



Boston, MFA
Hemidrachm of Mantinea with she-bear
(minted in Arcadia, Peloponnesos)
late Archaic (500-480 BC)
Acc no 04.907



Boston, MFA
Fragment of a red-figure krater with head of Callisto (note ears)
Apulian (attr. to the Black Fury Painter), 390-330 BC
Acc. no 13.206

Classical images – Roman

Ursa maior



Los Angeles, Getty Museum
Marble statue of a bear
Roman, c. 100-200 AD



Boston, MFA
bronze statue of a bear (9 mm / 3" tall)
late Hellenistic (possibly Egypt), 1st C BC
acc. no 67.627



1779
BEAR.
ROME.
Castellani.
London, British Museum
Bronze figure of a bear or hound
Roman, 1-3rd C AD
Acc no 1873.0820.7



Miletus, Greek Theatre, the stage building

Relief depicting Eros hunting

c. 250-225 BC

credit: Flickr (Carole Raddato)

Classical images – Roman



London, British Museum
Mould-made pottery lamp
with running bear
Found in Pozzuoli, 40-80 AD
Acc no 1856,1226.498



London, British Museum
Mould-made pottery lamp with
standing bear
Roman, made in Cnidos, 2 C AD
Acc no 1859,1226.117



London, British Museum
Mould-made pottery lamp with
standing bear
Roman, made by Augendus,
c. 175-225
Acc no1756,0101.632

Ursa maior



Amsterdam, Allard Pierson
Museum
Two-handled jar with relief of
a bear
from Djerba, 3rd C AD
Inv. 12.375



North African redware



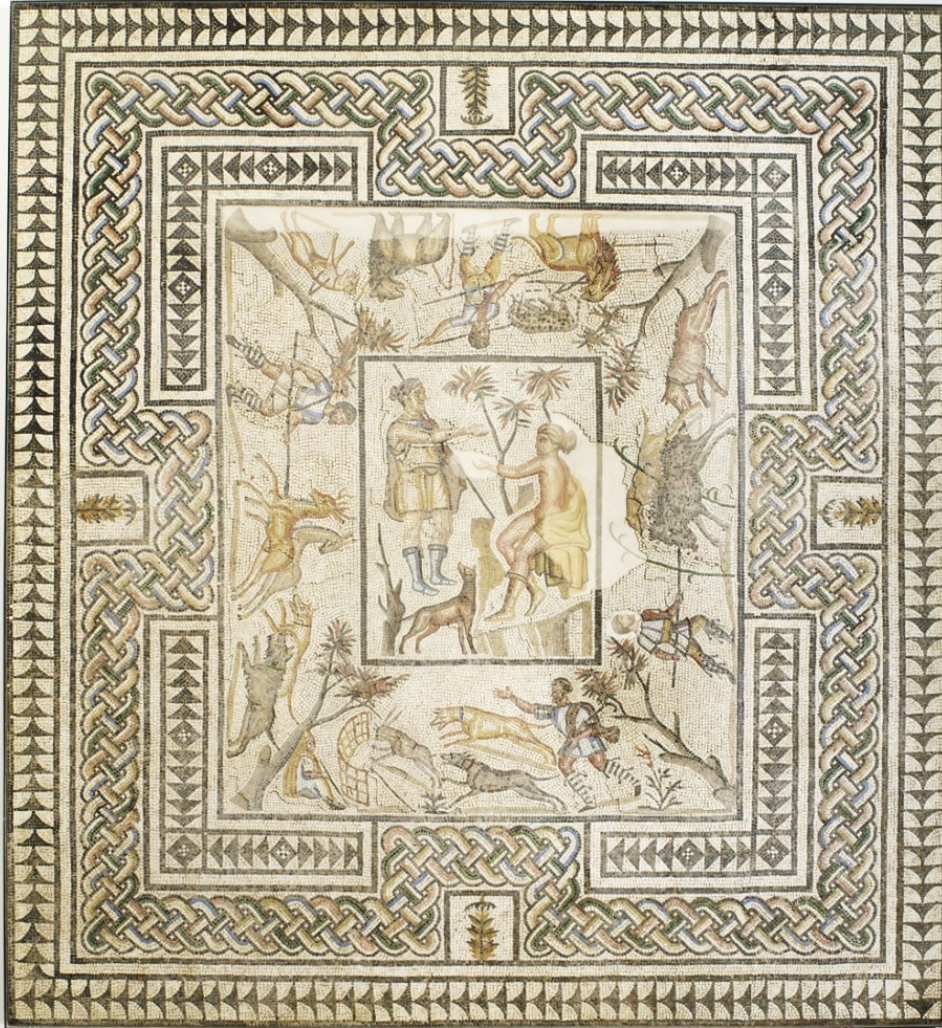
Boston, MFA
Fragment of mould for a bowl with
youth attacking a bear
from Arezzo
Acc no 13.147



Boston, MFA
Fragment of mould for a bowl with
youth attacking a bear
from Arezzo
Acc no 98.851



Boston, MFA
Red slipware bowl of Orpheus and the animals
Late Roman (probl. Tunisia)
Acc no 1981.658



Los Angeles County Museum of Art / The Getty Villa
Callisto and Diana with bear hunt in border
From the Villa Laurea
Gallo-Roman, 3rd C AD

Classical images – Roman

Ursa maior



Vatican Museums
From the Temple of Diana on the Aretine Hill, 1st C AD



Damnatio ad bestias (source?)
Credit: Wikimedia



Libya, Villa Selene
Detail from decorative border
2nd C AD





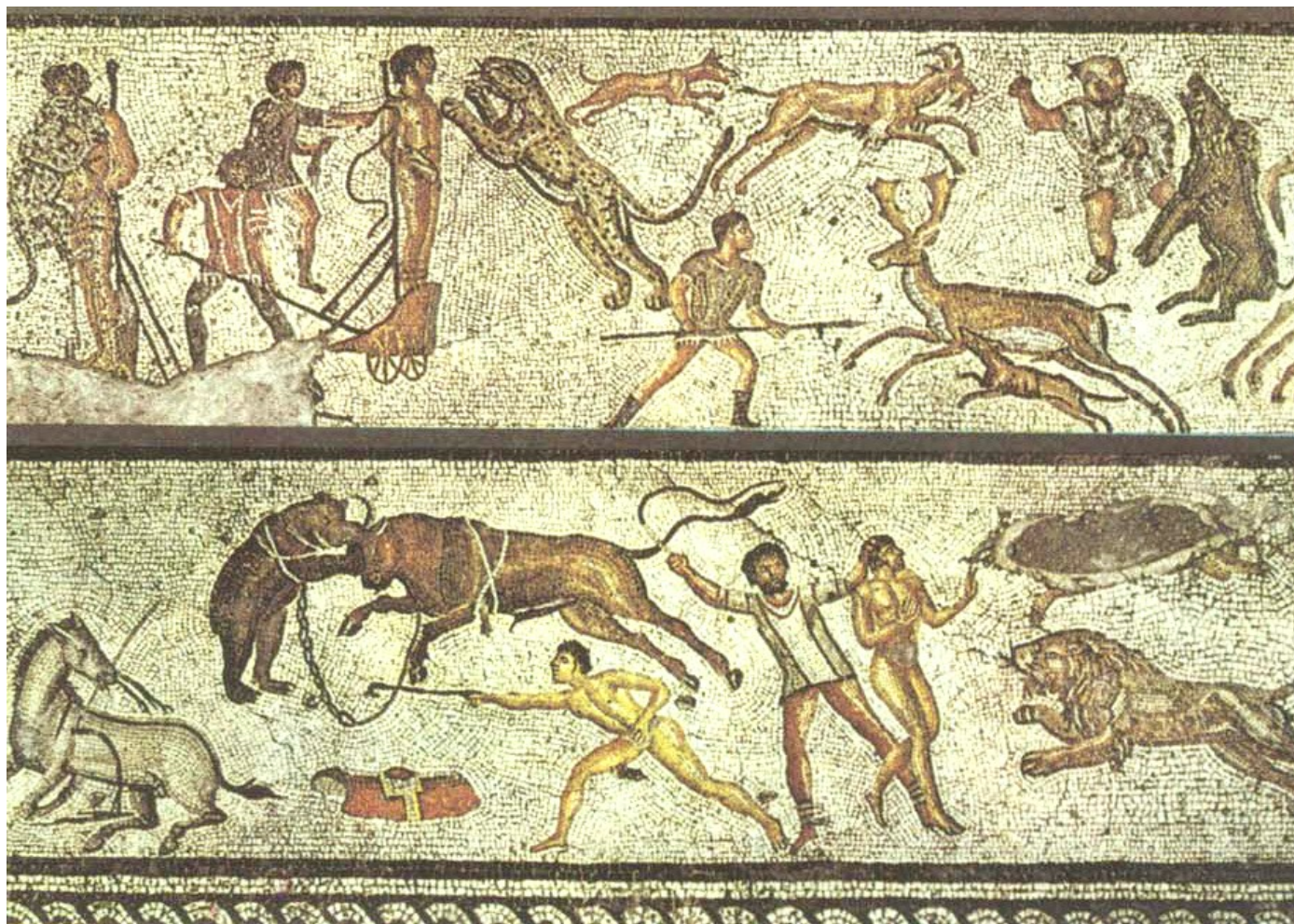
Los Angeles, Getty Museum
Fragments of floor mosaic
found between Bacoli and Pozzuoli, Italy
4th c AD



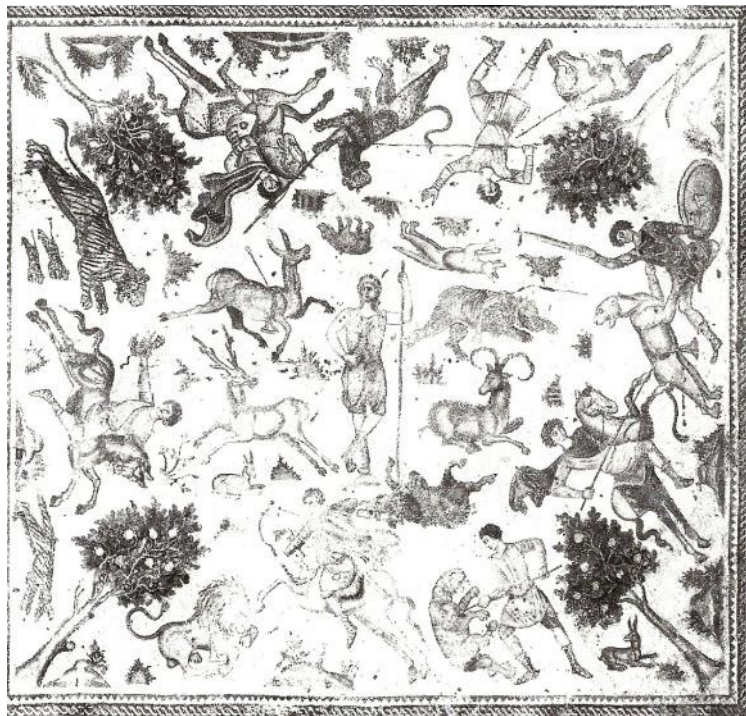
Paris, Musée du Louvre



Fribourg, Switzerland
Beast hunt in an amphitheatre
from the Villa at Vallon, ca 3rd C AD
Cf Ling, pp. 16-18



Leptis Magna, Amphitheatre
The execution of Garamantes
wall mosaic from the Villa Dar Buc Ammera, c. 70 AD



Cf. K. Dunbabin, *Mosaic of the Ancient World*, 1999.



Los Angeles, Getty Museum
Orpheus with animals and 4 seasons
Gallo-Roman (Saint-Romain-en-Gal)
c. 150-200 AD



form. Dallas Museum of Art(
returned to Turkey in 2012)
Orpheus with animals



Palermo, Museo regionale Antonia Salinas
Orpheus and the animals
from Building A, Piazza della Vittoria, c. 200-300 AD
credit: Wikimedia (Marie-Lan Nguyen)



Bristol Museum of Art (? - displayed there in 2013)
Floor mosaic from Roman Villa in Newton St Loe,
late 3rd-early 4th C AD



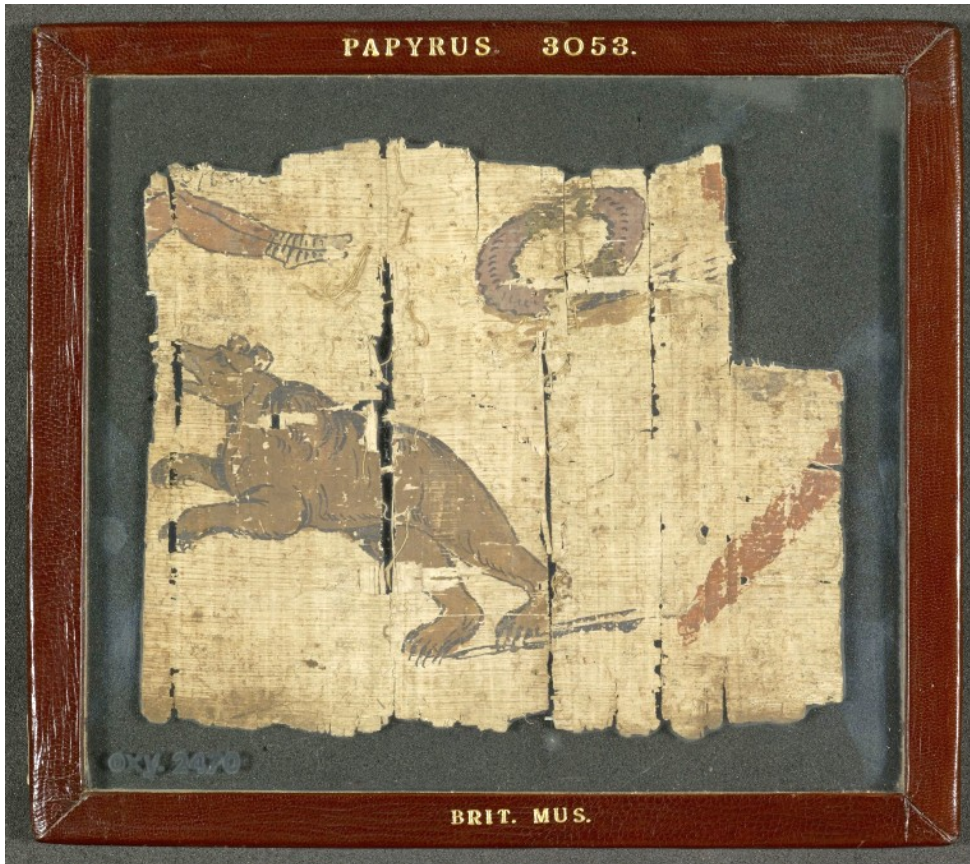
Cyprus, Paphos, House of Dionysus
credit: [a-picture-a-day.blogspot.co.uk](http://a-picture-a-day.blogspot.co.uk/2005)
[/2005](http://2005) (Rui Reino Bapista)



Libya, Tripoli Archaeological Museum
from Leptis Magna, Orpheus Mosaic Villa



Boston, MFA
Bronze container (ampulla) in the form of a bear
Late Imperial/ late antique (c. 4th / 5th C AD)
Acc no 62.1203



London, British Museum
Papyrus fragment with bear
Egyptian (?), 3-4th C AD
cf. Age of Spirituality, cat 86.

Classical images – Byzantine

Ursa maior



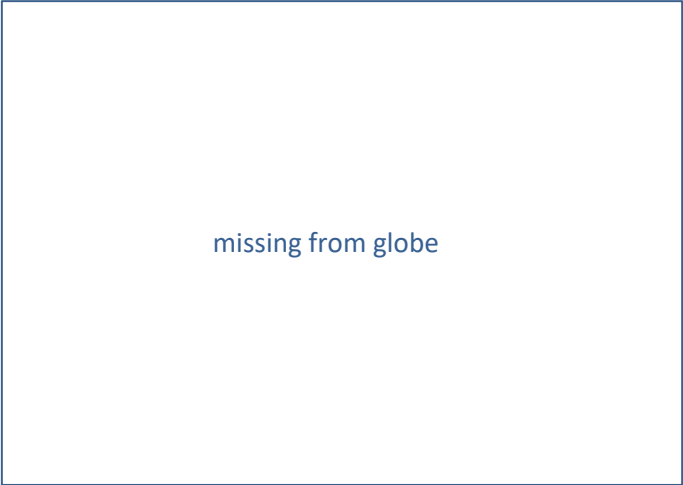
Boston, MFA
Silver ring engraved with a bear (and a lion on the reverse)
Early Byzantine, 6-7th C AD
Acc noo 2005. 291



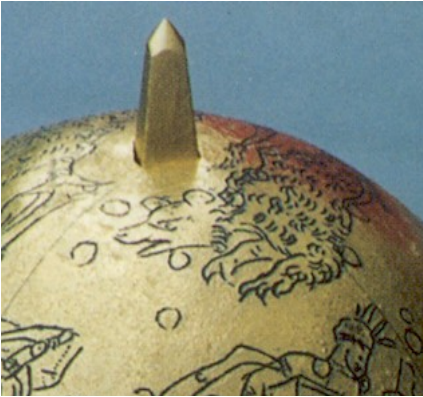
Libya, Qasr Museum
mosiacs from Olbia (?), 5th C AD

Classical globes

Ursa maior



Naples, Farnese Atlas



Paris, Kugel Globe
n.b. – facing tip of Draco's tail, long tail



Mainz globe
n.b. – facing tip of Draco's tail, short tail



(drawing © Kunzl)

l. = z stemma



Leiden, Univbibl
Voss lat 4° 79
n.b. – inside last curl of Draco, short tail,
facing outwards



Boulogne-sur-Mer, Bibl. Mun.
Ms 188
same



Bern, Burgerbibl,
Ms 88
n.b. – same



vs. planisphere
same position, but facing inwards



vs. planisphere
same position, but facing inwards

II and III. = O stemma (O¹ or v)

II.



Basle, OBU
Ms AN.IV.18

n.b. – same size, stars show that larger bear at head of Draco



vs. planisphere

III.



Aberystwyth, NLW
Ms 735 C



vs. schema



vs. planisphere
n.b. – larger



vs. hemisphere
similar to planisphere



Germanicus mss

IV. = O stemma (O² or μ)



Madrid, Bib nac
Ms 19 (16)

n.b. – same size, stars show larger bear at head of Draco

Ursa maior

Va. = O stemma (O² or μ = Siciliensis)



Cologne, Bib Bodmer
Cod lat 7

n.b. – slightly smaller



NY, Pierpont Morgan Libr
Ms M 389

same

Vb.



Vatican, BAV
Barb lat 76

n.b. -- same

VI.



London BL
Egerton 1050

n.b. – smaller (!)

VII.



London BL
Add 15819

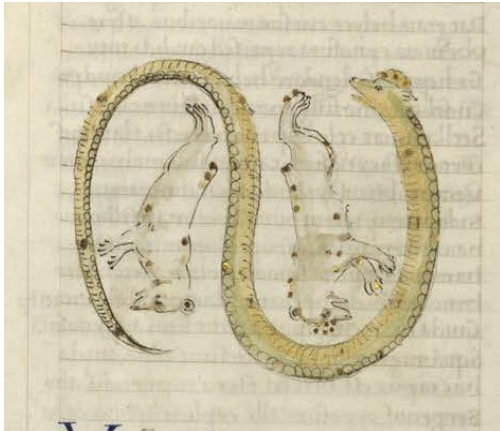
n.b. – same size



Naples, Bib naz
XIV D 37
same

= fragmentum ... repertum in Sicilia

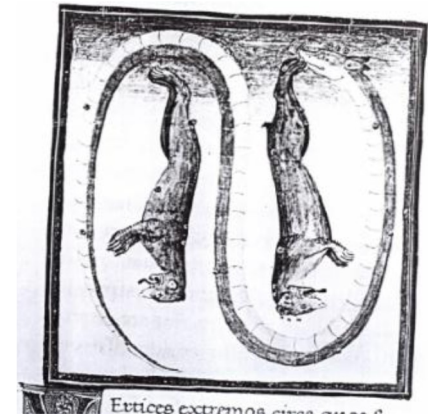
VIIIa.



Madrid Bib Nac
Ms 8282
n.b. – UMi slightly smaller



Vatican, BAV
Barb lat 77



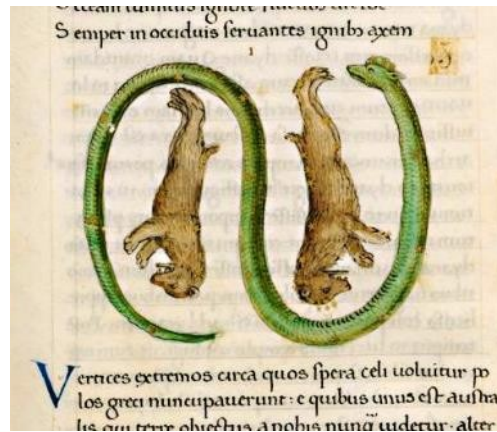
Vienna, Schottenstift
Ms 51

VIIIb.



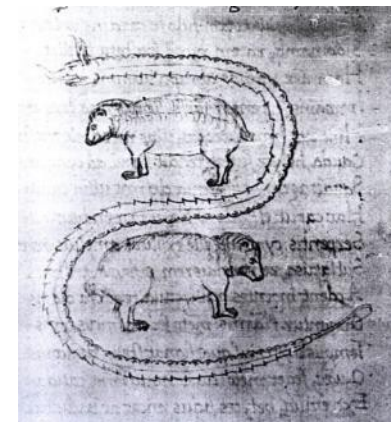
Vatican, BAV
Urb lat 1358

VIIIc.



Florence, Bibl Laurenziana
Plut 89 sup 43

IX.



