

Paris
Bibliothèque de l'Arsenal

Ms. 1036

Sufi latinus

north Italian (Bologna?)
third-quarter 13th century

The earliest illustrated manuscript of the Gerard of Cremona translation of the *Almagest* (*Sufi latinus*) and the model for many of the later manuscripts. The ms contains texts of the *Sufi latinus*; numerous stellar tables and excerpts of Latin translations of Ptolemy, *Quadripartitum* and Abumasar, *Tractatus in revolutione annorum*.

contents

ff. 1r-49r	<i>Sufi latinus</i>
fol. 1r	Incipit liber de locis stellarum fixarum cum ymaginibus suis. Verificata ab Ebbenesophy philosophum Annis arabum 272... (codicil mentioning that tables have been corrected to the year 1210 AD)
fol. 49r	Additonal codicil mentions that the tables have been corrected for the year 1450. (cf.: KUNITZSCH 1986; KUNITZSCH 1990).
ff. 49v-50v	blank.
fol. 50v	<i>Magnitudines stellarum</i> (later addition, 14th or 15th century), which includes the shapes of the different stellar magnitudes used in the following illustrations.
ff. 51r-70v	<i>Tabula stellarum fixarum</i> (with tables updated for the year 1210; cf.: KUNITZSCH 1986, pp. 71 f.)

- ff. 71r-72v Ptolemy, *Quadripartitum*, I.9 (in the Latin transl. by Plato of Tivoli; see KUNITZSCH 1986, p. 72)).
- ff. 73r-98v *Tabulae astronomicae*.
- ff. 99r-99v *Tabula stellarum fixarum* (list of 15 stars of the first magnitude with co-ordinates provided; on fol. 99v, has Latin transliterations of Arabic names (see KUNITZSCH 1986, p. 72)).
- ff. 100r-101v *Tabula stellarum fixarum* (table of 49 important stars after the Latin transl. of the *Almagest* by Gerard of Cremona, re-calculated for the year 1188 (+ 16° 30').
- ff. 102r-102v List of astrolabe stars (see KUNITZSCH 1966, Type XII (p. 72 f)).
- fol. 103r *Tabula*. Precession tables for the year 1231 (*Iste est motus octave spere equate in civitate panormi 1231...*).
- ff. 103v-104r Astrolabe stars (cf: KUNITZSCH 1966, Type XII (pp. 72f.)), but with a different longitude value (*Tabule iste directe sunt ad meridiem scilie perinstra certissima quam Willelmus rex sicilie felicis memorie in civitate palormi fieri fecit anno domini christi 1188...*).
- ff. 104v-110v Albumasar, *De revolutionibus annorum* (Latin transl. by Johannes Hispaliensis).
- fol. 111r *Tabula stellarum fixarum* (list of 15 first magnitude stars with co-ordinates as on fol. 99r, with updated longitude).
- ff. 111v-112v *Tabula stellarum fixarum* (list of 45 stars of the second magnitude with co-ordinates and the Latin transl. of the *Almagest* by Gerard of Cremona).
- fol. 113r *Tabula stellarum fixarum* (list of 15 stars of the first magnitude with co-ordinates, which (as on ff. 99r and 111r), have been updated from Ptolemy by the addition of 15° 50').

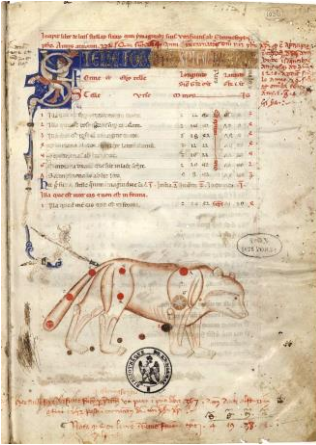
- ff. 113v-114v *Tabula stellarum fixarum* (list of 45 stars of the second magnitude, which (as on ff. 11v-112v, have been updated from Ptolemy by the addition of 15° 50').
- ff. 115r-121v *Stelle que sunt in cingulo orbis signorum* (tables for the zodiacal signs and their stars, updated from Ptolemy by the addition of 16° 30').
- fol. 122r *Tabula stellarum fixarum* (list of 27 stars for AH 609 (= 1212/13 AD), cf.: KUNITZSCH1966, pp. 99 ff., Type XV).

illustrations

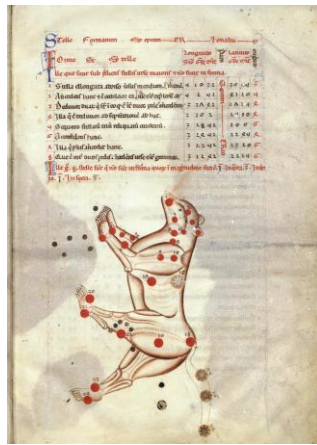
Full colour and full-page images of the 48 Ptolemaic constellations (with ANDROMEDA depicted three times), plus the addition of the second EQUUS. Iconographically and stylistically, the figures are quite close to those found in Arabic mss of al-Sufi's tables. Compare, for example, Oxford, Marsh 144. The Arsenal images preserve several 'oriental' details and the style in which they are painted recalls Islamic metal decoration

In terms of the *Sufi latinus* mss, the figures are closest to the ms in Bernkastel-Cues (both include al-Sufi's 'third horse'), but the major difference being that in that in the Bernkastel-Cues ms., all human figures except Virgo are naked, while Arsenal 1036 has the figures except Gemini appear barefoot and simply but fully clothed. In the Arsenal ms, All the figures are barefoot, except for Cepheus.

