

Berlin

Staatsbibliothek

Ms lat 130 (Phillips 1832) / **Ms lat 129** (Phillips 1830)

De ordine ac positione stellarum in signis (excerpted from the Salzburg Compilation of 810-818 / Liber calculationis, a.k.a. the 'Compilation of 810 in 3 blocks')

French (Laon)
873

The text accompanying the pictures is an excerpt from the *Liber calculationis* compiled in Salzburg during the years 810-818.

In terms of the history of the manuscript, it is important to understand that there is a historic relationship between this manuscript and the one now known as **Berlin, lat 129 (Phill. 1830)**, the latter coming into the library as the first section of Berlin, lat 130 (Phill. 1832), which was originally the first part of a larger combined with Berlin lat 130. There are notes in the first part of Berlin, lat 129 (Phill. 1830) referring to Metz and suggesting that these pages were added in the 11-12th centuries. See the entry for Berlin, lat 129 (Phill 1830) for additional information.

So, though originally French and probably from Laon, Berlin lat. 129/130 (Philipps 1830/1832) inscriptions suggest that the original manuscript spent time in St Bertin, Metz, though it is difficult to say when it arrived.

There are connections to the planisphere in **Munich, clm 210** (fol. 113), one of the most reliable of the texts of the *Salzburg compilation 810-818*, thus further tying this now-distinct manuscript to the *Salzburg Compilation* tradition.

The pictorial cycle in this manuscript has many of the defining characteristics of **Group I**, which is also encountered in **Madrid Ms 3307**, **Monza** and **Vat lat 645**.

It is worth noting the extra two pictures on fol. 86r attached to lines from Germanicus *Aratea* with *scholia Basileensia* and a fragment from Maass's 'Anonymous II. Whereas the pictures are clearly drawn from those that appear with the corresponding pictures *De ordine ac position* text on fol. 85v, it is telling that they have been so easily transferred from one set of texts to another.

Ms lat 130 (Phillips 1832)

text

ff. 81v-85v *De ordine ac positione stellarum in signis*

fol. 81r-v Duo sunt extremi vertices mundi quos appellant polos septentrionis et austri ... effusionem urnae aquarii que ad ipsum decurrit accipiens. (*Excerptum de Astrologia Arati*, cf. Maass, 1898, pp. 309-12)

with scholia (81r): *Ultimum eorum que videi possunt signorum ...*

DE ORDINE AC POSITIONE STELLARUM IN SIGNIS. Est quidem hic ordo et positio siderum quae fixa caelo plurium coacervacione. stellarum in signum aliquod formata. vel fabulose variarum genera formarum. in caelum recepta creduntur quorum nomina (82r) non natura constituo ... eo quod ab ipso est ordine digesta descriptio proferatur. (cf. Maass, 1898, p. 312)

Helice arcturus maior habet stellas in capite septem, in singulis humeris singulas, in armo i, in pectore i, in pede priori claras ii, in summa cauda claram unam ... (cf. Maass, 1898, p. 312, St P, p. 240)

fol. 85v Anticanis habet stellas . iii.

There are large passages of additional marginalia:

fol. 82r Servius clarumque lycaonis ... ; Servius in commento primi libri georgicon...

fol. 82v Servius in 1° georgicon...; Servius in commento primi libri aeneidorum ...

fol. 83r Servius in VI aeneidos super hoc ...

fol. 83v Servius in ii georgicon...; Servius in i georgicon...; ex libro v Ciceronis tusculanorum disputacionum...

fol. 84r Servius in xi aeneidorum ...

fol. 84v Servius in primo aeneidos super haec...; servius in i aeneidos ...

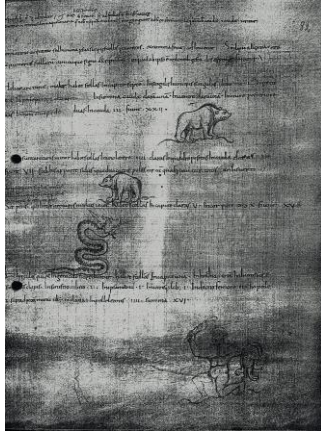
fol. 85v Servius in iii georgicon...

ff. 86r-70v There is a repetition/copy of the pictures of Piscis and Anticanis, with beginning 16 lines of the text of the Germanicus *Aratea*:

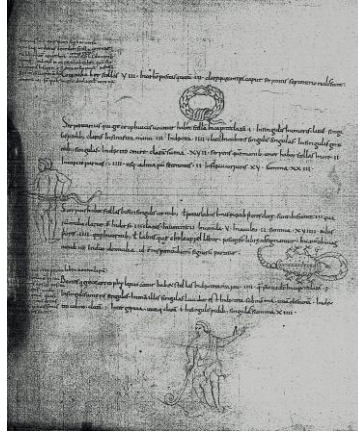
Ab love principium magno deduxerit Aratus ..., with the *Basileensia scholia*: Quaeritur, quare ab love coepit et non a Musis ut Homeris ... et Homerum lovem dixisse in alique parte caelum (cf. Breysig, 1867, p. 54 and Maass, 1898, p. 177).

This is then followed by a line from Maass's 'Anonymous II': cum dicit Herositus lovem dictum aera, et Crates eiusdem opinionis esse et testem esse Philemonem comicum dicit (with Greek quote lacking; cf. Maass, 1898, p. 178).