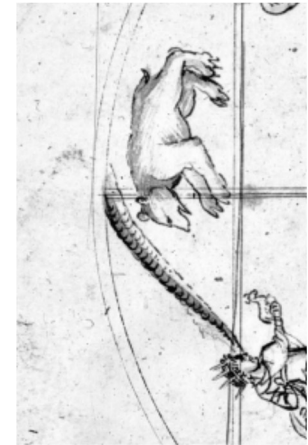
Montpellier
Ms H 452
n.b. – pig-like



Vatican BAV,
Vat grec 1087
n.b. – larger, short tail

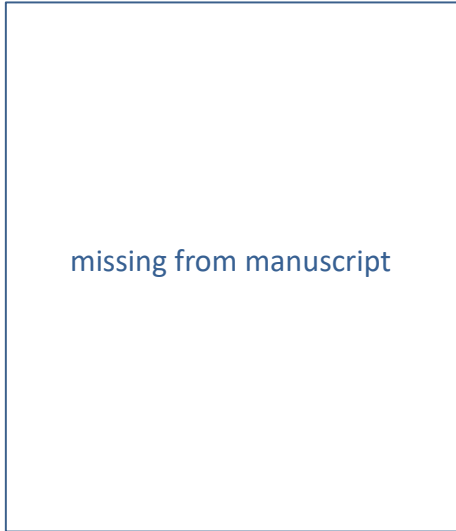


Hemispheres – smaller bear (!) near tail

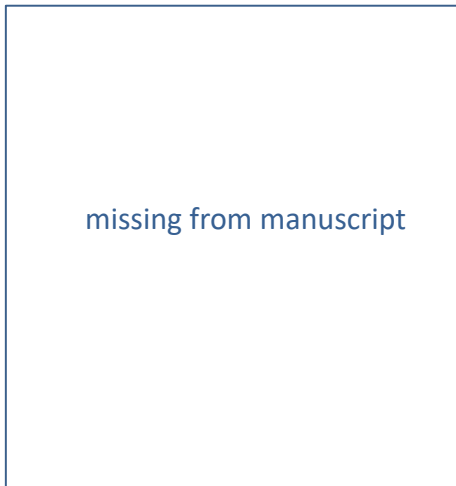


planisphere – larger

Cicero



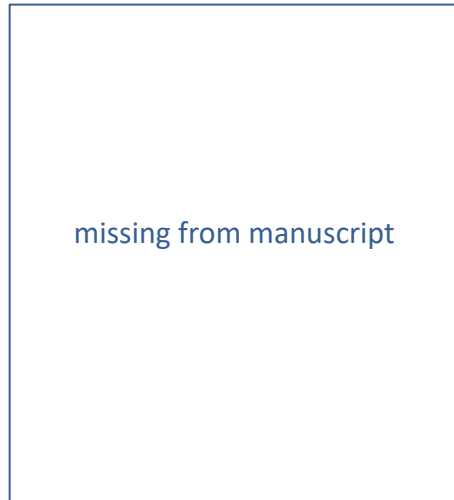
London, BL
Harley 647



London, BL
Cotton ms Tib B.V., pars 1

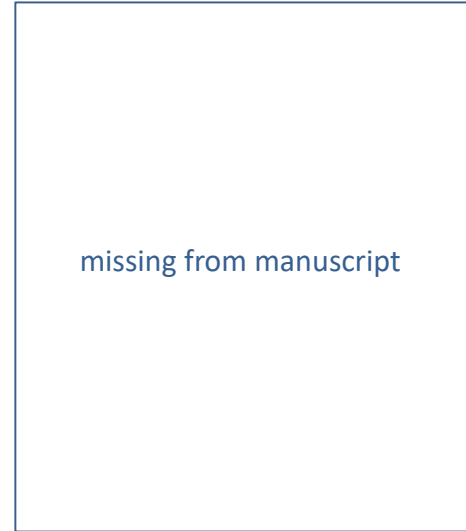


London, BL
Harley 647 – planisphere **larger**

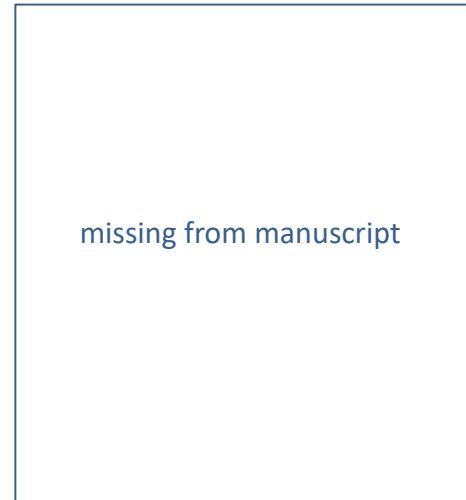


London, BL
Cotton Ms Tib C. 1

Ursa maior



London, BL
Harley 2506



Gottweig,
Stiftsbibl Ms 7

I.



Dresden, Landesbibl.
Ms D C 183 –
n.b. – slightly larger

standing to left

Paris BN
Lat 12957
n.b. – similar

running to left, shaggy



Dresden -- hemispheres
n.b. – UMa missing



globe on stand
= UMa or UMi ?

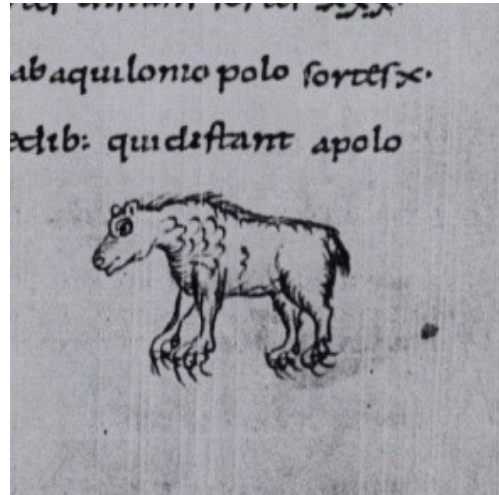
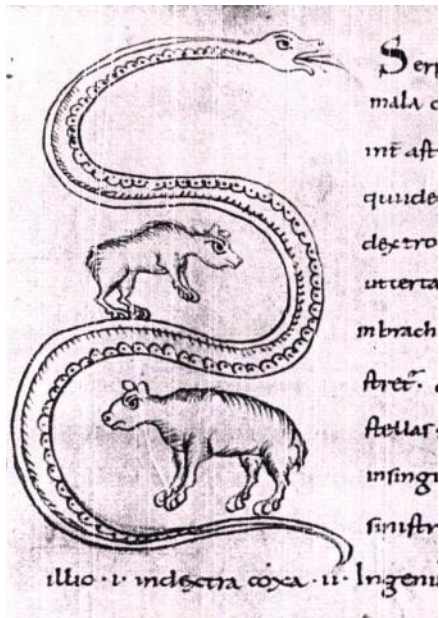


Paris – hemispheres
UMa beneath feet of Cepheus



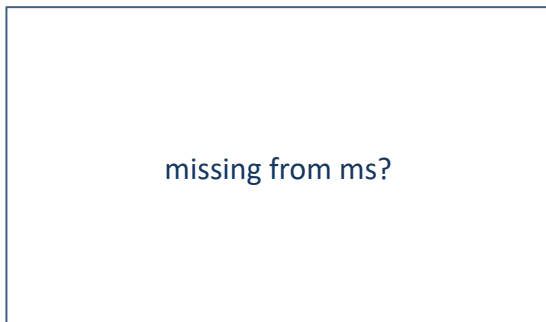
globe on stand
2 animals = UMi and Uma ?

I.



Prague, Univbibl
Ms IX. C. 6 (1717)

n.b. – head in profile, bears different standing to left, claws



Prague – hemispheres

Revised Aratus Latinus

Ursa maior

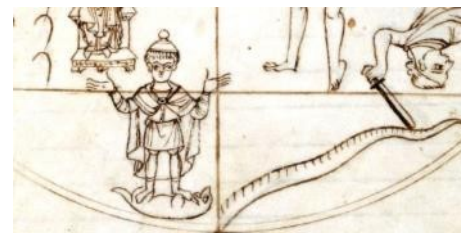
1a.



St Gallen, Stiftsbibl
Ms 902
n.b. — same size, tongues out



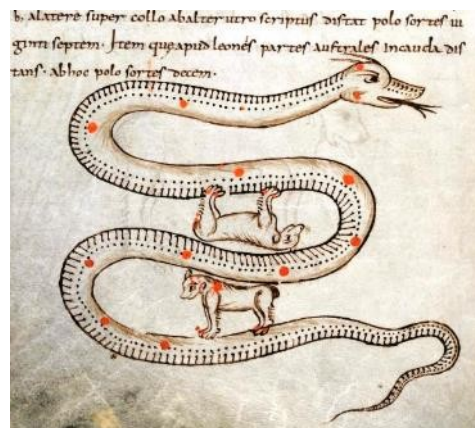
standing to left, tongue out, claws



Hemispheres
UMa under feet of Cepheus



globe on stand
2 animals =
UMa and UMi?



St Gallen, Stiftsbibl
Ms 250
same size



standing to left



hemispheres
UMa under feet of Cepheus



globe on stand
2 animals =
UMa and UMi?

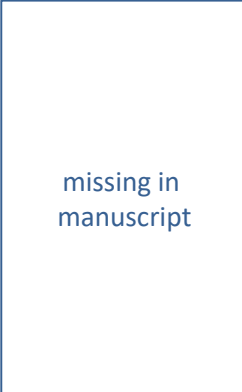
Ib.



Gottweig, Stiftsbibl.
 Ms 7 (146)
 n.b. – larger



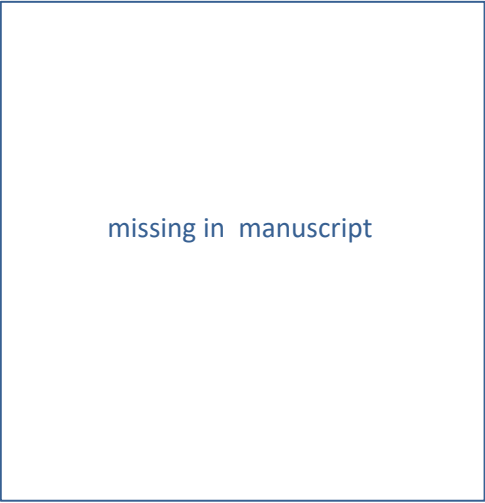
standing to left, tongue out, claws



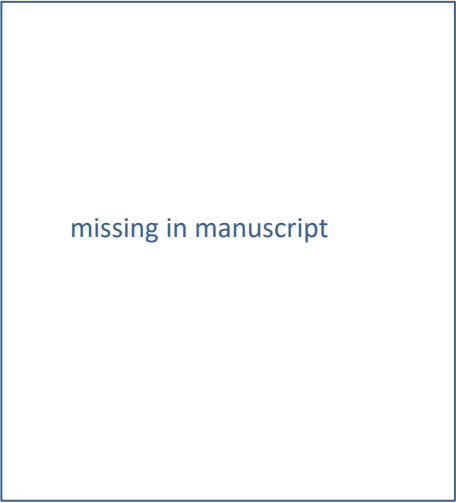
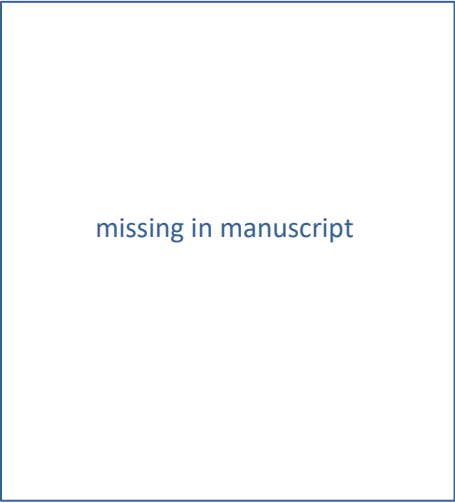
on hemisphere



globe on stand
 rabbit = one of bears?



Siena, Bib com
 Ms L. IV. 25

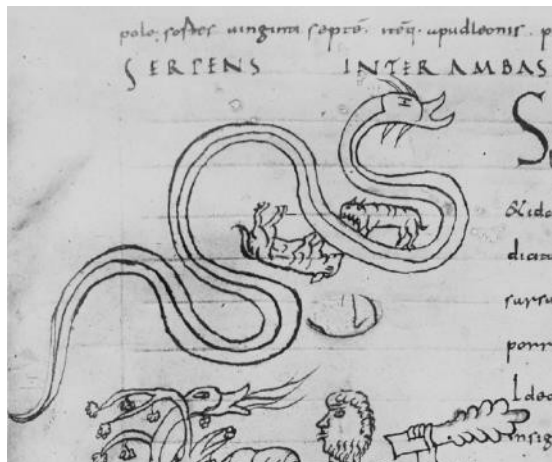


on hemisphere

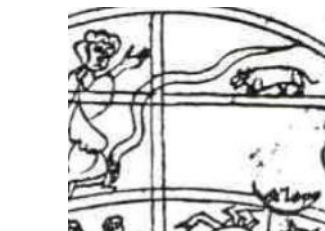
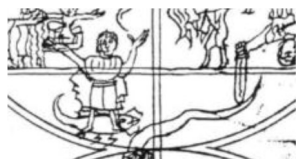
Revised Aratus Latinus

Ursa maior

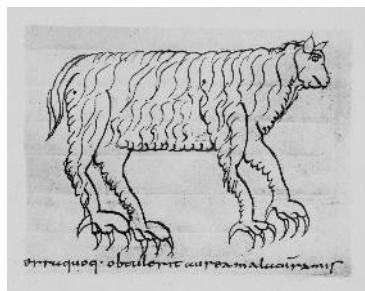
I. (distant relative)



Paris BN
n.a. 1614
n.b. – snake with dragon's head



Hemispheres
n.b. – UMa as scorpion under feet of Cepheus?



standing to right, claws

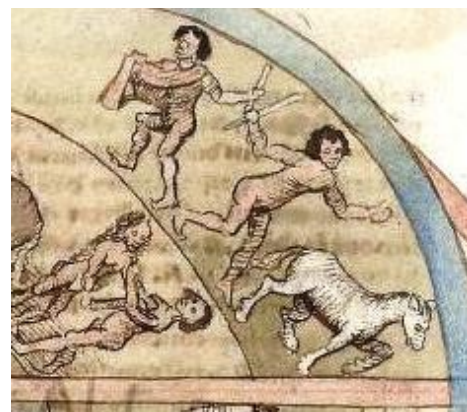


Munich, Staatsbibl.
CIm 560



hemispheres

I. (distant relative)



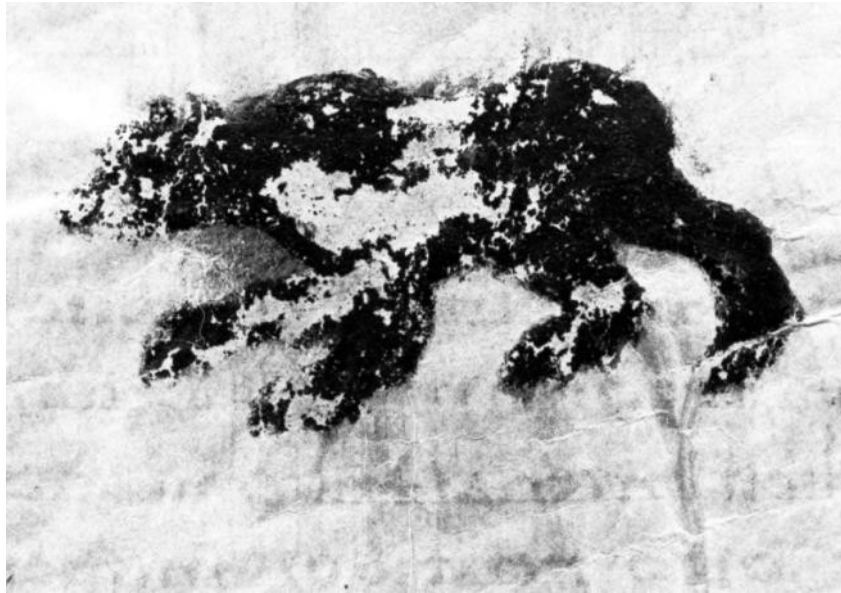
Hemispheres
 UMi near Draco's head

globe on stand
 animal near Auriga as horse

Vatican, BAV
 Reg lat 1324

n.b. - bear on tail slightly smaller

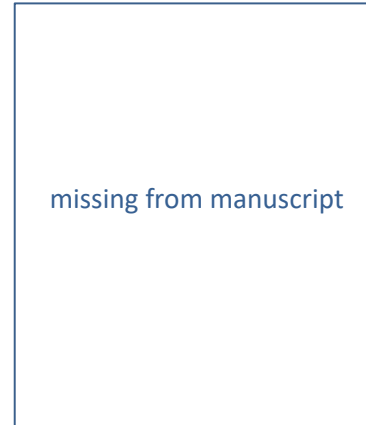
II.



Cologne, Dombibliothek

walking to left

Ms 83.11



hemisphere



globe on stand

1.



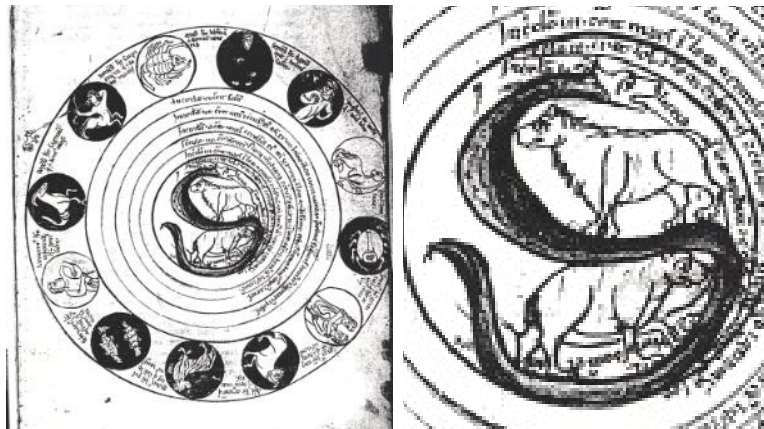
Oxford, Bodleian
Laud misc 644
n.b. – stand to left



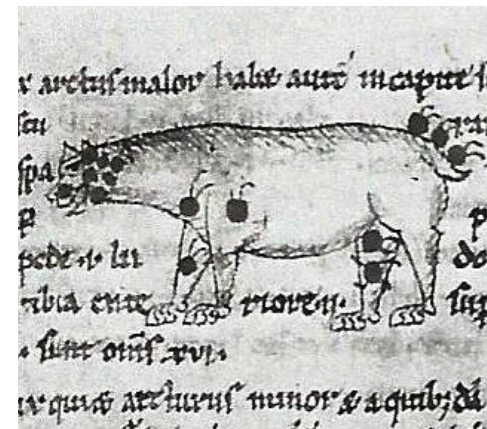
Padua, Bibl Antoniana
Ms Anton 27
same



Venice, Bibl Marciana
Ms VIII, 22
n.b. – walks to left

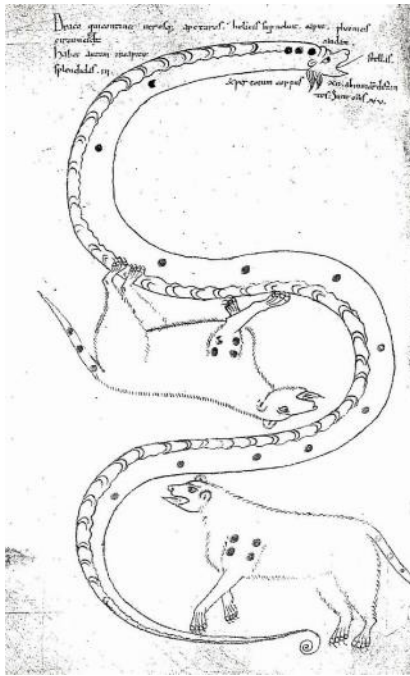


Draco inter arctos as part of zodiac rota



Paris BN
lat. 14754
same

la.



Dijon
Bib mun, Ms 488
n.b. – same size



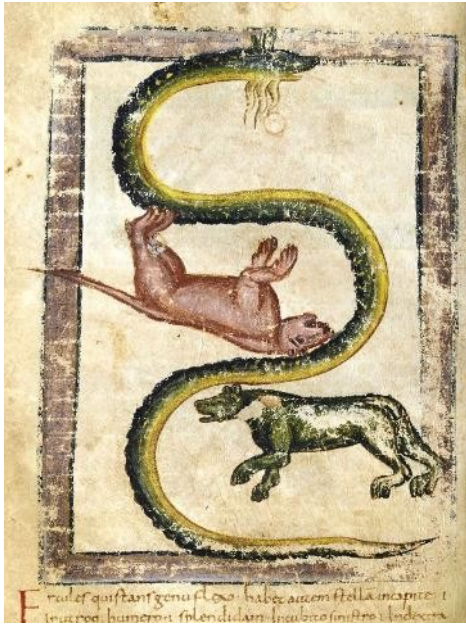
stands to left



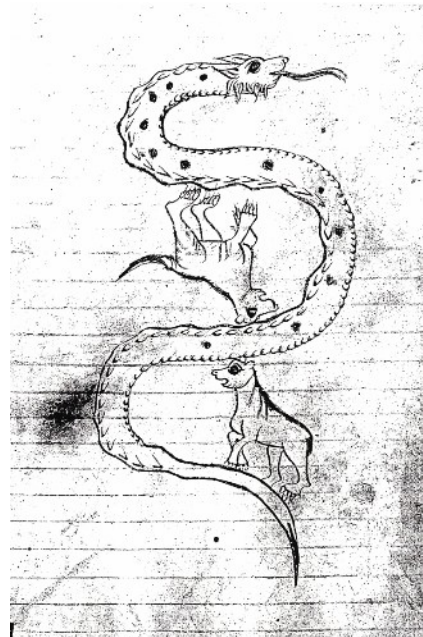
Draco inter arctos as part of zodiac rota



Ila.



Paris, BN
 Lat 5543
 n.b. – short tail, claws
 ‘Felix arcturus maior’



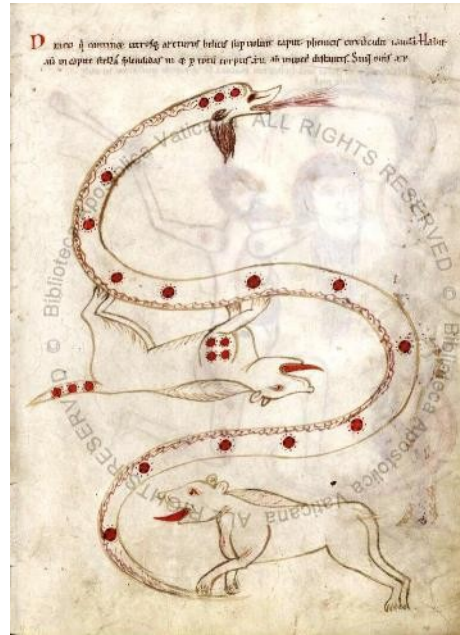
Paris, BN
 Lat 5239
 similar

lib.

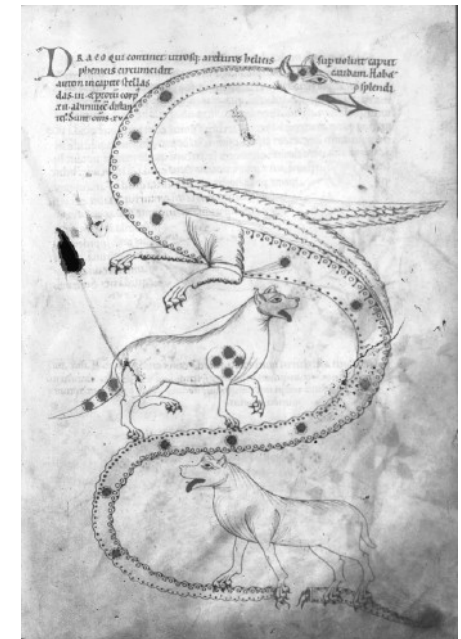


Klosterneuburg,
Stiftskirche, Ms 685

n.b. – shorter tail, tongue out, back ridge



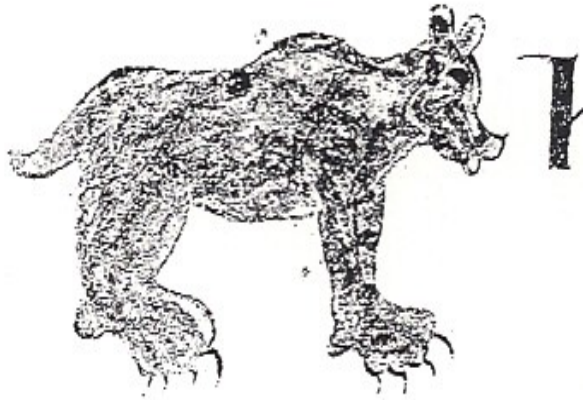
Vatican, BAV
Vat lat 643



Zwettl, Stiftskirche
Ms 296

closer to Klosterneuburg

III.

