

Abstracts in alphabetical order

1. Victoria Altmann-Wendling

The moon as part of the zodiac in ancient Egypt

Since the introduction of the zodiac to ancient Egypt in the 2nd-1st ct. BC, it became a popular motif in tombs, coffins and at the ceilings of temples. In representations of the zodiacal signs, sun and moon also occur, which according to ancient ideas belonged to the five planets known at that time. In most depictions, they all appear in the astrological constellation of their so-called exaltation (*hypsoma*). By means of these celestial phenomena either a certain date of birth, namely the horoscope of the owner of the tomb or coffin, or – often, but not exclusively in the temples – the date of the New Year was represented. This symbolized at the same time the date of the birth of the world (*thema mundi*). Some sources still displayed iconography and astronomical concepts that correspond to classical Egyptian ideas: here, the signs of the zodiac as well as the moon were incorporated into representations of the so-called decans, goddesses of the hours, and other celestial phenomena. Thus, on the one hand, the moon could be part of comprehensive astronomical scenes that depicted all phenomena of the sky, and on the other hand, it could be used to represent a specific date. The aim of depicting these phenomena in private monuments and objects was probably to let the owner participate in the cosmic cycles and their property of eternally perpetuating renewal. The paper discusses the sources and proposes interpretations and possible ways of inter- and intracultural transmission.

2. Benjamin Anderson

Pictorialization in al-Sufi's book of the fixed stars

Bodleian, Huntington 212 is a 12th-century manuscript of the Book of the Images of the Fixed Stars composed in the 10th century by 'Abd al-Rahman al-Sufi. Extant manuscripts of this work (in Arabic and in its Persian translation) number at least 70. While nearly all are illustrated, Huntington 212 belongs to the smaller set of more ambitious manuscripts that make multiple pictures out of overlapping sets of stars. For example, the painting on folio 40r depicts the overlapping forms of dhat al-kursi ("the enthroned one," = Cassiopeia) and a camel. Scholarly discussion of such juxtapositions seeks a cultural identity for each image: thus, e.g., the camel is "Bedouin," the enthroned one "Classical." I consider them rather as higher-order reflections by their painters on pictorialization; the very act of forming a picture out of a set of stars.

3. John Baines

Ordering the day and the night in ancient Egyptian imagery

Ancient Egyptian art is characterized by its use of fairly strict ordering schemas of registers and similar linear divisions. The same basic point applies to major architectural structures. The primary form in which the zodiac is depicted offers a marked exception to this principle. In so doing it may in part display its foreign origin, but its format also raises questions about the purpose and implications of ordering. This paper will review Egyptian visual representations of day and night, many of which are strongly idealized, and it will attempt to approach the kinds of knowledge and understanding that they exploit and depict. The knowledge involved could also be projected into the future. The patterning of these representations is most rigid, intense, and often abstract in the most highly valued this-worldly contexts. Material that focuses on the next world is more diverse and often looser and more paradoxical than material that deals with this world, as if it breaks the bounds of what can be encompassed by human understanding, as it surely does.

4. Nicola Barbagli

The sky in the hands: The zodiacal imagery in the coinage of Alexandria

The mint of Alexandria was perhaps the most prolific in the Roman empire in terms of emissions and variety of reverse types. Among the most notable ones are the images on the coins minted in year 8 of Antoninus Pius (AD 144/145), featuring individual astrological signs accompanied by a planet as well as more elaborate representations of one or even two zodiacal circles, surrounding other celestial divinities. This paper aims at analysing the iconography of these reverse types according to a twofold perspective, local and global, comparing them with the zodiacal images occurring in the other mints of the empire and those attested in the Egyptian temples and tombs. It also addresses the meaning of each representation and what might have been their local significance and reception, namely if it had to do with the beginning of a new Sothic cycle or other circumstances connected with the emperor and his family.

