

FROM THOLOS TOMB TO THRONE ROOM: PERCEPTIONS OF THE SUN IN MINOAN RITUAL*

Our perceptions of the sun in Minoan ritual are clouded by three thousand years of history and cultural change. In contemporary western culture the prevailing image of the sun is as one half of a set of socially constructed dichotomies, symbolizing male as opposed to female; summer as opposed to winter; *logos*, life and consciousness - in the psychotherapeutic terms of Carl Gustav Jung - as opposed to watery intuition, death, darkness and the unconscious.¹ Hélène Cixous has placed the oppositions sun/moon and day/night in context within a series of symbolic dualities in common currency within contemporary western culture.² The prevalent perception of the sun is as a high bright light vertically polarized from the dark and the low.

As a topic of study within the field of archaeology the sun is viewed with ambivalence. Its association with astrology and with new age cults since the 1960s have left it suspect as a theme for serious enquiry. Ruggles comments on the ethnocentric and positivistic approach of past investigations of prehistoric astronomy as well as the popular fascination with megalithic astronomy in the 1960s and 1970s and the resultant derision and divisions in the academic world.³ In the Aegean field specifically there has been a reluctance to engage with a continuing strand of writings which have constructed over-arching theories on the basis of complex alignments between special buildings and solar, lunar and astral movements, and have sometimes promoted a totalizing view of the importance of the sun and other astral bodies. In Aegean archaeology the topic has perhaps also suffered from what West⁴ has called a “dereliction of knowledge” whereby each generation turns away from those areas of study in which “its predecessors most obviously made idiots of themselves.” In reaction to past overstatements of the case - in this case universalizing Victorian theories of sun-worship and Frazerian nature-myths - it became “bad form to inquire in these directions at all.”

As a result although solar symbolism is an established and significant theme in the studies of ancient Egyptian and near-Eastern religion and has an acknowledged role in the prehistoric passage graves of north-west Europe,⁵ within Aegean studies the only current formulation is that shaped by the Homeric and later classical image of the minor god Helios as chariot driver and cattle owner.

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1 C.G. JUNG, *Symbols of Transformation* (1956) 211, 355, 251, 424, 442, 295, 347, 348 (Vol. V of *Collected Works*).

2 H. CIXOUS, “La jeune née;” see, most accessibly, T. MOI, *Sexual/Textual Politics* (1985) 102-126.

3 C.L.N. RUGGLES, *Astronomy in Prehistoric Britain and Ireland* (1999) 3-11.

4 M.L. WEST, *Immortal Helen, Inaugural Lecture delivered on 30.4.75 at Bedford College, University of London* (1975) 15.

5 As, for example, at Newgrange in Ireland (see n. 33 below).

The sun, so dominant in the experience of modern-day visitors and students to the Aegean, thus seems to be largely absent from the Bronze Age material record. In some cases it is marginalized: shown with the moon on the Great Gold ring from Mycenae, and similarly on the well-known Tiryns ring, it has been described as simply setting the cosmological framework of the scene.⁶ Radiant designs on seals are routinely interpreted as “stars.”⁷ However, individual scholars have identified representations from the Aegean Bronze Age where a possible solar symbol appears in relation to human figures in contexts suggestive of cult. The design on the silver diadem from Chalandriani showed for Zervos “l’adoration du disque solaire;” Renfrew too saw the scene as two “sun discs” next to “adorants with arms raised.”⁸ The recurring circular rayed designs on the Cycladic “frying-pans” - believed by some to be cult objects - have also often been identified as representing the sun, for example by Renfrew: “The central rayed-disc may reasonably be identified as the sun. On the Louros pan it could hardly be a star...”⁹ On the Palaikastro mould, Picard saw the small figure’s body as “garni d’une roue solaire décorée d’une croix,” an interpretation followed by Zervos; Evans also saw a votary holding up a solar symbol.¹⁰

Evans also described the engraved Cretan seal (Pl. XVIIIa) as showing “long-robed women... adoring a rayed solar symbol.”¹¹ Peter Warren has made a similar interpretation of a recently-excavated seal from Knossos which he suggests may show a female figure adoring a solar symbol.¹² John Younger has identified the symbols on Pl. XVIIIb-e as sun symbols.¹³ Despite the recurrent and suggestive gesture in these representations, no debate has been forthcoming concerning the significance of such scenes within Minoan religion. While all seal iconography is debatable, it is apparent that in the active process of interpretation, certain material becomes eclipsed from what are considered appropriate areas for discussion.

A new approach to “reading” the Mesara-type tholos tombs

Nilsson famously described Minoan religion as a picture book without a text. However, recent work has suggested the possibility of perceiving the monuments and landscapes of prehistoric and traditional peoples as a ‘text.’ David has summarized the promise of such approaches to archaeology as “their concern with people’s engagement in place; with the experienced world and the social construction of Being and time; with landscape as a question of people as situated in place, rich in meaning and identity.” Thomas refers to the idea that in pre-literate societies *dominant locales* can be integrated into cycles of activity sanctioned by tradition and significant for social reproduction: “Such spaces will tend to be architectural, and it is at this level that one may link the question of movement through space to that of the manipulation of the configuration of space.” It has been proposed that landscape and architecture can be approached as a spatial text which can be “read” in a physical sense; as Thomas puts it, “Space, whether humanly constructed or merely appropriated in the mind

6 See MMR² 347-9; 412-3; 420.

7 See discussion in L. GOODISON, *Death, Women and the Sun: Symbolism of Regeneration in Early Aegean Religion* (1989) 12-15.