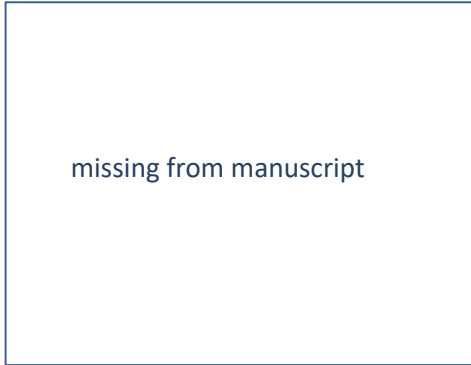


Laon
Bib mun, Ms 422
n.b. – standing to right, claws

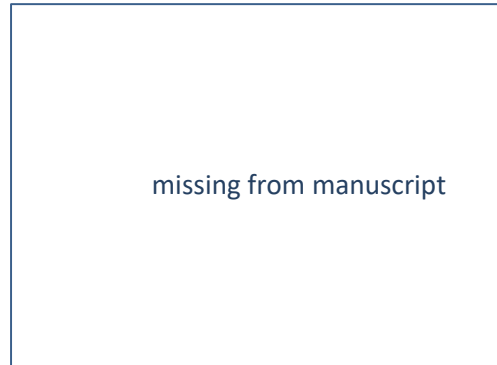


Rouen,
Bibl mun, 26
similar, but with tongue out

Singletons

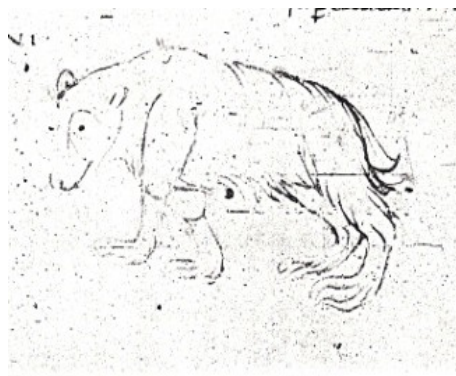


Amiens
Bibl mun, Ms 222

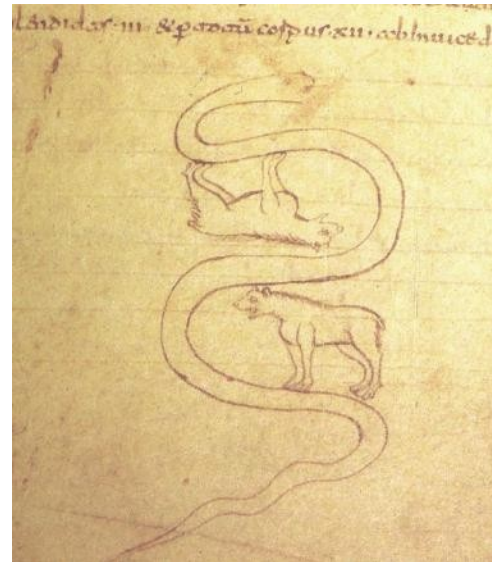


Durham, Cathedral Libr
Hunter 100

Singletons



Freiburg-im-Bresgau
Ms 35
n.b. – walks to left, shaggy



Montecassino,
Badia, Ms 3
n.b. – stand to left

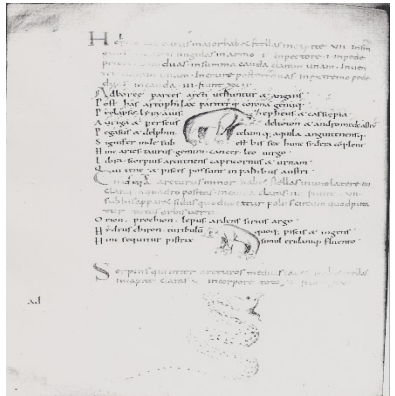
1a.



Berlin, Staatsbibl,
 Ms lat 130 (Phill 1832)
 n.b.— stands to right, back ridge



Berlin planisphere



Monza, Bib capit
 Ms F. 9/176 (246)
 same, with humped back



Madrid, Bib Nac
 Ms 3307
 similar

Ib.



Vatican BAV,
 Vat lat 645
 n.b. – walks to right, shaggy

II.



Munich, Staatsbibl.
 Ms clm 210
 n.b. – stands to left, long snout



planisphere

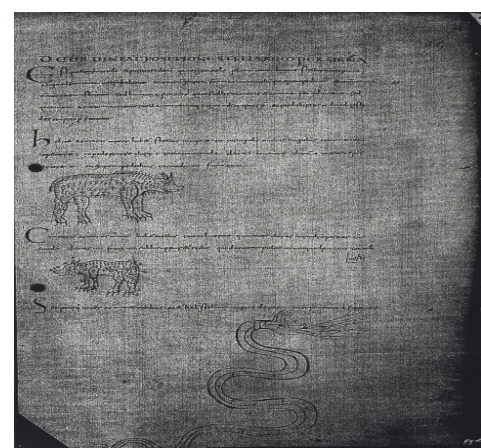


Vienna, ONB
 Vindob 387
 same

III.



Austin TX, Harry Ransom,
Univ of Texas, Ms 29
n.b. – stands to right, claws



Paris BN
lat n.a. 1614
similar



St Petersburg, Nat Libr
Ms Q v IX, no 2
same

IV.



Paris BN
lat 12117
n.b. – only as draco inter arctos



Vatican BAV,
Reg lat 309
same

De ordine ac positione

Ursa maior

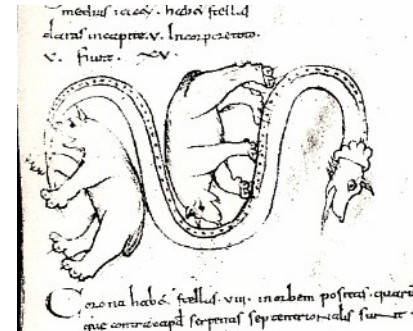
V.



Los Angeles, Getty Mus
Ludwig XII, 5
n.b. -- walking to left with bridle



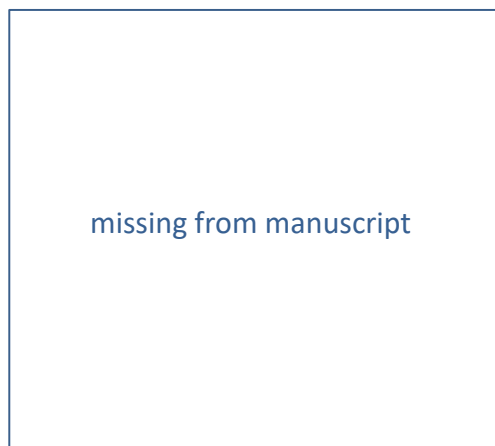
Paris BN,
lat 8663
n.b. -- climbing to left, claws



Singletons



Vienna, ONB
Vindob 12600
n.b. -- walks to left, large hump



Reykjavik
Ms 1812

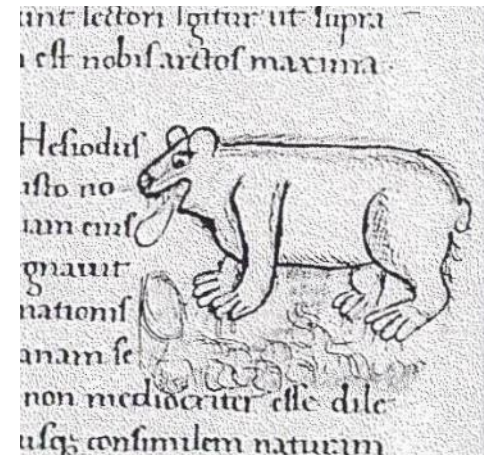
1a.



S Paul im Lavantthal
Ms 16/1 (XXV. 4. 20
n.b. – stands to left



Florence, Bibl Laurenziana
Ms Plut 29.30
same



Leiden, Univ-blbl
Voss 8°18
n.b. – standing on water (?)

Ib.



Wolfenbüttel, Herz Aug
Ms 18. 16. Aug 4°
n.b. – walking to left



London BL
Arundel 339
same

Hyginus

Ursa maior

Ic. (singleton)



Vienna ONB
Vindob 51
n.b. – stands to left, claws

II. (singleton)



Leiden Univ-bibl
Voss lat 4° 92
n.b. – stands to left, raised front foot

III.



Leiden Univ-bibl
Voss lat 8° 15
n.b. – leaping to left



Vatican BAV
Reg lat 123
same



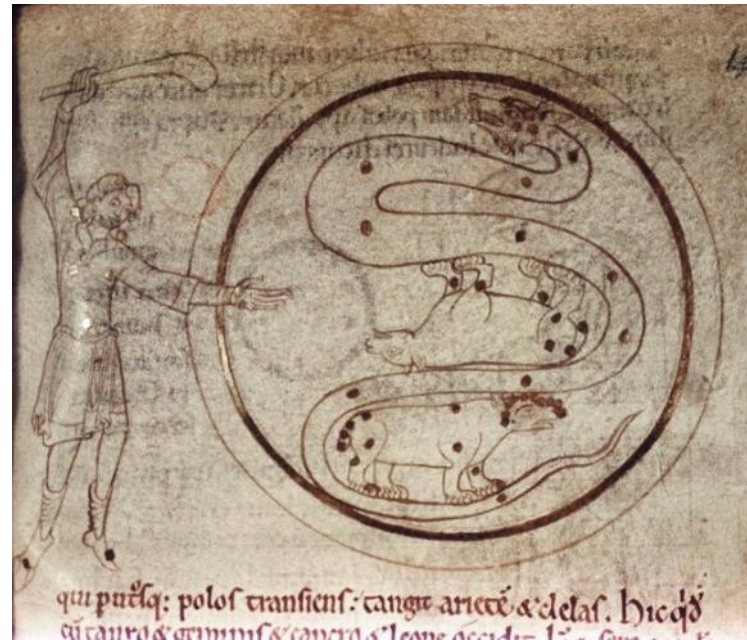
Vat Reg lat 123 –
planisphere

IV.



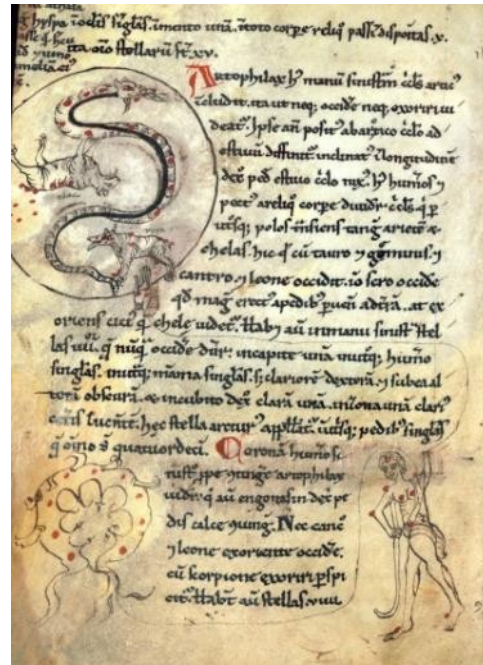
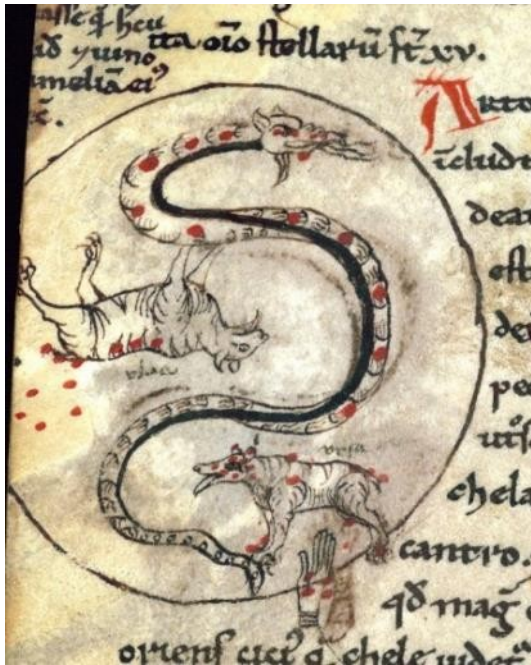
Oxford, Bodleian Libr
Bodley 614

n.b. – only in draco inter arctos, stands to right,
long tail



Oxford, Bodleian Libr
Digby 83 (SC 1684)
same

V. (singleton)



Baltimore, Walters Art Gallery

Ms 734

n.b. – only as part of draco inter arctos

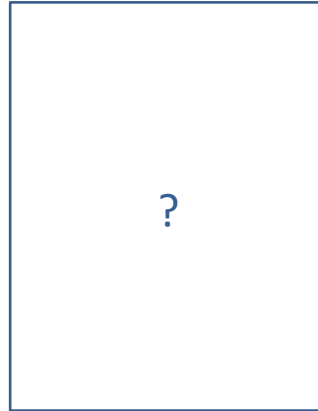
VI. (singleton)

VI- related: German Star Books ('secundum Hyginum')

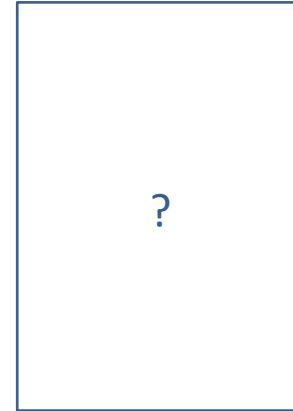


Berlin, Staatsbibl.
Ms 8° 44 (Rose 962)

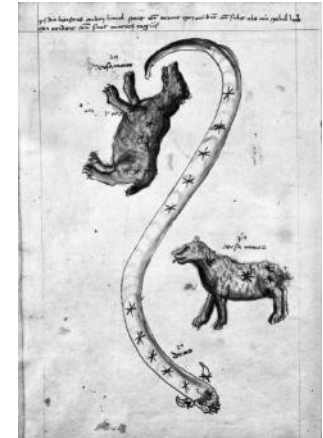
n.b. – only as part of draco inter arctos



Lyon, Bib mun, Pal des
Arts 45



Lyon, Bib mun
Ms 172



Munich, Staatsbibl
Germ 595

angled



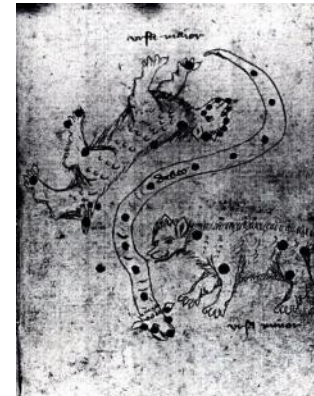
Munich, Staatsbibl
CIm 59

back-to-back, in circle



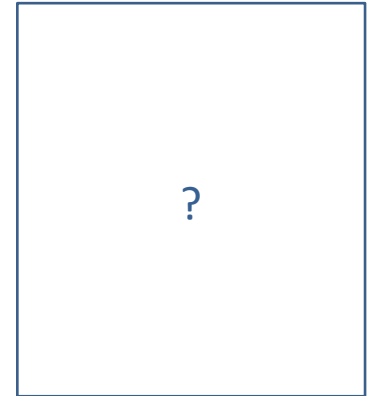
Vatican BAV
Pal.lat. 1369

angled



Vatican BAV
Pal.lat. 1389

angled



Wolfenbüttel Herz Aug
Guelf 81 24 Aug 1

VII. (singleton)



London BL,
Roy Ms 13. A. XI

n.b. – only as draco inter arctos

VIII. (singleton)



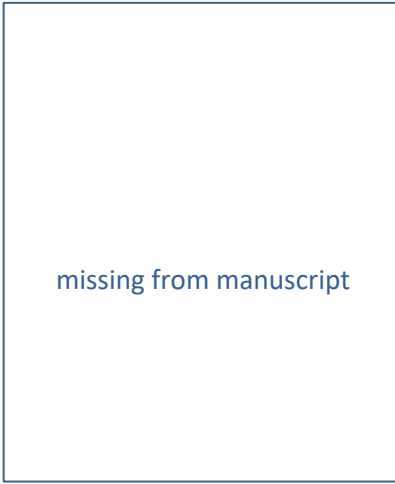
Munich, Staatsbibl.
CIm 10270

n.b. – only as draco inter arctos

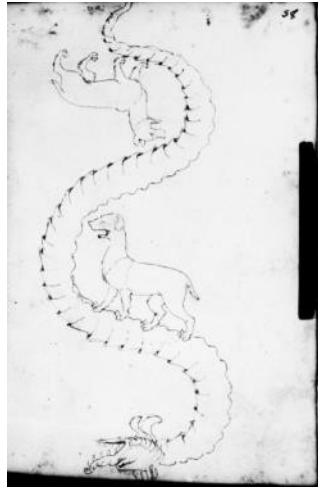
Hyginus

IXa.

Ursa maior

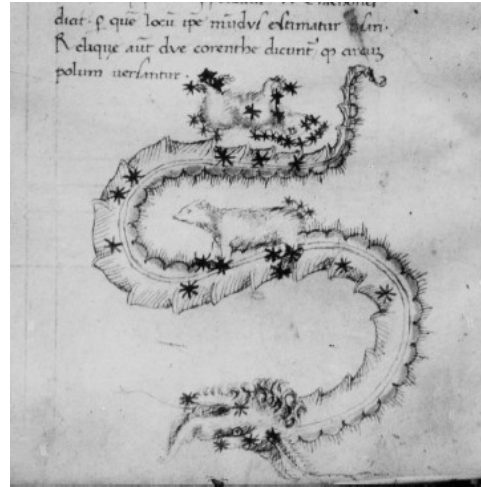


Cambridge, Fitzwilliam Mus
Ms 260



Florence, BN
Magl XI. 141

n.b. -- only as draco inter
arctos



Milan, Bibl. Ambrosiana
T. 47 sup



Oxford, Bodleian Libr
Can. class lat 179



Siena, Bib com
Ms L. VI. 25



Vatican, BAV
Vat lat 3109
within tail



Vatican, BAV
Vat lat 3109
within tail



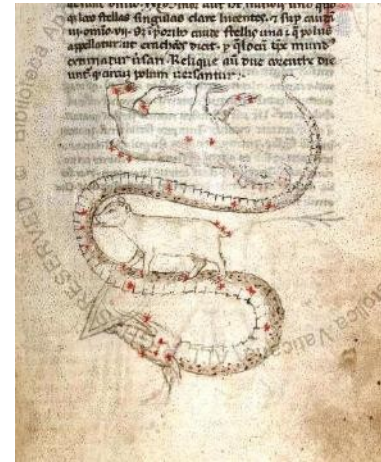
Verona, Bibl capitolare
Ms CCLXI

Hyginus

Ursa maior

IXb.

IXc.



Oxford, Bodleian Library
Can misc 46

Milan, Bibl Trivulziana
N. 690 (E 83)

Vatican, BAV
Vat lat 3110

Florence, BNC
Magl XI. 114,1

n.b. — only as draco inter arctos

IXd. (distant singleton)



Florence, Bibl Laurenziana
Ashburnam 1148

n.b. – only as draco inter arctos

IXe.



Pavia, Bibl Univ
Aldini 490



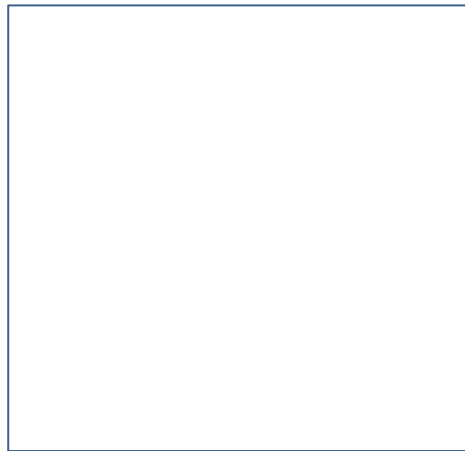
Vatican., BAV
Urb lat 1358

IXf.



New York, Public Library
Spencer Ms 28

n.b. – within curl



Freiberg, Andreas-Möller-Bibl.
Cl XI 4o 9

IXg.