5. Sonja Brentjes

Celestial imagery as chances and challenges for a history of supra-terrestrial knowledge

Visual expressions of knowledge have a different status in the practices of historians of science and of knowledge more generally. If part of written sources, they are acknowledged for their illustrative, demonstrative, explicative or additive contribution to the verbal or numerical formulation of knowledge or as mnemonic devices. If framing written sources as front and back cover, frontispiece or title page, they are defined as decoration or information. Particularly in print culture, they have been studied for their political, ideological, social, art historical, narrative and epistemic content and functions. Imagery on non-verbal objects is largely the domain of other disciplines than history of science or knowledge such as art history or archaeology, in particular for premodern cultures. Their knowledge content is usually not a primary component in their analysis. Relations between written sources—and their visual components—and imagery on non-verbal objects are discussed in studies of manuscript or book culture but mostly from the perspective of their iconographic dimension. Both kinds of sources are mostly used in an instrumental sense, that is, to specify the pictorial content of objects with imagery or to identify influence, impact or connections among visual specimens within or across cultures.

In our project *Visualizations of the Heavens and Their Material Cultures Across Eurasia and North Africa (4000 BCE to 1700 CE)* we aim to go further. By building a database of a broad range of visual depictions of supra-terrestrial phenomena, forces, bodies or living beings, we try to create opportunities for comparative studies on micro-, meso- or macro- levels of views about who or what exists and what happens above humans in “the heavens”, who or what coordinates and structures such events and their agents and how those spaces and their components relate to the lives of humans on earth. The roughly 8,000 specimens collected so far enable us first to recognize cross-cultural overlaps, changes as well as ruptures and barriers for which we hope it will be possible to determine and reconstruct their geographical, cultural, economic and epistemic infrastructures by large-scale and micro-component image analysis with tools from AI, art history, archaeology as well as visual discourse analysis. Second, they enable us to analyze the dissemination and related meanings and functions of supra-terrestrial imagery across fields of knowledge, sociocultural activities and literary, artistic and epistemic genres within cultures according to periods and political units. Third, as we have already seen, they empower us to spot gaps in our collecting efforts and thus raise new questions to be formulated and pursued.

In my lecture I will discuss these three opportunities provided by our database for integrating imagery into a cross-cultural, cross-disciplinary and long-term history of supra-terrestrial knowledge. First, I will give a survey of the range of visual types included in the database and some of the insights and challenges they offer. This will be followed by a focused discussion of zodiacal representations as a whole and of its components in their individual contexts. In the final part I will offer a few reflections on the biases infused into our database by the histories of provenance of the

individual objects, the collections, publications and other sites from which we appropriated them and the disciplinary studies on which we can rely.

6. Ilaria Bultrighini

Contexts, meanings, and functions of zodiacal imagery in Roman imperial times

In the Roman imperial period visual representations of the twelve zodiac signs are found in a variety of contexts and on different media (e.g. mosaics, coins, gems, stone reliefs and monuments) throughout the wider Mediterranean region. Most of the surviving examples of zodiacal imagery date from this period, during which the knowledge and practice of astrology were pervasive among members of all strata of society. While astrological implications are apparent in depictions of the zodiac, the connotations and the function of such images are not always limited solely to the astrological sphere. This paper will review a variety of visual representations of the twelve zodiac signs from Roman imperial times, and it will illustrate the connotations and role of these images in different contexts. The latter include not only astrological practice, but also religious cults such as those of Mithras, Isis, and Serapis; time measurement, as revealed by a number of *parapegmata* tracking various temporal cycles, including the passage of the Sun or Moon through the twelve signs of the zodiac; as well as the funerary sphere: the zodiac is also used in sepulchral context as a symbol of eternity and as a reference to the integration of man into the cosmos even after death.

7. Jeanette C. Fincke

“Conceived while Mercury stood in its DUR”. Two diagrams of planetary positions on a late Babylonian astrological tablet with nativity omens (TCL VI 13)

A group of Late Babylonian texts that predict a person’s character and future based on the planetary positions in the zodiac gives evidence for personal astrology. Some of these astrological texts with nativity omens refer to either the conception or the birth of a child and name three out of four possible positions of a planet: its *ki*, its *dur*, its *tur* or its *mihru*. A description of what *dur* means can be found on a fragmentary Hellenistic or Seleucid tablet from Uruk (TCL VI 13) that combines astrological nativity omens with older traditions of astronomical and probably also divinatory concepts. The meaning of the other three terms can then be deduced from this. It turns out that these Late Babylonian tablets represent the earliest evidence of the basic principles of what we know as Greek astrology.

