

On the Corinthian Column at the Temple of Apollo Epikourios at Bassae*

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Introduction

The Greek Temple, despite its persistence and role as a paradigm of architectural beauty in Western Architecture discourse for centuries, poses substantial questions regarding its source of inspiration and the origin of some of its most essential architectural and typological elements. Other than the passing accounts of Pliny and Theophrastus, our current understanding relies upon Pausanias¹ and Vitruvius,² who wrote from a Hellenistic perspective, upon archaeology, or upon such efforts to link philosophy with temple building as Hahn's *Anaximander and the Architects* (2001). The temple of Apollo Epikourios at Bassae (fifth century B.C.) by Ictinus, located in a remote but sacred part of mountainous Arcadia, exhibits unique architectural peculiarities. The most prominent of these are the earliest known coexistence of the three Classical Orders and appearance of the Corinthian column, which make it a fundamental monument for scholarly investigation into the Greek temple's typical architectural elements and the aspirations of its builders and commissioners influenced by religious developments and the inventive spirit of Classical period. For these reasons, the temple from the moment of its discovery in the late eighteenth century has attracted the

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¹ Pausanias *Description of Greece* with an English Translation by W. H. S. Jones and H. A. Ormerod, in 4 Volumes, Cambridge, MA, Harvard University Press; London, William Heinemann Ltd. 1918.

² Vitruvius, *The ten books on architecture*; tr. by M. H. Morgan. 1859–1910, Cambridge, Harvard University Press, 1914.

attention of eminent figures such as: A. Blouet,³ C. H. Hallerstein,⁴ C. R. Cockerell,⁵ W. B. Dinsmoor,⁶ W. Hahland,⁷ G. Roux,⁸ U. Pannuti,⁹ F. A. Cooper,¹⁰ A. W. Lawrence.¹¹ However, despite the extensive archaeological investigation and scholar attention, many questions related with the temple's unique appearance remain unanswered or debatable: the roof design, the role and nature of the Corinthian column, the east adyton door to name a few. Based upon the most recent archaeological and historical evidence for the temple and its environment, upon Pausanias, the ancient literature of Homer and Hesiod, and relevant myths this paper will focus on the temple's immediate mythical context and its iconography, morphology and articulation in relation with solar observations that point to a specific role of the Corinthian column-order and justify the temple's daring design, setting and proportions. This study offers a new comprehensive understanding for this remarkable temple which reveals a sensitive and mindful interdependence of the building with its site, its surrounding landscape and the celestial world.

³ Blouet, G. A., *Expédition scientifique de Morée II*, Paris, 1833.

⁴ C. Haller, *Le temple de Bassae*, G. Roux, ed., Strasbourg, 1976.

⁵ Cockerell, C. R., *The temples of Jupiter Panhellenicus at Aegina and of Apollo Epicurus at Bassae*. London, 1860

⁶ Dinsmoor, W. B., *The architecture of Ancient Greece; an account of its historical development*, London, 1950. Dinsmoor, W. B. "The Temple of Apollo at Bassae," *Metropolitan Museum Studies* 4, 1933, pp. 204-227.

⁷ Hahland, W., *Der iktinische Entwurf des Apollontempels in Bassae; Mit 3 Abbildungen und 1 Beilage*. Jahrbuch Des Deutschen Archäologischen Institut, Vol. 63, p. 14. 1948.

⁸ Roux, G., & Université De Paris, *L'architecture De L'Argolide Aux IVe Et IIIe Siècles Avant J.-C.*, 1961.

⁹ Pannuti, U., *Il tempio di Apollo Epikourios a Bassai (Phigalia). Storia, struttura e problemi*, Roma: Accademia nazionale dei Lincei, 1971.

¹⁰ Cooper, F. A., *The Temple of Apollo at Bassae*. Ph.D. diss., University of Pennsylvania, 1970.

¹¹ Lawrence, A. W., & Tomlinson, R. A., *Greek architecture*, 4th (integrated) ed., Harmondsworth, Middlesex, England; New York, U.S.A.: Penguin Books. 1983.

1. Site consideration—mythological context

The temple stands a half mile above the ancient Arcadian city of Phigaleia (Figs. 1, 2), 14 kilometers from the modern city of Andritsaina occupying a limestone plateau at the height of 1131 meters, named Bassae, on the southern slope of Mt. Kotilion and has been designated since 1986 a monument of World Cultural Heritage of UNESCO for its beauty and well-preserved condition. The *Description of Greece* from the famous second-century A.D. traveler and geographer Pausanias is the only ancient source of information in connection with the date of its construction, the architect, and the architecture of the temple.¹²



Figure 1. Ancient sites of interest around Bassae.

¹² Pausanias 8.41.7–9.



Figure 2. Topographic map of southwest Arcadia.

During his visit in Arcadia, he passed by Phigaleia and visited the temple of Apollo Epikourios informing us also of the existence of another smaller temple on top of Mt. Kotilion dedicated to Aphrodite and a sacred spring to the south of the mountain slope (Figs. 3, 4).¹³

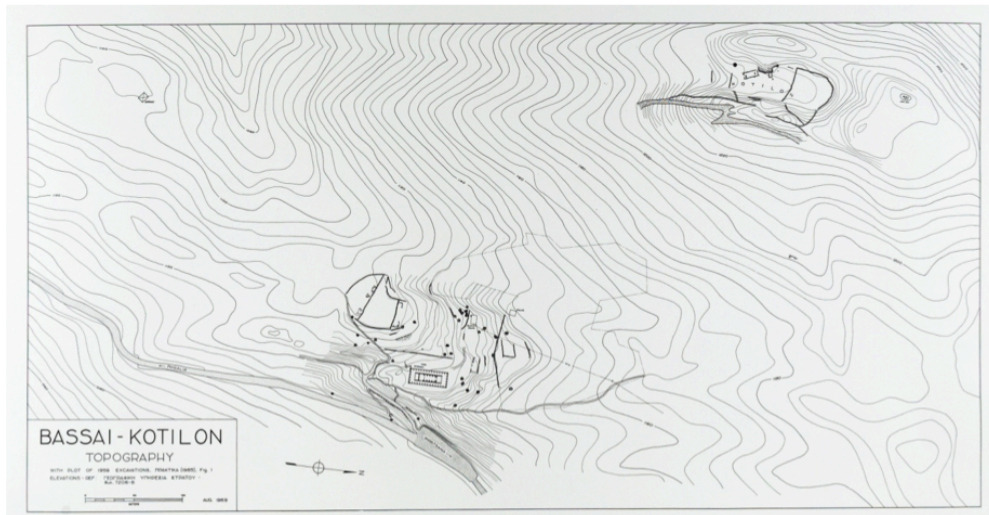


Figure 3. Topographic plan of the Bassae-Kotilon precincts.

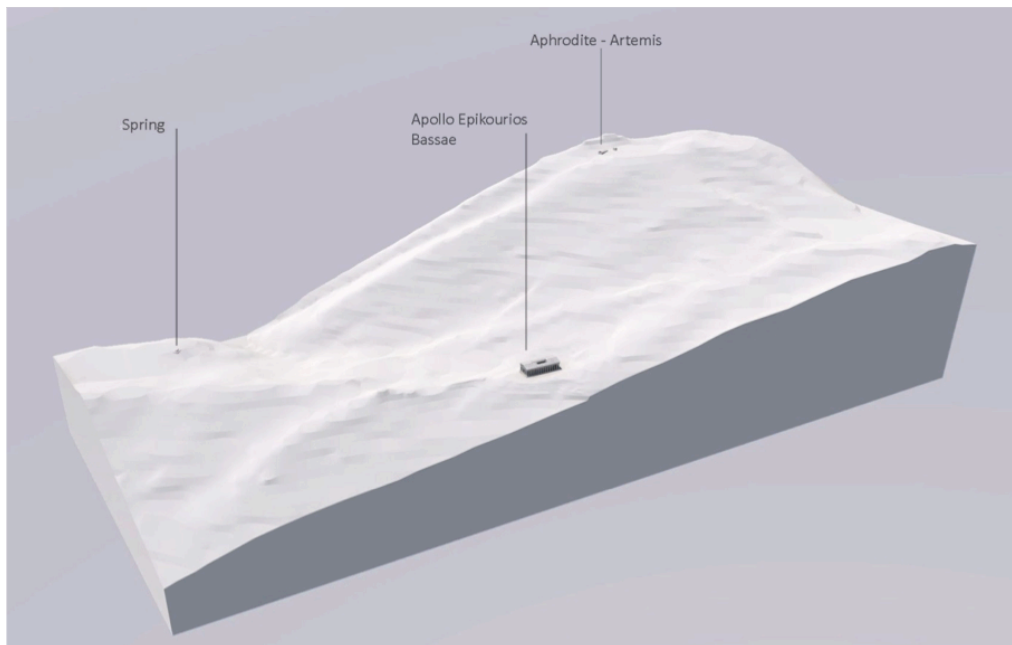


Figure 4. 3D Model of the topographic plan of the Bassae-Kotilon precincts (see figure 3).

¹³ Pausanias 8.41.10. On the Kotilion temples see, Cooper, F. A., *The Temple of Apollo Bassitas*, vol. 1 *The architecture*; with contributions by Nancy J. Kelly, Princeton, NJ: American School of Classical Studies at Athens, 1992. pp. 59–66.

The surrounding Arcadian mountainscape is imposing and fully rewarding after the long and weary travel to the top of the mountain. The main views from the Bassae temple are east toward Mt. Lykaion and south to Mt. Ithome where the ground drops rapidly towards the Neda river,¹⁴ while the north and west views are obstructed by an adjacent slope.

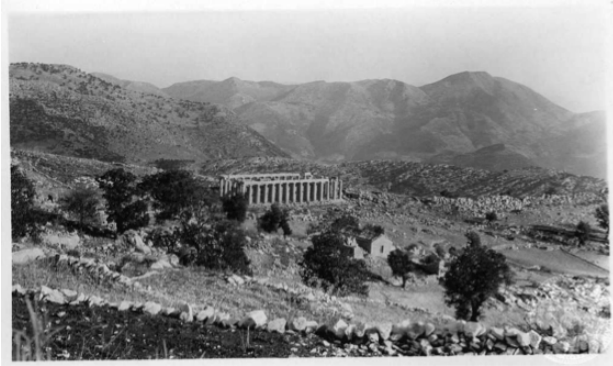


Figure 5. Bassae. Temple of Apollo, October 1931.



Figure 6. Northwest view of the temple of Apollo at Bassae.

The Classical temple (Figs. 5, 6) is sited ten meters north of the ruins of the Archaic temple (seventh century B.C.), and shares with it a north-south orientation, the elongated plan, the unusual east adyton door, and other design “anomalies,” which according to Nancy Kelly

¹⁴ Pausanias 8.41.2–6.

reveals a strong religious conservatism at the site (Figs. 7, 8).¹⁵



Figure 7. Aerial photo of Archaic foundations. North at top.

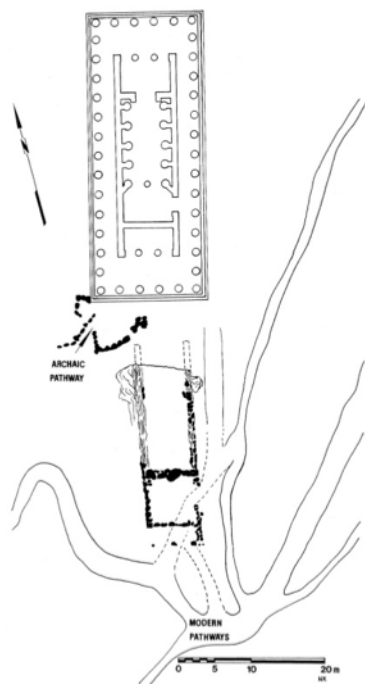


Figure 8. Modern and ancient pathways, Bassae sanctuary, based on the topographic plan, F. Cooper, 1992. IV. pl.5.

¹⁵ Nancy Kelly, *The Archaic Temple of Apollo at Bassai: Correspondences to the Classical Temple*, *Hesperia: The Journal of the American School of Classical Studies at Athens*, Vol. 64, No. 2 (April–June, 1995), The American School of Classical Studies at Athens, p. 263.

The mountainous and remote Arcadia was indeed the epicenter of important myths, birthplace of many Olympians, and center of early human settlement and religious activity. The Arcadians especially were known as autochtones-indigenous in Arcadia, called by the rest of the Greeks as *acorn eaters* (βαλανηφάγοι) and *older than the moon* (προσέληνοι), to point out their antiquity as a race and the ancient origin of their customs and beliefs.¹⁶ The close examination of the two most archaic and preeminent beliefs of the south west part of Arcadia: the birth of Zeus from Rhea on Mt. Lykaion, as well as several links with Zeus cults at Mt. Ida on Crete and nearby Olympia, and the search and mourning of Demeter for her kidnapped daughter Persephone, the founding myth of the Eleusinian Mysteries, is necessary in order to understand the overall religious backdrop and expectations of the inhabitants of Phigaleia from properly venerating the gods, which Apollo Epikourios belongs to, before we turn our attention to the temple itself to see in which form these hopes were reaffirmed and played out.

1.1. Mountain Lykaion—Zeus *Lykaios* sacrifice

In the heart of Arcadia looking east from the temple stands Mt. Lykaion, site of birth and youth period of Zeus. At the “Lykaia festival” of Zeus *Lykaios* (Zeus the Bright or ‘wolf-Zeus’, similar to Apollo *Lykeios*),¹⁷ Plato inform us of an old and sacred ritual connected with human sacrifice, cannibalism and werewolves.¹⁸ According to the myth, Lykaon slaughtered a young boy upon the altar, in one version his grandson Arcas,¹⁹ and then mixed his entrails into the sacrificial

¹⁶ Burkert, W., *Homo Necans: The Anthropology of Ancient Greek Sacrificial Ritual and Myth*, Berkeley: University of California Press, 1983, p. 84.

¹⁷ Burkert 1983, p.121. On Apollo’s Lykeios epithet see Hornblower, S., and Spawforth, A., *The Oxford Companion to Classical Civilization*, Oxford; New York: Oxford University Press, 1998, p. 51, s.v. Apollo.

¹⁸ Burkert 1983, p. 84; Plato *Republic* 565d.

