

# The Dendera zodiacs as narratives of the myth of Osiris, Isis, and the child Horus

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TWO ZODIACS have been incorporated into the decorative programme of the temple of Hathor at Dendera. The older one, which is circular in shape and dates from the middle of the 1st century BCE, forms one half of the ceiling of the second eastern room in the series of chapels that were built on the roof of the edifice to house the mysteries of Osiris [fig. 1].<sup>1</sup> The younger rectangular zodiac, created some eighty years later, is found high up in the pronaos, as part of the strips of images that are known as the astronomical ceiling of Dendera [fig. 2].<sup>2</sup> Though a large corpus of comparative material on Egyptian zodiacs has been in existence for quite some time,<sup>3</sup> it has only recently been properly acknowledged in Egyptological literature that the two zodiacs of Dendera, given that they are found in the same temple complex, should be studied together.<sup>4</sup> This approach can certainly be deemed sound from a methodological point of view and will be adhered to in the present paper. For the purposes of clear presentation, however, and because the differences – mainly due to the differing layout and dating of the two zodiacs – are still significant enough, it seems convenient to treat them separately, in the order they were created. Understandably, though, along the examination of the earlier many cross-references will be made to the latter.

The primacy accorded to the round zodiac, besides the chronological considerations, may find its justification in another argument as well. Right after the modern discovery of the two Dendera zodiacs at the end of the 18th century, much attention was devoted to them because they were thought to serve as chronological anchors by which the age of the ancient Egyptian civilization, and consequently its relation to Biblical events, could be determined.<sup>5</sup> The round zodiac had a dominant role in these early scientific debates, which eventually prompted the removal of the original artefact into Paris.<sup>6</sup> It is not difficult to see why this scholarly predilection has set in. All the Egyptian zodiacs incorporate the well-known Greek zodiacal signs, but with its circular layout the one in the Osirian chapel also very much resembles a planisphere and can be interpreted as a representation of the sky familiarly produced in

<sup>1</sup> *Dend. X/2*, pl. 60.

<sup>2</sup> O. NEUGEBAUER, R.A. PARKER, *Egyptian Astronomical Texts III. Decans, Planets, Constellations and Zodiacs*, Providence, 1969, pl. 42 (= *EAT III*); S. CAUVILLE, *Dendara XV. Traduction. Le pronaos du temple d'Hathor: Plafond et parois extérieures*, *OLA 213*, 2012, pl. 8.

<sup>3</sup> *EAT III*, p. 203-212.

<sup>4</sup> Chr. LEITZ, “Die Sternbilder auf den rechteckigen und runden Tierkreis von Dendera”, *SAK 34*, 2006, p. 285-318.

<sup>5</sup> J.Z. BUCHWALD, D.G. JOSEFOWICZ, *The Zodiac of Paris: How an Improbable Controversy over an Ancient Egyptian Artifact Provoked a Modern Debate between Religion and Science*, Princeton, 2010, p. 116-145.

<sup>6</sup> *Ibid.*, p. 9-27.

Western culture.<sup>7</sup> In other words, the great allure of the round zodiac is that it seemingly projects its mix of ancient Egyptian images and the Greek renderings of the zodiacal signs onto a flat surface in a way that became the norm of later visual representations of the sky. Thus it promises to offer decipherable clues to ancient Egyptian astronomical knowledge.

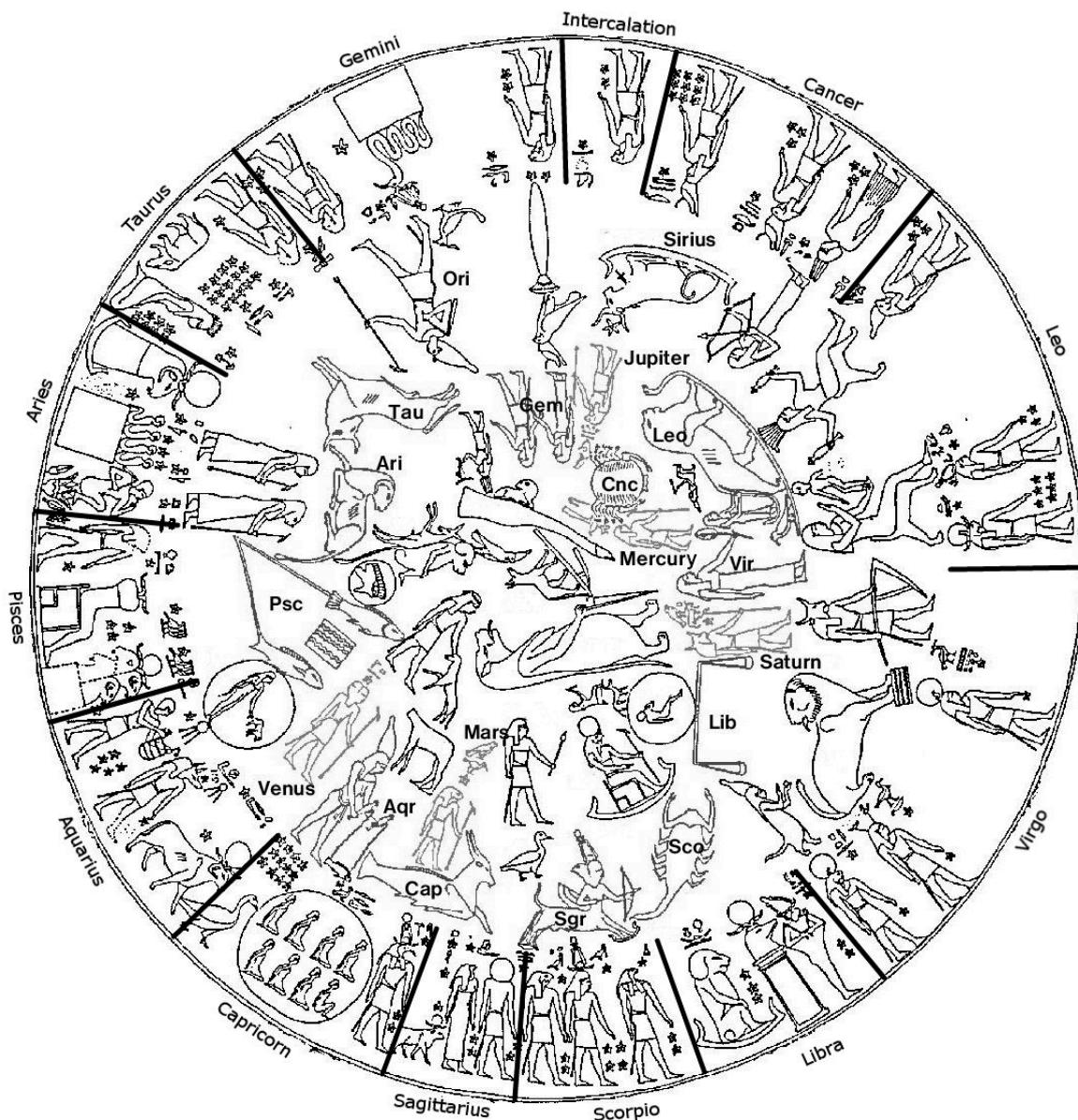


Fig. 1. Inner frame of the circular zodiac in the second eastern Osirian chapel (adapted from É. Aubourg, *BIFAO* 95, p. 4, fig. 2, © Bernard Lenthéric).

<sup>7</sup> D.W. HUGHES, C. STOTT, "The Planisphere: A Brief Historical Review", *Journal of the British Astronomical Association* 105, 1995, p. 37-38.

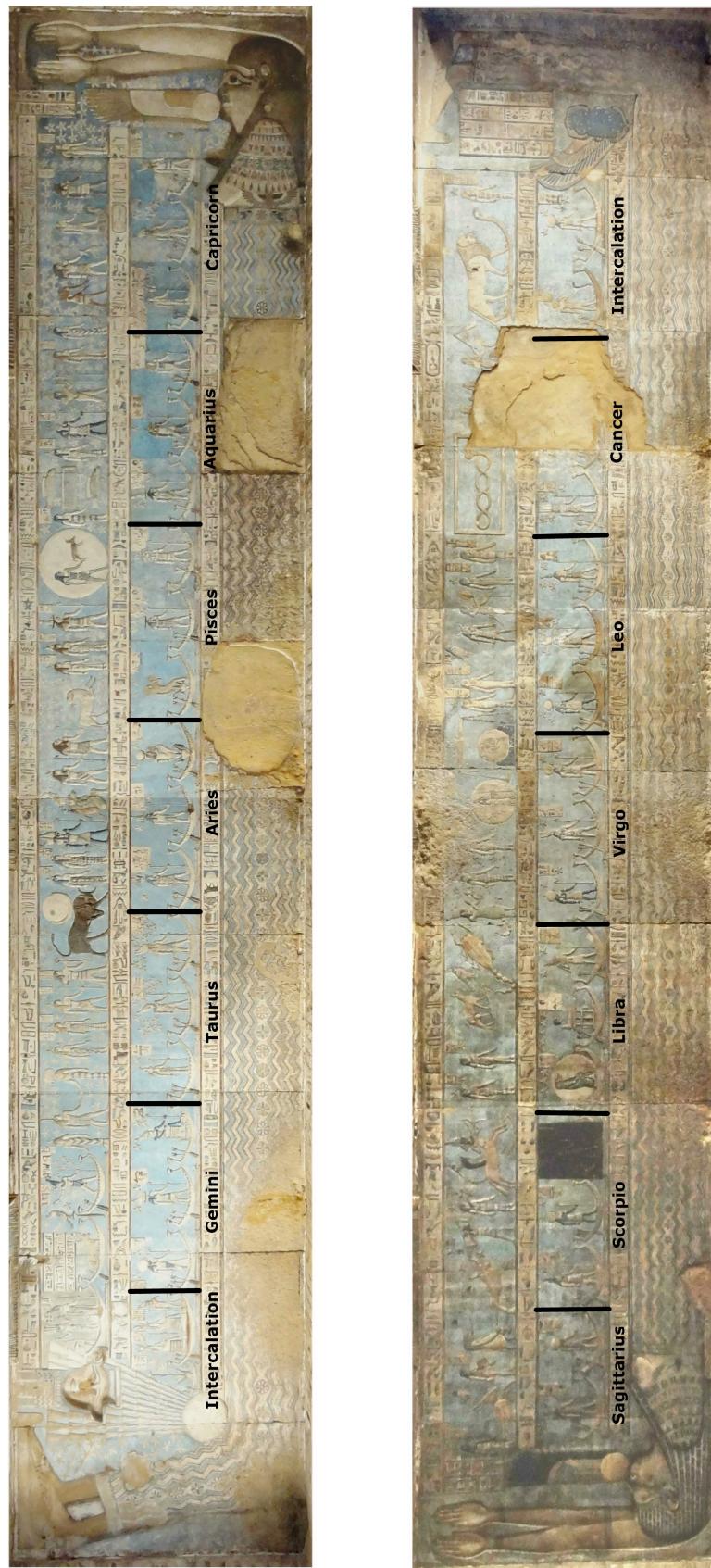


Fig. 2. Linear zodiac in the pronaos of the Dendera temple (© Olaf Tausch, commons.wikimedia.org).

However, unlike the translation of the trilingual inscriptions on another emblematic object of Ptolemaic Egypt, the Rosetta Stone, about which there has been a general agreement among Egyptologists for quite some time,<sup>8</sup> the meaning or exact purpose of the zodiac is still debated. In recent scholarship two schools of thought have emerged and voiced their opposing views on the subject. One, represented by Éric Aubourg and Sylvie Cauville,<sup>9</sup> claims that the zodiac is a “snapshot” of the sky taken at around the time of the construction of the Osirian chapels, while the other – whose most prominent representative, Christian Leitz, builds on the work of Otto Neugebauer, Richard A. Parker,<sup>10</sup> and classical scholars<sup>11</sup> – thinks that the zodiac is a comprehensive catalogue of constellations which derived from ancient Egyptian and Hellenic astronomy and was compiled regardless of time.<sup>12</sup> It must be added that, though they depart from this more traditional view in some respects, Aubourg and Cauville also see the majority of the depictions in the zodiac as representations of Hellenic constellations in the sky.<sup>13</sup>

Briefly, the strengths and weaknesses of the two differing opinions can be highlighted. What is appealing about Aubourg and Cauville’s approach is that it, by stating that the zodiac is an imprint of the sky made at around 50 BCE, tries to establish a direct connection between the artefact and its immediate surroundings, that is the Osiris chapels at Dendera and the mysteries that unfolded there. One of their key arguments, however, that the positions of the planets in the zodiac reflect their retrograde transits in the different constellations at a given period of time (July 54 BCE to August 50 BCE), falters on the fact that these places correspond to the traditional hypsomata of the planets.<sup>14</sup> In astrological thinking the planets are assigned to specific constellations in which their influence is allegedly felt to the most, that is where they have their hypsomata, or exaltations.<sup>15</sup> Leitz, on the other hand, rightly indicates that the zodiac in the Osirian chapel is not a unique monument, its closest relative being the linear zodiac in the pronaos, and insights into its possible significance can be gained from the comparison with relevant Egyptian and Greek sources. However, he seems to overemphasize the Hellenic connections of the zodiac, even though he himself also has to admit that some of the images are not Greek, and not even astronomical in the strict sense, as for example Satet and Anuket who follow the star Sopdet and signify the advent of the annual flooding of the Nile.<sup>16</sup> If he were to be criticized for one thing, it would be his lack of interest in explaining why the zodiac is included in an Egyptian cult complex that is otherwise so deeply rooted in the pharaonic cultural legacy of the country.

In this paper the balance showing how much of the zodiac’s content comes from abroad and how much of it is indigenous will be tilted towards Egypt. I will argue that the images in the zodiac, barring the few obvious exceptions of the zodiacal signs, the planets, and four traditional Egyptian asterisms, do not stand for constellations. Rather they are signs that come

<sup>8</sup> R. PARKINSON, *Cracking Codes: The Rosetta Stone and Decipherement*, Berkeley, 1999, p. 14-45.

<sup>9</sup> É. AUBOURG, “La date de conception du zodiaque du temple d’Hathor à Dendera”, *BIFAO* 95, 1995, p. 1-10; É. AUBOURG, S. CAUVILLE, “En ce matin du 28 décembre 47...”, in W. Clarysse, A. Schoor, H. Willems (ed.), *Egyptian Religion. The Last Thousand Years: Studies Dedicated to the Memory of Jan Quaegebeur*, OLA 85, 1998, p. 767-772.

<sup>10</sup> EAT III, p. 175-212.

<sup>11</sup> For references, see Chr. LEITZ, *SAK* 34, p. 285, n. 3.

<sup>12</sup> *Ibid.*, p. 292-316.

<sup>13</sup> É. AUBOURG, *BIFAO* 95, p. 5; S. CAUVILLE, *Le zodiaque d’Osiris*, Leuven, 1997, p. 32-38.

<sup>14</sup> Chr. LEITZ, *SAK* 34, p. 286-287.

<sup>15</sup> R. BECK, *A Brief History of Ancient Astrology*, Oxford, 2007, p. 85.

<sup>16</sup> EAT III, p. 73; Chr. LEITZ, *SAK* 34, p. 288, 307.

from an array of purely Egyptian representational systems, sometimes transformed by a thoughtful innovative process, to record celestial and cultic events intimately related to the mysteries of Osiris, Isis, and the child Horus at a particular point in time. Some astronomical statements on which this interpretation is based have already been put forward by Aubourg and Cauville, so to a certain extent I naturally side with them in the debate over the purpose of the Dendera zodiac in the Osirian chapel. They were, however, unaware of a wide range of clues extending from the Pyramid Texts to classical authors that help to click together the other pieces of the puzzle in the quest for unravelling the true meaning of the zodiac. From these sources Plutarch (beginning of 2nd century CE) needs special mention here because, as will become obvious in the foregoing pages, in his treatise about Isis and Osiris (*De Iside et Osiride*) he seems to have acquired first-hand information on the considerations that dictated the design of the Dendera zodiacs. The understanding of the circular zodiac leads onto the realization that the linear zodiac in the pronaos is a variant of the same theme and was also intended to narrate celestial phenomena that were seen as the pivotal moments of the story about the family of Osiris. Furthermore, the two zodiacs of Dendera are not isolated from similar monuments found elsewhere in the country, and a conceptual identity with at least some of the other Egyptian zodiacs can also be detected.

## Key dates

Though Aubourg's assertion about the arrangement of the planets in the circular zodiac is quite controversial, he originally made two more observations that have not since been explored in depth. He says that two of the images in the zodiac represent eclipses that took place around the time when the Osirian chapels were constructed.<sup>17</sup> Thus the wedjat-eye inscribed into a circle is grafted on the constellation of Pisces to signal the total lunar eclipse of 25 September 52 BCE.<sup>18</sup> Since the wedjat-eye in a disc often signifies the full moon,<sup>19</sup> Aubourg rightly conjectures that this image may stand for a lunar eclipse, which by the laws of nature can indeed only happen at the time of opposition. I shall argue later, however, that the encircled wedjat-eye only forms one element of a symbol marking the eclipse in question (rather the day on which an eclipse was also observed, see the explanation below). On the other side of Pisces another circle is depicted which includes a female figure holding an animal by the leg. Since a comparable image is also found in the linear zodiac, where the animal is recognizably a pig, there has been some debate about whether in the circular zodiac it is a baboon, as Aubourg and Cauville claim,<sup>20</sup> or a pig.<sup>21</sup> The baboon can represent the moon at its time of invisibility (conjunction),<sup>22</sup> that is the period when a solar eclipse can occur, so it would better suit Aubourg's claim that the whole image signifies such an event (an annular eclipse) observed on 7 March 51 BCE.

<sup>17</sup> É. AUBOURG, *BIFAO* 95, p. 10.

<sup>18</sup> The eclipse encompassed the late night hours of 25 September and the early morning hours of 26 September 52 BCE.

<sup>19</sup> A. VON LIEVEN, *Der Himmel über Esna. Eine Fallstudie zur Religiösen Astronomie in Ägypten am Beispiel der kosmologischen Decken- und Architravinschriften im Tempel von Esna*, *ÄA* 64, p. 157, n. 458; S. CAUVILLE, *Dendera. Le pronaos du temple d'Hathor: Analyse de la décoration*, *OLA* 221, 2013, p. 508-510, 531.

<sup>20</sup> É. AUBOURG, *BIFAO* 95, p. 10; É. AUBOURG, S. CAUVILLE, in W. Clarysse, A. Schoor, H. Willems (ed.), *Egyptian Religion. The Last Thousand Years*, p. 768; S. CAUVILLE, *Dendera. Le pronaos*, p. 540-541.

<sup>21</sup> A. VON LIEVEN, *Der Himmel über Esna*, p. 157, n. 458; Chr. LEITZ, *SAK* 34, p. 287, 302-304.

<sup>22</sup> G. PRISKIN, "The Encounter between the Sun and the Moon on Hypocephali", (forthcoming). See also the section on decans below.

As we can see it in figure 3, the placement of the images supposedly marking eclipses closely corresponds to the positions where these phenomena were actually observed in the sky. Such an impression is enhanced by the image of Pisces in the zodiac because – with its V-shaped lines which, unlike the usual renderings of the sign,<sup>23</sup> connect not the heads but the tails of the two fish – it is a realistic representation of the constellation. This, together with the fact that the position of the solar eclipse as set against the background of the constellations had to be mentally worked out, prompts the conjecture that the two figures poised at the tip of Pisces holding staffs represent priests taking note of the celestial events. In the linear zodiac the corresponding figures follow Aries and stand next to the symbol of ordered time (see below the sections on the death of Osiris and the linear zodiac). All things considered, I believe that Aubourg's identifications can be accepted. He does not really address the issue, however, why only these two eclipses are shown in the zodiac and why the solar eclipse taking place on 21 August 50 BCE is ignored. After all, this falls within the period, June-August 50 BCE, that he establishes for the conception of the zodiac through the retrograde transits of the planets. He believes that by this time the zodiac had been constructed,<sup>24</sup> but there is a real contradiction here. The solution to the riddle, as we shall see, is quite simple: the zodiac, at least at first glance, does not want to record events in August 50 BCE but wishes to make references to a period that only includes September 52 BCE and March 51 BCE.

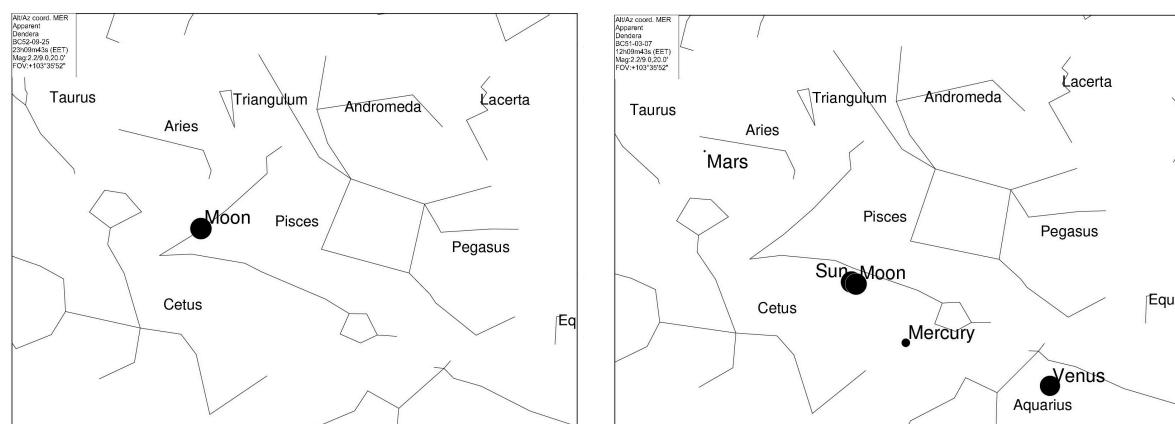


Fig. 3. Positions of the lunar eclipse of 25 September 52 BCE (left), and the solar eclipse of 7 March 51 BCE (right).

The recording of eclipses itself makes the zodiac quite unique because we seem to know very little about how the ancient Egyptians viewed these unruly occurrences in the sky (but see now Appendix). From the meagre body of evidence it may be gathered that solar eclipses were referred to as the darkening of the sun, while at lunar eclipses the sky (Nut) was said to swallow the moon.<sup>25</sup> The reference to a calamity that plagued the country even though the

<sup>23</sup> *Esna IV*, fig. 1 (strip E); *EAT III*, pl. 47A, 47B, 50; O. NEUGEBAUER, R.A. PARKER, D. PINGREE, “The Zodiac Ceilings of Petosiris and Petubastis”, in J. Osing *et al.* (ed.), *Denkmäler der Oase Dachla aus dem Nachlass von Ahmed Fakhry*, AV 28, 1982, pl. 39, 41.

<sup>24</sup> É. AUBOURG, *BIFAO* 95, p. 10.

<sup>25</sup> J. RAY, G. GILMORE, “A Fixed Point in Coptic Chronology: The Solar Eclipse of 10 March, 601”, *ZPE* 158, 2006, p. 191, n. 7.

moon had not suffered an eclipse implies that the event was seen as ominous,<sup>26</sup> an attitude that is also underlined by the existence of a demotic papyrus on eclipse omina dated to the 2nd century CE.<sup>27</sup> As regards the zodiac, more to the point is Plutarch's remark about the myth of Isis and Osiris:

Some regard the myth as a reflection of events relating to eclipses; for there is an eclipse of the full moon when the sun assumes a position opposite her and when the moon falls into the shadow of the earth, just as they say Osiris did into the coffin. The moon herself in turn obscures the sun on the thirtieth of the month and removes it from sight, yet does not completely obliterate it, no more than Isis did Typhon (*De Iside et Osiride*, ch. 44).<sup>28</sup>

Though of course Plutarch lived at the turn of the 1st and 2nd centuries CE, and related the story of Isis and Osiris through the eyes of an educated Greek intellectual, his statement at least offers some explanation for why the temple personnel at Dendera might have been interested in eclipses a hundred and fifty years earlier. It is also remarkable that the order in which he describes the eclipses matches the chronology of the events shown in the zodiac. The mention of Isis in connection with the solar eclipse even adds weight to the conjecture that the woman holding the animal in the disc below Pisces is identical with the goddess.<sup>29</sup>

In developing their theories, Aubourg and Cauville also rightly assume that the dates supplied by the zodiac should be correlated with the dates that are cited in connection with the mysteries of Osiris in the so-called "Khoiak text", an Egyptian-style manual written on the walls of the first eastern chapel and detailing the ritual proceedings between the twelfth and thirtieth days in the fourth month of the Akhet season (IV Akhet 12-30).<sup>30</sup> No absolute dates are given, of course, but only relative ones pertaining to the Egyptian civil calendar. On the basis of the text, however, an absolute date can be reconstructed, because it is stated that the starting point of the mysteries, IV Akhet 12, fell on the seventh day of the lunar month, called *dnj.t* in ancient Egyptian.<sup>31</sup> The title of one of the sections ("books") in the Khoiak text may explain why the mysteries were started on the seventh lunar day: "Knowing the mysteries of the hidden chamber to make the work of the *dnj.t* in secret, which is done in [list of sixteen localities], in the sixteen nomes of the sixteen divine relics, in all the nomes of Osiris where the work of *dnj.t* is done for Khentyamentiu" (*rh s̄t3 m .t jmn.t r jr.t k3.t dnj.t m n-rh jrj m* [list of sixteen localities] *m sp3.t 16 n.t h -ntr m sp3.wt nb.wt n.t Wsjr jr.w k3.t dnj.t jm n Hnty-Jmnt.t*).<sup>32</sup> The term *dnj.t* denotes not only the first but also the last quarter of the lunar month,<sup>33</sup> and between these dates exactly sixteen days elapse. So the mysteries perhaps originally lasted from the first *dnj.t* of the lunar month (day seven) to the second one (day twenty-three) and the number of relics, sixteen, reflects this period. The texts themselves are not consistent on this point, however, because in some other passages the relics count

<sup>26</sup> R.A. CAMINOS, *The Chronicle of Prince Osorkon*, *AnOr* 37, 1958, p. 88.