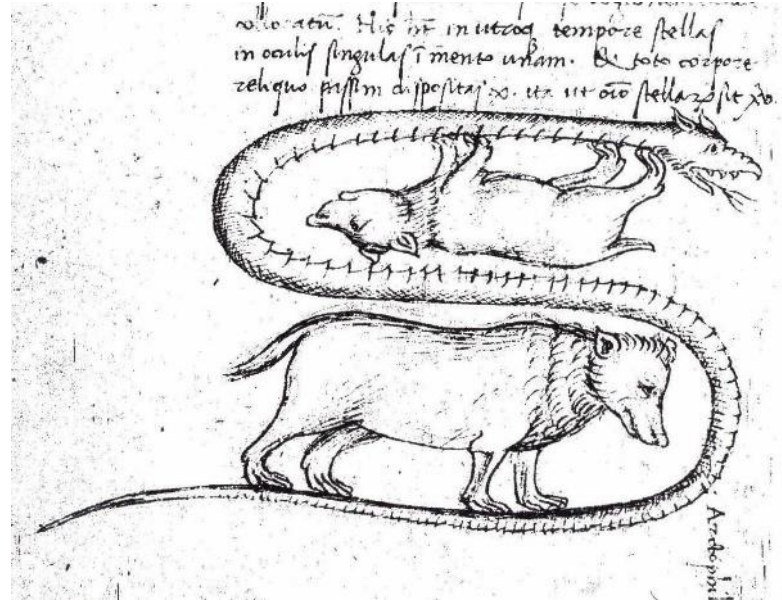
Florence, Bib Naz
Plut 89, sup 43

X. (singleton)



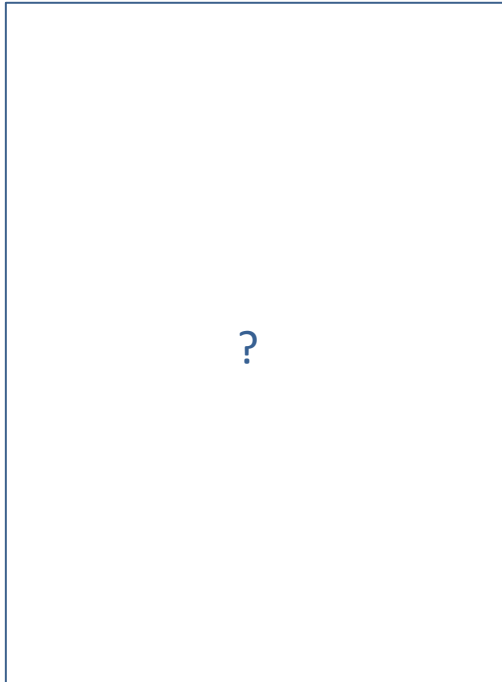
Vatican, BAV
Chigi H. IV. 20

XI. (singleton)

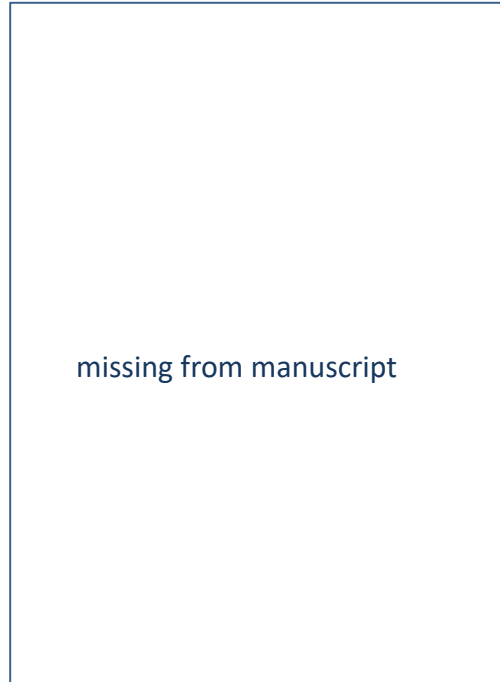


Cortona, Lib del Comune
Ms 184 (256)

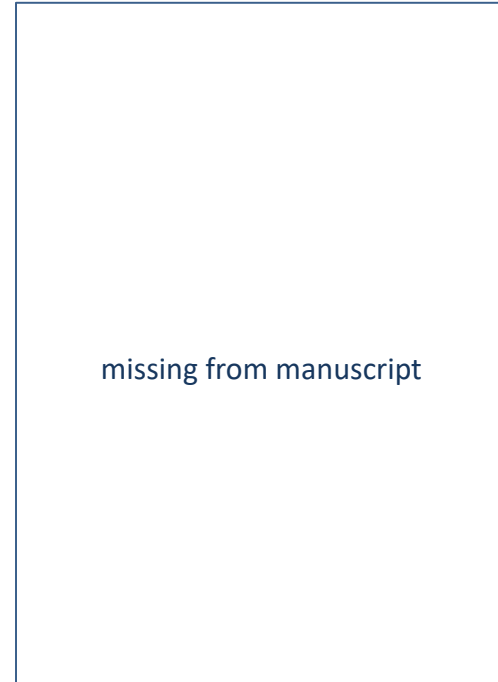
n.b. – only as draco inter arctos



Cambrai, Bibl Mun.
Ms 933 (832)

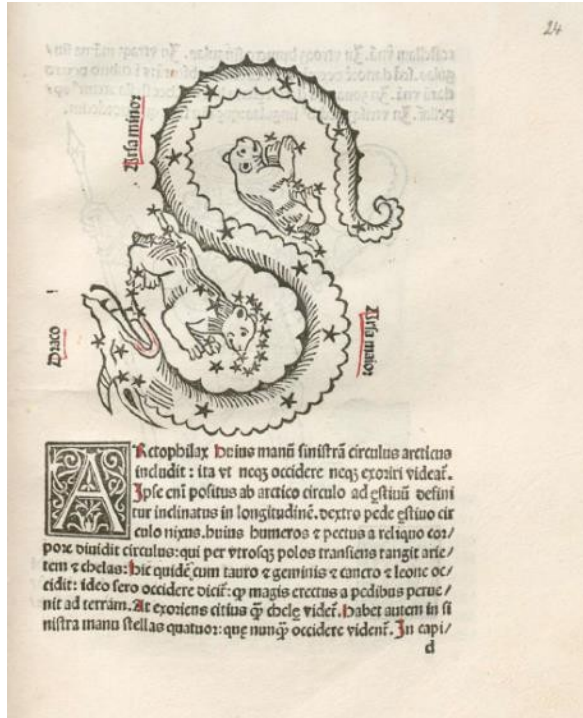


Cambridge, Trinity College
Ms R 15 32



Leiden, Univ.-bibl.
Gronovius 21

Venice: Ratdolt, 1482

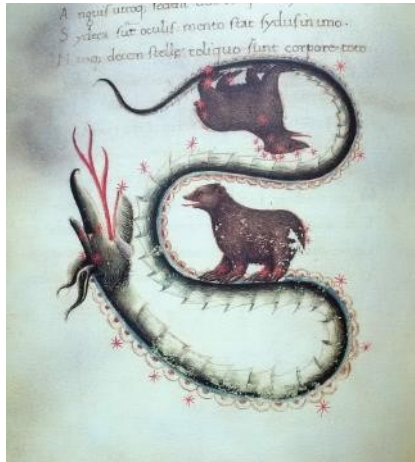


cf Michael Scot
n.b. — only as draco inter arctos



Vienna ÖNB
Vindob 3111
same

1a.



Rimini, Cassa di Risparmio
 (London Sotheby's sale 1992)
 n.b. – only as draco inter arctos

1b.

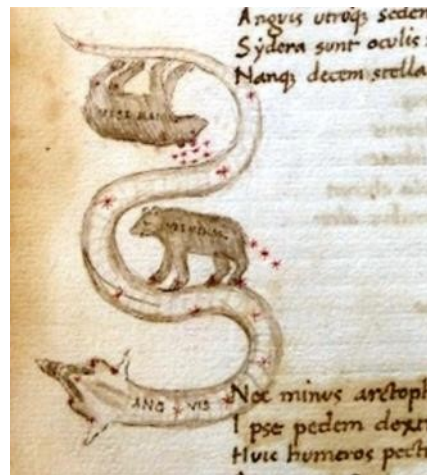


Cambridge, CUL
 Dd IV 64
 same

11a.



Oxford, Bodleian Libr
 Bodley 646

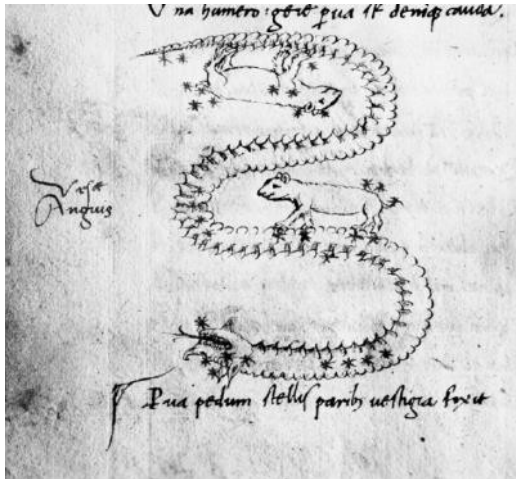


Parma, Bib Palatina,
 Parm 1008
 same

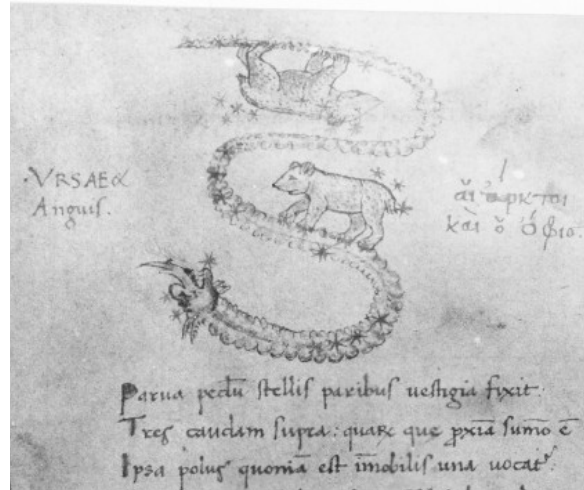


Venice, Bibl Marciana
 XII, 194 (4148)

IIb.



Parma, Bibl Palatina
 Parm 27
 n.b. — only as draco inter arctos



Rome Bibl Casanatense
 Ms 4059
 same



Munich, BSB
 Clm 15743
 same

III.



Bologna, Bibl Com
Ms 173
n.b. – only as draco inter arctos

IV.



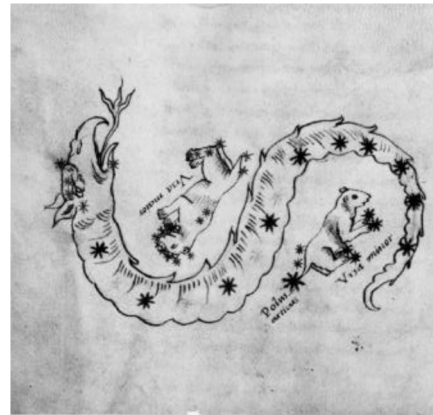
London, Wellcome Coll

V.

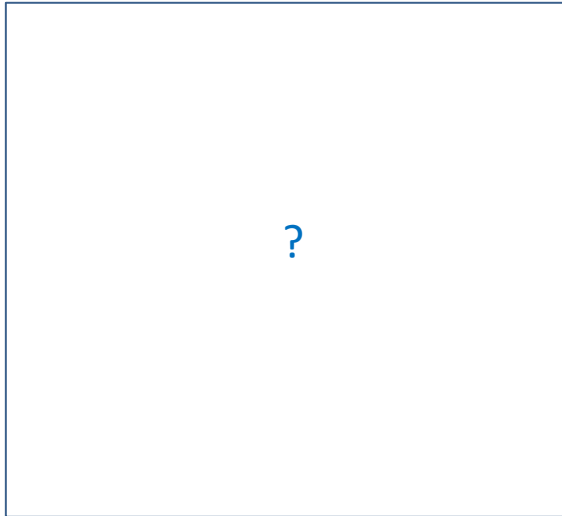


Ravenna, Bib Classense
Ms 120

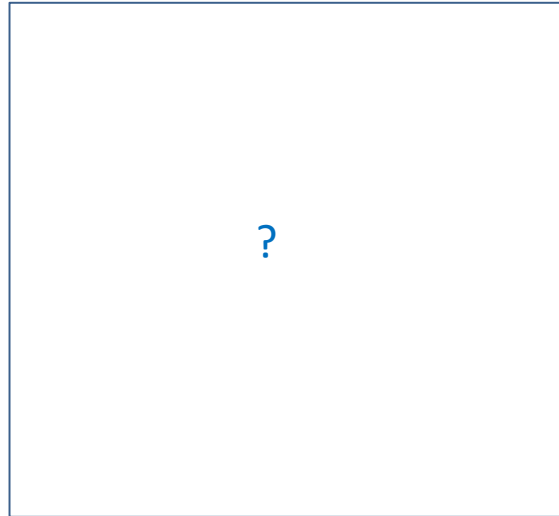
VI.



Florence, Bibl Marucelliana
Ms C. CCLI
cf. Ratdolt/ Michael Scot



Krakow,
Rps BJ 3706



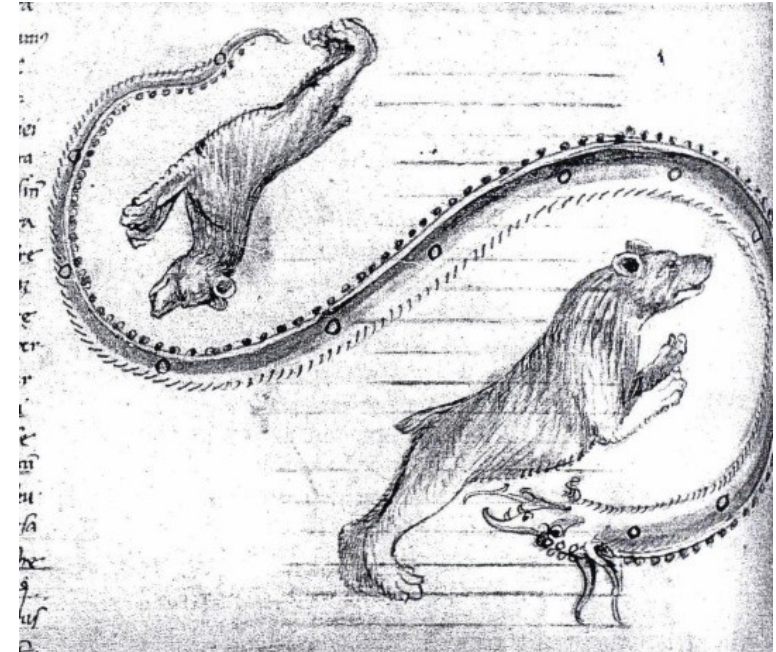
Padua, Bibl. Universitaria
Cod 983

N Italian Group – Ia.



Munich, Staatsbibl
Clm 10268

n.b. – only as draco inter arctos, larger bear at head of Draco



Oxford, Bodleian Libr
Bodley Ms 266
same

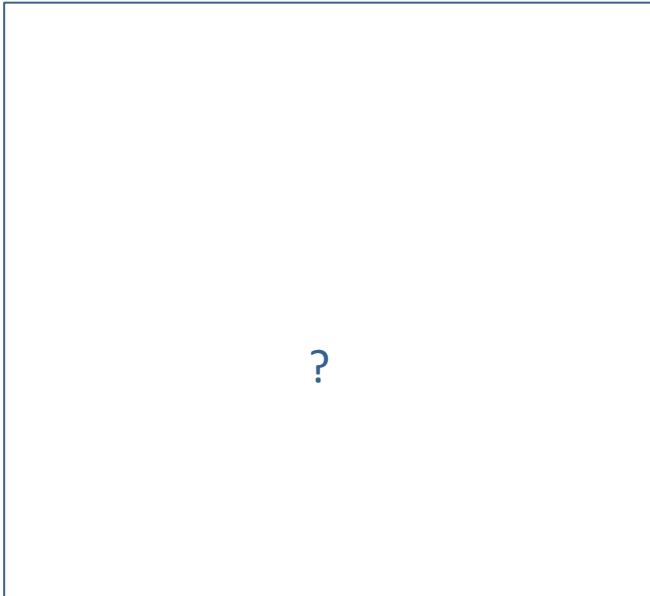
[1] In unoquoque est signum certa quantitate stellarum et utrumque dicitur Arcturus, tamen unum est maius altero. At sicut Greci nominant dicta signa Arctores, ita nos Latini nominamus eadem signa Ursas seu Plaustra.

[2] Ergo Ursarum una magna est et altera parva, et sibi sunt opposite, ut caput unius ad caudam alterius continuo persistens. Ursa quidem Minor est in parte septentrionis et Maior est in parte meridiei.

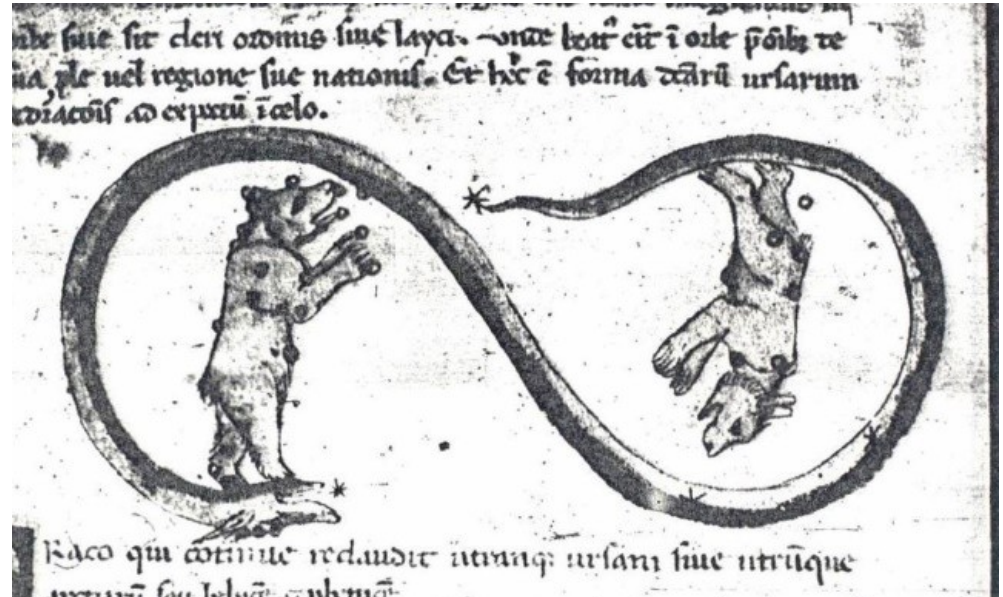
[6] Item quandoque Ursa Maior nominatur Helix

[8] Ursa maior, que quandoque dicitur Arcturus, quandoque Arctofilax, et quandoque Helix(ed. Ackermann 2009, p. 168 - 70).

N Italian Group – Ib.

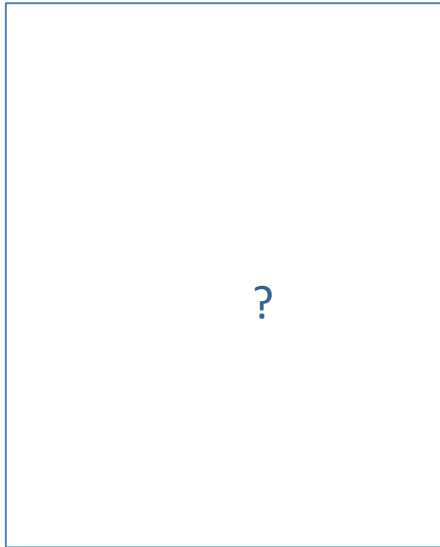


Vatican, BAV
Vat lat 4087 A



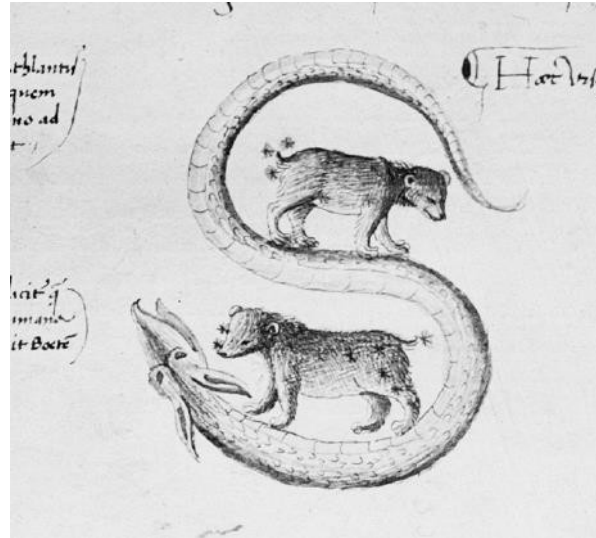
St Petersburg, Nat Libr
Ms lat F V IX, no. 1
n.b. – only as draco inter arctos

N Italian Group – Ic.



Warsaw, BN, B
Baw 46

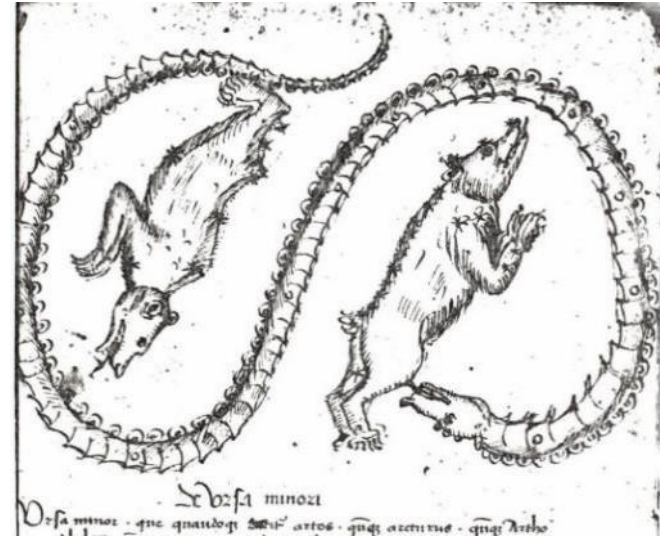
N Italian Group – Id.



Vienna, ONB
Vindob 3394

n.b. – only as draco inter arctos, larger bear at head of Draco

N Italian Group – Ie.



Padua, Bibl Seminario
Cod. 48

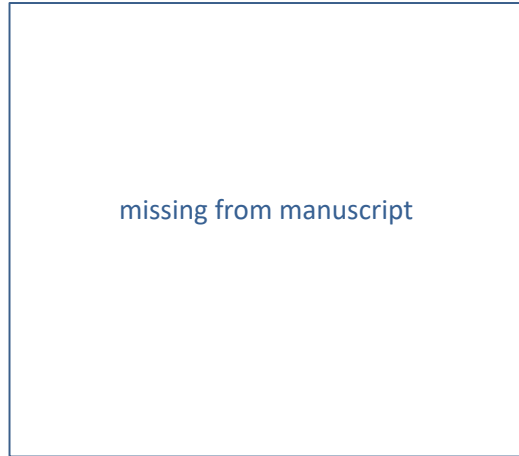
same

Venetian Group – IIa.



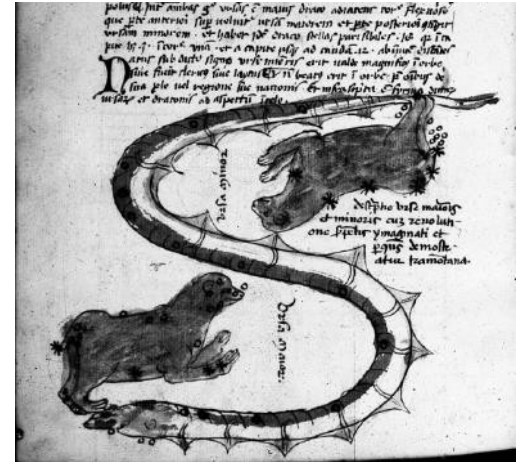
London BL
Add 41600

n.b. -- only as draco inter arctos, larger bear at head of Draco



London, Wellcome Coll

Venetian Group – IIb.



Milan, Ambrosiana
Ms I 90 sup

Bohemian Group – IIIa.



Vienna, ONB
Vindob 2352

n.b. – only as draco inter arctos

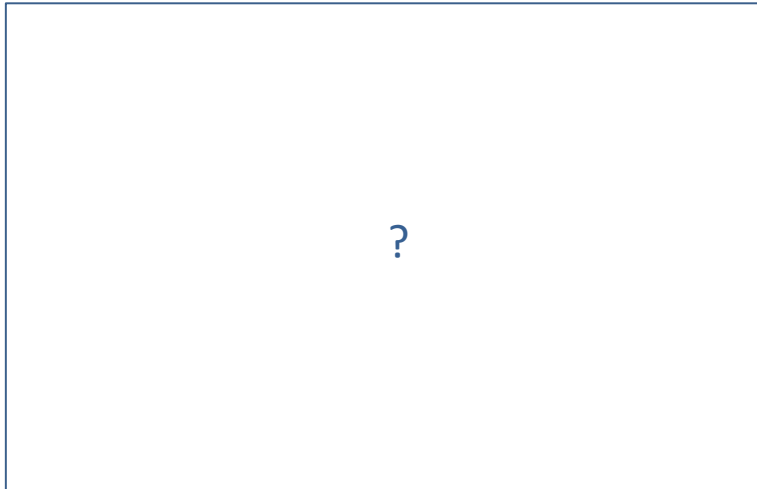


Vienna, ONB
Vindob 2378

same, but larger bear at head of Draco

Michael Scot

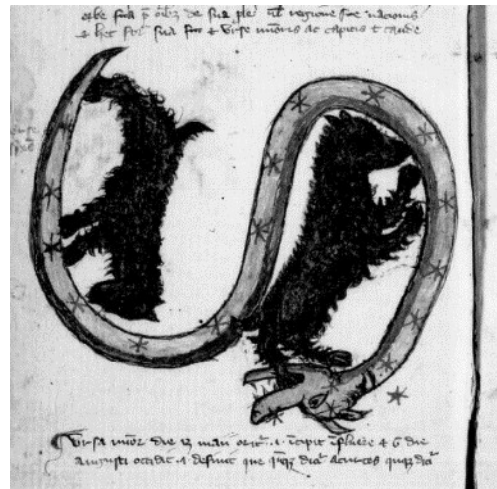
Bohemian – IIIa.