The stars are shown as large dark circles with a golden star (1st magnitude), as brownish circles with a silver star (2nd magnitude) and as larger and smaller red disks (remaining magnitude classes). The stars outside the figure, with separate counting, appear as bluish disks.



fol. 1r



fol. 2r



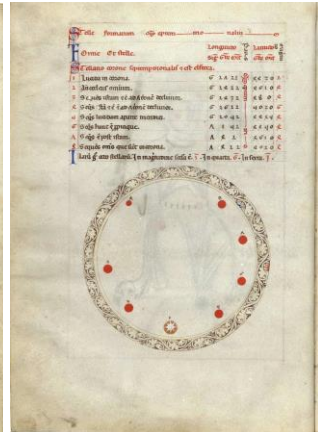
fol. 3r



fol. 4r



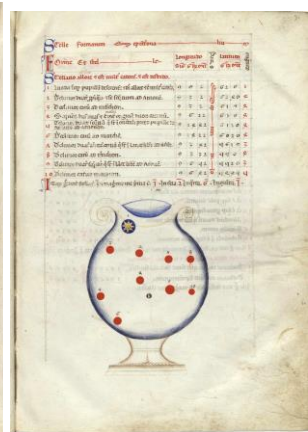
fol. 5r



fol. 5v



fol. 6v



fol. 7r



fol. 8r



fol. 9r



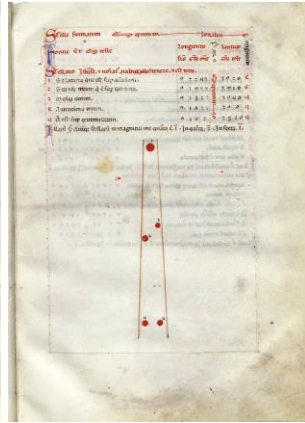
fol. 10r



fol. 11r



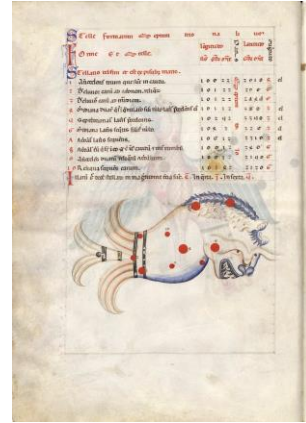
fol. 12v



fol. 13r



fol. 14r



fol. 15r



fol. 15r



fol. 16r



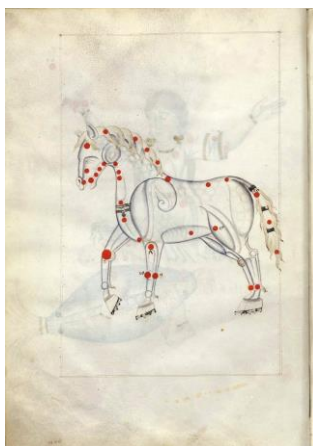
fol. 17r



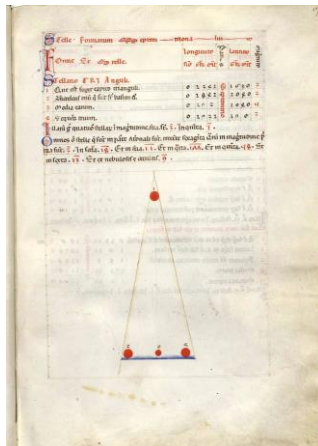
fol. 17v



fol. 18r



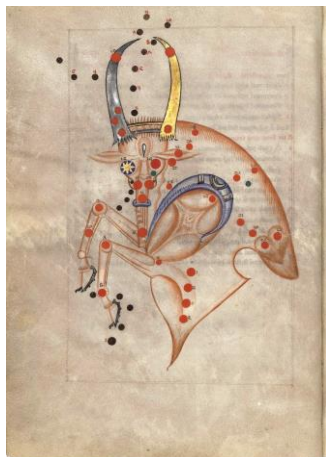
fol. 18v



fol. 19r



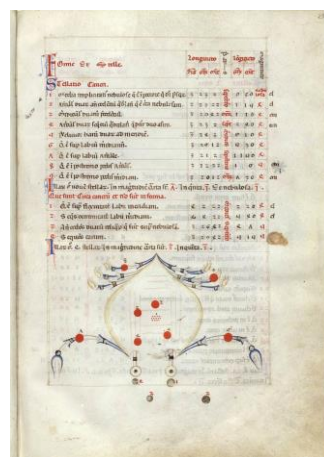
fol. 20r



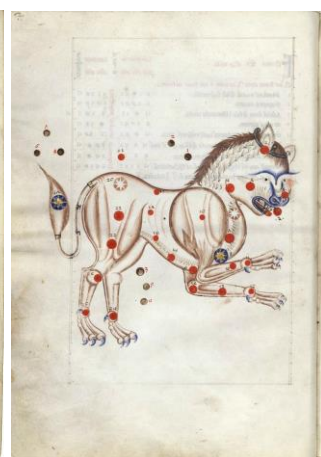
fol. 21v



fol.22v



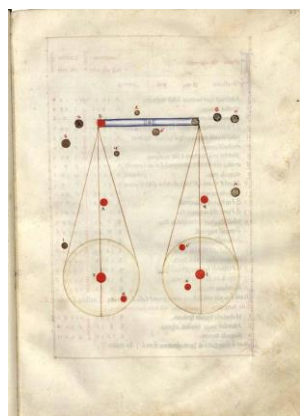
fol.23r



fol.24v



fol.26r



fol.27r



fol.28r



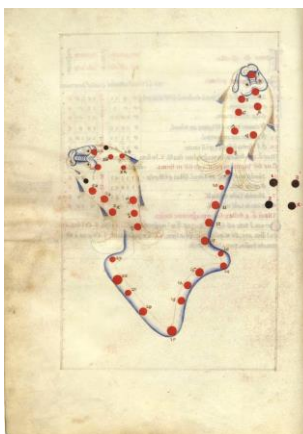
fol.29v



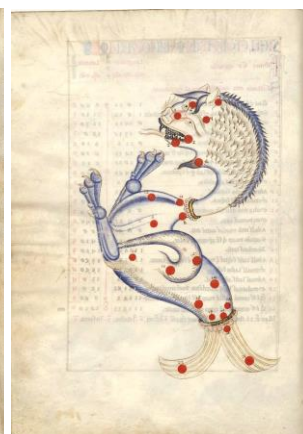
fol. 31v



fol.32v



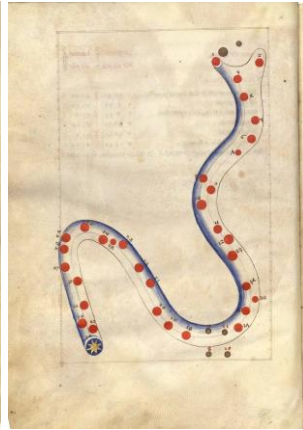
fol.33v



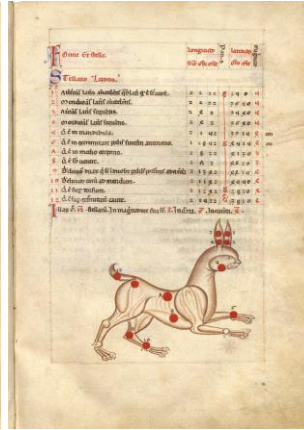
fol.34v



fol. 36r



fol. 37v



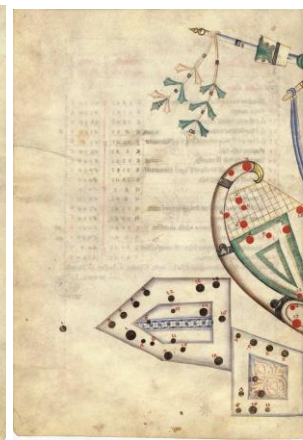
fol.38r



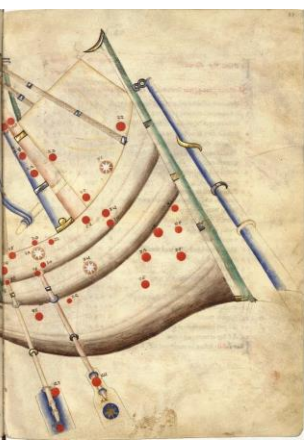
fol.39v



fol. 40r



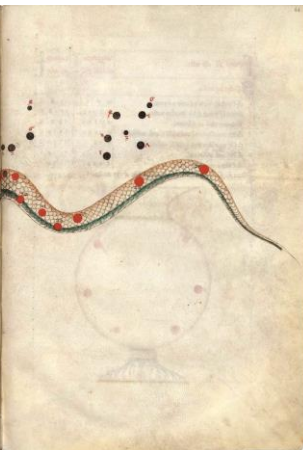
fol. 41v



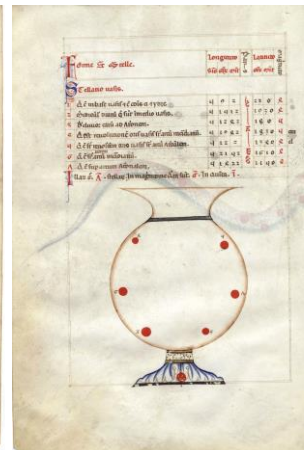
fol.42r



fol. 43v



fol.44r



fol. 44v



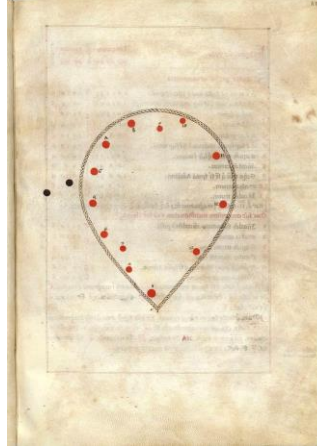
fol.45r



fol. 46v



fol.47r



fol.48r



fol.49r

-
- fol. 1r **URSA MINOR** walks to the right, with its head slightly dipped. It has a short, pointed snout and round ears. It leads with its left front leg and has a long tail and prominent claws. There are 6 stars marked and numbered, with additional unnumbered star under the hind legs.
- fol. 2r **URSA MAIOR** is turned on the page so that its head faces the top of the page (so it is walking towards the top or to the left). It has a short, pointed snout and round ears. The front legs are held together and the back left leg leads. It has a very long tails that extends horizontally behind it and is not coloured. There are 14 stars marked and numbered within the body of the figure.
- fol. 3r **DRACO** faces to the left and has a very large head in relation to the body. He has a short beard, sharp upper and lower teeth and a forked tongue sticking out. The body of Draco has one coil behind the head and then proceeds vertically downwards until it reaches two further coils, where it turns in a right angle towards right, and it then bends again with a second right angle, before continuing to the bottom of the page. He has 31 marked and numbered stars.