8 Silver diadem from Kastri settlement at Chalandriani on Syros, in National Archaeological Museum, Athens, No. 5234, see *AE* (1899) Pl. 10 No. 1; as reconstructed, see J.L. CASKEY, “Chalandriani in Syros,” in L.F. SANDLER (ed.), *Marsyas: Essays in memory of Karl Lehmann* (1964) 65, Fig. 5. Interpreted by C. ZERVOS, *L’Art des Cyclades du début à la fin de l’âge du Bronze* (1957) 258; by C. RENFREW, *The Emergence of Civilization* (1972) 421.

9 RENFREW (*supra* n. 8) 421. For suggestions about the religious significance of the “frying-pans,” see J. THIMME, “Die Religiöse Bedeutung der Kykladenidole,” *AntK* 8 (1964) 72ff and W. ZSCHIEITZSCHMANN, “Kykladenpfannen,” *AA* 50 (1935) 652-68.

10 Mould from Palaikastro in East Crete, see *PM* I 514, Fig. 371. Interpreted by C. PICARD, *Les religions préhelléniques (Crète et Mycènes)* (1948) 197; by ZERVOS (*supra* n. 8) 258; *PM* I 514.

11 *PM* I 125.

12 Seal SEX/81/1393 from the “Gypsum House” at Knossos. Professor Warren comments that he had been inclined to take the symbol as a sun symbol, as it is not unlike the sun on the Tiryns ring and is large in size; given the gesture he suggests that the lady may be thought to be adoring the sun symbol (personal communication, 1984 and 1999).

13 J.C. YOUNGER, *The Iconography of Late Minoan and Mycenaean Sealstones and Finger Rings* (1988) 133, 290.

is 'read' in relation to previously encountered spaces and internalised codes of value and meaning." The task of the archaeologist is to attempt, as with any text, to make a "reading" which despite modern cultural and personal preconceptions approximates as closely as possible to that of the prehistoric people studied.¹⁴

One area of Aegean study where the significance of the sun has been considered in relation to monuments and landscape is the Mesara-type tholos tombs. Commentators have noted that their doorways, with some variation but very few exceptions, were built to face east. Shaw, Branigan and others have discussed the possibility of a link between the orientation of these doorways and the rising sun.¹⁵ If we take these tombs as texts, their relationship to the sun - normally discussed on paper - can be "read" very differently on the ground.

The tombs, centred on the Mesara in south central Crete - with a period of construction and use within EM-MM and some sporadic re-use in LM¹⁶ - have been most recently catalogued by Branigan as 94 in number,¹⁷ of which less than a third still have a doorway adequate for study. In a project initially financed by a Leverhulme Research Fellowship, and to be presented in full elsewhere,¹⁸ I set out to find whether any pattern of intention could be traced in the tombs' alignment. The work established that the general rubric that Mesara-type tholos tombs faced east did not mean that they all faced the sunrise all year; on the contrary, each faced the sunrise directly only for certain days of each year. The sun rises over a range of directions over six months of the year from approximately 60° (depending on location) in midsummer to approximately 120° in midwinter - returning over the following six months - and the tomb doorways range over the same span. Fieldwork at the tombs drew attention to other factors, for example that a compass reading is not enough to indicate at which time of year a tomb doorway will be oriented to sunrise, because on the site particular topographies - not predictable on paper - affect the alignment. The dawn light may be blocked in certain directions or delayed by a nearby or distant mountain or hillside, and the date when it would reach in through the door to the centre of the tomb - a "complete alignment" in the terms of the study, as in Pl. XVIII f - might accordingly fall earlier or later in the year. When the stone doorslab blocking the doorway was rolled away - as it would have been to admit corpses into the tholos and perhaps on other occasions of post-funerary ceremony - the sun could have entered the tomb, but only on those particular days and only at the moment of dawn and soon after, as it rapidly rises too high for the low tholos doorway.

With the understanding that each tomb is aligned to sunrise only at particular times of year, these dates become interesting because they may reflect the times of seasonal festivals or rituals at the sites. Coming from northern Europe where the prevalent perception is of a year divided into summer and winter, I initially supposed there might be an emphasis on this

- 14 B. DAVID "Whither Landscapes? The Rise and Fall of a Concept," Review of P.J. UCKO and R. LAYTON, "The Archaeology and Anthropology of Landscape: Shaping your Landscape," in *CAJ* 9,2 (1999) 294-5, here 294; J. THOMAS, "The Hermeneutics of Megalithic Space" in C. TILLEY (ed.), *Interpretative Archaeology* (1993) 73-97, here 77, 78. See also R. BRADLEY (ed.), *Sacred Geography, World Archaeology* 28(2) (1996); T. KIRK, "Space, Subjectivity, Power and Hegemony: Megaliths and Long Mounds in Earlier Neolithic Brittany," in TILLEY (*supra*) 181-223; RUGGLES (*supra* n. 3) 112-124, 147-8, 151-3 and refs.; M. EDMONDS, *Ancestral Geographies of the Neolithic. Landscapes, Monuments and Memory* (1999).
- 15 K. BRANIGAN, *The Tombs of Mesara. A Study of Funerary Architecture and Ritual in Southern Crete, 2800-1700 BC* (1970) 105; J.W. SHAW, "The Orientation of the Minoan Palaces," in *Antichità Cretesi: Studi in onore di Doro Levi* Vol. I (1973) 47-59, here 57; S. ALEXIOU, Review of I. PINI, "Beiträge zur Minoischen Gräberkunde," in *Gnomon* 43 (1971) 274-280, here 277.
- 16 As I have suggested elsewhere, the main period during which sunrise alignment seems to have been prioritized by the Mesara-type tholos tomb users runs from EM II to MM I. Some very early tombs on the coast side of the Asterousia mountains were not built with a dawn alignment, likewise two late tombs built in MM II. MM I seems to have been the main period for the construction of tomb annexes, which in some cases blocked the line between the sun and the tomb doorway. (See fuller discussion in L. GOODISON, *The East-facing Tholos Doorways of the Prehistoric Mesara: Did Direction Matter to the Dead?* [forthcoming]).
- 17 K. BRANIGAN, *Dancing with Death. Life and Death in Southern Crete c. 3000-2000 B.C.* (1993) 143-148. This is the most comprehensive gazetteer. Other useful surveys are provided by O. PELON, *Tholoi, tumuli et cercles funéraires* (1976) and P. BELLÌ, "Nuovi Documenti per lo Studio delle Tombe Circolari Cretesi" (1984) 91-142. The classic account of early excavations is by S.A. XANTHOUDIDES, *The Vaulted Tombs of Mesara* (1924).
- 18 GOODISON (*supra* n. 16).