Prague NK,
Ms III. C. 2

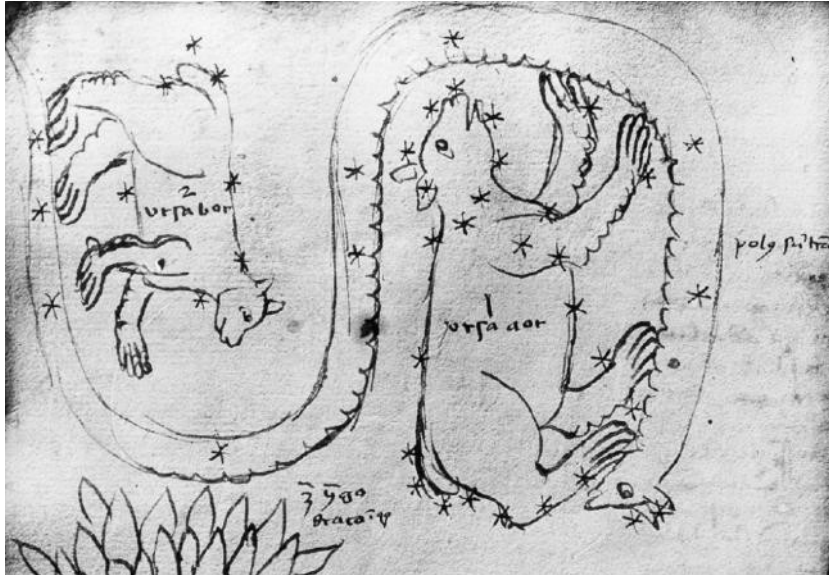
Ursa maior

Bohemian – IIIb.



Paris BN
lat 7408A

Bohemian – IIIc.



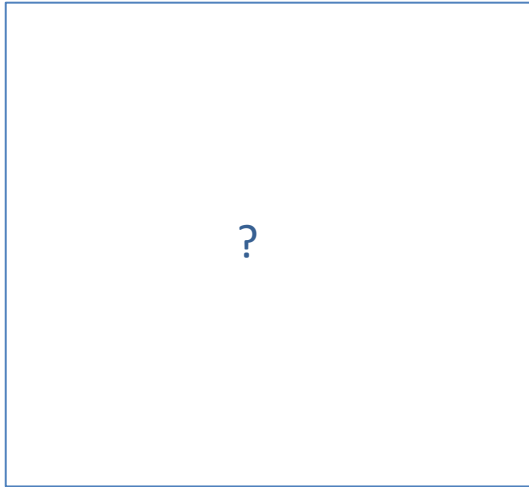
Vienna, ONB
Vindob 5442

n.b. – only as draco inter arctos, larger bear at head of Draco

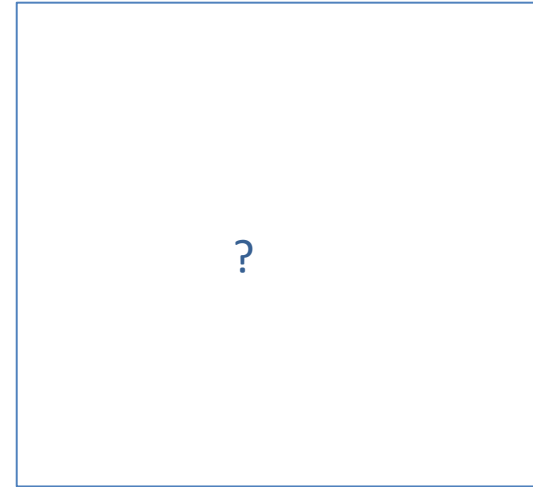
Bohemian – III d.



Cambridge, MA
Harvard, Houghton
Libr., Typ 43



Edinburgh, Royal Observatory
Ms Cr 3. 23

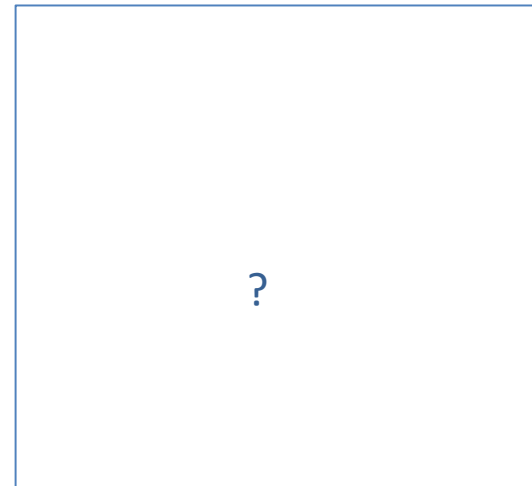


Florence, BNC
Magl. XXII, 22



Klosterneuburg, Augustiner Ch-Stift,
Ms CCI 125

n.b. – only as draco inter arctos, larger bear at end of Draco's tail



Krakow, Bibl Jagiellonska
Rps 573



Prague, Narodni Knihova
Ms XXXVI A 3

n.b. – only as draco inter arctos, larger bear at head of Draco



Seville, Bibl Columbina
Ms. 7.7.1

n.b. – stands to right, tongue out

Michael Scot
German mss – IVa.

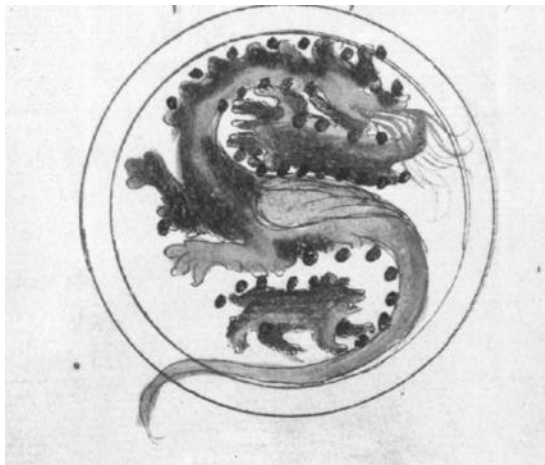
Ursa maior



Darmstadt, Hess Hochschulbibl.
Ms 266
n.b. – only as draco inter arctos



Berlin, Staatsbibl
Ms germ fol 244
larger bear at tail of Draco



Salzburg, Studienbibl
2 G 8/13
larger bear at head of Draco



Vatican, BAV
Pal lat 1370

German mss – IVa.



Paris, BN
Allem 106

larger bear at head of Draco

German mss – IVb.



Tubingen Univ-bibl.

Ms d 2

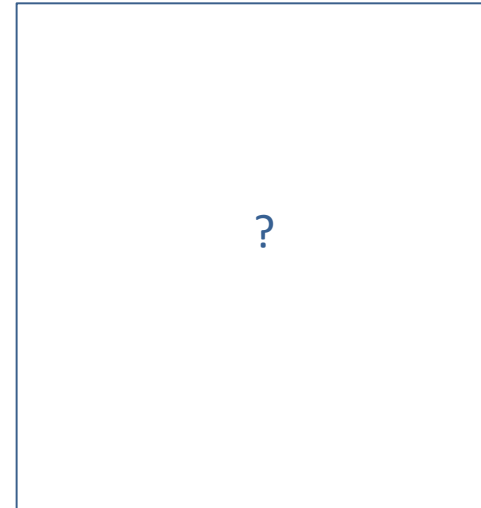
n.b. – larger bear at head of Draco, licking paw



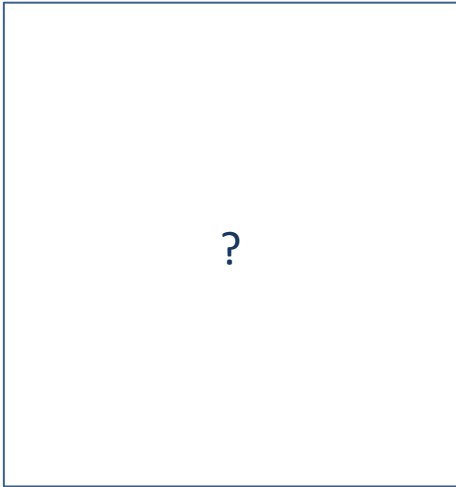
larger bear in paranatellonta rota



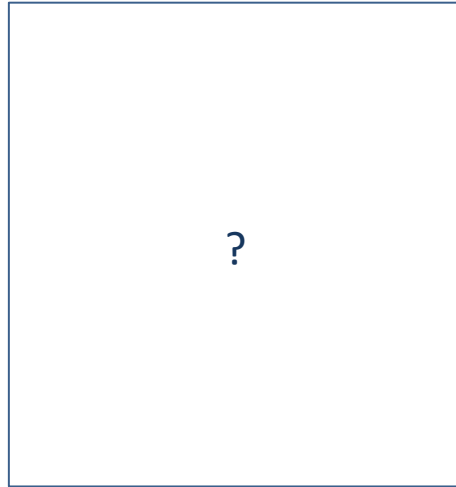
UMa and UMi as children of Luna



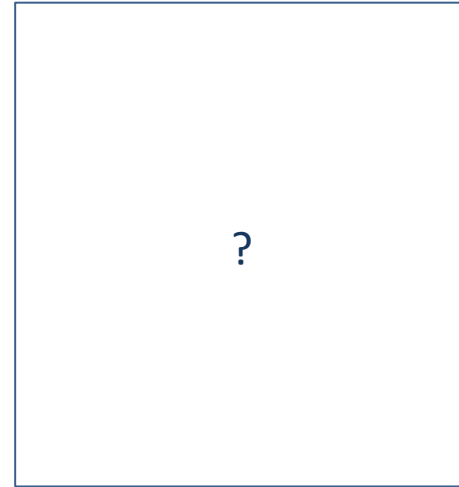
Wolfenbüttel, Herz Aug Bibl
Ms Guelph 29 14 Aug 4°



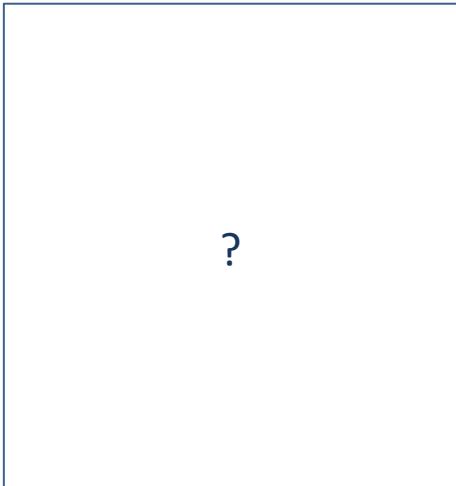
Coburg, Bayerisches Landesbibl.
Ms 5



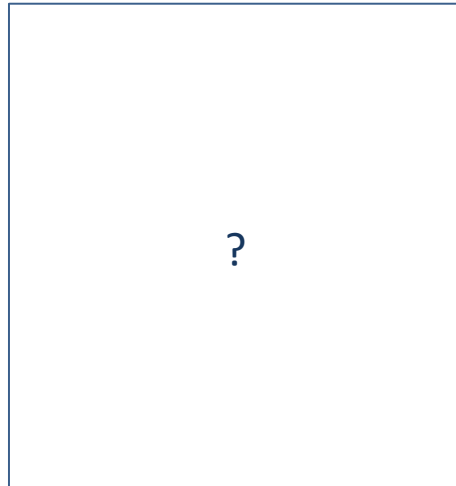
Edinburgh, Royal Observatory Libr.
Ms Cr 4 6



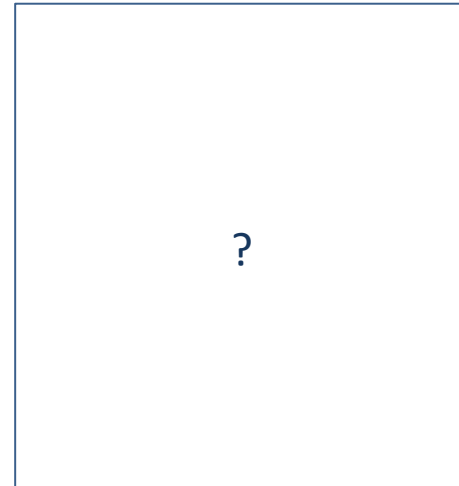
Freiburg, Univ-bibl.
Ms 458



Heidelberg Univ-bibl.
Pal germ 832



Karlsruhe, Badische Landesbibl.
Ms K 2790



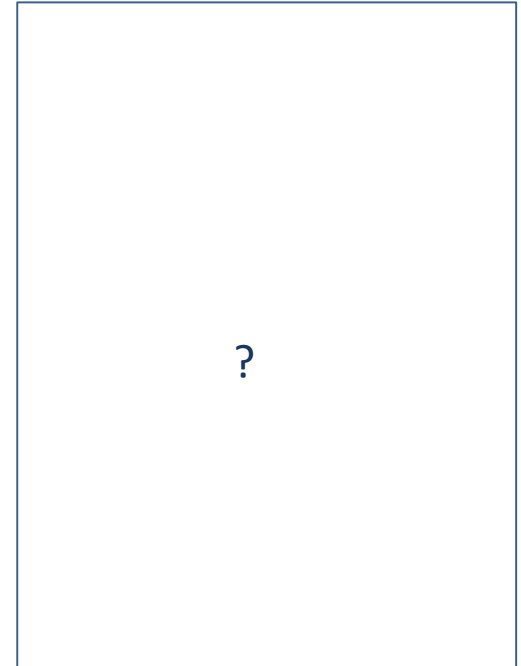
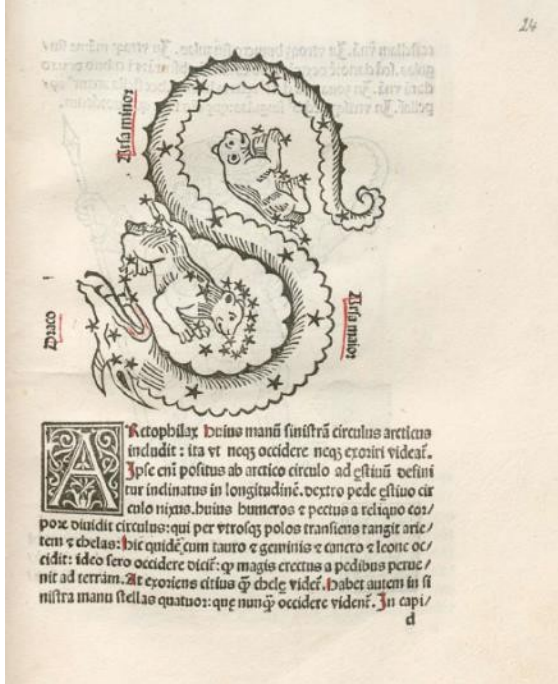
Nürnberg, Germanisches Nationalmus.
Ms 7082

Michael Scot - derived

Ursa maior

Venice: Ratdolt, 1482

Bartolommeo da Parma



Cambridge, Emmanuel College
Ms 70

Metz, Bibl mun
Ms 287

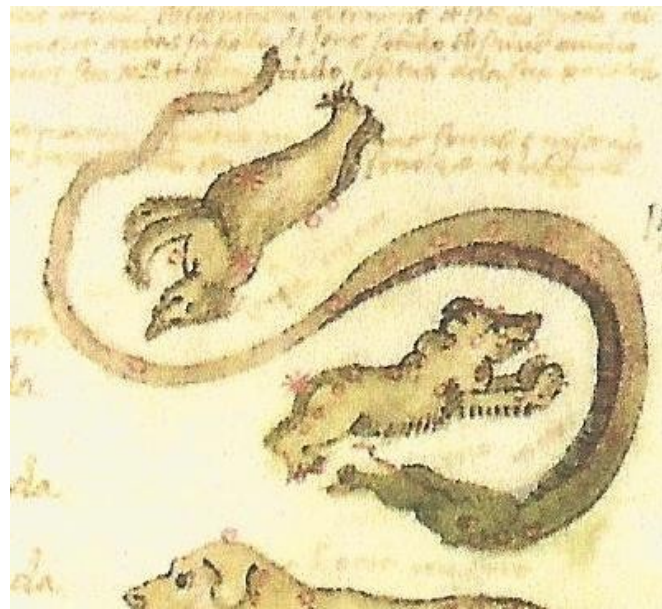
n.b. – only as draco inter arctos, stars
show larger bear at head of Draco

Fazio degli Uberti



Paris, BN,
Ital 81

n.b. – only as draco inter arctos, bear at Draco's head labelled UMa



Modena, Bibl Estense
Ital 483 (α. P. 47)

n.b. – only as draco inter arctos

Alfonsine Tables (John Killingworth update)



London, BL

Arundel Ms 66

n.b. – stands to left, raises snout

Stellacio urse maioris et dicitur helice

Ludovicus de Angulo



St Gallen, Vadianische Libr Ms 427
n.b. — only as draco inter arctos



Florence, Bibl. Riccardiana Ms 3011
n.b. — larger bear at head of Draco

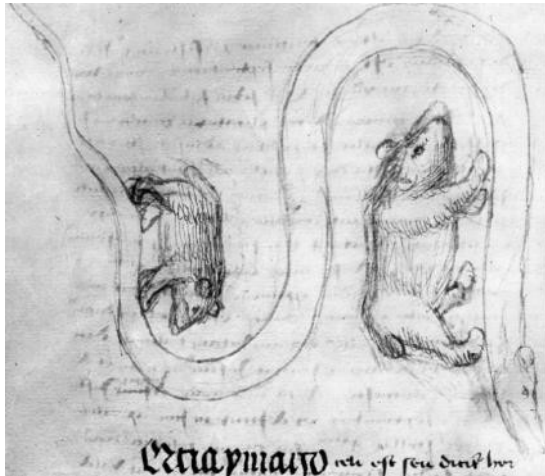


Madrid, BN Ms 9267
same (see label)

Michael Scot - derived

Ludovicus de Angulo

Ursa maior



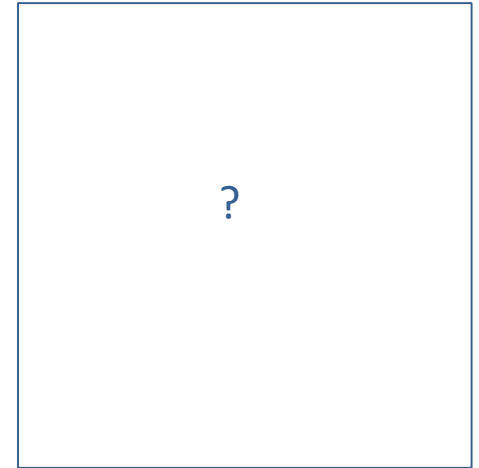
Paris BN
Lat 6561

n.b. – only as draco inter arctos , larger bear at head of Draco



Paris BN
Fr 612

n.b. – larger bear at end of Draco's tail



Paris BN
Lat 7344

Lambertus, Liber Floridus

Ursa maior



Hague
Ms 72.A
n.b. — only as draco inter arctos;
UMa near Draco's head (label)



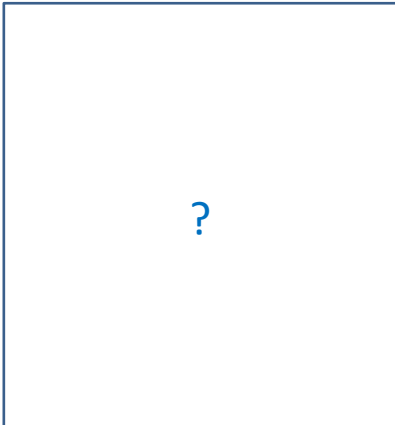
Hague
Ms 128 C
same



Paris, BN
Lat 8865
same



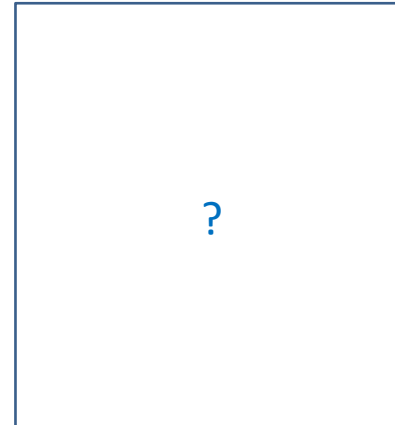
Chantilly, Petit Château
Ms 724 (1596)
same



Leiden, Univ-bibl
Ms 1° 31



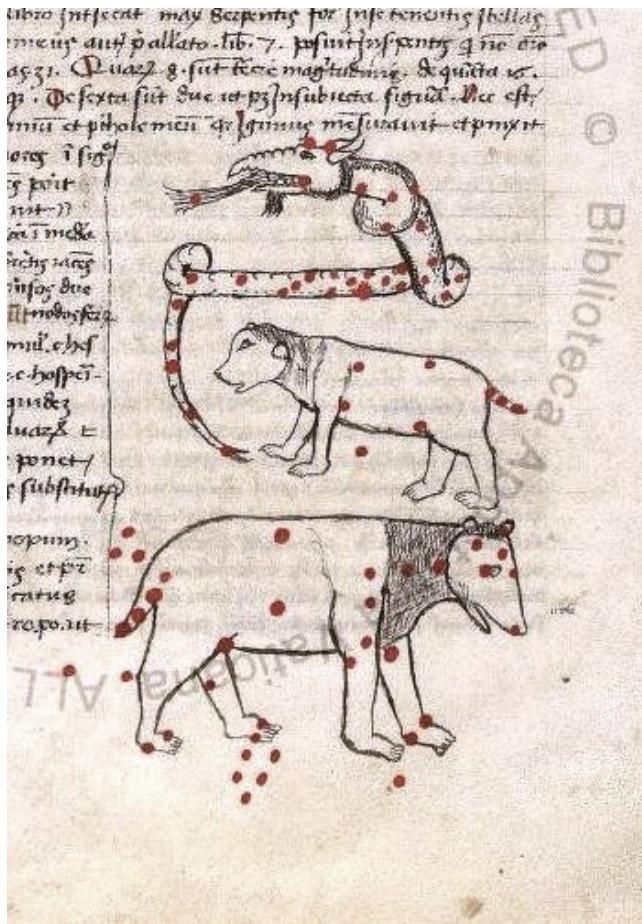
Ghent
Ms 92
same



Paris, BN
Lat 9675



Wolfenbüttel, WDB,
Ms Gud lat 1
same



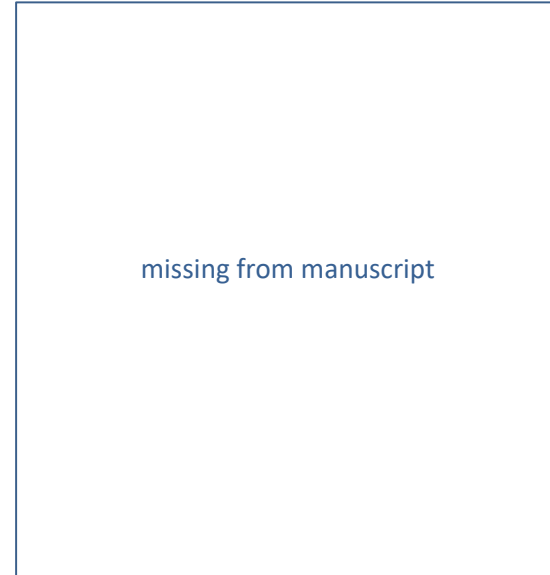
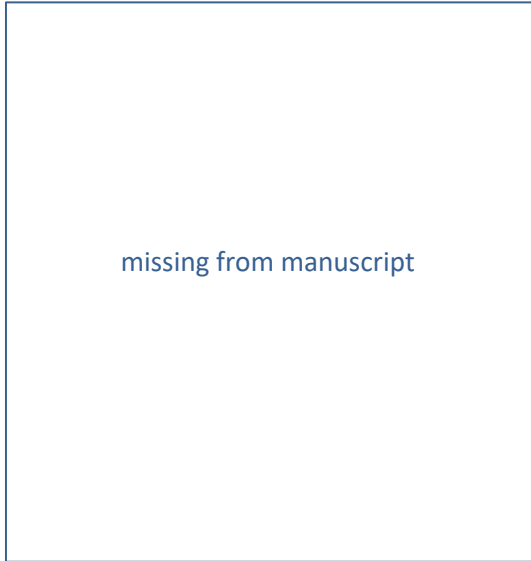
Vatican BAV
Val Lat 3121

n.b. – only as draco inter arctos, larger bear further from end of Draco's tail



Madrid, BN
Ms 1983

same, lower bear slightly larger



Fermo, Bibl. Com.
Ms 4

Florence, Bibl. Laurenziana
Aedil 170
same

London, Lambeth Palace
Ms 35



Florence, Bibl Laurenziana
Plut 40 53

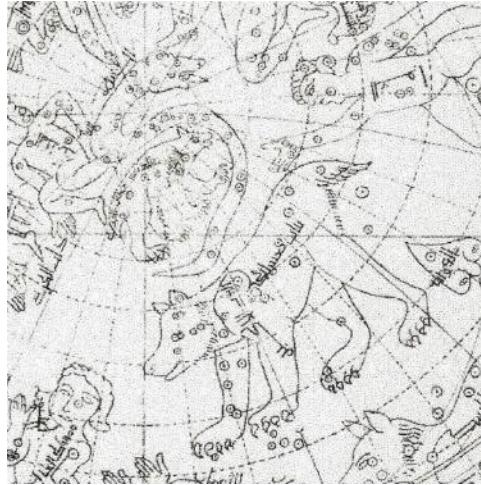
n.b. – only as draco inter arctos, bears same size



detail from planisphere
bear near tail slightly larger



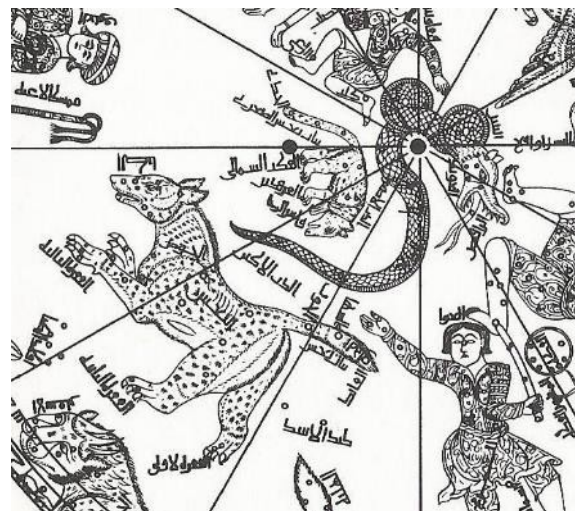
Florence, Mus delle Scienze, no. 2712
dated 1025 AD