- fol. 4r **CEPHEUS** is bearded, faces the viewer and walks to the right with his arms and legs set at right angles so that his body forms a swastika shape. The palm of his leading left hand has the palm facing upwards and the following right hand has the back of the hand facing the viewer. He wears a tall, dome-shaped hat, and a knee-length tunic, with tight

sleeves and a thin belt with dots on it. The edge of his hem is ruffled and he is barefoot and has 11 marked and numbered stars with some extra, unnumbered stars around his body, including a semi-circular arc near his left hand.

- fol. 5r **BOOTES** faces the viewer and walks to the left with his right arm raised and the palm of his right hand facing upwards. His upper left arm is held very close to his body, and the lower arm protrudes at a right angle at the level of his waist. He holds a long sword vertically in his left hand. He is wearing a loose, belted knee-length tunic, which has a V-shaped opening at the neck and three-quarter length sleeves with contrasting hems. The hem of his tunic flares out at each side and his head and feet are bare. He has 22 marked and numbered stars, including a very bright one between his knees.
- fol. 5v **CORONA BOREALIS** is a ring decorated with a leafy scroll and with 9 stars marked and numbered.
- fol. 6v **HERCULES** is turned to the left, kneeling on his left knee, with his right knee at a right angle in front of his. He faces the viewer and has both arms held out horizontally until the elbow, when they both make a right angle and rise vertically. He holds his right hand with its palm open and facing the viewer. In his left hand, he raised a short, curved knife, the blade of which touches his head above his left ear. He has a thigh-length tunic that is belted at the waist and has a V-shaped opening at the neck. It seems as though he has shorts under his tunic (note bands around his thighs), He has a tight-fitting red skull cap on his head, short blonde curly hair and his feet are bare. There are 28 marked and numbered stars with an extra, unnumbered large star on his left foot.
- fol. 7r **LYRA** is depicted as a fat-bellied vase standing on a stemmed support. It does not have handles, but the edge of the rim is curled like volutes. It has 10 marked and numbered stars, with the largest one on the rim. ***
- fol. 8r **CYGNUS** is a cockerel with a spiky crest and wattles beneath its chin. It is splayed so that its belly faces the viewer and its wings are outstretched and its legs turned outwards. Its neck is elongated. It has 16 marked and numbered stars, with the brightest one at the base of its tail.

