



# Thera, Hatshepsut, and the Keftiu: crisis and response in Egypt and the Aegean in the mid-second millennium BC

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## Introduction

Nearly half a century ago, R. W. “Squire” Hutchinson wrote in his synthesis *Prehistoric Crete*:

The Late Minoan IA period ... was the time when Queen Hatshepsut ruled Egypt and developed peaceful trade with her neighbours. The tomb paintings of her chief architect Senmut depicted foreigners [labeled Keftiu] in Minoan costume bringing tribute to Egypt in the form of vases, fillers [by which he meant rhytons], and various gifts so accurately portrayed that we can confidently assign them to the Late Minoan IA period.<sup>1</sup>

Hutchinson was restating the opinion prevalent since Sir Arthur Evans, founder of Minoan archaeology, assigned the Minoan envoys to Hatshepsut's court late in the LM IA period “a decade or more before the beginning of the fifteenth century B.C.”<sup>2</sup> (*Cf.* Table 1 for the absolute chronology used in this article).

Hutchinson also favoured Spyridon Marinatos's theory that the Minoan eruption of Santorini had serious consequences for Crete's harbour towns,<sup>3</sup> which, Hutchinson concluded, “were destroyed at the same time or shortly afterwards by the tidal waves and earthquakes” that accompanied the eruption.<sup>4</sup> Frederick Matz made the same LM I – Keftiu connection and linked it to the Thera eruption in his seminal historical synthesis in the *Cambridge Ancient History*.<sup>5</sup> Sinclair Hood, dean of Minoan studies, placed this LM IA eruption in approximately 1500 BC early in Hatshepsut's co-regency with her nephew Thutmose III, which began in 1504 BC in the Egyptian chronology prevalent during much of

the twentieth century,<sup>6</sup> and still preferred by *The Oxford Encyclopedia of Ancient Egypt*.<sup>7</sup> But, major changes in historical dating were suggested after Libby earned the Nobel Prize in Chemistry for his discovery of radiocarbon dating in 1960. The radiocarbon revolution that Libby incited added new precision to the historical framework, mostly in agreement with archaeological chronology, but sought to overthrow the established view of eastern Mediterranean cultural relations cited above by proposing that the Minoans in the mature stages of the LM IA period were contemporaries of the “Foreign Princes” of Egypt's Hyksos period, a century earlier than Hatshepsut's reign in the historical chronology.<sup>8</sup>

For more than two centuries archaeologists have refined the Bronze Age Mediterranean historical framework by observing the relative order of superimposed levels on a series of sites. Next, they established inter-site relationships based on common cultural characteristics – primarily in ceramics, art and architecture. Nothing has changed. This is still how we verify our relative chronology. And Evans's relative position of LM IA has only been bolstered

<sup>1</sup> Hutchinson 1962, 106.

<sup>2</sup> Evans 1928, 648.

<sup>3</sup> Marinatos 1939.

<sup>4</sup> Hutchinson 1962, 302.

<sup>5</sup> Matz 1973.

<sup>6</sup> Hood 1971, 10, 54; 1978, 24.

<sup>7</sup> Redford 2001.

<sup>8</sup> Manning 1999; Manning *et al.* 2006a; Rehak & Younger 1998, 97–100.

and better illustrated by much recent evidence and numerous detailed studies by his successors. Meanwhile, the plethora of radiocarbon samples linked to the Thera eruption show roughly contemporary readings in  $^{14}\text{C}$  years prior to calibration and, as there is close agreement between historical and calibrated  $^{14}\text{C}$  dates before 1650 and after 1500 BC, the divergence between radiocarbon and historical dates for the Thera eruption likely lies in the calibration of  $^{14}\text{C}$  dates in the sixteenth and seventeenth centuries BC.<sup>9</sup>

This paper reviews the LM IA period's relative chronology, which, when considered with the Minoan Thera eruption's enormity, its wider climatic effects, and Egyptian records, supports a precise date early in Hatshepsut's reign that conforms closely to the current Egyptian high chronology and calibrated radiocarbon dates in the 15<sup>th</sup> century BC. It also provides answers to some outstanding historical questions, such as why Hatshepsut was forced to assume divine Egyptian authority instead of remaining co-regent with Thutmose III, and why Mycenae rose so suddenly to prominence in LH I-IIA.

## Relative date

Late Minoan IA is a period and not a pottery style. Like all fashion, changes in ceramic technology and artistic trends in wares, forms and styles may be charted through time. Again, like fashion, these changes do not occur at the same time everywhere; they must be located both in time and space.

Marisa Marthari presented the evidence for two Late Cycladic I phases at Akrotiri in Thera.<sup>10</sup> The first is the Seismic Destruction Level (SDL) comprised of deposits created during a powerful earthquake. The imported Minoan pottery is predominantly of the Tortoise-shell Ripple Group of the Dark-on-light ware characteristic of a seismic "blow", as Evans put it, that "fell at Knossos" at the end of the MM IIIB period.<sup>11</sup> The damage was widespread at Knossos, and comparable deposits at Malia and Palaikastro may indicate that the same earthquake shook East Crete.<sup>12</sup> Further East, the excavators at Trianda in Rhodes and the Seraglio

in Kos postulate an earthquake that necessitated a large-scale rebuilding programme described as "having a Minoan character" early in LM IA.<sup>13</sup> If these events were related, it would indicate one or more very severe seismic shocks at the close of the MM IIIB period contemporary with Thera's SDL.