<sup>27</sup> R.A. PARKER, *A Vienna Demotic Papyrus on Eclipse- and Lunar-Omina*, Providence, 1959.

<sup>28</sup> J.G. GRIFFITHS, *Plutarch's De Iside et Osiride*, Swansea, 1970, p. 187.

<sup>29</sup> S. CAUVILLE, *Le temple de Dendera. Les chapelles osiriennes. Commentaire*, *BdE* 118, 1997, p. 80.

<sup>30</sup> *Dend. X/1*, 26, 5-50, 9; S. CAUVILLE, *Les chapelles osiriennes. Commentaire*, p. 147, 213; É. AUBOURG, S. CAUVILLE, in W. Clarysse, A. Schoor, H. Willems (ed.), *Egyptian Religion. The Last Thousand Years*, p. 770. Their supposition that the day when IV Akhet 26 coincided with the full moon was deemed important by the builders of the Dendera temple is not corroborated by the inscriptions.

<sup>31</sup> *jr 3bd 4 3h.t sw 12 dnj.t '3.t m Ddw*, *Dend. X/1*, 40, 3.

<sup>32</sup> *Dend. X/1*, 41, 12-15; 71, 4-6; 81, 11-13, etc.

<sup>33</sup> R.A. PARKER, *The Calendars of Ancient Egypt*, *SAOC* 26, 1950, p. 11-13

fourteen,<sup>34</sup> not sixteen, possibly symbolizing the days of the waning moon.<sup>35</sup> It must also be added that some activities are prescribed for days, for example the last day of the month (IV Akhet 30),<sup>36</sup> that do not fit into the period between the first and third quarters of the moon.

Howsoever it was the case, one thing is for certain: IV Akhet 12 coincided with the seventh day of the lunar month. Given that the Egyptian civil calendar operated with a uniform 365-day long year, this match between the civil date and the particular lunar phase statistically occurred every twenty-five years, but crucially on 15 December 52 BCE,<sup>37</sup> which day falls within the period determined by the eclipse observations recorded in the zodiac. Thus we have three dates at hand, 25 September 52 BCE, 15 December 52 BCE, and 7 March 51 BCE. Not only are these in close proximity to one another, but they also fall not far off from three key points in the yearly solar cycle: 25 September 52 BCE is the date of the autumnal equinox itself, the second date is close to winter solstice (23 December in 52 BCE), while the third one comes just two weeks before the vernal equinox (23 March in 51 BCE). In this regard, it is quite interesting what Plutarch writes:

Thus we shall attack the many boring people who find pleasure in associating the activities of these gods with the seasonal changes of the atmosphere or with the growth, sowing, and ploughing of crops, and who say that Osiris is being buried when the corn is sown and hidden in the earth, and that he lives again and reappears when it begins to sprout. For this reason it is said that Isis, when she was aware of her being pregnant, put on a protective amulet on the sixth day of Phaophi, and at the winter solstice gave birth to Harpocrates, imperfect and prematurely born, amid plants that burgeoned and sprouted before their season (and so they bring to him as offering the first-fruits of growing lentils); and they are said to celebrate the days of her confinement after the spring equinox (*De Iside et Osiride*, ch. 65).<sup>38</sup>

First it is worth noting that Plutarch here associates the annual shift in the path of the sun with the growing of crops, and of course we know from the Khoiak text and some other inscriptions in the Osirian chapels that the central activity of the mysteries was the making of an effigy of Osiris consisting of a paste of soil in which seeds were sown and let to sprout.<sup>39</sup> On the level of myth and ritual, Isis – in her name of Shentayt “the widow”<sup>40</sup> – was the chief player of the acts to fashion the figurine of Osiris and it was through her assistance that the main objective of the mysteries, the revival of Osiris, was achieved.<sup>41</sup> His resurrection made it possible for her to conceive from his husband and this holy union is recorded in the innermost Osirian chapels on both sides showing Isis descending in the form of a bird on the phallus of Osiris lying on a bier.<sup>42</sup> Plutarch states that these events, and the ensuing birth of their child,

<sup>34</sup> *Dend.* X/1, 35, 10.

<sup>35</sup> J.G. GRIFFITHS, *Plutarch*, p. 145, 185, 338, 460.

<sup>36</sup> *Dend.* X/1, 41, 9–10.

<sup>37</sup> Modern data (NASA table) indicate that the first quarter set in early morning on 16 December. An error of one day must be allowed for due to (a) a possible difference between calculations and actual naked-eye observation arising from weather conditions or the irregularities of the lunar cycle, and (b) the different starting points of the ancient Egyptian day (dawn, see R.A. PARKER, *Calendars*, p. 10) and the modern day (midnight). For possible errors of ancient lunar dates, see R. KRAUSS, “Lunar Dates”, in E. Hornung, R. Krauss, D. A. Warburton (ed.), *Ancient Egyptian Chronology*, *HdO* 83, 2006, p. 398–404.

<sup>38</sup> J.G. GRIFFITHS, *Plutarch*, p. 221.

<sup>39</sup> *Dend.* X/1, 29, 12–30, 2.

<sup>40</sup> S. CAUVILLE, “Chentayt et Merkhetes, des avatars d’Isis et Nephthys”, *BIFAO* 81, 1981, p. 21–25.

<sup>41</sup> *Dend.* X/1, 201, 4–5; 208, 7–209, 4.

<sup>42</sup> *Dend.* X/2, pl. 87, 90, 237, 239.

Horus, were also cosmically envisioned as the changes of the seasons around the times of the autumnal equinox, winter solstice, and spring equinox, and now I will demonstrate that this is really the story that the Dendera zodiac illustrates.

| <i>Julian date</i>  | <i>Civil date</i> | <i>Event</i>   |
|---------------------|-------------------|--|
| 25 September 52 BCE | I Akhet 21        | autumnal equinox; full moon; lunar eclipse             |
| 10 October 52 BCE   | II Akhet 6        | Isis conceives; new moon                               |
| 15 December 52 BCE  | IV Akhet 12       | Osiris mysteries start; first quarter ( <i>dnj.t</i> ) |
| 7 March 51 BCE      | III Peret 4       | solar eclipse; new moon                                |

Table 1. Sequence of dates recorded in the round zodiac, Plutarch's story about the pregnancy of Isis, and the Osiris mysteries.

I claim that Plutarch makes a reference to the autumnal equinox as well and to understand this we have to put the date he mentions, the sixth of Phaophi, into the same frame of reference as the other dates (Table 1). In the civil calendar it is the sixth day of the second month in the Akhet season (II Akhet 6), and we can see that in year 52 BCE it comes fifteen days after the autumnal equinox which happens to fall on I Akhet 21. The relation of II Akhet to the autumnal equinox is also established, at any rate, by another passage in the *De Iside et Osiride* which states that "on the twenty-third day of Phaophi they celebrate the birthday of the staff of the sun after the autumnal equinox" (ch. 52).<sup>43</sup>

The credibility of Plutarch on these matters is further propped up by the fact that the connection of II Akhet 6 with Isis has also been preserved by two temple festival calendars of the Graeco-Roman era. One, carved on the walls of the Edfu temple in the 1st century BCE, is directly linked to the locality of the Osirian mysteries because it lists the festivals of Hathor, Lady of Dendera.<sup>44</sup> The relevant entry reads: "the feast of Isis, the Great One, Lady of the Two Lands – writing is begun for her by her mother, Tefnut, and her elder brother, Osiris, likewise" (*hʒb ʒs.t wr.t nb tʒ.wj šʒ ‘t sphr n=sn mw.t=s Tfñ.t mjt.t sn=s ‘ʒ Wsjr*).<sup>45</sup> The other piece of information comes from the Esna temple and therefore it is roughly contemporaneous with Plutarch (second half of the 1st century CE). Here the calendar describes II Akhet 6 as "the feast of Isis that is known as the beginning of the festival activities done for her" (*hʒb ʒs.t šʒ ‘jrj-hʒb hr.tw rɔf*).<sup>46</sup> Though none of these sources implicate anything on conception,

<sup>43</sup> J.G. GRIFFITHS, *Plutarch*, p. 201.

<sup>44</sup> A. GRIMM, *Die altägyptischen Festkalender in den Tempeln der griechisch-römischen Epoche*, ÄAT 15, 1994, p. 1, 8.

<sup>45</sup> *Edfou V*, 349, 11-350, 1; A. GRIMM, *Die altägyptischen Festkalender*, p. 37, 185.

<sup>46</sup> *Esna II*, 55, 3; A. GRIMM, *Die altägyptischen Festkalender*, p. 37, 244.

they both emphasize that this day is the starting point of some events that relate to Isis.

### **Autumnal equinox and the conception of Horus**

As was stated earlier, the day of the autumnal equinox is marked by the image of the full moon just above Pisces. According to Plutarch, Isis conceives with her child on II Akhet 6, and in the year 52 BCE this day follows up the autumnal equinox by fifteen days. Consequently, II Akhet 6 is the day when the moon becomes invisible, that is, when the waning crescent is no longer observable just above the eastern horizon immediately before sunrise (conjunction). The moon moving in front of the sun, the glare of the latter drowns out the earlier. As it is now October, the sun traverses Libra along its yearly voyage through the signs of the zodiac and indeed the representation of this constellation shows the exact moment of this meeting of the two celestial bodies, precisely where it takes place within the sign [fig. 4]. The whole event is represented in the first place by the depiction of the morning sun: a child inscribed into a disc. It is frequently stated that the image of the scales with the encircled child is the localized version of the Libra sign incorporating the rising sun,<sup>47</sup> but now we can actually understand what it really wants to express: the first occasion of *psdn.tjw*, the invisibility of the moon (astronomical new moon),<sup>48</sup> after the autumnal equinox. A comparison with some other ancient Egyptian representations of Libra offers further support for this claim. In the linear zodiac the disc is merged with the akhet-hieroglyph within the interior of the scales, so it adds one more iconographic feature of the rising sun. The association of Libra with sunrise is also attested textually because in demotic horoscopes it is sometimes named “horizon” (*ȝh.t*).<sup>49</sup> In some other representations the child is replaced by a falcon, a symbol of the god Horus or Re-Harakhty,<sup>50</sup> while in two other instances, dated to the Roman era, not an encircled child but a baboon is shown sitting on the crossbar of the scales.<sup>51</sup> Though this iconography may also be related to the depiction of the scales in vignettes attached to chapter 125 of the Book of Going Forth by Day showing the weighing of the heart, in an astral context – and as the vignettes themselves sometimes show the lunar disc on the head of the animal<sup>52</sup> – the squatting baboon may point to the moon as well. This also furnishes evidence for concluding that the Egyptian image of Libra indeed captures the disappearance of the moon at the beginning of a lunar month. There are about thirty sunrises in Libra, just as in any other sign of the zodiac, but the one that coincides with the disappearance of the last crescent in that month stands out of these and is marked in the Egyptian depiction of the constellation.

The Egyptians thus customized the representation of Libra to mark a momentous cosmic event that in their mythology corresponded to the conception of Horus by his mother, Isis. There is a clear double play involved in the sign, because the image of the child may equally

<sup>47</sup> EAT III, p. 210; Chr. LEITZ, SAK 34, p. 290; J. LULL, J.A. BELMONTE, “The Constellations of Ancient Egypt”, in J.A. Belmonte, M. Shaltout (ed.), *In Search of Cosmic Order: Selected Essays on Egyptian Archaeoastronomy*, Cairo, 2009, p. 181.

<sup>48</sup> Throughout the paper the expression “new moon” is used in this sense, i.e. refers to the invisibility of the moon.

<sup>49</sup> O. NEUGEBAUER, “Demotic Horoscopes”, JAOS 63, 1943, p. 122; EAT III, p. 207.

<sup>50</sup> EAT III, p. 210, pl. 51

<sup>51</sup> Ibid., p. 210, pl. 47A, 48.

<sup>52</sup> R.H. WILKINSON, *Reading Egyptian Art: A Hieroglyphic Guide to Ancient Egyptian Painting and Sculpture*, London, 1992, p. 72; J.H. TAYLOR, “Judgement”, in J.H. Taylor (ed.), *Journey through the Afterlife: Ancient Egyptian Book of the Dead*, London, 2011, p. 237.

refer to the morning sun and the future child. That the period of lunar invisibility was especially propitious for conception is indicated by the description of the moon-god Khonsu on the propylon of Ptolemy III Euergetes at Karnak: “he is conceived on the day of the new moon, he is born on the day of the first crescent, and he grows old after the day of the full moon” (*bk3.tw-fm psdn.tjw bh.tw-fm zbd tnn.n-fm-ht smd.t*).<sup>53</sup> It is difficult to tell how much the Egyptians wanted to stress the parallels of this statement with the human reproductive process, but the metaphor certainly has a force on that level as well: the conception of a child in the womb cannot be seen just as the moon is invisible at conjunction, and only at the moment of birth can a baby be visually perceived, similarly to the way in which the moon only becomes discernable by the eye when the first crescent appears.

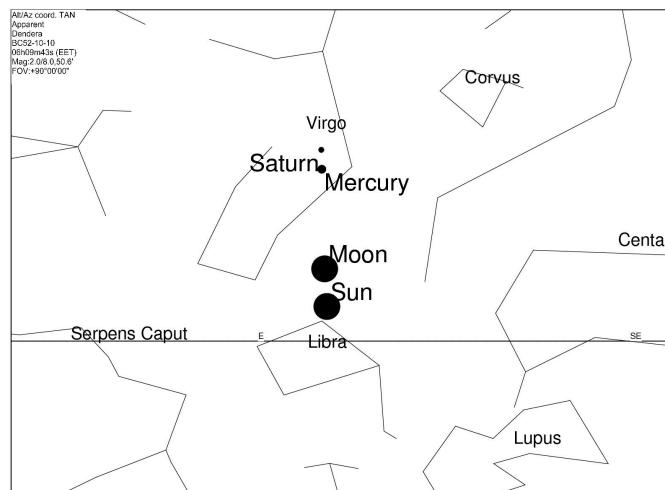


Fig. 4. Conjunction of the sun and the moon in Libra at sunrise on 10 October 52 BCE.

In the zodiac a plethora of other images surround the sign of Libra to assist and signal the heavenly developments. To the left a seated divinity arrives in his barque to witness the moment. Though he may be interpreted as the general depiction of the sun god,<sup>54</sup> his iconography may also point to *Hr.w-hr.j-hnd.w-f* “Horus on His Throne” who is represented in the seventh hour of the Book of That Which is in the Underworld (Amduat) in the company of twelve star gods, and who in the accompanying inscriptions is also named *Hr.w-dw3.tj*, “Horus of the Netherworld”.<sup>55</sup> This divine being is associated with dawn,<sup>56</sup> and from a text cited below we will see that he is indeed called upon in connection with the conception of Horus, so in all likelihood the figure depicted in the barque is identical with him. In the linear zodiac the image that corresponds to Horus of the Netherworld sailing in his barque shows an astronomer-priest inscribed into the lunar disc as he observes the morning sun at conjunction (see below), so quite likely Horus of the Netherworld also alludes to the invisible moon. This

<sup>53</sup> *Urk.* VIII, 89b.

<sup>54</sup> LGG IV, p. 612; J.H. TAYLOR, “Life and Afterlife in the Ancient Egyptian Cosmos”, in J.H. Taylor (ed.), *Journey through the Afterlife*, p. 21, fig. 3.

<sup>55</sup> E. HORNUNG, *Das Amduat. Die Schrift des verborgenen Raumes II. Übersetzung und Kommentar*, *ÄA* 7, 1963, p. 135-136.

<sup>56</sup> Pyr. §1134a. In fact, in some contexts his name is possibly a conflation of *Hr.w-dw3.yt*, “Horus of the Morning”, see LGG V, p. 295.

explains why he is depicted as the sun god: the new moon, as it has just been explained above, is in fact nothing else than the lunar disc imperceptibly united with the sun so that only the latter can be seen.

Immediately above the solar disc a jackal is shown striding forward and it must stand for Wepwawet, “opener of the ways”. As he is often depicted at the front of processions, pioneering the way for the king or divine beings,<sup>57</sup> his role is entirely concordant with conception on the one hand, and also with the calendar entries that report the launch of the ritual activities for Isis on IV Akhet 6. The image below Libra, showing the body of a pregnant hippopotamus with a female head, is also easy to interpret because it displays close affinities with Taweret, the goddess whom expectant women turned to for protection.<sup>58</sup> Small objects representing Taweret were popular amulets as well,<sup>59</sup> and this also tallies with Plutarch’s description that Isis put on a protective amulet when she realized her pregnancy. In the zodiac Taweret is wearing the white crown to indicate royal conception and – as yet another feature associating her with the child Horus – she also has a scorpion’s tail. From the Late Period onward stories on numerous Horus cippi and healing statues recounted the adventures of the young Horus against scorpions, and these objects owed their very existence to the belief that the child Horus could effectively repulse these venomous adversaries.<sup>60</sup> The sitting lion – as its upright front paws rest on water, which must be an allusion to the watery region in the east from where the sun rises<sup>61</sup> – is the representation of one of the double lions (*rw.tj*) that stand for the eastern and western horizons,<sup>62</sup> indeed we will find the counterpart of the animal at the opposite end of the zodiac later. Another noteworthy detail above the jackal is the seated figure holding the flail who possibly also evokes the royal dimension of the myth concerning Horus. It reappears above Leo, with the slight variation that there the figure wears the white crown; its significance will be expounded later.

### **Winter solstice and gestation**

The Khoiak text specifies that IV Akhet 12 is the seventh lunar day so, as a consequence, full moon occurs eight days later, that is on IV Akhet 20. Modern calculations suggest that it may have actually set in a day later in 52 BCE, on IV Akhet 21 (24 December).<sup>63</sup> In any case, these days must have signalled a very important phase in the mysteries because in 52 BCE IV Akhet 20 also coincided with the time of the winter solstice (23 December). According to the Khoiak text, along the course of the mysteries IV Akhet 20 and 21 were the days when the weaving of the so-called “cloth of one day” (*tȝ ȝ.t n w’ hrw*) was done.<sup>64</sup> This piece of linen, as its name suggests, was prepared in one day and was later used to wrap the Osiris effigy when it was mummified and laid to rest for one year in the third western chapel.<sup>65</sup> The lunar connotations of the cloth are obvious from its size, 9  $\frac{1}{3}$  by 3 cubits, that is twenty-eight

<sup>57</sup> E. GRAEFE, *LÄ VI*, 1986, col. 862-864, s. v. “Upuaut”.

<sup>58</sup> R.H. WILKINSON, *Reading Egyptian Art*, p. 71.

<sup>59</sup> C. ANDREWS, *Amulets of Ancient Egypt*, London, 1994, p. 40-41.

<sup>60</sup> L. KÁKOSY, *Egyptian Healing Statues in Three Museums in Italy (Turin, Florence, Naples)*, Torino, 1999, p. 11.

<sup>61</sup> Pyr. §343a-344b; J.H. TAYLOR, “The Perfect Afterlife”, in J. H. Taylor (ed.), *Journey through the Afterlife*, p. 243.

<sup>62</sup> C. DE WIT, *Le rôle et le sens du lion dans l’Égypte ancienne*, Leiden, 1951, p. 126.

<sup>63</sup> This is corollary to the slight incongruance of IV Akhet 12.

<sup>64</sup> *Dend. X/1*, 34, 6-8.

<sup>65</sup> É. CHASSINAT, *Le mystère d’Osiris au mois de Khoiak*, Cairo, 1968, p. 478.

square cubits matching the illuminations of the moon.<sup>66</sup> Neither is it difficult to see why its making was timed to such important celestial events and was perhaps thought to form a symbolic link between them. On the one hand, the full moon represented the acme of lunar power, while on the other the sun just started to regain its strength. Vigour and the ability to rebound were thus magically transferred to the textile, and then in turn to the bandages that enveloped the dead body of Osiris. If the mysteries, or their core part, lasted between the first and second *dnj.t* of the same lunar month, as is suggested by the sixteen relics of Osiris, IV Akhet 20 also naturally fell on the exact mid-point of the mysteries.

Though Plutarch claims that Horus was born at the winter solstice, the Egyptian sources tend to indicate that this was the period of gestation, rather than birth in its strictest sense. This important distinction can be inferred from the most informative ancient Egyptian version of the story about the infancy of the child of Isis and Osiris. The text is known as one part of the myth of Horus at Edfu and was recorded on the inner face of the enclosure wall there (1st century BCE):

ʒbd 2 ʒb.t 18 dd.jn Ʒs.t n Dhwjtj wnnȝ jwr.tj n snȝ Wsjr dd.n Dhwjtj n Ʒs.t šm rȝt r Dbȝ r ddȝs m-  
bȝ Hr.w Bhd.tj nb Msn Hr.w-nȝt rnȝf nȝt.nȝf ntj m h.t tn jj pw jrj r Msn Bhd.tj nb nȝtr.w ddȝf n  
Dhwjtj nb mdw-nȝtr ntk sȝ smn wd.t hr sȝ n Wsjr 'nh m mȝ'.t dd.n Dhwjtj m bkȝ.w tp rȝȝf jnd hrȝk  
nȝtr-dwȝj jnd hrȝk Hr.w-dwȝj.tj jnd hrȝk Hr.w Bhd.tj nȝtr 'ȝ nb p.t sȝdȝk jsk m nbw H'pj hwn jn.tȝf r  
sbj sr 7 m- ' mnjw n Ʒbdw jn jw jj.nȝk r rd.t dr nȝk sw m- ' Stȝ ksj.tȝȝf sw mjȝn Ʒs.t ts.nȝs sȝ n  
swdȝ swȝ.t m h.t n Ʒs.t mkj h'.wȝs hr jr m-ht ȝbd.w hrw.w snj hr nn msj.n Ʒs.t Hr.w m Ʒb-bȝ.t  
hrlwȝs ph.nȝf hr.t m ȝbd 4 pr.t 28 Nb.t-hw.t jbȝs ndm pȝ nb Msn m ȝw.t-jb nȝtr.w nȝtr.wt m rȝrȝ.

II Akhet 18, Isis spoke to Thoth: "I have conceived from my brother, Osiris". Then Thoth told Isis: "Go to Edfu and have a discussion with Horus of Edfu, Lord of Mesen, whose name is Horus the Mighty. He has already strengthened who is in your womb". So they went to Mesen and the One of Edfu, Lord of Gods said to Thoth, Lord of Divine Speech: "You are a scribe! Issue an order on the protection of Osiris who lives in maat!" Thus Thoth uttered with the magic of his words: "Hail to you, Morning Star! Hail to you, Horus of the Netherworld!<sup>67</sup> Hail to you, Horus of Edfu, Great God, Lord of the Sky! Your fillet is from gold, the rejuvenated Apis bull brings it so that the seven rams could be driven by the herdsman of Abydos". [Horus of Edfu:] "Have you come because of the birth? Remove him from Seth who wants to overpower him". [Thoth:] "Come, Isis has already knotted on the Amulet-to-Protect-the-Egg-in-the-Womb-of-Isis that tends to his limbs". Then months and days passed and Isis gave birth to Horus in Chemmis. Her word reached the sky on IV Peret 28. Nephthys was delighted, the Lord of Mesen was joyous, and the gods and goddesses rejoiced.<sup>68</sup>

The close similarities of this text with Plutarch's account are evident from the mention of the amulet that Isis dons for the protection of her child and from the place of birth, Chemmis, which was a locality in the Delta often depicted with an abundance of plants in the Egyptian tradition.<sup>69</sup> The text, though perhaps adjusted to the needs of local theology through casting

<sup>66</sup> For the linkage of the number twenty-eight with the moon in ancient Egyptian thought, see A. VON LIEVEN, *The Carlsberg Papyri 8: Grundriss des Laufes der Sterne. Das sogenannte Nutbuch*, CNIP 31, 2007, p. 95, 174; cf. also the excerpt from chapter 42 of the *De Iside et Osiride* below.

<sup>67</sup> The presence of the phoneme *t* in the name (*Edfou VI*, 214, 5) suggests the reading *Hr.w-dwȝj.tj* or *Hr.w-dwȝj.yt*.

