Without Translators No Latin Astronomy: On the Status Quo of Research on Medieval Translators of Astronomy from Arabic into Latin

Dag Nikolaus Hasse (Würzburg), Toruń, 13 September 2023

Calo Calonymos

dedicatory letter to his Hebrew-Latin translation
of Alpetragius (al-Biṭrūǧī), *On Astronomy*, printed Venice 1531,
quoted by Giovan Battista Amico [Di Bono 1995]

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"Hence, intellectually weak though I might be, I published this little work and translated it into Latin with the same number of words as lucidly and plainly as I could, so that people will be able to reach this knowledge of the movements of the spheres in harmony with physical science *(cum phisicae scientiae consensu)*, as a result of which the science of astronomy will be elucidated by being proven with true demonstrations. The astronomy of Ptolemy, however, lacks both demonstrations of the effect *(quia)* and demonstrations of the cause *(propter quid)*, as Averroes testifies in the proem to Ptolemy's Almagest."

Calo Calonymos, Reverendissimo domino […] Ioanni Mattheo de Gibertis episcopo (Venice, 1531), sig. aa1v, dedicatory letter to Gian Matteo Giberti, bishop of Verona.

Quoted from: D.N. Hasse, Renaissance Scholars on Why They Translate Scientific and Philosophical Works from Arabic into Latin, in: D. Gutas, ed., Why Translate Science (Leiden / Boston: Brill, 2022), 701.

Agostino Nifo (1497)
Commentator on Averroes at Padua University

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"You have to know that Jean de Jandun *(d. 1328)* hallucinates that Averroes negates these <epicyclic and eccentric> bodies in one way and concedes them in another way, and Jean tries to interpret these ways. But this person certainly did not understand what Averroes meant. For Averroes everywhere takes pains to destroy these <bodies> completely and attempts to save the phenomena by way of concentric orbs of the world *(per orbes concentricos mundi)* and through the diversity of motions upon different poles, as it was popular in the time of Aristotle."

Agostino Nifo, In duodecimum Metaphysices Aristotelis et Averrois volumen (Venice, 1518), fol. 29rb

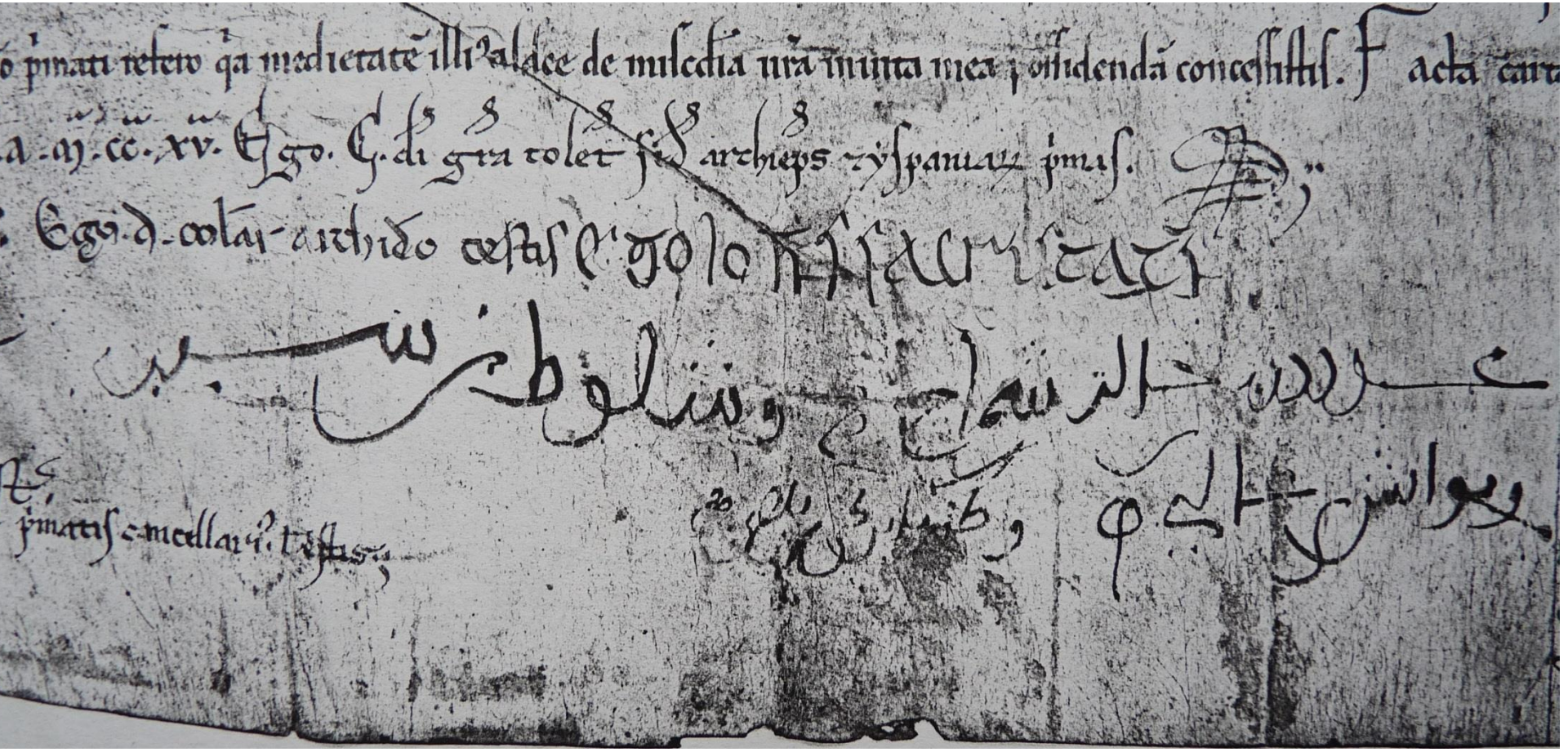
Cf. **Pietro Pomponazzi** 1517:

