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SHRINES OF RAM-HEADED DIVINITIES AND CANOPUS: SKYSCAPING AT HERAKLEOPOLIS MAGNA

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ABSTRACT

In the first decade of the 21st century, the Egyptian-Spanish Mission on Archaeoastronomy of ancient Egypt performed a detailed statistical analysis of the orientation patterns of the temples of Pharaonic Egypt, resulting in most interesting outcomes such as the justified proposal of seven families of astronomical orientations (Belmonte, Shaltout and Fekri, 2009). A preliminary analysis of what we may dub as cosmic landscapes in certain Egyptian locations, such as the Giza pyramids or Karnak, followed up (Belmonte, 2012: 215-250). On the other hand, the Spanish Archaeological Mission at Herakleopolis Magna has been excavating for several decades in one of the most important ancient sites of Middle Egypt, making extraordinary archaeological discoveries in what once was the capital of Egypt during the 9th and 10th Dynasties and again of a chiefdom for a short period during the Lybian epoch (Pérez Die, 2009). It was hence decided that a new complete survey of the site should be made with an astronomy and landscape perspective in mind. This paper presents the result of such a survey where the relationship between land- and skyscape at the main monuments of the city is put in the spotlight. One important outcome has been the possible orientation to Canopus – the second brightest star of Egyptian skies – of the main temple of the city, the one devoted to the patron divinity of Herakelopolis, the ram-headed god Heryshef. Epigraphy is integrated in the analysis and possible mythological relationships are explored, including the connections with other ram-headed deities of the Egyptian pantheon, such as Amun-Re or Banebdjedet. Interestingly, the temples of these divinities at Thebes and Mendes also show alignments that could be related to Canopus, offering a new challenge in the relationship between skyscapes and religion in the civilization of Pharaonic Egypt.

KEYWORDS: Herakleopolis, Heryshef, landscape, skyscape, Canopus, ram-headed deities, Thebes, Mendes

1. INTRODUCTION: ASTRONOMY & LANDSCAPE IN HERAKLEOPOLIS MAGNA

This paper represents a true interdisciplinary effort which is the result of a collaborative work between three members of the Spanish Archaeological Mission at Herakleopolis Magna: an astronomer specialized in ancient Egyptian astronomy, the Egyptologist who possibly best knows the site under discussion and Director of the Excavation, and an epigraphist who has specialized in ancient Egyptian religious texts (notably those those built around Herakleopolis Magna, which where the backbone of her PhD dissertation, Díaz-Iglesias, 2012).

The ancient Egyptian city of Henennensu, current Ehnasya el Medina in Beni Suef province, was the capital of the 20th Upper Egyptian nome called *Naret Khentet* (i.e. the Upper Naret tree). The town is located very close to the right bank of the Bahr Yusuf, an arm of the Nile that waters the Fayum Oasis. This province was one of the main centres in the history of Pharaonic and Coptic Egypt. Its origins go back to the first dynasties (as written sources demonstrate) but, for the moment, the archaeological evidence dates back only to the end of the Old Kingdom.

The Greeks called it Herakleopolis Magna, identifying the main ram-headed god of the city, Heryshef, with the Hellenic Herakles. In this paper, the main results of an archaeoastronomical study (see Belmonte, Pérez Die and Díaz-Iglesias, 2015)¹ carried out at Ehnasya in ancient religious and funerary structures are presented. This was made within the auspices of the Spanish Archaeological Mission (Pérez Die, 2012). We will also try to contextualize these results within the framework of our knowledge about other ram-headed divinities, such as Amun or Banebdjedet, and their temples in other sites of Egypt.

The most significant results focus on the orientation and location of the main temples of the city (see Figure 1), notably the temple of Heryshef.

This sacred structure, in addition to its undeniable relationship with the in-wall necropoleis of the First and Third Intermediate Periods (in the following FIP and TIP, respectively; Pérez Die, 2010), would have been astronomically orientated (azimuth of c. 201°) to the setting of Canopus, the second brightest star of Egyptian skies, at the time of the first monumental building of the temple during the Middle Kingdom (c. 1850 B.C.). This orientation could be perhaps related to the stellar epithets of the tutelary deity of the province, the ram-god Heryshef.