dichotomy, with alignments on midsummer and midwinter. A series of visits at different times of year showed that there were indeed such alignments at the solstices, but there were also alignments close to the equinox and also a large cluster around late August/early September, at a position which the sun would pass through again in early April. This last cluster at early and late summer - for which there are interesting historical and ethnographic parallels - is by far the most numerous, and I have tentatively used the term "the times of the dead" to refer to the two periods. The clear pattern of alignments which emerged (Pl. XIXa), including this last largest cluster, suggested intentionality in the choice of alignment dates on the part of the tomb builders.

In terms of the time gap between now and prehistory, it seems that these dates would be a close reflection of the alignment dates at these sites in the Bronze Age, with a very small margin of difference. Clive Ruggles points out that the equinox dawn position has stayed constant while the solstice positions have changed by only 0.5° , equivalent to one sun's width, since 2000 B.C.; and other factors would, it seems, equally not have made a substantial difference to the readings.¹⁹

We can therefore ask what significance these alignment dates might have had for the tomb users, whether they represented calendrical markers of the year turning or time passing, the changing of the seasons or economic markers (for example, in relation to livestock, planting or harvest), or a combination of those. They may also have related to beliefs about the dead. As at north-western European megalithic tombs aligned to sunrise, commentators have speculated whether the sun was thought to have some effect upon the dead, or vice versa.²⁰ The dawn shining in to a dark interior space containing the remains of the ancestors would have been impressive, and it may have been perceived as a life force which helped the dead in some way.

Traditional archaeology favoured a view of prehistoric religion as centred on fertility, associated with the earth and an earth goddess. This involved assuming the divinity of the early anthropomorphic figurines, an assumption now challenged by Ucko and others,²¹ and the privileging of anthropomorphic material generally over the large body of archaeological material which would seem to draw into the religious sphere elements of the natural world such as plants, animals, weather and landscape.²² This traditional view also assumed a split

19 Personal communication 2000/1, and see C.L.N. RUGGLES, *Megalithic Astronomy: A new archaeological and statistical study of 300 western Scottish sites* (1984) 311-2, where he contrasts this small change in the declinations of the sun and moon with the very substantial change in the position of the constellations since antiquity. On tectonic movements in Crete, which would not have affected the areas in question here, see C.G. FASSOULAS, *Field Guide to the Geology of Crete* (2000) 25-29; on the effects at a site like Amnisos, see V. STÜRMER, "Zur Organisation Minoischer Hafenanlagen," in *L'habitat égéen préhistorique*, BCH suppl. XIX (1990) 413-420, here 415, citing D. KELLETTAT, "Eine eustatische Kurve für das jüngere Holozän," in *Neue Jahrbücher für Geologie und Paläontologie* (1975) 330 ff. Other factors to be considered include the slow drift of Africa towards Crete and the lowering of the mountain horizon by a few feet due to erosion and the loss of woodland which may have covered it in prehistory (O. RACKHAM and J. MOODY, *The Making of the Cretan Landscape* [1996] 123-128).

20 See summary in GOODISON (*supra* n. 16). In GOODISON (*supra* n. 7) the relationship between the sun and beliefs about the dead was discussed and a hypothesis was developed suggesting a strand of symbolic beliefs associating the movements of the sun with death and the regeneration of plant, animal and human life in the Aegean Bronze Age.

21 P.J. UCKO, *Anthropomorphic Figurines of Predynastic Egypt and Neolithic Crete. Royal Anthropological Occasional Paper No. 24* (1968); see also R. TRINGHAM and M. CONKEY, "Rethinking Figurines: A Critical View from Archaeology of Gimbutas, the 'Goddess' and Popular Culture," in L. GOODISON and C. MORRIS (eds), *Ancient Goddesses: the myths and the evidence* (1998) 22-45, where Tringham and Conkey propose that the preoccupation with searching for anthropomorphic divinity among prehistoric figurines may be a form of 'presentism.' Dickinson has also come out strongly against the "Mother Goddess" theory (his argument summarized in O. DICKINSON, *The Aegean Bronze Age* [1994] 257, 259). If not assumed to be "Mother Goddesses," the earliest anthropomorphic figurines (female, male and ungendered) can be considered for other roles such as personal charms, dolls, spirit figures, initiation objects, twin figures, concubines or vehicles for sympathetic magic (see UCKO [*supra*] 420-437; also TRINGHAM and CONKEY [*supra*] 40 and *passim*). In Aegean archaeology specifically, the traditional search to find the earliest forms of later Olympian deities - such as Zeus, Athena or Hera - can be seen as reflecting the pre-eminence of later classical study and its search for origins, a back-projection unhelpful for the study of Neolithic and Early Bronze Age religion.