<sup>68</sup> *Edfou VI*, 214, 1-10; D. KURTH, *Die Inschriften des Tempels von Edfu. Abteilung I Übersetzungen Band 3*, *Edfou VI*, Gladbeck, 2014, p. 383-384.

<sup>69</sup> A. BADAWY, "The Architectural Symbolism of the Mammisi-Chapels in Egypt", *CdE* 38, 1963, p. 82-85.

Horus of Edfu in an emphatic role,<sup>70</sup> must have related a widespread version of the story because other Egyptian sources reinforce that Horus was born in the fourth month of the Peret season (see discussion in the next section). As for the time scale between conception and birth, leaving aside for the moment the fact that the text provides a slightly different date for the conception of Horus from II Akhet 6, we can see that it spans 190 days which is far too long a period between the autumnal equinox and winter solstice, but incidentally very close to the length of time that separates the earlier from the vernal equinox (roughly 180 days).

Thoth calls on seven rams in the divine order that he announces and these animals allude to the god Khnum who frequently manifested himself through such a group.<sup>71</sup> As is amply documented on the walls of the birth houses that were attached to late temples, in a maternal context Khnum was responsible for fashioning the body of the future child on his potter's wheel,<sup>72</sup> so his appearance is a clear reference to the gestation of Horus within the womb of his mother.<sup>73</sup> The seven rams are mentioned together with the Apis bull and the herdsman of Abydos and this last detail brings into mind the "driving the calves" ceremony. This ritual, the circumambulation of the temple with cattle performed in the honour of various deities, involved the threshing of grains under the hooves of the animals, so it was steeped in agricultural symbolism, but at some point in time it was also incorporated into the mysteries of Osiris where it acquired a more comprehensive apotropaic function and was perhaps enacted as the symbolic destruction of all the enemies of Osiris.<sup>74</sup> By Graeco-Roman times it must have attained astral connotations as well, because Plutarch writes that "at the time of the winter solstice they lead the cow seven times around the temple of the sun ... and they go around seven times because the sun completes its passage from the winter to the summer solstice in the seventh month" (ch. 52).<sup>75</sup> His reference to the temple of the sun may be explained by the fact that at Edfu the ceremony of driving the calves was associated with Heliopolis, because in the local theology that city was thought to be the resting place of Osiris.<sup>76</sup> Another correspondence between the ancient author and the Egyptian sources is that in the Khoiak text of the Osirian mysteries the cows are said to be driven between the days of IV Akhet 23 and 30, equalling the number Plutarch reports.<sup>77</sup>

Thus the myth at Edfu, through its references to the seven rams and the herdsman of Abydos, identifies winter solstice with the gestation of Horus and Plutarch's words about his birth should be understood in this sense. The circular zodiac accentuates this crucial stage, the period of winter solstice, with the images that are placed in the vicinity of the sign of Capricorn, the month which follows on the sun's tropical turning point. As also indicated by the linear zodiac, three figures are connected with this time of the year: a man holding a mace and standing above a bird (shown as one composite image in the linear zodiac, the human having the head of a falcon and holding a staff), a headless quadruped with the hind legs of a

<sup>70</sup> D. KURTH, "Über Horus, Isis und Osiris", in U. Luft (ed.), *The Intellectual Heritage of Egypt: Studies Presented to László Kákonyi by Friends and Colleagues on the Occasion of His 60th Birthday*, StudAeg 14, p. 383.

<sup>71</sup> D. KLOTZ, "Thoth as Textual Critic: The Interrupting Baboons at Esna Temple", ENiM 7, 2014, p. 47.

<sup>72</sup> Fr. DAUMAS, *Les mammisis des temples égyptiens*, Paris, 1958, p. 408-421.

<sup>73</sup> D. KURTH, in U. Luft (ed.), *The Intellectual Heritage of Egypt*, p. 374, n. 9.

<sup>74</sup> C. GRAINDORGE-HÉREIL, *Le Dieu Sokar à Thèbes au Nouvel Empire*, GOF 28, 1994, p. 201; A. EGBERTS, *In Quest of Meaning: A Study of the Ancient Egyptian Rites of Consecrating the Meret-Chests and Driving the Calves*, EgUit 8, 1995, p. 363-374.

<sup>75</sup> J.G. GRIFFITHS, *Plutarch*, p. 201-203.

<sup>76</sup> A. EGBERTS, *In Quest of Meaning*, p. 386-387.

<sup>77</sup> *Dend. X/1*, 39, 10-11.

human (a headless human in the pronaos), and an anthropomorphic figure restricting an oryx or gazelle (in the pronaos the human holds the animal in the hand, rather than opposes it). These images derive from the depictions of the three decanal stars or star clusters that belong to Capricorn, each signifying a ten-day period (hence the modern name “decan”). In ancient Egypt these stars, first attested on Middle Kingdom coffins, were originally used to determine the hours of the night,<sup>78</sup> but when the concept of the zodiac was transferred to the Nile valley, they became associated with its signs in triads, since the observation of the risings (or meridional transits) of three decanal stars – as a matter of fact – coincided with each of the twelve divisions of the ecliptical band.<sup>79</sup> By this time also the decans had become to be viewed not only as stars but also as powers that influenced the world or the life of an individual in various ways.<sup>80</sup> In other words, at this late stage the decans could carry a variety of symbolic meanings and this quality of theirs was thoroughly exploited in the zodiac.

Different traditions existed about the decans, both in terms of nomenclature and iconography,<sup>81</sup> but in the group that Neugebauer and Parker identified as the Tanis family, shown – *inter alia* – in the earlier and later temples at Esna, and in the circular zodiac itself, the three decans of Capricorn were called *smd* (“eyebrow”?), *sr.t* (“grey goose”), and *s3-sr.t* (“son of the grey goose”),<sup>82</sup> and were represented very similarly at the different locations. The images themselves suggest that the representations of these decans were composed with regard to concepts that alluded to the winter solstice. The one with the name *s3-sr.t* variously appears as eight bound captives within a circle (Dendera zodiac),<sup>83</sup> eight bound and headless captives within a circle surrounded by knives (later Esna temple),<sup>84</sup> and nine beheaded captive figures within a square formed from knives (earlier Esna temple).<sup>85</sup> These last two depictions on the one hand establish a direct connection with the headless hybrid animal in the zodiac, and on the other are particularly suggestive of a connection with a mythical region known as the Sea of Knives (*mr-n-h3.wj*). This sea or lake was located in the celestial waters of the sky,<sup>86</sup> and the solar barque was said to be grounded for a moment on a sandbank in the midst of the lake.<sup>87</sup> A passage in the Book of Going Forth by Day claims that Re – after successfully negotiating the Sea of Knives – continues sailing and his “enemy is fallen, his head has been cut off” (*hstj=k hr hsq tp=f*).<sup>88</sup> In two late papyri the stoppage of the barque on the sandbank is in all probability related to a solar eclipse,<sup>89</sup> but now we can surmise that this mythical pool of water may have been a more general symbol of the hardships the sun could encounter, and as a decan it may have referred to the apparent halt in the sun’s path between the times when it travelled southward (prior to the solstice), and northward (after the solstice).

<sup>78</sup> EAT III, p. 1, 167.

<sup>79</sup> Ibid., p. 168.

<sup>80</sup> L. KÁKOSY, “Decans in Late Egyptian Religion”, *Oikumene* (B) 3, 1982, p. 164-165.

<sup>81</sup> EAT III, p. 105-174; A. VON LIEVEN, “Die dritte Reihe der Dekane oder Tradition und Innovation in der spätägyptischen Religion”, ARG 2, 2000, p. 22-23.

<sup>82</sup> EAT III, p. 144-145, 170.

<sup>83</sup> In the zodiac the name of this decan is somewhat shifted to the left, see the discussion in the section on decans below.

<sup>84</sup> Esna IV, 409, no. 23, fig. 1.

<sup>85</sup> EAT III, pl. 29.

<sup>86</sup> H. ALTMÜLLER, „Messersee“, „gewundener Wasserlauf“ und „Flammensee“, ZÄS 92, 1966, 86-95.

<sup>87</sup> J. ASSMANN, *Sonnenhymnen in thebanischer Gräbern*, Mainz, 1983, p. 149.

<sup>88</sup> T.G. ALLEN, *The Egyptian Book of the Dead Documents in the Oriental Institute Museum at the University of Chicago*, OIP 82, 1960, 86, pl. 101.

<sup>89</sup> Urk. VI, 123, 7-10; V. ALTMANN, *Die Kultfrevel des Seth. Die Gefährdung der göttlichen Ordnung in zwei Vernichtungsritualen der ägyptischen Spätzeit (Urk. VI)*, Studien zur spätägyptischen Religion 1, 2010, p. 91-92.

Both the name and the iconography of the *sr.t*-decan connect this star with a bird.<sup>90</sup> Coffin Texts spell 159 describes the stretch of the eastern horizon from where the sun rises with the following words: “I know the gate in the middle from which Re emerges in the east. Its south is in the lake of the *hbs*-geese, which is the place where Re navigates by sailing; its north is in the waters of the *sr*-geese, which is the place where Re navigates by rowing” (*rḥ.kw sb3 pw hr.j-jb prr.w R ‘jm-f m jʒb.t rs.j-f m š.w hbs.w m bw sqdd R ‘jm m t ‘w mh.tj-f nw.yt sr.w m bw sqdd R ‘jm m hnj*).<sup>91</sup> We can see that the southern and northern extremities of the sun’s path were envisaged as watery regions named after different species of birds. The name of the northern one was the male form of the word that denoted the bird of the decan in Capricorn. The Coffin Texts precede the Dendera temple by some two thousand years, so possibly a transposition of the regions led to the situation in which the decan signifying the southern turning point of the sun was named after the *sr*-goose. This confusion could have easily arisen in the meantime, because the southern and northern waters of the eastern horizon were associated with other species of waterfowl in chapters 107 and 109 of the Book of Going Forth by Day,<sup>92</sup> the descendants of the cited Coffin Texts spell. It is also possible that the female form was thought to represent the antipode of the north designated by the male word. In the zodiac a standing man holding a stave appears above the bird; this figure must come from the last decan of Sagittarius, *pʒ-sb3-w’.tj*,<sup>93</sup> which is sometimes represented as a falcon-headed human and is substituted for *sr.t* in the decan list of the linear zodiac. Thus the anthropomorphic figure and the goose together stand for the precise borderline that separates the periods before and after the winter solstice (for an identical representation, see the section on other zodiacs below).

While the figures of the headless animal and the bird were connected with concepts that had been formulated in times immemorial, the man restricting the gazelle-like creature may originate from a story that was especially popular in Graeco-Roman times. It recounts how the eye of Re, personified most often by Hathor or Tefnut as a lioness, after having been enraged by her father, wanders into the southern desert in Nubia and can only be made to return to Egypt by the trickery of Thoth or Shu-Onuris.<sup>94</sup> As an important means of this persuasive process, the goddess is presented with a *wnšb*,<sup>95</sup> a symbol of ordered time (see discussion below). Consequently, various cosmic interpretations of the myth have been put forward,<sup>96</sup> but perhaps the most obvious one is the association of the narrative with the yearly southward journey of the sun before the winter solstice.<sup>97</sup> In the lists the *smd*-decan is often represented by an ibis-headed human wearing the atef-crown,<sup>98</sup> that is with the iconography

<sup>90</sup> EAT III, p. 144.

<sup>91</sup> CT II, 363c-366a (B4L<sup>b</sup>). For a similar text see also CT II, 388i-n (CT spell 161).

<sup>92</sup> T.G. ALLEN, *The Egyptian Book of the Dead Documents*, p. 181, 183.

<sup>93</sup> EAT III, p. 144.

<sup>94</sup> B.A. RICHTER, “On the Heels of the Wandering Goddess: The Myth and the Festival at the Temples of the Wadi el-Hallel and Dendera”, in M. Dolińska, H. Beinlich (ed.), 8. Ägyptologische Tempeltagung: Interconnections between Temples, Königstum, Staat und Gesellschaft früher Hochkulturen 3,3, 2010, p. 156-157.

<sup>95</sup> Ibid., p. 156.

<sup>96</sup> Ibid., p. 158 n. 23; J.Fr. QUACK, “A Goddess Rising 10,000 Cubits into the Air ... Or Only One Cubit, One Finger?”, in J. M. Steele, A. Imhausen (ed.), *Under One Sky: Astronomy and Mathematics in the Ancient Near East*, AOAT 297, 2002, p. 283-294.

<sup>97</sup> Chr. LEITZ, *Studien zur ägyptischen Astronomie*, ÄA 49, 1991, p. 10-13; J.Fr. QUACK, in J.M. Steele, A. Imhausen (ed.), *Under One Sky*, p. 286.

<sup>98</sup> EAT III, p. 144.

of Thoth.<sup>99</sup> As Thoth or Shu are variously said to be the protagonists of the story, it is entirely possible that the anthropomorphic figure holding back the animal in the zodiac shows one of them as he pacifies the solar eye. Though this latter is principally a lioness, it can also assume other zoomorphic forms when it wants to conceal its true identity from Thoth and during its return trip to Egypt, among them, that of a gazelle.<sup>100</sup>

The time of winter solstice, in connection with the decanal stars, is also indicated in the second eastern Osirian chapel by an inscription that runs along the outstretched figure of Nut separating the zodiac from the other half of the ceiling. In this hymn of Osiris the god is praised with the following words: “Sah in the sky who lives every day without disappearing in the celestial vault. Your likeness is rejuvenated on the day of the new moon, you are young in the interior of the moon. The *smd-decan* follows you, lord of the stars in your name of Osiris-Sah” (*Sʒh m p.t ‘nh.tw r‘ nb n sk m h.t n nn.t rnp sšm-k hrw psdn.tjw hwn-k m-hnw jʒb.t šms.tw-k smd m hqʒ hʒbʒs.w m rn-k n Wsjr-Sʒh*).<sup>101</sup> The reference to the *smd-decan* of Capricorn once more proves that the designers of the ceiling of the second eastern Osirian chapel were fully aware of the fact that the mysteries of IV Akhet in 52 BCE coincided with the winter solstice. It seems very likely then that the daylight hours listed under the arch of Nut on the other half of the ceiling denote the hours of the shortest day in the year.

An entire section below will be devoted to the argument that some of the images standing for the decans along the circumference of the zodiac also narrate symbolically the events of the birth of Horus, but the three images around Capricorn, with their meaningful allusions, are the only such stars that were incorporated into the central field of depictions. This also indicates that they want to put emphasis on the time when in the real world the moment of the winter solstice is passed and in the myth the embryonic development of Horus picks up momentum.

### Vernal equinox and the birth of Horus

We could see that in 52 BCE the autumnal equinox coincided with the day of the full moon and three months later the winter solstice and full moon were almost synchronous, too. This was also the case at the vernal equinox in the following year, 51 BCE, as the moon became full on 22 March (III Peret 19), while the solar equilibrium set in on the following day (23 March). These days are not represented in the zodiac, only the subsequent event that marked the birth of Horus. While Plutarch is vague about this date, stating only that the celebrations of Isis’s confinement were held after the vernal equinox, hieroglyphic inscriptions in the Graeco-Roman temples precisely specify on which day Horus was born. According to the Horus myth of Edfu, his birthday was on IV Peret 28,<sup>102</sup> which, it should be remembered, by rough calculation and within the timeline of the story fell around the time of the spring equinox. The date is a civil one, but the festival lists in Edfu and Esna also determine it in terms of the lunar calendar in the fourth month of the Peret season: “first-crescent day of this month, the birth of Horus, son of Isis, son of Osiris” (*ʒbd n ʒbd pn ms Hr.w sʒ ʒs.t sʒ Wsjr jm-f*);<sup>103</sup> “making a record of the divine birth of Horus on the first-crescent day of this month”

<sup>99</sup> LGG VII, p. 640.

<sup>100</sup> Å. STRANDBERG, *The Gazelle in Ancient Egyptian Art: Image and Meaning*, USE 6, 2009, p. 183-184.

<sup>101</sup> Dend. X/1, 176, 7-9; S. CAUVILLE, *Les chapelles osiriennes. Commentaire*, p. 91.

<sup>102</sup> This date for the birthday of Horus already appears in a papyrus that was compiled in the 7th century BCE, see D. MEEKS, *Mythes et légendes du Delta d’après le papyrus Brooklyn 47.218.84*, MIAO 125, 2006, p. 23.

<sup>103</sup> Edfou V 352, 7-8; A. GRIMM, *Die altägyptischen Festkalender*, p. 97.

(*jrj ms-ntr n Hr.w m ʒbd n ʒbd pn*).<sup>104</sup> The same lunar day of IV Peret is also recorded for the birth of Horus by a demotic papyrus that originates from the Fayyum region and dates to the 1st century CE.<sup>105</sup>

Therefore, as the month IV Peret started later than 23 March around the middle of the 1st century BCE,<sup>106</sup> the ancient Egyptian testimonies indicate that Horus was born on the day when the waxing crescent of the moon was first seen after the spring equinox. This scenario – Horus being conceived on the day of invisibility after the autumnal equinox and being born on the first-crescent day after the vernal equinox – is in harmony with the already cited statement about the moon at Karnak that associated these lunar phases with conception and birth, respectively. The demotic papyrus just mentioned expressly states that Horus is born on the same lunar day as Khonsu.<sup>107</sup> In 51 BCE the first appearance of the waxing crescent after the spring equinox fell on IV Peret 5 (7 April 51 BCE). Figure 5 shows how this event is observed at dusk, just as the sun dips below the western horizon. Since it is now April the sun is in Aries and the moon must obtain a sufficient distance from it (about 10°)<sup>108</sup> in order for its first crescent to be seen. Consequently the waxing crescent will appear in the neighbouring zodiacal sign, that is Taurus. This moment is represented in the zodiac by a figure of a man in front of Gemini, wearing a headdress with feathers, holding a ram-headed staff in one of his hands, and looking towards the signs of Aries and Taurus. The ram-headed object in his grasp may be an allusion to the setting sun, because it was often depicted as a cryocephalus being.<sup>109</sup> Next to the figure we can see a recumbent lion and this animal, though a bit smaller in scale and in a slightly different posture, is the western member of *rw.tj*, the double lions which attend the two horizons (see above). That the human figure is involved in the observation of the moon is proved beyond doubt by the linear zodiac, where he stands behind Taurus, and above the bull the unambiguous icon of the crescent moon can be seen. This detail is missing from the circular zodiac; perhaps the horns of the bull were deemed to represent the first crescent, or the figure of the onlooking person was thought to be sufficient to mark the occasion.

<sup>104</sup> *Esna II*, 77, 11.

<sup>105</sup> Gh. WIDMER, “Les fêtes en l’honneur de Sobek dans le Fayoum à l’époque gréco-romaine”, *Égypte, Afrique & Orient* 32, 2003, p. 17.

<sup>106</sup> In 51 BCE IV Peret 1 fell on 3 April so the newly visible lunar crescent had to appear towards the beginning of that civil month in order to qualify for the first sighting of the waxing moon after 23 March (otherwise the first crescent fell on a day at the end of III Peret). Because of the shifting of the civil calendar IV Peret 1 tended to coincide with the spring equinox around 20 BCE.

<sup>107</sup> Gh. WIDMER, “Un papyrus démotique religieux du Fayoum: P. Berlin 6750”, *BSEG* 22, 1998, p. 91.

<sup>108</sup> R.A. PARKER, *Calendars*, p. 4.

<sup>109</sup> R.H. WILKINSON, *Reading Egyptian Art*, p. 61.

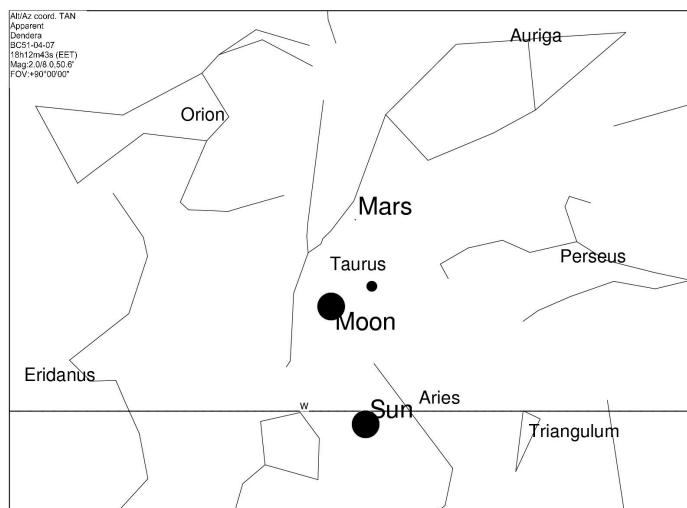


Fig. 5. First crescent in Taurus at sunset on 7 April 51 BCE.

It may seem strange that a celestial event is represented by the person observing it, but Egyptian sources tell us that the arrival of the first crescent was closely linked with a ritual action involving one member of the priestly class. A papyrus commenting on various mythological events and dated to the 7th century BCE relates how Horus, after an attack by Seth, has regained the vision of his eyes, i.e. how the moon became visible again at the beginning of the month. It is said about Horus: “his strength grew so he went forth at dawn – one calls it the going forth of the sem-priest on the fourth day following every new moon” (‘*ʒ ph.tj-fj prj.hr-f m hd-tʒ pr.t-sm hr.tw r-f hr hrw 4 n psdn.tjw nb*’).<sup>110</sup> The Book of the Fundamentals of the Course of Stars (Book of Nut), originally a New Kingdom or earlier composition but with later demotic variants dating from the 2nd century CE, contains a similar story.<sup>111</sup> In the Graeco-Roman lists of lunar day names the fourth day was also called “the going forth of the sem-priest”, no doubt reflecting the fact that the invisibility of the moon could sometimes last for three days (i.e. the new crescent appears on the evening of the third day).<sup>112</sup> Plutarch also writes about this ritual and says, once more indirectly reinforcing the link between the first crescent and the birth of Horus: “Sacrifice to the sun is also said to have been made on the fourth day of the month by Horus son of Isis before all others, as is written in the book called the Birthday-Celebrations of Horus” (ch. 52).<sup>113</sup> All this then seems to indicate that the sem-priest went forth at dawn on the fourth day to show gratitude to the rising sun for “releasing” the moon on one of the previous evenings. The figure watching the setting sun in Aries and the first crescent in Taurus is therefore perhaps a sem-priest, or an official with similar duties, as the double feathers are more suggestive of a lector priest.<sup>114</sup>

The time of parturition is also subtly indicated in the zodiac by the arrangement of the planets. As already mentioned in the introduction, the figures standing for the planets are put next to the constellations where they have their exaltations (Mercury-Virgo, Venus-Pisces, Mars-

<sup>110</sup> D. MEEKS, *Mythes et légendes du Delta*, p. 14.

<sup>111</sup> A. VON LIEVEN, *Carlsberg Papyri 8: Grundriss des Laufes der Sterne*, p. 97-101, 177-184, 455-463.

<sup>112</sup> R.A. PARKER, *Calendars*, p. 13.

<sup>113</sup> J.G. GRIFFITHS, *Plutarch*, p. 203.

<sup>114</sup> B.A. SHAFER, “Temples, Priests, and Rituals: An Overview”, in B.A. Shafer (ed.), *Temples of Ancient Egypt*, Ithaca, 1997, p. 17; J.H. TAYLOR, “The Day of Burial”, in J.H. Taylor (ed.), *Journey through the Afterlife*, p. 97.

Capricorn, Jupiter-Cancer, and Saturn-Libra). Within this conceptual framework known from later astrological texts, the exaltations of the two remaining and most conspicuous planets, the sun and the moon, are allocated to Aries and Taurus, respectively.<sup>115</sup> So when we see the five lesser planets in their exaltations, this draws our attention to the situation when the sun is in Aries and the moon is in Taurus, that is the exact moment when Horus is given birth. Current scholarly consensus holds that the system of exaltations originates from Babylonian astronomy,<sup>116</sup> and the two luminaries are tied to Aries and Taurus possibly because the year started in the spring in Mesopotamia,<sup>117</sup> but now we can see that the configuration for the sun and the moon may be based equally well on Horus's birth involving the same two signs, so it is not altogether impossible that the exaltations of the other planets are also rooted in Egyptian thinking. This claim will be supported later by the examination of the linear zodiac suggesting that another key concept of astrology, the houses of the planets, may also come from Egyptian sky lore. Either they borrowed the idea of exaltations from outside or it was their own tradition, it seems certain that the designers of the zodiac used this notional framework to allude to the time when Horus was being born because, *mutatis mutandis*, the linear zodiac uses the houses of the planets for the same purpose (see below).