Such stellar epithets (Díaz-Iglesias, 2014: 472-473) placed Heryshef as the leader of the cosmic sphere or of some of its elements (see Figure 2). Along with the more usual "King of the Sky" (*Nesu pet*) and "Lord of the Sky" (*Neb pet*), written sources at Herakleopolis, and even at Thebes, mention the exceptional description of Heryshef as "Pillar of the stars" (*Iunu sebau*) and "Ruler of the stars" (*Heka sebau*), originally assigned (at least the first one) to the deceased monarch in his ascent to the sky and then, within the divine pantheon, only to the Herakleopolitan ram-headed divinity. Other texts included the statement "he [who] made his place in the sky as the Lone Star" (see Fig. 2), linking an Osirianised Heryshef (he is often found in texts and reliefs in close connection with an Osiris of Naref, 'the One who is at the front of Naret') with a singular star. This Lone Star has seldom been identified with Venus as Morning Star or Capella (Krauss, 1997) but Canopus seems also a reasonable candidate. All these epithets show a trend towards the stellar and solar transfiguration of Heryshef.

In the celestial sphere, it is important to take into account both the stars and the big luminaries, the Sun and the Moon, and their relationship to the calendar and festivals as possible frames of reference. The documented presence of stellar titles among the epithets of Heryshef justifies it (see Belmonte, Pérez Die and Díaz-Iglesias, 2015). In addition, the relevance of the stars is well characterized in the case of the bright Sirius (a reference for another family of temple orientations and herald of the inundation). It was personalized in the goddess Sopdet, one of the manifestations of Isis (and of Hathor, Heryshef's partner).² Within this context we may put other important constellations such as Mesketyu, widely analyzed in previous studies as the dominant in the northern skies where the Egyptians recognized a most relevant part of the seat of immortality (Belmonte, Molinero Polo and Miranda, 2009).

Heryshef was the patron god of Herakleopolis Magna. Already witnessed by epigraphic sources from the early dynasties, his spheres of action are deployed into four spheres: water and purification, royal connections, reverential fear, and external manifestation or capacity of action (in Egyptian called "ba", the same word used to denote rams). These spheres of action related him to defining attributes of ram-headed divinities. His stellar and royal facets are highlighted (Díaz-Iglesias, 2014: 467-475) as well as his relationship to Osiris (as his "ba" or external manifestation), and perhaps to Amun.

¹ The rough data of the archaeoastronomical fieldwork is presented in Table 1 in this publication.

² A Queen Shepensopdet has been reported at Herakleopolis in the excavations of the TIP Necropolis (Pérez Die 2010: 443).

These defining factors of Heryshef seem to be linked to the astronomical orientation of his sanctuary in Ehnasya. However, this case is not unique, since other parallels point in the same direction. For example, the unfinished and aniconic temple of Qsar As-Sagha, located north of the Fayum Lake some 60 Km to the northwest of Herakleopolis as the crow

flies was certainly built in the Middle Kingdom similarly to the first confirmed monumental complex of Heryshef. It has an orientation that would be compatible to the rising of Canopus in the appropriate period. More examples will follow. But let us come back to Herakleopolis since this is not all what the city has to offer.