Alongside the Tortoise-shell Ripple Group pottery are numerous examples of Light-on-dark ware of the Open Spiral Group, which may be seen to continue a fashion started approximately two centuries earlier in Kamares ware.<sup>14</sup> But there is also a small proportion of pots in Dark-on-light ware and the floral styles that became more prevalent in later LM IA deposits.<sup>15</sup> Thus, it seems that the first experiments in this direction, often combining ripple with floral motifs, took place before the earthquake at the end of the MM IIIB period.

The second LC I phase at Thera is the volcanic destruction level (VDL), after which Akrotiri was buried in tephra. The imported pottery from this VDL includes a number of LH I imports,<sup>16</sup> Levantine stone vases,<sup>17</sup> and a Late Cypriot IA:2 White Slip I bowl.<sup>18</sup> Most conspicuous, however, among the VDL pottery are imitations and imports of Minoan wares.<sup>19</sup> These include Light-on-dark wares that continue to appear throughout LM IA and survive even into the LM IB period in Crete, much the same way that Attic Black-figure pottery continued in production for at least another fifty years after the Red-figure technique appeared in 530 BC, and some potters, the so-called "Bilinguists", combined both techniques. This is certainly the case with examples of the Open Representational, Crowded, and Abstract-banded styles inspired by wall paintings, tapestries, and metal vessels, and which occasionally combine both Light-on-dark

<sup>9</sup> Wiener 2006a.

<sup>10</sup> Marthari 1984; 1990.

<sup>11</sup> Evans 1928, 286–7; Hatzaki 2007, 158–72.

<sup>12</sup> Knappett & Cunningham 2003; Hatzaki 2007, 171.

<sup>13</sup> Marketou 1990.

<sup>14</sup> MacGillivray 1998.

<sup>15</sup> Warren 1999; Knappett & Cunningham 2003.

<sup>16</sup> Lolos 1990.

<sup>17</sup> Devetzi 2000.

<sup>18</sup> Manning 1999.

<sup>19</sup> Niemeier 1980.



and its opposite technique. These styles are characteristic of a mature stage of the LM IA period in Cretan deposits probably formed by earthquake and/or tsunami there, discussed below.

Minoan pottery of this Mature LM IA phase differed from western to central and eastern sites. Reed patterns are characteristic of Knossos,<sup>20</sup> whereas Alternating Foliate Scrolls in both Light-on-dark and Dark-on-light wares were most popular in the east.<sup>21</sup> But all regions enjoyed variations of Dark-on-light and Bi-chrome Ware and retorted spiral patterns with added white dots.<sup>22</sup>

Deposits with LM IA pottery styles after the Minoan eruption of Santorini at Phylakopi,<sup>23</sup> Knossos,<sup>24</sup> Palaikastro,<sup>25</sup> and Kos<sup>26</sup> have been called “sub” LM IA.<sup>27</sup> The designation Final LM IA is proposed here for these deposits that post-date the Thera eruption, but pre-date those with characteristic LM IB pottery styles.

Thera’s latest wall paintings are comparable to those of Mature LM IA at Amnisos and the House of the Frescoes at Knossos, the former scattered by tsunami and the latter apparently dislodged and deposited by a major earthquake.<sup>28</sup> Similar Mature LM IA destruction deposits have been discovered at a number of sites throughout Crete, many with Thera tephra: pumice in the west and centre, and both pumice and ash in the east. There is little doubt that these destructions are exactly contemporary with Thera’s VDL.<sup>29</sup> The Aegean style wall paintings executed during Hatshepsut’s reign at the Nile delta port of Avaris, perhaps ancient Peru-nefer, the royal shipyards, are comparable to the mature LM IA frescoes of Thera and mature LM IA and LM IB frescoes at Knossos, thus placing them near the time of the Minoan eruption.<sup>30</sup>

Imported Late Cypriot IA:2 White Slip II ware is found at Katsambas, the port of Knossos, near a LM IA tsunami deposit with Thera tephra,<sup>31</sup> and similar Late Cypriot IA:2 pottery appears in Egypt, Tell el-Dab<sup>a</sup> phases C/3-2, and in Palestine, Tell el-<sup>c</sup>Ajjul Horizon 5 with pumice from the Thera eruption.<sup>32</sup> A further confirmation that these periods are contemporaneous is the LM IA pottery found in LC IA levels in Cyprus.<sup>33</sup>

The Tell el-Dab<sup>a</sup> paintings, Cypriot imports in Egypt (with tephra from the Minoan eruption) and

the Aegean, Minoan imports in Cyprus, and the LM IA vessels born by the Keftiu in Senenmut’s tomb, discussed below, leave little doubt that the Mature LM IA eruption took place during Hatshepsut and Thutmose III’s co-regency; the view most archaeologists held before radiocarbon dating introduced an alternative chronology.

## Timing and effects

Half a century of dedicated Thera volcanology has produced the following sequence of events during the Minoan (VDL) eruption:

1. Major earthquake, strong enough to rattle many dwellings at Akrotiri, but not to topple the well-built town houses. There was enough time, perhaps days, for survivors to move broken furnishings into the streets and begin repairs before the next eruption phase.

