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L'ENVIRONNEMENT NATUREL ET LA RELATION HOMME-MILIEU DANS LE MONDE ÉGÉEN PROTOHISTORIQUE

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SOMMAIRE

Préface	11
A. Cadre naturel :	
Georgia KOURTESSI-PHILIPPAKIS, <i>Local vs exogène ? L'impact du milieu naturel sur la composition des assemblages lithiques néolithiques en Grèce</i>	15
Georgia STRATOULI, Anaya SARPAKI, Maria NTINOI, Eleni KOTJABOPOULOU, Tatiana THEODOROPOULOU, Vasilios MELFOS, Niels H. ANDREASEN, Panagiotis KARKANAS, <i>Dialogues Between Bioarchaeological, Geoarchaeological and Archaeological Data: Approaches to Understanding the Neolithic Use of Drakaina Cave, Kefhalonia Island, Western Greece</i>	23
Erika WEIBERG, <i>Timing, Perception and Response. Human Dimensions of Erosion and Sedimentation in the Greek Bronze Age</i>	33
Evangelia STEFANI, Nikos MEROUSIS, <i>Living on the Edge. People and Physis in Prehistoric Imathia, Macedonia, Greece</i>	41
Mimoza SIDIROPOULOU, Eric FOUACHE, Kosmas PAVLOPOULOS, Maria TRIANTAPHYLLOU, Konstantinos VOVALIDIS, George SYRIDES, Emanuele GRECO, <i>Geomorphological Evolution and Paleoenvironment Reconstruction in the Northeastern Part of Lemnos Island (North Aegean Sea)</i>	49
Thomas F. STRASSER, Anne P. CHAPIN, <i>Geological Formations in the Flotilla Fresco from Akrotiri</i>	57
B. Ressources naturelles :	
Katerina ATHANASAKI, <i>A Serpentine Quarry-Scape in Gonies, North-Central Crete</i>	67
Gerald CADOGAN, <i>Water Worries and Water Works in Bronze Age Southern Crete</i>	73
Jonathan M. FLOOD, Jeffrey S. SOLES, <i>Water Management in Neopalatial Crete and the Development of the Mediterranean Dry-Season</i>	79
Nagia SGOURITSA, Eleni SALAVOURA, <i>The Exploitation of Inland Natural Resources on an Island Environment: The Case of the Mycenaean Settlement at Lazarides and the South/Southeast Aegina</i>	85
Thomas G. PALAIMA, <i>Harnessing Physis: The Ideology of Control and Exploitation of the Natural World as Reflected in Terminology in the Linear B Texts Derived from Indo-European *bheh₂u- 'Grow, Arise, Be' and *h₂eg-ro- 'The Uncultivated Wild Field' and Other Roots Related to the Natural Environs</i>	93

C. Paysage et climat :

- Miriam G. CLINTON, Sarah C. MURRAY, Thomas F. TARTARON,
Gis in Action: Analyzing an Early Bronze Age Coastal Landscape on the Saronic Gulf 103
- Peter PAVÚK, Magda PIENIAŹEK, Simone RIEHL,
Troy and the Troad in the Second Millennium: Changing Patterns in Landscape Use 111
- Fritz BLAKOLMER,
Meaningful Landscapes: Minoan “Landscape Rooms” and Peak Sanctuaries 121
- Vincenzo AMATO, Fausto LONGO, Maria BREDAKI, Amedeo ROSSI,
Matthieu GHILARDI, David PSOMIADIS, Maxime COLLEU, Laetitia SINIBALDI,
Doriane DELANGHE-SABATIER, François DEMORY, Christophe PETIT,
*Geoarchaeological and Palaeoenvironmental Researches in the Area of Ancient Phaistos
(Crete, Greece): Preliminary Results* 129
- Christos DOUMAS,
*Le paysage côtier de la région d’Akrotiri, Théra, avant l’éruption volcanique
du Bronze récent* 141
- Anne P. CHAPIN, Brent DAVIS , Louise A. HITCHCOCK , Emilia BANOU,
*The Vapheio Tholos Tomb and the Construction of a Symbolic Landscape in Laconia,
Greece* 145
- Athanasia KRAHTOPOULOU, Rena VEROPOULIDOU,
*Linking Inland and Coastal Records: Landscape and Human Histories in Pieria,
Macedonia, Greece* 153
- Assaf YASUR-LANDAU, Nurith GOSHEN,
*The Reformed Mountains: Political and Religious Landscapes in the Aegean
and the Levant* 159
- Georgios FERENTINOS, Maria GKIONI, Maria GERAGA, Georgios PAPTAEODOROU,
*Neanderthal and Anatomically Modern Human Seafarers in the Aegean Archipelago,
Mediterranean Sea* 165

D. Iconographie :

- Fragoula GEORMA, Artemis KARNAVA, Irene NIKOLAKOPOULOU,
The Natural World and its Representations: A View from Akrotiri, Thera 175
- Andreas VLACHOPOULOS, Lefteris ZORZOS,
*Physis and Techne on Thera: Reconstructing Bronze Age Environment and Land-Use
Based on New Evidence from Phytoliths and the Akrotiri Wall-Paintings* 183
- Elsa PAPATSAROUCHEA,
Minoan Landscapes: Plant Communities and their Artistic Representations 199
- John G. YOUNGER,
The “World of People”: Nature and Narrative in Minoan Art 211
- Karen Polinger FOSTER,
Fur and Feathers in Aegean Art 217

E. Agriculture :

- Georgia KOTZAMANI, Alexandra LIVARDA,
Plant Resource Availability and Management in Palaeolithic and Mesolithic Greece 229