22 See GOODISON (*supra* n. 7) 11-15, 30-39, 44-56, 72-103, 110-115.

between earth and sky. Peatfield has drawn attention to the issue of intervisibility between sites on land;²³ by extension there is also the issue of the visibility of what is in the sky, which - Ruggles and others have argued - was an integral part of the cosmos as perceived by most non-Western peoples.²⁴

In this respect it may be significant that all the dawn alignments at the Mesara-type tombs focus on a low sun at the moment of its movement between land and sky, rather than a high sun polarized from a low earth. The pattern of alignments too seem to reflect interest not only in high summer and the dead of winter, but also in the periods of movement and transition between the two. Thus in a number of different ways the view of the environment and of the cycle of time passing during the year seem to have been shaped and framed differently in the Minoan context from that of our contemporary culture, and this new approach to “reading” the monumental texts yields information about place, time, and a very different perception of the role of the sun.

A “theatre of the sun” in the Knossos “Throne Room?”

Apart from the Mesara-type tholos tombs, significant east-facing orientations can be tentatively identified at a number of other sites, including settlements from various phases of the BA, peak sanctuaries, shrines and “country houses,” suggesting an area of study which would merit further attention.²⁵ Shaw commented, “The impression that one gets from the evidence available... is that many religious structures were set with an east-west orientation and were open on the east.”²⁶ While alignments along walls are often attributable to chance, those through an important doorway would seem more likely to reflect the builders’ deliberate choice.

In particular, at the palace of Knossos, observations made by the photographer Carlos Guarita drew attention to an interaction of landscape, building and sun creating specific dramatic lighting effects from sunrise shining in through the doorways of the “Throne Room” complex at certain times of year, which the people in control of the palace may have deliberately utilized in ritual.

It has long been observed that the central courtyards of the Minoan palaces run close to north-south. Several scholars have also pointed out that the significance of this would seem to rest in the orientation of the buildings, particularly the buildings along the west side of the courtyard which face east onto it, and for which cult uses have been suggested.²⁷ One of the most important of these east-facing buildings is the “Throne Room” suite, now extensively reconstructed by Evans.

This well-known suite (see plan Pl. XIXb), most accessibly placed in its context within the complex palace site by Cadogan,²⁸ includes an “Anteroom” with a four-doored polythyron opening E onto the palace courtyard and the hill of Prophitis Elias beyond. On its N wall is a wooden seat reconstructed on the basis of Evans’ findings when he excavated. On its W side, the “Anteroom” leads through a two-doored polythyron into the “Throne Room” proper. In his reconstruction Evans worked from the ruins which clearly showed the ground plan, including the width between the dividing pillars or piers and the fact that all the doorways were of pier-and-door type for partition doors to be placed in them. However, the height of the doorways as he reconstructed them is based on an estimate and is debatable. The “Throne Room” also

23 A. PEATFIELD, “Minoan Peak Sanctuaries: History and Society,” *OpAth* XVIII 8 (1990) 117-131, here 119-120; A. PEATFIELD, “Rural Ritual in Bronze Age Crete: the Peak Sanctuary at Atsipadhes,” in *CAJ* 2 (1992) 59-87, here 60-63.

24 RUGGLES (*supra* n. 3) 153, 162-3.

25 I am working on the preparation of a preliminary gazetteer of such sites.

26 SHAW (*supra* n. 15) 57.

27 H. VAN EFFENTERRE, *Le palais de Mallia et la cité minoenne* I-II (1980) 209, 246, 256-7; SHAW (*supra* n. 15) 52 n. 26, 54, 56-8; S. HOOD, *The Minoans: Crete in the Bronze Age* (1971) 65; M. PANAGIOTAKI, *The Central Palace Sanctuary at Knossos* (1999). See also summary of past comments in GOODISON (*supra* n. 7) 31, 77.

28 G. CADOGAN, “Knossos,” in J. W. MYERS, E.E. MYERS and G. CADOGAN (eds), *The Aerial Atlas of Ancient Crete* (1992) 124-147.

has a “throne,” of stone in this case, on its N wall. On its S side there is the “Lustral Basin.” On its west side, a doorway leads through to the “Inner Sanctuary” where a raised shelf or ledge, taken by Evans and Hood as an altar, is visible through the doorway on the facing wall. Adjacent to the “Throne Room” and “Inner Sanctuary” along the north, the “Service Section” comprises three rooms, one of them containing a cylindrical “Stone Drum” with indented markings on the top.²⁹

Since Evans’ publication, this famous area has generated much debate, particularly about its dating, function, and the gender and role of whoever may have sat on the “throne.”³⁰ Here comments will be confined to issues arising from a study of orientation. The findings discussed here were made during the progress of the tholos tomb fieldwork as a result of a series of photographic tests made by Guarita from a position outside the palace looking towards the sun rising over the ridge of Prophitis Elias hill on the east of the palace. These tests drew attention to the way in which the hill’s horizontal line provides a physical framework for observing the movement of the sunrise as it falls on the Knossos valley throughout the year, from midwinter to midsummer and back again. A conversation with a local farmer who pointed out the different points of sunrise as it moves along the ridge, correlated with different times of year, drew attention to the way in which the contours of a familiar hill can serve as a sort of calendar, a “calendar hill.” Other similar conversations with farmers in the Mesara have since given further evidence of this practice of linking dawn position with time of year.

The possible implications of this for prehistoric people raised the question as to whether there was any correlation with the architecture of the palace, where that same horizon line of the hill is framed by the four doorways of the “Anteroom.” Experiment in the “Anteroom” showed that early morning sunlight could create interesting theatrical lighting in relation to the seat in the “Anteroom,” with dramatic effect (Pl. XXa). It also became apparent that dawn light entering through the “Anteroom” doors reached right into the “Throne Room” itself, a normally unlit interior space, described by Cadogan as “an exciting spot, dark and mysterious,”³¹ which functioned rather like a light trap only when the sun at the moment of dawn was low enough to reach in almost horizontally through the two rows of pillars (Pl. XXb).