If people suspect I do not defend Averroes, „it will soon happen that I do not have any friend in Padua and Ferrara."

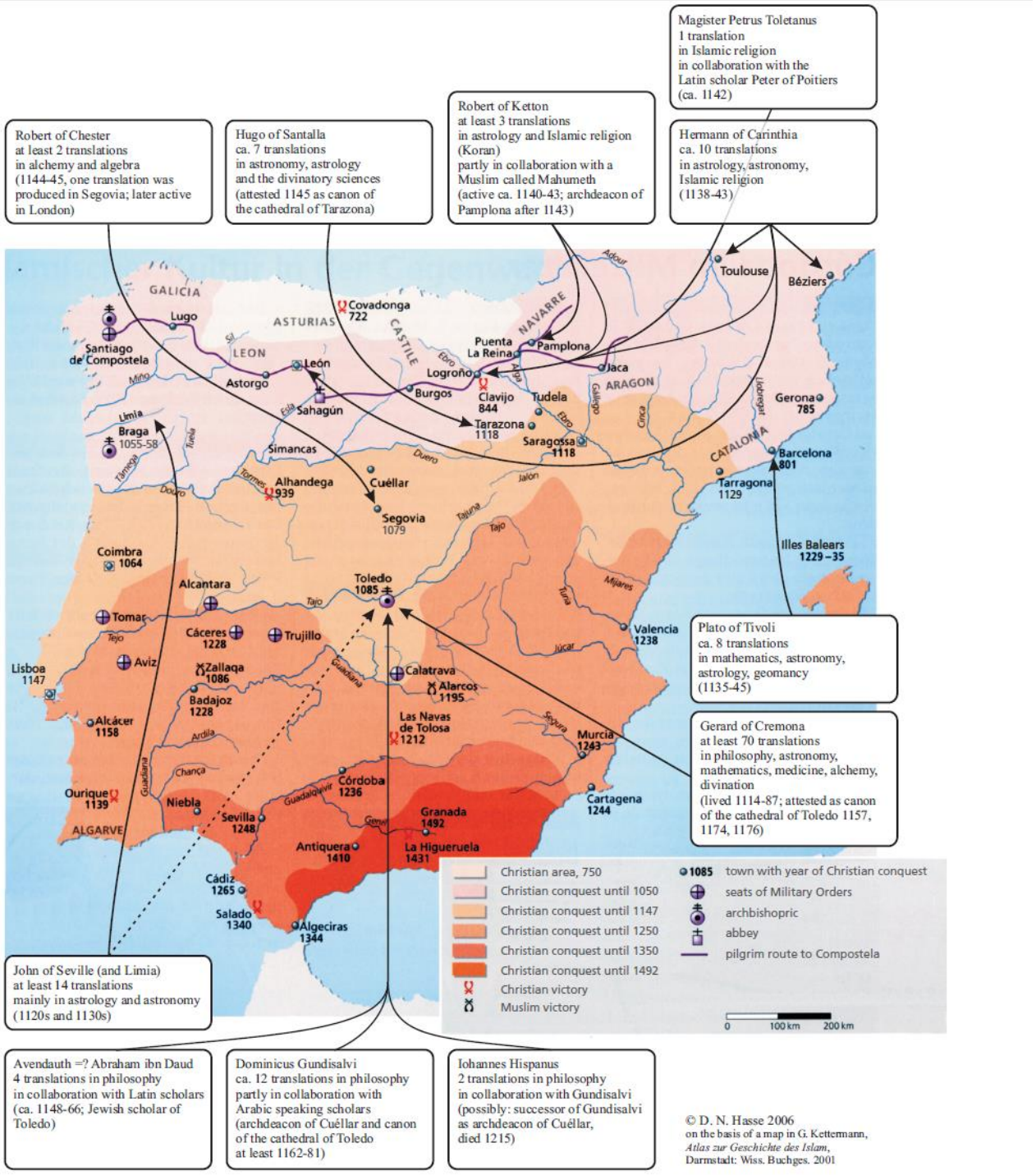
(mihi continget quod Padue et Ferrarie neminem habeo pro amico)