- fol. 9r **CASSIOPEIA** stands facing the viewer and slightly to the right. She stands in front of her chair, which has a tall back, which appears to have a vertical oval cushion on its back) and animal claws for feet. She raises her right arm behind her and grips the upright back of the chair with her right hand. She holds her left arm close to her body as far as the elbow and then twists the lower arm so that she holds her palm towards the viewer at chest height. She wears a simple banded crown. Her dress is loose and appears to be held by trifoliate fastenings at each of her shoulders. The garment is caught by a belt at her waist that has three tongue-shaped decorative flaps. The sleeves are three-quarter length and the excited hem of her skirt flairs out at her knees. Her feet are held closely together so that they almost appear like one foot. She is barefoot and her long, dark hair is uncovered. She has 13 marked and numbered stars.
- fol. 10r **PERSEUS** faces the viewer and stands facing to the right, but twists the upper part of his torso back to the left. He raises his left arm above his head so that his hand is directly above it, holding a long, straight sword that tilts downwards to the left. He holds his upper right arm close to his torso as far as the elbow, with the lower half held at right angles to his body. He holds a bearded demon's head (Medusa) by the hair in his right hand. He has a small, round blue cap on his head, and wears a belted tunic that has simple bands at the neck, cuffs and above the knee. The hem of his skirt falls as far as his shins and is agitated. His feet are bare feet. He has 26 marked and numbered stars, with a bright one on the left side of his chest and just below his right forearm. There is also a small grid of dots on his upraised left forearm.
- fol. 11r **AURIGA** faces towards the viewer, standing slightly to the right with his left leg raised at a right angle as if he were taking a step in that direction. He holds a stick with small thongs vertically in his right hand and points his right index finger behind him to the left. He grabs a fold of cloth from the skirt of his tunic in his left hand, so that his hand is positioned over his genitals. His loose, belted tunic has bands at the neck, forearms, on the upper left arm and at the thigh. The hem, which falls to his shins, is agitated. He has a crescent-shaped cap/round helmet decorated with acanthus leaves on his head and he is barefoot. He has 13 marked and numbered stars, including a very bright one on his left shoulder and bright ones on his right shoulder and right ankle.