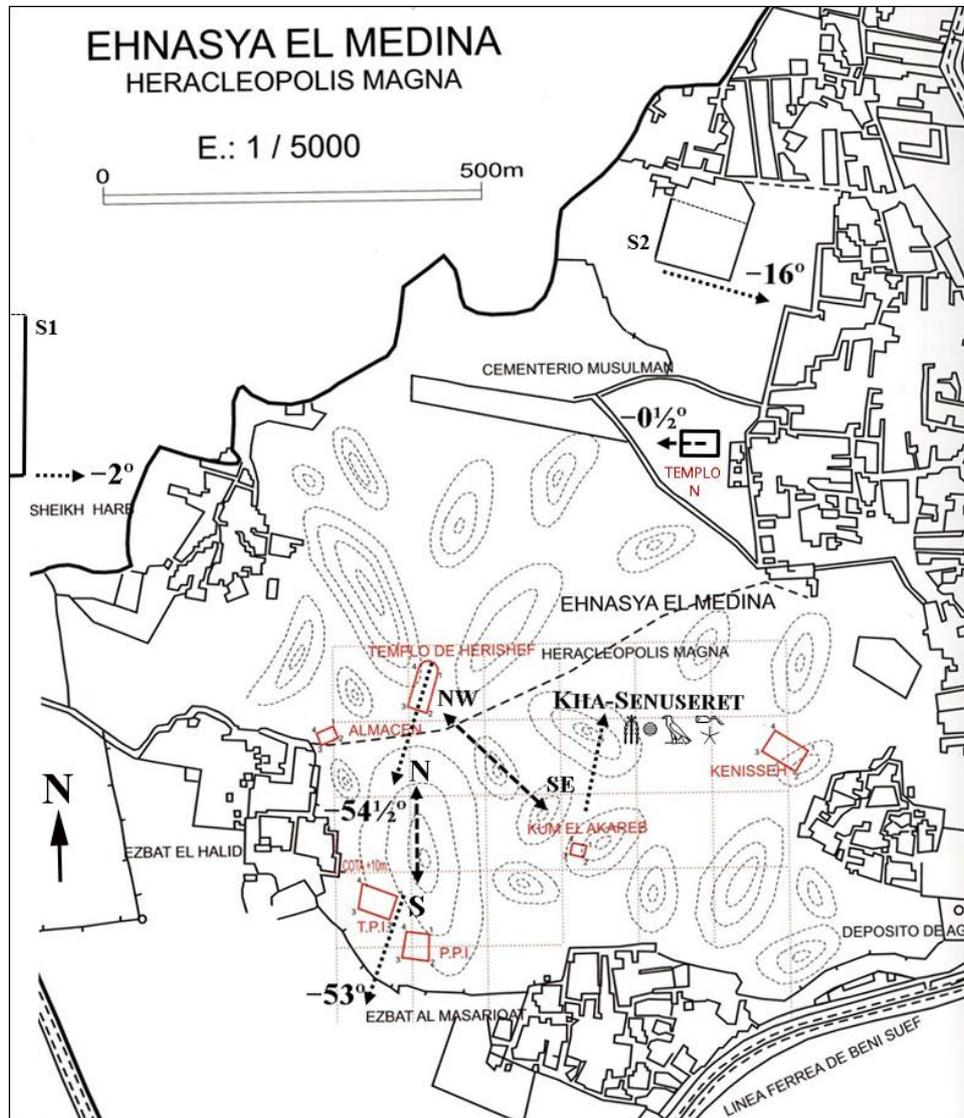


Figure 1. Plan of Herakleopolis Magna within the context of the modern village of Ehnasya el Medina, including the main monuments of the city. The most significant topographical and astronomical (represented by the value of the declination) alignments are plotted. The temple of Heryshef could have originally been orientated to the star Canopus as the chapel of the Third Intermediate Period necropolis (T.P.I. in the plot) twelve centuries later. The sanctuary at Kum el Akareb may have shown a double alignment to the "Imperishable" stars of the northern skies (notably those of Meskhetyu) which were orbiting above the pyramid complex of the Middle Kingdom Pharaoh Senuseret II in Lahun. The recently excavated - by an Egyptian team - "North Temple" is Equinoctially orientated, precisely. S1 and S2 stand for the two hypothetical salt pans that could be the modern counterparts of the classical Natron and Maat Lakes related by many ancient source to the city of Herakleopolis Magna. The expansion of the Muslim cemetery is challenging the northern sector of the site at the northern limit of the Spanish concession. See the text for further discussion. Figure elaborated by the authors upon a site plan of the excavation area by courtesy of the Archive of the Spanish Archaeological Mission at Herakleopolis Magna.

The site included two splendid ancient necropolises of the FIP and TIP (periods when Herakleopolis rose to preminence) excavated by the Spanish Mis-

sion (see Fig. 1). The former was located in a north-south (cardinal) relationship to the main temple, a fact which might be significant (the "imperishable"

stars would orbit above the temple). The latter was built on the axis of the temple and nearly with the same pattern of alignments. Interestingly, the chapel on the burial precinct (from out looking inside) has an orientation that would fit the setting of Canopus c. 800 B.C., adjusting the diachronic variation of declination of the star due to the precession of the equinoxes. In the vicinity of the necropolis of the FIP, in a place called Kum el Akareb (see Fig. 1), there are remains of another building that must almost certainly have been an imposing temple. Nowadays, only part of the portico is well preserved consisting of several cyclopean rectangular blocks, some columns and an ashlar with the name of the king Neferusobek, a woman who was the last sovereign of the glorious 12th Dynasty. Three colossi of Ramses II, possibly reutilized, were found in three of the building corners. Two of them, exposed today in the garden of the Cairo Museum, have been recently tentatively identified as portraits of the Middle Kingdom king Amenemhat IV, direct predecessor of Neferusobek and perhaps her brother. The third one, found in wild excavations during the 2011 “revolution”, still unpublished and now in the Service of Antiquities Magazine at Ehnasya has a cartouche of Senuseret (III).