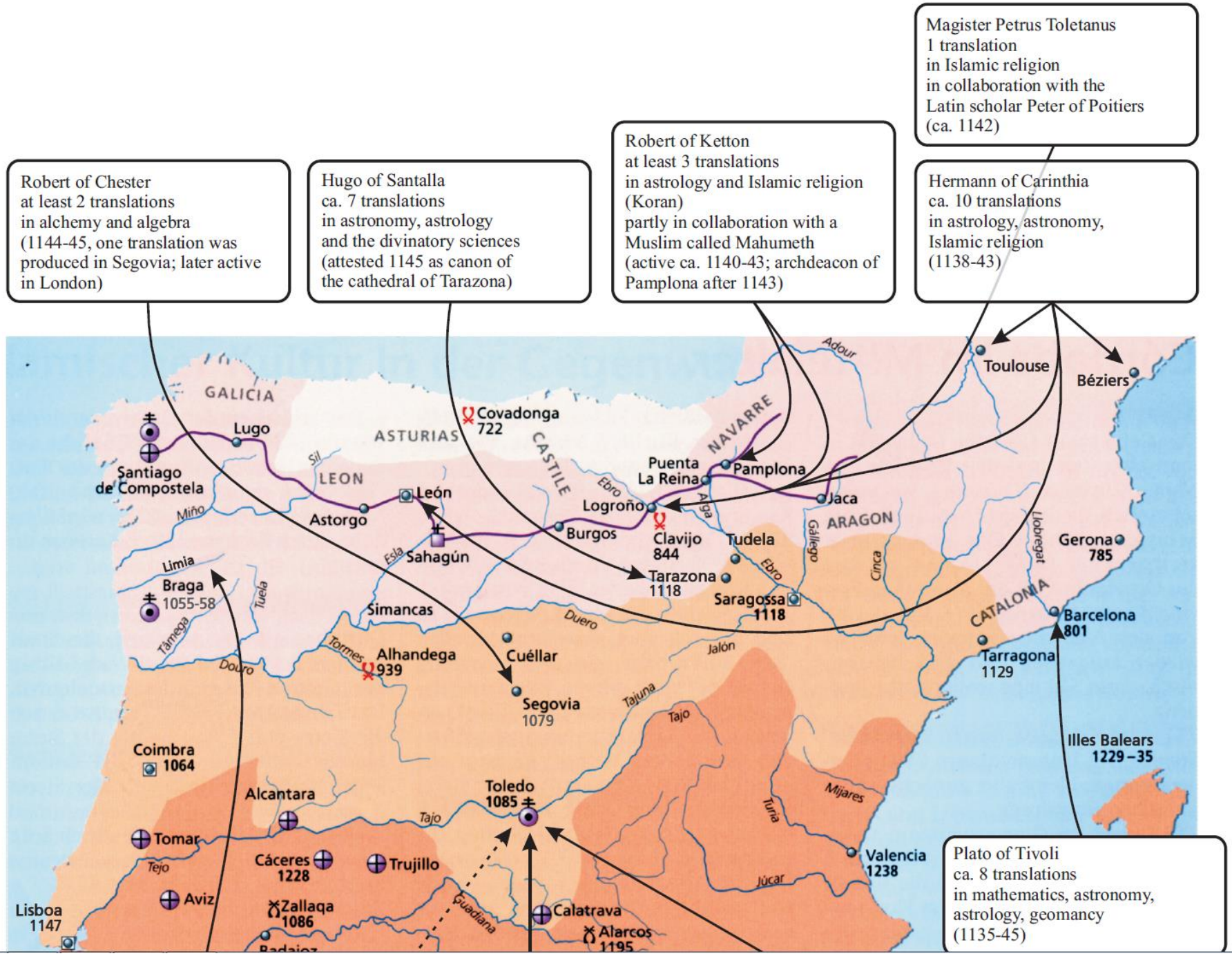
(Hasse, Success and Suppression, p. 217)