Paris globe GA 325



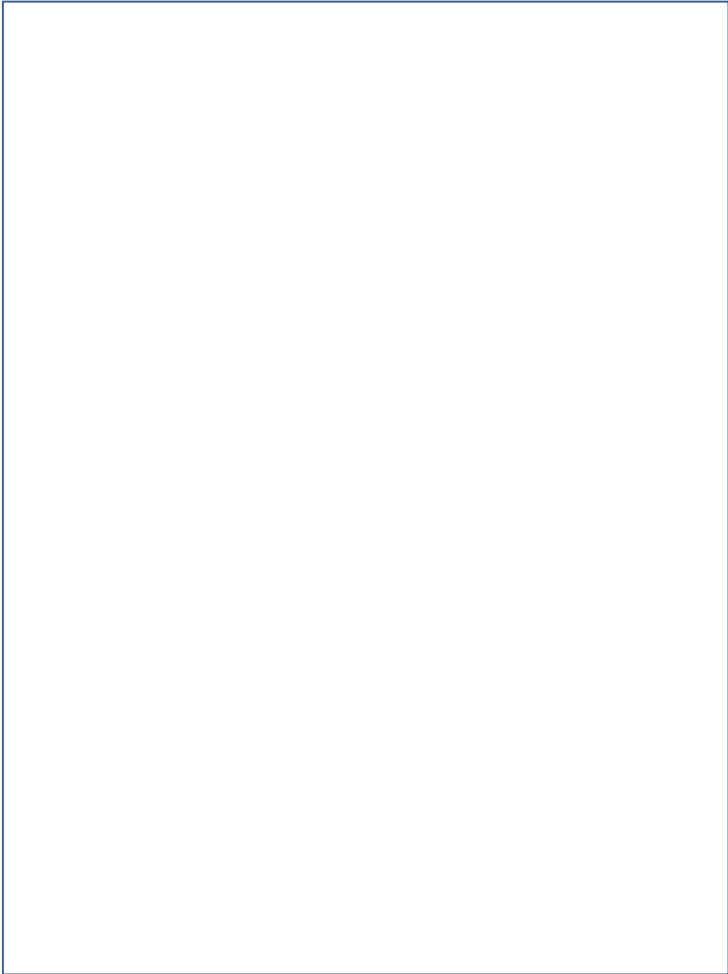
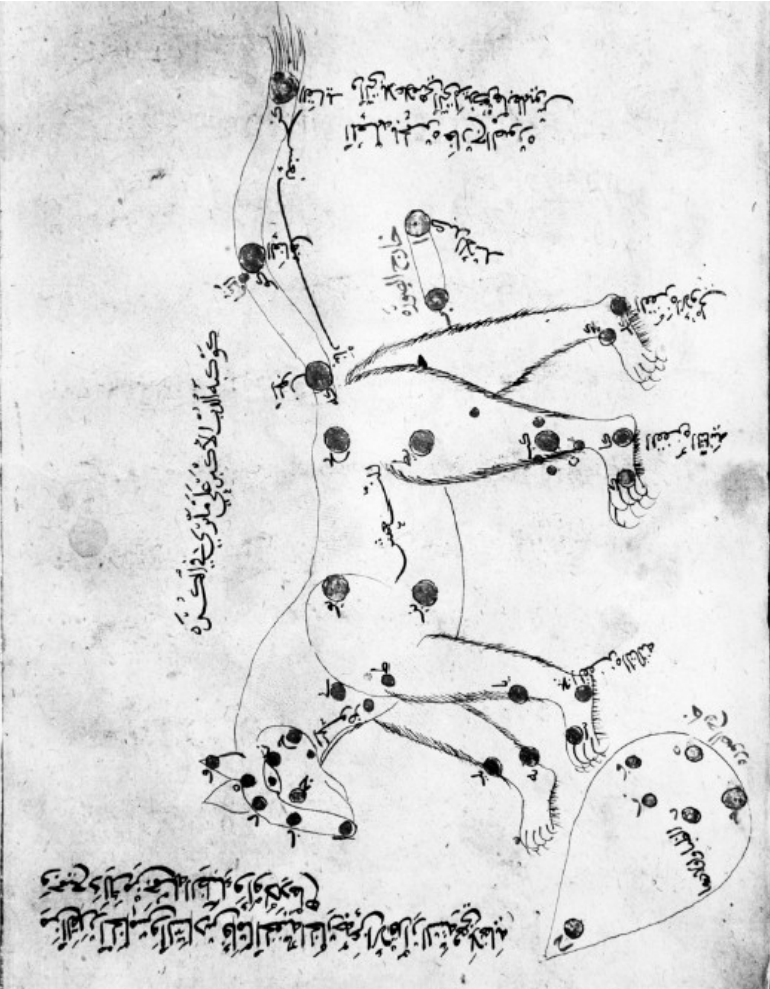
Smithsonian Mus, no 72-3085
n.b. – under Draco's tail, note long tail



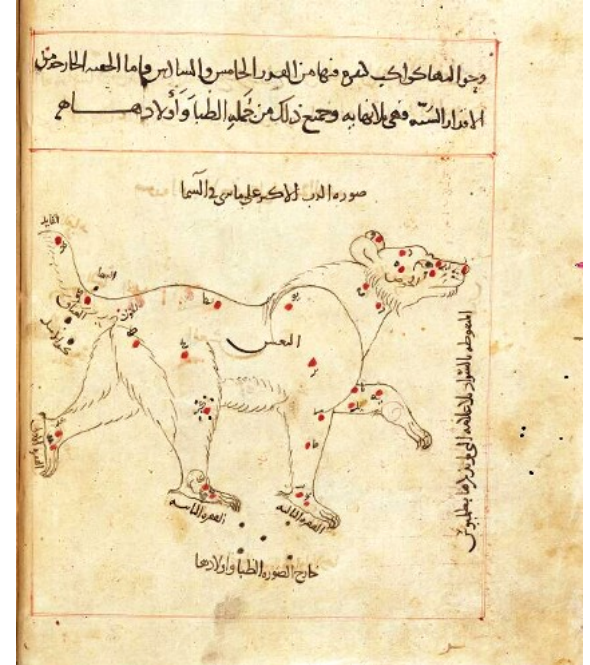
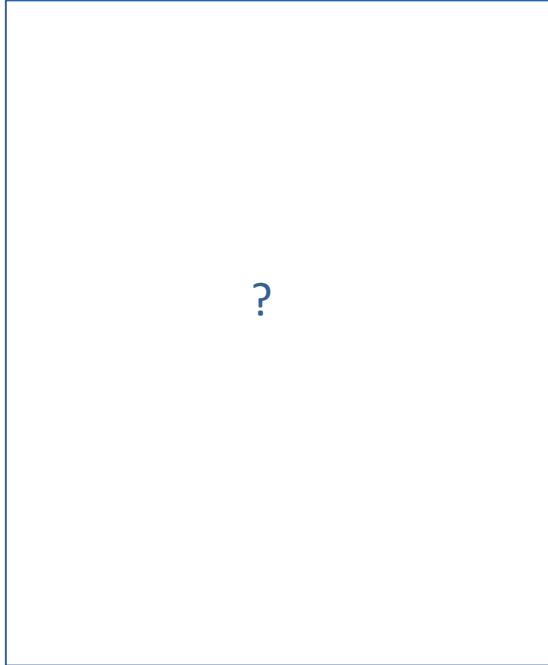
BM – Malcolm globe
n.b. – long tail



Doha, Mus of Islamic Art
Ms 2. 1998. SO (= Sotheby's 1998, lot 34)
Dated April 1125 AD; Baghdād
n.b. – long tail, different head shapes

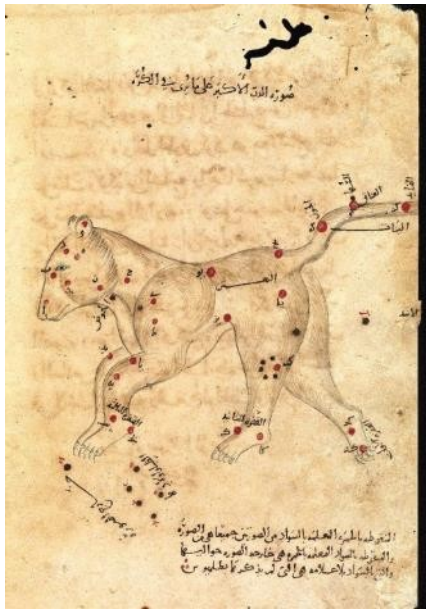


Istanbul, Süleymaniye Libr
 Ms Fatih Kütüphanesi 3422
 1125/26 AD; Mārdin
 n.b. – long tail, foxy head

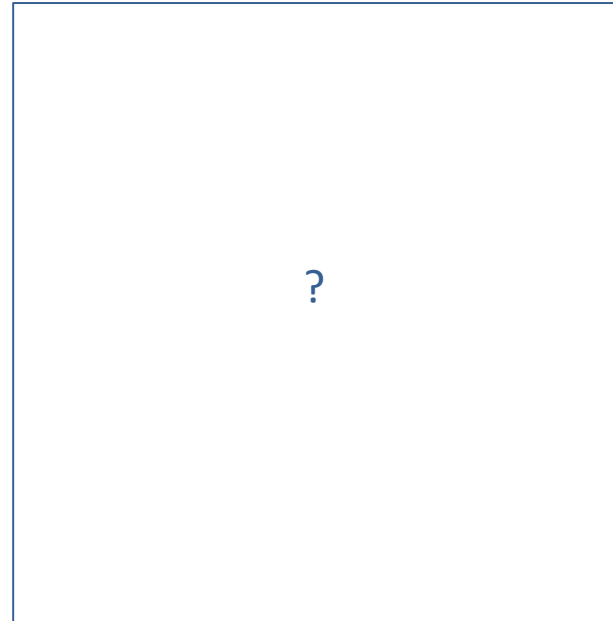
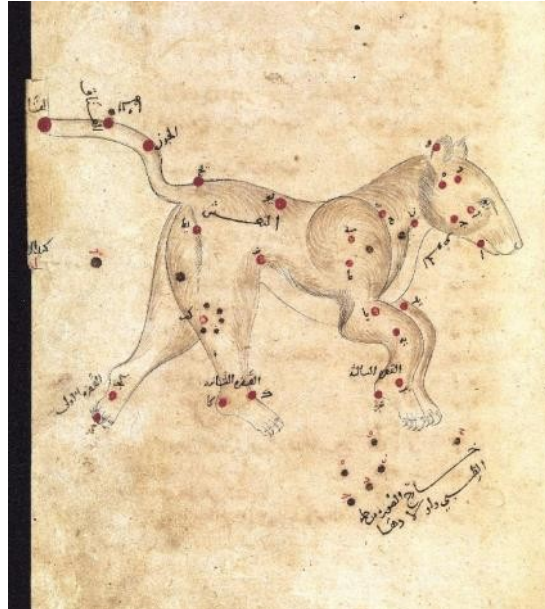


Istanbul, Topkapı Sarayı
 Ahmet II 3493
 1130-31 AD, Mayyafariqin, SE Turkey

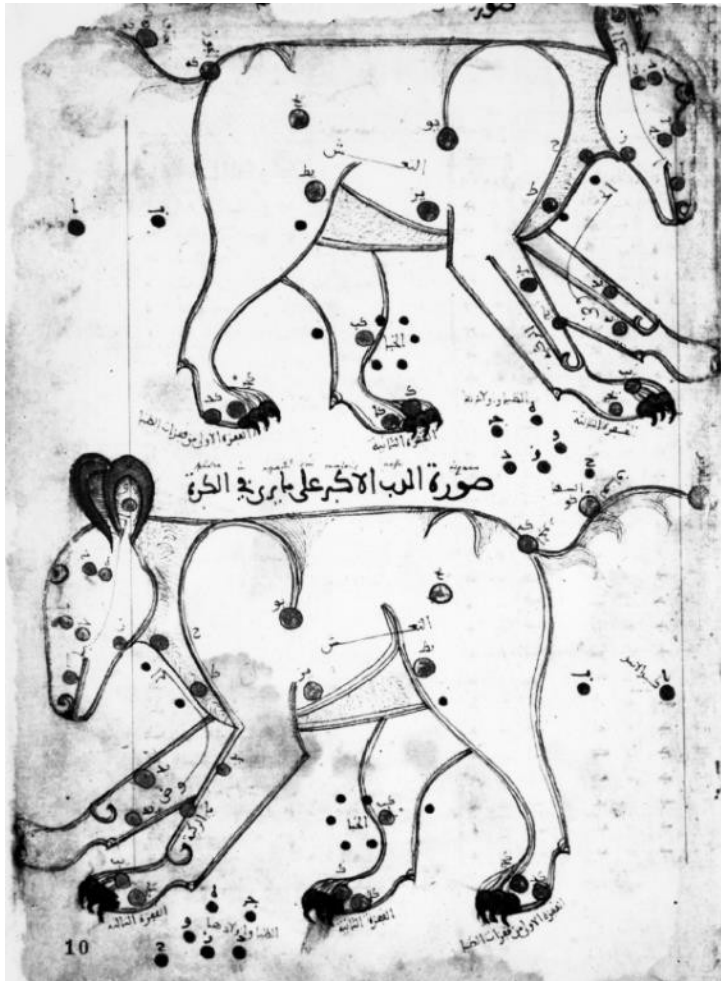
Oxford, Bodleian Libr
 Huntington Ms 212
 1170/71 AD; Mosul
 n.b. – long tail, raised right front foot



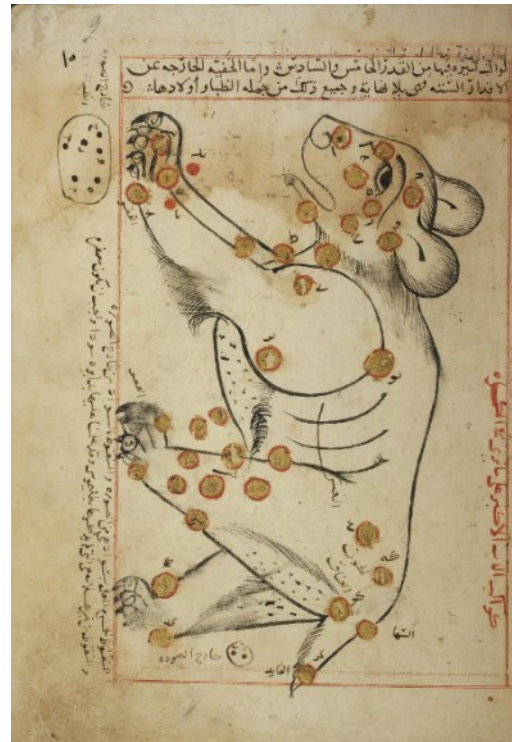
Oxford, Bodleian Libr
Ms Marsh 144
1009-1010 AD; Shiraz (?), Iran
n.b. – raised forefeet, long tail



Berlin, Staatsbibl.
Ms qu or 704
c. 1203

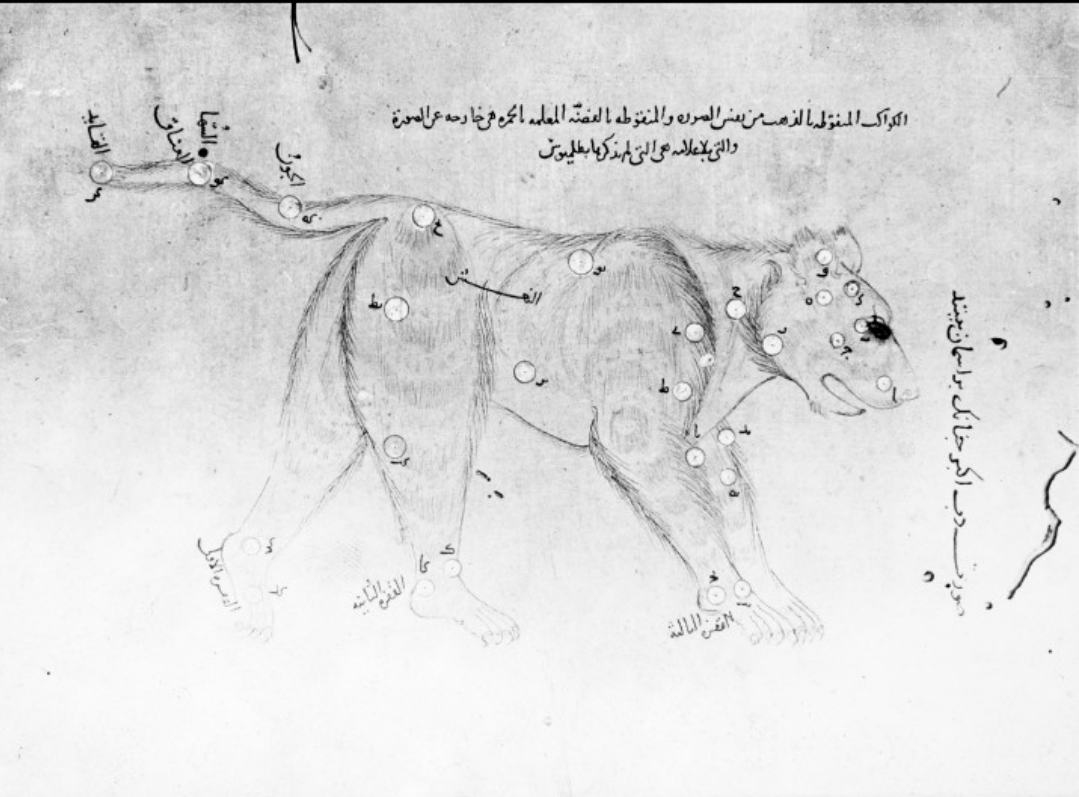


Vatican, BAV
 Ross 1033
 1224 AD, Ceuta (?) N Africa
 n.b. – long tail, round ears



Berlin, Staatsbibl.
 Landberg 71
 Aug/Sept 1233; Mosul
 n.b. – short tail, round ears

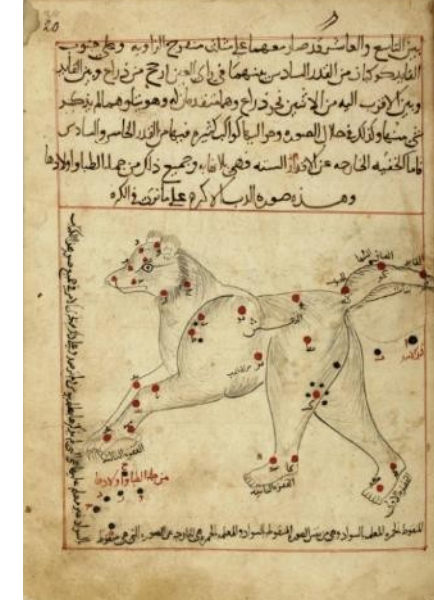




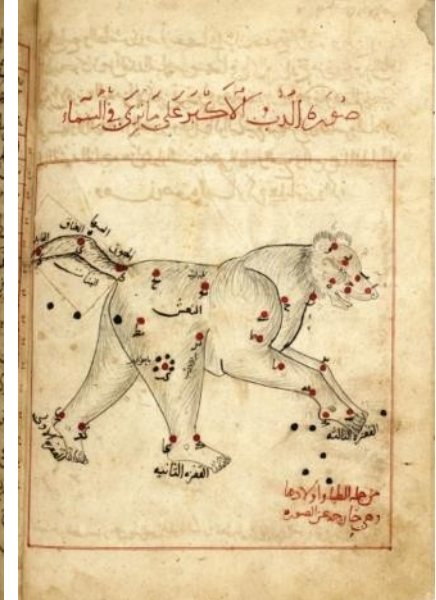
Istanbul, Suleymanie Libr
Ayasofia 2595
1249-50 AD; Alamut (?) Iran
n.b. – long tail

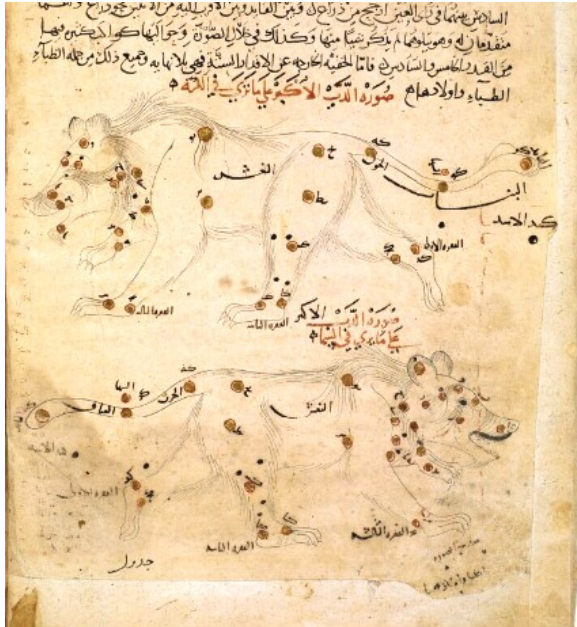


Paris BN
Arabe 2488
mid-13th C, Ceuta (?) N Africa
n.b. – long tail, strange head