Harriet BLITZER, <i>Preliminary Notes on Olive Domestication and Cultivation in the Prehistoric Aegean</i>	239
Orestes DECAVALLAS, <i>Plant Oils from Neolithic Aegean Pottery: Chemical Proof of the Exploitation of Oleaginous Plants and the Question of "Early" Oil Production</i>	245
Leonidas VOKOTOPOULOS, Gerhard PLATH, Floyd W. McCOY, <i>The Yield of the Land: Soil Conservation and the Exploitation of Arable Land at Choiromandres, Zakros in the New Palace Period</i>	251
Robert Angus K. SMITH, Mary K. DABNEY, Georgia KOTZAMANI, Alexandra LIVARDA, Georgia TSARTSIDOU, James C. WRIGHT, <i>Plant Use in Mycenaean Mortuary Practice</i>	265
Evi MARGARITIS, Katie DEMAKOPOULOU, Ann-Louise SCHALLIN, <i>The Archaeobotanical Samples from Midea: Agricultural Choices in the Mycenaean Argolid</i>	271
Evi MARGARITIS, <i>Acts of Destruction and Acts of Preservation: Plants in the Ritual Landscape of Prehistoric Greece</i>	279
Petra VAIGLOVA, Florent RIVALS, Amy BOGAARD, Rebecca FRASER, Armelle GARDEISEN, William CAVANAGH, Christopher MEE, Josette RENARD, Angela LAMB, <i>Interpreting Ancient Crop and Animal Management Strategies at Neolithic Kouphovouno, Southern Greece: Results of Integrating Crop and Animal Stable Isotopes and Dental Micro- And Mesowear</i>	287
Jörg WEILHARTNER, <i>The Influence of Aegean Iconography on the Design of the Linear B Logograms for Animals, Plants and Agricultural Products</i>	297
Marianna NIKOLAIDOU, Ernestine S. ELTER, <i>Hunting, Fishing and Gathering at Sitagroi and Beyond: Strategies of Wild Resource Use in the Neolithic and Early Bronze Age</i>	305
F. Ressources animales :	
Pietro MILITELLO, <i>Wool Production in Neolithic and Early Bronze Age Aegean</i>	317
Stavroula APOSTOLAKOU, Philip BETANCOURT, Thomas BROGAN, Dimitra MYLONA, Chrysa SOFIANOU, <i>Tritons Revisited</i>	325
Alexandra KARETSOU, Robert B. KOEHL, <i>The Minoan Mastiffs of Juktas</i>	333
Olga KRZYSZKOWSKA, <i>Cutting to the Chase: Hunting in Minoan Crete</i>	341
Anna Lucia D'AGATA, Sara DE ANGELIS, <i>Minoan Beehives. Reconstructing the Practice of Beekeeping in Bronze Age Crete</i>	349
Tatiana THEODOROPOULOU, <i>Excavating the Sea: Recent Advances in Marine Zooarchaeology of the Prehistoric Aegean</i>	359

Nancy R. THOMAS, <i>A Lion's Eye View of the Greek Bronze Age</i>	375
Ruth PALMER, <i>Managing the Wild: Deer and Agrimia in the Late Bronze Age Aegean</i>	391
Cyrille RIEAU, Armelle GARDEISEN, Florent RIVALS, <i>Alimentation des troupeaux durant l'âge du Bronze à travers l'analyse des micro-usures dentaires, les exemples d'Angelohori et Archontiko (Macédoine, Grèce)</i>	401
Aurélien CREUZIEUX, Armelle GARDEISEN, Evangelia STEFANI, <i>L'exploitation du monde animal en Grèce septentrionale durant le Bronze récent : l'exemple d'Angelochori</i>	409
Rena VEROPOULIDOU, <i>Molluscan Exploitation in the Neolithic and Bronze Age Communities at the Former Thermaic Gulf, North Aegean</i>	415
G. Peuplement et population :	
Pascal DARCQUE, Haïdo KOUKOULI-CHRYSSANTHAKI, Dimitra MALAMIDOU, Zoï TSIRTSONI, Laurent LESPEZ, Cécile GERMAIN-VALLÉE, <i>The Impact of Environmental Changes on the Neolithic Settlement of Dikili Tash (Northern Greece)</i>	425
Sylvie MÜLLER CELKA, Dario PUGLISI, Frédéric BENDALI, <i>Settlement Pattern Dynamics and Natural Resources in MM-LM I Crete: The Case of Malia</i>	431
Gert Jan VAN WIJNGAARDEN, Pavlos AVRAMIDIS, Nikolaos KONTOPOULOS, <i>Dealing with Extreme Dynamics. Prehistoric Landscapes of Zakynthos</i>	441
Michael L. GALATY, William A. PARKINSON, Daniel J. PULLEN, Rebecca M. SEIFRIED, <i>Mycenaean -Scapes: Geography, Political Economy, and the Eastern Mediterranean World-System</i>	449
H. Posters :	
Marcus J. BAJEMA, <i>Mycenaean Snail-Lovers?</i>	457
Dora CONSTANTINIDIS, <i>Physis and Space: Aegean Bronze Age Depictions and their Architectural Context</i>	459
Janice L. CROWLEY, <i>Images of the Earth in Aegean Art</i>	465
Mary K. DABNEY, <i>Representations of Fig Cultivation in Aegean Art</i>	469
Bryan FEUER, <i>Environmental Aspects of the Northern Mycenaean Border in Thessaly</i>	473
Walter L. FRIEDRICH, Annette HØJEN SØRENSEN, Samson KATSIPIS, <i>Santorini Before the Minoan Eruption: The Ship Fresco from Akrotiri - A Geological and Archaeological Approach</i>	475
Mercourios GEORGIADIS, <i>The Physical Environment and the Beliefs at Leska, a New Peak Sanctuary on Kythera</i>	481

Effie GEMI-IORDANOU, <i>The Meaning of Flowers: Symbolism and Interpretation of Flower Iconography in Minoan Art</i>	485
Angelos GKOTSINAS, Angeliki KARATHANOU, Maria-Fotini PAPAKONSTANTINOY, Georgios SYRIDES, Konstantinos VOVALIDIS, <i>Approaching Human Activity and Interaction with the Natural Environment Through the Archaeobotanical and Zooarchaeological Remains from Middle Helladic Agia Paraskevi, Central Greece</i>	487
Bernice R. JONES, <i>Revisiting the Figures and Landscapes on the Frescoes at Hagia Triada</i>	493
Dimitra KRIGA, <i>Flora and Fauna Iconography on Strainers and Kymbai at Akrotiri: Thera Ceramic Vessels of Special Use and Special Iconography</i>	499
Florence LIARD, <i>Mineral Resources, Potting Techniques and Social Identities in Late Bronze Age Sissi, Crete</i>	505
Stefanos LIGKOVANLIS, <i>The Exploitation of the Thesprotian Wetlands (NW Greece) During the Middle and Early Upper Palaeolithic; Different Hominins yet 'Similar' Strategies? Reflections from the Material World</i>	509
Joanne M.A. MURPHY, <i>The Wealth of Nature and the Nature of Wealth: Aspects of Pylian Ideologies</i>	513
Heleni PALAIOLOGOU, <i>Water Management, Climatic, Social Changes and Agriculture in the Plain of Mycenae during the 13th C. B.C. and Later: The Case of Chania</i>	517
Christina PAPOULIA, <i>Confronting the Sea: Navigation Skills in Pre-Modern Human Societies</i>	521
Vassilis P. PETRAKIS, <i>The Religious Significance of Insects in the Aegean Bronze Age: Three Notes</i>	525
Anna PHILIPPA-TOUCHAIS, Gilles TOUCHAIS, Oreste DECAVALLAS, Armelle GARDEISEN, Matthieu GHILARDI, Evi MARGARITIS, Odysseas METAXAS Sevi TRIANTAPHYLLOU, Efi TSIOLAKI, <i>Environnement, alimentation, hygiène et mode de vie dans la Grèce mésohelladique : le cas de l'Aspis d'Argos</i>	531
Maria ROUSSAKI, <i>New Evidence in Minoan Pictorial Wall Painting: 'The Swallows Fresco' from the Knossos Area</i>	539
Alessandro SANAVIA, <i>How to Improve on Nature: Some Middle Minoan Triton Shells from Phaistos (Crete)</i>	543
Robert SCHON, <i>The Political Ecology of the Pylian State</i>	547
Andrew SHAPLAND, <i>After Naturalism: Human-Animal Relations in LMII-III Crete</i>	555