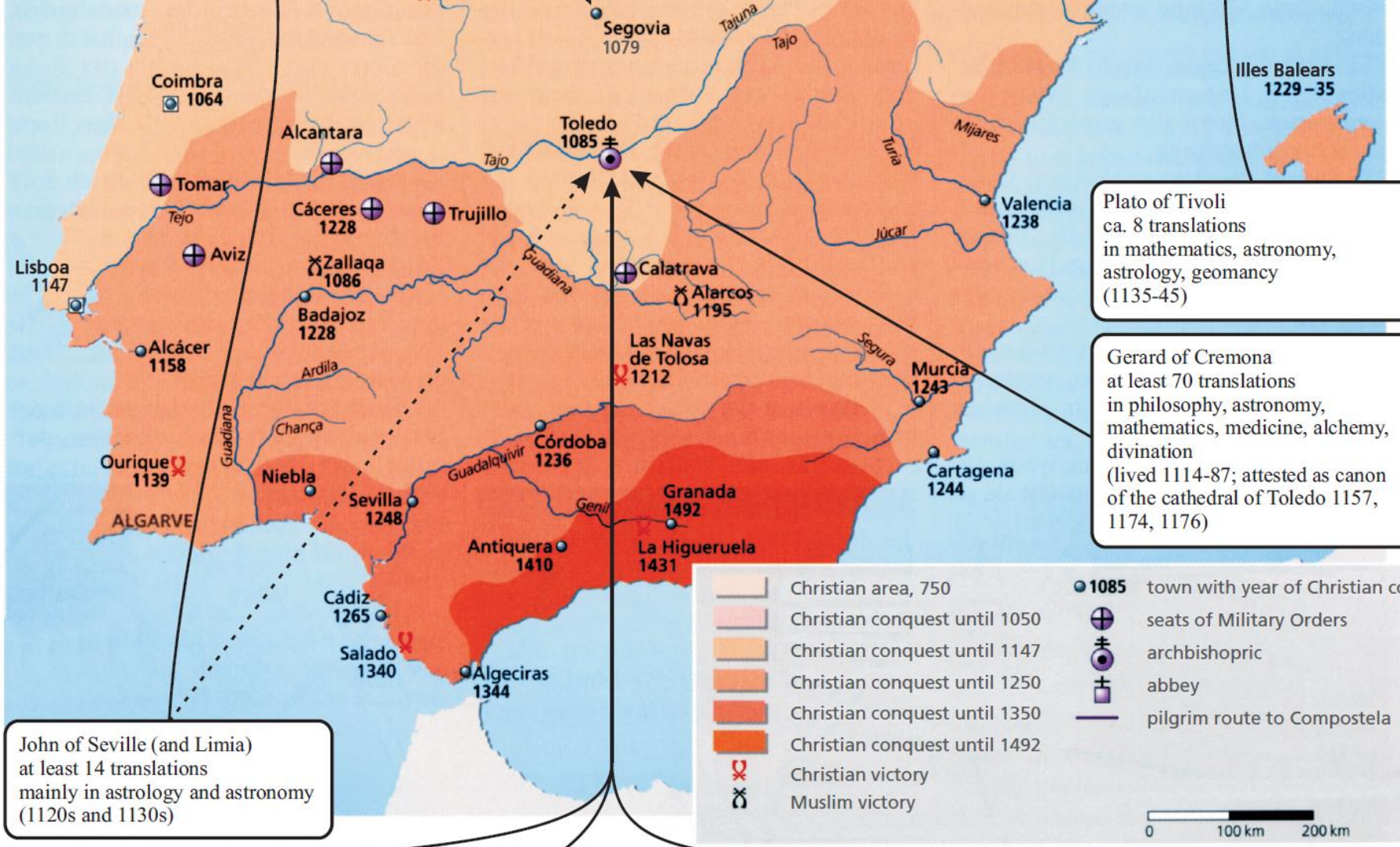
charter Toledo, 20 December 1177, ACT V.12.P.1.1
(F. Hernández, Los cartularios de Toledo: catálogo documental, 1985)