¹⁹ Burkert 1983, p. 86. Arcas is identified as a figure at the Bassae pronaos metopes (see Pronaos and Opisthodomos Metopes section below)

meal for the Gods.²⁰ This profane act enraged Zeus who destroyed the newly-formed community and transformed Lykaon into a wolf, whereas another version of the tale informs us of the almost total destruction of mankind by Zeus with a flood.²¹ In his book *Homo Necans*, Walter Burkert (1931–2015) an authority on Greek mythology and cult, unfolds how the sacrificial ritual was connected with initiation rites of young men into warrior-bands upon entering manhood, a closed male realm, complemented by a female one of “consecrated women,” who entered the cave where Rhea bore Zeus to attend the newborn life, as part of the distribution of societal roles and “... thus, the polarity of both sexes bound together the course of life and assured perpetuity in the face of death.”²² From Burkert we are also informed that in an analogous sacrifice ritual, that of Thyestes and Harpagos, the crime caused the sun to reverse its course, thus it assumed an almost cosmogonic function: “... the transition of night into day—the Greek conception of time always follows this order—corresponds to the dark and light sides of sacrifice.”²³

Along with weather magic, Zeus was recognized on Mt. Lykaion as a weather god.²⁴ Pausanias gives an account of such a weather ritual at a spring named Hagno, one of the three nymphs that reared Zeus:²⁵

[8.38.4] Should a drought persist for a long time, and the seeds in the earth and the trees wither, then the priest of Lycaean Zeus, after praying towards the water and making the usual sacrifices, lowers an oak branch to the surface of

²⁰ Burkert 1983, pp.86–87.

²¹ Burkert 1983, p. 86.

²² Burkert 1983, pp. 91–92.

²³ Burkert 1983, pp. 105–106.

²⁴ Hornblower, S., and Spawforth, A., *op. cit.*, p. 786, s.v. Zeus. Burkert 1983, p. 114; Burkert, W., *Greek Religion*. Cambridge, MA: Harvard University Press, 1985, pp. 120, 266.

²⁵ Pausanias 8.38.3.

the spring, not letting it sink deep. When the water has been stirred up there rises a vapor, like mist; after a time the mist becomes cloud, gathers to itself other clouds, and makes rain fall on the land of the Arcadians.

Pausanias, *Description of Greece*, translated by W. H. S. Jones

The invocation of rain from Zeus²⁶ aims to prevent the famine caused by drought, that awakens the savage dark side that resides in human nature. What we see at play on the Lykaion mountain is the attempt to establish a beneficial cosmic and social order for humanity, along with the portrayal of Zeus as guarantor of natural order, perpetuated by the community through the acceptance of the established societal roles and structure around the sacrificial tripod and Rhea's cave.

The antiquity of these myths and rituals have recently been confirmed by the Mt. Lykaion Excavation and Survey Project²⁷ which has made a complete map of the area. The most important findings include: a 3000-year-old skeleton of a young boy within the sacrificial altar (1100 B.C.),²⁸ the facilities for the athletic games that took place every four years, and a rock-crystal seal with the image of a bull (1500–1400 B.C.)²⁹ that could, according to the archaeologists, indicate interaction with the other mythic birthplace of Zeus in Mt. Ida in Crete and generally the Minoan culture (see also the 'Griffin Warrior' burial from Pylos, 1550–1450 B.C.).³⁰ Pottery findings of the Neolithic, Early Helladic, and Middle Helladic periods push back

²⁶ Burkert 1985, p. 126.

²⁷ Since 2004 the project has been working on the site, and since 2006 excavations have been underway. <http://lykaionexcavation.org/about/> (Accessed at 12/08/2016).

²⁸ <http://lykaionexcavation.org/site/research-highlights> (Accessed at 12/08/2016).

²⁹ <http://archive.archaeology.org/0805/trenches/zeus.html> (Accessed at 12/08/2016).

³⁰ Davis, J. L., and Stocker, S. R., "The Lord of the Gold Rings: The Griffin Warrior of Pylos." *Hesperia: The Journal of the American School of Classical Studies at Athens*, Vol.85 No.4, October–December 2016, pp. 627–655.

the chronology of the Lykaion sanctuary to 1600 B.C.³¹ According to Burkert, the games, along with the sacrificial and mythic elements,³² also show a striking resemblance with nearby Olympia (22 miles away) that could indicate this place as their origin. Olympia, like Mt. Lykaion, also contains initiatory features similar to Crete, the rival birthplace of Zeus.³³ Pausanias also inform us that on Mt. Lykaion, alternatively named Sacred Peak or Olympus, there was a place called Cretea on the left of the grove of Apollo Parrhasian, that the Arcadians claimed that the Crete, believed to be the place where Zeus was reared, was here and not the island.³⁴ Apollo's relation to Zeus youth period, is reinforced by the presence on the east part of the mountain range of Lykaion of a sanctuary dedicated to Apollo the Parrhasian, also called Pythian. Theisoa, another of the three nymphs that reared Zeus, was also the name of a city in the Parrhasia region, and later on the name of one district in Megalopolis, the later major urban center of all Arcadians, presumably inhabited by transplanted population from the area of Parrhasia.³⁵

At least three elements allude to a close affinity of Phigaleia and Apollo Epikourios at Bassae with Zeus *Lykaios*. Pausanias informs us of a sacrifice of a boar at the marketplace of Megalopolis for Apollo Epikourios that was carried in procession under the music of flute at the sanctuary of Apollo Parrhasian on Mt. Lykaion, where the victim was then consumed.³⁶ According to Madeleine Jost, professor of Greek history, in this way an urban sacred place, that

³¹ <http://lykaionexcavation.org/site/research-highlights> (Accessed at 12/08/2016).

³² Burkert 1983, pp. 93–94, 99–103.

³³ Hornblower, S., and Spawforth, A., *op. cit.*, p. 788, s.v. Zeus.

³⁴ Pausanias 8.38.2–8.

³⁵ Pausanias 8.38.3.

³⁶ Pausanias 8.38.8. Jost, M., "The Distribution of Sanctuaries in Civic Space in Arkadia," in Alcock, S. E., and Osborne, R., *Placing the Gods: Sanctuaries and Sacred Space in Ancient Greece*. Oxford; New York: Clarendon Press; Oxford University Press, 1994, p. 229. Nilsson, M. P., *Cults, Myths, Oracles, and Politics in Ancient Greece*, Skrifter Utg. Av Svenska Institutet I Athen, 8^o 1, Lund: C. W. K. Gleerup, 1951, p. 19.

owes its sacredness to a sanctuary at the countryside is closely linked with another rural sanctuary whose god evokes the antiquity of the region.³⁷ Also in Megalopolis marketplace, Pausanias found the statue of Apollo from Bassae temple together with a small one of the Mother of the Gods in front of the Lycaean Zeus enclosure, and in it saw a statue of Pan Sinoeis.³⁸ For Jost, this sanctuary is a transposition, of the complex cult of Zeus *Lykaios* on Mt. Lykaion, which is an instance of an interesting phenomenon of the period, the founding of “doublets” of the most sacred places of the territory.³⁹ The figure of Pan, god of nature, fertility, spring, the mountain wilds, and sexuality, should not be overlooked, having neighbouring sanctuaries with Zeus on Mt. Lykaion. The epithet Sinoeis of a Pan which comes from the Bassae-Phigaleia region, may show a contamination with a cult that originated from that region.⁴⁰ In regards to the statue of Apollo, modern scholarship argues for the original position of the statue of Apollo Epikourios to have been either inside or outside the temple at Bassae, before it was brought to Megalopolis by the Phigalians as a contribution to the foundation of the new city (370/69 B.C.).⁴¹ Finally, deified rivers in ancient Greece, knitted together several sites, through their source, following their disappearance and reappearance across the landscape in the form of natural fountains-waterfalls and sacred springs, that defined proper areas of worship and sanctuaries. In our case this role is played out by the river Neda flowing near Phigaleia, named after the last of the three nymphs that reared Zeus on behalf of Rhea. The source of Neda river is on Mt. Cerausius part of Mt. Lykaion and at a site where the river was the nearest to Phigaleia, the young men of the city cut off and through their

³⁷ Jost, M., *op. cit.*, p. 229.

³⁸ Pausanias 8.30.2–4, 8.41.9.

³⁹ Jost, M., *op. cit.*, pp. 226–227.

⁴⁰ Jost, M., *op. cit.*, p. 227. Cooper, F. A., *The architecture*, 1992, p. 65.

⁴¹ Cooper, F. A., *The Temple of Apollo at Bassai: A Preliminary Study*. Outstanding Dissertations in the Fine Arts, New York: Garland, 1978, p. 10.

hair in honor of the river.⁴² Flowing just behind Phigaleia Pausanias saw another smaller river called Lymax falling into Neda, that got its name from the cleansing of Rhea. According to the myth, the three nymphs after Rhea gave birth to Zeus, threw the refuse products of her travail into Lymax.⁴³ Moreover, at the spot where Lymax and Neda streams met there was also an ancient sanctuary of Erynome,⁴⁴ the titan goddess identified as the mother of the Graces⁴⁵ and queen of Ophion, the pair that lost their thrones from Kronos and Rhea. The Neda and Lymax rivers therefore mediated to Phigaleia the myth of Zeus through their relation to Rhea and her nymphs. The Theisoan city in Parrhasia and later on district in Megalopolis, the Hagno spring of the weather ritual on Mt. Lykaion and Lymax river falling into Neda were undeniable linked through the caretakers of Rhea and the infant Zeus.

These elements render possible that the Bassae temple and its area might have been part of a group with other sacred sites in the area of Mt. Lykaion that knitted together several themes—the meteorological/agricultural/seasonal cycle, sacred mountain peaks (Mt. Lykaion, Mt. Ithome) and rivers, coming-of-age rituals, and links to the Idean cult in Crete—prior to their formal concentrated composition around the agora in Megalopolis, which seems to go beyond being simple juxtapositions of deities in shrines solely for the purposes of syncretism by Epaminondas, founder of Megalopolis, a generation after the completion of the re-building of the temple at Bassae. Nonetheless, these late Classical architectural compositions represent the beliefs of the transplanted inhabitants from the various regions around Megalopolis. According to Jost they do not try to replace or rival the sanctuaries of the countryside, but rather recognize their prestige and importance for the town. In short, they are in no way just

⁴² Pausanias 8.41.3.

⁴³ Pausanias 8.41.2.

⁴⁴ Pausanias 8.41.4–6.

⁴⁵ Hesiod *Theogony* 908.

an abstract or arbitrary agglomeration of deities.⁴⁶ At the time of Bassae temple construction, starting around 429 B.C. and completed in 400 B.C., the syncretic religious processes may have already been present, fostering the appearance of the novel elements of the Classical temple, based however heavily on the guidelines of the archaic one that it replaced, thus guaranteeing religious continuity.

1.2. Demeter's grief for the loss of Kore.

To better grasp the importance of religious continuity, the power of tradition on people's mind and the nature and horizon of Phigaleians beliefs, we will now turn to the second major myth present in Phigaleia and the broader region, that of Demeter and Persephone. From the *Homeric Hymn to Demeter* and Hesiod's *Theogony* we are informed about the abduction of Persephone, the daughter of Zeus and Demeter, by Hades-Aidoneus, lord of the underworld, while she was gathering flowers from a meadow with a company of girls among them Athena and Artemis, as young girls generally play in the choruses of Artemis. Demeter, having heard the cry of her daughter, started in agony to search for her and eventually with the help of Hekate, Pan and Helios (Sun) learned of the abduction of her daughter by Hades. The loss of the *Kore* to the underworld led to the mourning of Demeter in a cave, that brought devastation to the land; the oxen drew the plough in vain, nothing germinated and nothing grew. Then, Zeus intervened in order to stop the destruction of humankind and the loss of their offerings to the Gods. In the end a fair agreement was reached, whereby the daughter would stay as bride of Hades one third of the year in the underworld and then ascend to spend the remaining two thirds with her mother:

⁴⁶ Jost, M., *op. cit.*, p. 228.

[459] Then bright-coiffed Rhea said to Demeter: “Come, my daughter; for far-seeing Zeus the loud-thunderer calls you to join the families of the gods, and has promised to give you what rights you please among the deathless gods, and has agreed that for a third part of the circling year your daughter shall go down to darkness and gloom, but for the two parts shall be with you and the other deathless gods: so has he declared it shall be and has bowed his head in token. But come, my child, obey, and be not too angry unrelentingly with the dark-clouded Son of Cronos; but rather increase forthwith for men the fruit that gives them life.”

Homeric Hymn to Demeter, translated by H. G. Evelyn-White

The myth was understood since antiquity as a natural allegory, as the corn which must descend into the earth so that from death new fruit may germinate, its seasonal return when “the earth blooms with spring flowers.”⁴⁷ According to Burkert the myth also found a double existence between the upper world and the underworld: “... a dimension of death is introduced in life, and a dimension of life in the death.”⁴⁸ Pausanias informs us that the Phigaleians worshiped not far from their city, an old image of Demeter, surnamed the Black, inside the cave where the great goddess hid herself during her mourning. The consequences that the inhabitants would suffer if she were not properly worshipped are dark and gloomy, according to Pausanias:

[8.42.1] The second mountain, Mount Elaius, is some thirty stades away from Phigalia, and has a cave sacred to Demeter surnamed Black. The Phigalians

⁴⁷ Burkert 1985, p. 160.

⁴⁸ Burkert 1985, pp. 159–161.

accept the account of the people of Thelpusa about the mating of Poseidon and Demeter, but they assert that Demeter gave birth, not to a horse, but to the Mistress, as the Arcadians call her.

[8.42.2] Afterwards, they say, angry with Poseidon and grieved at the rape of Persephone, she put on black apparel and shut herself up in this cavern for a long time. But when all the fruits of the earth were perishing, and the human race dying yet more through famine, no god, it seemed, knew where Demeter was in hiding,

[8.42.3] until Pan, they say, visited Arcadia. Roaming from mountain to mountain as he hunted, he came at last to Mount Elaius and spied Demeter, the state she was in and the clothes she wore. So Zeus learnt this from Pan, and sent the Fates to Demeter, who listened to the Fates and laid aside her wrath, moderating her grief as well. For these reasons, the Phigalians say, they concluded that this cavern was sacred to Demeter and set up in it a wooden image.

[8.42.4] The image, they say, was made after this fashion. It was seated on a rock, like to a woman in all respects save the head. She had the head and hair of a horse, and there grew out of her head images of serpents and other beasts. Her tunic reached right to her feet; on one of her hands was a dolphin, on the other a dove. Now why they had the image made after this fashion is plain to any intelligent man who is learned in traditions. They say that they named her Black because the goddess had black apparel.

[8.42.5] They cannot relate either who made this wooden image or how it caught fire. But the old image was destroyed, and the Phigalians gave the goddess no fresh image, while they neglected for the most part her festivals and sacrifices, until the barrenness fell on the land. Then they went as suppliants to the Pythian priestess and received this response:–

[8.42.6] Azanian Arcadians, acorn-eaters, who dwell In Phigaleia, the cave that hid Deo, who bare a horse, You have come to learn a cure for grievous famine, Who alone have twice been nomads, alone have twice lived on wild fruits. It was Deo who made you cease from pasturing, Deo who made you pasture again After being binders of corn and eaters of cakes, Because she was deprived of privileges and ancient honors given by men of former times. And soon will she make you eat each other and feed on your children, Unless you appease her anger with libations offered by all your people, And adorn with divine honors the nook of the cave.