Giorgos VAVOURANAKIS, <i>The Changing Significance of Nature within Minoan Society</i>	559
I. En guise de conclusion ...	
Thomas G. PALAIMA, <i>The Linear-B-Inscribed Triton PAR Ph 2012 and its Lessons about Phusis</i>	563

THE VAPHEIO THOLOS TOMB AND THE CONSTRUCTION OF A SYMBOLIC LANDSCAPE IN LACONIA, GREECE*

The monumental early LH IIB tholos tomb at Vapheio is best known for its rich grave goods, found in an undisturbed cist grave and on the floor of the burial chamber, left behind by tomb robbers.¹ In quality and quantity, these goods rival those found in the wealthiest early tombs of the Argolid and Messenia and indeed, they represent the emergence of wealth that characterizes the rise of Mycenaean power. Yet the tomb itself remains largely uncontextualized in scholarship. This investigation seeks to locate this important monument in the broader context of its relationship to both its human and natural environments, locally at Vapheio, regionally in Laconia, and more broadly, in Bronze Age Greece.

The grave goods offer a primary indicator of Vapheio's human environment – that is, those who built and used the tomb. The tomb was probably built by the individual buried in the cist grave found in the floor of the tholos. This contained the tomb's earliest pottery and a wealth of valuable goods, including the famous gold cups.² Though no bones were preserved, the large size of the cist (2.2 meters long) and the weaponry suggest the burial of an adult male of elite social status. Recent investigation by Banou and Hitchcock suggests that the occupant was not the “Vapheio *prince*” – a relatively diminutive title – but rather, an important ruler of an emerging political entity which, following James Wright's model for the rise of the Mycenaean state, can be identified as a complex chiefdom on the path to emerging statehood.³ The timing of the deceased's wealth accumulation – at the transition from LH IIA to LH IIB, when Crete shifted from Minoan to Mycenaean rule – suggests the Vapheio ruler's possible involvement in these events.⁴

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1 C. TSOUNTAS. “Ἐρευνᾶται ἐν τῇ Λακωνικῇ καὶ ὁ Τάφος τοῦ Βαφειοῦ,” *ArchEph* (1889) 129–172; C. TSOUNTAS and J.I. MANATT, *The Mycenaean Age* (1897) 130, 144–145, E. VERMEULE, *Greece in the Bronze Age* (1964) 127–130; I. KILIAN-DIRLMEIER, “Das Kuppelgrab von Vaphio: Die Beigabenausstattung in der Steinkiste. Untersuchungen zur Sozialstruktur in Späthelladischer Zeit,” *JRGZ* 34 (1987) 197–212.

2 A brief survey of the grave goods confirms his wealth: a sword, two inlaid daggers, seven bronze knives, two spear heads, two axes, three silver vessels, four stone vessels, three rings made of gold, bronze and iron respectively, twenty-four engraved gems, eighty amethyst beads, sets of lead weights and scale pans, and the two famous gold cups decorated in repoussé with scenes of bull capture. TSOUNTAS (*supra* n. 1); KILIAN-DIRLMEIER (*supra* n. 1).

3 E. BANOU and L.A. HITCHCOCK, “The ‘Lord of Vapheio’: The Social Identity of the Dead and its Implications for Laconia in the Late Helladic II-III A Period,” in H. CAVANAGH, W. CAVANAGH, and J. ROY (eds), *Honoring the Dead in the Peloponnese: Proceedings of the Conference Held at Sparta 23-25 April 2009* (2011) 1–23; J.C. WRIGHT, “From Chief to King in Mycenaean Society,” in P. REHAK (ed.), *The Role of the Ruler in the Prehistoric Aegean. Proceedings of a Panel Discussion Presented at the Annual Meeting of the Archaeological Institute of America, New Orleans, Louisiana, Aegeum* 11 (1995) 63–82; J.C. WRIGHT, “The Formation of the Mycenaean Palace,” in S. DEGER-JALKOTZY and I.S. LEMOS (eds.), *Ancient Greece: From the Mycenaean Palaces to the Age of Homer, Leventis Studies* 3 (2006) 7–52.

4 BANOU and HITCHCOCK (*supra* n. 3) 13. The continued richness of the Vapheio tomb's subsequent burials, as indicated by the gold and precious objects left behind by tomb robbers, suggests that the successors of the occupant of the cist grave also enjoyed sustained wealth and favorable access to exotic prestige goods in LH IIB and LH IIIA, the likely period of tomb's use (on the dates of the tomb's use, BANOU and HITCHCOCK (*supra* n. 3) 11–13). These finds include more than a dozen seal stones, two silver pins, four gold plates (two in the form of flying fish, a Minoanizing motif), two gold buttons, two gold rings, and twenty-two gold beads.) No other tomb yet identified in Laconia rivals the Vapheio tholos in either the wealth of its finds or its size and monumentality. Present evidence thus suggests that the Vapheio tholos served as the premier burial monument of a ruling Laconian dynasty that endured for several generations, from late LHIIA into IIIA, during the formative stages of Mycenaean palatial culture.

The materials and techniques of the tomb's construction imply that the Vapheio tomb was designed and built as an arena for competitive social display through funerary ritual (Pl. XLVIa).⁵ In size, the tholos ranks in the top 25% of early tombs built by LH II,⁶ and the 10.35 meter diameter of the burial chamber, together with the 29.80 meter dromos, are of monumental scale that surely required an architect to design and skilled workmen to construct. The Vapheio tholos, too, is progressive in its construction techniques. Most of the tomb's burial chamber and dromos are built of small, roughly rectangular stones typical of early tholos tomb construction, but the lower courses of the burial chamber incorporate hammer dressed blocks of poros. This constitutes one of the earliest uses of ashlar technique on the Greek mainland.⁷ The stomion is constructed of large dressed stones with joints filled by plaster, still visible today,⁸ and blocks of conglomerate, found in the dromos and now broken, perhaps belong to the lintel. Interestingly, a conglomerate quarry was recently discovered about 200 meters from the tholos, the first identified outside of the Argolid (Pl. XLVIb).⁹ It preserves cuttings from the removal of column bases and possibly other stone blocks, and an unfinished Mycenaean column base approximately 80 cm in diameter. This quarry could have supplied conglomerate for the tholos tomb.