source: D.N. Hasse, 'The Social Conditions of the Arabic-(Hebrew-) Latin Translation Movements in Medieval Spain and in the Renaissance', in: A. Speer, L. Wegener, Hrsg., *Wissen über Grenzen* (Berlin, 2006), pp. 68-86 and 806




Magister Petrus Toletanus
1 translation
in Islamic religion
in collaboration with the
Latin scholar Peter of Poitiers
(ca. 1142)
Robert of Ketton
at least 3 translations
in astrology and Islamic religion
(Koran)
partly in collaboration with a
Muslim called Mahumeth
(active ca. 1140-43; archdeacon of
Pamplona after 1143)
Robert of Chester
at least 2 translations
in alchemy and algebra
(1144-45, one translation was
produced in Segovia; later active
in London)
Hugo of Santalla
ca. 7 translations
in astronomy, astrology
and the divinatory sciences
(attested 1145 as canon of
the cathedral of Tarazona)
Hermann of Carinthia
ca. 10 translations
in astrology, astronomy,
Islamic religion
(1138-43)
GALICIA
ASTURIAS
LEON
CASTILE
NAVARRE
ARAGON
CATALONIA
Adour
Toulouse
Béziers
Covadonga
722
Lugo
Sil
Santiago
de Compostela
Miño
León
Astorgo
Puenta
La Reina
Pamplona
Ebro
Logroño
Alga
Jaca
Burgos
Clavijo
844
Tudela
Gállego
Sahagún
Esla
Tarazona
1118
Cinca
Llobregat
Gerona
785
Limia
Braga
1055-58
Tuela
Tâmega
Simancas
Saragossa
1118
Duero
Barcelona
801
Tormes
Alhandega
939
Cuéllar
Jalón
Douro
Tarragona
1129
Segovia
1079
Tajuña
Tajo
Illes Balears
1229–35
Coimbra
1064
Alcantara
Toledo
1085
Mijares
Turia
Tajo
Tomar
Tejo
Cáceres
1228
Trujillo
Valencia
1238
Júcar
Aviz
Lisboa
1147
Zallaqa
1086
Guadiana
Calatrava
Alarcos
1195
Badajoz
Plato of Tivoli
ca. 8 translations
in mathematics, astronomy,
astrology, geomancy
(1135-45)