This earthquake may be linked to the seismic destruction of the Knossos palace (*e.g.* Magazine of the Lily Vases) and several surrounding buildings, including the House of the Frescoes, in LM IA. The damage at Knossos was severe enough to necessitate the palace’s complete re-building in fine ashlar masonry during the subsequent LM IB period.<sup>34</sup>

2. Soon after the earthquake, a tephra plume ejected from a vent opening near the Kamini islands near the caldera’s centre was carried by south-

<sup>20</sup> Hatzaki 2007, 175–80.

<sup>21</sup> Knappett & Cunningham 2003.

<sup>22</sup> Hatzaki 2007, 175–81.

<sup>23</sup> Davis & Cherry 1984.

<sup>24</sup> Warren 1999; 2007.

<sup>25</sup> MacGillivray & Sackett *forth.*

<sup>26</sup> Furumark 1950.

<sup>27</sup> Mountjoy 2003.

<sup>28</sup> Evans 1928, 435–7; Chapin & Shaw 2006.

<sup>29</sup> Driessen & MacGillivray *forth.*

<sup>30</sup> Bietak, Marinatos & Palivou 2007.

<sup>31</sup> Warren 1991a, 32; Driessen & Macdonald 1997, 133.

<sup>32</sup> Eriksson 1992; 2001b; 2003; 2007b; Bietak 1998; 2005b, 85.

<sup>33</sup> Eriksson 1992, 170–3.

<sup>34</sup> Macdonald 1990; 1996; 2005.



east to south-southeast winds and deposited approximately 0.08 m of ash, fine pumice and lithics in four distinct layers on Thera's south side, including Akrotiri, without pause. There may have been a short interval during which the inhabitants collected their valuables and fled the city, perhaps time enough to sail to Crete and other nearby islands, before the first major eruption phase began.

3. The eruption proper began with the ejection of several cubic kilometres of pumice and ash straight up in a dark column between 36 to 38 kilometres into the stratosphere where lighter particles and aerosols were carried around the Earth's Northern Hemisphere. Seven metres of tephra covered Akrotiri and effectively ended the town's occupation. This first major, Plinian, phase may have lasted as much as eight hours, during which the wind blew southeast, as demonstrated by the tephra distribution on Thera and in deep-sea cores in the Aegean. This is further confirmed by Plinian phase ash in LM IA levels at Mochlos<sup>35</sup> and Palaikastro.<sup>36</sup>

4. During the second, base surge, phase, the volcano's feeding vent widened and cracks in the wall allowed the sea to enter and mix with the fluid magma, some of which formed huge lava boulders ejected around the volcano and into the upper storeys of Akrotiri's abandoned buildings. Approximately two cubic kilometres of pumice were deposited on Thera during this phase.

5. The third eruption phase saw the continued ejection of ash and older debris with massive pyroclastic flows until the collapse of the weakened caldera, which may have produced a landslide type of tsunami characterized by the sudden and rapid dispersal of water.

This sequence is confirmed thus far by the presence of Plinian phase Thera ash intraclasts reworked into multimodal chaotic layers interpreted as tsunami deposits on the coast at Palaikastro.<sup>37</sup> This indicates that the tsunami arrived during the eruption before the ash could be dispersed by wind and rain.

The tsunami wave's height has been modelled on the basis of the Palaikastro evidence to a minimum +35 -15 m at source with a crest length of 15 kilometres.<sup>38</sup> This lethal wave reached Crete's north coast within twenty minutes. It likely destroyed all Crete's harbours, as well as coastal settlements and

farmlands as it wrapped around the island; the inland city of Knossos would have been the only major population centre to survive inundation. The tsunami hit the Nile delta one hour after devastating harbours and coastal settlements throughout the Eastern Mediterranean. Subsequent reverberating waves likely caused further damage to the already beleaguered coastal communities.

6. Deposits attributable to the eruption's fourth major phase show that activity continued without pause from the previous phase. Great mudflows deposited the last of the tephra over much of Thera, and could well have caused further tsunami.

There is general agreement that, apart from the possibility of short intervals between the earthquake, precursor eruption, and the first major, Plinian, phase, the major eruption was a single event lasting approximately four days.

David Sewell, modelling the wind patterns at Thera throughout the year, has demonstrated that it would take several days of changing wind directions to account for the ash distribution noted in the eastern Mediterranean. Sewell's model also demonstrates that prevailing winter winds do not match the ash distribution pattern, as these usually blow due east. He finds that summer winds are more likely to shift from Southeast to East, and so conform to the observed tephra distribution.<sup>39</sup>

This summer wind tephra distribution pattern fits well with archaeobotanist Anaya Sarpaki's observation that the pantries at Akrotiri were low when their owners fled. This could mean that the agricultural produce was either still in the fields, or being processed elsewhere before being transported to the urban residences. A number of insect eggs were noted amid these depleted stores. Insects are particularly sensitive chronological indicators because they follow well-established seasonal cycles. Un-hatched eggs could indicate either that these pulses had been baked to kill the insect larvae before storage, or that these larvae had not

<sup>35</sup> Soles & Davaras 1990.

<sup>36</sup> MacGillivray *et al.* 1998; Bruins *et al.* 2008.

<sup>37</sup> Bruins *et al.* 2008.

<sup>38</sup> Bruins *et al.* 2008.