This scribe from Uruk has added two diagrams, which were certainly intended to illustrate his text, but which, as is quite typical for diagrams, are not easy to understand without explanatory descriptions. Unfortunately, he has not included any explanations or headings. However, with the help of the new interpretation of the above-mentioned terms, both diagrams can now be better understood. I shall present the results of my research on these texts and discuss the two diagrams.

8. Fabio Guidetti

The zodiac and the beginnings of Greek celestial cartography

Greek and Latin authors of the Roman imperial period describe the adoption of the Babylonian zodiac in the Greek world as the result of a gradual process, extending between the sixth and the fourth century BC. This process is depicted as a sequence of individual scientific improvements, from the definition of the ecliptic and the measuring of its obliquity to the establishment of the solstitial and equinoctial points, the association of certain parts of the ecliptic with specific constellations, and finally its division in twelve equal sections. Each of these steps is linked to the name of a ‘first inventor’, a fact which allows us to firmly place the development of Greek astronomical knowledge in those parts of the Greek-speaking world, namely Asia Minor and the islands off its coast, which had closer ties with the multi-cultural environment of the Persian Empire. The increasingly precise definition of the zodiac and its constellations can be seen as part of the development of a spatial

model of the universe, gradually elaborated by the Ionian philosophers from the sixth century BC onwards. This model existed in different media: as a mental image; as a verbal description, both oral and written; and as a graphic representation, both in two and in three dimensions. This paper will focus especially on those sources attesting to the existence of three-dimensional models and graphic depictions of the sky, with the aim of examining how these scientific tools changed and improved with the adoption of the zodiac. In this way, it will show how the definition of the ecliptic and its association with specific constellations, which were represented graphically so that they could be recognised in the sky, were instrumental to the birth of the first embryonic forms of celestial cartography.

9. Susanne Hoffmann

Visualizing ancient skies - Transfer and transformation of astronomical knowledge

Modern planetarium projection software allows scholars and educators to present constellations of ancient civilisations from all over the world. In this talk I present visualisations, some animated and some still, of Babylonian, Greek and other constellation images. Their reconstruction is an exciting enterprise of scholarship and their comparison leads to new knowledge.

10. Wayne Horowitz

The uranology texts: A new fragment and some new thoughts

The publication of The Cuneiform Uranology Texts by Paul-Alain Beaulieu, Eckart Frahm, John Steele, and myself in 2018 marked the beginning of our understanding of the then five sources belonging to this group as part of yet another genre in the tradition of cuneiform astronomical texts. The identification of yet another Uranology fragment in the collections of the British Museum provides us with an opportunity to revisit the group and update our thinking about this important collection of tablets. This paper will present an edition and discussion of the new fragment, and allow for more general discussion of the group.

11. Wolfgang Hübner

Taxonomy and constraint of systematization in Hellenistic astrology

In Hellenistic antiquity we observe a strict and highly developed classification of the twelve zodiacal signs. The method is similar to the doctrine of grammar and its oscillation between analogy and anomaly, its discrepancy between *ordo* and *contingentia*, including the excessive constraint of systematization, termed in German “Systemzwang”.

Within the zodiacal circle of twelve units there are three main possibilities of geometrical grouping. First, we find sequences of contiguous (neighbouring) signs that form quadrants or semicircles like the four seasons. Second, as the number twelve belongs to the “highly composite numbers”, there are two regular hexagons, three squares, and four triangles that correspond to the different kinds of regular distances called “aspects” as opposition (180°), trine aspect or triplicity (120°), quartile aspect (90°), or sextile aspect (60°). Finally, with horizontal or vertical parallel lines one could combine those signs that are equidistant to the four annual points (the two solstices and the two equinoxes). Within all these combinations the ancient astrologers sought so called “reasons” that could in any way explain the special and often bizarre configurations that sometimes go back to the Babylonians, to say nothing of the different prognostications for the natives born under such stellar conditions.