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Gerard of Cremona
at least 70 translations
in philosophy, astronomy,
mathematics, medicine, alchemy,
divination
(lived 1114-87; attested as canon
of the cathedral of Toledo 1157,
1174, 1176)

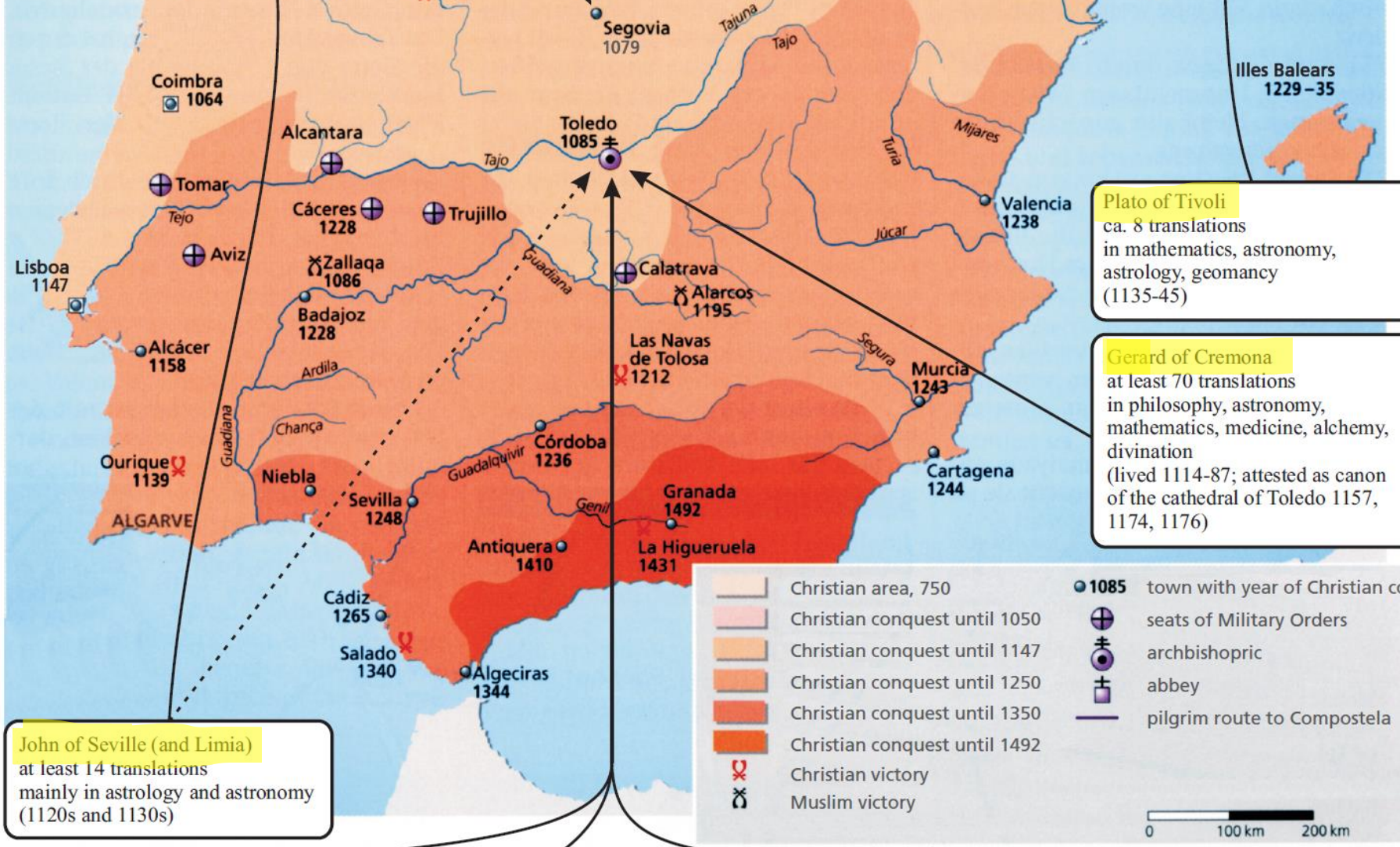
John of Seville (and Limia)
at least 14 translations
mainly in astrology and astronomy
(1120s and 1130s)