<sup>39</sup> Sewell 2001.



yet reached maturity, which they do at the end of Spring; insect eggs generally hatch in May–June. The wind patterns, the empty stores, and the possibility that the insect eggs were not intentionally baked when considered together suggest that the town was abandoned and the volcano erupted in early summer. This timing is quite relevant to the Egyptian documentary evidence considered below.

A palynological core taken in a coastal marsh by the Delphinos river west of Rethymnon revealed clear evidence for both climatic and social change above a thirty-one centimetre thick layer of Theraan pumice, thought to have been washed into the marsh by the sea.<sup>40</sup> The increase in *vitis* pollen suggests that the region's vineyards were abandoned and grew wild. The olive and cereal types evident before the eruption declined to such an extent that cultivation, and thus human populations, are thought to have moved elsewhere. But, Driessen and Macdonald believe that the archaeological evidence throughout Crete suggests a general population reduction in LM IB due to the eruption and its effects.<sup>41</sup> Thus, this reduced cultivation could have been due to the tsunami that would have both salted the coastal fields and groves rendering them uncultivable for approximately one generation, and simultaneously eliminated much of the human population living at the coast.

Most relevant to the present discussion is the sudden appearance of *Tilia* above the pumice layer after a two thousand year absence. *Tilia*, the deciduous linden or lime tree that grows only in temperate zones, indicates a wet climate following immediately after the Thera eruption.<sup>42</sup> Similar results obtained from pollen cores in modern Turkey contribute to the picture of a widespread climatic change immediately after the Thera eruption.

## Absolute chronology

Malcolm Wiener, in his search for the global climatic effects of the Thera eruption, notes narrow growth rings that may be due to lower than average temperatures in bristlecone pines at high altitudes in California and Nevada in the years 1524, 1520, 1499 and 1486 BC that could accommodate

the proposed historical dates of approximately 1530 to 1500 BC for the “climate-forcing” event.<sup>43</sup> These narrow rings have been interpreted as either volcanic or drought induced. Similar reduced growth rings are observed at 1527, 1524, 1510, 1498 and 1495 BC in Ireland. Within this spectrum, Wiener chooses 1524 BC as the most likely absolute date for the Thera eruption's effects because it comes within the 1620–1520 BC interval during which radiocarbon years (currently averaging 3350 BP) are approximately the same. The later the calibrated date after 1520 BC, Wiener observes,<sup>44</sup> the less likely it is to fall into that range of radiocarbon years for which there are problems on the calibration curve. 1525±4 BC also shows an acidity concentration peak in the DYE3 Greenland ice core, but it is one of many and currently thought to represent an eruption that barely reached the stratosphere.

Egyptian texts may give a clue to the absolute date and time of year. One of Hatshepsut's best-known dedications was the rock-cut temple to the lioness-goddess Pakhet, near Beni Hasan in Middle Egypt.<sup>45</sup> The later Greeks likened Pakhet to their wild huntress goddess Artemis and called this her cave temple, or Speos Artemidos. Here, Hatshepsut carved a very revealing account of herself and her deeds in that region over the architrave in what has become known as the “Great Speos Artemidos inscription”. This was executed sometime after her accession to the throne, currently approximated to between her second and seventh regnal years. James Allen reads the text as a record of her deeds, particularly in the Beni Hasan region, set in stone toward the end of her life.<sup>46</sup> But, Hans Goedicke sees something more; he reads the text as Hatshepsut sending braziers to her subjects driven by raging storms and total darkness into the temples. Tephra from the Minoan eruption found at several sites in the Nile delta and along the Levantine coast sup-

<sup>40</sup> Bottema & Sarpaki 2003.

<sup>41</sup> Driessen & Macdonald 1997.

<sup>42</sup> Moody 2005, 460–3.

<sup>43</sup> Wiener 2006a, 320, 323; 2006b.

<sup>44</sup> Wiener 2006b.

<sup>45</sup> Gardiner 1946; Allen 2002a; Goedicke 2004.

<sup>46</sup> Allen 2002a.



ports Goedicke's theory that this darkness was due to the Thera volcano's ash cloud during the first major (Plinian) phase.<sup>47</sup> Goedicke proposes that this inscription be considered together with a second text: the Ptolemaic period, third-second centuries BC, text on the el-Arish shrine at the northeast Egyptian frontier on the Levantine coast.<sup>48</sup> This el-Arish text, referring to an event during Thutmose III's reign, records that "there was no exit from the palace by the space of nine days. Now these days were in violence and tempest: none, whether god or man, could see the face of his fellow". This nine-day period reads suspiciously like an Egyptian multiple of three, which meant "a long time", and so refers to a lengthy period of storms and darkness.

Hatshepsut's next deed recorded in the Speos Artemidos inscription, as read by Goedicke, was to care for refugees who swarmed into Middle Egypt from the Nile delta because of an incursion of the sea there. But, by that time her status had changed from regent to pharaoh with the throne name *Maatkare*, meaning truth, justice, or harmony in the sun's *ka* – translated roughly as soul. Next, she praises the gods for sparing her country, *i.e.* the south, from the black cloud's ravages and Pakhet in particular for diverting the ensuing inundation into the Red Sea.

The recent discovery of Theran pumice near the Thutmoside fortress at Tharo, near El-Qantara, where the Nile delta meets the Sinai peninsula, strongly suggests that the pumice found there was transported inland by one or more tsunamis of great magnitude, perhaps the inundation that Hatshepsut referred to.