The tale and the oracle's response, offer us important information to understand some of the corners of the Phigaleian community, the builders of the temple of Apollo Epikourios. They are depicted as being wanderers twice, not able to have a settled inhabitation, that is allowed from agriculture and local pasturing, both depended on the fertility of the land. In their past due to climatic reasons, they have faced drought and famine that disrupted social order and behavior and probable befallen to cannibalism to survive. The oracle also clearly relates the Black Demeter with the story of Persephone and warned the Phigaleians that if the image is not properly worshipped, they will not only suffer once more a barren, infertile land but moreover that the Goddess through her passive stance, of withholding and not allowing the fruits of the land to rise, will through the awaking of an inhumane passion, hunger, make them

again eat each other and their children. Actions that the Gods do not accept and that caused in the past the severe punishment of Zeus, who did not hesitate to destroy the human community on Mt. Lykaion and to bring the near extinction of humankind through a deluge, another traumatic memory of the past. Whereas the appeasement of the communal concerns over crops fails on Mt. Lykaion is directed to Zeus the rainmaker, in Phigaleia is directed towards Demeter. Furthermore, we learn that Pan, the half-goat god, that we have already met on Mt. Lykaion, in Zeus sanctuary of Megalopolis and at Bassae area, is an important figure as an informant of Zeus in the soothing of Demeter.

The Demeter and Persephone myth, fertility symbolism and new religious ideas that are slowly focusing more and more on the individual concern of the salvation of soul, are related with another persistent and ancient cult that of the Mysteries. During her search for her daughter, Demeter passed from Eleusis and founded the famous Eleusinian Mysteries, which revolved around procreation, sacred ritual ploughing of the fields and the rebirth of nature. Many centers of the cult of Demeter and Persephone—alternatively named Despoina, Mistress, Kore the Savior—can be found in the tradition of Eleusis, *Mysteria*, in Arcadia and Messenia,⁴⁹ many of them in the adjacent Bassae area like in Lykosura,⁵⁰ Thelpusa,⁵¹ Megalopolis.⁵² In Phigaleia itself the myth of Demeter and Persephone according to Burkert may date from as early as the Bronze age.⁵³ In Andania at a place called the Carnasian Grove the Great Goddesses were worshiped in the same fashion as at the Eleusinian Mysteries, for Pausanias tells us: “I may not reveal the rites of the Great Goddesses, for it is their mysteries which they celebrate

⁴⁹ Burkert 1985, p. 161.

⁵⁰ Pausanias 8.37.1–8.38.2.

⁵¹ Pausanias 8.25.2–11.

⁵² Pausanias 8.31.1–8.

⁵³ Burkert 1985, p. 6.

in the Carnasian grove, and I regard them as second only to the Eleusinian in sanctity.”⁵⁴

Demeter is called in prayers alongside Chthonic Zeus by the peasant at seed time and also at the annual harvest festival in honor of the goddess, as the one filling the barn with corn, the center of her power and favor. Numerous depictions show her among wreaths of ears of corn, some holding them in her hand.⁵⁵ Also Demeter’s son Ploutos, Wealth, sired on a thrice-ploughed corn field, is identified with wealth in the form of corn and the treasury, *thesavros*, the granary.⁵⁶ *Demetriaka* in modern Greek still means the corn products of earth.

Apollo too has power over good harvest as the one who averts dangers, keeps away the mice as *Smintheus*, locusts as *Parnopios*, and corn rust as *Erysibios*.⁵⁷ Also “Apollo’s birthday falls on the seventh day of the month Bysios in the spring, which likewise signals Apollo’s return to power,”⁵⁸ attesting to the importance of the sunrays and its warmth in the blossoming of plants and fertility of the land. Pan,⁵⁹ Demeter-Persephone, Apollo-Artemis, and Zeus relations are privileged in this part of Arcadia.⁶⁰ They are the ones that bring the blessings of rich harvest, healthy children and civic order, according to Burkert: “... bad harvests and infertility of the soil, diseases of men and cattle, bareness of women and abnormal offsprings, civil wars and defeat by a foreign army ...” all these can be prevented by sacrifice and prayer by engaging the appropriate god for help “... Demeter for the fruits of the field, Apollo against pest and illness, and Zeus who joins together against civic discord.”⁶¹

⁵⁴ Pausanias 4.33.4–6.

⁵⁵ Burkert 1985, p. 159.

⁵⁶ Burkert 1985, p.159.

⁵⁷ Burkert 1985, p. 265.

⁵⁸ Burkert 1983, p. 125.

⁵⁹ See Pan in Arcadia and relation to Lykæan Zeus. Hornblower, S., and Spawforth, A., *op. cit.*, p. 514, s.v. Pan.

⁶⁰ Pausanias 8.38.2.

⁶¹ Burkert 1985, p. 264.

The relationship of this Trio is attested at Megalopoli's marketplace portico, where in the east there is a sanctuary of an enthroned Zeus the Saviour with Artemis and Megalopolis, standing next to him and in the west of the portico there is an enclosure to Demeter and the Maid the Saviour with a relief at the entrance depicting Artemis, Asclepius and Health.⁶² Other interesting elements here that are connected with the myths and rituals that have been examined so far are the images on the statues of the Goddesses depicting the scene of Persephone gathering flowers with her retinue of girls, a statue of Heracles next to Demeter and a table engraved with reliefs of the two Seasons, Pan with pipes and Apollo playing the harp, with an inscription claiming that they are amongst the first gods. Also depicted on the table are several nymphs among them Neda holding the infant Zeus, Hagno holding a water pot in one hand and a bowl in the other and two more nymphs that carry water pots with water pouring out of them.⁶³ Moreover, within the enclosure of the mysteries of the Great Goddesses amongst the other gods we find Sun surnamed the Saviour.⁶⁴ This urban symmetrical composition around the portico together with the conclusions from the examination of the sacrifice on Mt. Lykaion, weave tightly together the most important myths of the countryside, Lykaean Zeus and Demeter-Persephone, in support of the position that they reflect preexisting associations between them and with Apollo.

The examination of Apollo's temple surrounding sacral landscape reveals also the recurring issues of a concern over the weather conditions and water supply in relation to the fertility of flora and fauna, not surprising, for mountainous communities that had to sustain themselves from the sparse and small arable land plots mainly on artificial terraces on the

⁶² Pausanias 8.30.10–8.31.1.

⁶³ Pausanias 8.31.2–6.

⁶⁴ Pausanias 8.31.7, also see in 7.23.8 Helios-Apollo as the one imparting air's healthfulness by adapting in each season his course, thus presented as rightful father of Asclepius.

mountains slopes, supplementing their scarce provisions of cereals with game from their main activity of pasturing and acorns offered by nature. This fragile balance was also accentuated from the lack of immediate and easy communication with the sea trade supplies for cereals. Indeed, the failure of even one crop could made the difference between life and death. Due time, following the gradual decline of the ancient Greek religion, these cults along with the temple at Bassae, situated between the major sites of the myths examined, will be left to oblivion for centuries.

2. The Temple of Apollo Epikourios at Bassae.

It was only in the eighteenth century that the temple became the subject of archaeological and academic interest during the advent of European Neo-Classicism. The first to visit the temple was the French architect J. Bocher (1765); however, the systematic excavation of the site started much later in 1811–1812 with ‘the Society of travellers’, a group of individuals from various nationalities and interests: treasure hunters, antiquarians-enthusiasts, archaeologists, and architects-scholars of neo-Classical architecture, including among others: J. Foster, C. R. Cockerell, C. H. Hallerstein, G. Gropius. These expeditions created valuable drawings of the temple that depict many lost architectural elements. However, the Ionic frieze, still intact in place, was removed from the temple and bought by the British Museum in 1815, where it still resides. The temple’s construction date is placed between 429 to 400 B.C.⁶⁵ It is a Doric, peripteral, hexastyle building with the short side having six columns and the long side fifteen columns, instead of the thirteen that we should expect based on the classical proportions of the period. The temple’s elongated plan, eastern adyton door, and its axis that runs north-south have their origin in the archaic late-seventh-century B.C. temple whose foundation, as

⁶⁵ Cooper, *The Architecture*, 1992, p. 5, 163; Cooper 1978, pp. 4–5, 74–75.

we have seen, was found slightly south of the existing temple.⁶⁶ The Classical temple presents a number of unusual features which appear to refer to both archaic practice and to new forms of architectural articulation. It is Doric on the exterior, but houses an Ionic colonnade on the interior, as well as the earliest known use of the Corinthian Order, in a single free-standing column centered at the back of the naos (Figs. 9, 10, 11).⁶⁷



Figure 9. Reconstruction drawing of the Corinthian capital now lost.

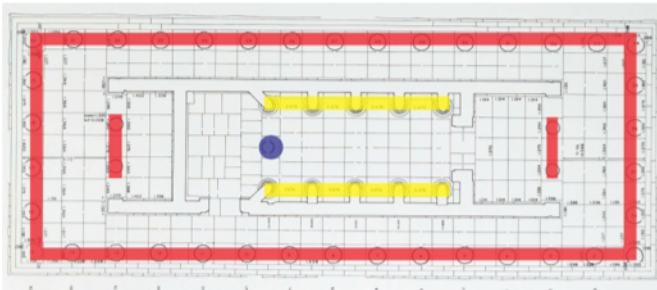


Figure 10. Distribution of the orders in Bassae temple plan: Doric - Red, Ionic - Yellow, Corinthian - Blue.

⁶⁶ Cooper, F. A., "The Temple of Apollo at Bassae: New Observations on Its Plan and Orientation," *American Journal of Archaeology*, Vol. 72, No. 2 (April, 1968), Archaeological Institute of America, p. 103, note 3-4. Kelly *op. cit.*, p. 232.

⁶⁷ Cooper 1978, p. 151. On the hypothesis of the three Corinthian columns, see Dinsmoor, W., "The Temple of Apollo at Bassae," *Metropolitan Museum Studies* 4, 1933, p.212. Cooper 1978, pp. 151-153.

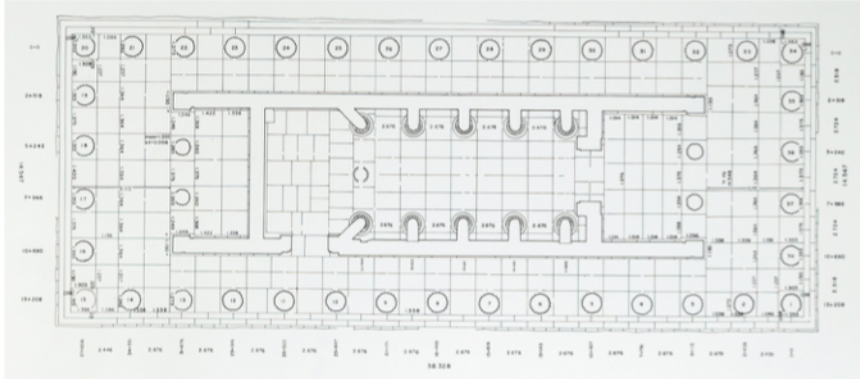


Figure 11. Plan of the temple of Apollo at Bassae with ideal dimensions.

The Ionic colonnade is unusual in that it actually consists of engaged piers and may indicate a link with Olympia (Figs. 12, 13), since the Heraion there exhibits alternate engaged columns in the cella and preserved its archaic origins (around 600 B.C.) up to the time of Pausanias, who noted a surviving column of wood.



Figure 12. Restored ruins of the temple – Olympia, Temple of Hera.

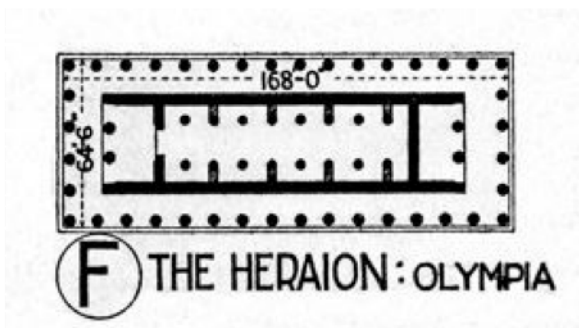


Figure 13. Temple of Hera – reconstruction plan.

Also unusual at Bassae is the composite use of materials, for the interior columns and the exterior guttae⁶⁸ and the interior frieze, supported by the Ionic colonnade, suggesting that the temple might have been hypaethral.⁶⁹ Also traces of colors on several architectural elements, placed the temple in the beginning of the the nineteenth century at the center of the polychrome debate of Classical art and architecture. Other distinctive elements that mainly puzzled architects and archaeologists are the diagonal orientation of the southernmost engaged Ionic columns, the opening and visual communication of the adyton to the cella (Fig.14), and the adyton's irregular pavement.⁷⁰ These 'innovations' point this to be a work of an ingenious architect, none other than Ictinus, the best architect of his time.



Figure 14. Bassae, Temple of Apollo Epicurius, interior from north.

⁶⁸ Combination of materials: white marble guttae on blue-green limestone cornice, see Rykwert, J., *The dancing Column: On order in Architecture*, Cambridge, MA: MIT Press, 1996, Chapter VII, note 41; also in Dinsmoor 1933, p. 204. For the marble capitals on limestone shafts in the interior, see Dinsmoor 1933, p. 208.

⁶⁹ Cooper 1978, pp. 153–154.

⁷⁰ Kelly *op. cit.*, pp. 242–243.

Ictinus, which Pausanias and most scholarship credits as the architect of the temple at Bassae (Fig. 15),⁷¹ was already an architect involved in the most important buildings of his time, the Parthenon built together with Callicrates in Athens (447–432 B.C.) and the Telesterion, the great hall of the Eleusinian Mysteries (ca. 430 B.C.) in Eleusis.



Figure 15. Temple of Apollo Epikourios at Bassae.

We may assume that the combination of archaic and novel elements of Apollo's temple was a contribution of Ictinus, based on the archaic temple,⁷² in consultation with the priests who would have interpreted the cult for him. We have no record of the cult, and certainly none of the priests' requirements. It is therefore necessary to look to the context to understand probable thematic emphases, in relation to the elements of articulation of the architecture. The antiquity of the cult suggests that continuity with archaic tradition would demand the best authority for innovations, and so we will adhere to poets like Homer and Hesiod⁷³ (drawing upon such late authors as Ovid, Strabo etc. as necessary), although it is also likely that the century and a half of dialogues between the mythic inheritances and philosophy would provide a context for new forms of analogy and synthesis. In general, the Greek *temenos*

⁷¹ Pausanias 8.41.9.

⁷² Kelly *op. cit.*, pp. 238–240, 261–263.

⁷³ Burkert 1985, p. 120.

being primarily the house of a God on earth, *naos*,⁷⁴ manifests the authority of the Olympians and thus mediates the primordial conditions disclosed in myth and the vicissitudes of history. It is also evident today through numerous ancient artifacts, texts but also instruments, that the Greek and Middle Eastern civilizations were fascinated with and had profound knowledge of nature's annual 'rebirth', manifested in such landscape motifs as mountains, fields, seas, rivers, and especially the image of the tree, as well as the celestial phenomena of the seasonal cycles of the day and night sky. This served the practical purpose of navigation and agriculture as accurately described in Hesiod's *Works and Days*; but, since archaic times in the Near East, religion, poetry, and mytho-philosophical speculation mediated between the immortal gods and everyday life. Therefore, central for understanding the introduction of the innovative elements of the temple, especially the Corinthian column, is the figure of Apollo, to whom the temple is dedicated, as are new perceptions of the god in the fifth century B.C. under the influence of novel philosophical ideas, social values, and the relationship of humans with the immortal gods and particularly Apollo.