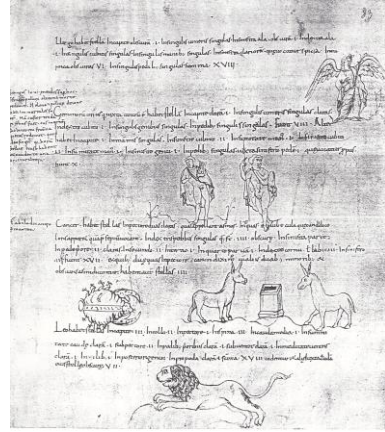
illustrations



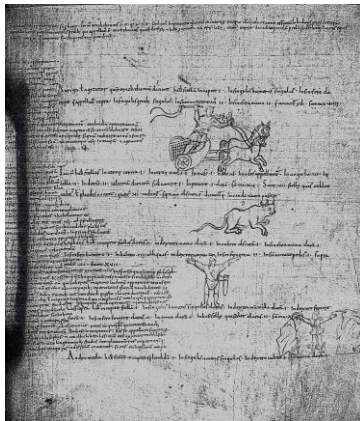
fol. 82r



fol. 82v



fol. 83r



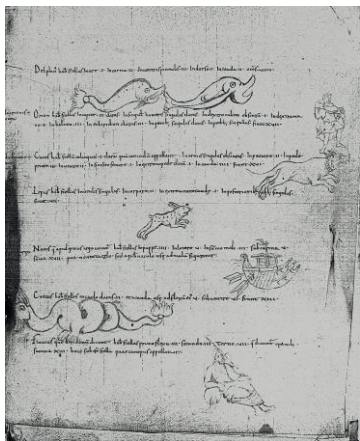
fol. 83v



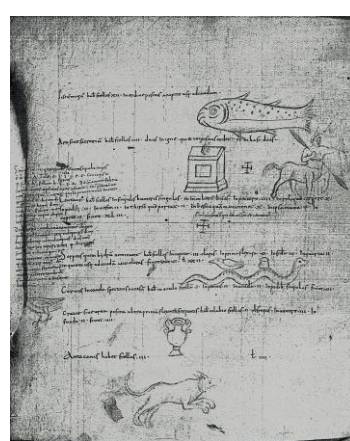
fol. 84r



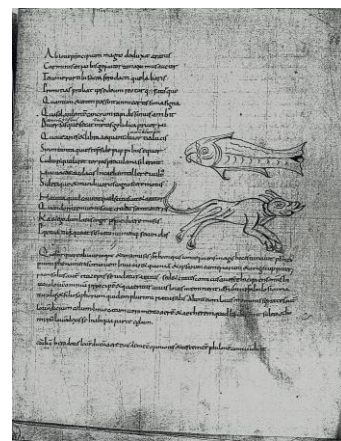
fol. 84v



fol. 85r



fol. 85v



fol. 86r

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- ff . 82r-85v The very short star catalogue entries are interspersed with drawings; several small light purple pen drawings per page set between sections of text that run across the page; the stars are not marked
- fol. 82r **URSA MAIOR** stands in profile to the right and **URSA MINOR** to left; both bears stand on an undulating ground line and have humped backs, The larger bear has a fierce expression
- DRACO** faces to the right and has with four bends in its body, with a tall triangular comb on its head and and beard; its tongue is sticking out
- HERCULES** is nude and kneels on his left knee, with his genitals with visible; he holds the lion's skin horizontally out to the side over his left arm and the hand and four feet of the lion are visible; he holds his club in upraised right arm in front of him
- fol. 82v **CORONA** is a leafy wreath with a ribbon wrapped around the bottom and and a large diamond on the top of the wreath
- OPHIUCHUS (SERPENTARIUS)** is nude and stands to left with his back to viewer and raises his left leg slightly; the snake is coiled around middle once and the snake's neck rises at a right angle and faces away from the man
- SCORPIO** is shaped like a lumpy lozenge, with a collar at the neck and at the beginning of the tail, spots on its back and a decorative line running down it; it has a segmented tail with a sting and two large claws that meet in a circle; it has four legs on the top and three on the bottom
- BOOTES** faces the viewer and leans on his staff towards the left with the held curved side down at his right side of his feet; his left hand is raised with its palm open; he wears a short *tunica exomis*, which exposes his right shoulder and has a with a bottom hem that comes down in tendrils; he stands on an undulating ground line
- fol. 83r **VIRGO** stands facing the viewer, slightly to the right; she wears a long robe that is caught at the hip and she has a trefoil on her forehead; her wings are outstretched and she makes a benediction with her right hand; she holds a palm-like branch (*Spica*) in her mantle-covered left hand; she stands on an undulating ground line
- GEMINI** are two nude youths facing the viewer wearing calf-length cloaks over their shoulders; the left Twin holds a lyre in his covered left hand and the right Twin holds a spear in his right hand and his left hand is covered by his cloak; they look away from each other and stand on an undulating ground line with plants
- CANCER** has a lumpy diamond-shapes body and faces to the right; it has a line running down the back a large nose; curved claws and eight small legs

The **ASINI** appear to the right of Cancer and are standing in profile on an undulating ground line and facing a square manger

LEO leaps to the left, with his mouth open and his tail flying; there is a ground line beneath his feet

fol. 83v

AURIGA stands to the right, facing the viewer, in a *biga* with a curved front and a lattice pattern behind him (one wheel is visible); he holds a flail in right hand with two thongs trailing behind him; he wears a short-hemmed, long-sleeved tunic and holds the reins in his left hand there are two small goats standing facing each other on his left arm

TAURUS is a full bull lying to the right, with his left foreleg tucked under his body; he has short, straight horns and his tail lies straight behind him

CEPHEUS stands facing the viewer and wears a short tunic with long sleeves and a Phrygian cap; his arms are outstretched and slightly raised and he wears an empty scabbard at his left side

ANDROMEDA stands wearing a long, belted and layered dress that has tight, long sleeves; her arms are outstretched to the sides and her wrists are tied with ropes to rocks on either side

fol. 84r

CASSIOPEIA sits facing the viewer on a boxy throne with arms outstretched to the sides; she is dressed in a long, belted tunic with long, tight sleeves; her head is covered and she looks slightly to the right

PEGASUS faces to the right with his mouth open and his left forefoot bent and raised; both wings are raised and his body ends after its fat belly

ARIES stands to the right in profile with his head turned to face the viewer; he wears a with a lacy belt around his waist and has a long fleecy tail

TRIANGULUS is drawn as a series of nested triangles with dotted decoration

PISCES are positioned one above the other with both backs upwards; the top fish to the right and the bottom one to the left; they are tied at mouths with a tin line

PERSEUS is nude and rushes to the right; he holds a *harpe* in his right hand, which he holds behind his back; he has wings on his feet and a Phrygian cap; he holds a severed head in front of him with his left hand

fol. 84v

LYRA is a U-shaped lyre with curved sides and five strings

CYGNUS stands firmly on both feet and with its wings outstretched in an almost heraldic pose with his head snaking to the right

AQUARIUS is nude and faces the viewer, lunging to the right with his left leg bent at the knee; he wears a Phrygian cap and a long cloak, which is wrapped over his outstretched left arm in front of him; he holds an upside-down urn in his outstretched right hand to the right side

CAPRICORN is set to the left, but turns his head backwards to the right; he has vertical twisted horns and a beard; his long, corkscrew tail is decorated with dots along the top and tip ends in an acanthus fan

SAGITTARIUS is depicted as a satyr rushing to the right, with his front leg bent; he holds a bow in his left hand, pulling the arrow with his right