Relevant here is the mention by Manetho, the high priest at Heliopolis, in his *Egyptiaca/History of Egypt* dedicated to Ptolemy II, that the great event known as "Deucalion's flood" occurred during Thutmose III's reign. The classical Greeks believed that Deucalion and Pyrrha, king and queen of Thessaly, escaped the flood their sky god Zeus sent to wipe out the Greek Bronze generation in the Greek equivalent to the Biblical Noah's ark tale and, as the only pair to survive the deluge, became the ancestors of the Hellenic heroes who built great Mycenae and fought the Trojan War. We shall revisit their Thessalian origin below.

Also interesting here is molecular biologist Siro Trevisanato's reading of the Dyn. XVIII London Medical Papyrus, which contains various burn remedies, as advice to survivors of Theran ash fall-out.<sup>49</sup>

Manetho wrote his *Egyptiaca* in approximately 280 BC but drew on much earlier sources to set out the framework of the thirty-one Egyptian dynasties with absolute calendar years based on the lengths of pharaonic reigns checked by documents and events dated to each king's regnal years and correlated with astronomical records. His framework remains basic.

There is one quite reliable astronomical date during Thutmose III's reign – the record of the New Moon in his regnal year 23 on I *šmw* 21 (9 May) – the battle of Megiddo, where Thutmose III fought a coalition of rebellious Canaanite princes in the spring after Hatshepsut's death.<sup>50</sup> The "Middle" Egyptian chronology opts for 1457 BC.<sup>51</sup> But, as the moon is new on the same date every twenty-five years, the "High" chronology prefers 1482 BC,<sup>52</sup> and an even higher 1507 BC date is possible. The latter date would suit Wiener's proposed 1525 BC eruption date well because it would place Thutmose III's accession in 1529 BC and the eruption, thus, would have occurred in his and Hatshepsut's fourth regnal year. But, such a high accession date for Thutmose III would create a new "Ultra-high" chronology that would take us too far from the harmony evident in radiocarbon and historical dates after the Thera eruption, discussed below. If Megiddo were in 1457 BC, as the middle chronology prefers, the Thera eruption, if linked to Hatshepsut's rise to the throne, would have been between 1477 and 1472 BC, far too low for the radiocarbon dates after 1500 BC.

The greatest agreement between radiocarbon and Egyptian historical dates comes when we consider the May 1482 BC date, preferred by Egypt-

<sup>47</sup> Francaviglia 1990.

<sup>48</sup> Goedicke 1992.

<sup>49</sup> Trevisanato 2006.

<sup>50</sup> Der Manuelian 2006.

<sup>51</sup> Kitchen 1996; 2002.

<sup>52</sup> Wells 1992; 2002; Spalinger 1992.



tologists for much of the twentieth century and still used by many, for the battle of Megiddo.<sup>53</sup> This places Thutmose III and Hatshepsut's accession to the throne in 1504 BC and Thera, if responsible for the reduced growth rings in California and Nevada in 1499 BC and in Ireland in 1498 BC, would have erupted in their fifth year, 1500 BC.

Goedicke cites later epigraphical evidence from Saft el-Henna that the disaster in Thutmose III's reign occurred on the anniversary of Thutmose II's death on (I *šmw* 4) 30 April.<sup>54</sup> This early summer date for the eruption sequence conforms to the meteorological and archaeo-botanical evidence cited above. The emergency brought on by the Theran ash cloud over the southeast Mediterranean, effectively obscuring the sun, may have been a catalyst for Hatshepsut's bold accession, which went firmly against the Egyptian tradition that regards the king as "His Incarnation" – Horus's physical incarnation – and thus male. It also meant that she would rule until her death because she became the god, a process that could not be reversed. The Theban Amun priests may have agreed because they realized that the nation required absolute leadership to cope with the crisis and, as Thutmose III was too young at the time, assisted Hatshepsut to take full control as Egypt's divine intermediary.

This suggests that the Thera eruption began just before 30 April 1500 BC at the outset of Hatshepsut and Thutmose III's fifth regnal year. The ash cloud may have created a crisis that forced Hatshepsut to take the unusual step of acceding immediately to the throne. Then, the tsunami hit the Nile delta and Sinai within a few days of the eruption's start.

How would this possible 1500 BC eruption date at the start of Hatshepsut and Thutmose III's fifth regnal year affect Egyptian New Kingdom absolute dates? It fits very well with the high chronology.

Thutmose II, Hatshepsut's brother and husband, and Thutmose III's father with another wife, certainly ruled for one year. Manetho assigns him thirteen years. Some suggest that this could be due to a common scribal error and propose three, but Manetho's duration fits well here, given Amenhotep I's astronomical date, discussed below, so we allot him from 1517 to 1504 BC. Hatshepsut's father, Thutmose I, is attested certainly in his third year,

giving him a minimum of four regnal years. His predecessor Amenhotep I's twenty-one year rule is firmly established because his latest recorded date is in his twentieth year and the astronomer Amenemhet records that his own career spanned Ahmose's last ten years, twenty-one years of Amenhotep I, and Thutmose I's Nubia expedition.