- fol. 12v **OPHIUCHUS** faces the viewer and walks to the right with the **SERPENS** held horizontally behind his back. The Snake's head is raised to the right and his tail, with one coil, is raised to the left so that, overall, its body makes a U-shape. Its head is relatively large for the body. **OPHIUCHUS** has a decorated, turban on his head and a loose, belted tunic that ends with an agitated hem at his knees. His feet are bare. He is marked by 24 numbered red stars. **SERPENS** has 18 numbered green stars. There are also 5 extra numbered stars above **OPHIUCHUS**'s right shoulder.
- fol. 13r **SAGITTA** is depicted as two vertical lines, which converge towards the top of the page. It is marked by 5 numbered stars.
- fol. 14r **AQUILA** is an eagle with outspread wings standing to the right and it has a golden crown on its head. It is highly coloured, with blue, tan and green striped wings and a blue beak. It is marked by 9 numbered stars, with 6 numbered stars outside the body.
- fol. 14v **DELPHINUS** is depicted as a lion-headed fish, with large eyebrows (the left one of which protrudes almost like a horn), short tufted ears and curved, pointed upper and lower teeth. Its head is pointed towards the right. Its body is paunchy and fish-shaped, with a band just behind the protruding stomach. To the left of the band, the tail splays outwards in two sections the inner one of which has two bands on it. It is marked by 10 numbered stars.
- fol. 15r **EQUULEUS** is the *protome* of horse's head and neck, facing to the left with an open mouth. Its body is brown and mane is blue. It has 4 numbered stars.
- fol. 16r **PEGASUS** (*Equus secundus*) is half a winged horse facing to the left with its body cut off by the frame of the drawing. Its mouth is open and it has highly stylized 'Persian' wings that rise above its back and end in a curl. The connection at the shoulder also forms a curl. Its hooves have prominent ridges along the bottoms (nails?) and its feet are stretched out in front of it. It has 20 marked and numbered stars, with the quadrangle being marked with bright stars.

- fol. 17r: **ANDROMEDA** (version 1) is standing to the right with her arms outstretched and raised; she has long loose hair and is crowned. She has 23 numbered stars.
- fol. 17v **ANDROMEDA** (version 2) faces the viewer and walks to the right with her arms outstretched at shoulder height and her hands raised so that both palms face upwards. Her dark hair is uncovered and she wears a long, loose dress that is belted and falls to her shins. The sleeves of her over dress are slightly loose, showing a tighter-sleeved undershirt. She has decorative trefoil clasps at the shoulders of her garment and decorative bands at her neck and at her thighs. There are two semi-transparent fish lying with flared nostrils and prominent noses stacked one on top of each other, with their heads to the right, lying on top of her upper torso. She has ankle bracelets, and her feet are bare. She is marked by 20 numbered stars and the smaller fish has another 15 numbered stars (making a total of 35 numbered stars) and 2 unnumbered stars and a small grid of stars is floating in front of the larger fish's snout.
- fol. 18r **ANDROMEDA** (version 3) faces the viewer and walks to the right with her left leg leading. Her arms and hands are upraised and her open palms facing. She wears a loose belted dress with wide sleeves as far as her elbows that have double decorative bands. Her skirt flares out to the sides at her thighs. She wears anklets and bracelets and has bare feet. She has a large, semi transparent fish (more fish-like than in version 2) placed over her lower legs facing to the left and inclined slightly on the diagonal, with its snout higher than the tail. She is marked with 21 numbered stars and the fish as 7 unnumbered stars.
- fol. 18v **EQUUS SECUNDUS** is a full-bodied horse walking to the left with his right front leg raised and his mouth open. He is marked by 32 stars, some of which are numbered (the largest of which is in its right front knee).
- fol. 19r **TRIANGULUM** is a narrow isosceles triangle with the acute point towards the top of the page, with 4 numbered stars marked one at the apex and three along the base). The base is coloured blue.
- fol. 20r **ARIES** is turned on the page so that his head is towards the top. His legs are so closely tucked under his body that it is difficult to determine if he

is just getting up (hind legs first) from a crouching position or if he is running towards the left (the top of the page). His right front leg reaches forward and his left foreleg is completely folded under him. He turns his head backwards over his shoulder (to the right and the bottom of the page) and has huge, curled horns and a very long tail. He is marked by 13 numbered stars and there is one numbered star above his head and 4 numbered stars above his flank.

- fol. 21v **TAURUS** is half a bull that is set vertically on the page. He faces to the left, but his head is turned towards the viewer so that it is placed frontally. He has long, slightly curved horns that rise vertically from his crown towards the top of the page. He seems to have breath coming from his nostrils His forelegs are bent and tucked in front of him. There are highly decorative patterns on his shoulder and on his back towards the cut-off. He is marked by two sets of numbered stars: 12 numbered stars in his horns and 31 numbered stars on his belly, starting near the cut. There are also a handful of unnumbered stars by his left front hoof and in front of his face.
- fol. 22v **GEMINI** are two naked males (?) wearing small blue turbans on their heads walking to the right with their legs in profile, but their upper torsos turned to face the viewer and their heads turned back to the right in profile. They are intertwined so that their outstretched inner arms cross at the armpit and their outer arms are outstretched at shoulder height. They walk with their right legs leading. The stars are numbered across both the Twins from head to foot as if there were a single constellation), with a total of 18 numbered stars and three extra stars trailing behind the left foot of the left (hindmost) Twin. They each have a bright star in their foreheads.
- fol. 23r **CANCER** is a heart-shaped crab with his front claws towards the bottom of the page. His eyes are extended on stalks and he has two long, segmented arms with small claws outstretched from his 'shoulders'. At the pointed end of his body (towards the top of the age), he has 3 segmented legs sprouting from each side (6 legs in total fanning out from its base). He has 9 numbered stars on his body, with an additional 4 numbered stars on the centre of his shell (the Asses), surrounding a small grid of dots at the centre of the shell (the Manger).