29 This “Stone Drum” is another feature indicating an interest in orientation. A solid cylindrical column 0.69 m across, located in the room adjacent to the “Inner Sanctuary,” it bears on its top indentations aligned to the east on the same axis (c. 12° off east) as the palace courtyard outside (which runs not exactly north-south, 0° to 180°, but from c. 12° to c. 192°). This alignment of the stone drum coincides with that of the mid-March alignment which illuminates the doorway to the “Inner Sanctuary,” further suggesting the significance of both. The function of the “Stone Drum” has been much discussed and it has several parallels. The orientation of its markings makes a purely secular use for this area - such as a “kitchen area” (*PM* IV, 924ff; *Minoan Religion* 107) - less plausible. Niemeier (W.-D. NIEMEIER, “On the Function of the ‘Throne Room’ in the Palace at Knossos,” in *Function Palaces* 163-168, here 166) has argued that it was an altar. Hood has drawn a parallel between it and the baetyl in the West Court at Gournia (S. HOOD, “A Baetyl at Gournia?,” *Ariadne* 5 [1989] 17-21, here 21). Another comparable object is the circular “altar” at Chrysolakkos which was located on the east side of the NSEW-aligned rectangular cemetery. As Hood points out, the indentations on the top of the “Stone Drum” would have been suitable for the placing of offerings; they are reminiscent of indentations on the top of an offerings table from the Mesara-type tholos Tomb A at Skotoumeno Kharakas (see D. BLACKMAN and K. BRANIGAN, “An archaeological survey of the lower catchment of the Ayiofarango valley,” *BSA* 72 [1977] 13-84, here 50-1; I am grateful to Todd Whitelaw for drawing my attention to this parallel.). The purpose of the “Stone Drum” is unclear. Recent work by V. Fotou and D. Evely has suggested that the door between the “Inner Sanctuary” and the “Service Section” is modern (Sinclair Hood and Don Evely, personal communication 2000), and so whatever activities took place in the “Service Section” would in any case have been separate from those in the “Throne Room” suite.

30 Evans in his original account posited a “Priest-king” on the “throne” (*PM* IV, 901ff, here 915). For the debate see Helen WATERHOUSE’s seminal paper “Priest-Kings?,” summarized in *BICS* 21 (1974) 153-5, full text in H. HUGHES-BROCK (ed.), *Cretan Studies* 8 [in honour of R.F. Willetts] (forthcoming); H. REUSCH, “Zum Wandschmuck des Thronsaales in Knossos,” in *Minoica. Festschrift zum 80. Geburtstag von Johannes Sundwall* (1958) 334-358; NIEMEIER (*supra* n. 29); E.N. DAVIS, “Art and Politics in the Aegean: The Missing Ruler” in *Ruler* 11-20; R.B. KOEHL, “The Nature of Minoan Kingship” in *Ruler* 23-35; R. MCKENZIE-YOUNG, “The Throne Room at Knossos: a historiographical study,” paper presented at University College London, 19.2.1997.

31 G. CADOGAN, *Palaces of Minoan Crete* (1976) 63.

The pier-and-door structures indicated that any of the partition doorways could have been closed off to gain effect with one beam of light. These findings encouraged a limited project which led to a different reading of the “Throne Room” as a spatial text: a confined interior space into which light entered at specific times through the “Anteroom” doors and could be manipulated to create special effects.

A first early-morning visit at midwinter - when sunrise is late enough to fall within the site’s opening hours - showed that from a central position on the W wall of the “Anteroom” there is a precise alignment of the most southerly (extreme right) of the complex’s four doorways to the sun rising over the hill at the time of the midwinter solstice (Pl. XXId). Clinometer readings indicated that, because of the high horizon altitude offered by the close hill, the view is unlikely to have been obstructed by buildings on the other side of the courtyard.³² Subsequently a midsummer dawn visit revealed a symmetrical alignment of the northernmost (extreme left) doorway to the summer solstice sunrise (Pl. XXIa); and close to the equinoxes the dawn through the second doorway from right (Pl. XXId) was aligned with the entrance to the “Inner Sanctuary.” These observations suggested that the doorways from the “Throne Room” complex onto the courtyard may have been deliberately constructed to align at specific times of year with the sunrise over the facing ridge. The four doorways of the “Anteroom” offered a theatral view of the sunrise throughout the solar year, with the second doorway from left (Pl. XXIb) aligning at the same “times of the dead” as the large cluster of Mesara-type tholos tombs. That these alignments were deliberately created, and used, is suggested by further observations made while recording the lighting effects visible on early morning visits at those specific times of year, as described below. These comments are based on preliminary observation and suggest that this would be a valid topic for further study.

“Winter Throne,” “Illuminated Doorway,” and “Summer Spotlight”

It was only looking afterwards at photographs taken on the first midwinter dawn investigation that we noticed that the dawn light entering at that time of year through the southernmost (extreme right) doorway (Pl. XXId) passes through into the “Throne Room” itself, on a line (Pl. XXIIa) to illuminate the stone “throne” and whoever may have been seated on it (Pl. XXIIb). A return visit confirmed this, although because of the height which Evans estimated for the doorways the beam of light currently reaches only to the lower part of the throne (Pl. XXIIIa).³³ This alignment resonates with Reusch’s suggestion, based on the iconography of the adjoining wall-paintings (griffins and altars) that this seat may have been the site where epiphany of the goddess was enacted.³⁴ Niemeier adds the iconographical element of palm trees to the evidence suggesting enacted epiphany at this spot, but in the lack of an adjacent door is concerned about the absence of the “necessary element” of suddenness in the deity’s appearance.³⁵ The possibility afforded by the architecture and orientation of closing off the entire pier-and-door colonnade onto the courtyard and then opening only the S door at the moment of sunrise to illuminate the “throne” might have provided just this element of surprise and impact.