The Sothic date in Amenhotep I's ninth year recorded in the Papyrus Ebers has been calculated to either 1537 BC, if observed in Memphis or Heliopolis, Egypt's centre of astronomy and theology, or 1517 BC, if seen from Thebes, the capitol. This variance is due to the four-year difference for each degree of latitude from north to south and accounts for the twenty-year disagreement between the "High" and "Middle" chronologies. Neither date can be calculated with absolute confidence unless we know exactly: 1) the point of observation, 2) the arc of visibility (the angle at which Sothis is still visible before it melts into the dawn light), 3) whether you begin the day with sunrise or with Sothis, and 4) whether or not the record is of a predicted date, or an actual observation.<sup>55</sup> Nonetheless, the high chronology 1537 BC date, which accepts that the High Priest at Heliopolis, also known as the "Chief of observers", made the observation in Amenhotep I's ninth year, works well here and suggests that the pharaoh reigned from 1546 to 1525 BC. This means that his successor Thutmose I, who has four certain regnal years, would have ruled the eight years from 1525 to 1517 BC.

Amenhotep I's father, Ahmose, certainly ruled for twenty-two years and, as Manetho records twenty-five years and four months, there is general agreement that he ruled for twenty-five years, from 1572 to 1546 BC, if we accept 1482 BC as the date for the battle of Megiddo. He ascended the throne as child under his mother Ahhotep's guidance, and died at approximately thirty years of age.

This proposed 1572 BC date for the start of Egypt's New Kingdom approaches that preferred by proponents of the high Egyptian chronology. It

<sup>53</sup> Redford 1967; 2001; Lipinska 2001.

<sup>54</sup> Goedicke 1992, 61.

<sup>55</sup> Müller 2007.



also may provide a date for the beginning of the LM IA period. Warren and Hankey place this MM IIIB to LM IA change in approximately 1600,<sup>56</sup> but we may now be more precise. There was an inundation in the Nile delta at the very beginning of Ahmose's reign, most likely linked to the deluge described in the Storm Stele he erected.<sup>57</sup> The "storm" caused the Nile to overflow its banks and sweep away temples and people. The Theban priests read this as a divine portent and knew that bold steps were needed to both calm the people and secure pharaoh's new position. Weakness would have led to chaos. Ahmose, though a youth at the time, is credited with rebuilding Egypt's temples and helping drive the "Foreign Princes" from the Nile delta where they had taken up residence. Although he may not have been mature enough to lead Egypt's forces until approximately ten years after the deluge, the Hyksos may have been recovering still when he launched his attacks. Thus, Ahmose took credit for re-uniting Upper and Lower Egypt at the outset of the New Kingdom. If the inundation at the start of Ahmose's reign was a tsunami generated by the severe seismic activity witnessed in the eastern Aegean at the end of the MM IIIB period, cited above, it would place the beginning of LM IA in 1572 BC.

There is no debate regarding Thutmose III's death in his fifty-fourth year, which comes out as 1450 BC in the high chronology. His son, Amenhotep II succeeded him, perhaps after a two-year and four months co-regency.<sup>58</sup> The debut of Amenhotep II's sole reign was marked by the need to quell the insurrections that arose after his father's death, but this was followed by relative peace. Manetho records that he ruled for thirty years and ten months, which agrees with a record in his thirtieth year, so his thirty-one year rule would have been from 1452 to 1421 BC in the high chronology.

The autopsy of Amenhotep II's son Thutmose IV showed that he died in his mid-twenties.<sup>59</sup> This accords well with Manetho's nine years and eight months rule, supported by a record in his eighth year. Thus, most Egyptologists give him ten years, which would be 1421 to 1411 BC here. There are disputed records of an eighteenth and a twentieth

year plus two jubilee festivals, the first normally celebrated after thirty regnal years and the second after a further three. Thus, Wentz and van Siclen give him thirty-three regnal years, but this goes against the autopsy results.<sup>60</sup>

The highest attested date for Thutmose IV's son Amenhotep III is in his thirty-eighth year, which gives him approximately thirty-nine years on the throne, from 1411 to 1382 BC in the present scheme. His son Amenhotep IV, better known as Akhenaten, certainly ruled for seventeen years, which would be from 1382 to 1365 BC here.

Akhenaten was succeeded briefly, perhaps for one year, by the enigmatic Semenkhare before his youthful son Tutankhamun took the throne and ruled for nine years, from approximately 1364 to 1355 BC. Next came Tutankhamun's Grand Vizier, Aya, who married his widow to take the throne, which he occupied, according to Manetho, for four years and one month, that is, from 1355 to 1351 BC here.

Aya was succeeded by Tutankhamun's Commander-in-Chief of the Army, Horemheb, who initiated a domestic reform programme and set about eradicating all references to the Amarna heresy, which is why Akhenaten and his successors are absent from official Egyptian history; Manetho skips from Amenhotep III to Aya. The careers of these deleted pharaohs have been restored through centuries of painstaking archaeological research, which continues to provide refinements and could also bring more surprises.

There is no doubt that Horemheb's reign was long because of his many accomplishments, but the record of a case initiated in his fifty-ninth year likely refers to the inclusion of the reigns of his expunged predecessors because Horemhab dated the years of his reign from the death of Amenhotep III, thus incorporating the reigns of Akhenaten, Semenkhare, Tutankhamun, and Aya. The second to

<sup>56</sup> Warren & Hankey 1989, 137, 169.

<sup>57</sup> Goedicke 1992, 60–1; see also Wiener & Allen 1998; also Foster *et al.* this volume.

<sup>58</sup> Der Manuelian 2006, 421–2.

<sup>59</sup> Davis 1904, xliii.