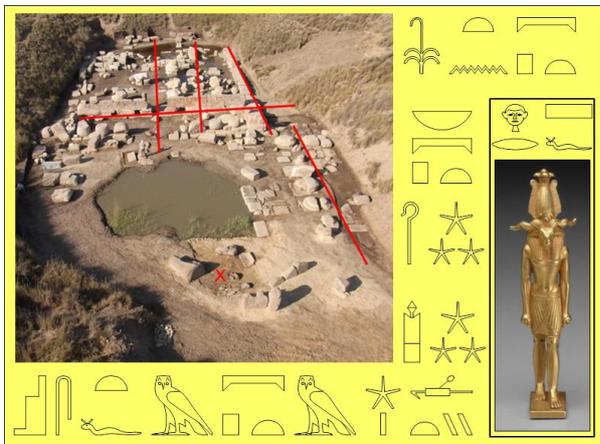


Figure 2. Temple, iconography and “celestial” epithets of Heryshef. Adapted aerial image of Heryshef temple showing where the data were collected and golden statue of the deity with his name in hieroglyphs, meaning “The One who is upon his Lake”. The five celestial epithets from top to bottom are: “King of the Sky”, “Lord of the Sky”, “Sovereign of the Stars”, “Pillar of the Stars”, and “He who is established in the Sky as the Lone Star”. Diagram of the authors based on images by courtesy of José Javier Martínez, Boston MFA, and the Spanish Archaeological Mission at Herakleopolis Magna.

The topographical orientation of this large sacred structure to *Kha-Senuseret*, the pyramid complex of Senuseret II at Lahun, more than ten kilometres to the north, is very appealing and could reinforce the idea of an original construction of this building in

the Middle Kingdom. An astronomical orientation could also be suggested since the “imperishable” constellation of Meskhetyu would have had its easternmost position in the sky above Senuseret II complex c. 2000 B.C., precisely.

An additional monument, recently excavated by a team of Egyptian archaeologists of the Department of Antiquities under the lead of Ahmed Galal, is a spectacular sanctuary located close to (and nearly surrounded by) the expanding Muslim cemetery of Ehnasya. The construction reuses an enormous amount of blocks of the Middle and New Kingdoms presumably from other temples, possibly including the one of Heryshef and perhaps of the still unidentified temple of Hathor, his consort and partner. However, several additional blocks show the typical *opus quadratum* of Roman buildings. Hence, this third temple could have been built in the Roman or Byzantine periods.

The temple shows a very marked equinoctial orientation, which is exceptional in Egypt later than the pyramid age (when it was the dominant one) but is frequent in Hellenistic buildings and Christian churches (González-García and Belmonte, 2014 and 2015). This poses an interesting question mark on the kind and purpose of this building. Unfortunately, the outcomes and archaeological discoveries of this excavation have not been published yet, remain completely unknown and cannot be used to extract further conclusions.

Therefore, the archaeological site of Herakleopolis Magna includes a series of temples and sanctuaries of different epochs, in a peculiar environment, likely to be interpreted within a general context of landscape archaeology, where the archaeoastronomical analysis of the skyscape plays a most relevant role.

As a corollary, we will enter now in a more controversial issue. When analysing the fieldwork data of Ehnasya we used modern satellite images of the area comparing them with old reports and maps of earlier researchers on the site (e.g. Naville, 1894; Wilcken, 1903). There were two rectangular enclosures that strongly called our attention, located to the west and the north of the Spanish concession (but unfortunately out of it). These are marked as S1 and S2 in Figure 1. According to early reports these would be two salt pans of unknown origin, called Ma’ m al Kôm el Assâra and Mellaha, respectively, but that were in use in the 19th century. Their orientation (nearly cardinal in one case) and location (in close apparent connection to the axes of the North temple, see Belmonte, Pérez Die and Díaz-Iglesias, 2015) was appealing.