- fol. 24v **LEO** appears to be pouncing to the right with his forepaws raised so that h is nearly standing on his hind legs. He has a round head and his tongue is sticking out. His musculature is highly stylized. His tail forms a U-shape with the tip raised and ending in a flame-like plume. He appears to have a crown on his head and has 27 numbered stars marked, including bright ones on his chest and on the top of his haunch. There are also 6 numbered stars above his back and three numbered stars in front of his left hind leg.
- fol. 26 **VIRGO** faces the viewer and walks to the left. Her arms are held tight to her body along her sides with the palms twisted to face the viewer. Her right shoulder is raised or hunched, and she seems to stare at it. She wears a loose tunic with a peplum that has decorative bands at the neck, sleeves, and thighs. She carries no attributes and is not winged. She has a bare head and feet, and her dress ends at her calve with a highly agitated hem. She is marked by 26 numbered stars.
- fol. 27r **LIBRA** is a two-panned scales with the pans of each tipped upwards, rather than being foreshortened. The stars in each half are numbered separately: the right has 8 stars and the left has 9 numbered stars.
- fol. 28r **SCORPIO** has a heart-shaped body and intense round eyes. He is set at a slightly diagonal with his claws towards the upper right corner of the page. His back is towards the viewer and he has two long, curved and segmented front claws held so they form a circle in front of its nose. His front claws and tail are segmented like a beaded necklace. He has 4 V-shaped legs with small claws on either side. He has 21 numbered stars in his body and tail and 3 additionally numbered stars surrounding the end of his sting. There is one very bright star in the middle of his back and a large star at the beginning of his tail.
- fol. 29v **SAGITTARIUS** is depicted as a centaur facing to the right with his left front hoof raised in a high kick. His human half is clothed in a loose shirt and he wears a white scarf tied around his head, the ends of which trail out to the left in a very agitated manner. He holds the reflex-bow in his left hand and pulls the string with his right. His horse's body is 'dappled' brown with large circles and the nails in his hooves are visible. He is marked by 31 numbered stars.

- fol. 31v **CAPRICORN** faces to the right. His front half is a goat with remarkably long and slightly curved horns rising vertically from his forehead. His front legs are extended in front of him and his fishy hind-quarters twist in a curl before ending in a splayed finlike tail. He has 28 numbered stars.
- fol. 32r **AQUARIUS** faces the viewer and stands slightly to the left. His left arm is raised to shoulder height with the palm upwards. He holds the end of an L-shaped stream in his right hand so that the stream drops vertically and then curves back to the right under his feet. He has a decorated blue cap (mini-turban?) on his head and wears a belted tunic with a band at the neck and sleeves, which ends at his knees. His feet are bare. He has a total of 42 numbered stars between his body and his stream and numerous stars outside his body.
- fol. 33v **PISCES** are connected by a V-shaped stream at their tails so that the point of the V is at the bottom of the page and the two fish surge towards the top of the page. Both fish are seen from the back and have slightly leonine facial features, with prominent nasal ridges and flattened nostrils. Between them, there are 29 numbered stars. There is a square of four numbered stars to their right.
- fol. 34v **CETUS** is a highly stylised 'leo marinis'. He is placed horizontally on the page so that his head is at the top. He has a large lion's head, with a mane, that tapers into a narrow neck, which has a neck band. He has two lion's claws and a hook-shaped wing (?) coming from his shoulder and his posterior ends in a bifurcated fish's tail. He has 22 numbered stars.
- fol. 36r **ORION** is facing the viewer and kneels to the right on his right knee, but his left leg is stretched so that it appears he is kneeling on an incline. He raises both hands above his head. In the right hand, he holds a bent stick (like a boomerang) and his left hand is covered by an overly long sleeve that 'pours' downwards towards his left knee. He has a small tan turban and a belted loose blue tunic that ends at his knees. He wears a long straight sword that hangs vertically between his legs. He has 38 numbered stars within his body.