2.1. Apollo Epikourios.

The deity worshipped at Bassae, Apollo, is one of the most prominent gods of the Greek pantheon. Depicted either holding his silver bow, thus his auxiliary name *Asimodoxaros* 'silver-bowed' and *Ekativolos* 'one that strikes from distance' or his Lyre, *Citharoedus* 'holding a kithara/lyre' as the god of Music and *Musagetes* 'leader of the Muses'. He is the child of Leto and Zeus born under a palm tree on the island of Delos (supposedly floating, therefore not land, escaping Hera's curse) together with his twin sister Artemis, with both having many different

⁷⁴ Burkert 1985, p. 88.

attributes.⁷⁵ Apollo was the god of light, arts, poetry and oracles, with its center in Delphi, plague and medicine, but also a warrior. For Burkert Apollo is the union of: “Youthfully pure renewal at the annual gathering, the banishment of disease in song and dance, and the image of an arrow-bearing Guardian God.”⁷⁶ The beauty and power of Youth, the idealized *kouros*, as an ideal for the Greeks is central in the culture of Apollo,⁷⁷ thus he is the god of initiation of youth to manhood⁷⁸ himself being:

... an epitome of that turning-point in the flower of youth, *telos hebes*, which the *ephebos* has attained and which he also leaves behind with the festival which gains admittance to the society of men ... with the tribal gathering and the society of men one can also connect the epithet *Lykeios*, the wolf-like, and perhaps *Phoibos* (the fox-like?) and *Delphidios/Delphinios* unquestionably belongs in this context.⁷⁹

Apollo's epithet *Lykeios* also points to Mt. *Lykaion* and to Lycia in Asia Minor, where the *Iliad* connects him with an important oracle in Patara.⁸⁰ From the fifth century onwards, he will be also associated with *Helios*, and understood as a Sun-god.⁸¹

The temple at Bassae, we are informed by Pausanias, was dedicated to Apollo *Epikourios* meaning Helping-Assisting, for the help Apollo offered to the Phigalians when they faced a terrible plague. From Pausanias:

⁷⁵ Burkert 1985, p. 146.

⁷⁶ Burkert 1985, p. 145.

⁷⁷ Burkert 1985, p. 143.

⁷⁸ Hornblower, S., and Spawforth, A., *op. cit.*, p. 51, s.v. Apollo.

⁷⁹ Burkert 1985, p. 145.

⁸⁰ Burkert 1985, pp. 144–145.

⁸¹ Burkert 1985, pp. 120, 149, 335–336.

[8.41.8] Of the temples in the Peloponnesus, this might be placed first after the one at Tegea for the beauty of its stone and for its symmetry. Apollo received his name from the help he gave in time of plague, just as the Athenians gave him the name of Averter of Evil for turning the plague away from them.

However, according to Frederick A. Cooper (1936–2011), the last archaeologist that worked and researched extensively on the temple, the Bassae-Kotilon religious complex has a pan-Arcadian character and rejects the primary healing aspect because of the lack of any archaeological findings that would suggest Bassae as a healing sanctuary. Instead, based on the many and various military dedications found at the temple site in the form of votive simulacra, of bronze and iron helmets, corslets, spears and shields, he points out the military nature of the cult.⁸² He links the name at Bassae with the ancient tradition of Arcadia as being the main source of mercenary soldiers and assisting forces in battles the “epikouros”⁸³ and Apollo Bassitas and Apollo Epikourios as war gods.⁸⁴ Cooper sees the votives as gifts from these mercenaries, however, they could also be gifts from the initiated warrior-bands of Mt. Lykaion.

Healing-purification, music and dancing,⁸⁵ and transition of youth to manhood, are also found in the mythical, fully-armed warbands the Cretan Kouretes, Idaen Daktyloi, and Phrygian Korybantes, all associated with the birth and raising into manhood of Zeus. The youthful Kouretes brandished their shields in a dance around the new-born Zeus that mirrored: “... Cretan initiation rituals as found in the Ida mysteries: here Zeus was born every year in the glow of a great fire. In the war dance of the youths the Dictean Zeus appears as the

⁸² Cooper 1978, pp. 16–21.

⁸³ Cooper 1978, pp. 21–28.

⁸⁴ Cooper 1978, pp. 75–76.

⁸⁵ Burkert 1985, p. 80.

greatest Kouros who springs on flocks, corn fields, houses, towns, ships and young citizens.”⁸⁶ Also Rhea, the mother of gods, presides over the initiation and purification of the Korybantes⁸⁷ (found in Lycosura at the base of Demeter’s sculpture⁸⁸), children of Apollo-Thaleia, Apollo-Rhetia, or Zeus-Kalliope. In another myth the pregnant Rhea (or Ankhiale) went to Mount Ida’s sacred cave where, as she clutched the earth with both her hands, Gaia brought forth the Daktyloi Idaioi to protect her. Thus often five in number, coupled with their sisters Hekaterides to form ten, correspond to the *daktyloi* ‘fingers’—the ten fingers of the hands. They are also connected with sorcery, attributed as being the discoverers of iron and smelting of iron with the use of fire and the introduction of new music from Phrygia to Greece (the Dactylic rhythm). Interestingly, Burkert argues that the Idaian Daktyloi could have mirrored guilds of smiths in real life.⁸⁹ Also, in several passages Pausanias⁹⁰ gives us information on the activity of the five brothers in the region around Bassae and especially Olympia, where Heracles the Daktyl, leader of the group, is attributed as the founder of the games. Elsewhere, he is given the surname Parastates-Assistant—very close to Epikourios. Other passages also focus on the band’s relation with Hyperborea, the Curetes, and Demeter. According to Hesiod, one of them, Iasion, layed with Demeter, a stand-in for Rhea, in a thrice-ploughed field and the Goddess brought forth *Ploutos* ‘wealth’, in the form of a bountiful harvest.⁹¹

Apollo is referred to as the ‘justice-order’ warrior, initiator of youth into manhood, bringer of spring-light, healer and rejuvenator of bodies and spirits through his melodies, all elements hinted in the iconographic program of the temple of Apollo Epikourios.

⁸⁶ Burkert 1985, p. 127.

⁸⁷ Burkert 1985, p. 110.

⁸⁸ Pausanias 8.37.6.

⁸⁹ Burkert 1985, p. 173.

⁹⁰ Pausanias 5.7.6–9, 5.14.7, 8.31.3

⁹¹ Hesiod *Theogony* 970.

2.2. Pronaos and opisthodomos metopes.

The iconographic program of the Greek temple is the most direct informant of the reasons of a temple's construction that reveals much of the intentions and aspirations of the temple's dedicators. Fortunately the shattered exterior sculptural program of the temple at Bassae, that consists of the pronaos and opisthodomos, has been reconstructed in drawings by the surviving elements piece by piece. There have been debates over the existence of sculptures on the pediments, but today the commonly accepted position is that there were no sculptures there. The interpretation of the metopes and the arrangement of the Ionic frieze are mainly based on Cooper and his seminal work *The Temple of Apollo Bassitas*. Vol 2, *The Sculpture*, written with Brian C. Madigan, professor of art history. They are also responsible for the drawings that reconstruct the fragmented original.

The iconographic program of the temple consists of 12 metopes, six to the north and six to the south and 23 slabs of the interior Ionic frieze (Fig.16).

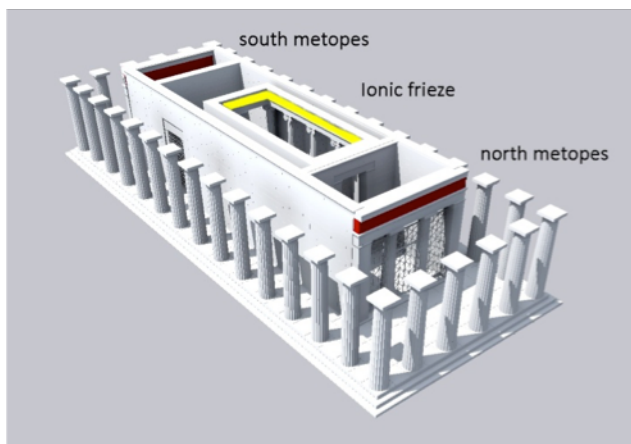


Figure 16. Position of the metopes (red) and Ionic frieze (yellow).

The north metopes at the entrance of the pronaos (Fig.17) depict the celebration of the return of Apollo from Hyperborea (Fig. 18),⁹² a fabulous realm of eternal spring at the far North,⁹³ even

⁹² Cooper, F. A., and Madigan, B. C., *The Temple of Apollo Bassitas. The sculpture*, Princeton, N.J.: American School of

beyond the home of the north wind, thought as an idyllic place where the people were blessed, long-lived, and untouched by war, hard toil, old age, and disease.⁹⁴



Figure 17. Pronaos with metopes.

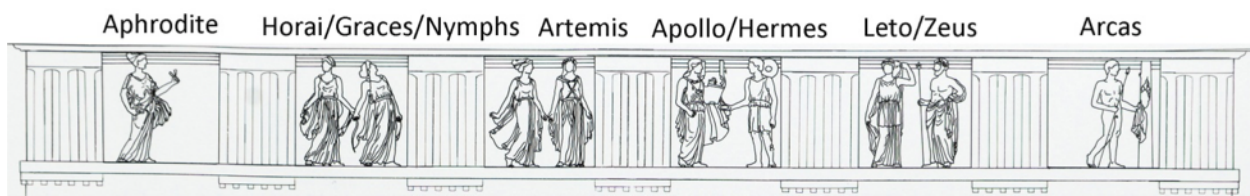


Figure 18. The 6 north metopes of the pronaos.

It was described as a continent-bound land bordered on the far north by the great, earth-encircling Okeanos. Blessed with eternal spring, the land produced two harvests per year, but most of the countryside was covered with beautiful forests—the so-called “garden of

Classical Studies at Athens, 1992, pp. 21–22, 27–28.

⁹³ Burkert 1985, pp. 146, 110–111.

⁹⁴ Pindar *Pythian* 10, translated by Diane Arnson Svarlien, 1990: “He can never set foot in the bronze heavens; but whatever splendor we mortals can attain, he reaches the limit of that voyage. Neither by ship nor on foot could you find [30] the marvellous road to the meeting-place of the Hyperboreans— Once Perseus, the leader of his people, entered their homes and feasted among them, when he found them sacrificing glorious hecatombs of donkeys to the god. In the festivities of those people [35] and in their praises Apollo rejoices most, and he laughs when he sees the erect arrogance of the beasts. The Muse is not absent from their customs; all around swirl the dances of girls, the lyre’s loud chords and the cries of flutes. [40] They wreath their hair with golden laurel branches and revel joyfully. No sickness or ruinous old age is mixed into that sacred race; without toil or battles they live without fear of strict Nemesis. Breathing boldness of spirit [45] once the son of Danae went to that gathering of blessed men, and Athena led him there.”

Apollon.”⁹⁵ The dedicated priests and people there worshipped only Apollo, who upon his annual return to Greece, brought with him the return of spring.⁹⁶ The first three metopes depict the goddess Aphrodite playing the krotala, two women dancing while holding hands, and one dancing near Artemis who leads the group.⁹⁷ In the fourth scene we find Apollo holding his lyre, ready to play his delightful melody, followed by his retinue, and beside him making a libation the god Hermes,⁹⁸ inventor of the lyre, a gift for Apollo (Fig. 19).

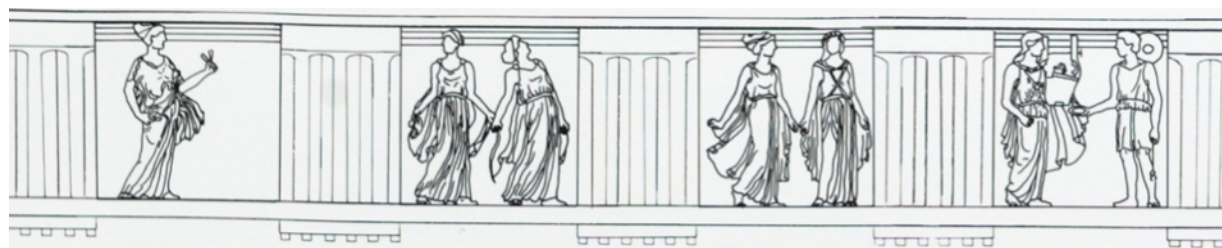


Figure 19. The first four metopes of the pronaos.

The triad of women in the second and third metopes are identified by Cooper and Madigan as either the three Charites-Graces: Euphrosyne, Aglaia, and Thalia, the constant retinue of Apollo (found in the great statue of Apollo at Delos with Charites in his right hand),⁹⁹ the three Horai (Seasons): Thallo, Auxo, and Carpo, or the three local Nymphs that took care of infant Zeus: Theisoa, Neda, and Hagno (the spring where the weather magic took place).¹⁰⁰ Indeed, the Homeric Hymn includes the Charites and Horai in the celebrating retinue of Apollo, together

⁹⁵ Strabo *Geography* 7.3.1, translated by Jones. H. L. 1924: “It is because of men’s ignorance of these regions that any heed has been given to those who created the mythical “Rhipaeian Mountains” and “Hyperboreans,” and also to all those false statements made by Pytheas the Massalian regarding the country along the ocean, wherein he uses as a screen his scientific knowledge of astronomy and mathematics. So then, those men should be disregarded; in fact, if even Sophocles, when in his role as a tragic poet he speaks of Oreithyia, tells how she was snatched up by “Boreas” and carried ““over the whole sea to the ends of the earth and to the sources of night and to the unfoldings of heaven and to the ancient garden of Phoebus.”

⁹⁶ Cooper and Madigan, *op. cit.*, p. 27.

⁹⁷ Cooper and Madigan, *op. cit.*, pp. 23–24.

⁹⁸ Cooper and Madigan, *op. cit.*, p. 22.

⁹⁹ Burkert 1985, p. 146.

¹⁰⁰ Cooper and Madigan, *op. cit.*, pp. 24, 27

with Aphrodite, Artemis, Hermes, Leto, and Zeus.¹⁰¹ The female triads of the Horai and Graces are found many times depicted together in various hymns and artworks and seem to be closely associated in the *dance of Horai* and *dance of the Graces* that were sometimes conflated. One of the most prominent coexistence is found in the temple of Zeus at Olympia, where the triadic Horae and Graces are flanking the head of the splendid golden ivory statue of Zeus made by Pheidias. Pausanias inform us that:

[5.11.7]: On the uppermost parts of the throne Pheidias has made, above the head of the image, three Graces on one side and three Seasons on the other. These in epic poetry are included among the daughters of Zeus. Homer too in the Iliad says that the Seasons have been entrusted with the sky, just like guards of a king's court. The footstool of Zeus, called by the Athenians thranon, has golden lions and, in relief, the fight of Theseus against the Amazons, the first brave deed of the Athenians against foreigners.