<sup>60</sup> Wentz & Van Siclen 1976.



last available record is in Horemhab's twenty-seventh year. Thus historians generally allot him thirty years, which would be from 1351 to 1321 BC here.

This proposed date for Horemheb's death and the close of Dyn. XVIII takes us back to the dawn of Egyptian astral chronology. Pioneering Egyptologist and chronographer Eduard Meyer proposed July 19, 1321 BC for the accession of Ramesses I, Horemhab's adopted successor who founded the nineteenth dynasty. Meyer believed that mathematician and astronomer Theon of Alexandria, last custodian of the great Library of Alexandria destroyed by religious zealots in AD 391, meant Menpehre, Ramesses I's throne name, when he wrote that the Sothic cycle of 1,460 years ending in AD 139 was the "epoch of Menophres". Ramesses I acceded at an advanced age and co-ruled with his son Sety I for approximately two years before his son succeeded him. Sety I's accession was, William Hayes tells us, "hailed in official texts of his time as the dawn of a new era called a 'Repeating of Births' and the years of his reign were sometimes numbered by reference to this Renaissance".<sup>61</sup> Sety I's co-regency with his father began at the outset of Dyn. XIX, which could be why Manetho erroneously lists him as that dynasty's first ruler. Thus, later references to this "epoch of Menophres" could well refer to the conscious renaissance that Sety I initiated by commissioning historical texts, such as the list of royal ancestors in his Abydos temple.

Generations of historians followed Meyer's lead until conflicting chronologies for Dyn. XVIII arose due to the uncertainties regarding regnal years and where the astral observation during Amenhotep I's ninth regnal year, mentioned above, was made. But, the 1321 BC date for the end of Dyn. XVIII remains a possibility and requires fresh re-examination in the light of the present review.

The dates currently preferred by most Egyptologists following the middle chronology, 1479-1425 BC for Thutmose III, would place the cataclysmic events in his and Hatshepsut's second to seventh years, when she acceded the throne, between 1477 and 1472 BC, and thus unlikely to be related to the Minoan eruption of Santorini. But, this would leave the problem of explaining the Theran tephra

and LC IA pottery deposited in Egypt and Palestine during their reign.

Calibrated <sup>14</sup>C dates from burnt destruction deposits marking the end of the LM IB period at a number of Cretan sites cluster between 1460 and 1440 BC,<sup>62</sup> which, in the present scheme, is from the time of Thutmose III's campaigns in Syria and his fifth *Sed* festival in 1462 BC, when he initiated Hatshepsut's proscription, discussed below, to early in Amenhotep II's reign. Also, samples from a site occupied from late Thutmose III into early Amenhotep II in Israel gave calibrated dates of 1450-1430 BC and so early in Amenhotep's 1452 to 1421 BC reign, as proposed here.<sup>63</sup> Charred barley seeds from a LM II burnt deposit at the Knossos Unexplored Mansion are calibrated to 1448 ± 43 BC, which puts them in Amenhotep II's reign, but within the range of dates from LM IB destructions elsewhere.<sup>64</sup> This supports the ceramic evidence for the overlap between LM II at Knossos and LM IB elsewhere in Crete, discussed below.

Placing Akhenaten's reign from 1382 to 1365 BC suits one <sup>14</sup>C Amarna date, a bone sample calibrated to 1377 ± 53 BC, his year 5 when construction began at Amarna. But the majority of samples gave calibrated average dates of 1340 ± 10 BC,<sup>65</sup> which fall early in Horemheb's reign. The wood, charcoal, hide, and horn samples that Martha Bell collected in the main quarry in 1982 could well belong to the period when Horemheb returned to Amarna early in his reign to destroy Akhenaten's city and to quarry it for building materials. Reliable samples to date the Amarna period must be short-lived and carefully selected from levels known to belong exclusively to Akhenaten's reign and not to the subsequent squalid re-occupation and wanton destruction.

Akhenaten's reign must also be calibrated with Assyrian, Babylonian and Hittite history as the Amarna correspondence shows that Amenhotep III and his son Akhenaten were contemporaries of

<sup>61</sup> Hayes 1970, 190.

<sup>62</sup> Soles 2004b, 147-8; Wiener 2006b.

<sup>63</sup> Wiener 2006b.

<sup>64</sup> Manning & Weninger 1992, 650-1.

<sup>65</sup> Switzur 1984; Weninger 1990, 223-4.



known monarchs in those regions.<sup>66</sup> Letters from Assyrian king Ashur-Uballit I, who is believed currently to have ruled for 36 years from approximately 1365–1330 BC, may indicate that his rule overlapped with the end of Akhenaten’s 1382–1365 BC reign, as proposed here. The Kassite kings Kadashman-Enlil I and Burna-Buriash II of Babylon and Suppiluliumas I of the Hittite Empire also corresponded with Akhenaten. Later, Tutankhamun’s widow asked the latter to send her one of his sons to marry, presumably after her husband’s death in 1355 BC. These correspondences fit well with Suppiluliumas I’s estimated reign from approximately 1380 to 1334 BC, which spans those of Akhenaten and Tutankhamun as given here.<sup>67</sup> But, despite these tantalizing chronological correspondences, the arguments regarding Egyptian and Southwest Asian chronology are still largely co-dependent.