- fol. 37v **ERIDANUS** is a section of river that forms a loose, reversed S-shape. The upper right end of the river (the mouth) is bifurcated. It has 34 numbered stars as 2 extra, unnumbered stars at the mouth. The lower end has a bright star on it.
- fol. 38r **LEPUS** leaps to the right and has vertical, sharp ears and a short curved tail. It has 12 numbered stars.
- fol. 39v **CANIS MAIOR** is set vertically on the page, with his head towards the top of the page, as if he were rearing on his hind legs. He has a very large head, open mouth with tongue sticking out and sharp teeth bared. He wears a thin collar with a ring on his neck. He has a long tail that ends in a curl. He is marked with 18 numbered stars and 1 extra number star above his head. There is also a rectangular shape below his hind legs with 10 numbered stars in it.
- fol. 40r **CANIS MINOR** stands facing to the right, with his mouth open and tongue and teeth showing. He has a thick collar with a ring on it. He has short, curled ears and a long, curled tail. He has 2 numbered stars, with the very bright one on the haunches.
- fol. 41v- 42r **NAVIS** (covering an open bi-folio) is depicted as half a stylized ship with one curved end at the left and the other end cut-off vertically with behind the mast. It appears as though the vertical pole that forms the cut-off is chained to another vertical column (like a mooring post) that is wrapped with a rope. The ship has two steering oars towards the curved end. There is a square sail draped over the yardarm and a crow's nest and two streamers with tassels at the top of the mast. There appears to be a stylized cabin with a cross-hatched roof under the curl of the stern. The ship is marked by 40 numbered stars. Beneath the curved stern, there are two decorated polygons, one of which has 16 numbered star and the other has 11 numbered stars.
- fol. 43v-44r **HYDRA** (covering an open bi-folio) is a long, scaly snake with a large head, sliding to the left. There is one coil in its body near the head and its mouth is open to show a forked tongue and sharp teeth. The Snake is marked by 20 numbered stars and several unnumbered ones. **CRATER** and **CORVUS** are not included in the picture, but their shapes are marked with 6 stars and 7 stars.

- fol. 44v **CRATER** is a fat-bellied vase standing surprisingly similar in shape to LYRA/ It stands on a pedestal foot with 6 numbered stars marked.
- fol. 45r **CORVUS** flies to the left with its wings raised and is marked by 7 numbered stars.
- fol. 46v **CENTAURUS** stands to the left. His human half is clothed in a loose shirt and he has a small turban on his head. He holds a leafy plant in his left hand in front of his body and holds **LUPUS** (a lion) by its hind feet (so that it rears up) in his right hand. Centaurus is marked by 38 numbered stars and Lupus by 15 numbered stars.
- fol. 47r **ARA** is placed on its side so that the flames are rising to the right. It is a cylinder with two concave sides and a decorative band at the middle. It has 7 numbered stars on the body of the vase and in the flames and there are another 10 numbered stars above it.
- fol. 48r **CORONA AUSTRINUS** is an ovate, shield-shaped decorative band with the pointed end at the bottom. It has 13 numbered stars and 2 unnumbered stars.
- fol. 49r **PISCIS AUSTRINUS** is a large fish with a prominent nose and open mouth with teeth and tongue exposed, swimming to the left. It has 11 numbered stars in its body and 7 numbered stars beneath it.

notes

33.3 x 23.4 cm, 122 folia; parchment; all pages are framed with a thin, light red double line that encloses the text area and image fields.

BUCHTAL 1947 proposed a Sicilian origin for the archetype of the ms, written in Sicily under the patronage of Frederic II; DOMNGUEZ-RODRIGUEZ 1984 and 2006 suggests that the ms was made for Alfonso X el Sabio and dates it to 1252 based on the information concerning the rectification of the longitude of the stars; GOUSSET

1984 agrees with the idea of a Sicilian model, but argues that the ms itself is Bolognese in origin.

METZGER 2016 notes that the manuscript appears to be of one piece; apart from occasional entries by later users, there are no subsequent additions or traces of parts being removed. The year 1231 mentioned on fol. 103r is too early as a *terminus post quem* to be relevant for a more precise dating. The same is true for the 367-year adjustment of the longitude values for the stars (=1252). The second star list on fol. 51 provides values for 1210.

While the design of the animal bodies and especially the animal faces clearly shows the model of the Arabic image, the faces of the human figures also clearly express the influence of Byzantine models typical of the time and landscape.

He believes that there is ultimately no reason to mistrust the opening description of the text and that this manuscript is ultimately directly or indirectly based on a *Sufi latinus* text dating from the late 12th century which came from Norman Sicily. As in the case of *Liber introductorius* of Michael Scot and his images, our understanding of the precise origins of the *Sufi latinus* remains shrouded in mystery, since the earliest surviving manuscripts hail from northern Italy of the 13th century.

bibliography

MARTIN 1886, II, pp. 247ff.

entry referring to the catalogue of stars says that was revised at Palermo by means of instruments of King Roger of Sicily.

HAUBER 1918, pp. 50 ff.

PANOFSKY /SAXL 1933, pp. 228-280, esp. p 238, no. 12, figs. 17 and 23.

BYVANCK 1949, p. 210 f., no. 25.

SAXL/ MEIER III, 1 1953, pp. xxxii, xlv, xlix, lii and figs 17 and 35.

BUCHTHAL 1957, (Miniature painting in the latin Kingdom of Jerusalem. Oxford, 1957).

WELLESZ 1959, p. 22.

she says 13th century; follows Bodley, Marsh 144 type of drawings very closely.

STEJSKA/KRASA 1964 (Stejska ,Karel ; Krasa, Joseph, 'Astralvorstellungen in der mittelalterlichen Kunst Böhmens', *Sbornik praci filosoficke fakulty Brenske University*, VIII, 1964), pp. 61-85.

KUNITZSCH 1965, pp. 65-74.