AQUILA stands to the left on an arrow with his wings outstretched and his head turned back to the right facing over his left wing

fol. 85r

DELPHINUS is classical dolphin, swimming to the right, with a long nose and teeth bared; his tail ends in an acanthus fan (there is a second, crude copy of Delphinus to the right)

ORION stands to the right facing the viewer; he wears a short tunic and a mantle over his shoulders; he raises his right hand towards his face and rests his left hand on handle of sword, which is hung at his waist

CANIS MAIOR (CANIS) is a wolf-like dog with a pointed nose and a furry jowl; it wears a studded collar and leaps to the right; he has a long slim tail

LEPUS leaps to right, has upright long ears and spots on its body

ARGO (NAVIS) is a full ship with a tri-prong bow; there are vertical lines (oars) along the body; and two steering oars and an *aphlaston* (circlet with 3 pennants) at the stern; the sail is unfurled

CETUS is classical sea monster with a dog's head (vertical ears and a beard) and a long, thin corkscrew body; it sticks out its tongue and has an acanthus-fan tail; the front two flippers are quite stubby

ERIDANUS (FLUVIUS/HERIDANUS) is seated river god facing to the right with long skirt covering his lower legs and an exposed torso; he has long hair and beard and leans with his right elbow on a foreshortened (circle) urn from which water pours; he holds a reed in his left hand that rests on his left shoulder

fol. 85v

PISCIS AUSTRINUS (PISCIS MAGNUS) is a large fish with back on top, swimming to left; it has large lips and a large eye

ARA (SACRARIUM) is square altar with one step and with a fire on the top surface; there is a cross nearby

CENTAURUS walks to the right with his left foreleg raised; he holds a dead spotted animal (rabbit, hare) by heels in his outstretched left hand in front of him; in his right hand, he holds something like a kayak paddle (with paddles at both ends)

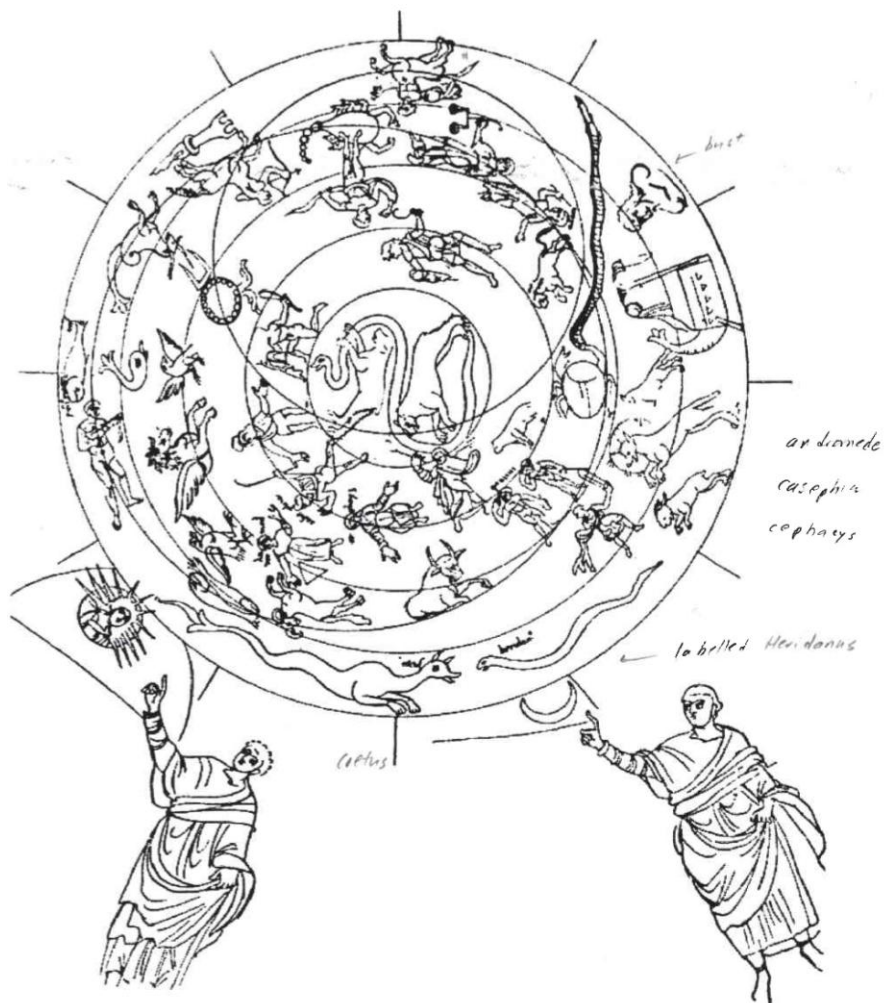
HYDRA is a snake that lifts its head and slithers to the right with three small humps

CRATER is a small pot without handles, set in the middle of Hydra's back

CORVUS is on Hydra's second hump, placed in profile and faces towards the end of the tail

CANIS MINOR (ANTICANIS) rushes to the right; he has pointed ears and pointed snout and wears a collar; he has a long, slim, curved tail

Ms lat 129



ff. 11v-12r

This preliminary study was made jointly with Elly DEKKER. An updated and corrected version has been published in her book in 2012.

accompanying *Cyclum secundum Dionysium*

ff. 11v and 12r: planisphere. In two of the corners of the page, there are depictions of an antique figure dressed in a toga. The one on the left points to a lunette attached to the edge of the planisphere, which contains a bust of Sol-Apollo, with rays coming from his head. Alongside, there is the accompanying text: *Sol quoque exoriens et cum se condit in undas. versi LX* (= Virgil, *Georgics*, I, 438-9) [*** CHECK Kirchner says it is *Georgics* V, 438 and 497]: ‘The Sun also at dawning and when she sinks deep / will give you signs: his signs are the most reliable of all’.). The one on the right points to a crescent Moon with his right hand, which has the accompanying text: *Luna revertentis cum primum colligit ignis, sunt versi XI. Infra [g]lau[co et] panope[ae et Inoo] melicerta.* (= Virgil, *Georgics*, I, 427: ‘When first at the new moon her radiance is returning’.) The planisphere covers two facing folii and the drawings are executed in a now faded brown ink. The diameter of the planisphere’s outer edge is 24 cm.

folio size: 30 x 23.5 cm.

Constellations:

The presentation is in globe view.