Pausanias *Description of Greece*, translated by W. H. S. Jones

¹⁰¹ *Homeric Hymn 3 to Pythian Apollo*, translated by Evelyn White H.G. 1914: “[1] O Lord, Lycia is yours and lovely Maeonia [180] and Miletus, charming city by the sea, but over wave-girt Delos you greatly reign your own self. Leto’s all-glorious son goes to rocky Pytho, playing upon his hollow lyre, clad in divine, perfumed garments; and his lyre, [185] at the touch of the golden key, sings sweet. Thence, swift as thought, he speeds from earth to Olympus, to the house of Zeus, to join the gathering of the other gods: then straightway the undying gods think only of the lyre and song, and all the Muses together, voice sweetly answering voice, [190] hymn the unending gifts the gods enjoy and the sufferings of men, all that they endure at the hands of the deathless gods, and how they live witless and helpless and cannot find healing for death or defence against old age. Meanwhile the rich-tressed Graces and cheerful Seasons dance with [195] Harmonia and Hebe and Aphrodite, daughter of Zeus, holding each other by the wrist. And among them sings one, not mean nor puny, but tall to look upon and enviable in mien, Artemis who delights in arrows, sister of Apollo. [200] Among them sport Ares and the keen-eyed Slayer of Argus, while Apollo plays his lyre stepping high and featly and a radiance shines around him, the gleaming of his feet and close-woven vest. And they, [205] even gold-tressed Leto and wise Zeus, rejoice in their great hearts as they watch their dear son playing among the undying gods.”

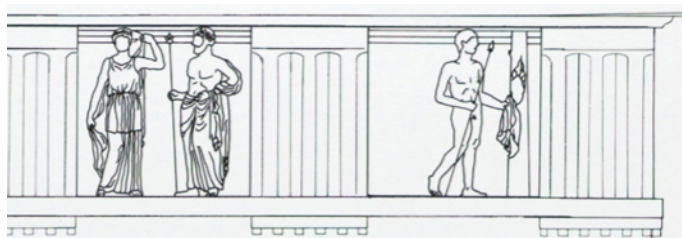


Figure 20. The last two metopes of the pronaos.

In the last two metopes we found first Leto and Zeus,¹⁰² the parents of Apollo and Artemis, and then Arcas the mythic ancestor of all Arcadians (Fig. 20),¹⁰³ the offspring of Zeus-Kallisto and Lykaon's grandson, that according to one myth was the one sacrificed on the Mt. Lykaion altar, establishing another link with that site.¹⁰⁴ The return of Arcas, who holds a spear and hangs his chlamys on a tree, is also a sign of the return of the spring.¹⁰⁵ The myths tell how his mother Kallisto was transformed by Hera into a bear and was either killed by Artemis or almost killed by her hunter son Arcas, when at the last moment Zeus intervened; in both cases they are placed among the stars.¹⁰⁶ In an older tradition Arcas is associated with Arkturus,¹⁰⁷ he is the *ArctoPhylax* 'Bear-guardian', while the bear that he is guarding is his mother Kallisto-Arktos, Ursa Major.¹⁰⁸ When Hera heard of that, she became so angry that she asked Tethys to keep Ursa Major in a certain place so that the constellation would never sink below the horizon and receive water.¹⁰⁹ Odysseus also mentions this constellation as the best for naval

¹⁰² Cooper and Madigan, *op. cit.*, pp. 26–27.

¹⁰³ Cooper and Madigan, *op. cit.*, pp. 25–27.

¹⁰⁴ Burkert 1983, pp. 86–87.

¹⁰⁵ Cooper and Madigan, *op. cit.*, pp. 27–28.

¹⁰⁶ Cooper and Madigan, *op. cit.*, pp. 25, 28.

¹⁰⁷ Nonnus, *Dionysiaca* 13.295, translated by Rouse, W. H. D., 1940: "... Arkadia, city of Arkas son of Kallisto and Zeus, whose father fixed him in the starry firmament and called him Boötes Hailbringer."

¹⁰⁸ Cooper and Madigan, *op. cit.*, p. 28.

¹⁰⁹ Ovid *Metamorphoses* 2, translated by Brookes, 1922: [496] When thrice five birthdays rounded out the youth of Arcas, offspring of Lykaon's child, he hunted in the forest of his choice; where, hanging with his platted nets the trees of Erymanthian forest, he espied his transformed mother, — but he knew her not; no one had told him of his

navigation for the same reason.¹¹⁰ Also from Hesiod [564–614] we learn that the Arkturus star rises first at dusk, between February to March, and, together with other natural signs and observations, signals the beginning of spring and the right moment for contacting certain agricultural works. Arcas therefore is placed properly at the Northern side facing the celestial axis of Polaris star and his ‘mother’ Ursa Major (Kallisto) constellation.

Turning now our attention to the 6 south metopes of the opisthodomos of the temple, we find the depiction of the Dioskouroi brothers, Kastor and Polydeukes, kidnapping and raping the Leukippide, who were already betrothed to their twin cousins Idas and Lynkeus (Figs. 21, 22).¹¹¹ This mythical theme has a natural association with Aphrodite, goddess of sexual arousal, and Eros,¹¹² who always lurks behind instinctual erotic pathos, that in this case will eventually

parentage. Knowing her child, she stood with levelled gaze, amazed and mute as he began approach; but Arcas, frightened at the sight drew back to pierce his mother’s breast with wounding spear. — but not permitting it the god of Heaven averted, and removed them from that crime. He, in a mighty wind—through vacant space, upbore them to the dome of starry heaven, and fixed them, Constellations, bright amid the starry host. [508] Juno on high beheld Calisto crowned with glory—great with rage her bosom heaved. She flew across the sea, to hoary Tethys and to old Oceanus, whom all the Gods revere, and thus to them in answer to their words she made address; “And is it wondered that the Queen of Gods comes hither from ethereal abodes? My rival sits upon the Throne of Heaven: yea, when the wing of Night has darkened let my fair word be deemed of no repute, if you behold not in the height of Heaven those new made stars, now honoured to my shame, conspicuous; fixed in the highest dome of space that circles the utmost axis of the world. Who, then, should hesitate to put affront on Juno? matchless goddess! each offense redounds in benefit! Who dreads her rage? Oh boundless powers! Oh unimagined deeds! My enemy assumes a goddess’ form when my decree deprives her human shape; — and thus the guilty rue their chastisement! Now let high Jove to human shape transform this hideous beast, as once before he changed his Io from a heifer. — Let him now divorce his Juno and consort with her, and lead Calisto to his couch, and take that wolf, Lycaon, for a father-in-law! Oh, if an injury to me, your child, may move your pity! drive the Seven Stars from waters crystalline and azure-tint, and your domain debar from those that shine in Heaven, rewarded for Jove’s wickedness. — bathe not a concubine in waters pure.”— the Gods of Ocean granted her request.”

¹¹⁰ *Odyssey* 5.270, translated by Murray, A. T., 1919: “Gladly then did goodly Odysseus spread his sail to the breeze; [270] and he sat and guided his raft skilfully with the steering-oar, nor did sleep fall upon his eyelids, as he watched the Pleiads, and late-setting Bootes, and the Bear, which men also call the Wain, which ever circles where it is and watches Orion, [275] and alone has no part in the baths of Ocean. For this star Calypso, the beautiful goddess, had bidden him to keep on the left hand as he sailed over the sea.”

¹¹¹ Cooper and Madigan, *op. cit.*, pp. 31, 13–15.

¹¹² Cooper and Madigan, *op. cit.*, p. 14.

cause a strife leading to the death of one of the two brothers.



Figure 21. Opisthodomos with metopes.

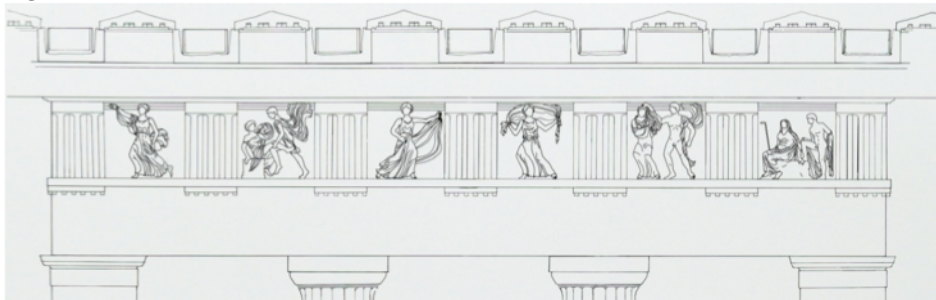


Figure 22. The south metopes of the opisthodomos.

The Dioskouroi twins were born as mortal princes, sons of the Spartan queen Leda by Zeus and her husband Tyndareus and were the brothers of Helen. Polydeukes being a son of Zeus, was at first the only one that was offered immortality, but he insisted to share it with his beloved brother Kastor, when the latter lost his life in a battle against Idas and Lynkeus.¹¹³ Zeus agreed, but to appease the Fates, the twins had to spend alternate days in heaven and the underworld. Burkert¹¹⁴ and Gregory Nagy¹¹⁵ remark that the Dioskouroi exhibit a great resemblance with the *ashvins* (gods of Shining of Sunrise and Sunset) of the Vedic mythology.

¹¹³ Burkert 1985, pp. 212–213.

¹¹⁴ Burkert 1985, p. 17.

¹¹⁵ Nagy, G., *Greek Mythology and Poetics*, Chapter 9. “Phaethon, Sappho’s Phaon, and the White Rock of Leukas: ‘Reading’ the Symbols of Greek Lyric,” 1990, pp. 256–259. (<https://chs.harvard.edu/CHS/article/display/1290>).

From this perspective the Dioskouroi are perceived as embodying the Morning and Evening stars.¹¹⁶

The Dioskouroi were generally shown as youthful horsemen, also flying in the sky, with wide-brimmed traveller's hats, gods of horsemanship, helpers of navigators and protectors of guests, travelers, and assistants in case of danger.¹¹⁷ Moreover: "... the Dioskouroi are to a large extent a reflection of the body of young men capable of bearing arms. They invent the war dances, and as mounted warriors they ride out in search of adventure, rustling cattle and stealing brides, but they also rescue their sister."¹¹⁸ Therefore in the Spartan cult of the Dioskouroi they are found in the context of the warrior society and of initiations; and along with Heracles they were initiated at Eleusis and were perceived as examples for those who wanted to break out of mortality to approach the gods.¹¹⁹

The violent-passionate thematic subject of the south metopes seems to subvert that of the north metopes: peace, law, and return of spring, of the chorus-dance celebrations, and return of Apollo from the Hyperboreans, marking an inherent peculiarity of spring. This is the period of two contradictory but parallel conditions triggered by the climatic conditions and the instinctual sexual forces of nature. Although it is the blossoming, cheerful, and reproductive period of nature, the high erotic state of flora, fauna, and man, it is also the moment of antagonistic-competitive conditions in search of a desirable mate that lead into open bloody conflicts. It is also the season that is suitable for raids and warfare. The attraction of beauty can easily slip into seduction and uncontrollable passion, the source of transgression and

¹¹⁶ Nagy, G., "Helen of Sparta and her very own Eidolon," *Classical Inquiries*, posting 2016.05.02 . par. 14 (<https://classical-inquiries.chs.harvard.edu/helen-of-sparta-and-her-very-own-eidolon/>).

¹¹⁷ Burkert 1985, pp. 212-213.

¹¹⁸ Burkert 1985, pp. 212-213.

¹¹⁹ Burkert 1985, pp. 212-213.

strife, with a paradigmatic example being the mythical cause of the Trojan War. This theme and other 'agonic' states and struggles of the Greek heroes are further elaborated in the interior frieze of the temple.

2.2 The interior Ionic frieze and the roof debate.

The Ionic frieze at Bassae is a remarkable example of Classical period sculpture, comparable to Pheidias's Parthenon frieze, that captures moments of war between the Greeks and hostile forces. Of the 23 slabs of the Ionic frieze 11 depict a Centauromachy, Centaurs disrupting the procession in honor of Artemis for Polypoite's birth, and 12 represent the Trojan and Heraklean Amazonomachies.¹²⁰ These immense battle scenes, between centaurs, Amazons, and Greeks, are often also used as a favorite theme on *sarcophagi*, as well as, for example, the Hellenistic altar of Pergamon. Here, diverse polarities are in play, cultured /barbaric, man/warrior woman-centaur, familiar/exotic, the agon of life and death where the Greek heroes are presented as defenders of social order against the forces of disorder. Among them we find Theseus in the Centauromachy¹²¹ and Achilles killing the Amazonian queen Penthesilea in the Trojan Amazonomachy,¹²² however one is distinguished. According to Cooper's restoration and arrangement of the slabs, Heracles is positioned on the south, directly on top of the Corinthian column in a series of slabs depicting Heracles' ninth labor, the seizing of the belt of the Amazon queen Hippolyte.¹²³ Specifically, Heracles is depicted at the moment of his

¹²⁰ Cooper and Madigan, *op. cit.*, pp. 75, 78.

¹²¹ Cooper and Madigan, *op. cit.*, p. 87.

¹²² Cooper and Madigan, *op. cit.*, p. 71.

¹²³ Cooper and Madigan, *op. cit.*, p. 76.

dueling with the Amazon queen (Fig 23).¹²⁴



Figure 23. Southern group of interior frieze. In the middle Heracles battling with Hippolyte.

Heracles is a pan-Hellenic hero and guardian, the ideal man that every youthful warrior looks up to. He is always wandering, fighting, away from home, which is why he is also suitable for gymnasium and the *epheboi*.¹²⁵ Burkert argues that for the Greeks he was also the prototype of the ideal ruler—able to make the correct moral choices, acting for the good of mankind—who eventually found his place amongst the gods, achieving immortality through his *apotheosis*, and who also broke the fear of death: “... the divine is close at hand in human form, not as an Apollonian antitype, but as an inspiring prototype. Heracles contained the potential to shatter the limits of Greek religion.”¹²⁶ On the opposite, northern side of the frieze we also find a new element, the direct intervention and assistance of the gods in favor of the Greeks. Artemis guides a chariot drawn by stags with her brother Apollo next to her, ready to shoot an arrow at a centaur that had grabbed hold of a woman carrying an infant, identified as Polypoites, whose birth is the occasion of the procession (Fig 24).¹²⁷



Figure 24. Artemis and Apollo in her chariot drawn by stags at the north-east corner of the interior frieze.

¹²⁴ Cooper and Madigan, *op. cit.*, p. 88.

¹²⁵ Burkert 1985, p. 211.

¹²⁶ Burkert 1985, p. 211.

¹²⁷ Cooper and Madigan, *op. cit.*, p. 82.