MÜTHERICH 1974 (Mütherich, F., "Handschriften im Umkreis Friedrichs II", in *Probleme um Friedrich II* [Vorträge und Forschungen, 16], Sigmaringen: J. Thorbecke, cop. 1974, p. 9-21

McGURK, IV 1966, p. xx.

Sicilian or southern Italian; taken from the 12th century translation made in Sicily; he says this is the earliest surviving illustrated ms and is 13th century

BOLOGNA 1969, p. 47.

DIE ZEIT DER STAUFER 1977, no. 821.

DOMINGUEZ RODRIGUEZ 1982, pp. 211-240.

TRESORS DE LA BIBLIOTHEQUE DE L'ARSENAL 1980, no. 89.

DIX SIECLES D'ENLUMINURE ITALIENNE 1984, p. 41 f., no. 28, fig. 28 (f. 71r).

DOMINGUEZ RODRIGUEZ 1984A (*ASTROLOGIA Y ARTE EN EL LAPIDARIO DE ALFONSO X EL SABIO*. MADRID: EDILAN, 1984.)

DOMÍNGUEZ RODRÍGUEZ 1984B, ('LA PERVIVENCIA DE LA ASTROLOGÍA ISLÁMICA EN EL ARTE CORTESANO EUROPEO DE LOS SIGLOS XIII AL XVI', *BOLETIN DEL SEMINARIO DE ESTUDIOS DE ARTE Y ARQUEOLOGIA*, L, (VALLADOLID, UNIVERSIDAD DE VALLADOLID, 1984), p. 227-238.

GOUSSET 1984, pp. 93-108 (Gousset, *Arte medievale*, II, 1984, pp. 93-108.)

LIPPINCOTT 1985, p. 67 and *passim*.

(Type 1): Tabular manuscripts identical in format, text and illustrations.

Table for each constellation is headed with list of multiple names.

illustrations: 1r-50v ; closely related to Arabic models.

inc (1r:) Incipit liber de locis stellarum fixarum cum ymaginibus suis.

Verificata ab Ebbenesophy philosophum Annis arabum 272.

DOMINGUEZ RODRIGUEZ 1986, pp. 109-119.

KUNITZSCH 1986, pp. 56-81, esp. pp. 68, and 71-74.

fol. 1r: star catalogue with drawing (Ebbenesophy) + Hijira year 272 = 885-86 AD; longitudes = Sufi = Ptolemy + 12° 42' and note adding that from 885-1210 there has to be added 39" or 1° 4'51" for every 100 years; draws end at 50v and PISCIS ASUTRINUS
49r-50=blank

fol 10v: Auriga. nota quod in hac ymagine posuit pholomeus (sic) in almagesti .14. stellas hec nominatur (?) Minor que est super pedem sinistrum 1 s 30° 40' lo., 10° 20' lat mag 6 = he used Gerard of Cremona translation to augment Sufi's list of 13 stars and used Ptolemaic coordinates

51r - speaks of Sicilian connection

LIPPINCOTT 1993, p. 42, fig. 8.

fol. 18r Andromeda.

OROFINO/PACE 1994 ('La miniatura', in *I Normanni, popolo d'Europa 1030 -1200*, ed. Mario D'Onofrio, Venice, 1994, p. 263-271), esp. pp. 129-149, esp. pp. 138 and 148.

OROFINO 1984 ('IL RAPPORTO CON L'ANTICO E L'OSSERVAZIONE DELLA NATURE NELL'ILLUSTRAZIONE SCIENTIFICA DI ETA SVEVA IN ITALIA MERIDIONALE', IN *INTELLECTUAL LIFE AT THE COURT OF FREDERICK II HOHENSTAUFEN* [CASVA SYMPOSIUM PAPERS, 24], PP. 129-149.

MINERVINI 1995, p. 328 ff, no. IX. 26

OROFINO 1995A ('I CODICI SCIENTIFICI', IN *FEDERICO II, IMMAGINE E POTERE* [EXPOSITION, BARI, 1995]. VENICE: MARSILIO EDITORE, 1995, PP. 155-159)

OROFINO 1995B (FEDERICO II E L'ITALIA : PERCORSI, LUOGHI, SEGNI E STRUMENTI [EXPOSITION, ROME, 1995-1996]. ROME: ED. DE LUCA, 1995, P. 104 ET NOTICE IX.26 P. 328-329.)

PRESENZA DELL'ARTE INCISORIA 2000 (PRESENZA DELL'ARTE INCISORIA NELLA CULTURA CONTEMPORANEA: OPERE DEI MAGGIORI ARTISTI ITALIANI DEL NOVECENTO [EXPOSITION. BASSANO DEL GRAPPA, PALAZZO AGOSTINELLI. 2000]. BASSANO: ED. ARTISTICA, 2000).

BLUME 2000, pp. 248, 260 and 279.

OROFINO 2001, p. 190.

MARIANI CANOVA 2001, p. 392.

Bestiaire médiéval 2005 (Bestiaire médiéval: enluminures [Exposition. Paris, Bibliothèque nationale de France. 2005-2006], Paris: Bibliothèque nationale de France, 2005), n° 108.

BLUME/HAFFNER/METZGER 2016, II, 1, pp. 35, 57-60, 73 and 332-337; II, 3, plates 19-27 and figs 263-308.