In the religious written sources related to Herakleopolis (from the Coffin Texts onwards, Díaz-Iglesias, 2014) there are several references to a couple

of sacred, perhaps seasonal, lakes which received the names (with different variants) of Lake Natron and Lake Ma'a(t). The former could perhaps be connected with an endorreic area in the contour of Herakleopolis (sometimes confused with the lake produced at high water within the temple of Heryshef, see Fig. 2) where different salt deposits ("natron") could be collected in low waters. The latter had a name that could be tentatively translated as "Upper Lake" or "Lake that is in the height" (nothing to do with its nearly homophonous word *ma'at*, i.e. the cosmic order) which suggests that it was located in an upper or superior area which might only be filled up during the inundation.

Interestingly, structure S2 major axis could be assigned a declination of c. -16° (see Fig. 1) which fits, within the errors, to the declination of Sirius/Sopdet, the harbinger of the inundation, for a long part of Egyptian history. Could structures S1 (cardinally orientated) and S2 (orientated to Sopdet) be modern adaptations or rearrangements of the lakes of ancient sources? These have till now escaped any correct archeological identification. Hence, it would be fascinating if this were the case. Indeed a more detailed analysis of both structures ought to be performed in future seasons that may hopefully shed some light over this important, controversial but also very suggestive issue.

2. RAM-HEADED DEITIES, TEMPLES AND SKYSCAPING

During the six campaigns of the Egyptian-Spanish Mission of Archaeoastronomy of ancient Egypt a total of some 350 temples were measured. This permitted a pioneer statistical study of Egyptian temple alignment patterns which discovered a total of seven families of astronomical orientations (Belmonte, Shaltout and Fekri, 2009). One of these families (numbered V) was assigned to Canopus. Nearly twenty temples across Egyptian geography could be related to it. Interestingly, several temples associated with ram-headed divinities – who were also somehow related to Osiris – were among them.

In this sense, some inscriptions recording stellar epithets of Heryshef have been found in the Amun-Re religious complex at Karnak (Thebes) in two reliefs dating to the reign of Ramses III. Amun-Re was normally represented in human form, although his relationship with the ram is well-known. Suffice it to remember that his bark and the sphinx avenues were always decorated with ram-headed images and statues. The relationship between the nocturnal aspect of Re (who is depicted as a ram-headed creature) and Osiris is also a well established fact as the famous relief of Nefertari's tomb – and in other royal tombs in the Valley of the Kings – demonstrates. In the

same line of argument, numerous structures at Karnak had their axes presumably orientated to the setting of Canopus. These include the VII and VIII pylons creating a secondary axis of the complex (Gabolde, 1999) that was perpendicular to the main axis of the temple which was solstitially orientated (Hawkins, 1973; see Figure 3). The temple of Ramses III and the TIP chapel of Osiris Heqadjet (although with their gates open to the north) could have had their axes orientated to the setting of Canopus as well (Belmonte, Shaltout and Fekri, 2009: Appendix II). This series of facts would reinforce our hypothesis.

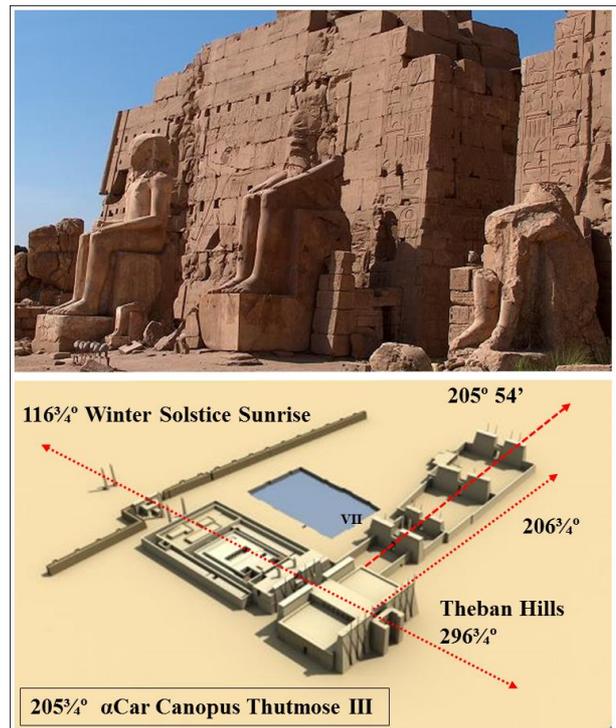


Figure 3. The VIIIth pylon of the temple of Amun-Re at Karnak, the first to be erected in the processional way to the temple of Mut during the reign of Thutmose III and Hatshepsut. This pylon, and the VIIIth one, defined a secondary axis of the temple that was not exactly perpendicular to the main axis which was orientated to sunrise at the winter solstice. This axis, however, was aligned, either by chance or probably by design, to the setting of Canopus during the reign of Thutmose III. See the text for further discussion. Diagram by the authors