32 The horizon altitude offered by the ridge of Prophitis Elias is such that the clinometer reading was 15° from the W wall of the “Anteroom” to the top of the ridge. This suggested that buildings on the other side of the courtyard would have needed to be over 9m high (measured from a base at the level of the courtyard) in order to block the line of vision between that point in the Throne Room suite and the sun rising over the ridge.

33 There has been some criticism of the height at which Evans restored the upper floors in the west wing; in the lack of firm evidence, one can consider the possibility that the doorways were higher, or were topped by “window-like openings” such as Evans reconstructed in the “Hall of the Double Axes” (PM III, 341-2). On the return visit at midwinter (22. 12. 99, 23. 12. 99 and 24. 12. 99), we met three days of cloud and heavy rain with only a patch of almost clear sky in the east just *after* dawn on 22. 12. 99, when the photograph (Pl. XXIIIa) was taken, the delay resulting in the beam striking the throne slightly to the right (i.e. slightly more towards the rear of the throne than might be expected).

34 REUSCH (*supra* n. 30).

35 NIEMEIER (*supra* n. 29) 165-7.

The setting of the “throne” and benches in the “Throne Room” are assigned to Mirié’s “second phase” of construction of this part of the palace, although this dating is problematic. Niemeier points out that this stone furniture may have been preceded by wooden versions.³⁶ The effect of midwinter sunrise striking a significant seat may be reduplicated at the SE corner of the palace: I am grateful to Antonis Vasilakis for the information that Nicholas Platon noticed, and photographed, a similar arrangement at the parallel south-easterly suite, where the rays of the winter solstice sunrise would pass through three rows of columns to illuminate the “throne” (partly preserved in cast form) on the N wall of the Hall of the Double Axes.³⁷

We thus have evidence suggesting an interest in what I have called a “Winter Throne” effect, which in its timing tallies with the midwinter alignment of some Mesara-type tholos tombs as mentioned above. It has not been within the scope of this study to investigate such architectural arrangements further. However, that such an alignment might have been a recurrent interest in the conception of palatial buildings could be further suggested by a suite of rooms at the SE corner of the palace of Phaistos where buildings, doorways and pillars are arranged in such a way that the midwinter sunrise shines directly onto a set of steps overlooking the cliff edge and then through onto the north wall of Room 63, so that a person seated inside against that wall would have been illuminated at the moment of sunrise.³⁸ In the newly-excavated palatial building at Galatas³⁹ in central Crete, there is also a room with special features – ‘the room with the column’ – and a possible similar alignment, again in the south-east section (personal observation).

The next doorway along in the “Anteroom” (second from right) frames the sunrise one week to the winter side of the equinox (mid March and late September) (Pl. XXIC), coinciding with a cluster of tomb alignments and again apparently having implications for the inner rooms. At sunrise at that time of year it admits a beam which coincides exactly with the alignment of the doorway from the “Throne Room” through to the “Inner Sanctuary” (see Pl. XXIIa). Evans himself commented that the “Inner Sanctuary” gets light only through the doorway, and saw this as the location for “a vision of the Goddess herself and her divine associates on the altar ledge beyond.”⁴⁰ This is also Niemeier’s preferred place for the enactment of epiphany, the goddess being able to appear in the doorway after getting ready

36 S. MIRIÉ, *Das Thronraumareal des Palastes von Knossos: Versuch einer Neuinterpretation seiner Entstehung und seiner Funktion* (1979) 53ff. NIEMEIER (*supra* n. 29) 164. Evans comments of the throne that “the original of the whole is to be sought in woodwork” (PM IV, 918).

37 PM III, 333-338.

38 This small area at the Phaistos palace dating from the Neopalatial period comprising buildings around a court, and a set of three wide steps which face directly onto the cliff-edge marking the limit of the palace on the SE side, presents several curious features. The steps descend towards a sheer precipice and face 120° directly towards the midwinter solstice sunrise which appears behind the distant Asterousia mountains across a view of the Mesara plain. At the foot of the steps, traces of paving were found, but there is no evidence of building construction in front of the steps which could have blocked this view of the sunrise (Vincenzo La Rosa, personal communication, 1995). No clear use has been suggested for this complex of rooms, which includes the megaron Room 63, 63b, 63d (a “Lustral Basin”), 63e (containing a toilet) and the colonnaded portico Room 64. Adjacent to the steps is a gulley and, to the south, an area of bedrock pitted with hollows – some artificial – for which various uses have been suggested, including holding up an awning (L. BANTI, in L. PERNIER and L. BANTI, *Il Palazzo Minoico di Festos*, Vol. II [1951] 186), and for which Hood has suggested a ritual use (S. HOOD, “Minoan Cup-Marks,” *Eirene* 31 [1995] 7-43, here 14). The finds from within and adjacent to the “Lustral Basin” suggest a non-secular use of these rooms. The “Lustral Basin” was destroyed in LM IB; the human head rhyton found just south of it probably dates from LM IIIB (G. GESELL, *Town, Palace and House Cult in Minoan Crete* [1985] 128-9; PERNIER and BANTI [*supra*] 163-181). From the steps themselves came a rectangular fragment of mother-of-pearl, perhaps the inlay from a box, with a bas-relief carving showing a procession of four robed figures, holding staffs, with bird and animal heads (L. BANTI [*supra*] 189-190 and Fig. 117). From the finds the use of this area for some kind of special activities would not be inconsistent. Vincenzo La Rosa has suggested that the steps, perhaps LM IA, might even be earlier than the Rooms 63/64, which could be LM IB (personal communication, 1995). What such special activities might have been, if indeed they took place, is difficult even to speculate. Vincenzo La Rosa points out that an exterior location is as possible as an interior one as a site for epiphany, and this place by the steps might have been such a location (personal communication, 1995).