12. Yossra Ibrahim

The making of the big picture: On the ancient Egyptian celestial diagrams and their long decorative tradition

The celestial diagram is a term denoting a decorative motif that can depict a variety of stellar elements: i.e., decans, constellations, and planets. This elaborate picture of the night sky was very well utilised from the New Kingdom onwards and can be found decorating multiple media, such as the ceilings of tombs and temples, coffins, and in some cases the exterior of water clocks. The celestial diagram was open to new traditions and elements: for example, the Ramesside star clock, the zodiac, and the four winds. With the introduction of the Babylonian zodiac, these astrological signs found their way among the classical images of the night sky and blended in a perfect harmony. These zodiacs are not just a foreign addition to the celestial diagram but are also extensively inspired by the Egyptian iconographic repertoire. Of particular interest is the group of Roman-period coffins that exemplify an interest in personal astrology. These coffins are decorated with traditional celestial figures along with zodiacal elements that portray a great deal of indigenous Egyptian ideas and iconographies. The purpose of this presentation is to explore the primary celestial decorations and to discuss the combination of foreign and Egyptian art forms in these sets of astronomical representations. The hope is to elucidate how the zodiac was adopted among the classical images of the celestial diagram and to what extent it communicates Egyptian concepts.

13. Christian Leitz

Der Tierkreis in den Litaneien von Esna

Die insgesamt 7 Litaneien auf den Säulen des Pronaos von Esna für die Hauptgötter des Tempels enthalten insgesamt 596 Verse. Jeder Vers besteht aus einer zumeist unkonventionellen Schreibung des Götternamens und einem Begleittext von einigen wenigen Epitheta, auf die in der Regel mit der Schreibung des Götternamens verwiesen wird, was schon dem Erstherausgeber der Texte Serge Sauneron vor über 50 Jahren bekannt war. Darüber hinaus existieren jedoch noch weitere Bedeutungsebenen, die in mehr oder weniger verborgener Form andere Sachverhalte ansprechen. Der Vortrag bietet in einem ersten Teil eine Einführung in die Systematik der Litaneien, bevor er dann in einem zweiten Teil zu den Anspielungen auf die Tierkreiszeichen übergeht.

14. Stamatina Mastorakou

The zodiac in poetry and material culture in Hellenistic times

In this paper I compare the descriptions of the zodiac in Aratus' astronomical poem *Phaenomena* with the depictions of those constellations in material culture. By doing so I explore the influence of this popular poem in visual astral imagery during Hellenistic times, to assess whether Aratus' descriptions impacted not only the manuscript tradition but also the objects that preceded it. Through examples from the major regions of the Hellenistic era, I will show how the properties of Aratus' descriptions are traceable to specimens, but also point to how they differ from each other. The selected objects come from different regions and manifest different cultural influences; they include celestial globes and works of art such as vases, coins and mosaics.

15. Daniela Mendel-Leitz

Zu einem Detail der astronomischen Decke im Pronaos des Hathortempel von Dendara

Der Vortrag beschäftigt sich mit einem kleinen, aber nicht unwichtigen Detail der astronomisch-astrologischen Deckendarstellungen im Pronaos des Hathortempels von Dendara. Vermutlich ist es erst mit der Reinigung der Decke vor einigen Jahren wirklich erkennbar, jedoch ist auch nicht ausgeschlossen, dass es aufgrund seiner geringen Größe bislang übersehen wurde.

Bei dem Detail handelt es sich um die bildliche Darstellung einer wesentlichen Information, die in den Texten erwähnt wird, was die Interpretation der Gesamtdecke in einem neuen Licht erscheinen lässt.

