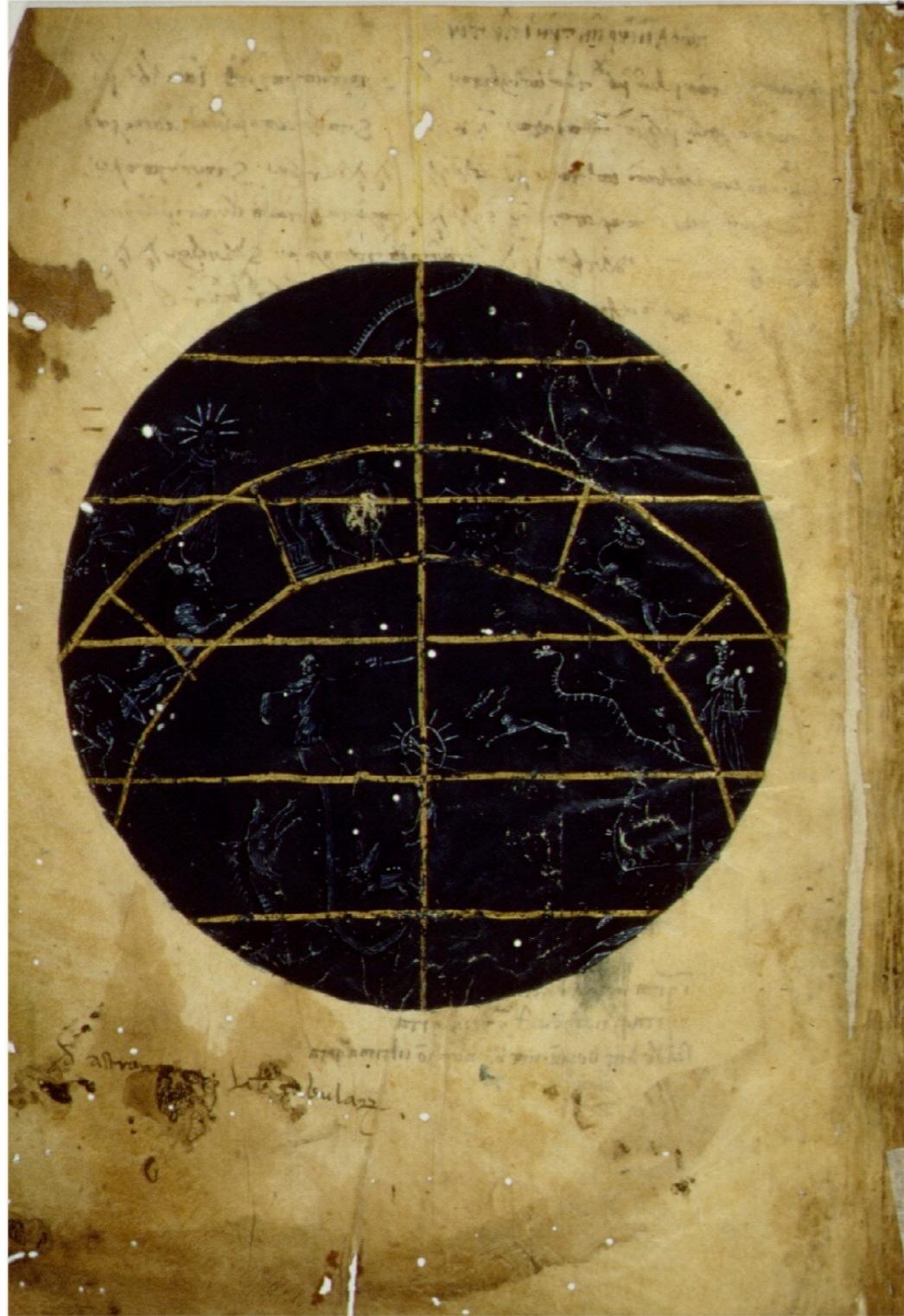
“One has to investigate...the earth’s shape, size, and position with respect to [the heavens]...so it will be possible to speak of its known part...and under which parallels of the celestial sphere each of the localities in this [known part] lies. From this last, one can also determine the lengths of nights and days, which stars reach the zenith or are always borne above or below the horizon, and all the things that we associate with the subject of habitations [*oikēseis*].” (GH 1.1)

"Using the star globe... [we can] determine what point...is as many degrees from the equator as the parallel through the place in question is in the same direction, and...conveniently find out whether no star at all passes through that point, or if there are many, and [if so,] which one or ones. (GH 8.2)



## Regional Map of Hibernia and Albion (GH 8.2)

# The Handy Tables



- Conversion tables for ‘simple observations’ to those with respect to Alexandria.
- Primarily used for calculating horoscopes and culminations remotely