As a building material, conglomerate was associated with power and prestige in Mycenaean culture, as is evident from its prominent use at major monuments in the Argolid including the Lion Gate and the column bases in the House of the Columns, and the Treasury of Atreus and Tomb of Clytemnestra at Mycenae; the threshold and gateway at Tiryns, and in a monumental re-used lintel block at Argos.¹⁰ Its use distinguishes the Mycenaeans from the identity and complexity of early Iron Age cultures purported to be a result of massive Aegean migration, such as the Philistines.¹¹ Wright suggests that, at Mycenae, these structures reference each other through their intervisibility.¹² Rodney Fitzsimons argues that they intentionally resemble one another in materials and structure in order to establish physical and emotional links between the living power of the state and the inherited grandeur of the past.¹³ At Vapheio, the early appearance of ashlar masonry and conglomerate in the tomb's construction, and the opening of a quarry to obtain conglomerate, suggests that these ideas were circulating well beyond the Argolid, and that Vapheio's ruling elite were fully engaged in the highly competitive arena of Early Mycenaean funerary display, better recognized in other parts of Greece such as the Argolid, Boeotia, and Messenia.¹⁴

5 On competitive social display through funerary architecture, see W. CAVANAGH and C. MEE, *A Private Place: Death in Prehistoric Greece* (1998) 56; W. CAVANAGH, "Death and the Mycenaeans," in C. SHELMERDINE (ed.), *The Cambridge Companion to the Aegean Bronze Age* (2008) 327-341.

6 R.A. BRIDGES, *Mycenaean Tholos Tombs (An Architectural Study)* (Unpublished Ph.D. Dissertation, Bryn Mawr College 1974), 206, Table II; 211, Table VI; 223.

7 BANOU and HITCHCOCK (*supra* n. 3) 7-8. For a recent overview of the development of the ashlar technique in mainland Greece, probably under the influence of Minoan architecture, see R.D. FITZSIMONS, "Monumental Architecture and the Construction of the Mycenaean State," in N. TERRENATO and D.C. HAGGIS (eds.), *State Formation in Italy and Greece: Questioning the Neoevolutionist Paradigm* (2011) 94-100. See also J. WRIGHT, "Death and Power at Mycenae," in R. LAFFINEUR (ed.), *Thanatos: les coutumes funéraires en Egée à l'âge du Bronze, Aegaeum 1* (1987) 171-84.

8 H. WATERHOUSE and R. HOPE SIMPSON, "Prehistoric Laconia: Part I," *BSA* 55 (1960) 76.

9 L.A. HITCHCOCK, A.P. CHAPIN, E. BANOU and J. REYNOLDS, "The Conglomerate Quarry from Vapheio-Palaiopyrgi," *Hesperia* (forthcoming).

10 A.J.B. WACE, *Mycenae: An Archaeological History and Guide* (1949) 135-136; J.C. WRIGHT, *Mycenaean Masonry Practices and Elements of Construction* (Unpublished Ph.D. Dissertation, Bryn Mawr College 1978) 234-235; J. CROUWEL, "Ahhiyawa, Argos, and the Argive Plain," in C. GALLOU, M. GEORGIADIS, and G.M. MUSKETT (eds.), *DIOSKOUROI: Studies Presented to W.G. Cavanagh and C.B. Mee on the Anniversary of their 30-year Joint Contribution to Aegean Archaeology* (2008) 265-273.

11 For a new view of the Philistines, see A.M. MAEIR, L.A. HITCHCOCK, and L.KOLSKA HORWITZ, "On the Constitution and Transformation of Philistine Identity," *OJA* 32.1 (2013) 1-38.

12 WRIGHT (*supra* n. 7).

13 FITZSIMONS (*supra* n. 7) 110.

14 CAVANAGH and MEE (*supra* n. 5) 56; C. GALLOU, *The Mycenaean Cult of the Dead* (2005) 136-137.

The Vapheio tholos, moreover, is situated within a broader cultural and physical landscape. Most immediately, it is associated with a major Mycenaean settlement at Palaiopyrgi.¹⁵ Today, we believe Vapheio-Palaiopyrgi may belong to a greater habitation area extending almost 3 km along the chain of hills to Amyklai in the north (Pl. XLVIIa). This suggestion, implied by T. W. Allen in 1921,¹⁶ is supported by preliminary survey work by Banou, but cannot be confirmed without an intensive field survey.¹⁷

As central in a network of intervisible sites, Vapheio-Palaiopyrgi offers clear views of other important Laconian sites in the Eurotas River valley.¹⁸ These include: the Menelaion 5 kilometers to the northeast; Vouno Panayias, a hilltop site occupied throughout the Mycenaean period lying 4.5 kilometers to the southeast,¹⁹ and Ayios Vassileios, a site 4.5 kilometers to the southwest that has recently yielded Laconia's first Linear B tablets, frescoes and other important finds.²⁰ Vapheio-Palaiopyrgi is also connected to the sea via its location beside the Eurotas River. Traces of an old carriage road through the Eurotas gorge were noted by William Leake in 1830 and rediscovered by Richard Hope Simpson. It likely follows the prehistoric route to the Helos Plain and the important sites of Skala and Ayios Stephanos, both near the sea.²¹

The importance of the landscape for the whole region lies in its abundant natural resources. Ayios Stephanos participated in the exploitation of *lapis lacedaemonius*, a green stone favored by Minoan stone-workers. In addition, the *rosso antico* quarry on the Tainaron peninsula was likely to have been of great importance.²² Sources for metal ores – gold, silver, copper, and lead – are more elusive, but the Gales suggest that southern Laconia offered perhaps the most interesting supplies of copper, lead, silver and even gold on the mainland.²³ Alluvial gold