16. Willis Monroe

Cuneiform astral diagrams in theory and practice

The corpus of diagrams containing astronomical and astrological content on cuneiform tablets is comparatively quite small. However, the diagrams themselves are contemporary with and often written on related cuneiform texts. This makes them an ideal corpus for studying the ways in which paradigms are constructed in astral sciences in Mesopotamia. Diagrams alongside tabular structures form parallel ways of thinking on clay for cuneiform scribes. This paper will start with a brief survey of the existing corpus of astral diagrams. From there a few remarks will be offered on the existence of theoretical concepts with astral science as well as the relationship between diagram and text in cuneiform scholarship.

17. Rune Nyord

Celestial reflections: Strategies for imaging the sky and its processes in ancient Egypt

Egyptian astral representations like those of the pronaos ceiling at the temple of Dendera (1st century CE) are the product of interaction between different long-standing traditions of thinking about and imaging the sky. This paper seeks to situate such works in the Egyptian tradition, less in terms of concrete questions of transmission and exchange, and more by setting up a conceptual experiment exploring how they might be interpreted if understood on the basis of traditional Egyptian concepts. More specifically, the relevance of two central ideas will be explored, firstly the image concept *sšmw*, which plays a prominent role in the cosmographic tradition evidenced in royal tombs of the New Kingdom (late 2nd millennium), along with the more-than-representational interpretations it prompts, and secondly ideas attested even earlier about the relationship between “mythological” patterns and the phenomenal world. The aim is to contribute to a discussion about the extent to which visualizations of the sky during the Graeco-Roman Period can be interpreted in these terms, and how the underlying concepts of images and “mythology” might align with or differ from those of the pharaonic Egyptian tradition.

18. Marvin Schreiber

Drawings and diagrams in late Babylonian astral science

There are several astrological cuneiform tablets containing texts that are accompanied by drawings. Among these are pictorial depictions of celestial bodies and zodiac-related beings, as well as geometrical figures and diagrams. Most famous are the so-called *Gestirndarstellungen* on the Microzodiac tablets from Uruk. This paper will present the context and origin of their specific iconography, analyse their role in Late Babylonian astrology and culture, and show the relations between drawings and texts.

19. Fabio Spadini

The orientation of the zodiacal image on monuments of the Roman imperial period

The orientation of the individual constellations within the zodiac ring seems to follow a precise pattern. Nonetheless, some external factors, whether cultural or practical, seem to modify the expected structure of the image. We will first attempt to define the factor that determines the orientation of each individual constellation within the zodiacal ring (e.g. relative orientation, general harmony, readability, etc.).

Second, we will analyse a case study (Khirbet et-Tannur) where the change in the orientation of the zodiacal image seems to be dictated by the position of the planets at the time of the construction of the monument.

20. John Steele

A new look at the images on the Neo-Assyrian circular tablet K.8538

K.8538 is one of the most well-known Neo-Assyrian astronomical tables, due in large part to several drawings that have been interpreted as representations (or diagrams) of constellations. The tablet itself has been interpreted in many different ways ranging from a “star map”, an astronomical instrument, to a record of observations made in the 3rd millennium BC. In this talk I will critically assess the various interpretations of this tablet and propose a new way of thinking about the drawings and the tablet.

21. John Wee

The Kassite calendar of constellations

A remarkable “calendar” tablet portrays the twelve months as horizontal bands, with vertical striations for the 30 days of each month, and with images above the bands representing some of the earliest symbolic or realistic depictions of constellations and possibly other celestial phenomena from ancient Mesopotamia. The calendar comes from a private archive in the Kassite city of Babylon (site M8) belonging to the “magicians” (lu2.MAŠ.MAŠ) Itti-Ezida-lummir and his brother Gula-šumu-līšir, and dates to c. 1206–1157 BCE—relatively close in time and provenance to sources such as the Babylonian Astrolabe B and the Mul-apin Compendium, where detailed lists of stars and constellations are already codified. I identify the images of the Kassite Calendar particularly in comparison with the rich iconographic tradition of then-contemporary kudurru monuments, the meanings of other markings on the Calendar, as well as the themes and pictorial techniques that it shares with the better-known tableaux of constellations in Gestirn-Darstellungen tablets from Seleucid times.