Of the 48 Ptolemaic constellations, 42 are present. Missing are Sagitta, Equuleus, Crater, Corvus, and Corona Austrinus. In addition, there is an anomalous bust below the middle of Hydra and in advance of Argo. There is also an additional bear drawn above Gemini and in advance of Auriga. The constellations drawn conform to Hipparchus rule are Perseus, Sagittarius, Orion (the buttocks of Orion suggest globe view but his head is twisted to make it conform sky view).

Cartography:

The planisphere has a grid consisting of five concentric circles centred on the celestial pole. From inside to outside, they presumably represent the ever-visible circle, the Tropic of Cancer, the equator, the Tropic of Capricorn and the ever-invisible circle. When expressed as a fraction of the radius of the equator, the radii of the Tropics of Cancer and of Capricorn are 0.71 and 1.29, respectively. The radii of the ever-visible and ever-invisible circles are

0.42 and 1.59, respectively. In addition, there are two other circles. One of these represents the southern boundary of the zodiacal band. The size of the circle is such that it is too large for the ecliptic, but fits nicely with the southern boundary. Further one sees that many zodiacal constellations are north of it. These errors are probably the result of ignorance.

A second circle represents the Milky Way. The centre of the southern boundary of the zodiacal band (or the ecliptic pole) is located inside the ever-visible circle, in the head of Draco. When expressed as fractions of the radius of the equator, the distance from the ecliptic pole to the centre of the map amounts to 0.24. The radius of the southern boundary of the zodiac is 1.19 and the radius of the Milky Way turn out to be 0.85. Finally, there is a series of short lines, radiating from the outer edge of the map, which, if the lines were continued into the map, would come together at the northern celestial pole. At the border of the map, these lines are set at regular distances of 30° or, if one thinks in terms of zodiacal co-ordinates, they divide the map into twelve equal segments or twelve hours.

Locations with respect to the main circles:

- a.) Inside the ever-visible circle: Ursa Maior, Ursa Minor, Draco, the head and hand of Auriga and the toes of Perseus.
- b.) Between the ever-visible circle and the Tropic of Cancer: Perseus (except his head, hands and toes), the left/northern side of Cassiopeia, Auriga (except for this head, right hand and feet), the anomalous bear, Boötes except his southern arm, staff and leg, Hercules (except for the tip of his club) and Cepheus from neck to feet.
- c.) Between the Tropic of Cancer and the equator: Andromeda (except her right arm), half of Triangulum, the right arm of Cassiopeia, the head and neck of Taurus, the feet of Auriga, the Gemini (except for the left Gemini's right foot), the tip of Orion's sword, Cancer, the head of Hydra, Leo,), the left/northern side of Virgo, the southern leg and arm of Bootes and his crook, Ophiuchus from head to hips, Serpens, Corona Borealis, the tip of Hercules's club, the feet of Cygnus, the forefeet and belly of Pegasus, the head of Cepheus, the head and hands of Perseus
- d.) Between the equator and the Tropic of Capricorn: Aries (except the tip of his horns), half of Triangulum, the torso and legs of Taurus, Orion (save the tip of his sword and his feet), the right foot of the left Twin, the upper part of Canis Maior, Canis Minor, the stern, pennant and mast of Navis, the middle part of Hydra, the head, right arm and right thigh of Virgo, and the figure holding the scales, the head of Centaurus, Ophiuchus from his hips to his feet, Scorpio (save his southern legs), Sagittarius (except his belly and legs), the head and neck of Capricorn, Lyra, the main part of Cygnus and of Delphinus, the head, chest and wings of Pegasus, Aquila, the northern one of the Pisces and the right arm of Andromeda.
- e.) Between the Tropic of Capricorn and the ever-invisible circle: Cetus, Eridanus, Lepus, the

hind legs and tail of Canis Maior, and the main part of Navis, the anomalous bust, the tail of Hydra, the southern pan of the scales, Centaurus (except for his head), the southern legs of Scorpio, Ara, the belly and feet of Sagittarius, the body, legs and tail of Capricorn, the tail of Delphinus, Piscis Austrinus, Aquarius and the southern one of the Pisces.

There is no zodiacal band, but the southern boundary of the ecliptic passes through the horn of Aries, below the body of Taurus, the feet of both Gemini, the sword of Orion, the southern legs of Cancer, the neck of Hydra, the hind feet of Leo, and the chest of Virgo, through the figure holding the pair of scales from his left shoulder to his right hip, down the length of Scorpio, the legs and tail of Sagittarius, through the body of Capricorn and of Aquarius and through the maw of the southern Pisces.

The ever-visible circle passes through the head and hand of Auriga and feet of Perseus. It touches the hind feet of both Ursa Maior and Ursa Minor and is tangential to the final curve of Draco's body. The feet of Cepheus and the right foot and left knee and right foot of Hercules touch it.

The Tropic of Cancer passes through the length of Cassiopeia's body, the feet of Auriga, the heads of the Gemini, the right arm and leg of Boötes, the club of Hercules, the shoulders of Cepheus and the hands and head of Perseus.

The equator passes through the right arm of Andromeda, Triangulum, the neck of Taurus, the feet of Gemini, the sword of Orion, the neck of Hydra, the hind feet of Leo, the length of Virgo's body, the thighs of Ophiuchus, touches Corona Borealis and Lyra, passes through the body of Cygnus, the chest and torso of Pegasus and the feet of Aquila rest upon it.

The Tropic of Capricorn passes through the right horn of Aries, the legs of Orion, the forefeet and body of Canis Maior, the hind feet of Canis Minor, through the sail and stern of Argo, through the brow of the anomalous male bust, the middle of Hydra, the southern pan of the scales, the head of Centaurus, the southern feet of Scorpio, the legs and tail of Sagittarius, the neck of Capricorn, the tail of Delphinus and between the two Pisces.

The ever-invisible circle touches the hind feet of Lepus, the oars of Navis and the feet of Centaurus.

The circle of the Milky Way passes through the nose and forefeet of Ursa Maior, the tail of Draco, between Leo and Hydra, through the body of Centaurus, through the horse's chest of Sagittarius, Corona Borealis and the hind legs of Ursa Minor. It touches the right hand and right foot of Cepheus.

The colures are not drawn, but their position can be determined from that of the ecliptic pole. Using this, one finds that the equinoctial colures pass through the forelegs and the middle part of Cetus, between Aries and Taurus, through the hands and the hips of

Cassiopeia, the main body of Draco, and the equatorial pole. It continues through the head of Boötes, passing between the figure holding the pair of scales and Scorpio, and through the arm and the front part of Centaurus.