Avendauth =? Abraham ibn Daud
4 translations in philosophy
in collaboration with Latin scholars
(ca. 1148-66; Jewish scholar of
Toledo)

Dominicus Gundisalvi
ca. 12 translations in philosophy
partly in collaboration with
Arabic speaking scholars
(archdeacon of Cuéllar and canon
of the cathedral of Toledo
at least 1162-81)

Iohannes Hispanus
2 translations in philosophy
in collaboration with Gundisalvi
(possibly: successor of Gundisalvi
as archdeacon of Cuéllar,
died 1215)

© D. N. Hasse 2006
on the basis of a map in G. Kettermann,
Atlas zur Geschichte des Islam,
Darmstadt: Wiss. Buchges. 2001



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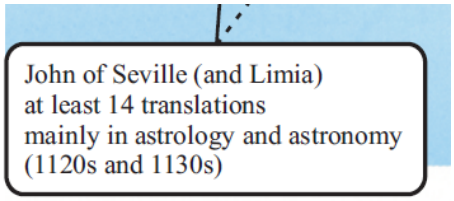
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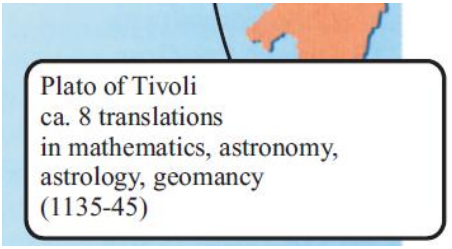
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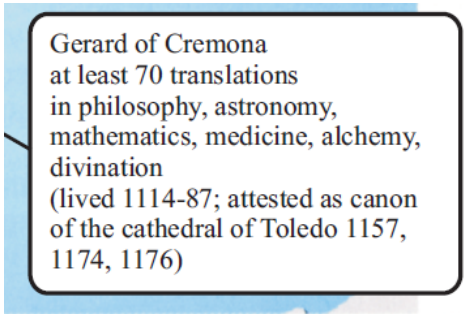
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Plato of Tivoli (fl. 1135-45)



Gerard of Cremona (d. 1187)



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Original works: not identified

Epitome totius astrologie ?

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Problems: Plato of Tivoli‘s Latin style is difficult to isolate.
His collaboration with Abraham bar Ḥiyya is very likely, but lacks evidence.

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Original works:

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« Back to the index page of *The Book of Manṣūr on Medicine – Latin* .

1r

¶ Albubetri arazi filij zacharie Liber incipit qui ab eo Alman⟨-⟩
sor vocatus est: eo quod regis mansoris Isaac filij precepto edi-
tus est translatus ex arabico in latinum apud toletum a Gerardo
cremonensi cum ipsius Gerardi nonnullis additionibus cum
textu incertis et quibusdam glosulis interlinearibus etiam ab
ipso gerardo notatis nusquam vsque nunc ab aliquibus impressis.

¶ Uerba albubetri.

IN hoc meo libro regi cuius
vitam prolonget deus aggrega-
bo summas: et aggregationes: et
flores doctrine medicinalis: et
hoc faciam compendiose. Dicam
quoque in eo de conseruatione sa-

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- *Notule Almagesti* (lemmatic commentary on the complete *Almagest*) [Georges forthcoming]