It is worth noticing that the temple of the Oracle at the Oasis of Siwa, where Amun was conceived and represented as a ram-headed god (Fakhry, 2004), could also be oriented to Canopus (Shaltout, Belmonte and Fekri, 2007). The Oasis of Siwa is one of the most important areas of Egypt outside the Nile Valley and, from our personal point of view, is by far the most fascinating of all the oases of the Western Desert. After the foundation of Cyrene by Dorian colonizers in 631 B.C., the kings of Egypt became

interested in the oasis which was administered as a sort of vice-kingdom until Roman times.

The Oasis of Siwa is very rich in archaeological sites of Egyptian typology, with the remains of at least 12 temples of which the temple of the Oracle of Amun at Aghurmi is by far the best preserved and the most interesting. This temple has a splendid location in a low rocky outcrop above the palm-tree sea of the oasis with open views in all directions. It was built during the reign of Amasis (570-526 B.C.) perhaps over an earlier building, but the foundations of the temple have never been excavated in depth. The southeast horizon as seen from the sancta sanctorum of the temple is dominated by the hills of Djebel Takrur, where the quarry of the stones to build the temple was located. This orography would have been dominated in antiquity (6th century B.C.) by the appearance of Canopus in the winter skies. The temples of Khamisa and Zeitun, both dated in late Ptolemaic or Roman times, would be other examples of presumable orientation to the second brightest star in the Siwan skies (Shaltout, Belmonte and Fekri, 2007).

Heryshef had a possible Lower Egyptian counterpart in the ram-headed god Banebdjedet of the ancient city of Mendes (Djedet in Egyptian), capital of Egypt during the 29th Dynasty. Banebdjedet ("The Ram Lord of Djedet", also known as Mendes like the city in the Greek form of the name of the Egyptian king Nesobanebdjedet, i.e. Smendes) was considered as the "ba" (note the homophony between *ba* for ram and *ba* for power of manifestation) of four deities who were known to be four generations of father and son (Geb, Shu, Re and Osiris), the latter being the most relevant of the quartet (Redford, 2010). A substantial temple of the god existed at Mendes whose most representative structures were four gigantic, monolithic naoi dedicated to each of these divinities of which only one survives today (see Figure 4).

Although the temple of Banebdjedet built by the kings of the 29th Dynasty was open to the north, there are archaeological evidences that this was not the case in earlier periods and that the temple – or parts of it – could be facing south in previous periods of Egyptian history. Hence, with an azimuth of 22° (202° if south, Shaltout, Belmonte and Fekri, 2007; see Fig. 4), it would be nearly parallel to the temple of Heryshef at Herakleopolis Magna and, taking into account the different latitude, and possibly an alternative epoch (c. 600 B.C. or later), the temple axis could also have been orientated to the setting of Canopus. This similarity could indeed reinforce the association of Heryshef's temple at Herakleopolis, and even of the ram-headed god himself, with this bright star.