The solstitial colure passes through the middle of Canis Minor, of Cancer, and of Ursa Maior. It continues through the equatorial pole, the middle of Ursa Minor, the ecliptic pole and Draco. It touches the skin of Hercules and the left hand of Cepheus, and continues through Cygnus, Delphinus, and Pisces Austrinus.

For reasons explained in the comments below, the constellations on the hour circles have shifted 30° behind the colures are listed.

The hour circle that has shifted 30° to the rear of the equinoctial colures passes through the tail of Cetus, the foreleg of Aries, the middle of Andromeda, the left arm and leg of Perseus, the tail of Ursa Minor, the equatorial pole, Draco, the legs of Boötes and the feet of Virgo.

The hour circle that has shifted 30° to the rear of the solstitial colures passes through the front part and head of Capricorn, Lyra; it touches Corona Borealis, and continues through the left arm and knee of Hercules. It passes through Draco, the body of Ursa Minor, the equatorial pole, the body of Ursa Maior, the head of the anomalous Bear, the advanced twin lengthways and the right arm of Orion.

Significant features of the constellation images:

(note: Since Ms lat 129 was once part of Ms lat 130, there might be some justification in comparing the depictions of the constellations in the planisphere in Ms lat 129 with those found accompanying the text of the *De ordine ac positione stellarum* in Ms lat 130). A quick check, however, shows that the two sets of images have so little in common that they certainly do not reflect the same pictorial tradition.)

- **URSA MINOR** is a bear with a very short tail, placed inside the second bend of Draco and looking into it. His paws cross in front of DRACO's body and he leaps opposite to the direction of the zodiac.
- **URSA MAIOR** is a bear with a very short tail, placed inside the third bend of DRACO, facing into it. It leaps opposite to the direction of URSA MINOR and to the zodiac.
- **DRACO** has three bends in its body and a small head like a snake. It encircles both URSA MINOR and URSA MAIOR, with the end of its tail tail passes beneath URSA MAIOR'S feet. His head nearly touches the right foot of Hercules and its third bend is overlapped by AURIGA's

head.

- **CEPHEUS** stands 'upside-down', with his feet to the north. His feet nearly touch the back paws of URSA MINOR. He is dressed in a short tunic, wears a hat and has his arms outstretched to the side. He stands on the ever-invisible circle and his neck is cut by the Tropic of Capricorn. The label for the constellation appears in the wrong place, set around the head of CASSIOPEIA (see below).
- **BOÖTES** is north of both Virgo and the figure that holds Libra, with his body parallel to the Tropic of Cancer. It is not clear whether he faces the viewer or not, because if one compares the figure with other constellations that do face the viewer, they have a similar circular shape defining their abdomens (such as CASSIOPEIA, for example). He is dressed in a short *exomis*, which exposes his left (?) shoulder and seems to show his buttocks (he shares this problem with ORION, see below). He holds a sickle in his southern hand; and his northern hand is covered by a piece of cloth. The Tropic of Cancer runs through the length of his southern leg and through his southern elbow.
- **CORONA BOREALIS** is a wreath of circlets with ribbons that look like wings placed at the bottom. It is placed to the north of the head of HERCULES, and butts up against LYRA on the southern side.
- **Hercules** is 'upside-down' with his head towards the south. He kneels towards CEPHEUS (in the direction of the zodiac). His lower body is in profile, with his left leg closer to the viewer, but the orientation of his upper body is unclear. He is nude and has a skin hanging over his outstretched arm in front of him towards LYRA and club in following arm held behind him. The Tropic of Cancer grazes the top of his head, and he kneels on the ever-visible circle. (The figure is now almost obscured by a tighter re-binding of the manuscript.)
- **LYRA** is between CORONA and CAPRICORN. It consists of two beams or 'horns' facing towards the south.
- **CYGNUS** is standing 'upside-down' with its head towards the south. It is directly north of DELPHINUS. Its wings are outstretched and looks over his shoulder towards CAPRICORN (opposite to the direction of the zodiac), a posture usually associated with the figure of AQUILA. (The figure is now almost obscured by a tighter re-binding of the manuscript.)
- **CASSIOPEIA** is between PERSEUS and AURIGA and to the north of ARIES and TAURUS. Her body is placed so that the Tropic of Cancer runs through it from her head to her right shin and she appears to be sitting, though there is no evidence of a throne. She is dressed in a long robe with long sleeves and her arms are raised to either side. The incorrect label for CEPHEUS (*cephews*) appears written on her head. She is in the location where one would expect PERSEUS to be.
- **PERSEUS** stands 'upside-down' with his head pointing to the south and his body located directly north of ANDROMEDA. He appears to be nude and he twists his body with an unexpected elegance, reminiscent of classical satyrs or maenads, so that his back is towards the viewer. He holds a curved stick in his raised right hand and holds his left elbow cocked so

that his hand is in front of his face. There is no Medusa's head. He is in the location where one would expect CASSIOPEIA and there is an incorrect label (*casiephia*) above his head. The Tropic of Cancer cuts through his neck and right arm and his feet have the ever-visible circle passing through them.

- **AURIGA** is placed in advance of CASSIOPEIA and to the north of TAURUS and the TWINS. He is standing and faces the viewer. He wears a long dress and has a long cloak draped over his his left hand. He holds a stick upraised in his right hand. The ever-visible circle passes through his head and the Tropic of Cancer runs through both his ankles.
- There is an **anomalous bear** to the north of the space between the GEMINI and CANCER. It faces towards AURIGA and may be the memory of one of the goats that belong to the Charioteer.
- **OPHIUCHUS** is nude and faces the viewer. He stands with both feet on SCORPIO. SERPENS surrounds his waist. The head of SERPENS, which nearly touches the sickle of BOÖTES, is facing towards him. The equator passes through the thighs of the Serpent-holder.
- **AQUILA** is standing 'upside-down' with its head towards the south and is placed between PEGASUS and ARIES, facing towards the wings of PEGASUS (opposite to the direction of the zodiac). Its right wing touches the belly of the northernmost fish of PISCES and his left wing touches the tip of PEGASUS's wing. Its feet are resting on the equator. Aquila is in the wrong place. The correct position would be to the rear of DELPHINUS and to the south of LYRA.
- **Delphinus** is between CAPRICORN and AQUARIUS, directly south of CYGNUS and north of PISCIS AUSTRINUS. It looks like a classical dolphin with a trefoil tail. The Tropic of Capricorn cuts through his tail.
- **PEGASUS** is depicted as half a winged horse and is placed 'upside-down' with its head to the south, directly north of AQUARIUS. His forefeet are stretched in front of him and he faces towards CYGNUS (opposite to the direction of the zodiac). The equator runs through his chest and belly.
- **ANDROMEDA** is to the north of ARIES and PISCES. She is parallel to the equator with her heads towards AQUILA and her feet towards the misplaced CASSIOPEIA. She wears a long robe and stretches her arms on either side. The Tropic of Cancer intersects her right arm.
- **TRIANGULUM** is a simple triangle, placed between ARIES and ANDROMEDA, and bisected by the equator.
- **ARIES** is 'upside-down', with his head towards the south. He leaps towards the fish (opposite to the direction of the zodiac), but his head is turned over his shoulder looking at the Bull. He has curled horns and a long tail. The southern boundary of the zodiac and the Tropic of Capricorn pass through his horns.
- **TAURUS** is depicted as ½ a bull, facing towards the GEMINI (in the direction of the zodiac). He tucks his right leg under his body and extends his left one in front of him. His body rests on the on the southern boundary of the zodiac and the equator passes through his neck.
- **GEMINI** are standing on the intersection between the southern boundary of the zodiac and