- 15 H. WATERHOUSE and R. HOPE SIMPSON, "Prehistoric Laconia: Part I," *BSA* 55 (1960) 76-80; E. BANOU, *Beitrag zum Studium Lakoniens in der mykenischen Zeit* (1996) 34-36. Brief investigation of the hilltop site by Theodore Spyropoulos identified a Mycenaean settlement with a floruit in LH IIIA2-III B. T. SPYROPOULOS, "Ε' Εφορεία Προϊστορικών και Κλασικών Αρχαιοτήτων. Ανασκαφικές εργασίες," *Archaiologikon Deltion* 29 B'1 Chronika (1982) 111-12.
- 16 T.W. ALLEN (*The Homeric Catalogue of Ships* [1921], 74) brings Amyklai in connection to Vaphio, the discoveries of which "point to an important city in the neighbourhood."
- 17 This area might have included, beyond the sanctuary on the hilltop of Ayia Kiriaki (the later Amyklaion), the cemetery of chamber tombs at Spilakia, as well as other possible grave clusters north of the Amyklaion, north (on Raches) and west of the tholos tomb and at Tsarkaleika, to the northwest of Palaiopyrgi. See BANOU (*supra* n. 15), 31-36, 76-78; see also R. HOPE SIMPSON "The Mycenaean Settlement in the Sparta Plain and the Ancient Traditions," *SMEA* 51 (2009) 322.
- 18 This pattern of settlement is similar to the distribution of intervisible sites in the Argolid. See L.A. HITCHCOCK and A.P. CHAPIN, "Lacuna in Laconia: Why Are There No Middle Helladic Palaces?" in A. PHILIPPA-TOUCHAIS, G. TOUCHAIS, S. VOUTSAKI and J. WRIGHT (eds.), *MESOHELLADIKA: The Greek Mainland in the Middle Bronze Age, Actes du colloque international organisé par l'École française d'Athènes, en collaboration avec l'American School of Classical Studies at Athens et le Netherlands Institute in Athens, Athènes, 8-12 mars 2006* (*BCH* Suppl. 52, 2010), 817-822; BANOU and HITCHCOCK (*supra* n. 3) 13-17; BANOU (*supra* n. 15), 103-4, and Plan 7; E. BANOU, "The Mycenaean Presence in the Southeastern Eurotas Valley: Vouno Panagias and Ayios Georgios," in W.C. CAVANAGH, C. GALLOU, and M. GEORGIADIS (eds.), *Sparta and Laconia from Prehistory to Pre-Modern* (*BSA Studies* 16, 2009) 77-84.
- 19 BANOU (*supra* n. 15), 78-80; BANOU (*supra* n. 18).
- 20 BANOU (*supra* n. 15), 37-39; E. BANOU, "Μυκηναϊκά περιοχής Ξηροκαμπίου Λακωνίας. Συμπεράσματα μιας εκτεταμένης έρευνας επιφανείας και ερευνητικές προοπτικές," *Lakonikai Spoudai* 13 (2006), 133-55; on the excavations, *AR* 56 (2009-2010) 47.
- 21 W.M. LEAKE, *Travels in the Morea*, vol. 1 (1830) 194-195; WATERHOUSE and HOPE SIMPSON (*supra* n. 8) 85. For detailed discussion, see J. BINTLIFF, *Natural Environment and Human Settlement in Prehistoric Greece* (1977) 429-430. On Mycenaean roads, R. HOPE SIMPSON and D.K. HAGEL, *Mycenaean Fortifications, Highways, Dams and Canals* (2006) 144-175. On Skala, see BANOU (*supra* n. 15), 92-94; E. BANOU, "The Eurotas valley and the Helos plain in the Early Helladic period: Addressing Some Key Issues on the Basis of Topography and Pottery," *Pharos* 18/1 (2012), 39-52; on Ayios Stephanos, W.D. TAYLOUR and R. JANKO, *Ayios Stephanos: Excavations at a Bronze Age and Medieval Settlement in Southern Laconia* (2008).
- 22 O.T.P.K. DICKINSON, *The Origins of Mycenaean Civilization* (1977), 90; S.P. MORRIS, "Lakonian Marble in the Bronze Age," *AJA* 86 (1982) 278; TAYLOUR and JANKO (*supra* n. 21) 581-582.
- 23 Z.A. STOS-GALE and N.H. GALE, "The Minoan Thalassocracy and the Aegean Metal Trade," in R. HÄGG and N. MARINATOS (eds.), *The Minoan Thalassocracy: Myth and Reality* (1984), 60-63; D. KISKYRAS, "Ο ορυκτός πλούτος της Μάνης και γενικώτερα της Λακωνίας," *Lakonikia Spoudai* 9 (1988) 121-122; E. BANOU (*supra* n. 15), 114-116.

has been noted at Aphissou on the Eurotas River, just south of Sparta where there are also small sources of copper ores such as malachite and azurite, and sources of lead and copper are found near Molaoi further to the south.²⁴ Copper sources may also have been exploited in Apidia and Krokees to the south, and at Velies and Floka on the Malea peninsula, early in Mycenaean times.²⁵ The Gales speculate that the Minoan colony situated at Kythera was perhaps as motivated by access to metals in Lakonia as by *rosso antico* and *lapis lacedaemonius*.²⁶

The centrality of the Vapheio tholos tomb within this rich Laconian landscape is evidenced by aerial photography. Its position is also enhanced by its prominent location high on a hill overlooking the Eurotas river valley – “like a hat on an oven” as described by Emily Vermeule.²⁷ This visibility could elevate the entire community and its claim on the landscape.²⁸ New research further suggests that the tomb’s elevated location was intended to emphasize the tomb’s symbolic connections with the surrounding natural landscape.

It has already been observed that the dromos is oriented toward Profitis Ilias, the highest peak of the Taygetos massif, thereby referencing the Minoan practice of orienting important buildings, such as palaces, on sacred mountains.²⁹ This connection, however, deserves further consideration. At more than 2400 meters, Profitis Ilias is the highest peak of the massif, and Taygetos, the tallest mountain in the Peloponnese. Though there are no excavated Mycenaean shrines on Taygetos, Pausanias writes in his *Description of Greece* (3.20.3-4), “Above Bryseai rises a peak of Taygetos named Taleton. They call it sacred to the Sun....”³⁰ Of the ancient sanctuary, nothing is known, but interestingly, Mary Hamilton mentions an icon of St. Elias placed in a Taygetos mountaintop shrine inscribed “The Prophet of the Sun.”³¹ Taygetos was thus considered sacred in both Classical and Christian religious traditions. More importantly, the orientation of the tomb towards a sacred mountain suggests that the builder of the tomb, like the Minoans before him, sought to demonstrate specialized knowledge of foreign practices and ideologies, and possibly a privileged connection with the divine. Some might object that the preliminary restoration of the tomb (Pl. XLVIa) demonstrates that the tomb obscured the view to Taygetos, but it is important to note that before construction began, when the site was selected and the orientation was established (possibly in a laying-out ritual), the view to Taygetos would have been clear.

If one turns in the other direction, a view down the length of the dromos leads the eye to the northeast. Unnoticed for over a century is a second alignment connecting the tomb to its physical environment: the dromos is precisely oriented to the summer solstice sunrise.³² Pl.

24 STOS-GALE and GALE (*supra* n. 23), 61, n. 20.

25 BANOU (*supra* n. 15) 114-116, discussing KISKYRAS (*supra* n. 23); see also STOS-GALE and GALE (*supra* n. 23) and TALOUR and JANKO (*supra* n. 21) 586.

26 STOS-GALE and GALE (*supra* n. 23) 61.

27 VERMEULE (*supra* n. 1) 127.

28 L.A. HITCHCOCK, “Monumentalizing Hierarchy: The Significance of Architecture in the Emergence of Complexity on Minoan Crete,” in M. ANDREADAKI-VLAZAKI (ed.), *Proceedings of the 10th International Congress of Cretan Studies, 1-8 October 2006* (2011) A2, 89. See also W. ASHMORE and A.B. KNAPP (eds.), *Archaeologies of Landscape: Contemporary Perspectives* (1999) esp. 9.