The thematic subject of the southern metopes' and friezes' violence, death, and sacrilege again contradict the North metopes' peacefulness, law, and justice.¹²⁸ The reciprocity of destruction and creation is also presented in the two different depictions of Apollo as a musician in the north metopes, and as a fighter in the frieze, however always harmonized in the image of the god as a cultivated hunter, reassuring, together with his sister, of the prevalence of order.

The existence of this high quality, deep relief artwork in the interior of the temple at Bassae, which was an innovation for that time, is linked with one of the most debatable elements of the temple, its roof. The appearance of the interior and the visibility of the sculptured frieze and the colored Corinthian column of the temple of Apollo Epikourios at Bassae are indeed heavily affected by the structural design of the ceiling and the roof. Unfortunately, the surviving archaeological remains do not permit a confident reconstruction. The solutions that have been historically proposed can be grouped in two: one focusing on the need of direct sunlight in order for the frieze, Apollo's sculpture, and the Corinthian column to be properly illuminated—the hypaethral hypothesis¹²⁹ advocated by Stackelberg (1826), Cockerell (1860), Blouet (1833), Orlandos (1923), Kenner (1946), and Seltman (1946), whereas Roux restored a hypaethral roof to the adyton (1961); and another group supporting a closed roof and flat ceiling, which is today the canonical solution—Dinsmoor (1950) restored a wooden ceiling directly on the frieze geison and Cooper (1992) proposed a marble ceiling, slightly above the frieze geison.¹³⁰

There are two things to be noticed in respect of the visibility issue, not only of the frieze, but also the Corinthian column and the interior of the temple in general. The visibility in the

¹²⁸ Cooper and Madigan, *op. cit.*, pp. 89–90.

¹²⁹ See Cooper, F. A., *The Hypaethron, The Temple of Apollo Bassitas: The architecture*, 1992, pp. 277–279.

¹³⁰ Cooper 1978, pp. 153–156.

case of a closed roof in Bassae is not connected with the height of the interior flat ceiling above the frieze. The crucial parameter in naturally illuminating an interior space is the orientation of the building in respect to the size and position of the openings on the side walls and the roof/ceiling. In the plan of the temple of Bassae we have a precise North-South orientation,¹³¹ and two openings, one main entrance door in the North approached after traversing two covered areas, the peristyle and the pronaos, and one in the East of the adyton shaded from the peristyle and no windows in the walls of the cella. The temple's design and orientation simply do not allow enough natural light to intrude in the interior, confirmed by annual light exposure testing on a digital model of the temple with closed roof. On the one hand, the main entrance is already 10.5 meters away from the exterior peristyle where the northern light (constant through the day and year but not strong, diffused, or shadowless) cannot reach, therefore insignificantly illuminating the interior. On the other, the east door allows direct light to intrude into the adyton for a short time in the morning at the summer solstice and especially on the equinoxes, but not towards the cella. Only in the morning, near the period of winter solstice do sunrays intrude for a short time into the cella.



Figure 25. Comparison of the interior's illumination between the closed roof (left) and hypaethral roof at dawn of spring equinox.

However, in all cases, the illumination is not enough to light adequately the cella, leaving it in near absolute darkness and rendering unseeable the artistic creations of the frieze and the

¹³¹ See fig. 32, note 127.

Corinthian column, not only from the exterior but also from the interior (Figs. 25, 26).

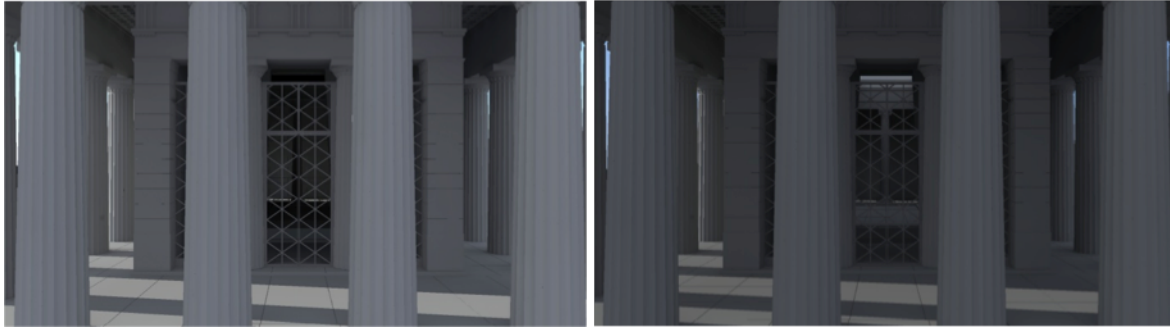


Figure 26. Comparison of visibility of the interior, between the closed roof (left) and hypaethral roof at dawn of spring equinox.

In this case, providing light from many strong fire sources would be an absolute necessity, which demands at least some parts of the ceiling to be either permanently open or to be able to be periodically opened and closed for the smoke to go out from the holes of several roof marble tiles.¹³² Another hypothesis, that has not yet been adequately supported by any archaeologist or scholar, is that of a closed translucent marble roof without an interior cella ceiling, that could allow diffused light to reach the interior. However this is a most ungraceful solution that creates many awkward conditions. It still demands the existence of horizontal wooden beams in regular distances to span the cella width, along the spur walls and on top of the Ionic frieze, in this way interrupting the even light from the roof and creating shadows to fall on several parts of the Ionic Frieze, heavily disrupting its intended visual continuity. Moreover, the gaps between the horizontal beams improperly draw the attention to the lighted attic-like space on top of the ceilings, whose fragments exist, of the niches on the right and left of the cella and the adyton, directly on top of the Corinthian column. Instead, design techniques on plan, especially the existence of the deep side niches formed by the spur walls of

¹³² Dinsmoor proposed that there may have been single tiles with small openings and removable covers for providing ventilation or light to the loft above the ceiling. Whereas, Roux placed an opening in the adyton ceiling and roof above to allow smoke to escape. Cooper, F. A., *The Hypaethron, The Temple of Apollo Bassitas: The architecture*, 1992, p. 279.

the Ionic half-columns, can be read as spatial and optical operations on the perception of enclosed space, that in the history of architecture are implemented in order to give the impression of extended space and allow spatial ambiguity. This is particularly reinforced from seeing the temple, either from the entrance or outside the pronaos and the north plateau in front of the temple, where the majority of the worshippers would probably have stood. The investigation on lighting exposure on the 3D model of the Bassae temple, based on Blouet's hypaethral design,¹³³ seems to favor this type of solution. It offers abundance of south light throughout the year, stressing the importance of the cella and the darker adyton, allowing the deep carved reliefs of the frieze to be emphasized in the contrast of natural light coming from above and the shadow of the niches and the statue of Apollo and the Corinthian column to be visible though the main door even from the outside. This solution is further supported from the fact that the temple's design and its proportions appear to be dictated by the sun's movement during the year.

3. Apollo and the solar drama.

Based on the themes that have been examined so far—such as Apollo's equation with Helios-Sun, the thematic nature of the temple's iconography and the return of light and spring, the articulation of the temple—the North-South orientation which places it almost perfectly into the heliacal arc and the existence of the eastern door in the adyton, along with the mythical context of the surrounding landscape—especially Mt. Lykaion's sacrifice, Zeus as weather-atmospheric god, the marvel of the precinct of Zeus that cast no shadows¹³⁴ and

¹³³ Digital model of the temple at Bassae with hypaethral solution, based on the ideal dimensions of the closed temple from the archaeological survey in Cooper, F. A., *The Temple of Apollo Bassitas*, Princeton, NJ: American School of Classical Studies at Athens, 1992.

¹³⁴ Pausanias 8.38.6: "Among the marvels of Mount Lycaeus the most wonderful is this. On it is a precinct of Lycaean Zeus, into which people are not allowed to enter. If anyone takes no notice of the rule and enters, he

Demeter/Persephone allegory of nature's annual rebirth—are all connected with the circular passing of the seasons¹³⁵ and the annual phases of the sun. We have already noticed that Hesiod remarks the importance of the signs in the sky and their great importance, in both practical matters of life—war, agriculture, sailing—and also the cult and worship of the Gods and the various minor deities by indicating the proper time and dates for celebrations, sacrifices, and libations. The unique position of the Corinthian column on the centerline, combined with the North-South orientation of the temple, place it directly under the sun in his midday highest position. The threshold directly behind the stylobate of the Corinthian column, also marks the transition from the regular pavement of the cella to the irregular pavement of the adyton, rendering the Corinthian column as an element in the peculiar state of being between the traversable cella and the off-limits sacral adyton. Moreover, there is the puzzling diagonal approximately 45° orientation of the two southernmost half-columns, which are aiming towards a point of interest in the cella floor directly in front of the Corinthian column and slightly, but definitely offset, from the lateral alignment axis of the two Ionic columns (Fig. 27) and the eastern opening into the adyton. This point, together with the peculiar position of the Corinthian column, the adyton's pavement pattern and door, triggered various proposals for the position of the statue of Apollo that include: in front of the Corinthian column (Stackelberg), the middle of the west adyton wall (Cockerell), behind the Corinthian Column at the South wall of the adyton (Blouet), and finally the southwest corner of the adyton (Cooper).

must inevitably live no longer than a year. A legend, moreover, was current that everything alike within the precinct, whether beast or man, cast no shadow. For this reason when a beast takes refuge in the precinct, the hunter will not rush in after it, but remains outside, and though he sees the beast can behold no shadow. In Syene also just on this side of Aethiopia neither tree nor creature casts a shadow so long as the sun is in the constellation of the Crab, but the precinct on Mount Lycaeus affects shadows in the same way always and at every season."

¹³⁵ See also Aphaia's presence at Bassae precinct, Cooper, F. A., *The architecture*, 1992, pp. 62–64; Cooper 1978, p. 185, fig. 70.

However, all the aforementioned elements are also related with the temple's intentional design in relation to the sun's annual movement in the sky.

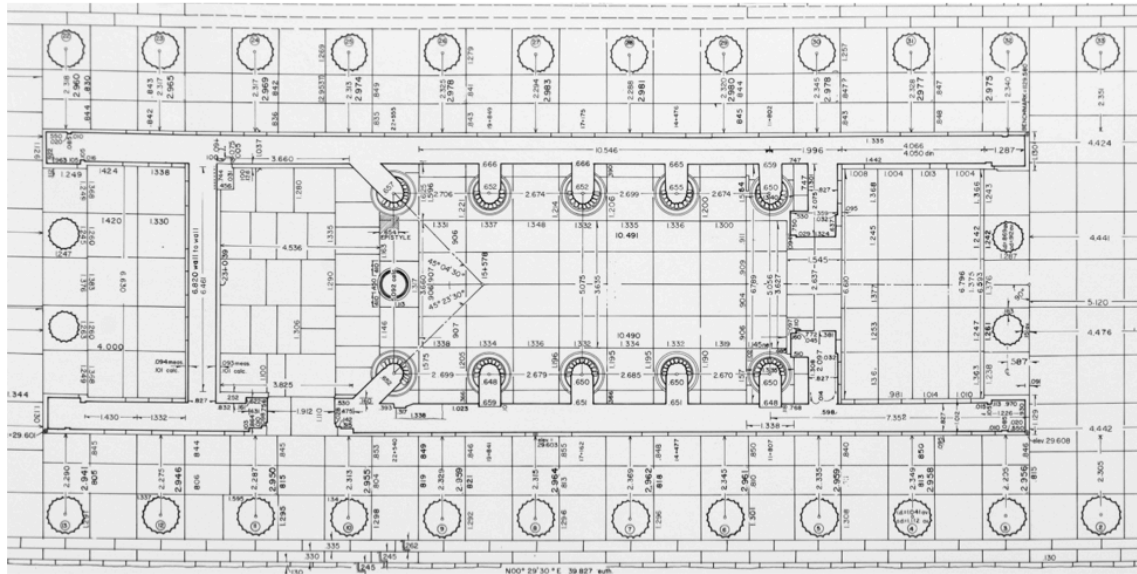


Figure 27. Part of the plan of the temple, actual dimensions; the dotted lines mark the point of convergence of the extension of the diagonal walls.

The yearly seasons and climate difference on earth are the outcome, not only of the distance of the sun to the Earth, but of the time of daylight and thus warmth due to the varying angles of the sun. Examining the hypaethral solution of the temple, based on its unique coordinates¹³⁶ and the three unique altitudes and rising and setting angles of the sun at its distinctive positions throughout the year 420 B.C.,¹³⁷ shows that the moments of summer and winter solstice were highly significant. The sun has three distinct phases that are easily observable, a low and high position through the year (solstices), with two moments lying in between (the equinoxes). Examining the sun's position during the winter solstice, 28.82°,

¹³⁶ Lirintzis, I., and Vasileiou, H., "Were Greek temples oriented towards aurorae?," *Oxford Journals, Astronomy and Geophysics*, Volume 47 Issue, table 1, table 2.

(<https://academic.oup.com/astrogeo/article/47/1/1.14/258057/Were-Greek-temples-oriented-towards-aurorae>) (accessed at 10/05/2016). Azimuth of the temple of Apollo Epicurean, Bassae: 2° 36', Coordinates: Lat. 37° 25' 45" / Long. 21° 54' 0.4".

¹³⁷ Angles retrieved from Horizons program, Nasa's Jet Propulsion Laboratory. (<https://ssd.jpl.nasa.gov/?horizons>).

summer solstice, 76.31° , and the two equinoxes, 52.60° , several interesting convergences are found with the temple's design, in plan and section.

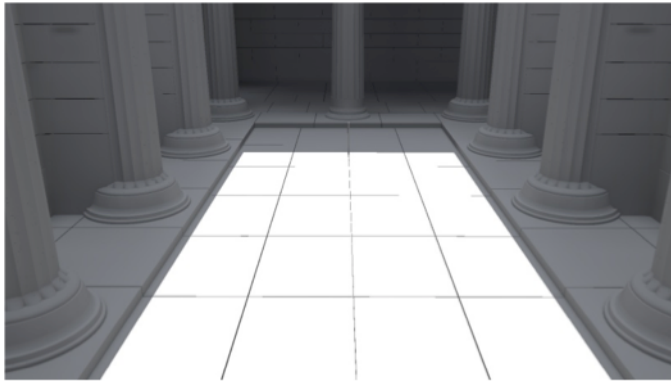


Figure 28. Lighted surface falls exactly on the cella pavement, midday summer solstice.