39 G. RETHEMIOTAKIS, “Galatas,” *Kritiki Estia* 5 (1994-6) 317-322.

40 PM IV, 920, 910.

and coming round the back way;⁴¹ in a darkened room a dazzling beam of light from the dawn sun revealed at the appropriate instant could have strongly enhanced the effect. Currently the beam can be seen touching the foot of that doorway (Pl. XXIIIb); if the doorways had been higher than reconstructed, the first rays would have been capable of reaching onto that doorway to illuminate anyone entering through it or indeed any object placed upon the shelf inside.⁴² At this time of year, then, we have what might be termed an “Illuminated Doorway.” Again, the beam would have been specific and short-lived, since throughout the process of sunrise the sun is travelling upwards and southwards on a diagonal trajectory and within a few minutes it has moved horizontally into a different alignment, while at the same time its rising lifts it above the top of any doorway with the visual result that its beam of light shortens and retreats from interior places. There is an architectural anomaly here which would seem to confirm that this effect of alignment to the entrance of the “Inner Sanctuary” was intentional and deliberately contrived: this second doorway leading from the courtyard to the “Anteroom” is 0.20 m wider than the other three doors in the row, while the corresponding doorway inside, from “Anteroom” to “Throne Room,” through which the beam of light passes *en route* to the “Inner Sanctuary,” is also 0.20m wider than the opening next to it (see Pl. XIXb). The result is that between them they create a continuous broad passageway between the dawn sun and the inner door, admitting a beam which fills the full width of the inner door. Such discrepancies are unlikely to be accidental.

Moving along, the next doorway (second from the left) (Pl. XXIb) aligns with sunrise at a time coinciding approximately with the largest cluster of tomb alignments at the Mesara tombs as mentioned above - the “times of the dead” group. Further work is needed to clarify what effect, if any, the dawn through this doorway created. This, along with further study to clarify the intersection between any rituals associated with dawn alignments and the diachronic development of the suite from MM II through various building changes to the last interrupted ritual in the “Throne Room”⁴³ perhaps in LM IIIA2, are among the numerous questions thrown up by these preliminary observations.

From the northernmost doorway of the anteroom (extreme left), the midsummer solstice sunrise reaches precisely through the openings in the “Throne Room’s” two rows of pillared doorways and the entrance of the “Lustral Basin” - a sliver of a gap (Pl. XXIVa) - to create a patch of illumination c. 0.75 m up off the ground and c. 0.30 m in height on the wall exactly in the corner of the “Lustral Basin” for a period of approximately five minutes, after which it rapidly diminishes and then disappears. If Evans’ doorways were higher, the patch of illumination would occur higher. As it is, one can give a sense of its size and location by saying that it is at a height dramatically to illuminate the face of a present-day six-year-old child (Pl. XXIVb) or of a seated adult; with greater height it could have illuminated the upper torso and head of a standing adult or any other object placed at that position or anywhere along the beam of light within the “Lustral Basin;” what is illuminated in the centre of the “Lustral Basin” appears to float in the darkness (Pl. XXIVc). If, with Niemeier, one favours S. Marinatos’ suggestion that “Lustral Basins” are imitations of cult-caves,⁴⁴ one might imagine something or somebody lit up at the moment of emerging out of it. We thus have a very focussed effect which I have called a “Summer Spotlight.” The beam is very localized and short-lived and we can only speculate as to what it might have illuminated in the prehistoric context. The furniture of the

41 NIEMEIER (*supra* n. 29) 165-6. The loss of the door between “Inner Sanctuary” and “Service Section” (see above, n. 29) would prevent the goddess’s entry via the “Service Section” which Niemeier suggests, but she would still have opportunity to prepare within the “Inner Sanctuary” to make the entrance through the doorway which he favours.

42 Photographing on 7.3.99, we were a few days too early for an optimum alignment on the doorway; on 13.3.99 the beam of dawn light shone straight onto the foot of the doorway, reaching about 20 cm up it before beginning to retreat and change alignment as the sun moved up and across from the dawn position. The overall dates of dawn visits to the “Throne Room” complex were 22.12.94, 23.12.94, 22.3.95, 20.6.98, 21.6.98, 7.9.98, 8.9.98, 7.3.99, 8.3.99, 13.3.99, 22.12.99, 23.12.99, 24.12.99, 21.6.00, 22.6.00, 23.6.00.

43 Discussed by Helen WATERHOUSE, “The flat alabastron and the last ritual in the Knossos Throne Room,” *OJA* 3 (1988) 361-367.

44 S. MARINATOS, *Review of Religion* 5 (1941) 130, cited by NIEMEIER (*supra* n. 29) 163.

“Throne Room,” with benches along the N wall catering for a number of people seated with one dominant, creates the effect of a seated audience facing towards the “Lustral Basin.”⁴⁵ The specificity of the beam as regards date, location and duration all suggest the deliberate and sophisticated engineering of an effect which would have been all the more impressive if the partitions on the other three doors had been closed so that this one precise beam of light was the only one entering the rooms. The use of partitions in the doorways obviously increases control over the main light source and the flexibility of the effects created. The sense of contrivance of this particular effect within the “Lustral Basin” is increased by the observation that the northernmost doorway from the courtyard to the “Anteroom,” through which this beam of light enters, is set back in an irregular formation out of alignment with the northern wall of the “Anteroom” (i.e. the polythyron runs further north than the line of the northern wall) (see Pl. XIXb and XXIIa), which allows this effect to be achieved.