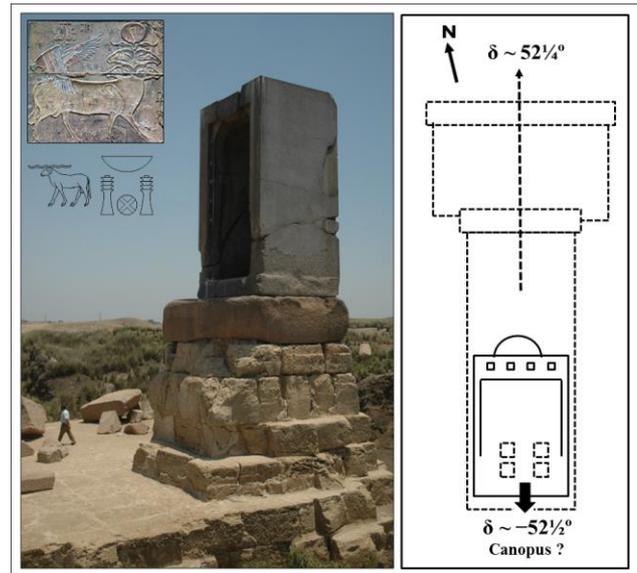


Figure 4. The only surviving exemplar of the four huge naoi once erected at the sancta sanctorum of the temple of the four ram-headed god Banebdjedet (image and glyph name within the diagram) at Mendes (ancient Egyptian Djedet), capital of Egypt during the 29th Dynasty. The temple plan shows that it is today orientated north. However, archaeological excavations on the site show that it might have originally been orientated towards south and hence to the setting of the star Canopus. See the text for further explanations. Diagram of the authors.

However, it is worth mentioning that neither of the two best known temples of another ram-headed deity, the "creator" god Khnum, at Elephantine and Esna, which are orientated closer to southeast, had any alignment compatible with the Canopus family (Belmonte, Shaltout and Fekri, 2009: Appendix II). A detailed comparison between the mythology associated with this divinity and his ram-headed counterparts could be interesting to establish similarities and discrepancies which may shed some light on this particular issue.

On the contrary, a very interesting case of the Canopus Family would be that of the Isis temple complex at Philae. The main axis of the temple of Isis on the site was diverted to a declination of $-53\frac{1}{2}^\circ$ and hence could have been orientated to the setting of Canopus. We should not forget that Isis was the consort of Osiris. In this role, it might have been significant to orientate her temple to a star which could have been associated with ram-deities, who themselves were so closely related to Osiris.

3. CONCLUSIONS

It is not self-evident whether the ancient Egyptians recognized Canopus or not. They probably did so; being the second brightest star in their skies, its presence would not have passed unnoticed, giving way to mythological associations also reflected in architectural constructions. However, we have been

unable to undoubtedly identify its name, astronomical correlations or possible religious connections (Lull and Belmonte, 2009). There are, however, a couple of interesting exceptions. On the one hand, the very late reference by M. Capella, who called it *Ptolemaeus* in honour of King Ptolemy Lagos (Allen, 1963). It should be remembered that kingship is one of the main attributes of Heryshef.

On the other hand, a possible relation between Canopus and Osiris (and hence to the mythology of Isis) can be inferred in Plutarch [*The mysteries of Isis and Osiris*, lxvi], although it is not clear if the text refers to the star itself or to the pilot of the vessel Argo. However, Argo Navis, clearly the constellation now (where Canopus is located at its helm), is related to the boat of Osiris within the same paragraph. The traditional Coptic name of the star may also relate it to sailing. Besides, this correlation could also be inferred from a controversial passage of the *Book of Day and Night* mentioning Osiris, who is “behind” Sah (Piankoff, 1942) and hence of a celestial body which would be located behind this ancient Egyptian constellation which is often identified as Orion or parts of it (Lull and Belmonte, 2009). So the star Canopus may be related in some way or the other to the Osirian Triad and hence to the deities who were somehow connected to this charismatic god as a celestial manifestation of them.

This might be one explanation for the stellar attributes of the god Heryshef (see Fig. 2), his relation-

ship with Osiris, and the orientation of his temple at Herakleopolis. The same might apply for other ram-headed divinities, such as Amun-Re or Banebdjedet who were somehow linked to Osiris and Re as well.

The land- and skyscape of Herakleopolis have proven to be deeply interconnected. The orientation of the main axis of the Temple of Heryshef allows confirmation of its membership to the Canopus family of orientations together with its visual connection with the TIP necropolis. The orientation of the chapel at this site seems to suggest a diachronic variability in the alignments that could perhaps be related to the precession of the equinoxes. The orientation of the building known as Kum el-Akareb to the funerary complex of Senuseret II is very appealing and suggests an original construction of this shrine in the Middle Kingdom. This will need to be further explored by the members of the Spanish Mission in highly desirable future excavations if socio-political circumstances allow it.

Finally, the equinoctial orientation of the North “Temple”, possibly of the Roman period, suggests a totally different context (a sanctuary of the Egyptian divinities or perhaps a Christian church) that will also need to be explained once the results of the excavations by the local Egyptian team of archaeologists have been published, contrasted and evaluated. The expectances for future research in Herakleopolis Magna are hence very promising.

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