the equator. They are nude and stand facing the viewer. Both raise their right hands as if pointing to their own heads (perhaps, a gesture reminiscent of having once held spears) The advanced Twin has a club or spear in his left hand. And the following Twin has something lumpy in his left hand. There is a label (*gemini*) above their heads.

- **CANCER** faces towards LEO and has a circular body, two claws and six (?) legs. His right claw touches the head of HYDRA. His body is bounded by both the Tropic of Cancer and the equator, with the southern boundary of the zodiacal band passing through his southern legs.
- **LEO** leaps towards CANCER (opposite to the direction of the zodiac), with his held high and his tail lowered. His head touches the Tropic of Cancer and his feet stand on the intersection between the equator and the southern boundary of the zodiac.
- **VIRGO** is a female, wearing a long dress and holding a branch upraised in her right hand. She has no wings. Her head is placed towards LEO (opposite to the direction of the zodiac). There is a label (*uirgo*) above her head. Her body is nearly bisected from her left shoulder to her right foot, by the equator.
- There is a **figure holding a pair of scales** between VIRGO and SCORPIO. It looks like a female, wearing a long robe and holding a pair of scales in her right hand. The southern boundary of the ecliptic nearly bisects her, from her left shoulder to her right toes. The southern pan of the scales is cut by the Tropic of Capricorn.
- **SCORPIO** faces towards the figure holding the pair of scales (opposite to the direction of the zodiac) and has OPHIUCHUS standing on his back. He has two, arm-like front claws, six legs and a segmented tail. Its shield-shaped body is bisected by the southern boundary of the ecliptic.
- **SAGITTARIUS** is a centaur, that runs towards SCORPIO (opposite to the direction of the zodiac). Though his horse's body is presented in profile, it seems that his back is turned to the viewer. He holds a bow and arrow with his left hand before him. The horse part of his body is cut by the Milky Way, while the intersection of the Tropic of Capricorn, the southern boundary of the zodiacal band and the circle of the Milky Way occurs in the space between his two front hooves.
- **CAPRICORN** faces towards SAGITTARIUS (opposite to the direction of the zodiac). He has two long horns, a coil in his body and a trefoil tail. His legs bent in front of him. The Tropic of Capricorn passes through his neck and the southern boundary of the zodiacal band runs from his knees through the last part of his tail.
- **AQUARIUS** is a nude male, who faces the viewer. He appears to hold an upside-down urn in his hands. His body is parallel to the ecliptic, which bisects him from his head to his groin. The edge of his urn (?) touches the Tropic of Capricorn.
- **PISCES** are swimming in opposite directions, the northern one with its back to the north, the southern one towards the south. The Tropic of Capricorn and the southern boundary of the ecliptic cross in the northern fish's mouth
- **CETUS** is a sea monster with pointed ears, paws on his front legs and an oddly-shaped trefoil

tail. His head is to the south of TAURUS and the tip of his tail extends well past PISCES. There is a label (*cetus*) above his neck.

- **ERIDANUS** is depicted as a snake, complete with a head that faces towards CETUS. The head is placed to the south of TAURUS's feet the tail ends south of the left foot of ORION. There is a label (*heridanus*) above his neck.
- **ORION** stands directly south of GEMINI. He wears a skirt that comes down to his knees and is covered with decorative drapery folds, so that it is difficult to determine if some of the curved line are intended to represent buttock or not (see the similar problem in Bootes). His face, however, appears to be in profile, towards Taurus. A cloak covers his following arm and flutters away from his body not unlike the animal skins one usually sees being worn by Centaurus. He raises a sword vertically in his advance hand.
- There is an **anomalous Bust** of a bearded male figure placed to the south of HYDRA and in advance of ARGO. Iconographically, it is very close to some depictions of ERIDANUS (see, for example, the image in Basle AN. IV. 18).
- **LEPUS** IS to the south and in advance of ORION. It leaps towards the tail of the snaky ERIDANUS (opposite to the direction of the zodiac).
- **CANIS MAIOR** is behind LEPUS and in advance of NAVIS. It jumps towards ORION (opposite to the direction of the zodiac). Around his head, there is a halo with streams of light emanating from it. His forefeet and chest are cut by the Tropic of Capricorn and the top of his halo brushes the equator.
- **CANIS MINOR** is directly south of CANCER, between CANIS MAIOR and ARGO. He runs towards CANIS MAIOR (opposite to the direction of the zodiac). His hind feet are on the Tropic of Capricorn and his tail touches Argo.
- **NAVIS** is depicted as the rear part of a ship, placed in advance of CANIS MINOR and to the south of Hydra's head. It has one large oar, 5 triangular decorations that may have been oarlocks, and a mast with tattered sails or pennants. Its stern and the mast are cut by the Tropic of Capricorn.
- **HYDRA** looks like a snake and is very long. Its head touches the right claw of CANCER and its tail stretches south below VIRGO. There is no CRATER nor CORVUS on its back.
- **CENTAURUS** is to the south of the figure that holds the scales and the forepart of SCORPIO. He runs towards ARA (in the direction of the zodiac). His human half is nude and the cross-shape on his torso seems to suggest that he is facing the viewer. A sort of cloak or cloth floats behind him from his right shoulder. He holds a dead animal by its feet in his left hand in front of him.
- **LUPUS** is held by CENTAURUS.
- **ARA** is directly south of the body of SAGITTARIUS and runs parallel to the Tropic of Capricorn and the ever-invisible circle. It has three feet and a single column ending in a circular top, with flames coming from the top.
- **PISCIS AUSTRINUS** swims towards AQUARIUS (in the direction of the zodiac), with his back

towards the north. There is a label (*piscus mag.*) to the south of the body.