29 BANOU and HITCHCOCK (*supra* n. 3) 9, fig. 8; L.A. HITCHCOCK, “Naturalizing the Cultural: Architectonized Landscape as Ideology in Minoan Crete,” in R. WESTGATE, N. FISHER, and J. WHITLEY (eds.), *Building Communities: House, Settlement and Society in the Aegean and Beyond*, Cardiff University, April 17-21 2001 (2007) 91-97.

30 Trans. P. LEVI, *Pausanias’s Guide to Greece II. Southern Greece* (1971) 73.

31 M. HAMILTON, *Greek Saints and their Festivals* (1910) 19-23. Arthur Bernard Cook, in his classic study of Zeus, (A.B. COOK, *Zeus: A Study of Ancient Religion*, vol. 1 [1914] 177-178) argued that the cult of Saint Ilias succeeded that of Zeus on numerous mountaintop sanctuaries, including Taygetos and Mt. Olympus. On new excavations of a prehistoric/Classical ash altar dedicated to Zeus on Mt. Lykaion in Arcadia, see *AR* 55 (2008-2009) 27; *AR* 56 (2009-2010) 41.

32 Aligning the dromos would be a simple task involving two people just before dawn on a summer solstice. Each person carries a tall stake; the stakes are connected by a long cord. Person A drives Stake A into the center of the circle that will become the tholos, while Person B stands with Stake B as far as possible to the east, ensuring that the cord remains taut. Person A sights along the top of Stake A toward the coming sunrise. When the sun first appears above the horizon, Person A directs Person B to move until the taut cord is pointing to the location of sunrise. Person B then drives Stake B into the ground, and the dromos is built along the line between the two stakes. This procedure for aligning monuments to sunrises and

XLVIIIb, taken six weeks after the summer solstice at sunrise on 6 August 2011, shows the sun peeking above the horizon at a point slightly south of the dromos. Davis used GoogleEarth views of the same northeastern horizon as seen from the tomb in combination with a standard astronomical formula to calculate the location of the summer solstice sunrise when the tomb was built in the 15th century BCE.³³ This evidence indicates that sunlight would have shone directly down the dromos in Mycenaean times. If the tomb's façade were not buried or obstructed, the entrance would also have been illuminated. And if the tomb were open, sunlight would have penetrated into the burial chamber itself. This phenomenon would have occurred each year for a few days before and after the summer solstice.³⁴

The co-occurrence of these two sightlines – a view to a sacred mountain in the west, and an orientation to the summer solstice sunrise in the east, is highly unlikely to be accidental. On the contrary, it speaks of specialized knowledge, detailed planning and careful site surveying. Solar alignments are found in monuments built around the world and are known in some megalithic constructions of prehistoric Europe, most famously at Stonehenge and the passage grave at Newgrange, Ireland, whose architecture creates sightlines to the points of sunrise on the solstices.³⁵ In Egypt, the pyramids at Giza are oriented to the cardinal points, but recent observations by Mark Lehner also suggest that the summer solstice sun, when viewed from the Sphinx Temple, sets between the two largest pyramids of Khufu and Khafre. Whether by chance or design, Lehner suggests that the event recreates the *akhet*, the horizon hieroglyph representing the sun between two mountains.³⁶ On Crete, Early Minoan tholoi of the Mesara are now demonstrated to have had precise orientations northeast (toward the summer-solstice sunrise) and southeast (toward the winter-solstice sunrise),³⁷ and at Knossos, Lucy Goodison

other astronomical events was used in Ancient Egypt at least as early as the Old Kingdom, where it was called "stretching the cord": C. ROSSI, *Architecture and Mathematics in Ancient Egypt* (2004) 148; see also A. BADAWY, *Ancient Egyptian Architectural Design* (1965). In addition, D. PREZIOSI, *Minoan Architectural Design* (1983) 29, n. 21, suggests that the name Sarpedon may allude to Bronze Age laying out rituals as in later Greece, the name *harpodonaptae* is given to the stretchers of the cord in laying out rituals. At Vapheio, such a laying out ritual would have been done in conjunction with the view to Taygetos.

- 33 The location of a point on the circle of the horizon (expressed in degrees clockwise from due north) is called the point's azimuth. The azimuth A of the point of summer-solstice sunrise at a particular site is given by $\cos(A) = \sin(\epsilon)/\cos(\phi)$, where ϕ is the latitude of the site, and ϵ is the obliquity of the ecliptic (i.e., the tilt of the Earth's axis) calculated using Laskar's high-precision formula (J. LASKAR, "Secular Terms of Classical Planetary Theories Using the Results of General Relativity," *Astronomy and Astrophysics* 157 [1986] 68). The value of ϵ is not constant, but varies slowly with time; its value (currently 23.438°) was 23.865° in 1450 BCE. As a result, the point of summer-solstice sunrise at Vapheio (latitude 37.024°), currently at azimuth 60.119° , was at azimuth 59.552° in 1450 BCE.
- 34 As the summer solstice approaches, the point of sunrise moves each day a little further to the north ('left'); thus the azimuth of sunrise is decreasing. On the solstice itself, the sun rises at its northernmost ('leftmost') point, and the azimuth of sunrise is at its annual minimum; after the solstice, the point of sunrise begins to move again to the south ('right'), and the azimuth of sunrise begins to increase. Judging by GoogleEarth simulations, a person sitting in the stomion will be able to see approximately 9° of the horizon, stretching from ca. azimuth 52° to ca. azimuth 61° ; therefore, any sunrise that occurs within this 9° section of horizon can be viewed from the tomb's entrance. Throughout the 15th c. BCE, the azimuth of sunrise at Vapheio decreased to ca. 61° a few days before the summer solstice, falling to its annual minimum of 59.6° on the solstice itself (see n. 33) before increasing again to ca. 61° a few days after the solstice; thus in Mycenaean times, the sun shone down the dromos only on the summer solstice and on a handful of days before and after it.
- 35 C. RUGGLES, *Ancient Astronomy: An Encyclopedia of Cosmology and Myth* (2005); J. POLLARD and C. RUGGLES, "Shifting Perceptions: Spatial Order, Cosmology, and Patterns of Deposition at Stonehenge," *CAJ* 11 (2001) 69-90; M. O'KELLY, *Newgrange: Archaeology, Art and Legend* (1988).
- 36 M. LEHNER, *The Complete Pyramids* (1997) 129-130. This symbol closely resembles the Minoan "horns of consecration," which, as argued by Banou, served as both a practical device and an abstract symbol of the sun, a notion adopted from or developed in parallel with Egypt in palatial and post-palatial Crete. See E. BANOU, "Minoan 'Horns of Consecration' Revisited: A Symbol of Sun Worship in Palatial and Post-Palatial Crete?" *MAA* 8.1 (2008) 27-47. See also B.B. POWELL, "The Significance of the So-Called 'Horns of Consecration,'" *Kadmos* 16 (1977) 70-82.
- 37 On the eastward orientation of the Mesara tholoi, see K. BRANIGAN, *The Tombs of Mesara. A Study of Funerary Architecture and Ritual in Southern Crete, 2800-1700 BC* (1970) 105; L. GOODISON, "From Tholos Tomb to Throne Room: Perceptions of the Sun in Minoan Ritual," in R. LAFFINEUR and R. HÄGG (eds.), *POTNIA: Deities and Religion in the Aegean Bronze Age. Proceedings of the 8th International Aegean Conference /*

has established that light from the winter solstice sunrise illuminated the stone throne in the Throne Room complex.³⁸ More recently, Brent Davis has shown that several important Minoan peak sanctuaries offer views of sunrises or sunsets behind especially prominent mountain peaks on the equinoxes or one of the solstices. These sightlines are accidents of geology, and cannot have been the primary reason that these places were chosen as peak-sanctuaries; but the existence of these sightlines probably did contribute to the ritual significance of these places.³⁹