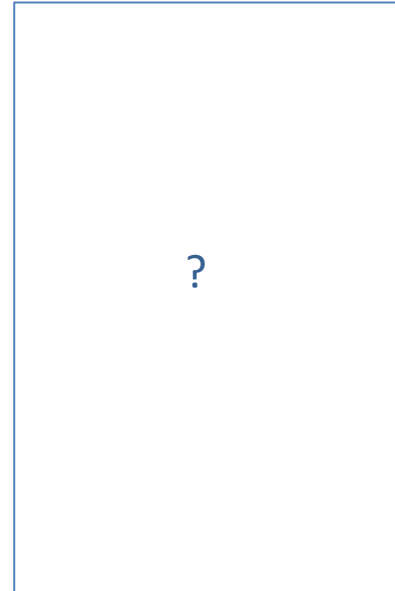


Paris BN
Arabe 2489
1266-67 AD; Syria?
n.b. – long tail, raised forefeet

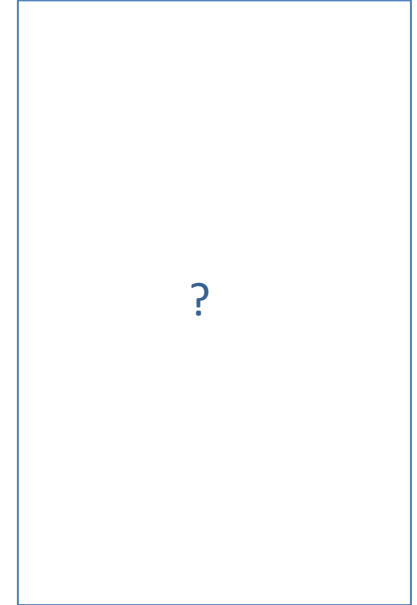




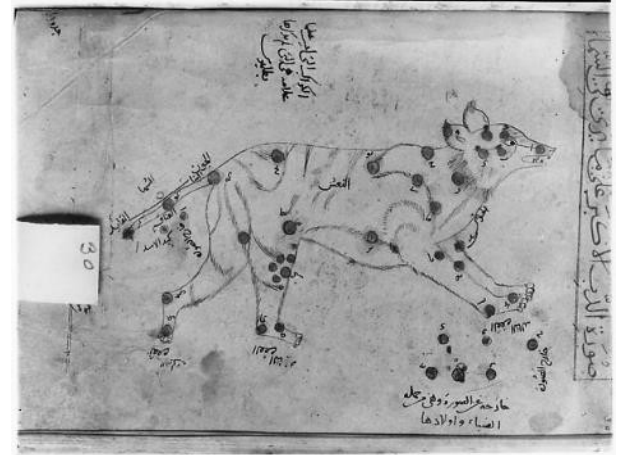
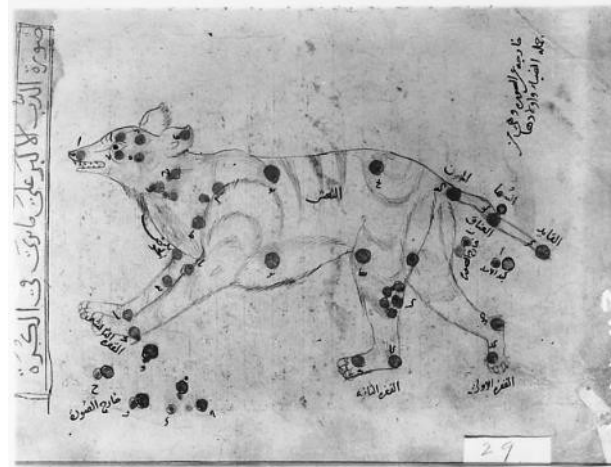
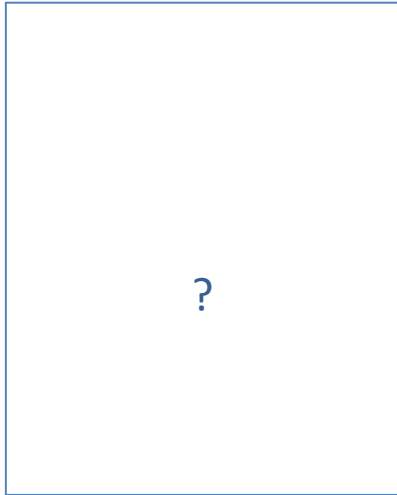
London BL
Or 5323
1260-80; Maragha (?), NW Iran
n.b. – long tail



Cairo, National Libr
Ms Dar al-Kutub miqāt 390
1300 AD

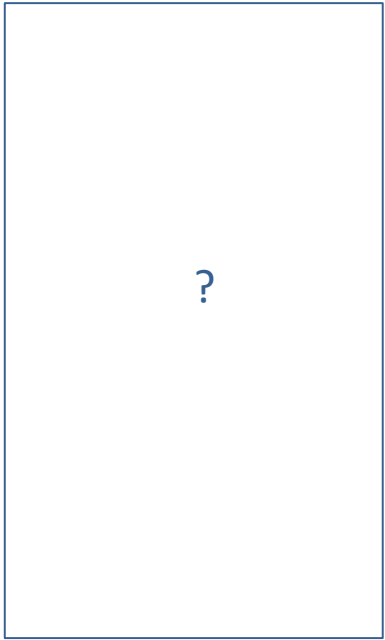
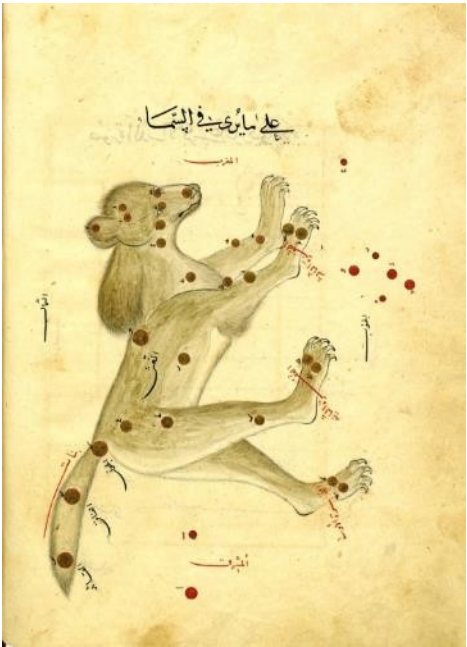
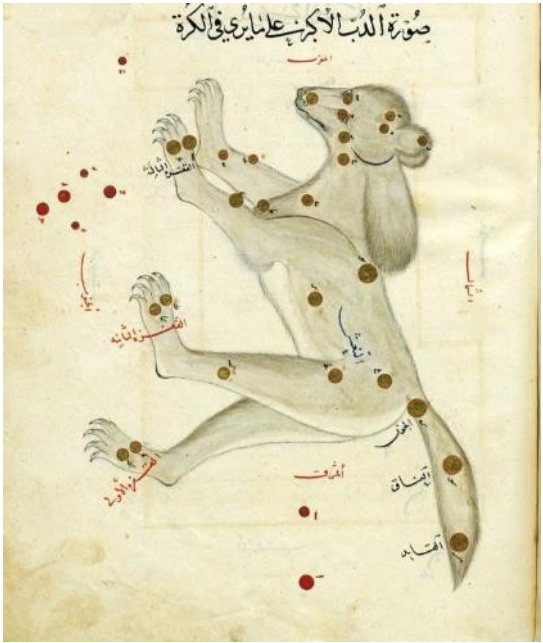


Oxford, Bodleian Libr
Pococke 257
1303/04; Aleppo



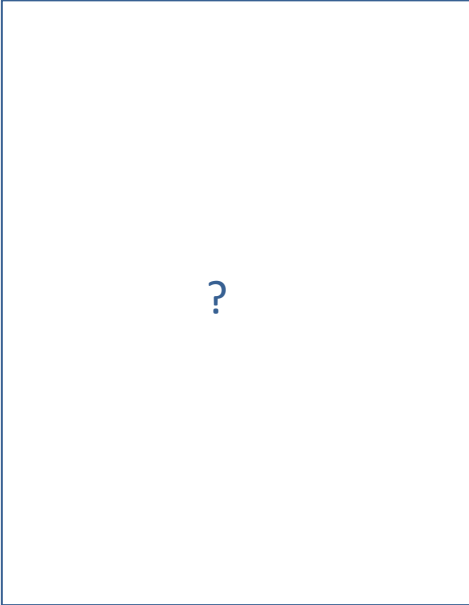
Escorial
Ms 915
20 March 1364 AD

NY, Metropolitan Mus
Ms Rogers Fund 1913
c. 1400, Samarkand
n.b. -- long tail, front feet extended



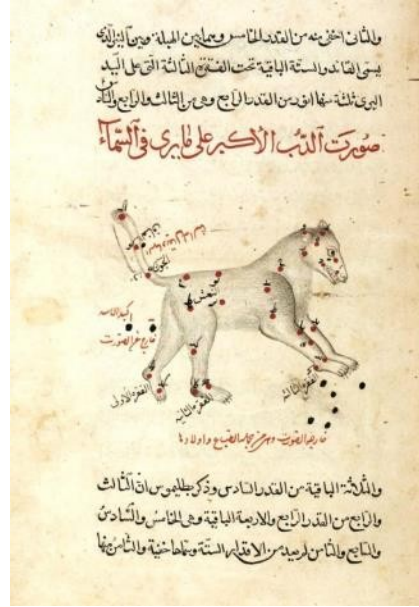
Paris BN
 Ms arabe 5036
 c. 1430-40, Samarkand
 n.b. – long tail, front feet extended

Bologna, Bibl. Univ
 Ms 2953
 8 Oct 1500 AD



Dublin, Chester Beatty Libr
 Ms Ar 4119
 1504/05 AD

Paris BN
 Arabe 2490
 1516/17 AD
 n.b. – shorter tail, more bear-like



Paris BN
 Arabe 2491
 1770 AD

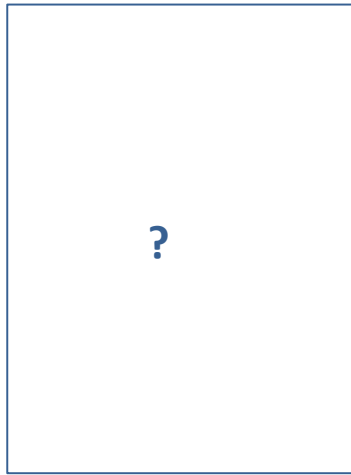
n.b. – long raised tail

Paris BN
 Arabe 2492
 18th C

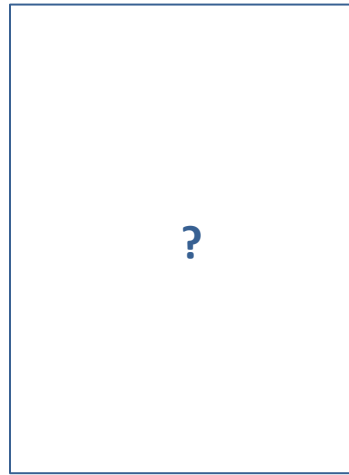
n.b. – raised tail, like a wolverine



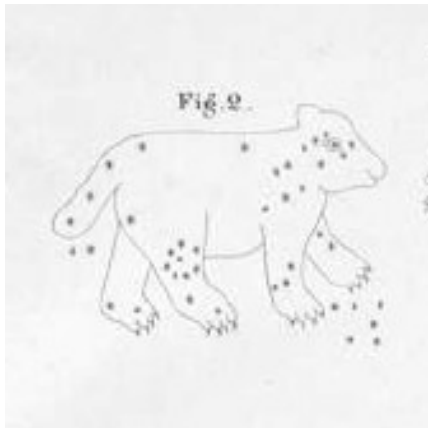
Dublin, Chester Beatty Libr
Ms Ar 4222
16th C; Iran



London BL
Add ms 7488
16th C



Istanbul, Perter Pasa Libr
Ms 375
16th C



Copenhagen, Kong. Bibl.
Ms arabe 83
25 May 1602 AD; Medina; copied from copy dated 1013/14
AD believed to be al-Sufi's own copy



St Petersburg, Inst Or Studs
 Ms n.s. 191
 16th C; Istanbul ?



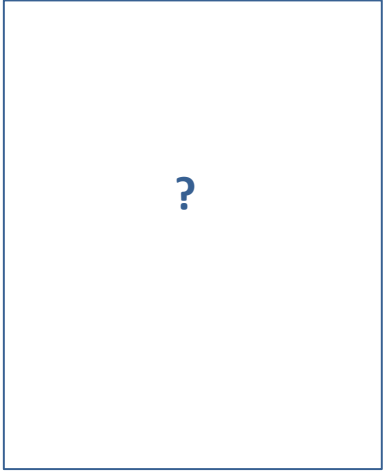
Princeton, Univ Libr
 Ms Garrett 2259 Yehuda
 al-Sufi, dated 3 Jan 1607



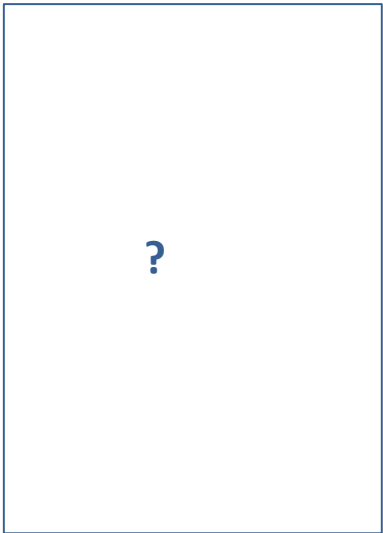
Paris BN
 Arabe 6528
 India, 1643-44

non-Latin Eastern mss – al-Sufi translations, etc.

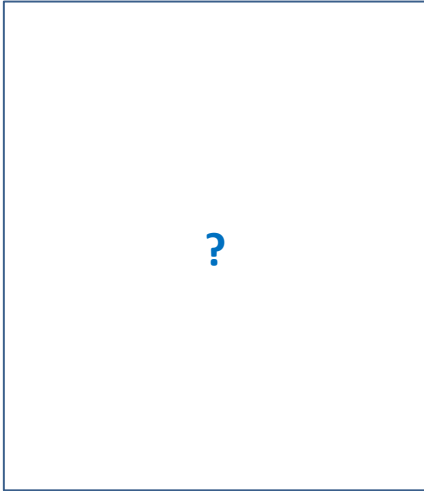
Ursa maior



al-Sufi, at-Tusi transl???



Tehran, Riza 'Abbasi Libr
Ms M. 570
Ibn-al-Sufi (son)
1159-60 AD



St Petersburg, Ms E (?)
Qazwini



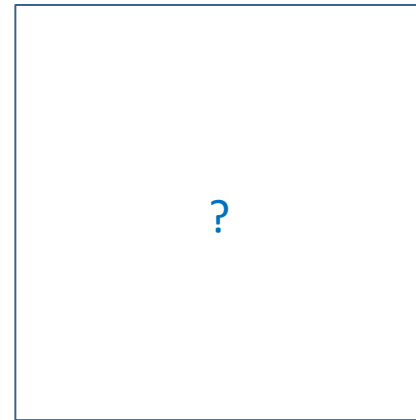
Baltimore, Walters Art Gall
Ms W 359
Qazwini – short tail, bear-like



Paris BN
Arabe 2178
1762-63 AD – longer tail, fox-like



Washington DC, Freer
Ms 1954 -52 (ex-Sarre)
Qazwini
n.b. – long tail, bear-like



Location unknown
Mughal, 17th c
Qazwini



Paris, Bibl Arsenal

Ms 1036

n.b. – vertically on page, walking to left, long tail



Prague, Strahov
DA. II. 33
same

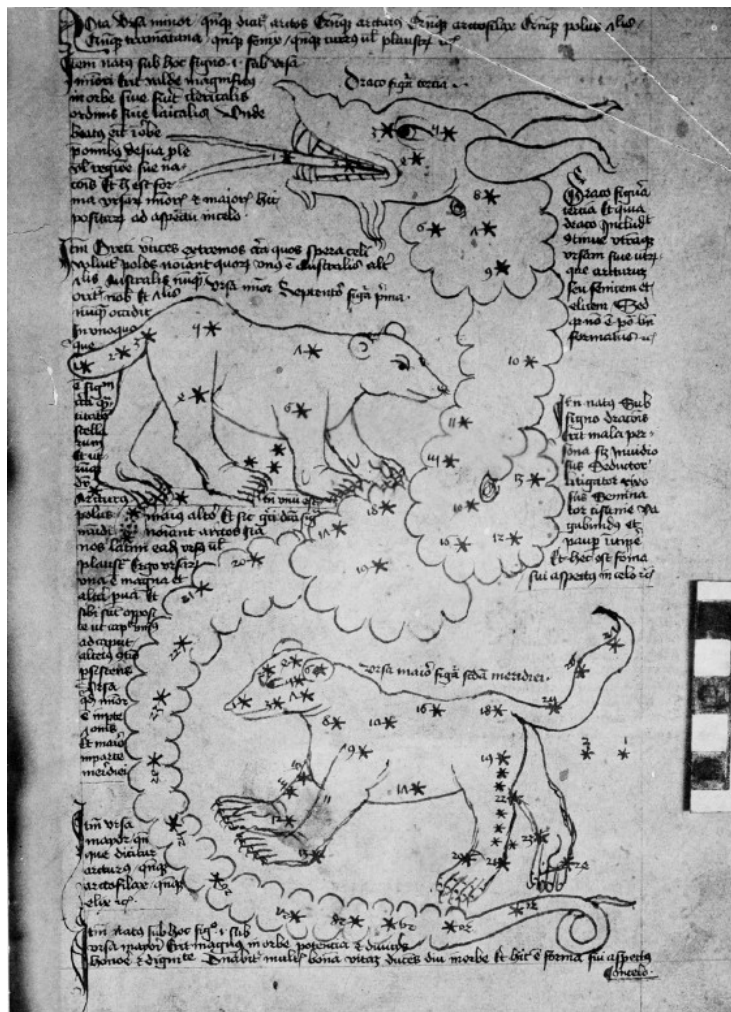


Berlin, Staatsbibl, KK
Ms 78 D 12
same



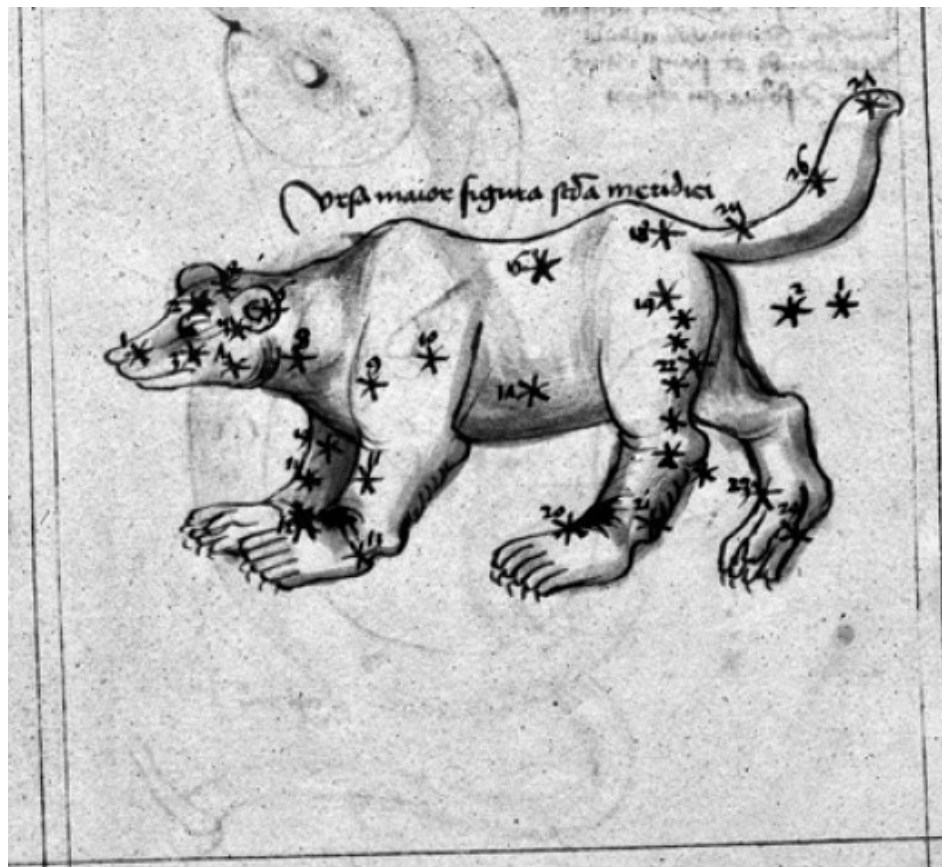
Munich, Staatsbibl
CIm 826
same

Gotha, Forshungsbibl
Membr II 141
same



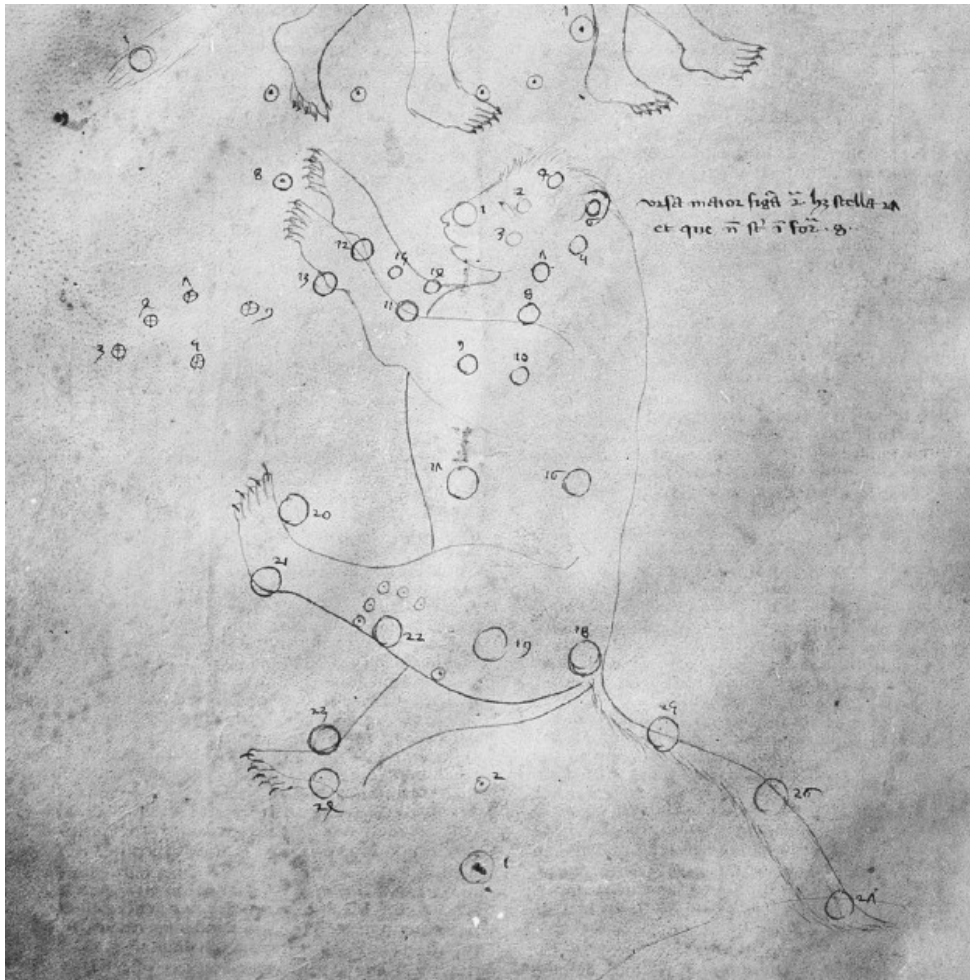
Catania, Bibl Univ
 Ms Univ Ar, 387

n.b. – only as draco inter arctos, longer tail,
 UMA at head of Draco



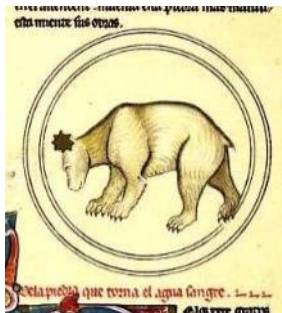
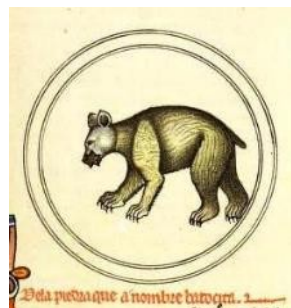
Vienna, ONB
 Cod 5318

similar, but on its own



Bernkastel-Kues, Nicolaus hosp.
Ms 207

n.b. – vertically on page, long raised tail, walking to left



El Escorial
Ms h 115

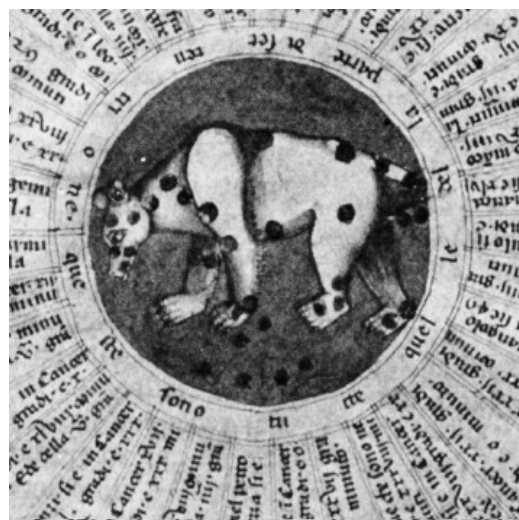
(no text for this image)

plus 3 more

n.b. – no appreciable pictorial difference between bears, selection based on text