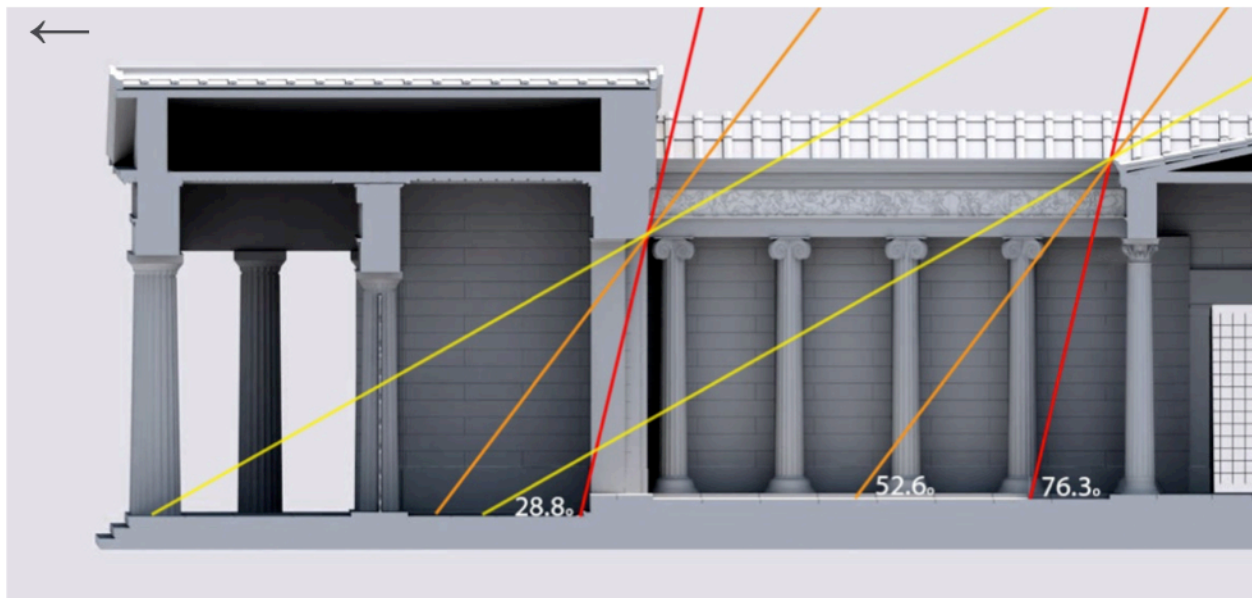


Figure 29. Longitudinal section showing the two sun rays that define the limits of the lighted floor surface, the noon sun is at its highest position directly to the south (summer solstice with red, fall and spring equinoxes with orange, winter solstice with yellow).

The first thing to observe is how the light allowed from the outline of the sima of the hypaethral roof falls neatly into the cella floor (Fig. 28). The longitudinal section (Fig. 29) shows the sunrays at the moment of the sun's highest altitude of the day (noon), when it is directly in the South and aligned with the temple's centerline. For each sun position two sunrays define the limits of the lighted floor surface, one created by the southern edge of the

lintel of the cella's north entrance and the other by the sima of the hypaethral roof directly above the Corinthian column. In the north part of the temple we notice the gradual drift of the light from the centerline of the north peripteral Doric columns and the center of the pronaos floor in the winter solstice, to the entrance step of the cella and to the unique point on the floor where the diagonal southernmost half-columns intersect, in the summer solstice (Figs. 29, 30, 31, 32), defining the uppermost limit of the lighted area throughout the whole year (Fig. 33).

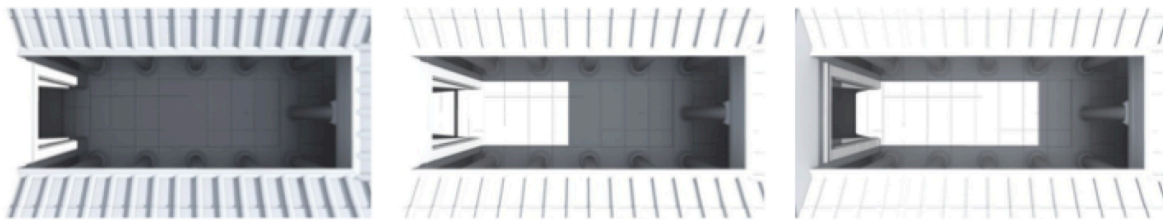


Figure 30. Top view from hypaethron. Notice the gradual annual drift of light from: winter solstice, to equinox, to summer solstice. From no light falling on the cella floor, to half of the cella floor in the equinoxes and to its uppermost boundary marked by the cella point from the 45° oriented diagonal walls.

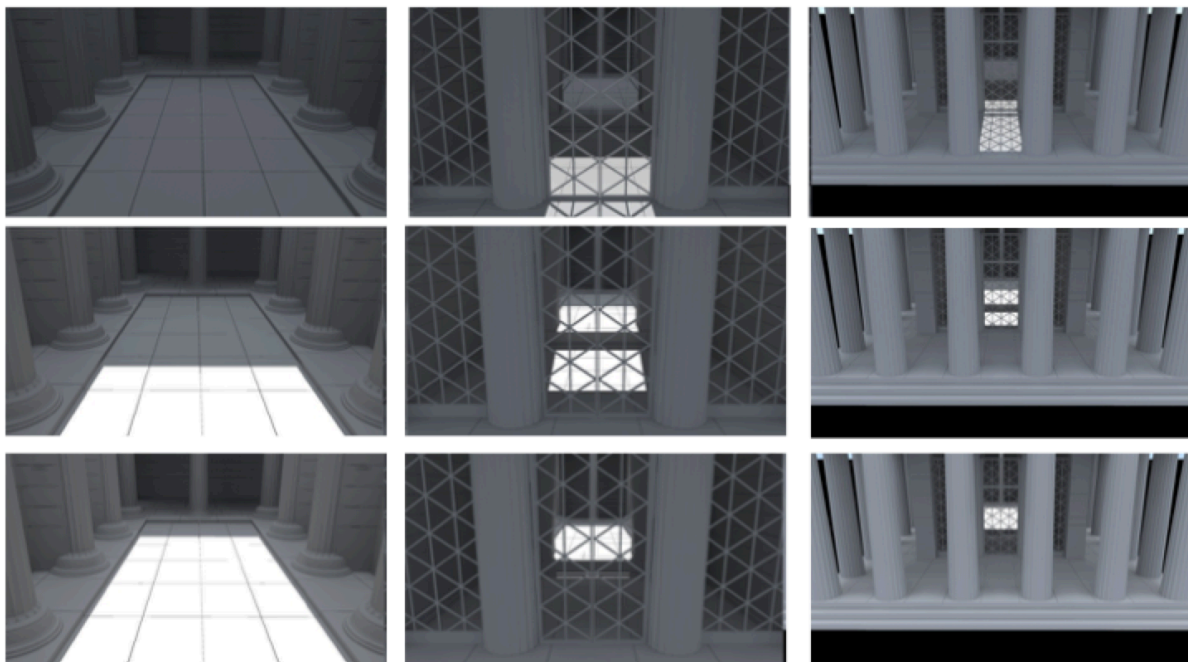


Figure 31. Gradual annual drift of light from winter solstice, to equinox, to summer solstice noon time. Viewed from the entrance of the cella (left column), from the pronaos (middle column) and from outside the temple (right column), always looking South.



Figure 32. All shadows in fig. 31 are simulated digitally with the temple oriented to true N. The temple is actually oriented $2^{\circ} 36'$ E of N. These three images reflect that difference from true N, and should be compared with those above. It is evident that the difference is minimal, and in any case only lasts for a few minutes.

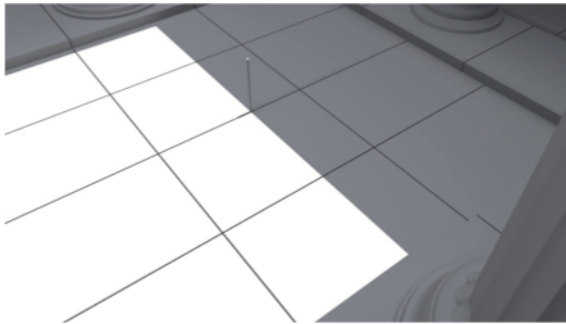


Figure 33. Lighted surface uppermost limit coincides with the defined unique point marked by the 45° diagonal spur walls that flank the Corinthian column (see Fig.27).

At the two equinoxes the sun's rays light the pronaos floor up to the middle of the cella floor. At the winter solstice, the lighted area is the peristyle and pronaos, at the equinoxes it is the pronaos and cella and in the summer solstice only the cella. In other words, the illuminated rectangle moves from wholly outside the cella (winter solstice) to wholly inside the cella (summer solstice), straddling the entrance at the equinoxes. Also, at the southern part of the temple which is independent from the roof debate, the winter solstice ray defines the meeting point of the adyton floor and the back wall of the adyton, (although this alignment assumes Ictinus either knew about sectional projection or mocked it up with a temporary frame during construction), near the threshold of the opisthodomos at the equinox and the back limit of the south Doric peristyle columns at summer solstice (Figs. 34, 35a-d), further affirming that the

temple's proportions are intentionally dictated by the sun's rays.

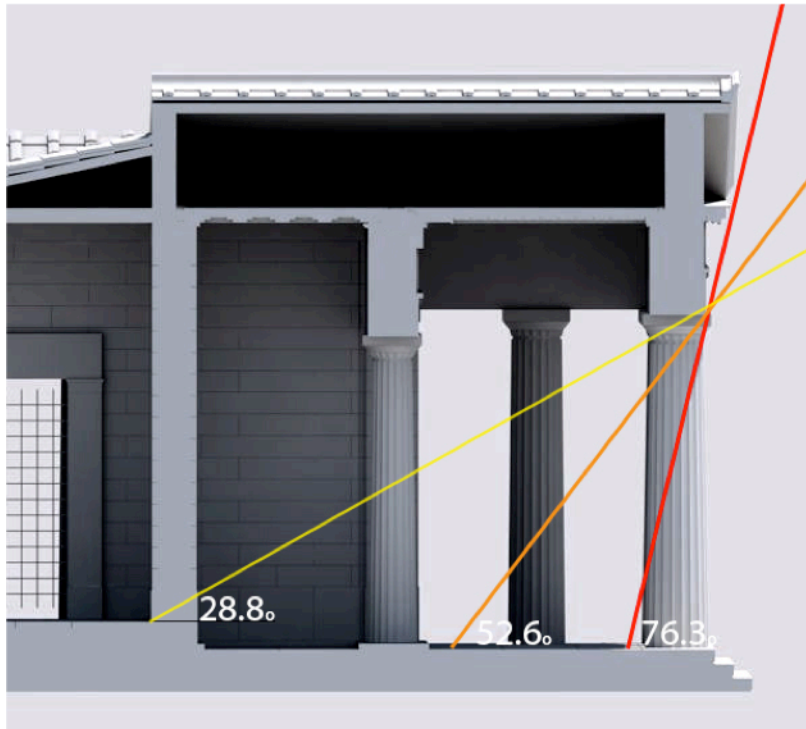


Figure 34. Longitudinal section showing that the sun rays define the opisthodomos and peristyle length and proportions of the temple by defining the back wall of the adyton (summer solstice with red, spring- fall equinoxes with orange, winter solstice with yellow).

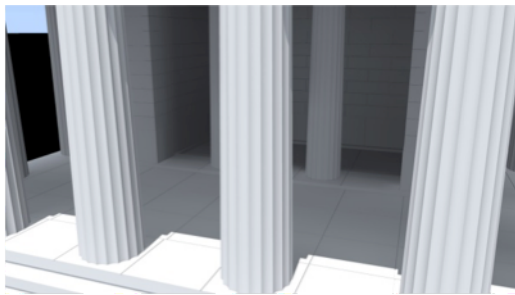


Figure 35a. View towards the opisthodomos at the summer solstice.

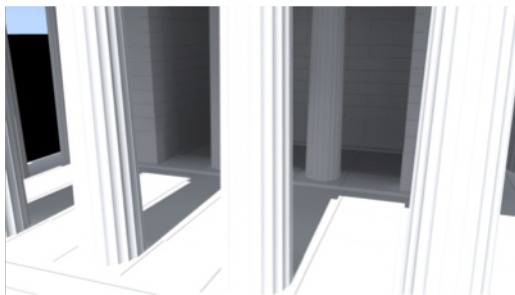


Figure 35b. At the equinoxes.

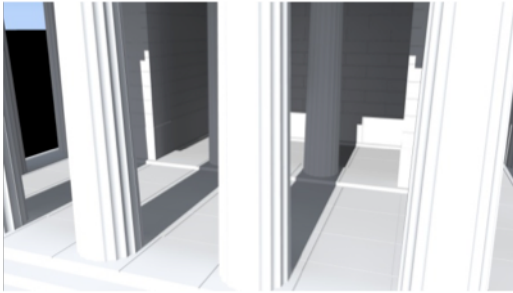


Figure 35c. At the winter solstice.

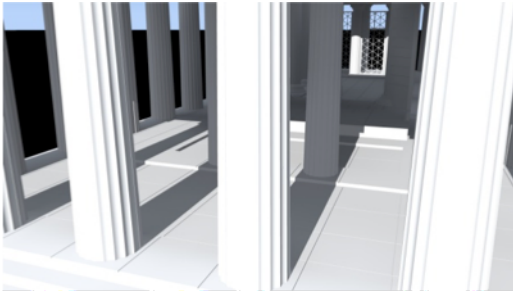


Figure 35d. 3D model without the surrounding walls of the adyton showing the winter rays defining the meeting point of adyton floor – back wall.

As we have already seen, at the highest position of the sun, 76.31° at noon of the summer solstice, the patch of sunlight on the cella floor reaches the intersection point of the 45° angled southernmost half-columns. This requires a specific proportional relation between the overall height from the base of the Corinthian column to the uppermost limit of the hypaethron's roof sima and the width of the interior of the cella. It demands an architect's well planned, accurate design and knowledge of solar phenomena (although easily tested on-site with temporary structures). What seems to have been achieved is the orchestration of the peristyle, pronaos, and cella in relation with the annual sun phases. Furthermore, if one were to extend the diagonal 44.9250° and 44.6084° orientation of the southernmost half-columns outward towards the horizon, the resulting angles closely bracket the nautical dawn and dusk (sun 12° under the horizon), starting and ending moments of nautical twilight at the summer solstice (az. 47.0830° - 312.8865°), off only 2.0080° and 1.7219° degrees if the temple were precisely aligned to the

North. With the azimuth of the built temple measured today as $2^{\circ} 36' = 2.60^{\circ}$, the diagonal columns are off 0.5920° and 4.3219° from actual summer solstice nautical dawn and dusk.

The east door of the adyton has also been an element of intense inquiry for its role in the temple design. First it should be noticed that it does not lead to an open area, but to a small one, very close to the edge of the plateau where the temple is situated, urging someone not only to look towards the eastern horizon and observe the rising sun, but also to the imposing mountainscape and especially Mt. Lykaion's two peaks between East and Northeast, the southern one (1382m./ca. $37^{\circ} 26' 47''$ N, $21^{\circ} 59' 18''$ E) where the fire and smoke of the Zeus ash altar would be easily observable and the northern one (1421m./ca. $37^{\circ} 27' 26''$ N, $21^{\circ} 58' 27''$ E). Also the east door is looking towards Delos the birthplace of Apollo and Artemis and Didyma sanctuary, with the temple at Bassae situated in a latitude very close with those of Delos and the great hypaethral temple of Apollo in Asia Minor: (Bassae: $37^{\circ} 25' 45''$ N, Delos: $37^{\circ} 24' 09''$ N, Didyma: $37^{\circ} 23' 05''$ N).