### The heliacal rising of Sirius and another conception

Besides the depiction of the “astronomer” observing the setting sun and the appearance of the first crescent of the moon in Taurus, there is obviously one more image in the zodiac that is linked with the birth of Horus. It is found below Leo and shows a woman seated on a throne as she tends a child standing on her left hand. The opinion that we should associate these characters with Leo is substantiated by the linear zodiac, which also puts them in the same sign,<sup>118</sup> although some astronomical texts of later antiquity, all deriving from the register of stars made by Teukros in the 1st century CE, talk about a constellation showing a seated woman and a child in a hall as the first decan of Virgo.<sup>119</sup> This textual tradition is important, however, because it does identify the figures as Isis providing nourishment to her son, Horus. Given that the description of Teukros matches the image of the Dendera zodiacs so closely, we must surmise that Teukros either saw the zodiacs himself or based his opinion on an intermediary source, and one of them mistook the position of the figures. Another possibility is that the incongruance stems from the identification of Virgo with the girl clutching onto the tail of the lion in the Egyptian depictions of Leo.<sup>120</sup> One thing, however, is more than likely: placing the image in the sky as a constellation was a – perhaps deliberate – misinterpretation.

Within the context of the zodiac, the sign of Leo is connected with Libra, the moment of conception, through the two images that show a figure seated on a throne holding the flail (the one above Leo with the white crown). Their presence suggests that the woman on the throne caring for her child is indeed identical with Isis, and mother and son are represented with some reference to kingship and regeneration. Once more, Plutarch can offer enlightenment about the meaning of the scene:

<sup>115</sup> R. BECK, *A Brief History of Ancient Astrology*, p. 85.

<sup>116</sup> F. ROCHBERG-HALTON, “Elements of the Babylonian Contribution to Hellenistic Astrology”, *JAOS* 108, 1988, p. 53-57; R. BECK, *loc. cit.*

<sup>117</sup> F. ROCHBERG-HALTON, *JAOS* 108, p. 57.

<sup>118</sup> This part of the zodiac is unfortunately broken off but enough traces are left for a positive identification.

<sup>119</sup> F. BOLL, *Sphaera. Neueu griechische Texte und Untersuchungen zur Geschichte der Sternbilder*, Leipzig, 1903, p. 210; Chr. LEITZ, *SAK* 34, p. 307.

<sup>120</sup> J. LULL, J.A. BELMONTE, in J.A. Belmonte, M. Shaltout (ed.), *In Search of Cosmic Order*, p. 183-184.

Of the stars, they consider Sirius belongs to Isis because it brings water (i.e. the inundation), and they also honour the Lion (the constellation) and adorn the doors of temples with lions' jaws, since the Nile overflows *when first the sun comes near to the Lion* [Aratus, *Phaen.* 151]. Just as they view the Nile as the efflux of Osiris, thus they hold the earth to be the body of Isis, and they do not mean the whole earth, but as much as the Nile goes over, fructifying it and uniting with it; and from this union they make Horus be procreated. (*De Iside et Osiride*, ch. 38).<sup>121</sup>

Thus in fact the zodiac records two different celestial phenomena that harbour the conception of Horus in two different, though also somehow related mythical stories. One is the sight of the new moon after the autumnal equinox, while the other is tied to the heliacal rising of Sopdet (the star Sirius, Greek Sothis) represented by the recumbent cow in a barque placed next to the circumference of the zodiac (i.e. the horizon), behind Sah (the constellation Orion as Osiris), and another sign whose role will be explained in the next section. It is a well-known fact that the reappearance of the star Sirius in the sky at dawn in mid-July coincided with the time when the Nile began to flood. Egyptian sources link up the heliacal rising of Sirius with the inundation from very early on,<sup>122</sup> and this close relationship is also expressed in the zodiac by the figures of Satet and Anuket appearing behind Sopdet.<sup>123</sup> In turn, the connection between the flooding Nile and the procreation of Horus is established by the depiction of Isis nursing her child in the wake of the two goddesses. In the linear zodiac, since Satet and Anuket are now far away in Cancer, another representation of the inundation, the astral snake of the Nile enclosed in a rectangle,<sup>124</sup> is inserted after Isis to signal the same concept.

There is of course plenty of evidence in ancient Egyptian sources for the association of Osiris with the waters of the flooding Nile. Already in the Pyramid Texts we read that “the canals are filled, the waterways are flooded by means of the purification which issued from Osiris” (*mhj mr.w jʒḥ.w jtr.w m rɔf 'b.w prj m Wsjr*).<sup>125</sup> Similarly, in a late hymn Osiris is addressed as the “Gleaming child, he is the inundating water, being born on the First of the Year, when the efflux of his body is absorbed” (*nḥn.w tḥn jm.j-mn.w msj.tw-f tp.j-rnp.t 'm rd.w h'.wʃ*).<sup>126</sup> In the light of this it is more than tantalizing that no textual attestations have come down to us to substantiate the other part of Plutarch’s story, the equivalence of Isis with the land that the inundating river covers.<sup>127</sup> Graeco-Roman texts, however, do describe the arable fields as a motherly woman. Thus, for example, in an offering scene on the pylon of the Edfu temple we read: “[the king] has come to you, Horus of Edfu, Great God, Lord of the Sky, he brings the fields that have conceived on time and give birth at their appointed moment; you are a fiery bull (= the waxing moon) that enlarges the wombs so that the Fruitful Mother delivers her children (= plants)” (*jw.n njsw bjtj* [cartouche of Ptolemy XII] *hr=k Hr.w Bhd.tj ntr 'ʒ nb p.t jnj=f n=k ʒh.t jwr.tj r tr=s msj=s n=k r dmd.jt=s ntk kʒ psj swr hm.wt smsj Bkʒ.t n ms.w=s*).<sup>128</sup> The context and the plant determinative of the word “children” make it clear that the Fruitful Mother denotes the fertile land of the country. Noteworthy are the references to the temporal aspects and to the moon. So the Egyptian texts (see another example below) liken the fields to

<sup>121</sup> J.G. GRIFFITHS, *Plutarch*, p. 177.

<sup>122</sup> *Pyr.* §965a-b; J.G. GRIFFITHS, *Plutarch*, p. 444.

<sup>123</sup> *EAT III*, p. 73; Chr. LEITZ, *SAK 34*, p. 288, 307.

<sup>124</sup> L. KÁKOSY, “The Astral Snakes of the Nile”, *MDAIK* 37, 1981, p. 255-260.

<sup>125</sup> *Pyr.* §848a-b. Translation by R.O. FAULKNER, *The Ancient Egyptian Pyramid Texts*, Oxford, 1969, p. 151.

<sup>126</sup> L.V. ŽABKAR, “A Hymn to Osiris Pantocrator at Philae”, *ZÄS* 108, 1981, p. 142.

<sup>127</sup> J.G. GRIFFITHS, *Plutarch*, p. 446.

<sup>128</sup> *Edfou VIII*, 59, 9-11.

a mother but do not name Isis. The two zodiacs now provide indirect iconographic evidence for this identity and to corroborate Plutarch's statements.

The final line of the myth of Horus and another calendrical inscription from Edfu, which so far have baffled researchers,<sup>129</sup> offer support for making a link between the procreation of Horus and the heliacal rising of Sirius. They both state – also in connection with the birthday on IV Peret 28 – that Horus is conceived at the beginning of the third month of the Shemu season (III Shemu 4 and 9).<sup>130</sup> At face value they plainly contradict the other piece of information from Edfu that puts the conception of Horus on II Akhet 18, but now we can see that they belong to the tradition that associates this event with the inundation. The two different dates of conception, II Akhet 18 and III Shemu 4, are separated by 256 days (or 261 days in the case of III Shemu 9), and this period corresponds well enough to the length of time that it takes for the sun to travel from Libra to the sign in which the dawn rising of Sirius takes place, Cancer, some 270 days on average. It must be noted here, however, that while the data from Edfu roughly fit the scheme suggested by the zodiac, and thus natural observations, their imprecision does not allow for a full reconciliation with actual celestial cycles. For example, between the conception and birth of Horus at the autumnal and spring equinox 178–179 days elapse (six lunar months plus one or two days), but the 190 days between II Akhet 18 and IV Peret 28 far exceed this period.

The conception of Horus after the autumnal equinox is linked up with one particular phase of the moon, and there is some evidence to suggest that the day of the conception around the dawn rising of Sirius was determined in the same way. An inscription in the Esna temple creates a link between the new crescent day (*tp-ʒbd*, or perhaps more comprehensively, the beginning of the month)<sup>131</sup> and the Nile inundation (*h'pj*),<sup>132</sup> but its tone is basically rather general. Since, however, the Edfu texts both put the second conception of Horus in III Shemu (on different days, again strongly hinting at a lunar or astral origin), we can compare this with the information that Plutarch passes on about this month:

In the sacred hymns of Osiris they call on him who is hidden in the arms of the sun, and on the thirtieth day of the month of Epiphi they celebrate the birth of the eyes of Horus, when the moon and the sun are in a straight line, since they believe that not only the moon, but also the sun is the eye and light of Horus (*De Iside et Osiride*, ch. 52).<sup>133</sup>

The imagery – moon hidden in the arms of the sun (invisible), the two luminaries in a straight line (conjunction) – points to the new moon. Also, as we have seen it in the quotation about the eclipses, for Plutarch – in accordance with the Greek method of starting the month with the first crescent<sup>134</sup> – the thirtieth day of the month means the day when the moon is not seen. Therefore Plutarch states that this other birth of Horus (i.e. the birth of his eyes) takes place on the day when the moon is not seen in the month of III Shemu. Once the true message of

<sup>129</sup> É. CHASSINAT, *Le mystère d'Osiris*, p. 761; A. GRIMM, *Die altägyptischen Festkalender*, p. 410.

<sup>130</sup> *ʒbd 3 šmw sw 4 jwr.tw n Hr.w s3 3s.t s3 Wsjr msj.twʃn ʒbd 4 pr.t sw 28, Edsou V* 356, 5-6; *ʒbd 3 šmw sw 9 hrw pw jwr 3s.t n s3ʃs Hr.w jmʃf, Edsou VI*, 223, 2.

<sup>131</sup> *Wb I*, 65, 8.

<sup>132</sup> “one rejoices in the moon on new crescent days as it guides all festivals to their seasons and leads the inundation to its time” *h'j.tw m jwn-h' tp-ʒbd.w ssm.nʃ hʒb nb.w r tp-tr.w bsj.nʃ m h'pj r swʃf, Esna II*, 184, 22; M. SMITH, *The Carlsberg Papyri 5: On the Primaeval Ocean*, CNIP 26, 2002, p. 124.

<sup>133</sup> J.G. GRIFFITHS, *Plutarch*, p. 201.

<sup>134</sup> R. HANNAH, *Greek and Roman Calendars. Constructions of Time in the Classical World*, London, 2005, p. 27.

Plutarch's discourse is understood, it also becomes obvious that a series of entries in the Graeco-Roman festival calendars bear out his story. For the day of the invisible moon in III Shemu (Epiphi) is well-attested as the starting point of the feast of the "beautiful embrace" (*hʒb shn nfr*), when the cult statue of Hathor of Dendera sailed upstream to spend a fourteen-day sojourn in the company of Horus of Edfu.<sup>135</sup> The exact ramifications of this celebration are not entirely clear, but the earlier interpretation that it was a sort of "holy wedding" between the two divinities has now been questioned.<sup>136</sup> It has also been suggested that it was the celebration of Hathor as the eye of Re returning to his father, the sun.<sup>137</sup> This would be in unison with Plutarch's account of the events, as the arms he mentions resonate with the idea of a beautiful embrace, and the lunar aspect is also quite obvious. Hathor joins Horus at the beginning of the month and fourteen days later the two eyes of Horus can be observed in their full glory: the setting sun on the western horizon and the full moon on the eastern one.

While the two parties of the "beautiful embrace", Hathor and Horus of Edfu, are not the main protagonists of the myth of Osiris, and thus this festival has perhaps no immediate connections with his mysteries, an inscription placed next to the image of five falcons in the lunar strip on the ceiling of the pronaos establishes a clear link between the celestial eyes, Isis, the child Horus, and the invisibility of the moon in III Shemu: "The new moon of III Shemu, when Isis is called Ipet. Re commands his throne and rulership onto his heir, Horus, the son of Osiris, to please the heart of his mother, Isis" (*psdn.tjw ʒbd 3 šmw Jp.t rn n ʒs.t wd R' ns.t-ʃ hqʒ.t-ʃ n sʒ-ʃ Hr.w sʒ Wsjr r sndm jb n mw.t-ʃ ʒs.t*).<sup>138</sup> Then the text continues with references to the manipulation of the wedjat-eye by Isis, and ends with associating the inundation with Osiris-moon who is likened to a child at the beginning of its cycle: "the perfect child who arrives on time, the ruler of inundation that swells without stopping; the perfect infant conceived in the womb as the bull (= the moon) rejuvenates and the Fruitful Mother (= the land of Egypt) lives" (*hwn nfr šm r nw-ʃ jty h'pj hy wr n ʒbw hʒ nfr jwr hm.t kʒ rnp sw 'nh Bkʒ.t*).<sup>139</sup>

Since in 51 BCE the day of the invisible moon in III Shemu (III Shemu 2, 3 July 51 BCE) precedes that of the dawn rising of Sirius (16 July in Dendera in the 1st century BCE),<sup>140</sup> we must conclude that the new moon prior to the sighting of Sirius was either seen as the moment of conception itself or as a prelude to the upcoming conception at the time when the floods would arrive. If the event was strongly tied to the civil calendar, it entailed that around the middle of the 1st century BCE, when the month III Shemu roughly corresponded to the period

<sup>135</sup> *Edsou* V, 124, 8-12; 356, 8-357, 3; 394, 12-14; *Dend.* VI, 158, 4-7; A. GRIMM, *Die altägyptischen Festkalender*, p. 125-127, 424-426.

<sup>136</sup> H. ALTEMÜLLER, "Die Fahrt der Hathor nach Edfu und die Heilige Hochzeit", in W. Clarysse, A. Schoor, H. Willem (ed.), *Egyptian Religion. The Last Thousand Years*, p. 753-756.

<sup>137</sup> P. WILSON, *A Ptolemaic Lexikon. A Lexicographical Study of the Texts in the Temple of Edfu*, OLA 78, 1997, p. 906.

<sup>138</sup> *Dend.* XV, 28, 14-29, 1; S. CAUVILLE, *Dendara XV. Traduction*, p. 40-41.

<sup>139</sup> *Dend.* XV, 29, 10-11; S. CAUVILLE, *loc. cit.*

<sup>140</sup> The date for the heliacal rising of Sirius varies depending on the arcus visionis (the height of the star above the horizon necessary for visibility) and geodetic latitude (see R.A. PARKER, *Calendars*, p. 7). A reliable source for its timing in Dendera in the 1st century BCE is the foundation date of the temple, 16 July 54 BCE, when the axis of the building was determined according to the azimuth of the dawn rising of Sirius (S. CAUVILLE, "Le temple d'Isis à Dendera", *BSFE* 123, 1992, p. 41). Since the length of the Sothic year (for this see M.F. INGHAM, "The Length of the Sothic Cycle", *JEA* 55, 1969, p. 39-40) is almost identical with the Julian year, it is a reasonable assumption that around the start of the Common Era the dawn rising of Sirius as seen from Dendera constantly fell on 16 July in the proleptic Julian calendar. Still the actual sighting of the star may have deviated by one or two days.

between 2 and 31 July, the new moon in that civil month in some years arrived before the heliacal rising of Sirius, while in others, as for example in 50 BCE (new moon on 22 July, III Shemu 21), followed the appearance of the star and did indeed fall on the days when the sun was about to enter the sign of Leo, and simultaneously the river began to flood. By the first half of the 1st century CE, when the inscription in the pronaos was written, III Shemu shifted forward roughly twenty days in the Julian calendar, so that now the new moon of the month always preceded the heliacal rising of Sirius and in fact had to happen towards the month's end to remain close to it (so that the new moon prior to 16 July did not fall in IV Shemu). All this then, coupled with the fact that the Edfu texts place the second conception of Horus at the beginning of III Shemu, seems to implicate that the new moon in that month ideally came before the dawn rising of Sirius, but its ultimate reference was still to the time when the floodwaters arrived in the second half of July. The connection between the two events was established – we must assume – by the days of waxing.

As for the relation between this second act of conception around the time of the inundation and the first one, it may be further clarified by the already mentioned details that Teukros talks about Isis and Horus as dwelling in a hall, and that the seated figure above Leo wears the white crown. They, combined with the line above stating that Re hands over his kingdom to Horus, the son of Isis, point to a particular episode in the myth of Osiris already elaborately recorded on the stela of Amenmose (18th Dynasty):

*bs.t sw ḥf nḥt.w m-hnw wsh.t Gbb psd.t hr ršw jj.wj s3 Wsjr Hr.w mn-jb m3'-hrw s3 3s.t jw 'w Wsjr shwj nεf d3d3 n.t m3'.t psd.t nb r-dr dsf nb.w M3'.t sm3.w jmεs mk h3.y jsf.t sndm.w m wsh.t n.t Gbb r rd.t j3w.t n nbεs nsw.jt n m3'.tεs nεf gm.n.tw Hr.w m3'-hrw rd.w nεf j3w.t n.t jtεf prj.nεf mdh.w m wd n Gbb šsp.nεf hq3.t jdb.wj hd.t mn.tj m tpεf.*

[Isis] brought him when his arm was strong into the broad hall of Geb. The Ennead was jubilant: "Welcome, son of Osiris, Horus, firm-hearted, justified, son of Isis, heir of Osiris!" The council of Maat assembled for him, the Ennead, the All-Lord himself, the lords of Maat, who united in her who eschew wrongdoing. They were seated in the hall of Geb to give the office to its lord, the kingship to its rightful owner. Horus was found justified, his father's rank was given him, he came out crowned by Geb's command, received the rule of the two shores, the crown placed firmly on his head.<sup>141</sup>

Now we can see that through the motifs of the hall and the crown (*hd.t*, the white crown of Upper Egypt as is shown on the head of the seated figure above Leo) this second conception is strongly associated with the moment when the council of gods, after a bout of strenuous fighting against Seth, recognizes Horus as the rightful heir of Osiris. On the stela of Amenmose this vindication of Horus, with the expressions of overwhelming joy over it, concludes the text,<sup>142</sup> and Plutarch's summary of the myth of Isis and Osiris at the beginning of his tractate also ends with the judicial scene and a reference to the conception of Horus.<sup>143</sup> While the description of the hall of Geb is missing from the Edfu myth, the epic struggle between Horus and Seth is abundantly reported and this text also closes with an allusion to Horus's conception.<sup>144</sup> If we look at their overall structure, all these accounts contain some of

<sup>141</sup> A. MORET, "La légende d'Osiris à l'époque thébaine d'après l'hymne à Osiris du Louvre", *BIFAO* 30, 1931, p. 744-745; Translation from M. LICHTHEIM, *Ancient Egyptian Literature II. The New Kingdom*, Berkeley, 1976, p. 84.

<sup>142</sup> A. MORET, *BIFAO* 30, p. 746-750.

<sup>143</sup> J.G. GRIFFITHS, *Plutarch*, p. 147 (*De Iside et Osiride*, ch. 20).

<sup>144</sup> *Edfou VI*, 219, 8-223, 2.

the key episodes of the myth in the same chronological order: rule of Osiris on earth (Amenmose, Plutarch), death of Osiris (Plutarch), search for Osiris by Isis (Amenmose, Plutarch), first conception and birth of Horus (Amenmose, Edfu, Plutarch), contest between Horus and Seth (Edfu, Plutarch), final judgement at the court of Geb (Amenmose, Plutarch), second conception (Edfu, Plutarch).<sup>145</sup>

The intricate relationship between coronation and conception is explained in the scenes that decorate the walls of the birth houses.<sup>146</sup> These late additions to the temple complex served the cult of the mother and child of the local divine triad, but they originate from New Kingdom prototypes that emphasized the divine birth of the ruling pharaoh.<sup>147</sup> In royal ideology, as was especially articulated after the reign of Hatshepsut, the king had a legitimate claim for the throne because he had been conceived by a god.<sup>148</sup> The divine nature of conception, however, was retrospectively established by the act of coronation itself, so the reception of the crown was a vital element in the birth process and was a regular scene in the birth houses.<sup>149</sup> Conception and coronation were reciprocal: divine procreation was indispensable for becoming a rightful ruler but this destiny was only revealed when the individual had actually taken possession of the royal regalia.<sup>150</sup> The same idea is expressed visually by the two seated figures placed above Libra and Leo in the zodiac.

All these nuances of the myth help us to set up a timeline for the events recorded in the zodiac in connection with the birth of Horus. The plot of the story puts them in the order conception-birth-confirmation of conception, and we must suppose that the same chronology is retained in the zodiac. In more concrete terms it means that the zodiac shows events which start off with the autumnal equinox on 25 September 52 BCE (wedjat-eye in Pisces) and come to an end with the heliacal rising of Sirius in the next year (16 July 51 BCE). The other astronomical landmarks are thus the first new moon after the autumnal equinox, winter solstice, first crescent after the vernal equinox, and the new moon before the dawn rising of Sirius. This course of events is also reflected by the circular inscription that surrounds the zodiac:

*t3 p.t nbw t3 p.t nbw 3s.t wr.t mw.t-ntr nb.t J3.t-dj hr.jt-jb Jwn.t t3 p.t nbw n3 ntr.w '3.w n3j=s sb3.w Hr.w-s3-3s.t p3j=s ntr dw3 Skr p3j=s šw Jhy p3j=s sb3 nw Wsjr p3j=s j 'h S3h p3j=s ntr Spd.t t3j=s ntr.t j.jr=w 'q pr [...] k jw jn.t.*

The golden sky, the golden sky, Isis the great one, the divine mother, lady of Dendera amidst southern Heliopolis, the golden sky. The great gods are her stars: Harsiese, her god of the morning, Sokar, her light, the child Ihy, her observed star, Osiris, her moon, Sah, her god, Sopdet, her goddess. They rise and set [for the inhabitants] of the valley below.<sup>151</sup>

First of all, the reasons for naming Isis as the golden sky and addressing her by the epithet “divine mother” are now inherently obvious. The celestial identity of her son, Harsiese, the

<sup>145</sup> For the narrative structure of the myth, see J. ASSMANN, *The Search for God in Ancient Egypt* (transl. D. Lorton), Ithaca, 2001, p. 123-148.

<sup>146</sup> Fr. DAUMAS, *Les mammisis*, p. 388-487.

<sup>147</sup> *Id.*, LÄ II, 1977, col. 462-475, s. v. “Geburtshaus”.

<sup>148</sup> H BRUNNER, *Die Geburt des Gottkönigs. Studien zur Überlieferung eines altägyptischen Mythos*, ÄA 10, 1964, p. 194-203; L. BELL, “The New Kingdom «Divine» Temple: The Example of Luxor”, in B.A. Shafer (ed.), *Temples of Ancient Egypt*, p. 137-139.

<sup>149</sup> Fr. DAUMAS, *Les mammisis*, p. 463-472.

<sup>150</sup> L. BELL, in B.A. Shafer (ed.), *Temples of Ancient Egypt*, p. 140.

<sup>151</sup> *Dend. X/1*, 175 (2)-(5); S. CAUVILLE, *Le temple de Dendera. Les chapelles osiriennes. Transcription et traduction*, BdE 117, 1997, p. 90. I follow Cauville in augmenting the text.

god of the morning is a controversial issue. The expression *ntr dwʒ* is usually translated as the “Morning Star”, and while in demotic – and some late hieroglyphic – texts it denotes the planet Venus,<sup>152</sup> in other contexts it can also be interpreted as the herald of the rising sun or the rising sun itself.<sup>153</sup> Here it surely refers to the latter on the dawn of lunar invisibility after the autumnal equinox.<sup>154</sup> The connection between *ntr dwʒ*, the Morning Star and Horus’s conception is also evident in the Edfu myth (see above). Sokar played a crucial part in the Osirian mysteries because an effigy of him was also made during the rituals;<sup>155</sup> he is included in the list for his close association with the winter solstice through his long-established festival day on IV Akhet 26, which in fact later became tied to the solstitial point in the Alexandrian calendar.<sup>156</sup> Ihy, the child god, is mentioned with an emphasis on the human action of watching, and therefore stands for the first crescent of the moon after the spring equinox which is shown being observed in the zodiac. The expression *sbʒ nw* “visible star”, signifying birth, is used to make a contrast with the invisibility of the moment of conception. The first three gods thus delineate the solar cycle, the “first round” of the birth myth. Next Osiris is named as the moon evoking the day of lunar invisibility prior to the dawn rising of Sirius. Sah-Orion and Sopdet-Sirius come last, making a clear allusion to the latter’s reappearance in mid-July and corresponding to the final phase of the celestial phenomena depicted. As the moon, Orion, and Sirius also rise close to one another after sunset at the death of Osiris (see next section), the last three named stars may relate to this event as well.