Comments

The planisphere appears on ff. 11v-12r of the manuscript now called Berlin, Ms lat 129 (Phill. 1830). As has long been appreciated, Ms lat 129 (Phill. 1830) was originally the first section of Ms lat 130 (Phill. 1832). The current manuscript only has eight pages of computistical tables, so the appearance of an early planisphere within this context makes little sense. However, if one conceptually reunites it with the contents of Ms lat 130 (Phill. 1832), the planisphere can then be seen as part of the larger tradition of illustrated astronomical manuscripts connected to the *De ordine ac positone stellarum in signis* (illustrated with figures of constellations; ff. 81v-85v in Ms lat 130) and the text of Germanicus's *Aratea* with the scholia (not illustrated; on ff. 86r-70v of Ms lat 130).

If one compares the positions of the colures vis-à-vis the zodiacal constellations, it is clear that they have been shifted by about 30° in longitudinal position. As a result, the vernal equinoctial colure, which should pass roughly between Aries and Pisces, passes between Aries and Taurus etc. This shift in the colures has had a number of consequences. Some of the constellations south of the zodiac, such as Cetus, do appear in the right place with respect to the correct positioning of the colures (*i.e.*: through the middle of the map). So the head of Cetus is placed below Taurus (next to the misplaced colure) instead of Aries, and Ara is located below Sagittarius (near the misplaced colure) instead of below Scorpio. But some of the placements of the constellations are less easy to explain. The positions of Cassiopeia and Perseus have been interchanged, for example. Cygnus appears to have lost his way completely, Corona and Lyra have become conflated and Aries appears upside-down. Last, but not least, if the anomalous male bust does represent Eridanus, it appears as a kind of ghostly memory from some other map or series of constellations. Not only is it placed in the wrong spot, but there is already a 'correct' version of the stream elsewhere in the map. As far as the relative positioning of the constellations is concerned, this planisphere is the least accomplished of the whole series.

The radii of the various circles indicate that a linear scale underlies in the construction of the map. Assuming the distance of the equator of 90° , one finds that the angular distances of the Tropics of Cancer and of Capricorn from the centre of the map correspond to 64° and 116° , respectively. These values show that these circles are symmetrical with respect to the equator and suggest an obliquity of the ecliptic of 26° , which is fairly close to the expected 24° . However, the value deviates by 4° from the angular distance of the ecliptic pole in the map, which appears to be located at an angular distance of 22° from the centre of the map. Using the same linear scale factor, the radius of the southern boundary circle centred on the

ecliptic pole corresponds to an angular distance of 107° . Assuming a size of the ecliptic of about 90° this would indicate a distance between the ecliptic and its southern boundary of 17° , which is more than twice the expected value of 6° . The angular distances of the ever-visible and the ever-invisible circles correspond to 38° and 143° from the centre of the map, respectively. These values, which are the equivalent to the geographical latitude of $38^\circ/37^\circ$, show that these circles are symmetrical with respect to the equator. Finally, the radius of the Milky Way turns out to be 77° , which deviates considerably from the expected value for a great circle of 90° . This value is fairly close to the value one would expect for the radius of the northern boundary of the ecliptic.

notes

According to MCGURK 1981, this star catalogue is taken from the *Compilation of 810*, but according to BORST 1995², it is more precise to say that it is an excerpt from the *Liber calculationis* compiled in Salzburg during the years 810-818.

BOSCHEN 1972 (p. 25, n. 82) notes that the manuscript Berlin, lat 129 (Phill. 1830) was originally the first part of Berlin, lat 130 (Phill. 1832). Moreover, there are notes in the first part of Berlin, lat 129 (Phill. 1830) referring to Metz that were added in the 11-12th century. He also mentions that the two texts spanning ff. 81r-v -- the *Excerptum de astrologia Arati* and the star catalogue -- have been written by different hands and show a different spacing ('*Schriftraum*') between their lines and letters.

Since ROSE 1893, it has been recognised that lat 130 (Phill. 1832) bears the date of 873; Lat. 129 (Phill. 1830) is earlier - BORST 1995² dates to c. 900.

bibliography

ROSE 1892, I, pp. 287-89 (Ms 129) and 289-93 (Ms 130).

Phill. 1830 from Metz, perg., 24 x 20; originally came from Phill. 1832. On fly leaf has: Ex Bibl Abb S Vencentii de Metz scripta circa 1063; inc.: Incipit Liber Dyonisii exigui.

92 (91) pages; folio 21 x 17; IX-X century with date indication of 873 inside

KAUFFMANN 1888, pp. lxii-lxxviii.

THIELE 1898, p. 158, fig. 67.

MANITIUS 1899, pp. .
 dates it 9th-10th.

SWARZENSKI 1913, pp. .

HERMANN 1923, I, pp. 145-54

KIRCHNER 1926, I, pp. 30-33 and fig. 37.

p. 130 (Ms 129) as *Cyclus secundum Dionysium*, perg., 300 x 235 mm, 12 leaves, minicule from the 10th century; West German (?), formerly in the Cloister of S Vincent in Metz re: Beischriften from the 11 and 12 centuries; series of columned tables for the 19-year cycle; from 4r-10v: 18 columns on each side in two rows; on fol. 11v-12r: a table of the heavens (diam 240 mm), faded brown pen drawings of the heavens, etc.

Ms 130: Perg., 296x242mm; miniscule 10th century Westdeutsche (?); ms Phill. 1830 is associated with St Vincenzkloster in Metz; 92ff.

Illustrations accompany *De ordine* (ff. 81vff) with illustrations beginning between 82r and 86r in feder; describes each picture; Bootes with a garment called an exomis hanging from right shoulder; Virgo is a Nike with an antique peplos; describes Gemin as Amphion anwith his cithara and Zethus; auriga wears a chiton; Cepheus with a chiton and a Phrygian cap and a quiver; Andromeda with a peplos and Phrygian cap between rocks; Equus as 'protome) of Pegasus; Orion with chiton; Argo with oar, sail, mast and rudder and an emporgezogenes (raised) stern 'und ein in drei spitzen auslaufender'; ara as an antique for; Centaurus with a panther in his hand; and a double lance; krater in Greek.