Figure 36. Areas of light on the adyton wall through the east door at sunrise.

The relation of the temple's design with the annual movement of the sun is also confirmed by another solar phenomenon this time in relation to the east door of the adyton. Cooper has proposed that the purpose of the east door was to funnel the sunrays into the chamber at dawn on particular days, based on the in-situ observation of the effect of light streaming

through the door at summer sunrise, of a double ray, one that lights the center of the south adyton wall while the other marks the southwest corner (Fig. 36).¹³⁸ Building on this observation we can see that, indeed, the sunrays in the adyton at the summer dawn are part of an annual choreography, that can be observed by following the movement of the dawn sunrays through the year. The morning sunlight due to its position relative to the east entrance during the passage of the year, traverses the adyton back wall in summer, creating two beams of light as Cooper observed: one hitting the center of the back cella wall and one the northeast corner, then the back west wall of the adyton on the equinoxes when the sun rises perpendicularly to the temple, finally towards the Corinthian column and the main cella in the winter period when the sun rises from its northern-most position (Fig. 37a–c).



Figure 37a. Summer solstice dawn – 3:36 AM UT.

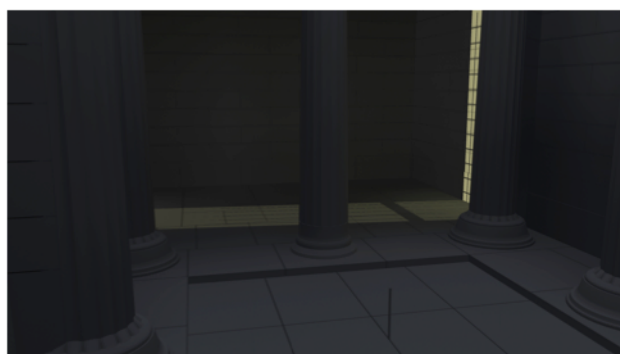


Figure 37b. Spring/Fall equinox dawn – 5:01 AM UT.

¹³⁸ Cooper 1968, pp. 103–111.



Figure 37c. Winter solstice dawn – 6:21 AM UT.

The two limital positions of the sunrays are the winter and summer solstice with equinoxes in between. Furthermore, the yearly limital position on winter solstice, is marked by the angled position of the southernmost spur walls. On this day, dawn's light first illuminates the Corinthian column (Fig. 38a) and then slowly moves towards the point of interest on the cella (Fig. 38b, c). At that moment a ray of light, permitted by the gap between the exterior Doric column and the adyton's east entrance right corner, passes through the unique point on the cella floor towards the middle of the west spur wall and then vanishes (Fig 38c, 39, 40a–b).



Figure 38a. Winter solstice dawn – 6:21 AM UT.



Figure 38b. Winter solstice – 7:08 AM UT.

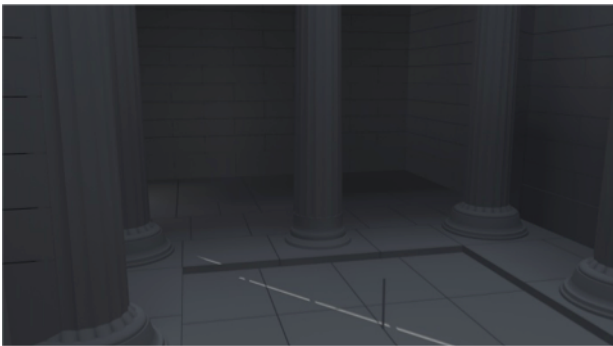


Figure 38c. Winter solstice – 7:42 AM UT.

After that date the whole process reverses. The Corinthian column is illuminated from the ‘new and young’ sun at the day of the year, when light starts again to prevail over darkness, witnessing the sun’s ‘rebirth’ after a continuous decline in the sky and again highlighted as we have seen in the day of the year when the sun is at its most glorious and highest position, its sunrays the strongest and the duration of light/day over darkness/night the longest (Figs. 28, 33).

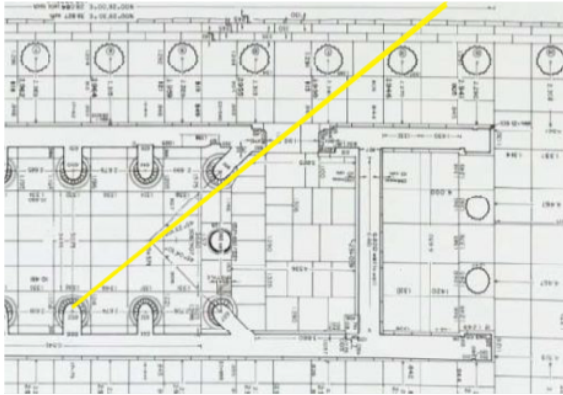


Figure 39. Strip of light passing through the mark on the cella at winter solstice.

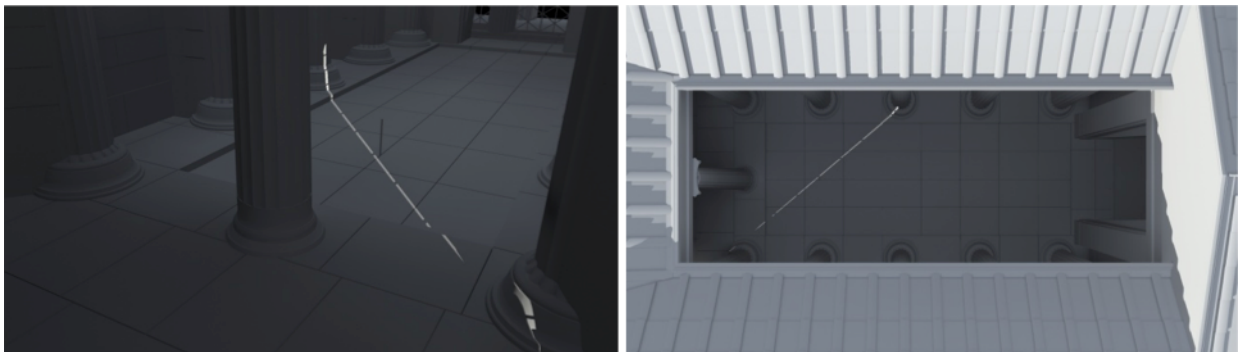


Figure 40a-b. Strip of light entering from the east adyton door at morning of winter solstice, view from the East door into the cella (left) and top view of hypaethron (right).

Conclusions

Solar effects of this elaboration and precision are rare in Classical architecture, indeed in architecture generally. It appears that the uniqueness (and possibly the remoteness) of the cult and its site—whose archaic temple may have contained some of these effects—can account for the three-fold hypothesis for which I have argued: that the temple was hypaethral embracing in this way the meteorological phenomena and the passing of the seasons, central in the cults of Zeus *Lykaios* and Demeter, influenced by Apollo's/Helios's movements and crucial for the fertility of land, that solar effects were deployed consistent with the temple iconography, and that Ictinus had the primary architectural imagination to create such a combination of orthodoxy and originality. On this basis I would argue that Ictinus intentionally oriented the temple's design to the unique inclinations of the rays of the sun during the year, emphasizing

the importance of the Corinthian column as its central element. In this respect Pausanias' characterization of the temple of Apollo Epikourios as the second most "harmonious" in the whole of the Peloponnesus,¹³⁹ could be praise for its proportions or for the precision and quality of the stone cutting, to which should be added its alignment and "harmonious" intergration with the celestial world and the cosmos, as some scholars have speculated in their interpretation of Pausanias passage.¹⁴⁰ Ictinus' involvement in the design of the Parthenon and then the building of the great hall, the Telestirion at Eleusis, prior to the temple at Bassae, surely brought him in close contact with the priests and priestesses, the rituals, the artifacts used in the rituals and their sacred and symbolic meanings; indeed this would have been necessary in order to adequately design the great hall for the initiation ritual. This further implies that he was initiated and learned first-hand the mysteries, motivating him to accept to build a temple and introduce the new Order in a remote area, but one archaic in traditions, closely related to the mysteries, although there is no written or archaeological evidence for this.

The presence of a kindred Demeter/Persephone cult near Bassae points to a persistent local theme: Apollo's and Pan's role in assuaging the anger of Demeter and Zeus. In Phigaleia Demeter's mourning was remembered by her image; and these must be placed alongside the myths of savage sacrifice on Mt. Lykaion in relation to the 'magical' rain evocations of Zeus. These two sites preserve the collective traumatic memory of the extreme punishments of the two gods, that almost brought about the extinction of human race. The barren infertility of the land, from the grief of Demeter withheld the gifts of wheat, corn and fruits leading to the

¹³⁹ Pausanias 8.41.8.

¹⁴⁰ Rykwert, *op. cit.*, p. 502. On the word ἀρμονία and its interpretations in the passage of Pausanias 8.41.8 see: Pollitt, J. J., *The ancient view of Greek art: Criticism, History, and Terminology*, Yale publications in the history of art 25, New Haven: Yale University Press, 1974, pp. 153–154.

destruction of agriculture and pasture, the subsistences of civilized life, whose famine stimulated the repressed savage and wild part of human nature causing impious acts such as cannibalism and Zeus great flood stipulated by these acts, almost brought the destruction of mankind with a deluge. Apollo/Sun helps appease Demeter's grief and protect her gifts, while Apollo the ephebe ideal Kouros, helps the youth to properly come into manhood and accept their role as mindfull warriors-defenders of the community. Therefore Apollo Epikourios seem already, at least at the time of the construction of the temple at Bassae, to have been perceived as taking part into the myth of Zeus birth and coming into adulthood. That becomes apparent in Apollo's Epikourios and Pan Sinoeis conflation with Apollo the Parrhasian and Pan of Mt. Lykaion, in the Megalopolis market and the dedication of the Apollo statue from Bassae as part of the Lykean sanctuary in Megalopolis.

The temple's orientation and northern metopes seem very appropriate, because the figures celebrate through dancing the return of Apollo from the Hyperborean's fertile land in the far North. The Corinthian column, too, faces North toward the Hyperborean realm, the eternal garden where people lived under the blessing of Apollo, untouched by war, hard toil, old age, and disease and home of the North wind. The actions of Apollo-Helios, integrated as we have seen in the design and the orientation of the iconography of the temple, signals both the victory over darkness and the coming of spring, assisting with his warmth and light the growth of vegetation. The Corinthian capital itself presents the acanthus leaves, vegetation, at its vigorous moment topped by an anthemion. The advent of spring marked not only the regenerative fecundity embodied in Aristotle's *physis*, but also the beginning of the part of the year devoted to the *agon* of war, whose warriors seem to have been significant to the cult, and therefore also the transition to ephebe of the young men, celebrated in the wolf-ritual of initiation of Lykaian Zeus. The interior fierce battles of the Amazonomachy and

Centaureomachy revolve around the theme of women and child protection and the prevalence of Greek warriors against foes with the direct assistance of heroes and the gods. The heroes were for the Greeks and especially the youth the highest paradigms to look up to. Among them, the ideal example of physical power, intelligence, and character is represented by Heracles, recognized by the gods with his *apotheosis*. Apollo Epikourios at Bassae therefore guarantees and safeguards in its interior the powers of spring, its beauty and abundance, the *agon* of opposites, and the cosmic and divine order that sustains the continuation of generations within the cycles of life, the drama of mortal life: human finitude prevails within the *agon* of cosmic cycles of decay and renewal, whilst offering the possibility of overcoming these limits to a select few.

The Corinthian order has been passed on to us since the Renaissance mainly as a symbol of ostentation, because of the Romans extensive use of the order in a decorative manner, for its floral elements and the flexibility of the proportions it offered. However as we have seen, the prototype of the Corinthian order appears inside a temple in a remote but highly sacred area. If a grandiose, raffish appearance were wanted, it could have been achieved with the use of the new ornament in a great number of columns and in large urban temples, as an earthly demonstration of wealth, power or as part of a political statement. Instead, the new order appears in a very specific place and moment in history, associated with a specific deity, in response to an immediate and vivid mythic and ritual context. The reason for the later widespread Hellenistic use of the Corinthian order and elevation next to the long established and much older Doric and Ionic Orders, is therefore not to be found only in its external beauty or as a 'novel' artistic expression of Ictinus. Similarly, the legend of the maiden's funerary basket retailed by Vitruvius (4.1.9–10) seems distant from the ethos at Bassae, although the motif of death and renewal might retain something of the original. A single Corinthian

column, and framed by the other two orders, is highly unique. A history of the Corinthian column is out of place here, rather it is sufficient to suggest its role at Bassae.

The singular column has a cosmic significance related to the solar performance and thus the Corinthian order has a special relation to the sun, Apollo, and the Hyperborean land,¹⁴¹ embodying a double meaning: one connected with the tree-plant world, the regeneration, growth, and flowering of vegetation and the other social, symbolizing the coming of age for marriage of young girls and boys—their turning point in life—into motherhood and manhood (suitable for war), respectively. Accordingly we are invited to understand the temple, made from the honey-colored limestone spur on which it rests, as the durable rhythmic framework for a temporal drama of the several divine, natural and cultural rhythms which conditioned the aspirations of any individual, who is potentially embodied in the single generative column, the pivot of the site, supporting the *agon* of Herakles.

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¹⁴¹ Also for the relation of sun and Hyperborean land with the Delphic Acanthus Column, see Ferrari, G., *Alcman and the Cosmos of Sparta*, Chicago: University of Chicago Press, 2008, 2014, pp. 141–146.

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Figure 6. Temple of Apollo Epicurius, Bassae NM2007.85.14. Credit: This photograph was taken by Nicholson Museum curator William J Woodhouse in Greece between 1890 and 1935.

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Figure 14. Frantz Image: PE 8: Bassae, Temple of Apollo Epicurius, interior from north, American School of Classical Studies at Athens, Archives, Dorothy Burr Thompson Photographic Collection – Alison Frantz Photographic Collection. Source Link: <http://ascsa.net/id/frantz/image/pe%208?q=bassae&t=image&v=list&sort=&s=4>. (Retrieved at 11/07/2017.)

Figure 15. Temple of Apollo Epikourios at Bassae (Greece), about 420–400 BC, British Museum. Credit: photo by Carole Raddato from FRANKFURT, Germany. Source Links: [https://commons.wikimedia.org/wiki/File:Temple_of_Apollo_Epikourios_at_Bassae_\(Greece\),_about_420-400_BC,_British_Museum_\(14237128366\).jpg](https://commons.wikimedia.org/wiki/File:Temple_of_Apollo_Epikourios_at_Bassae_(Greece),_about_420-400_BC,_British_Museum_(14237128366).jpg). <https://www.flickr.com/photos/carolemage/14237128366/>. Link to licence: <https://creativecommons.org/licenses/by-sa/2.0/>. (Retrieved at 11/07/2017.)

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