The figure of the recumbent cow showing Isis-Sopdet is preceded by the constellation of Orion, that is the astral embodiment of Osiris. When Sopdet reappears after its period of invisibility, Isis joins her husband in the sky and their meeting marks the arrival of the inundation, so Orion in a sense was also considered as a herald predicting this event.<sup>157</sup> Right on the heels of Osiris we can see a bird which has been identified as a lapwing,<sup>158</sup> ancient Egyptian *rh.yt*, and consequently it must be a concise expression of the rekhyt-rebus. In its standard form it combines the rekhyt-bird, often depicted with human hands held up in the gesture of reverence, standing on the *nb*-sign with a five-pointed star; it thus expresses the idea “all the people show adoration” (*dwʒ rh.yt nb*).<sup>159</sup> Sometimes a cartouche in front of the bird names the focus of the pious act (*dwʒ rh.yt nb N*, “all the people adore N”).<sup>160</sup> Since the rekhyt is a symbol of the subjects that are under the power of a superior authority, its appropriate place is in the lower parts of scenes,<sup>161</sup> and it is accordingly positioned at the foot of Osiris in the zodiac who also replaces the cartouches of the traditional representations. The purpose of the rekhyt-bird is therefore to give due respect to the god to whom the chapels on the roof are dedicated.

<sup>152</sup> EAT III, p. 181; It has been argued that *ntr dwʒ* already refers to Venus in the Pyramid Texts, see R. KRAUSS, *Astronomische Konzepte und Jenseitsvorstellungen in den Pyramidentexten*, ÄA 59, 1997, p. 216-226. The term refers to Venus in the zodiac itself, see figure 1.

<sup>153</sup> K. GOEBS, *Crowns in Egyptian Funerary Literature: Royalty, Rebirth, and Destruction*, Oxford, 2008, p. 21.

<sup>154</sup> For the association of *ntr dwʒ* with conjunction, see also Appendix.

<sup>155</sup> Dend. X/1, 31, 2-5; 32, 9-11 etc.

<sup>156</sup> C.J. BLEEKER, *Egyptian Festivals: Enactments of Religious Renewal*, SHR 13, 1967, p. 70.

<sup>157</sup> K. GOEBS, *Crowns in Egyptian Funerary Literature*, p. 20.

<sup>158</sup> Chr. LEITZ, SAK 34, p. 305.

<sup>159</sup> K. GRIFFIN, “A Reinterpretation of the Use and Function of the Rekhyt Rebus in New Kingdom Temples”, in M. Cannata (ed.), *Current Research in Egyptology 2006*, Oxford, 2007, p. 67.

<sup>160</sup> K. GRIFFIN, *loc. cit.*

<sup>161</sup> J.-H. WILKINSON, *Reading Egyptian Art*, p. 87.

### The death of Osiris

Osiris begets his son after he has been raised from the dead so it is not unexpected that – in addition to the references involving the nativity of Horus – the zodiac also records his demise. To understand this, we must start by recapitulating what Plutarch says about this event:

When he was away Typhon conspired in no way against him [Osiris] since Isis was well on guard and kept careful watch, but on his return he devised a plot against him, making seventy-two men his fellow-conspirators and having as helper a queen who had come from Ethiopia, whom they name Asô. Typhon secretly measured the body of Osiris and got made to the corresponding size a beautiful chest which was exquisitely decorated. This he brought to the banqueting-hall, and when the guests showed pleasure and admiration at the sight of it, Typhon promised playfully that whoever would lie down in it and show that he fitted it, should have the chest as a gift. They all tried one by one, and since no one fitted into it, Osiris went in and lay down. Then the conspirators ran and slammed the lid on ... They say that all these events occurred on the seventeenth day of the month of Athyr, when the sun passes through the scorpion, in the twenty-eighth year of the reign of Osiris. But some state that this was the period of his life rather than of his reign (*De Iside et Osiride*, ch. 13).<sup>162</sup>

The Egyptians relate that the death of Osiris occurred on the seventeenth (of the month), when the full moon is most obviously waning ... The number of twenty-eight years is said by some to have been the extent of the life of Osiris, by others of his reign; for such is the number of the moon's illuminations and in so many days does it revolve through its own cycle (*De Iside et Osiride*, ch. 42).<sup>163</sup>

We can see that Plutarch associates the death of Osiris once with a civil date, III Akhet 17, and once with a lunar one, day seventeen of the month, that he specifies as the time when the full moon is obviously over. That the two were somehow connected is hinted at on the one hand by the inclusion of the same number, seventeen, in both of them, and on the other by the reference to the number of years of Osiris's reign or life, twenty-eight, which chapter 42 clearly explains in lunar terms. Then it would be natural to conclude that the death of Osiris happened on a day when III Akhet 17 corresponded to the seventeenth day of the lunar month. However, as no such match occurred around year 52 BCE,<sup>164</sup> we can set up the working hypothesis that Plutarch's description preserves two interrelated traditions about the death of Osiris, one tied to the civil calendar and the other steeped in lunar observation. This supposition is borne out by the zodiac in which correspondingly two different images refer to this inauspicious moment.

First let us consider the civil date. In 52 BCE, III Akhet 17 fell on 20 November so the sun was in fact in Scorpio at this time of the year and that is in accordance with Plutarch's claim. In the past it was usually thought that the death of Osiris on III Akhet 17 was related to the widely attested mysteries in the next month (IV Akhet, Khoiak), and the thirty-day shift arose from Plutarch's possible reference to the Alexandrian calendar,<sup>165</sup> the reformed mode of time

<sup>162</sup> J.G. GRIFFITHS, *Plutarch*, p. 137-139.

<sup>163</sup> *Ibid.* p. 185.

<sup>164</sup> A perfect match occurred on 9 November 7 BCE, so if we calculate back with the 25-year long civil cycle, other matches fall on 15 November 32 BCE and 21 November 57 BCE. However, modern data here also suggest that in these latter two cases we have to allow for a margin of error of one day.

<sup>165</sup> R.A. PARKER, *Calendars*, p. 41; J.G. GRIFFITHS, *Plutarch*, p. 312-313.

keeping with a leap year introduced in Egypt at around 25 BCE.<sup>166</sup> The correspondences cited in this paper, however, make it unambiguous that Plutarch's dates are traditional civil ones and we must fit the date in question into this same framework. Although there are not very many attestations, some sources do corroborate that Osiris deceased on III Akhet 17. Already in some New Kingdom hemerologies (lists of lucky and unlucky days) III Akhet 17 is described as a day on which great lamentations were made by Isis and Nephthys for Osiris.<sup>167</sup> There is now also mounting papyrological evidence showing that around III Akhet 17 important feast days of Isis were celebrated in Graeco-Roman Egypt.<sup>168</sup> It seems reasonable to assume that these festivities, called *Isia* in the Greek papyri, acted as a duplicate to the mysteries in IV Akhet,<sup>169</sup> and therefore were closely connected with them. In chapter 39 of the *De Iside et Osiride* Plutarch gives a detailed description of the ritual actions unfolding in the four days that follow III Akhet 17, and his words reinforce the connection between the *Isia* and the death of Osiris, and also their position in the month of November ("the lengthening of the night darkness increases").<sup>170</sup> That the true nature of the *Isia* is not revealed in the ancient documents may be explained by the reticence of the Egyptians to make outright references to the death of Osiris.<sup>171</sup>

The day of III Akhet 17 is marked in the circular zodiac by the image placed in the exact centre showing a jackal striding on a hoe. While the relationship of this sign with the month of November remains hidden in the Osirian chapel, any doubts about its reference are dispelled by the linear zodiac where it is indeed put in the sign of Scorpio. The appearance of the jackal on the hoe in the epicentre of the round zodiac signals that III Akhet 17 was in all probability the real starting point of the mysteries that culminated in the next month, IV Akhet. This seems to be the message that the constituent elements of the sign impart. The animal is again a manifestation of Wepwawet,<sup>172</sup> and he may once more feature here in his role of opening the cult activities, all the more so because he is known to have been the initiator of the Osiris mysteries as early as the Middle Kingdom.<sup>173</sup> The presence of Wepwawet both in the central sign of the zodiac corresponding to the death of Osiris and next to the image marking the conception of Horus (the sign of Libra) thus also pictorially expresses the interrelated nature of the two events.

The allusion of the hoe is also easy to comprehend. It must point to the ceremony of "hacking up the earth" (*hbs-tʒ*) that is mentioned in connection with the mysteries of Osiris.<sup>174</sup> This ceremony is basically known from two contexts. It is often linked to the foundation rituals of temples and there it signals the digging of the trenches that delineate the plan of the future sacred edifice.<sup>175</sup> However, the association of *hbs-tʒ* with the Osirian mysteries derives from the use of the ritual in a funerary context, where it symbolically expresses the burial and resurrection.<sup>176</sup> Accordingly, it seems that in the Khoiak text of the Osirian mysteries the term

<sup>166</sup> D. HAGEDORN, "Zum ägyptischen Kalender unter Augustus", *ZPE* 100, 1994, p. 211.

<sup>167</sup> Chr. LEITZ, *Tagewählerei. Das Buch hʒt nh̄ ph.wy dt und verwandte Texte*, ÄA 55, 1994, 127.

<sup>168</sup> F. PERPILLOU-THOMAS, *Fêtes d'Égypte ptolémaïque et romaine d'après la documentation papyrologique grecque*, *StudHell* 31, 1993, p. 94-96; Gh. WIDMER, *Égypte, Afrique & Orient* 32, p. 15-18.

<sup>169</sup> Gh. WIDMER, *Égypte, Afrique & Orient* 32, p. 18.

<sup>170</sup> J.G. GRIFFITHS, *Plutarch*, p. 179-180.

<sup>171</sup> J. ASSMANN, *Death and Salvation in Ancient Egypt* (transl. D. Lorton), Ithaca, 2001, p. 190.

<sup>172</sup> J. LULL, J.A. BELMONTE, in J.A. Belmonte, M. Shaltout (ed.), *In Search of Cosmic Order*, p. 188.

<sup>173</sup> J. ASSMANN, *Death and Salvation*, p. 227.

<sup>174</sup> *Dend. X/1*, 27, 13; 29, 11; 42, 1.

<sup>175</sup> C.J. BLEEKER, *Egyptian Festivals*, p. 72; P. WILSON, *Ptolemaic Lexikon*, p. 717.

<sup>176</sup> J. ASSMANN, *Death and Salvation*, p. 280-284.

can denote the whole course of events lasting from IV Akhet 12 to 30, or at the same time be more closely associated with the first and last days.<sup>177</sup> We must now assume that the initial episodes of the mysteries in III Akhet were similarly marked by a ceremony of “hacking up the earth”, and that is why the jackal of Wepwawet is combined with the hoe in the central sign of the zodiac.

The seventeenth lunar day is represented in the zodiac by the picture of a falcon perching on a papyrus column between Osiris-Sah and Isis-Sopdet, right below Gemini. This depiction, known as Horus-on-his-papyrus-column (*Hr.w-hr.j-w3d=f*), figures in temple scenes and appears in a variety of contexts,<sup>178</sup> but more importantly the Graeco-Roman lists that name the eponymous deities of the days of the lunar month match him with day seventeen,<sup>179</sup> and he is also referred to at the end of Coffin Texts spell 157 to close down the description of the events relating to the full moon (see Appendix).<sup>180</sup> As Plutarch himself explains, the seventeenth lunar phase signifies the death of Osiris because on this day the waning of the moon becomes quite apparent. Behind this statement must lie the scientific truth that day seventeen puts an end to the time window within which the full moon in a particular month can occur.<sup>181</sup> The moon in its seventeenth phase can only be found in the sky occupying the place where it is shown in the zodiac, in Gemini and close proximity to Orion, in November, that is when the sun is in Scorpio [figs. 6 and 8]. On this day not only is the seventeenth phase of the moon the closest to Orion, but it also rises simultaneously with that constellation, the astral embodiment of Osiris. Consequently, now we can once more appraise the full import of Plutarch’s account of the death of Osiris. Clearly, this event was fixed in the civil calendar on III Akhet 17, but it was also commemorated by a movable ceremony that fell on the seventeenth lunar day in November, that is when the sun moved through Scorpio (24 October–22 November, to be more precise). The two occasions tended to coincide in the 1st century BCE, when the month of III Akhet was synchronous with November, although perfect matches only occurred in the years 82 and 7 BCE.

The death of Osiris, as marked by Horus-on-his-papyrus-column around Gemini and Orion, is connected with the image of the sitting baboon carrying an oryx placed next to the wedjat-eye, because a falcon wearing a crown is also perching on the head of the ape. It must be realized, however, that the baboon and the oryx belong to the wedjat-eye and together they form a composite sign that relates to the events of 25 September 52 BCE. The whole ensemble is thus made up of three elements that are arranged to paraphrase the *wnšb*-symbol (𓀃). This tripartite hieroglyph originally combines the sitting baboon with the column at his back as they are both placed on a basket.<sup>182</sup> From similarly fashioned objects now found in museum collections it is clear that on the one hand the wensheb – that is its upper part made up of the baboon and the column or vase – was a kind of waterclock,<sup>183</sup> while on the other its presence in the lists of ritual equipment, and the numerous temple scenes that show its presentation to divine beings indicate that it was also considered a more abstract symbol of

<sup>177</sup> É. CHASSINAT, *Le mystère d’Osiris*, p. 34-36, 231-232, 503-505.

<sup>178</sup> W. GUGLIELMI, K. BUROH, “Die Eingangssprüche des Täglichen Tempelrituals nach Papyrus Berlin 3055 (I, 1-VI, 3)”, in J. van Dijk (ed.), *Essays on Ancient Egypt in Honour of Herman te Velde*, Groningen, 1997, p. 115.

<sup>179</sup> *Dend.* XV, 33, 8; *TIA* I, p. 47.

<sup>180</sup> *CT* II, 348a.

<sup>181</sup> R.A. PARKER, *Calendars*, p. 13.

<sup>182</sup> Ch. SAMBIN, “Les objets šbt des musées”, *BIFAO* 87, 1987, p. 275.

<sup>183</sup> *Ibid.*, p. 291-292; A. POGO, “Egyptian Water Clocks”, *Isis* 25, 1936, p. 414-416, pl. 4; D. KURTH, *Die Inschriften des Tempels von Edfu. Abteilung I Übersetzungen Band 2, Edsou VII*, Wiesbaden, 2004, p. 650-652.

ordered, cyclical time.<sup>184</sup> In other words, the addition of the basket, a regular container of offering goods, to the waterclock (the baboon and the column) lifted off the original object from its mundane use and placed it in a higher symbolic sphere. The relevant scenes in the Graeco-Roman temples usually show the king acting as the son of Thoth, or as someone closely in allegiance with Thoth, as he hands over the symbol to a goddess, most often Hathor (as the distant eye of Re), who in turn grants the pharaoh all that the gaze of the two heavenly eyes, the sun and the moon, encircles, and ensures that the two eyes are at their proper place.<sup>185</sup> Thus the wensheb is a symbol that embodies the mutual motion of the sun and the moon and therefore serves as a particularly apt image to refer to an eclipse. This must be so even if Horapollo (I.16), the Greek author who penned down often rather enigmatic descriptions of hieroglyphic signs in the 4th century CE, primarily associates the wensheb with the equinoxes when he writes that the Egyptians sculpt a sitting baboon on their waterclocks because it urinates at twelve equal intervals during the day and night at these occasions.<sup>186</sup>

A scene depicting the presentation of the wensheb in one of the crypts of the Dendera temple may also provide an explanation for the replacement of the column with the oryx because it is situated next to another one that shows the killing of the oryx.<sup>187</sup> It is a basic rule of “temple grammar” that the scenes carved side by side had some bearing on each other.<sup>188</sup> The connection between the two rituals is already clear from the very earliest instance when the offering of the wensheb was recorded in the birth room of the Luxor temple built by Amenhotep III.<sup>189</sup> The captions that accompany some other examples of the slaughtering of the oryx also establish a connection with the time of the full moon. Thus we can read: “Slaying the oryx. To be recited: The oryx is burnt and killed as the wedjat-eye is provided with its constituent elements. Moon, come so that you may wander through the sky and your movement could be whole and sound” (*sm3 m3-hd dd-mdw mh nsr.tw m3-hd m ds.tw wd3.t 'pr.tw m r.w=s hr.j-j3b.t m hns=k m h3j.t nm.t=k jr.(t) m 'd wd3*).<sup>190</sup> Similarly, on the propylon of Ptolemy III at Karnak the time for the sacrifice of oryx is specified as the opposition of the setting sun and the rising full moon (“Khonsu-Moon ... rises from the eastern mountain as the solar disc is on the western mountain”; *Hnsw-J'h ... wbn m b3hw jw jtn m 'nh.t*).<sup>191</sup> The relation between the full moon and the oryx is also intimated by Horapollo (I.49) who says that “the ancient kings, when the astrologers foretold the rise [of the moon and the sun] to them, placed themselves near this beast and determined by it as by means of a sort of gnomon the exact moment of the rise”.<sup>192</sup>

Horapollo (I.49) also describes the oryx as an inimical creature that does not pay the proper respect to the moon.<sup>193</sup> While we know that the oryx in ancient Egypt, especially from the Late Period onwards, symbolized the forces of chaos in general,<sup>194</sup> the ancient Egyptian roots

<sup>184</sup> Ch. SAMBIN, *L'offrande de la soi-disant “Clepsydre”*. Le symbole šbt/wnšb/wtt, *StudAeg* 11, 1988; P. WILSON, *Ptolemaic Lexikon*, p. 238-239.

<sup>185</sup> P. WILSON, *loc. cit.*

<sup>186</sup> G. BOAS (transl.), *The Hieroglyphics of Horapollo*, *BollSer* 23, 1993, p. 55.

<sup>187</sup> *Dend.* V, 67, 12-69, 4 and pl. 369, 372, 373; Ph. DERCHAIN, *Le sacrifice de l'oryx*, *RitesEg* 1, 1962, p. 24.

<sup>188</sup> P. WILSON, “Temple Architecture and Decorative Systems”, in A.B. Lloyd (ed.), *A Companion to Ancient Egypt* II, Chichester, 2010, p. 794.

<sup>189</sup> A. GAYET, *Le temple de Louxor*, MMAF 15, 1894, pl. 68.

<sup>190</sup> *Edfou* III, 138, 17-139, 2. See also *Edfou* VI, 263, 10-11.

<sup>191</sup> *Urk.* VIII, 61b. See also Fr. COLIN, Fr. LABRIQUE, “Semenekh oudjat à Bahariya”, in Fr. Labrique (ed.), *Religions méditerranéennes et orientales de l'antiquité*, *BdE* 135, 2002, p. 53-54.

<sup>192</sup> G. BOAS, *Horapollo*, p. 65-66.

<sup>193</sup> G. BOAS, *loc. cit.*

<sup>194</sup> L. KÁKOSY, *Egyptian Healing Statues*, p. 18-19.

of the statement about the animal's particular hostility towards the moon may be given away by Coffin Texts spell 157.<sup>195</sup> This text, it must be emphasized, is part of a longer composition that through a wide variety of mythological references takes stock of lunar phenomena in a chronological order (see Appendix). The oryx enters the scene when the full moon arrives:

*jn jw=tn rh.tjwnj rd.t Pj n Hr.w hr=s n rh=tn st jw=j rh.kw st jn R` rdj nef sw m jsw j3t.t m jr.t=j  
jw=j rh.kw st R` pw dd.nef n Hr.w jmj m33=j jr.t=k dr hpr nw r=s m33.nef s(t) dd.jn=f dg r pf=k  
hbs(.w) m wd3.t jmj.t wn jn Hr.w hr dg.t r pf dd.jn Hr.w mk wj m33=f hd.wj hpr m3-hd pw.*

Do you know why Pe was given to Horus? You do not know it, but I know it. Re gave it to him as compensation for his injured eye. I know it. It was the case that Re said to Horus: "Let me see your eyes because this happened to it". As he looked at it, he said: "Take a look at this part as your hand covers the sound eye". And then Horus looked at that part and said: "Behold, I see it altogether bright". And this is how the oryx came into being.<sup>196</sup>

The temporary covering of the eye of Horus, that is the moon, and the oryx is associated through a pun between the phrase *wj hr m33=f hd.wj* and the name of the animal *m3-hd*. This text, which survived into Ptolemaic times as chapter 112 of the Book of Going Forth by Day, therefore hints at the reason why the creators of the zodiac chose the oryx to be part of the symbol that represented the lunar eclipse of 25 September 52 BCE. It should not be forgotten, however, that on this day three celestial phenomena coincided and we can now see that each individual element in the three-piece symbol that marks the day corresponds to one of these: baboon – autumnal equinox, wedjat-eye in disc – full moon, and oryx – lunar eclipse. In fact, since in the linear zodiac the symbol does not mark an eclipse (see below), we are led to believe that, in accordance with Horapollo's claims about the waterclock and the foretelling powers of the oryx, the main purpose of the symbol was to record the coincidence of the full moon with the autumnal equinox. The rationale behind this can easily be comprehended. On such a day the periods of daylight and night were evenly proportioned, and in addition the sun and the moon, the latter as an intact disc mirroring its diurnal counterpart, spent the same amount of time in the sky. In other words, 25 September 52 BCE was a perfect day when the ordered state of the world, Egyptian maat, was tangible and cosmic equilibrium was perceived on more than one level. From this viewpoint, the eclipse that took place on the same day was an important, perhaps to some extent ominous, but still only collateral event.

Horus-on-his-papyrus-column thus signals the death of Osiris at the end of a period that starts off with the day 25 September 52 BCE marked by the innovatively rehauled wensheb. As for the length of this period, an important clue is provided by Plutarch who says that Seth was helped by seventy-two conspirators in his plot against Osiris. Joachim Quack has already conjectured that the appearance of this number in some Hellenic astrological and eschatological works may be based on the reduplication of thirty-six, that is the number of decans making up one full circle of the celestial vault.<sup>197</sup> Translated into temporal terms, the seventy-two conspirators consequently correspond to two entire revolutions, that is two years. As Plutarch himself relates in chapter 39 that the seventy-third conspirator, the Ethiopian queen symbolizes the cessation of the northerly winds in the month of III Akhet,<sup>198</sup> we must therefore conclude that Horus-on-his-papyrus-column marks the death of Osiris on the

<sup>195</sup> Ph. DERCHAIN, *Le sacrifice de l'oryx*, p. 29.

<sup>196</sup> CT II, 330d-338b (B4L<sup>b</sup>).

<sup>197</sup> J.Fr. QUACK, "Dekane und Gliederung. Altägyptische Traditionen im Apokryphon Johannis", *JAC* 38, 1995, p. 101-102.

<sup>198</sup> J.G. GRIFFITHS, *Plutarch*, p. 179.

seventeenth lunar day in that month two years after the autumnal equinox in 52 BCE, on the day of 4 November 50 BCE (III Akhet 1). Indeed, the position of his emblem below Gemini in the zodiac closely reflects where the newly waning moon was actually observed in the sky on that particular day [fig. 6].

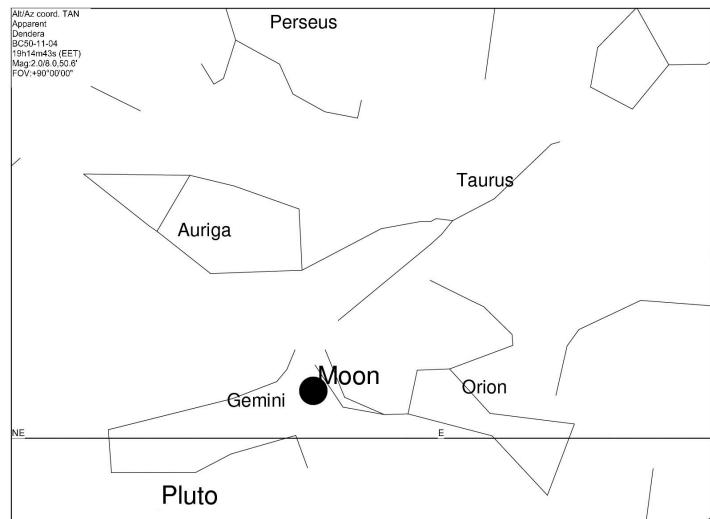


Fig. 6. Seventeen-day moon around Gemini and Orion rising simultaneously on 4 November 50 BCE.

Between the two dates, 25 September 52 BCE and 4 November 50 B.C.E., exactly 770 days elapsed and the significance of this period is obvious from the descriptions of the death of Osiris. The fixed civil date marking this event, III Akhet 17, is the seventy-seventh day of the year. It therefore does not come as a surprise that in the second register around the walls of the second eastern Osirian chapel the seventy-seven guardian deities of Pharbaitos are depicted and named.<sup>199</sup> We may now surmise that these divine beings protected not only the seventy-seven civil days counting from the start of the year, but also the 770 days recorded in the zodiac, in the latter case each guardian standing in for a ten-day period, the basic weekly unit of the Egyptian calendar.<sup>200</sup> This does not necessarily imply that this group of seventy-seven deities, counteracting the equally numbered forces of evil and first attested in the Late Period,<sup>201</sup> was established in view of the 770-day period. The builders of the Osirian chapel may just have used the group, originally established for the reason that the number seven generally had magical powers in ancient Egypt,<sup>202</sup> because it really fitted their purpose. It is, however, notable that the seventy-seven guardian deities are connected to the local cult of “Horus of the Two Eyes” (*Hr.w-mr.tj*) at Pharbaitos, an avatar of Horus that embodies the concept of the two heavenly eyes, the sun and the moon.<sup>203</sup>

<sup>199</sup> *Dend.* X/1, 94, 8-113, 15; *Dend.* X/2, pl. 43-46, 69-72.