According to Mirié’s re-investigation,⁴⁶ the “Lustral Basin” seems to be one of the earliest features of the complex, dating back to her first building phase (along with the shape of the anteroom; the changing height of the courtyard would not have affected the sunrise effects within). N. Marinatos⁴⁷ has discussed the impressive effects that could be created, especially in relation to “Lustral Basins”/“adyta” through the use of partition screens, by closing off dark spaces and then allowing light to come in: “the contrast would have been dramatic. ‘Dramatic’ is the key term pointing to ceremonial usage because ritual makes use of drama.” However in such discussions there has been little consideration of the powerful effects potentially created by the most obvious source of light in a pre-electric society - the sun - in relation to such architectural features. Previous photography of the palace interiors has tended to use artificial lighting with electronic flash equipment which cancels out an awareness of the effect of the natural light source on the architecture of the rooms and thus the potential use of sunlight for theatrical effects. The identification of the timing, dates and location of such effects may contribute to our understanding of the rituals which may have taken place in this suite of rooms. They suggest that the suite was used at dawn, and point towards certain times of year for significant ceremonies. They also indicate areas within the suite as *foci* of interest, corroborating existing ideas about possible rituals of epiphany within the rooms.

MacGillivray has stressed the concern of the Knossos rulers - from the earliest period - with maintaining their authority, and the role of the palace to “impress outside viewers;”⁴⁸ theatrics could have contributed to achieving this.

Hägg has identified locations at Knossos which might have been suitable for the enactment of epiphany; all three have an approximately east-west orientation in which the focus of attention is at the western end.⁴⁹ It is easy to imagine how light entering darkness might contribute to the spectacular effect of a theatrical appearance, and any of these three places - “throne,” “Lustral Basin,” doorway - could have been used in this way.

That these alignments were deliberately created is suggested by

(i) the observation that the overall perimeters of the quadripartite east-facing opening are constructed to frame precisely the most extreme positions of the sunrise to the north in summer and to the south in winter (Pl. XXI).

(ii) the specific effects which the light of the aligned sunrises creates in relation to particular architectural features in the special rooms within (specifically in relation to the “throne,” the doorway and the “Lustral Basin”). If there were only one effect, this could perhaps be attributed to chance, but three separate effects in significant parts of the “Throne Room” are hard to explain without intentionality.

45 Evans further suggested that anything happening within the “Lustral Basin” would also have been viewable from the gallery above (PM IV, II, 908), but Hood concurs with the doubts that have been expressed as to whether there is adequate evidence for the existence of such a gallery (personal communication, 2000).

46 MIRIÉ (*supra* n. 36) 51-56.

47 *Minoan Religion* 85-7.

48 J.A. MACGILLIVRAY, “The Early History of the Palace at Knossos (MM I-II),” in D. EVELY, H. HUGHES-BROCK and N. MOMIGLIANO (eds), *Knossos: A Labyrinth of History. Papers presented in honour of Sinclair Hood* (1994) 45-55, here 5.

49 R. HÄGG, “Epiphany in Minoan Ritual,” *BICS* 30 (1983) 184-5.

(iii) certain construction irregularities in the doorway panel which make those effects possible, as described above.

This paper has offered two separate glimpses of the sun as it might have been perceived in Minoan ritual. In two very different contexts, they seem to share certain common factors such as an interest in alignment to sunrise; the possibility of creating impressive effects through the light of the sunrise entering dark places, perhaps to illuminate a special object or person; and the possible use of buildings' orientation towards sunrise as a marker of the seasons. However, while each tholos tomb offered an alignment and marker only at one or two times of year, the palace would seem to have established an institutionalized structure which encompassed the entire solar year in a more comprehensive way. Whatever other forms of time measurement were in use, the four outer doorways of the Throne Room complex provided a spectacular and visible marker of six points in the year (moving from left to right and back again: summer solstice, late summer 'time of the dead,' autumn equinox, winter solstice, spring equinox, early summer 'time of the dead'). We can only speculate whether they might have provided guidance as to times of year to expect weather change, to undertake agricultural or other economic activities, for ceremonies with religious content, or a combination of these.

A number of modern perceptions have affected approaches to the role of the sun in Minoan ritual. Seeing it as characteristically high creates a sense of separation from the earth, defining an "astral" space polarized from the "chthonic" realm traditionally associated with themes of fertility. Minoan buildings oriented to a horizontal sun moving in relation to the earth's horizon suggest that this dichotomy may be anachronistic in the context of Bronze Age Crete. Similarly, modern and classical symbolism assigning a male gender to the sun could be inappropriate in the context of rituals which may have involved female figures; the whole notion of personification of the sun may be inappropriate in contexts where the sun seems to be utilized as a light source interacting perhaps with processes of the dead or with dark spaces in special palatial rooms. The modern religious concept of adoration or worship again presupposes a vertical relationship between adorer and adored, and may be pre-empting our consideration of more participatory symbolic transactions between the practicers of ritual and the natural forces so important for their economic survival.

Unlike our contemporary dualisms and more static polarizations, Minoan perceptions of the sun appear to have focussed on aspects of the sun which are horizontal and in motion; they seem to have interacted with its transitions both daily, at the moment of dawn, and seasonally, as the point of dawn shifted position throughout the year. And those perceptions themselves underwent transitions diachronically. From the Mesara-type tholos tombs' sun shining in on the dead to the complex spectacular effects apparently achieved within the "Throne Room" suite at Knossos, it seems that these spatial texts reflect a changing and dynamic relationship between sun, landscape, monuments and the people who used them.

Lucy GOODISON

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