On mainland Greece, however, spatial analysis of the relationship between Mycenaean cemeteries and settlements reveals no fixed pattern governing the placement and orientation of funerary architecture.⁴⁰ Some Mycenaean cemeteries are located west of settlements, towards the setting sun, but others are not. Yet interestingly, preliminary investigation of sightlines presented by the dromoi of large and notable tholos tombs built in the Argolid indicates that a surprising number of them are, like the Vapheio tholos, also oriented to solstice or equinox events, when viewed from the dromos as the sun rises or sets over hills and mountains on the horizon.⁴¹ These include the Dendra tholos (oriented to the winter solstice sunset); the Treasury of Atreus at Mycenae (oriented to the spring and fall equinox sunrise, as previously observed by V. Reijs⁴²); the Tomb of the Genii at Mycenae (summer solstice sunset); the Kato Phournos tholos at Mycenae (spring and fall equinox sunset); and Tholos 1 at Tiryns (winter solstice sunset). However, other tholoi point in other directions, and practical considerations, such as responding to local topography, or orientations towards roads and palatial monuments, may also have contributed to the placement of these tombs.⁴³ Altogether, as concluded by Cavanagh and Mee, and more recently by Gallou, the evidence does not support the idea that a commonly-held Mycenaean funerary belief or ideology guided the placement and orientation of Mycenaean cemeteries and tombs. Rather, variation and diversity define the norm.⁴⁴ This means, then, that the type of tomb built, and its placement and orientation, reflect a decision made by an individual or a (family?) group. By this logic, the orientation of select tombs to solstice or equinox events probably reflects the priorities – and ideologies – of these individual tomb builders.

At a time when the bureaucratic state was forming, when kingship was emerging as a social institution, and when various elite groups vied with one another for social dominance, funerals and funerary displays (with their associated demonstrations of wealth, power, and specialized knowledge) became arenas for competition and for establishing rights of succession.⁴⁵ When the Lord of Vapheio oriented his tomb to the summer solstice sunrise in the east, and to Mt. Taygetos in the west, it was probably as a physical manifestation of an ideology, one that was intended to advance the ruler's position in society.

But can these messages be decoded? Obviously, Mycenaean cosmological beliefs remain largely unknown, but cross-cultural, historical and ethnographic comparisons suggest the importance of the solstices and equinoxes to ancient peoples as significant markers of the solar year. Solstices often represent times of rebirth and regeneration, with the sun as a source or symbol of power;⁴⁶ and equinoxes—when days and nights are of equal length, and the sun rises

*Se Rencontre égyptienne internationale. Göteborg, Göteborg University, 12-15 April 2000, Aegaeum 22 (2001) 77-88. On the precise orientation of Early Minoan tholoi to two points on the eastern horizon, see M. GOODWIN, *The Archaeoastronomy of Early Minoan Crete*, M.A. Thesis, Bryn Mawr College (1999).*

38 GOODISON (*supra* n. 37) 83.

39 B. DAVIS, *Minoan Stone Vessels with Linear A Inscriptions*, *Aegaeum* 36 (2014) 401-419.

40 CAVANAGH and MEE (*supra* n. 5) 41-43; GALLOU (*supra* n. 14) 61, with further references.

41 The same method of calculating the sunrise or sunset view using GoogleEarth and Laskar's astronomical formula was applied to the site lines of major tholos tombs in the Argolid. See above, n. 33.

42 The Treasury of Atreus faces the spring equinox sunrise, as has been previously observed by V. Reijs (<http://www.iol.ie/~geniet/eng/atreus.htm>).

43 A.A. MARAVELIA, "The Orientations of the Nine Tholos Tombs at Mycenae," *Archaeoastronomy* 27 (2001; *JHA* 33, 2002) S63-S66; D. MASON, "The Location of the Treasury of Atreus," *OJA* 26.1 (2007) 35-52.

44 See the overview of various Early Mycenaean tombs and cemeteries in CAVANAGH and MEE (*supra* n. 5) 43-60; GALLOU (*supra* n. 14) 60-62. See also CAVANAGH (*supra* n. 5) 330-333.

45 CAVANAGH and MEE (*supra* n. 5) 56; GALLOU (*supra* n. 14) 136.

46 Most famously, the Roman Saturnalia was the winter solstice festival devoted to Saturn, god of dissolution (here, of the year), which is followed by the rebirth of the sun on the solstice itself. See S.I. JOHNSTON (ed.),

and sets due east/west—were often viewed as numinous thresholds between the summer and winter halves of the year.⁴⁷ The sun appearing on the horizon calls attention to these points of transition.⁴⁸ In contemporary Egypt, the sun god Re was associated with kingship, and kings were identified in their titulary as the son of Re.⁴⁹ On Crete, Sir Arthur Evans argued that Minoan religion drew on Egyptian influences, including the importance of solar cult.⁵⁰

In Mycenaean studies, however, solar symbolism remains largely uninvestigated.⁵¹ This study begins to fill that gap. We argue that participation in LH I-II prestige exchange networks enhanced Early Mycenaean contact with foreign cultures, including those of Egypt and Minoan Crete. This privileged communication facilitated access to practical knowledge, such as the techniques for ashlar construction evident in the Vapheio tholos tomb, and also to foreign and exotic belief systems which the Mycenaeans then selectively adapted for their own purposes and beliefs. The variability of funerary practice across Early Mycenaean Greece suggests too that different ideas were being put forward in competition with one another. At Vapheio, the occupant of the cist seems to have adapted solar symbolism, better recognized in Egypt and Minoan Crete, to his own purposes, as if associating his own power with that of the sun, eternal and renewed yearly. The Vapheio tholos tomb, constructed on the axis between a sacred mountain and the point of the summer solstice sunrise, suggests a ritual incorporation of its Laconian environment—both human and natural—as a sacred landscape imbued with cosmological significance, presumably for the social and political benefit of the “Lord of Vapheio” interred at its center.