<sup>200</sup> R.A. PARKER, *Calendars*, p. 55.

<sup>201</sup> J.-Cl. GOYON, *Les dieux-gardiens et la genèse des temples (d'après les textes égyptiens de l'époque gréco-romaine). Les soixante d'Edfou et les soixante-dix-sept dieu de Pharaethos I*, *BdE* 93, 1985, p. 189-193, 203-208.

<sup>202</sup> K. SETHE, *Von Zahlen und Zahlwörtern bei den alten Ägyptern*, *Schriften der Wissenschaftlichen Gesellschaft Strassburg* 25, 1916, p. 33-37. D. KLOTZ, *Adoration of the Ram: Five Hymns to Amun-Re from Hibis Temple*, *YES* 6, 2006, p. 168-169.

<sup>203</sup> J.-Cl. GOYON, *Les dieux-gardiens*, p. 158-159.

Another, more subtle numbers game may associate the 770 days with the navigational ceremony of the mysteries that was carried out on IV Akhet 22. On this day a flotilla of thirty-four model boats with the small cult statues of gods and 365 lights on board were made to sail on the sacred lake situated next to the temple.<sup>204</sup> While the 365 lights obviously evoke the length of the year, the role of thirty-four is not evident. The same numbers also show up in the building inscription that records the construction of the naos because it states that it took thirty-four years (34 times 365 days) to erect the main part of the edifice.<sup>205</sup> From this inscription three specific dates can be reconstructed corresponding to the times when the foundations were laid (16 July 54 BCE), the temple was put in service (15 February 29 BCE), and the work was finished (7 July 20 BCE).<sup>206</sup> These three dates are timed in such a way that the proportion of the periods separating them – 8090 and 3430 days – equals the square of the golden ratio ( $8090 \div 3430 = 2.61807$ , precise to four decimal places).<sup>207</sup> Now if the number thirty-four is multiplied not by 365 but by 770 days, the result will be 26180 days (10000 days multiplied by 2.6180). Here numerology and astronomical observation again converge because this longer period is quite close to the half of 1773 synodic months, meaning that if its starting point coincides with full moon, there is a good chance that it will terminate at conjunction (new moon). Indeed, this is the case with 25 September 52 BCE (opposition) and the end point 26180 days later, 30 May 21 CE (conjunction).<sup>208</sup> These calculations, though someone may perhaps dismiss them as much speculative, offer an explanation for why the zodiac recorded the 770-day period and how it was related to the motions of the sun and the moon on the one hand, and to the mysteries on the other.

In addition, the 770-day period seems to be recorded in another Egyptian source, though admittedly this piece of evidence is a bit roundabout and far removed in time from the Dendera zodiac. In spell 519 of the Pyramid Texts a 770-cubit long celestial boat is described that is built by the gods of Pe and the eastern gods for an entity that shows close affinities with the theme of the zodiac as he is addressed the “Morning Star, Horus of the Netherworld, divine Falcon, *w3d3d*-bird whom the sky bore” (*ntr dw3 Hr.w-dw3.tj bjk ntr w3d3d msj.w p.t.*).<sup>209</sup> Noteworthy is the detail that the name of this bird contains the papyrus column (*w3d*). Also, the Morning Star and Horus of the Netherworld are similarly called upon in the divine order that Thoth issues for the protection of Osiris and the infant Horus in the Edfu myth (see above). The Morning Star features in the circular inscription of the zodiac, too, while Horus of the Netherworld is in all probability depicted next to the Libra sign. Since the more thorough analysis of this spell would lead us quite astray from our present topic, suffice it to say here that there are numerous astral references in the text so it is entirely possible that the number 770 relating to the length of the boat wants to symbolically represent a period of time that lasts 770 days.

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<sup>204</sup> *Dend.* X/1, 37, 14-38, 3.

<sup>205</sup> H.I. AMER, B. MORARDET, “Les dates de la construction du temple majeur d’Hathor à Dendera à l’époque gréco-romaine”, *ASAE* 69, 1983, p. 256-257.

<sup>206</sup> G. PRISKIN, “The Golden Ratio in Ptolemaic Temple Design”, *GM* 194, 2003, p. 60.

<sup>207</sup> *Ibid.*, p. 61.

<sup>208</sup> Also the date of a partial solar eclipse not observable from Dendera.

<sup>209</sup> *Pyr.* §1207a-b. Translation from R.O. FAULKNER, *The Ancient Egyptian Pyramid Texts*, p. 192.

### The anthropomorphic figure with a hoe

The bull-headed figure with a hoe in his hands stands in Virgo in both zodiacs.<sup>210</sup> In 52 BCE this sign encompassed the period approximately between IV Shemu 23 and I Akhet 19 (23 August to 23 September 52 BCE). Within this time span only one ritual activity of the mysteries took place but it can easily be associated with a figure holding a hoe. According to a text that was once written on the doorjambs leading into the first western chapel but which has now all but disappeared,<sup>211</sup> the barley, emmer, and flax needed for the mysteries were to be sown on a specially designated plot of land between I Akhet 12 and 19.<sup>212</sup> In fact, this inscription is a duplicate of a passage from the Khoiak text in which, however, the time for cultivating the plot of Osiris is wrongly given as lasting from I Peret 12 to 19.<sup>213</sup> This error, the replacement of I Akhet with I Peret must have crept into the text because of the next date specified, I Peret 20, the day when the crops were to be harvested.<sup>214</sup> Only the first set of dates – sowing on I Akhet 12 and harvest some four months later, on I Peret 20 – can be fitted into a realistic time frame,<sup>215</sup> and thus we can see that the first stage of work was carried out on the special plot of the mysteries at the beginning of September, that is when the sun was in fact dwelling in Virgo. The bull-headed anthropomorphic figure therefore must signal this episode of the mysteries, the real sowing of the seeds that eventually led to the resurrection of Osiris. His posture with the hoe resembles that of King Scorpion shown as taking part in an agricultural ceremony on his macehead,<sup>216</sup> and the bull's head is perhaps a reference to the Apis bull, and thus indirectly to the two black cows that are said to draw the plough during the sowing ritual.<sup>217</sup>

### The decans

The decans, arranged in a circle along the outer rim, form an indispensable element of the zodiac because they are included in the same frame as the constellations of the northern sky (the hippopotamus and the leg), the signs of the ecliptic, the planets, and the other images that have been described so far. In the pronaos the same idea is expressed by placing both the band of the zodiac and the adjacent register of the decans within the embrace of Nut. In the case of Capricorn we could see that these stars, with some transformations, even made their way into the innermost group of signs. The decans in fact offer additional illustrations for the story that is told by the other elements of the zodiac. To reveal their role in this respect, first they have to be grouped so that three decans belong to each zodiacal sign. The reference point of such a reconstruction is the order of the Tanis lists which in the majority of the cases starts with the

<sup>210</sup> Teukros, uniquely among the Hellenic astronomers, identifies one of the decans of Virgo as a bull-headed figure with a plough (“half the bull-headed ploughman and half the plough”), see F. BOLL, *Sphaera*, p. 227-232; Chr. LEITZ, *SAK* 34, p. 307-309. His description again very closely matches the relevant figure at Dendera, and this adds further weight to the assumption that for his work he may have been inspired by the images shown on the Dendera zodiacs. The Greeks had their own similar constellation, never bull-headed, north of Virgo still known as Bootes (ploughman or herdsman).

<sup>211</sup> S. CAUVILLE, *Les chapelles osiriennes. Commentaire*, p. 133.

<sup>212</sup> É. CHASSINAT, *Le mystère d'Osiris*, p. 498-501.

<sup>213</sup> *Dend.* X/1, 35, 13-14.

<sup>214</sup> *Dend.* X/1, 36, 5.

<sup>215</sup> É. CHASSINAT, *Le mystère d'Osiris*, p. 510-511.

<sup>216</sup> S. HENDRICKX, F. FÖRSTER, “Early Dynastic Art and Iconography”, in A.B. Lloyd (ed.), *A Companion to Ancient Egypt*, p. 839, fig. 37.10.

<sup>217</sup> *Dend.* X/1, 35, 15.

decan called *knm.t*.<sup>218</sup> As already mentioned above, later lists of decans written in Greek but with names that derive from the original Egyptian designations also help to establish correspondences because they also group the decans according to the signs of the zodiac. The number of insights we can gain in this way are, however, limited because the later Greek sources commingle two different series of the decans (Seti I B and Tanis).<sup>219</sup> Nonetheless, on the basis of the anchor points provided by the Greek documents, and through the collation of the names and depictions with the linear zodiac, the triads belonging to the individual signs can be determined with a fair degree of certainty [Table 2].<sup>220</sup>

The matching of three decans with the zodiacal signs is fairly straightforward and mechanical once the starting point of *knm.t* is determined, but a few things should be noted. Two images, the crocodile-headed pedestal in Libra and the ram in Aquarius are not named. As for the latter, it seems to bear a caption, but on the evidence presented above, that is on the analogy with other lists found elsewhere, we must assume that the designation *s3-sr.t* refers to the previous image of the bound captives within the solar disc. The matter is confounded even further by the reversion of the two names, *sr.t* and *s3-sr.t*, because the earlier should refer to the bird and not the complex depiction in front of it. These emendations, however, come about naturally if we want to keep the images and captions in line. Between Gemini and Cancer we find what I dubbed the intercalation, which in the circular zodiac consists of only one decan probably representing the five epagomenal days, the period of time that was by definition (*hrj.w-rnp.t*, “those above the year”)<sup>221</sup> an addition to the core year of 360 days, and was occasionally seen as somewhat separate from it.<sup>222</sup>

One striking feature of the decanal procession is its asymmetrical layout [fig. 1]. Whereas between Gemini and Virgo the figures standing for the decans are dispersed casually, in the opposing semicircle, from Libra to Taurus, they follow each other in compact density, without having any gaps between the individual signs, except perhaps for the three decans of Libra which seem to form a group of their own. This “weighing” of the decans may be understood as yet another iconographic device to draw attention to the months between the autumnal and spring equinox, during which the sun travels from Libra to Taurus and simultaneously the cosmic mystery of Horus’s conception, prenatal development, and birth unfolds. At the same time, the concentration of decans next to the zodiacal signs of this period follows naturally from the fact that some of the decanal images also wish to narrate the story of nativity so they must stand close to their governing zodiacal sign.

The images of the decans belonging to Capricorn allude to concepts that are concerned with the sun’s path around the time of the winter solstice (see above). In the decan list their signification is augmented with yet another visual pun. The three decans of Capricorn are flanked on both sides by the identical figure of a ram, the only difference between the two being that the one in Aquarius is much bigger than its counterpart at the end of Sagittarius.

<sup>218</sup> EAT III, p. 141.

<sup>219</sup> Ibid., p. 170.

<sup>220</sup> For the names of the decans, see *Dend. X/1*, 173-174, and XV, 23, 4-24, 1; 45, 4-13.

<sup>221</sup> P. WILSON, *Ptolemaic Lexikon*, p. 665.

<sup>222</sup> R.A. PARKER, *Calendars*, p. 54; A. SPALINGER, “Some Remarks on the Epagomenal Days in Ancient Egypt”, *JNES* 54, 1995, p. 33-34.

| <i>Sign</i>   | <i>Osirian chapel</i> | <i>Pronaos</i>                                  | <i>Greek name</i> |
|---------------|-----------------------|---|-------------------|
| Cancer        | <i>knm(t)</i>         | [...]   |                   |
|               | <i>hr.j-knm</i>       | [...]   |                   |
|               | <i>dʒ.t</i>           | <i>hʒ.t-dʒ.t</i>                                |                   |
| Leo           | <i>dʒ.t</i>           | <i>dʒ.t</i>                                     |                   |
|               | <i>ph.wj-dʒ.t</i>     | <i>ph.wj-dʒ.t</i>                               |                   |
|               | <i>tm</i>             | <i>tm</i>                                       |                   |
| Virgo         | <i>wšʒ.tj</i>         | <i>wšʒ.tj</i>                                   |                   |
|               | <i>bʒk</i>            | <i>bʒ-qd</i>                                    |                   |
|               | <i>jps.t</i>          | <i>jps.t</i>                                    | αφοσο             |
| Libra         | <i>sbhs</i>           | <i>sbhs</i>                                     | σουχωε            |
|               | (without name)        | <i>tp.j- ‘hn.t</i>                              | πτηχου            |
|               | <i>hr.j-jb-wjʒ</i>    | <i>hr.j-jb-wjʒ</i>                              |                   |
| Scorpio       | <i>sp.t[...]</i>      | <i>sp.t-hnw</i>                                 | στωχνηνε          |
|               | <i>sšm</i>            | <i>sšm</i>                                      | σεσμε             |
|               | <i>sʒ-sšm</i>         | <i>sʒ-sšm</i>                                   | σισιεμε           |
| Sagittarius   | <i>knm</i>            | <i>knm</i>                                      |                   |
|               | <i>tp.j- ‘-[...]</i>  | <i>tp.j- ‘-smd</i>                              |                   |
|               | <i>pʒ-sbʒ-w‘</i>      | <i>&lt;pʒ-sbʒ-w‘.tj&gt;</i>                     |                   |
| Capricorn     | <i>smd</i>            | <i>pʒ-sbʒ-w‘.tj</i>                             | σματ              |
|               | <i>sr.t</i>           | <i>smd</i>                                      | σρω               |
|               | <i>sʒ-sr.t</i>        | <i>sʒ-sr.t</i>                                  | ισρω              |
| Aquarius      | (without name)        | <i>tp.j- ‘ʒh.w</i>                              | πτιαν             |
|               | <i>tp.j- ‘-ʒh.w</i>   | <i>ʒh.w</i>                                     | αεν               |
|               | <i>ʒh.w</i>           | <i>tp.j- ‘-bʒ.w</i>                             | πτηβυου           |
| Pisces        | <i>tp.j- ‘-bʒ.w</i>   | <i>bʒ.w</i>                                     | βιου              |
|               | <i>bʒ.w</i>           | <i>tp.j- ‘-bʒ.w</i>                             |                   |
|               | <i>hn.t-hr.j</i>      | <i>hn.t-hr.j</i>                                | χονταρε           |
| Aries         | <i>h‘-hr.j</i>        | <i>hn.t-hr.j</i>                                |                   |
|               | <i>qd</i>             | <i>qd-ʒ</i>                                     |                   |
|               | <i>sʒ-qd</i>          | <i>sʒ-qd</i>                                    |                   |
| Taurus        | <i>hʒ</i>             | <i>hʒ.w</i>                                     |                   |
|               | <i>‘rj.(t)</i>        | <i>‘rj.t</i>                                    |                   |
|               | <i>rmn-hr.j</i>       | <i>rmn-hr.j</i>                                 |                   |
| Gemini        | <i>ts- ‘rq</i>        | <i>ts- ‘rq</i>                                  |                   |
|               | <i>rmn-hr.j</i>       | <i>rmn-hr.j</i>                                 |                   |
|               | <i>w‘r</i>            | <i>w‘r</i>                                      |                   |
| Intercalation | <i>ph.wj-hr.j</i>     | <i>Jhy, Hw.t-Hr.w, ʒs.t</i><br>(in one barque); |                   |
|               |                       | <i>R‘-smʒ-tʒ.wj</i>                             |                   |
|               |                       | <i>ph.wj-hr.j</i>                               |                   |
|               |                       | <i>Jhy</i>                                      |                   |

Table 2. The decans belonging to each sign in the two Dendera zodiacs.

The ram, as mentioned above, is a well-known solar symbol, usually of the evening sun; here it also wears the solar disc on its horns and signifies not the daily but the annual period of solar decline, for the change in size no doubt once more expresses that after the lowest point in the yearly cycle at the winter solstice (the very end of Sagittarius), the sun turns the trajectory of its path and begins to regain its strength.

In Libra the appearance of mummified Osiris may evoke the scenes of postmortem sexual intercourse between him and Isis, and thus conception.<sup>223</sup> The next decan shows a pedestal from which the head of a crocodile with horns and solar disc on top protrudes and this image, as the crocodile was often associated with the morning aspect of the solar deity,<sup>224</sup> may refer to the rising sun. This decan is followed by a sitting baboon travelling in a boat (inscribed into the lunar disc in the linear zodiac), making a reference to the moon,<sup>225</sup> and perhaps more specifically to the time of conjunction (see Horapollo I.14),<sup>226</sup> so the last two representations in Libra combined may allude to the invisible moon meeting the rising sun, and thus define the exact moment of conception. In Pisces the first decan is a rectangular base with four ram heads. An anthropomorphic or zoomorphic figure with four ram heads may stand for the midday sun,<sup>227</sup> but it has much wider connotations as well, and is often employed to refer to the “United Ba”, a composite and complex entity who embodies the ultimate balance of forces in the world.<sup>228</sup> As such, it is a fitting image to pair up with the depiction of the moon, baboon, and oryx in Pisces signalling the initial point of events, the synchronous arrival of the autumnal equinox and the full moon manifesting the state of ideal cosmic equilibrium.

Horus is born when the sun travels through Aries and not surprisingly the first decan of this sign is a well-known symbol of birth, a child emerging from a lotus flower.<sup>229</sup> Now we can see that the priest standing in front of Gemini is not only looking towards Aries in expectation, but he is actually gazing at the moment of birth. While the significance of the square with four human-headed rearing cobras eludes me for the moment, the third decan of the sign, the support with a ram’s head bearing the solar disc within a boat may stand for the setting sun on the evening of Horus’s birth. His arrival is concomitantly signalled by the appearance of the first crescent in Taurus and accordingly its first decan is represented as a woman in the traditional posture of giving birth.<sup>230</sup> A link between such an image and the moon is also attested by the picture of a child-bearing woman actually inscribed into the lunar disc depicted with a crescent at the bottom on a robe that was most probably used in the initiation ceremonies of the Isis cult in the 2nd-3rd centuries CE.<sup>231</sup> The next decan is a pig and this image may be connected with two mythemes. One interweaves the figure of the young Horus with the myth about his celestial eyes in Coffin Texts spell 157 and states that “when Horus was a child, his sacrificial animal was the pig before the injury to his eye” (*wnn Hr.w m*

<sup>223</sup> *Dend.* X/2, pl. 87, 90, 237, 239. Also D. O’CONNOR, *Abydos: Egypt’s First Pharaohs and the Cult of Osiris*, London, 2009, p. 36, fig. 9.

<sup>224</sup> A. PIANKOFF, *La création du disque solaire*, *BdE* 19, 1953, p. 67-69; H. BEINLICH, *Das Buch vom Fayum. Zum religiösen Eigenverständnis einer ägyptischen Landschaft*, *ÄA* 51, 1991, p. 391, pl. 9;

<sup>225</sup> For a comparable image see O.E. KAPER, “The Astronomical Ceiling of Deir el-Haggar in the Dakhleh Oasis”, *JEA* 81, 1995, p. 176, fig. 1.

<sup>226</sup> G. BOAS, *Horapollo*, p. 52-53.

<sup>227</sup> *Edfou III*, pl. 71; S. CAUVILLE, *Dendera XV. Traduction*, pl. 6; *Esna IV*, fig. 1 (strip D).

<sup>228</sup> D. KLOTZ, *Adoration of the Ram*, p. 168.

<sup>229</sup> R.H. WILKINSON, *Reading Egyptian Art*, p. 20-21.

<sup>230</sup> A. GARDINER, *Egyptian Grammar*, Oxford, 1957, p. 448.

<sup>231</sup> G. TALLET, “La fabrique des rites en Égypte gréco-romaine. Réflexions sur une tunique historiée de Saqqara”, in G. Gorre, P. Kosmann (ed.), *L’Égypte ptolémaïque dans l'espace méditerranéen, oriental et africain*, Paris, 2011, p. 150-151, fig. 1.

*hrd.t=f hpr hr.wt=f m rrj jw.t mr.t jr.t=f).*<sup>232</sup> Alternatively, the animal may be a sow, and thus perhaps connects to the story inscribed onto the Metternich stela (4th century BCE) in which Isis – in her attempt to save her son from the effects of a scorpion’s bite – recites to him: “a cat has nursed you in the house of Neith, a sow and a dwarf were the protection of your body” (*mn.t n tw mjw m-hnw Hw.t-Nj.t rr.t hj.t m s3 n h.w=k*).<sup>233</sup> In the hieroglyphic text the determinative of *rr.t* is a hippopotamus with the posture of Taweret, so it is perhaps after all not a sow,<sup>234</sup> but the pig in the zodiac (female *rr.t*), through homonymy, may still allude to it no matter what ultimate form this protective being in the different contexts assumes.

### The linear zodiac

Throughout the analysis of the round zodiac many references were made to its linear counterpart in the pronaos consisting of the easternmost and westernmost strips of the astronomical ceiling. The parallels so far cited have already highlighted the similarity of the two artefacts but now the rectangular zodiac will be described on its own, often reiterating the points mentioned beforehand, to demonstrate that essentially the same principles governed its design. We may expect that the differences that are noticeable between the two zodiacs resulted, at least to a certain extent, from the fact that the linear zodiac is found in a part of the temple that served a different function from the small cult chapels especially dedicated to Osiris, and was therefore perhaps more accessible to a wider spectrum of the public. However, it will turn out that this did not really affect the overall message of the zodiac and the differences stem from two factors: the rectangular layout and the different point in time when the linear zodiac was created. As for this latter, a Greek building inscription in the pronaos provides the first clue.<sup>235</sup> Although in the past it was believed to point to a particular year, now it is generally accepted that the ambiguities of the text only allow for a wider time span at the end of the reign of Tiberius, so on its basis it can only be stated that work on the pronaos was initiated within a period of five years, between 32 and 37 CE.<sup>236</sup>

In the circular zodiac the starting point of events related to the birth of Horus was signalled by the composite symbol of the baboon, oryx, and wedjat-eye in Pisces recording the day of the autumnal equinox and the total lunar eclipse on 25 September 52 BCE. In the linear zodiac in the same constellation we find a disc within which a human figure holds a pig by the hind legs. While this image can easily be interpreted as identical with the disc showing a goddess with a pig (or baboon?) in the circular zodiac, the differences between them are not negligible. Even if the animal is the same, and this is not at all certain, the humans are markedly different. In the circular zodiac it is a female, most probably the goddess Isis, restraining the animal at the time of a solar eclipse, and in the pronaos it is a male who – because of the green colour of his skin – must be Osiris.<sup>237</sup> In one passage Plutarch mentions that the Egyptians sacrifice a pig at full moon once every year and they link this act with the story that

<sup>232</sup> *CT II*, 344b-345b (B4L<sup>b</sup>).

<sup>233</sup> C.E. SANDER-HANSEN, *Die Texte der Metternichstele*, *AnAeg* 7, 1956, p. 44. Translation from J.F. BORGHOUTS, *Ancient Egyptian Magical Texts*, NISABA 9, 1978, p. 70.

<sup>234</sup> *Ibid.*, p. 109, n. 245.

<sup>235</sup> *Inscriptiones Graecae ad res Romanas pertinentes* I, Paris, 1901, p. 398, no. 1164.

<sup>236</sup> E. WINTER, “A Reconsideration of the Newly Discovered Building Inscription on the Temple of Denderah”, *GM* 108, 1989, p. 76, n. 2; R. ALSTON, *The City in Roman and Byzantine Egypt*, London, 2013, p. 201.

<sup>237</sup> G. ROBINS, “Color Symbolism”, in D.B. Redford (ed.), *Oxford Encyclopedia of Ancient Egypt* I, Oxford, 2001, p. 291.

Seth found the body of Osiris while pursuing a pig in the light of the full moon.<sup>238</sup> Besides some other ancient authors (Herodotus, *The Histories* II.47, Aelian, *On the Characteristics of Animals* X.16),<sup>239</sup> this connection of the full moon with the pig is corroborated by an entry in the festival calendar of Hathor at Edfu which states about the great lunar festival of I Shemu (Pachons): “the festival of the fifteenth lunar day of this month, the day of the filling of the wedjat-eye (= full moon), a great festival in the whole country ... a pig is slaughtered and placed on the altar of the riverbank” (*smd.t n ȝbd pn hrw mh wdȝ.t hȝb ‘ȝ m tȝ drȝf... snq.tw jph dj hr hȝw.t n wdb*).<sup>240</sup> Also, the pig as a danger to the eye of Horus is described in Coffin Texts spell 157,<sup>241</sup> and this text, as has been pointed out earlier, is about the full moon. On top of this, in one version of the very next spell (158) describing the waning phase after full moon (see Appendix), the rubric orders that the text should not be recited when eating a pig.<sup>242</sup> This warning also spurs the inference that pork could be consumed at full moon but not later than that during the month.