Work C.1.3

Gerard of Cremona
Notule Almagesti

A lemmatic commentary on the complete *Almagest* written by Gerard of Cremona on the basis of his own translation of the text (A.1.2). This work was previously known as the 'Vatican Commentary' (Zepeda), but Stefan Georges has demonstrated that the author was in fact Gerard of Cremona himself. In the three main manuscripts, the 'opening' of the text is somewhat abrupt and consists of a commentary on sections of Book I of Geber's *Liber super Almagesti* (C.1.2) – a text also translated by Gerard of Cremona –, but it is unclear whether this opening was originally meant to be part of the text. The commentary otherwise starts with *Almagest* I.2. The text is followed by additional notes discussing matters pertaining to the various books (including I.1). These additional notes break off abruptly in all three manuscripts and appear to be most complete in MS Vatican, BAV, Vat. lat. 6795, where they amount to 18 chapters. Sections of the *Notule Almagesti* occur as glosses to the *Almagest* in Gerard of Cremona's translation in the margins of at least five manuscripts: Berlin, SBPK, lat. fol. 753 (Görres 72); Florence, BML, Plut. 89 sup. 57; Oxford, NC, 281; Paris, BnF, lat. 16200; and Vatican, BAV, Pal. lat. 1365. The *Notule Almagesti* was revamped in England in the 1230s (C.1.5).

Text '(Madrid, BRAH, 97) (1r-2r) [OPENING] Quod perpendicularis cadens ex extremitate arcus super diametrum productam ab extremitate eius secunda sit sinus eius — nobis tunc nisi notitia anguli qui sequitur angulum quesitum. (2r-12v) [BOOK I] In capitulo secundo Almagesti, sciendum est universaliora esse preponenda aliis et sensibiliora particularia minus sensibilibus — sunt descripti

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- Lemmatic commentary on Ptolemy‘s *Tetrabiblos* [Juste PAL]
- Glosses on Albumasar‘s *Great Conjunctions*, Alcabitius‘ *Introduction*, Ps.-Ptolemy‘s *Centiloquium* ? [Juste PAL/Georges forthcoming]

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Samuel ibn Tibbon (ca. 1165-1232)

Commentary on Ecclesiastes 1:5 (written after 1213)

“This is all according to what previous astronomers have proposed; all of this can be found in their books. But now there is an individual *(i.e. al-Biṭrūjī)* possessed by the spirit of God who has discovered an astronomical model *(תכונה teḵunah = hayʾa)* that does not suppose two motions contrary to each other; nor does it <postulate> an orb that does not revolve around the center of the world or an epicycle. […]

This is all according to what can be found in the book that this sage has composed according to this astronomical model. Aristotle had already alluded to an astronomy like this, for he saw that all of the other models were impossible according to the <physical principles> that he had postulated in natural science.”

Quoted from: James T. Robinson, The First References in Hebrew to al-Biṭrūjī's On the Principles of Astronomy, in: Aleph: Historical Studies in Science and Judaism 3 (2003), pp.145-163, here p. 154.

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Note the narrow time slot:

Averroes: long commentaries written 1180s/1190s

al-Biṭrūǧī's *On Astronomy:* written after 1185

Samuel ibn Tibbon visits Toledo: between 1204 and 1210

Michael Scot leaves Toledo for Italy: 1220/21

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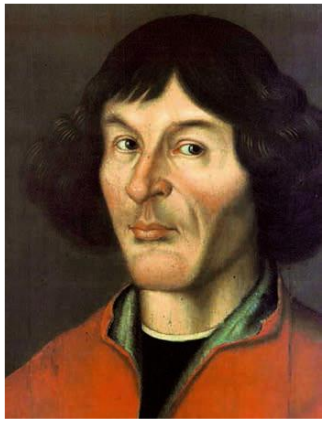
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Important original works:

- *Liber introductorius* (a massive summa of astrology and prognostication, probably written around 1200)
- Commentary on Sacrobosco's *Sphera* (on cosmology and astronomy)
- *Ars alchimiae*

Nicolaus Kopernikus (1473-1543)



Arabic-Latin translations as sources:

A. Graeco-Arabic mathematical astronomy:

> John of Seville (Alfraganus, Tables)

> Plato of Tivoli (Albategnius)

> Gerard of Cremona (Ptolemy, Alfraganus, Geber, Thebit)

B. anti-Ptolemaic astronomy and cosmology:

> Michael Scot, probably influenced by Samuel ibn Tibbon (Alpetragius, Averroes, Alhazen)