GOLDSCHMIDT 1928, (repr New York 1970) pl. 14 (=planishere).

KIRCHNER 1926, pp. 30-33 and fig. 37.

perg; 296 x 242; miniscule, 19th century, west German (?); associated with S Vincenzkloster, Metz;

NEUSS 1940, pp. 37-64.

Compilation of 809 also from Metz

NEUSS 1941, pp. 113-40.

BETHE 1945, p. 125, n. 20.

BYVANCK 1949, no. 43, p 216 and no. 88, p. 226.

SCHRAMM 1958, p. 43, pl. 20

GUNDEL 1963, p. 206

DESTOMBES 1964, pp. .

L'OCCIDENTE E L'ISLAM 1965, pp. .

BISCHOFF 1965, II, pp. 42-62.

PETERSOHN 1966, p. 242.

BISCHOFF 1966, pp. .

GUNDEL and BÖKER in P-W, 1972 no. 229, p. 682 or 681, nr 225.

WEITZMANN 1970, pp. 84 and pl. 65.

WEITZMANN 1971, pp. 335-39

BOSCHEN 1972, pp. .

Die Annales Prumienses,

McGURK 1973, vi, p. 200,

DELL' ERA 1974, p. 14: 9th c.

written by Martinus Scotus at Laon or Reims in 873, ff. 81r-85v.

Le BOEUFFLE 1975, p. xxxvii.

parchment in grand format, contains on ff 86r-90v verses 1-146 with intercalary *scholia* and images of constellations in first pages only; dates end IX c; re: ff. 86r-90v of lat. 130=Phillips 1832), relates to an original 6th-century provenance

ZIDI-NISSIEN 1975, pp. 217-40.

CONTRENI 1978, pp. 124-30.

McCULLOUGH 1979, pp. _____.

McGURK 1981, pp. 321-22.

star catalogue from compilation of 810 (but separate); early 9th century; dated 818; was at Regensburg in the 9th century; stars painted at Laon by mid-9th century; ills like Madrid 3307, Monza, Freiburg and Vat 645; notes globe close to Basle ABN. IV. 18

MUNK OLSEN 1982, I, pp. 405-06 (Germanicus section).

PAUL 1983, pp. 261-91.

REEVE 1983, p. 21.

says parent ms part of family of Basle and Aberystwyth; IX 3/4 and from Laon by way of Saint-Vincent, Metz

NEES 1984, pp. _____.

FRANCONIS 1984, pp. _____.

LE BOURDELLÈS 1985, p. 99ff.

he calls it the Compilation of 809; most studied are the twin mss from Salzburg, executed during the period of the Archbishop Arn (785-821): Vienna 387* and Munich 210* (which for a long time was housed in the church of St Emmeran in Ratisbone), all the evidence seems to suggest that they are copies of a French manuscript, that the Archbishop, a familiar of Charlemagne and Abbot of St Ammans since 783 made it easy to acquire (see F. Unterkircher, *European illuminated manuscripts in the Austrian National Library*, London 1967.); the number of French copies of the manuscript are amazing, considering they are all limited to the Carolingian age.

PERINA 1986, pp. 257-64.

TEITGER-STELZER 1986, no. 9.

De MERIDOL 1987, 81-112.

BISCHOFF 1989, p. 90.

NORTH 1989, pp. 171-86, esp. pp. 179-181.

GUNDEL 1992, pp. 92, 310, nr 389, pl. 5b.

BORST 1995², p. 173, note 19 and p. 175, note 23.

WHITFIELD 1995, p. 24.

MAZAL 1997, pp. 44-64.

HAFFNER 1997, p. 25.

says this manuscript has the Germanicus text with *scholia Basileensia* and on p. 174 the star catalogue *De ordine ac positione* is listed.

KÜNZL 2000 [2003], pp. 495-594, esp. pp. 549 ff: 9th c; Aratus scholia

GARCÍA AVILÉS 2001, fig. 22.

BLUME HAFFNER METZGER 2012, pp. 74-75 and 208-13.

pp. 74-75: well-designed copy for the Cathedral of Laon, the pictures are confined, but the iconography and the model of a single-column lay-out follows the Aachen court model; notes that the planisphere accompanies an unillustrated Germanicus; the images in this map refer to the Germanicus tradition (where as the constellation have been simplified according to the *De ordine* model); map used to help orient the reader to the sky

pp. 208-13: assigns it to Reims [?]; there is a later insert on ff. 11 and 12 with Sol and Luna and zodiac and the 19-year cycle from the 11th-12th centuries.

Lists contents; says Germanicus text is connected to **Basel AN.IV.18**; brush drawings with wash; locating it to Reims is via BISCHOFF 1989.

DEKKER 2012, pp. 154

p. 154: the appearance of a planisphere with the computes context makes little sense and must have belonged to an *Excerptum de astrologia* of the Salzburg compilation of 810-18, which is on ff. 81r-85v in **BERLIN lat 130**;

pp. 175-76: shares some features with Group I and Group II planispheres, but is closer in many ways to Group I; but, despite the appearance of the toga-wearing figures, the map is very corrupt;

pp. 230-33: France (Laon); lines from Virgil, *Georgics*, I, 438 and 437; constellations in a globe view; there is an anomalous bearlike figure to the east of Auriga; and an anomalous bust to the south of Hydra (if Eridanus, it is in the wrong place); the least accomplished of all the planispheres; earlier literature locate Lat 129 and lat 130 to St Vincent in Metz; by BOSCHEN1972, points out that those notations date to the 11-12th centuries; there is a reference to Laon in the manuscript (see CONTRENI 1978, p. 125).

To find:

- *Cimelia monacensis*, pp. 15-16; colour plate of planisphere 88 (fol 113v) says is 'nordliche sternhimmels' (=wrong); Vienna 387; illustrs to *De ordine ac positione stellarum signis*; in Middle Ages was in the Benedictine cloister of St Emmeram in Regensburg
Cimelia : a catalogue of important illuminated and textual manuscripts published in commemoration of the sale of the Ludwig Collection / [text by Roland Folter ... [et al.] ; color photography by C.V. Passela ; black-and-white photography by Hertha Bauer. New York (16 E. 46th St., New York 10017) : H.P. Kraus, c1983.
 - *Monumenta paleographica*, I, 1. 1. 2
 - D. Bulloch, *The Age of Charlemagne*, London 1965
 - Peltzer, *Mélanges*
-

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