So, whereas on one level the pig is associated with the child Horus, on another one it appears, especially in connection with Osiris, at the time of the full moon. In the pronaos Osiris and the pig are shown together within a disc and this detail further implicates the time of the full moon because he is said to enter the moon on the fifteenth day of the month in the lunar strip of the astronomical ceiling.<sup>243</sup> Therefore the image in Pisces evokes the full moon, and its parallel in the circular zodiac, despite all appearances, is not the symbol marking the solar eclipse with the goddess Isis, but the wedjat-eye signalling the full moon at the autumnal equinox.<sup>244</sup> Just as in the Osirian chapel, the iconographic representation of the full moon in Pisces defines a day when this event coincided with the autumnal equinox. Within the time frame set up by the building inscription of the pronaos, this coincidence took place on 24 September 36 CE (II Akhet 12).<sup>245</sup>

The two figures observing the full moon at the autumnal equinox, one with a leonine head and one fully anthropomorphic, now stand in the sign of Aries reflecting the fact that in 36 CE the moon was rather between Pisces and Aries on 24 September [fig. 7]. The iconography of the lion-headed figure, which is identical to that of Wepwawet in the decanal list in the second eastern strip of the ceiling,<sup>246</sup> here may allude to the beginning of the momentous events that are yet to come. His companion wears a star on his head, which clearly identifies him as *wnw.tj* “astronomer” (in the original sense of the word: “hour-watcher”). Behind the two observers we find the composite symbol of the baboon and the oryx, now separated from the disc of the full moon by some distance but still referring to it. Although on 24 September 36 CE there was no eclipse at the autumnal equinox, the image of the lunar baboon carrying the oryx is retained in the pronaos. The connotations of the latter animal must here be limited only to its close relationship with the full moon. This reduction in meaning, however, must

<sup>238</sup> J.G. GRIFFITHS, *Plutarch*, p. 129 (*De Iside et Osiride*, ch. 9).

<sup>239</sup> A.D. GODLEY (transl.), *Herodotus* I, London, 1920, p. 335; A.F. SCHOLFIELD (transl.), *Aelian: On the Characteristics of Animals* II, London, 1959, p. 307.

<sup>240</sup> Edfou V, 354, 2-4; A. GRIMM, *Die altägyptischen Festkalender*, p. 105, 197.

<sup>241</sup> CT II, 338c-342b (B4L<sup>b</sup>). For the pig attacking the lunar eye, see also D. MEEKS, *Mythes et légendes du Delta*, p. 14-15.

<sup>242</sup> *n dd hr wnm rrj*, CT II, 362c (S2P).

<sup>243</sup> *Wsjr Wnn-nfr mȝ -ȝrw ‘ȝ.tw m jȝb.t m smd.t*, Dend. XV, 35, 6.

<sup>244</sup> A. VON LIEVEN, *Der Himmel über Esna*, p. 157, n. 458. The identification involves that Cauville’s claim (*Dendara. Le pronaos*, p. 541) about the image representing the total solar eclipse of 19 March 52 CE can hardly be correct.

<sup>245</sup> The only two other coincidences in the 1st century happened on 25 September 6 CE and 24 September 17 CE.

<sup>246</sup> S. CAUVILLE, *Dendara XV. Traduction*, pl. 7.

not have been problematic for the Egyptians because, as was explained earlier, the wensheb – or the waterclock forming its core part – was principally the symbol of equinoxes, and not specifically of eclipses.

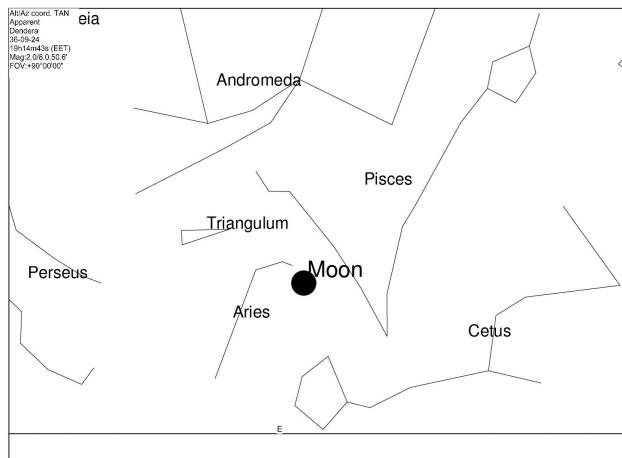


Fig. 7. Full moon on the day of the autumnal equinox, 24 September 36 CE.

The 770-day period thus initiated on 24 September 36 CE comes to an end on 3 November 38 CE (III Akhet 22), so its terminal point still coincides with day seventeen of the lunar month within III Akhet. The marker of Osiris's death on this day, Horus-on-his-papyrus-column stands in a specially designed part of the eastern strip of the zodiac which expresses the double involvement of its images. On the one hand he is situated within the space behind Gemini and thus – through analogy with the other constellations of the zodiac – belongs to this sign, corresponding to the time of the year when the seventeenth phase of the moon appears in this region of the sky [fig. 8], while on the other he is still wedged between Orion-Osiris and Isis-Sopdet, the constellation and star that herald the coming of the flood in mid-July, that is when the sun is in Cancer. This sign does not feature in the normal series of zodiacal divisions but is drawn on the legs of the sky goddess Nut arching over the entire depiction (more on this later). The ambiguity of the space between Gemini and Cancer therefore must be intentional, and is also indicated by one of the hour goddesses who – in contrast to all her other colleagues – faces left and not right.

The moment of conception (new moon on 8 October 36 CE, II Akhet 28) is depicted in Libra with a smaller cast of entourage than in the circular zodiac because the jackal of Wepwawet and the seated royal figure are left out. The child within the solar disc is incorporated into the hieroglyph of the horizon, making the allusion to the meeting of the rising sun and the disappearing moon more complete. The spot on the left of the scales occupied by Horus of the Netherworld in the round zodiac is here filled with a representation of the invisible lunar disc into which the figure of an astronomer-priest taking note of the event is inscribed. Taweret – the prime symbol of conception and pregnancy – follows behind.

The next stage, gestation around the winter solstice (22 December 36 CE, I Peret 11), is marked by the three figures corresponding to the decans of Capricorn, but also perhaps more importantly by the way the zodiac is split into two halves. For the twelve signs are grouped in such a way that the actual depiction of the hybrid animal of Capricorn closes the western

strip, whereas the three decans belonging to it lead in the procession of celestial figures on the eastern strip. This peculiar division, already noticed by previous commentators,<sup>247</sup> obviously corresponds to an attempt to call attention to the time of the winter solstice.

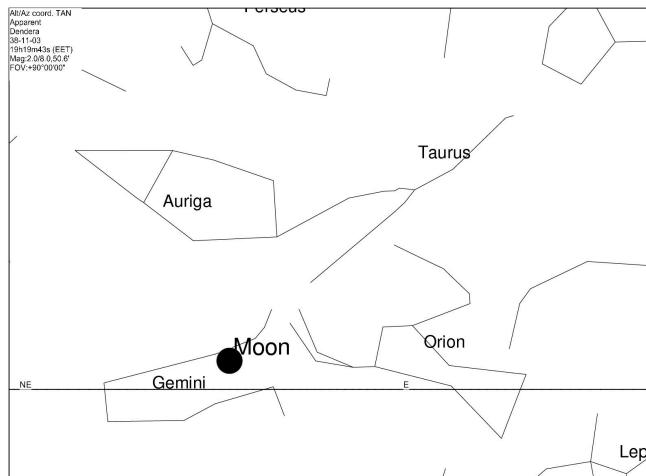


Fig. 8. Seventeen-day moon in Gemini and Orion rising simultaneously on 3 November 38 CE.

The birth of Horus after the vernal equinox (first crescent on 5 April 37 CE, IV Peret 25, after 22 March 37 CE, IV Peret 11), is depicted not only by the observing priest after the sign of Taurus, but also by the unmistakable representation of the lunar crescent above the bull. While of course this is the same spot where the exaltation of the moon takes place in astrological thinking, within the context of the Dendera zodiacs, as argued earlier, it surely signifies the appearance of the waxing moon after the spring equinox. Looking at the signs of Libra and Taurus together, we can see that the linear zodiac systematically differs from its predecessor in the Osirian chapel in one very important way: whereas in the circular zodiac the moon is not represented pictorially at all in these signs, in the pronaos both the invisible and the first-crescent moon are included in the design of Libra and Taurus, respectively.

The new moon preceding the heliacal rising of Sirius (1 July 37 CE, III Shemu 22), just as in the circular zodiac, is not alluded to by an image but evoked only textually in the lunar strip of the astronomical ceiling (see above). It arrives at the end of the civil month so it falls in the first half of July. As for the appearance of Sirius at dawn (16 July 37 CE, IV Shemu 7), it is the most emphatic feature of the zodiac, and this has already been thoroughly understood by Leitz.<sup>248</sup> The horizontal inscription running next to the zodiac is in fact a hymn to the rising Sirius.<sup>249</sup> A short hymn to Isis-Sopdet, praising her benefactions at the start of the year, is also written above her barque.<sup>250</sup> The sign of Cancer is drawn on the legs of Nut in the eastern strip to show that the sun is dwelling in this region of the sky at the time of the star's reappearance. The twelve goddesses of the night hours are inserted into the series of the other figures,<sup>251</sup> and – as has been indicated above – the last of them, the twelfth hour of the night

<sup>247</sup> EAT III, p. 206; Chr. LEITZ, SAK 34, p. 287.

<sup>248</sup> Chr. LEITZ, SAK 34, p. 287-289.

<sup>249</sup> Dend. XV, 25, 7-26, 14.

<sup>250</sup> Dend. XV, 24, 13-14.

<sup>251</sup> Dend. XV, 24, 3-11.

immediately before dawn, turns her face towards the stars Orion-Osiris and Isis-Sopdet to heed the newly visible Sirius emerging at the end of the night. The order of the hour goddesses of the night is reversed on the western side,<sup>252</sup> and this was again done to place the first hour of the night as close to Capricorn as possible, and the last hour close to Cancer. Isis and her child, who signal the relation of Horus's procreation to the inundation, are now separated from Satet and Anuket, the prime markers of the flooding river following the barque of Isis-Sopdet at the end of the eastern strip, so the astral snake of the Nile is paired with the image of mother and son in Leo.

The other images within the zodiacal signs signify the same events as in the round zodiac. Thus the jackal standing on a hoe denotes III Akhet 17 (29 October 36 CE), the day of the death of Osiris in the civil calendar and the initial point of the mysteries, still coinciding with the month of Scorpio. The bull-headed anthropomorphic figure holding a hoe in Virgo relates to the cultivation of crops in I Akhet (from 25 August to 1 September 36 CE, I Akhet 12 to 19). The northern constellations are put in Sagittarius, possibly to indicate that the influence of Seth, represented by the leg,<sup>253</sup> and here depicted more traditionally with a bull's head, is felt most towards the period when the winter solstice is approaching. As a new feature, the astral embodiment of Seth is attacked by a falcon-headed human identified by a caption as "Horus who strikes the enemies" (*Hr.w hwj sbj.w*).<sup>254</sup> His figure is also a set piece in the Egyptian representations of the northern constellations,<sup>255</sup> so we may surmise that he does not carry any additional information about the mysteries and he was simply omitted from the circular zodiac for lack of space.

The planets are shown twice, as anthropomorphic figures in the east and as birds in the west,<sup>256</sup> but instead of their signs of exaltation, in the pronaos they dwell in their houses. In the eastern strip the planets are in their night houses (Jupiter and Mars having been replaced), and in the western one in their day houses.<sup>257</sup> In astrology, the houses of the planets result from a projection of the planets onto the signs of the zodiac based on their distance from the earth (in the geocentric model), i.e. the lengths of their periods.<sup>258</sup> The cornerstone of the whole arrangement is the pairing of the two luminaries, the sun and the moon with the signs of Leo and Cancer, respectively.<sup>259</sup> Then the five ordinary planets are assigned to the remaining ten signs in two rows representing the two complementary halves of the zodiacal circle bisected between Leo and Cancer, so that the day houses are from Virgo to Capricorn, and the night houses are from Gemini backward to Aquarius.<sup>260</sup> Once more it must be stressed that the whole system is an artificial construct that is based on matching the sun with Leo and the moon with Cancer. We cannot fail to notice that there is a distinct Egyptian tinge about these planetary houses because our sources connected with the two Dendera zodiacs emphasize precisely this setting for the developments around the time of the inundation: the new moon in III Shemu arrives in the first half of July, that is in the month of Cancer (the moon meets the sun in Cancer), while the onset of the flooding is linked with the sun's

<sup>252</sup> *Dend. XV*, 46, 2-9.

<sup>253</sup> H. TE VELDE, *Seth, God of Confusion: A Study of His Role in Egyptian Mythology and Religion* (transl. G.E. van Baaren-Pape), *PdÄ* 6, 1967, p. 86-88.

<sup>254</sup> *Dend. XV*, 46, 8.

<sup>255</sup> *EAT* III, p. 183-188.

<sup>256</sup> S. CAUVILLE, *Dendaro. Le pronaos*, p. 538-539.

<sup>257</sup> *EAT* III, p. 80; Chr. LEITZ, *SAK* 34, p. 286.

<sup>258</sup> *EAT* III, p. 203-204; R. BECK, *A Brief History of Ancient Astrology*, p. 85.

<sup>259</sup> R. BECK, *loc. cit.*

<sup>260</sup> *EAT* III, p. 204, fig. 32.

entrance into Leo. Seen from this angle, the placement of the planets in their houses in the linear zodiac is yet another feature to highlight the period when Sirius rises heliacally, the Nile begins to swell, and concomitantly Horus is procreated. Thus the display of the houses of the lesser planets corresponds to the use of planetary exaltations in the round zodiac where these latter evoke Horus's birth at the spring equinox.

The circular zodiac recorded the two eclipses that happened between the autumnal equinox and the heliacal rise of Sirius in the years 52-51 BCE. In the corresponding period in 36-37 CE only one lunar eclipse took place, but it must have been quite memorable to the Egyptians living in Dendera, because it coincided with the dawn rising of Sirius on 16 July 37 CE. This partial lunar eclipse is marked in the zodiac with the lunar disc placed in the throat of Nut in the eastern strip [fig. 2].<sup>261</sup> It could perhaps be argued that this disc is the repetition of the solar disc seen at Nut's mouth, which she swallows each day at dusk, but some of the details of the depiction speak against this interpretation. First of all the same smaller disc does not appear in the western strip, and secondly whenever the sun and the moon are shown close together, as for example in the round zodiac or on the ceiling of the Esna temple,<sup>262</sup> and possibly in the vignette attached to chapters 141-142 of the Book of Going Forth by Day (also known as chapter 143),<sup>263</sup> the moon tends to be represented by a smaller disc. Therefore the smaller disc in the throat of Nut is the moon and it shows how the sky goddess swallowed the lunar disc on 16 July 37 CE. Since the sun is in Cancer, i.e. Nut is giving birth to it in that region of the sky, the full moon will occur in the opposite sign of the celestial sphere, Capricorn, and of course Nut's head is situated just there, reflecting the precise position of the eclipse [fig. 2].

The decans correspond to the zodiacal signs in generally the same order as in the circular zodiac [fig. 2 and Table 2]. Sagittarius has only two decans and its third one, *p3-sb3-w'.tj*, is merged with the first decan of Capricorn. Thus the first figure in the western strip may be said to belong to both Sagittarius and Capricorn. We could see that this blurring of the two decans is represented in the band of the zodiacal signs by the combined image of a standing man and the bird of the *sr.t*-decan. The name of this decan is dropped from the list altogether and the overlap between Sagittarius and Capricorn highlights the time of the winter solstice in the decanal list itself. The intercalation, split into two halves between the eastern and western strips,<sup>264</sup> is much more extended than in the circular zodiac and incorporates a barque carrying Ihy, Hathor, and Isis. This barque is followed by that of Rasomtous in the eastern strip, while in the west appears the decan *ph.wj-hr.j*, and once more Ihy. While *ph.wj-hr.j* may still connote the epagomenal days, the other images, with their underlying mother-son pairings (Hathor-Ihy, Isis-Rasomtous),<sup>265</sup> possibly emphasize the heliacal rising of Sirius at the beginning of the seasonal year and the ensuing inundation providing nourishment for the young divine child, so the intercalation here perhaps doubly refers to both the ending and the beginning of the decan list. Since it is quite long, and because the decans of the "missing

<sup>261</sup> EAT III, pl. 42. This detail seems to be missing from the published drawings of the rectangular zodiac (*Description, Antiquités, Planches* IV, pl. 18, 20; S. CAUVILLE, *Dendara XV. Traduction*, pl. 8).

<sup>262</sup> Esna IV, fig. 1, strip A.

<sup>263</sup> M. MOSHER, Jr., *The Papyrus of Hor (BM EA 10479) with Papyrus MacGregor: The Late Period Tradition at Akhmim*, CBDBM 2, 2001, pl. 22 (pLouvre N3079). That one of the discs is the moon is strongly hinted at by the papyrus of Hor (pl. 9) in which a wedjat-eye is drawn next to the upper one (though there the discs are of equal size).

<sup>264</sup> Dend. XV, 23, 13-24, 1; 45, 4.

<sup>265</sup> For the association of Isis with Rasomtous (Harsomtous), see R. PREYS, "Isis et Hathor *nbtyt rhyt*", BIFAO 102, 2002, p. 341.

sign” of Cancer are also listed, the triads of decans in the western strip are shifted considerably from their signs. In the east, the key decans still correspond well with the depictions in the upper band; thus the figure with four ram heads, alluding to the cosmic harmony on the day of the full moon and autumnal equinox, is seen under the lunar disc in Pisces, and the child emerging from the lotus flower, here himself wearing the lunar disc on the head, is under Aries. It is preceded by the third decan of Pisces showing what seems to be a child in an embryonic state on a lotus flower, and this image may indicate that the appearance of the full moon at the time of the autumnal equinox in Pisces is the event that leads to the conception of Horus.

### Other zodiacs

Finally, a brief look at similar artefacts found elsewhere in Egypt will reveal that the ideas that governed the design of the Dendera zodiacs radiated to other parts of the country. This is not the place to give a thorough interpretation of them and come up with an in-depth analysis of how they relate to their predecessors, so I will just highlight the most salient points.

The first zodiac that deserves our attention is the one that was found on the ceiling of the pronaos of the temple of Khnum that once stood some four kilometres north of Esna at Kom ed-Deir.<sup>266</sup> This building was demolished in the middle of the 19th century, but before its unfortunate demise the members of the French expedition had made a rendering of the ceiling.<sup>267</sup> Even then it was fragmentary because the part containing the signs of Virgo, Libra, and Scorpio was unfortunately missing. Although it is often stated that this monument dates to the beginning of the 2nd century BCE,<sup>268</sup> in the temple cartouches of rulers ranging from Ptolemy III Euergetes I to the Roman emperor Marcus Aurelius were found,<sup>269</sup> so it cannot be told with certainty when exactly the decoration of the astronomical ceiling was executed.<sup>270</sup> The astronomical images are arranged in three registers from which one shows the series of decans known as Seti I B, the middle one the zodiacal signs, while the third one the decans of the Tanis family.<sup>271</sup> Some of the images in the last two registers have close affinities with the Dendera zodiacs. Thus the astral snake of the inundation is placed in Leo and the decans of this sign may allude to the enthronement of Horus by depicting a falcon-headed human wearing the white crown as he is hailed by two females (possibly Nephthys and Isis) from the two sides, all three standing in a boat. The moon is seen in Taurus and the sun in Aries, below which in the decanal list the child emerging from the lotus is shown. However, the most remarkable feature of this zodiac is the depiction of the decans of Capricorn. Next to the already mentioned picture of the decapitated bodies within a rectangle of knives (Sea of Knives as a decan), we can see the bird of the *sr.t*-decan and above it, separated by some space, a human figure holding a staff. In other words, this zodiac displays one of the decans of Capricorn – the composite entity of *sr.t* and *p3-sb3-w'.tj* – in very much the same way as it is found in the inner area of the circular Dendera zodiac.

<sup>266</sup> M. ABDEL-RAHMAN ALI, “The Lost Temples of Esna”, *BIFAO* 109, 2009, p. 2-5.

<sup>267</sup> *Description, Antiquités, Planches* I, pl. 87. Reproduced as *EAT* III, pl. 29.

<sup>268</sup> M. CLAGETT, *Ancient Egyptian Science II. Calendars, Clocks, and Astronomy*, Philadelphia, 1995, p. 126; E. HORNUNG, *The Secret Lore of Egypt: Its Impact on the West* (transl. D. Lorton), Ithaca, 1999, p. 30-31; J. EVANS, “The Astrologer’s Apparatus: A Picture of Professional Practice in Greco-Roman Egypt”, *JHA* 35, 2004, p. 26; J. LULL, J.A. BELMONTE, in J.A. Belmonte, M. Shaltout (eds.), *In Search of Cosmic Order*, p. 180.

<sup>269</sup> M. ABDEL-RAHMAN ALI, *BIFAO* 109, p. 4-5.

<sup>270</sup> *EAT* III, p. 62.

<sup>271</sup> *EAT* III, loc. cit.

In the first centuries of our era, depictions of zodiacs were no longer restricted to the ceilings of temple rooms but began to appear on coffin lids and in private tombs.<sup>272</sup> These zodiacs also preserved to a certain extent the characteristics of the representations found in Dendera. As mentioned earlier, two of them, though painted adjacently to each other in the same tomb at Athribis near Akhmim, included in the depiction of the sign of Libra a disc into which a falcon was inscribed as a symbol of the rising sun or Horus.<sup>273</sup> At the nearby site of el-Salamuni it was common to draw the twelve signs of the ecliptic band in a circle and put an image of either Isis-Sopdet or a young child in the middle.<sup>274</sup> The central area of one of these zodiacs shows the child god emerging from a lotus flanked by six seated divine figures in a barque, so it echoes one of the main themes of the Dendera zodiacs more tangibly.

Even more remarkable is the zodiac found in the inner room of the tomb of a certain Petosiris that is located in Qāret el-Muzawwaqa in the Dakhleh oasis [fig. 9].<sup>275</sup> It tells the story of the nativity of Horus in such a detailed way that is comparable with the sophistication of the two Dendera zodiacs. The style of the zodiac, just as the entire decoration of the tomb, is mixed in character: traditional Egyptian images are put side by side with Roman depictions.<sup>276</sup> In the central oval field we can see the child Horus shown in a posture that is so frequently represented on the Horus cippi, taming dangerous animals.<sup>277</sup> He also has a disc and crescent on the head, and is flanked by two classical busts which most probably represent the stars Saturn and Venus.<sup>278</sup> The three similar busts to the south stand for the three remaining planets. The ring of the zodiacal signs in the outer oval, six in the north and six in the south, is interrupted by a series of other images on both the eastern and the western sides. In the east, placed next to Pisces, appears a wedjat-eye with legs and ten rearing cobras on its wings (moon),<sup>279</sup> and this depiction – being equivalent with the wedjat-eye-baboon-oryx sign of the circular, and the lunar disc-Osiris-pig sign of the linear zodiac – records the coincidence of the autumnal equinox with the full moon. This meaning of the sign is reinforced by the image of the standing anthropomorphic figure with four ram heads also in the east, which is borrowed from the decan lists of the Dendera zodiacs. The two signs surround a composite image that shows the body of a beetle from which the head and arm of a child protrudes, and which thus represents the conception of Horus at the sunrise of lunar invisibility following the autumnal equinox.

On the western side the sun again appears in its form of a winged scarab travelling in a boat and hailed by four baboons on each side. As this image often depicts the rising sun in the east, the natural conclusion would be that it does so here as well,<sup>280</sup> but its placement in the west suggests that on this side of the zodiac we can see a scene mirroring sunrise and representing the entry of the sun into the netherworld after its setting. The depictions and inscriptions of the first hour of the Book of That Which is in the Underworld, where the scarab and the

<sup>272</sup> *Ibid.*, p. 204-205.

<sup>273</sup> *Ibid.*, p. 210, pl. 51.

<sup>274</sup> *Ibid.*, p. 98-101, pl. 52-56.

<sup>275</sup> O. NEUGEBAUER, R.A. PARKER, D. PINGREE, in J. Osing *et al.* (ed.), *Denkmäler der Oase Dachla*, p. 97-100, pl. 40-41.

<sup>276</sup> J. OSING, “Die Gräber des Petubastis und Petosiris”, in J. Osing *et al.* (ed.), *Denkmäler der Oase Dachla*, p. 71.

<sup>277</sup> L. KÁKOSY, *Egyptian Healing Statues*, p. 19.

<sup>278</sup> O. NEUGEBAUER, R.A. PARKER, D. PINGREE, in J. Osing *et al.* (ed.), *Denkmäler der Oase Dachla*, p. 98.