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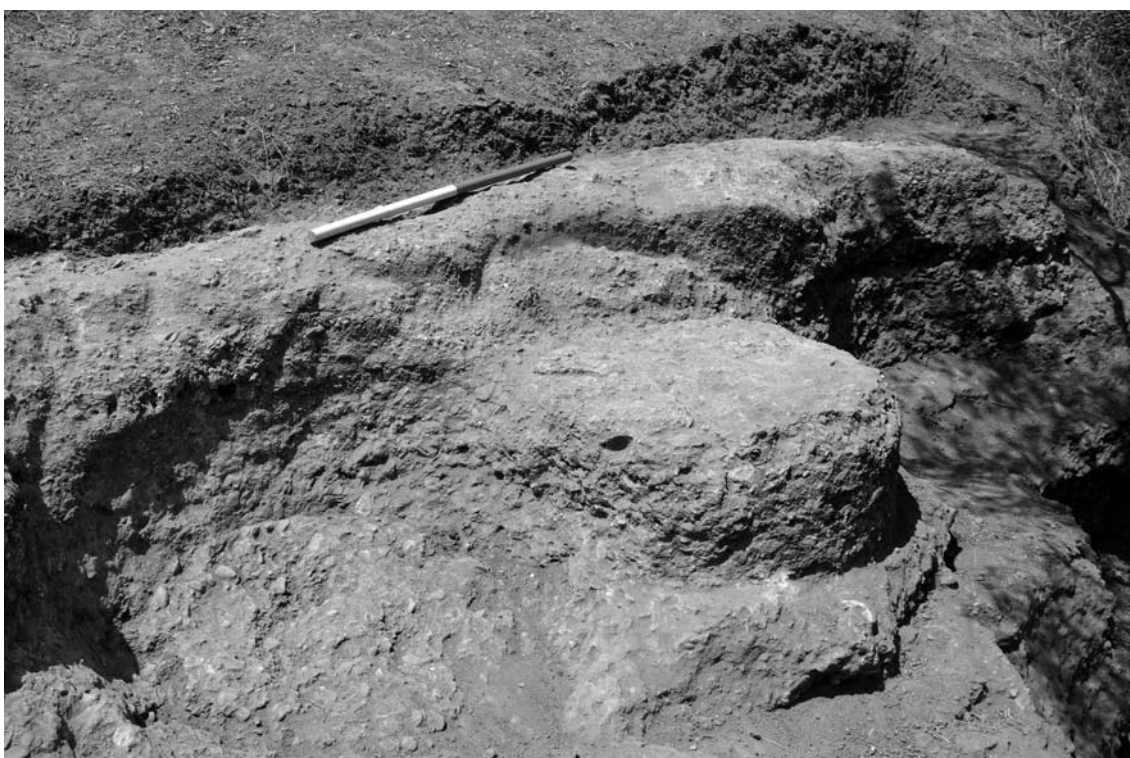
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- Religions of the Ancient World* (2004) 286. The notion is far older, however. The Babylonians believed that Nergal (as the sun) tarried in the underworld, while the Sumerians mourned the death (and celebrated the resurrection) of the vegetation god Tammuz. See W.C. WOOD, “The Religion of Canaan: From the Earliest Times to the Hebrew Conquest,” *JBL* 35.1/2 (1916) 114; J.D. PRINCE, “A Hymn to Tammuz: Cuneiform Texts from the British Museum, Tablet 15821, Plate 18,” *JAOS* 30.1 (1909) 100; J.D. PRINCE, “Ichabod,” *JBL* 32.3 (1913) 153; H.G. MAY, “The Departure of the Glory of Yahweh,” *JBL* 56.4 (1937) 321; H.G. MAY, “Some Aspects of Solar Worship at Jerusalem,” *ZATW* 55.3/4 (1937) 274.
- 47 In civilizations throughout the ancient world, from Egypt and Mesopotamia to India, China and the Americas, administration and regulation of calendars was a priestly function: J.E. MCCLELLAN and H. DORN, *Science and Technology in World History: an Introduction* (2nd ed. 2006) 51-52. This is not surprising. As the sun, moon and stars are the most obvious and accessible natural clock, administering a calendar involves regular observation of the sky, the realm of the divine; cf. Macrobi. Sat. 1.8.7: *Tempus est certa dimensio quae ex caeli conversione colligitur* “Time is a fixed measure obtained from the turning of the heavens.” The numinousness of the solstices and equinoxes is then amply illustrated by the fact that most ancient calendars began on or soon after one of these four days of the year. The Babylonian and Aztec calendars, for example, began on or soon after the spring equinox, as did the calendar of Classical Chios; the Sumerian calendar evidently began on or soon after the winter solstice, like the later calendars of Classical Delos and Boeotia; the calendars of Classical Sparta, Rhodes, Crete and Miletos were similarly anchored to the autumn equinox, while those of Classical Athens and Delphi began on or soon after the summer solstice: G. THOMSON, “The Greek Calendar,” *JHS* 63 (1943) 52-53; A.F. AVENI, E.E. CALNEK and H. HARTUNG, “Myth, Environment, and the Orientation of the Templo Mayor of Tenochtitlan,” *American Antiquity* 53.2 (1988) 289.
- 48 GOODISON (*supra* n. 37) 87.
- 49 R.H. WILKINSON, *The Complete Gods and Goddesses of Ancient Egypt* (2003) 205-209; S. QUIRKE, *The Cult of Ra: Sun-Worship in Ancient Egypt* (2001).
- 50 N. MARINATOS, “The Indebtedness of Minoan Religion to Egyptian Solar Religion: Was Sir Arthur Evans Right?” *Journal of Ancient Egyptian Interconnections* 1.1 (2009) 22-28; also J.A. MACGILLIVRAY, “Sir Arthur Evans’ Minoans and the Egyptian Renaissance of the New Kingdom,” in A. KARETSOU (ed.), *Crete-Egypt: Three Millennia of Cultural Connections* (2000) 150-153; BANOU (*supra* n. 36).
- 51 Solar symbolism has, however, been embraced in an unscientific manner by contemporary neo-pagan and new age religious movements. On the role of solstices and equinoxes in rituals that focus on the cycles of nature in contemporary religious movements, see S.M. PIKE, *New Age and Neopagan Religions in America* (2006) 21.

LIST OF ILLUSTRATIONS

- Pl. XLVIa Tentative restoration of the Vapheio tholos tomb, by A.P. Chapin.
- Pl. XLVIb Quarry cuttings at Vapheio-Palaiopyrgi, from the southeast. Photo: L.A. Hitchcock.
- Pl. XLVIIa View to the north from Palaiopyrgi across the Vapheio tholos tomb towards Amyklai. Photo: A.P. Chapin.
- Pl. XLVIIb Photograph of the sunrise on 6 August 2011, from the Vapheio tholos tomb, with the point of the early LH IIB summer solstice sunrise marked on the horizon. Photo: A.P. Chapin; solstice calculations, B. Davis.



a



b



a



b