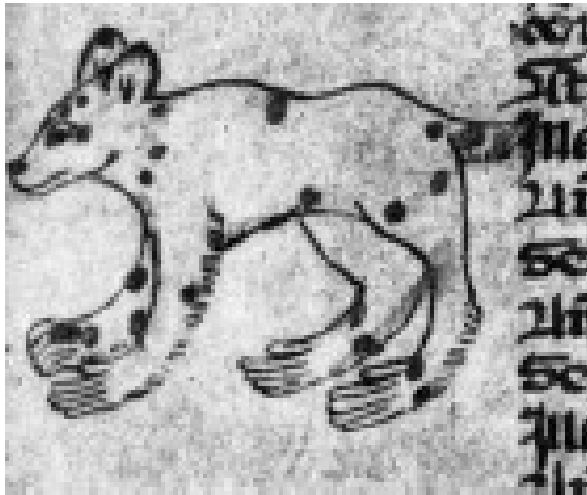
Vatican BAV
Reg lat 1283a



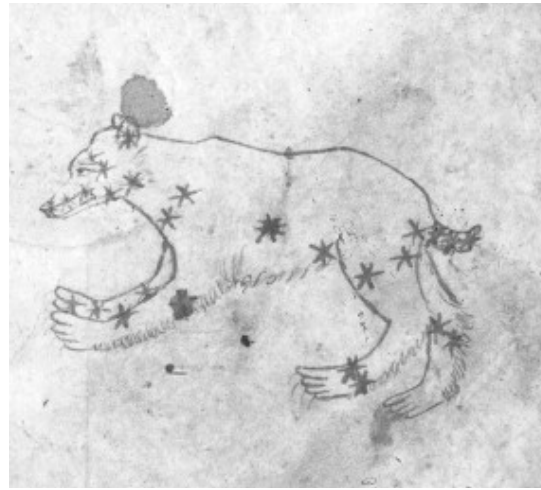
Vatican BAV
Vat lat 8174
Orsa maggiore ... in latino ursa maior e in arabico alduh alacbar



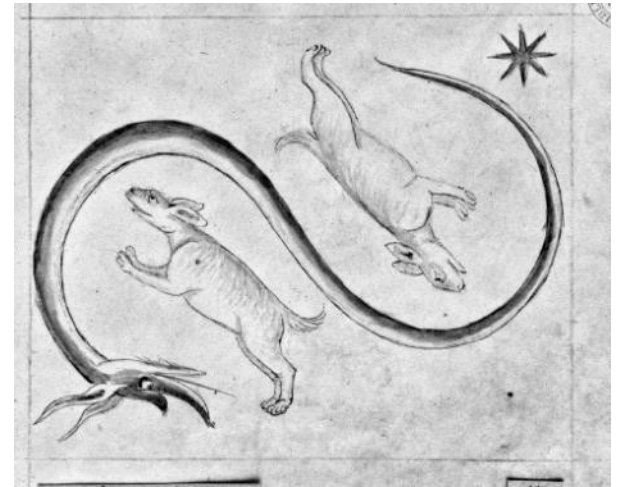
Los Angeles, Getty Mus
Ms Ludwig XII, 7
figura ursa maior e in arabico alduh alacbar



Oxford, Bodleian Libr
Rawl C 117
n.b. – shorter tail



Vatican, BAV
Urb lat 1399



Oxford, Bodleian
Can class misc 554
n.b. – only as draco inter arctos, same size



Bergamo, Bibl A Mai
 Ms Σ II 2
 n.b. – faces to left, long hairy tail



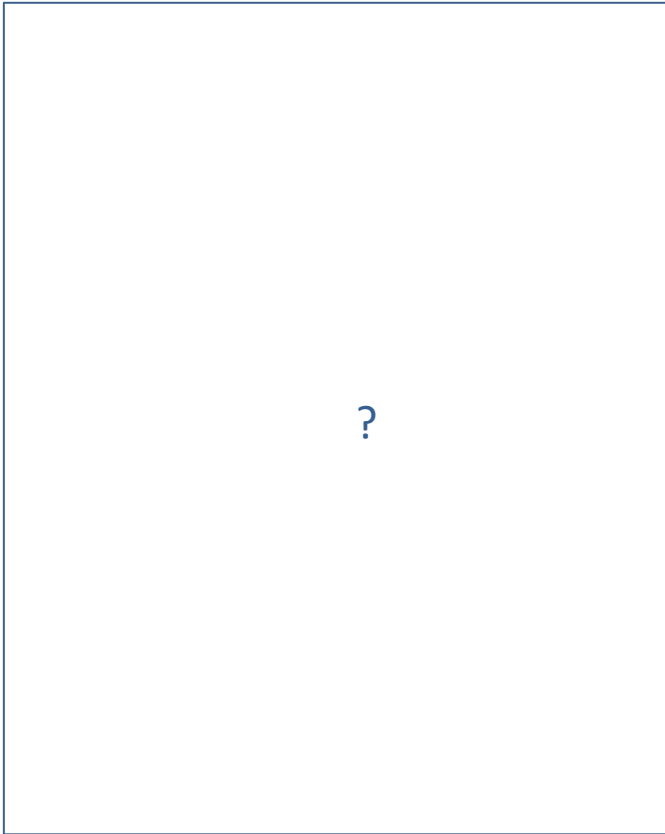
Vatican, BAV
 Vat lat 3099
 same



Brussels, Bib Roy
 Ms 10117-26
 n.b. – stands to left
 Ursa maior alio nomine dicitur bootem



Vatican BAV
 Pal lat 1368
 n.b. – short tail, standing on hind legs



Vatican BAV
Pal lat 1377



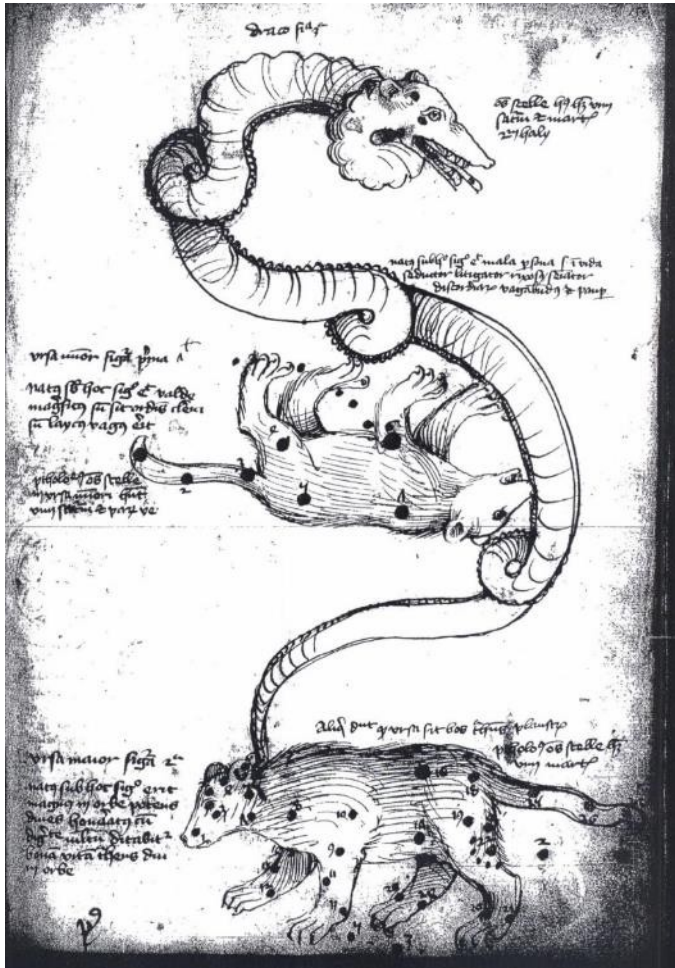
Torun
Ms 35

n.b. -- only as draco inter arctos, larger bear at head of Draco



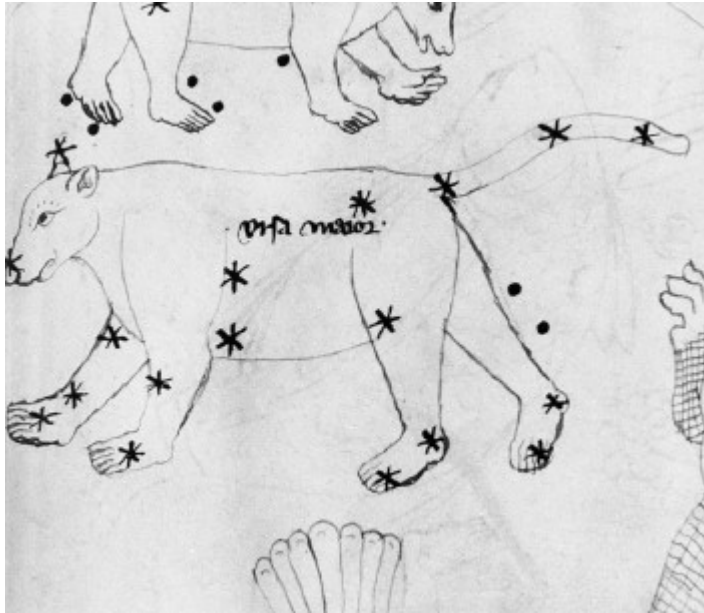
?

Augsburg, Univ-bibl.
Cod II 1.2o 110

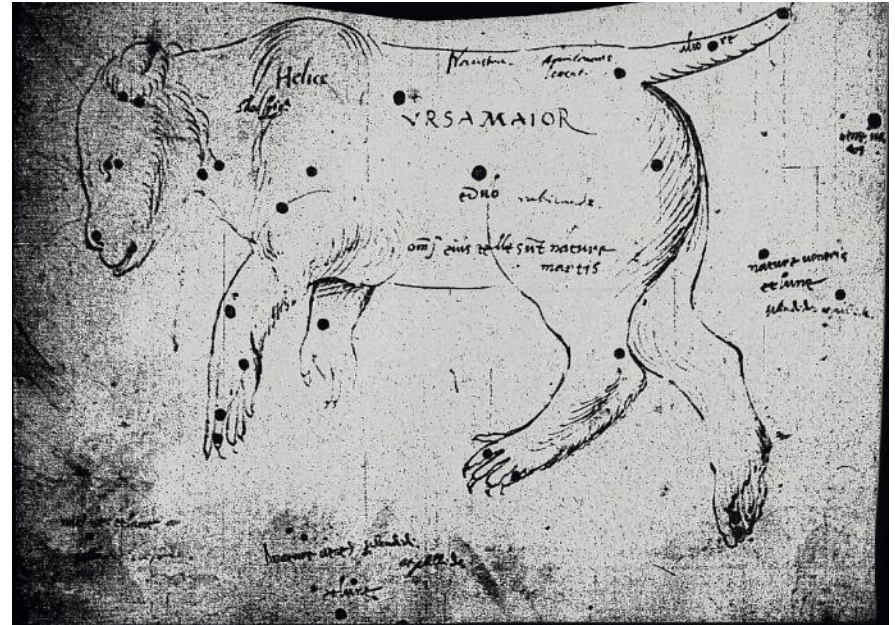


Cambridge MA
Houghton, Typ 43

n.b. — only as draco inter arctos, UMa at end of
Draco's tail



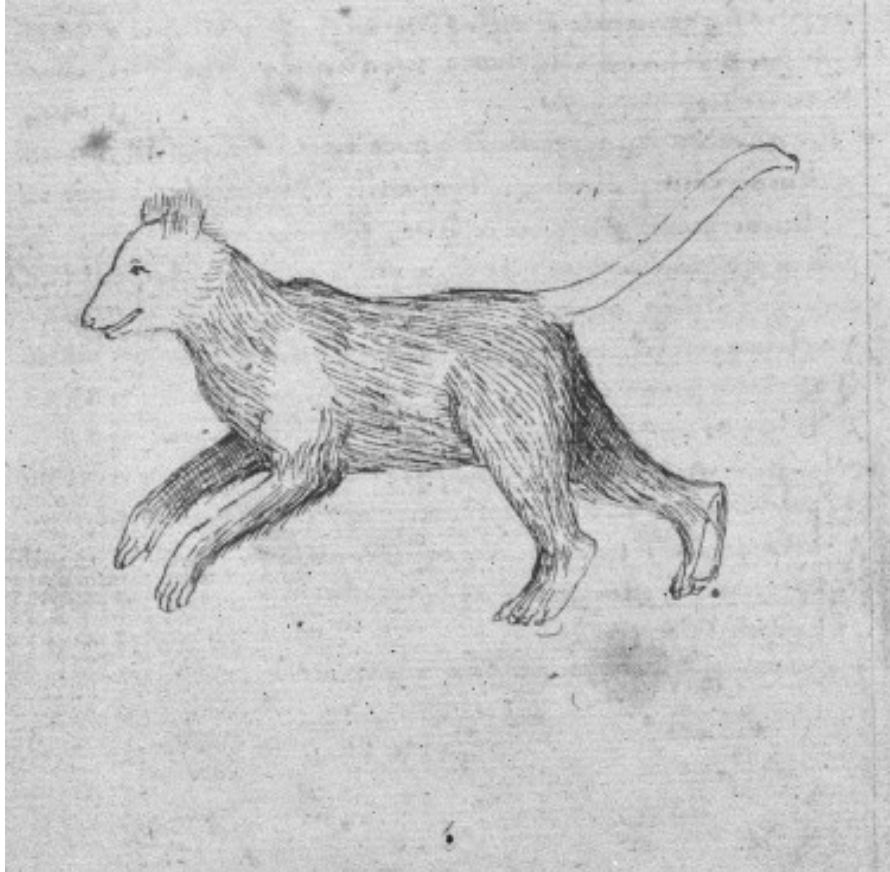
Basle, Univ-Bib
Ms F. II. 33
n.b. – longer tail



Florence, BNC,
Ms Angeli 1148

'Ptolemaic' stellar tables

Ursa maior



Vienna ONB
Vienna 5415
n.b. – runs to left, long tail



Vienna ONB 5415
southern hemisphere
same



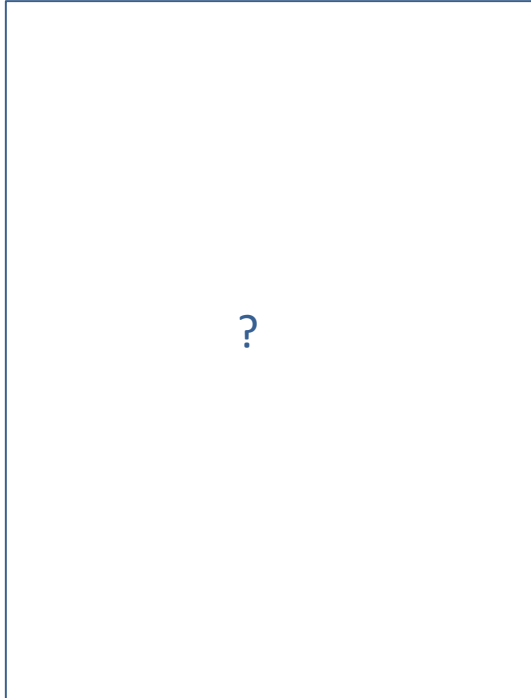
Philadelphia, U Penn
Ms LJS 57
n.b. – stands to right, short tail



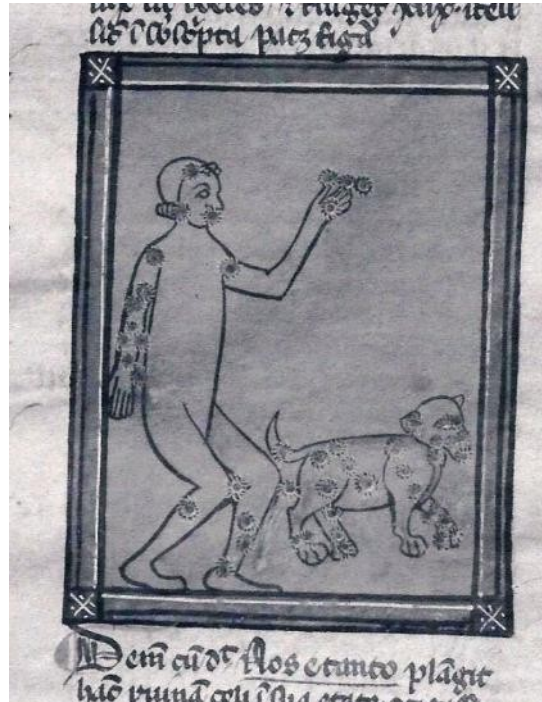
Vienna, ONB
Hebrew 132



northern hemisphere



Padua, Univ . Bibl.
Cod 896



Vatican BAV
Urb lat 355
n.b. – walking to right (with Bootes)



Vatican BAV
Vat lat 1650
n.b. – raised forefeet (with Bootes)

Miscellaneous images

Ursa maior

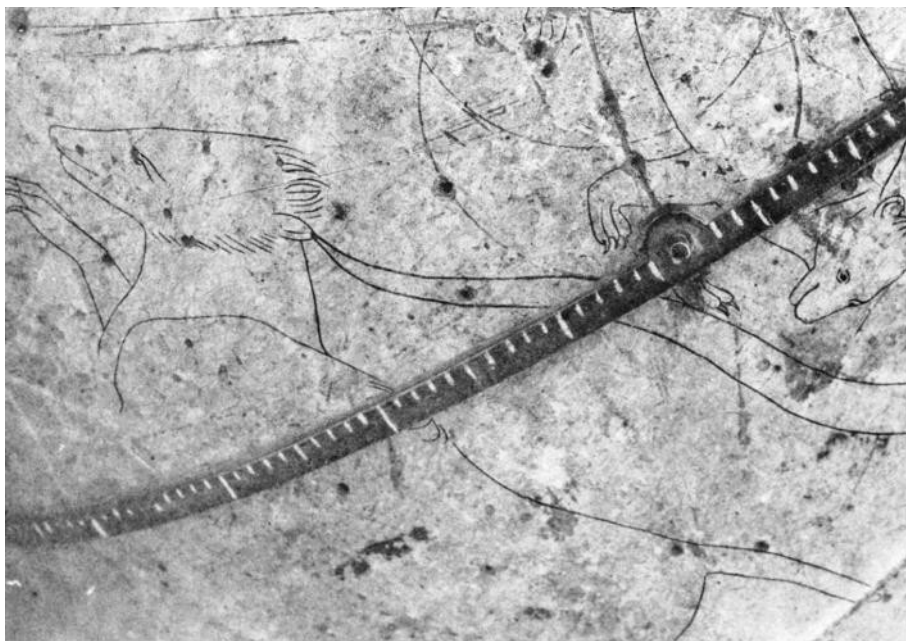


Bernkastel-Kues
St Nicholas-Hospital
Ms 212 (hemispheres)
n.b. – larger one at tail of Draco

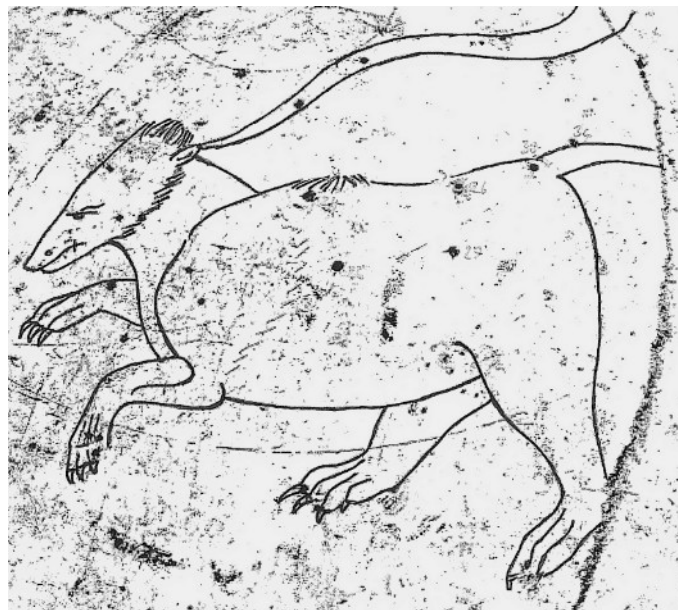


Darmstadt, Univ- and Landesbibl.
Ms 1020
northern hemisphere
n.b. – reversed





Cusanus globe



reconstruction © P. Hadrava



London, BL

Burney ms 275

n.b. – marginalia of bear using a quadrant



Berlin, Islamisches Museum
Sassanian plate from Iran
7th C