<sup>279</sup> O. NEUGEBAUER, R.A. PARKER, D. PINGREE, *loc. cit.*

<sup>280</sup> O. NEUGEBAUER, R.A. PARKER, D. PINGREE, *loc. cit.*; H. WHITEHOUSE, “Roman in Life, Egyptian in Death: The Painted Tomb of Petosiris in the Dakhleh Oasis” in O.E. Kaper (ed.), *Life on the Fringe: Living in the Southern Egyptian Deserts during the Roman and Early-Byzantine Periods*, Leiden, 1998, p. 263.

baboons similarly make an appearance,<sup>281</sup> prove that the two transitory stages of the daily solar cycle, the move from the duat to the visible world (rising in the east) and from the visible world to the duat (setting in the west), were envisioned as being accompanied by parallel actions.<sup>282</sup> A depiction of the solar barque that is clearly defined by the accompanying inscriptions as the setting sun is also hailed by eight baboons in the tomb of Benaty (6th century BCE).<sup>283</sup> That the scarab in the boat on the western side of the zodiac represents the setting sun is further reinforced by the appearance of the crescent moon next to it in the form of a female bust.<sup>284</sup> Thus the whole scene in fact shows the birth of Horus as the first crescent of the moon after the vernal equinox, when the sun is in Aries, which sign is depicted next to the baboons and the solar boat on the right.

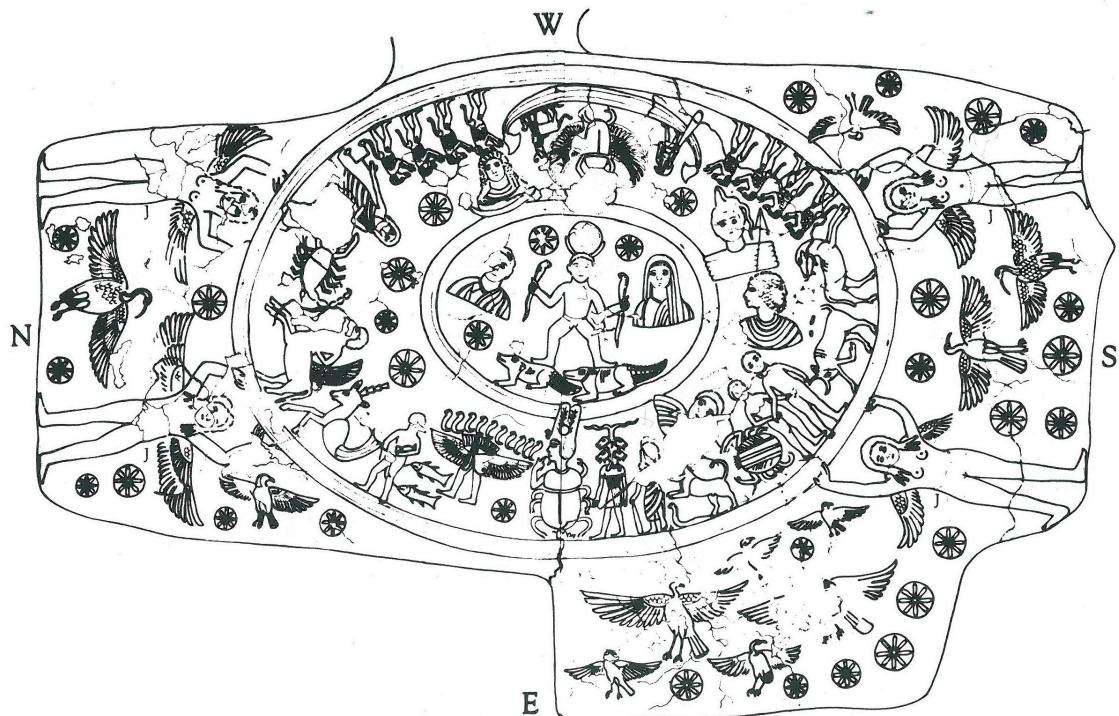


Fig. 9. Zodiac on the ceiling of the inner room in the tomb of Petosiris at Qāret el-Muzawwaqa (adapted from J. Osing *et al.* [ed.], *Denkmäler der Oase Dachla*, pl. 41, © Deutsches Archäologisches Institut, Kairo).

The intermediate second stage of the birth process, winter solstice, is not represented in the zodiac but is alluded to in a hieroglyphic inscription that is placed next to the depiction of Petosiris in the first room of the tomb.<sup>285</sup> Here he expresses his wish that his ba should follow Sokar and, a few lines later, that a garland be given to him on days 25 and 26 of an unspecified month. As Jürgen Osing correctly thinks, the dates must refer to the festival of Sokar in IV Akhet and the garland mentioned is the bouquet made from onions that the

<sup>281</sup> E. HORNUNG, *The Ancient Egyptian Books of the Afterlife* (transl. D. Lorton), Ithaca, 1999, p. 34, 42, fig. 14.

<sup>282</sup> *Id.*, *Das Amduat. Teil II: Übersetzung und Kommentar*, p. 10.

<sup>283</sup> A. FAKHRY, *The Egyptian Deserts: Bahria Oasis I*, Cairo, 1942, p. 75, fig. 34.

<sup>284</sup> O. NEUGEBAUER, R.A. PARKER, D. PINGREE, in J. Osing *et al.* (ed.), *Denkmäler der Oase Dachla*, p. 98.

<sup>285</sup> J. OSING, in J. Osing *et al.* (ed.), *Denkmäler der Oase Dachla*, p. 92.

participants of the festival either offered to the god or worn around their neck.<sup>286</sup> Sokar is included in the circular text of the zodiac in the Osirian chapel to evoke the winter solstice, and if the date in Petosiris's inscription, IV Akhet 26, is specified in the Alexandrian calendar, then the actions of the tomb owner are directly linked with this time of the year. If the date is civil, then the connection with the winter solstice is only periphrastic because IV Akhet 26 fell in the middle of November in the first half of the 2nd century CE (for the dating see next paragraph). Alternatively, the date may be intentionally ambivalent and may equally refer to both the traditional festival of Sokar in civil IV Akhet, and its Alexandrian offspring at the winter solstice.

The zodiac of Petosiris therefore, with its depictions of the celestial conception and birth of Horus, can be considered a very close relative of the Dendera zodiacs. It also records the situation when full moon occurred on the day of the autumnal equinox. As on style-critical grounds the tomb of Petosiris has been dated to the first few decades of the 2nd century CE,<sup>287</sup> its zodiac possibly captures such a moment either on 23 September 112 CE or 24 September 131 CE. It should be noted that between 36 CE, the creation of the linear zodiac in Dendera, and 112 CE, the day of the full moon did not coincide with the autumnal equinox, so this year is the earliest possible date that we can determine for the design of Petosiris's zodiac.<sup>288</sup>

## Conclusion

Past research into the Dendera zodiacs, and all the Egyptian zodiacs in general, has been based on the pretext that these artefacts – since the idea of the zodiacal belt was surely borrowed from abroad – represented the same world view as the later Hellenic zodiacs, so they were either the products of horoscopic astrology or an attempt to record those constellations that the Greeks distinguished in the sky. The interpretation presented in the foregoing pages radically breaks with this view and argues that the reception of the zodiac into Egypt was not a passive acceptance of a concept that had been developed in an allegedly more advanced culture, but it was an active process of appropriation by which the zodiac was transformed into a means that could express the long-held traditions of indigenous astral myths.

As much as this novel approach sheds light on how the myth of Osiris, Isis, and Horus was associated with a series of cosmic events, it undeniably leads to some issues that cannot be fully explained at the moment and need further investigation. First it is not entirely clear if the birth cycle of Horus was projected onto the sky every year, or only in those years when the full moon was observed on the same day as the autumnal equinox. Perhaps most likely the birth of Horus, just as the mysteries of Osiris in IV Akhet, was celebrated every year, but the years with the simultaneous appearance of the full moon and the autumnal equinox were seen as so special that they deserved to be marked by zodiacs. Another line of enquiry should focus on when the ideas depicted in the zodiacs were created, whether they were the innovations of the Ptolemaic age or were formulated much earlier. In the case of the 770-day period leading up to the death of Osiris we could see that a reference to it is possibly made in the Pyramid Texts, and the importance of III Akhet 17 is indirectly indicated by some New Kingdom texts. It is also well-known that the mysteries of Osiris were celebrated in the month of IV Akhet

<sup>286</sup> *Ibid.*, p. 93.

<sup>287</sup> H. WHITEHOUSE, in O.E. Kaper (ed.), *Life on the Fringe*, p. 262.

<sup>288</sup> Further coincidences of the full moon and the autumnal equinox in the 2nd century fell on 24 September 150 CE, 23 September 169 CE, and 23 September 188 CE.

before the first centuries BCE, so all this suggests that the zodiacs – notwithstanding their originality and ingenuity – were leaning on traditions that had been perpetuated for a considerable time.

Calendrical dates should be another concern. As the celestial events illustrated in the zodiacs regularly occurred around the same time of the solar year, the astral side of the Osiris myth was tied up with the seasons. In the written sources, however, the same events are recorded through the medium of the civil calendar, a method of time-keeping that is irrespective of the seasonal year. Thus for example when we are told that the birth of Horus happens on the new-crescent day of the civil month IV Peret, it may lead to some ambiguities because IV Peret will coincide with the days after the vernal equinox only at a particular period of time, when the sun's presence in Aries and IV Peret are roughly synchronous. On the other hand, the links between the more or less fixed events and the shifting civil calendar may help to determine the age of the astral aspects of the Osiris myth. In accordance with the remarks of the previous paragraph, it is a real possibility that the zodiacs were created to celebrate and commemorate the newly observed coincidence of natural phenomena and civil dates around the middle of the 1st century BCE, a long time after such a coincidence had perhaps been originally established during the New Kingdom or earlier.

To complicate matters, the date of the events recorded in the zodiac did not only move along the long-term shift of the civil calendar. The civil day corresponding to conjunction, first crescent, or seventeen-day moon could also significantly vary from year to year because of the approximately eleven-day gap between the lunar and solar year. Furthermore, it seems there was a tendency to artificially fix the celestial events to civil dates. The day of Osiris's death, IV Akhet 17 must have been chosen this way prior to Ptolemaic times, whereas the recording of II Akhet 6 as a feast day of Isis at the end of the 1st century CE perhaps testifies to the same process contemporaneously with the zodiacs, because it must have been based on the coincidence of this civil day with the first conjunction after the autumnal equinox in year 52 BCE. The intention to "freeze" the movement of the days of meaningful celestial events within the civil calendar may also be responsible for the timeline of the Horus myth at Edfu. Since its dates – though generally describing the relevant periods quite well – cannot be fully reconciled with natural phenomena, they must have been determined by several steps of abstraction. One of the key dates of the Edfu myth, IV Peret 28 for the birthday of Horus, is already written down in a papyrus from the 7th century BCE, and this possibly indicates a pre-Ptolemaic origin for this version of the myth as well.

Lastly, however, it must be stressed that, notwithstanding the minor points that await further clarification, the interpretation outlined above provides a coherent explanation of the astral myths that were current in Ptolemaic Egypt and can also lead to the better understanding of a variety of Egyptian texts and depictions. Just to give an obvious example, what really aroused my interest in the Dendera zodiacs in the first place was my observation that two key characters of Coffin Texts spell 157, the oryx and Horus-on-his-papyrus-column, also prominently feature among the depictions of the zodiacs. Then the mutual examination of the textual references and the pictorial representations revealed the close connections between the oryx and the full moon, and consequently a possible lunar eclipse. I seriously hope that along the course of future study other details of my interpretation will result in similar insights into yet more areas of ancient Egyptian thought, and this will bear out the soundness of the ideas that I presented in this paper.

**Note**

Conversion between proleptic Julian, Gregorian, and Egyptian civil dates was done with the software CIVIL 4.0 developed by Michael St. John ([www.egyptologyforum.org](http://www.egyptologyforum.org)). Sky charts are by Cartes du Ciel 3.10 (© Patrick Chevalley, [www.ap-i.net/skychart/en/start](http://www.ap-i.net/skychart/en/start)). Simulations were also run on StarCalc 5.72 (© Alexander E. Zavalishin, [www.m31.spb.ru/StarCalc](http://www.m31.spb.ru/StarCalc)). Astronomical data were collected from the following sources: lunar phases – NASA Six Millennium Catalog of Phases of the Moon ([eclipse.gsfc.nasa.gov/phase/phasecat.html](http://eclipse.gsfc.nasa.gov/phase/phasecat.html)), lunar eclipses – NASA Five Millennium Catalog of Lunar Eclipses ([eclipse.gsfc.nasa.gov/LEcatalog5/LEcatalog.html](http://eclipse.gsfc.nasa.gov/LEcatalog5/LEcatalog.html)), solar eclipses – Five Millennium Catalog of Solar Eclipses ([eclipse.gsfc.nasa.gov/SEcatalog5/SEcatalog.html](http://eclipse.gsfc.nasa.gov/SEcatalog5/SEcatalog.html)), equinoxes and solstices – NASA Time and Date of Vernal Equinox ([data.giss.nasa.gov/ar5/srvernal.html](http://data.giss.nasa.gov/ar5/srvernal.html)). [All sites accessed through November 2014 and February 2015.]

## Appendix

### The Ancient Egyptian Book of the Moon: Coffin Texts Spells 154-160

Spells 154-160 of the Coffin Texts (*CT* II, 266a-388c) have long been known to form one composition because in their titles all of them promise the knowledge of bas, mostly in association with different localities.<sup>289</sup> These spells are also frequently cited in discussions about the lunar concepts of the ancient Egyptians,<sup>290</sup> yet so far these two quite noticeable aspects of the spells have not been intertwined more tightly. A careful reading of the texts reveals that this group of spells is indeed a unified composition, and their real editorial principle is not the knowing of bas but a chronologically ordered account of the phenomena that happen during a lunar month. After the introduction (spell 154) which explains the origins of the month, the separate texts represent the successive stages of the monthly cycle: the period of invisibility (spell 155), waxing (spell 156), events around the full moon (spell 157), waning (spell 158), the arrival of the last crescent at the eastern horizon (spell 159), and again the conjunction of the sun and the moon when a solar eclipse can occur (spell 160). While these meanings of the spells can in most cases be deduced from the already existing and widely used translations of the Coffin Texts,<sup>291</sup> at present I am working on a new translation with extensive commentary using the text variant that is found on the coffin of the Hermopolitan official, Sen (B4L<sup>b</sup>). To help the understanding of my arguments about the zodiacs, here I give a brief overview of the contents of the spells.<sup>292</sup>

Spell 154 relates a dispute between Re and a snake called *Jm.j-whmf* about the division of Heliopolis which leads to the reduction in the length of the month. Re's adversary, *Jm.j-whmf* “He Who is in His Fire”, is the moon in conjunction that from the perspective of an earthbound observer dwells invisibly near the sun (“in his fire”), and it assumes the form of a snake because in this spell the moon acts as the enemy of the sun god. The waxing and waning of the moon is also evoked by references to human beings with or without hair,<sup>293</sup> and the overall purpose of the spell – as a sort of introduction – is to explain why the lunar month in nature may differ from the idealized civil month of thirty days (alluded to through the word *m'b3* “harpoon” that is written with the hieroglyphic signs of the number thirty and is

<sup>289</sup> K. SETHE, “Die Sprüche für das Kennen der Seelen der heiligen Orte (Totb. Kap. 107-109, 111-116)”, *ZÄS* 57, 1922, p. 1-4; G. LAPP, “Die Papyrusvorlagen der Sargtexte”, *SAK* 16, 1989, p. 181-182; H.M. HAYS, “Transformation of Context: The Field of Rushes in Old and Middle Kingdom Mortuary Literature”, in S. BICKEL, B. MATHIEU (ed.), *D'un monde à l'autre. Textes des Pyramides & Textes des Sarcophages*, *BdE* 139, 2008, p. 190.

<sup>290</sup> R.A. PARKER, *Calendars*, p. 12; Chr. LEITZ, *Tagewählerei*, p. 268-269; Fr. SERVAJEAN, “L'étoffe *sj3.t* et la régénération du défunt”, *BIFAO* 103, 2003, p. 446; A. VON LIEVEN, *Carlsberg Papyri 8. Grundriss des Laufes des Sternes*, p. 199; K. EATON, “Monthly Lunar Festivals in the Mortuary Realm: Historical Patterns and Symbolic Motifs”, *JNES* 70, 2011, p. 236-240; B. ARQUIER, *Le double sarcophage de Mésehti SIC (CG 28118)-S2C (CG 28119). Recherches sur l'organisation du décor iconographique et textuel*, [doctoral thesis] Montpellier, 2013, p. 122-126.

<sup>291</sup> R.O. FAULKNER, *The Ancient Egyptian Coffin Texts I*, Warminster, 1973, p. 132-139; P. BARGUET, *Les Textes des sarcophages égyptiens du Moyen empire*, Paris, 1986, p. 571-578; Cl. CARRIER, *Textes des sarcophages du Moyen Empire égyptien*, Lonrai, 2004, p. 370-397.

<sup>292</sup> A longer summary of my findings, also entitled “The Ancient Egyptian Book of the Moon: Coffin Texts Spells 154-160”, is to appear in S. KLEIN *et al.* (ed.), *Current Research in Egyptology 2015: Proceedings of the Sixteenth Symposium*, Oxford, 2016.

<sup>293</sup> K. EATON, *JNES* 70, p. 236.

homonymous with that numeral).<sup>294</sup> Since the serpent takes away a part of Re, this motif of the spell may be a distant relative or predecessor of Plutarch's story of how Thoth won a part of each day from the moon through playing draughts to form the five epagemonal days.<sup>295</sup>

The title of spell 155 leaves absolutely no doubt about which phase of the lunar cycle this text describes, because it – unlike the other spells – connects the bas not with a place or locality, but with *psdn.tjw*, the invisibility of the moon. Further lunar references of the spell have already been analysed in detail in my recently published article;<sup>296</sup> the two most important passages relating to the timeline of the lunar month are the description of the eye of Tebi about the maximum length of the period (three days) during which the moon cannot be seen,<sup>297</sup> and an allusion to a gelder leaving the slaughterhouse of the eye at the end of the spell, implying that the castration of the bull of the sky (the period of waning and invisibility) is over.<sup>298</sup>

The waxing moon in spell 156 is said to occur when a feather is fastened to a shoulder and the red crown shines forth in the *mnt3.t*-bowl. The feather, as is clear from other texts, is the symbol of the first crescent appearing in the west,<sup>299</sup> and thus the shoulder possibly signifies the corresponding body part of Nut situated in the same direction.<sup>300</sup> The sem-priest is mentioned in the text in accordance with the important role he played in the observation of the new crescent.<sup>301</sup> The expressions about the growth of the feather and the completeness of the red crown connote the idea of the waxing moon, but it is a line at the end of the spell that most succinctly sums up its message: "I know the bas of Hermopolis. It is the small eye on the first-crescent day, it is the great eye on full moon's day" (*jwȝj rh.kw bȝ.w Hmnw šr.t m ȝbd pw 'ȝ.t m smd.t pw*).<sup>302</sup>

Spell 157 introduces a new context into the Book of the Moon, that of the struggle between Horus and Seth, and it is about the two different kinds of injury that the full moon – the intact eye of Horus – can suffer. The first is associated with the oryx and relates to the eclipse of the moon because it is presented as a temporary setback in the condition of the lunar eye. The second injury involves the pig as a Sethian animal knocking Horus unconscious, and thus presages the regular monthly waning of the moon. Spell 157, as belonging to the first half of the lunar cycle, is contrasted with the following spell (158) describing the waning of the moon (the second half of the month) through linking these two spells with the geographically apposed towns of Pe and Nekhen, respectively. The opposite halves of the lunar cycle are also put in contrast by the association of two sons of Horus with spell 157, and the two other with spell 158. At the very end of spell 157 Horus-on-his-papyrus-column is named and his appearance – as in the later lists he is the eponymous deity of the seventeenth lunar day – signals the last day on which the full moon can occur.<sup>303</sup>

<sup>294</sup> B. ARQUIER, *Le double sarcophage de Mésehti*, p. 123.

<sup>295</sup> J.G. GRIFFITHS, *Plutarch*, p. 135 (*De Iside et Osiride*, ch. 12).

<sup>296</sup> G. PRISKIN, "Coffin Texts Spell 155 on the Moon", *Birmingham Egyptology Journal* 1, 2013, p. 25-63.

<sup>297</sup> *Ibid.*, p. 43-44.

<sup>298</sup> *Ibid.*, p. 53-54.

<sup>299</sup> H. KEEPS, "Zu den ägyptischen Mondsagen", *ZÄS* 60, 1925, p. 8; H. GOEDICKE, "Coffin Text Spell 6", *BSEG* 13, 1989, p. 61; H. WILLEMS, "The Feather of the West", *RdE* 56, 2005, p. 208-213.

<sup>300</sup> Some versions of the text speak about the shoulder of Osiris; in accordance with his epithet, Foremost of the Westerners, here he also refers to the west.

<sup>301</sup> See the section on the vernal equinox and the birth of Horus above.

<sup>302</sup> *CT* II, 322c-324a.

<sup>303</sup> See the section on Osiris's death in the main text.

The waning moon in spell 158 is equated with the hands of Horus that are cut off by his own mother, Isis. Although it is not stated explicitly in the text, the hands must be severed and thrown into water because they contain the semen of Seth.<sup>304</sup> Before they can be reattached and can grow again, they must be fished out by Sobek. The hands being thrown into water may metaphorically express the fact that after the time of the full moon, when within one cycle the lunar disc first reaches the eastern horizon, the waning crescent regularly rises each night from the celestial waters in the east. Also, Sobek, the embodiment of the rising sun,<sup>305</sup> tries to catch the hands but they slip from his grasp, meaning that the waning crescent does not set in the west but fades out in the light of the morning sun more and more to the east as the month progresses. Thus in the second half of the month each day the moon drops back into the water, i.e. it dissolves into the blue background of the sky as the sun's light intensifies. Finally Sobek gets hold of the hands by a cover basket (*hʒd*)<sup>306</sup> and this describes how the last crescent, only visible for a short period of time above the eastern horizon before sunrise ("in shallow waters"), becomes "caught" by the solar disc at the end of the month. The second part of the spell underlines that without the waning of the moon its waxing could not be observed either.

Spell 159 is concerned with the beginning of the period of lunar invisibility, that is with the arrival of the moon into the realm of the rising sun, the Field of Reeds.<sup>307</sup> Whereas spell 155 is about the invisible moon in the evening anticipating the appearance of the first crescent in the west, this spell is connected with the east and the morning sun. Because the moon is hidden in the light of the sun, the text refers to it through the description of the sun. The southern and northern limits of the sun's path are specified and this part of the text perhaps emphasizes that both the sun and the moon are confined to the same band of the sky (the ecliptic and its immediate environs) during their movements. The enormous dimensions of the vegetation – barley four cubits tall, emmer seven cubits – possibly allude to the closeness of the moon and its beneficial effects on the growth of plants.<sup>308</sup> At the end of the spell the Morning Star (*ntr dwʒ*) features among the bas of the easterners, suggesting that this elusive celestial entity has a lot to do with the conjunction of the sun and the moon in the east.

The last chapter of the Book of the Moon, Coffin Texts spell 160, describes the situation when the invisible moon in conjunction travels with the sun through the day sky and a solar eclipse occurs. Since the moon here once more acts as the enemy of the sun in its vicinity, it again assumes the form of the *Jm.j-whm-f* snake.<sup>309</sup> The serpent is thirty cubits long, with a head of three cubits, and is said to reside on the mountain of Bakhu which is 300 rods long and 120 rods wide. The lunar connotations of these dimensions are quite obvious. When *Jm.j-whm-f* turns his eye towards Re, the crew of his barque stops. As the stoppage of the sun is associated with a solar eclipse elsewhere,<sup>310</sup> it must also refer to such an event here. The darkening of the sky is indicated by the statement that the meeting of the serpent and Re

<sup>304</sup> As can be reckoned from the New Kingdom story of Horus and Seth on Papyrus Chester Beatty I, see M. LICHTHEIM, *Ancient Egyptian Literature* II, p. 219-220.

<sup>305</sup> M. ZECCHI, *Sobek of Shedet: The Crocodile God in the Fayyum in the Dynastic Period*, *Studi sull'Antico Egitto* 2, 2010, p. 23.

<sup>306</sup> P. LACAU, "Le panier de pêche égyptien", *BIFAO* 54, 1954, p. 146-151.

<sup>307</sup> J.H. TAYLOR, in J.H. Taylor (ed.), *Journey through the Afterlife*, p. 243.

<sup>308</sup> J.G. GRIFFITHS, *Plutarch*, p. 185 (*De Iside et Osiride*, ch. 41); M. SMITH, *Carslberg Papyri 5. On the Primaeval Ocean*, p. 126. See also *Edsou VIII*, 59, 9-11 cited above.

<sup>309</sup> Misspelled as *Jm.j-whn-f* on Sen's coffin (CT II, 379a).

<sup>310</sup> V. ALTMANN, *Die Kultfrevel des Seth*, p. 91-92.

happens when the light of day dims (*mšr.w*, “evening”, “twilight”).<sup>311</sup> Seth, in his capacity of defender of the solar barque, springs into action and after he utters a magic spell and displays his strength to repel the lunar serpent, the voyage of the sun continues and Re can set in the west. The moon can also emerge from the encounter unscathed, and thus a new lunar cycle can be initiated.

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<sup>311</sup> *Wb* II, 157, 9-17.