On the whole, the Thera eruption linked to the climate-forcing event in 1499–8 BC fits well both the radiocarbon dates after the event, and the Egyptian historical chronology prevalent for much of the twentieth century AD. It also allows us to explore and propose answers to outstanding historical questions.

## Keftiu in Egypt

Visual and textual records of foreign leaders bearing *jmw*, literally “that which is brought” for which we should understand “gifts”, to the Egyptian pharaoh began in the reign of Hatshepsut’s father Thutmose I.<sup>68</sup> These gifts were reciprocal, the Pharaonic end of a system of diplomatic gift exchange irrespective of taxes, which were collected from subject states abroad.<sup>69</sup> These gifts represented an agreement reached between the Pharaoh personally and the foreign chiefs; the modern concept of the state did not exist in Egypt, which was run more like a grand household with pharaoh holding absolute power at the head. The gifts were presented to pharaoh on festive occasions – coronation and *Sed* (jubilee) festivals in particular – attended only by the most privileged members of his court. The Keftiu first joined the subdued Syro-Palestinians and Nubians, and the diplomatically allied Hittites, Mitanni,

along with the people of Punt bearing gifts early in Hatshepsut’s reign.<sup>70</sup> These Keftiu are generally taken to be Cretans because of their costume even though the metal ware cups that they bear are in the niello technique, which was employed in the Peloponnese in LH I and LH II for the drinking cups and weapons, recovered from elite early Mycenaean burials, but so far not found in Crete.<sup>71</sup> The absence of Cretan examples is problematic, but may be explained by the lack of intact elite LM I burials.

Hatshepsut’s reign was characterized by great devotion. She restored and founded temples both in Egypt and abroad; a good example of the latter is the Hathor temple for the miners at Serabit el Khadim in the Sinai. This could be one reason why she was the first Egyptian monarch that the Keftiu approached for “the breath of life”, an Egyptian expression for vassalage – the acceptance of the Egyptian king as overlord. These Keftiu, portrayed with long wavy hair and sporting the loincloth and codpiece well-known from representations of themselves in Crete, first appeared bearing gifts in Hatshepsut’s chief steward Senenmut’s tomb started two years after her accession. If Thera erupted in her fifth year, as suggested above, these Keftiu may have been the survivors of a beleaguered administration, perhaps centered at Knossos, the only major urban site not fully inundated, paying homage to the new pharaoh, on the occasion of her coronation.<sup>72</sup> While requesting allegiance they may have been also seeking vital aid from the most powerful, in both secular and divine terms, ruler in the region. Without substantial assistance, the Cretan leadership could not have hoped to restore order after the tsunami devastated their coastal cities, harbours and navy, and salted their coastal plains. There was also the matter of faith. The Cretans may have needed to appease their divinities by re-building their temples in the wake of such a clear sign of disapproval.

<sup>66</sup> Moran 1992, xxiv–xxxix; Müller 2007, 213 fig. 3.

<sup>67</sup> Macqueen 1986, 47.

<sup>68</sup> Bleiberg 1996.

<sup>69</sup> Panagiotopoulos 2001; 2006.

<sup>70</sup> Wachsmann 1987.

<sup>71</sup> Xenaki-Sakellariou & Chatziliou 1989.

<sup>72</sup> Macdonald 2001, 529.

One indication that the pharaoh responded favourably is shown by the reference to Keftiu ships being built at the royal dockyard of *Peru-nefer* – “good departure” – perhaps Tell el-Dab<sup>a</sup>, at this time.<sup>73</sup> Thus, the pharaoh both sponsored and supervised the rebuilding of the Minoan navy. She may also have decided to assist with the rebuilding of Crete’s sacred monuments; the “palaces” – now regarded as ritual centres – at Knossos, Gournia and Kato Zakros were entirely rebuilt using lavish ashlar masonry during the LM IB period. This same architectural style was used for expensive religious structures at Palaikastro, Petras, Mochlos, Pseira and Khania. Archives in the Minoan Linear A script show remarkable unity at this time, perhaps indicating central authority, most likely at Knossos. The required manpower for such widespread building activity and control may have included the Africans, perhaps Nubian slaves and/or mercenaries, who appeared in Minoan art at this time.<sup>74</sup>

In return for essential aid, the Minoans may have supplied finished goods such as the stone vases, metal ware and textiles (linen, woollen, and perhaps silk) they carry in the Theban tomb paintings of Hatshepsut and Thutmose III’s officials. Minoan, or Aegean, textile patterns, probably copied from originals, appeared frequently in painted tomb ceilings from Hatshepsut and Thutmose III’s reign, including that of Senenmut, and adorned the cabin of one of Hatshepsut’s ships.<sup>75</sup> The frequency of loom-weights in Minoan buildings supports the notion that textiles were produced on a large scale, perhaps in a centrally organized cottage industry, much as tweed is produced currently in Harris. Fragments of finely carved wooden and engraved leather articles decorated with Aegean spirals from the tombs of Hatshepsut and Amenhotep II are examples of other luxury goods the Minoans crafted and brought to Egypt at that time. But, the tannins derived from Cretan oaks were an essential ingredient in the “resin” required in the Egyptian mummification process, as Ipuwer’s well known “lament” documents.

Palace F at Tell el-Dab<sup>a</sup> was established and decorated with frescoes similar in style and technique to those of Mature LM IA Thera and LM IA and LM IB Knossos during Hatshepsut’s reign.<sup>76</sup>

Most striking is the bull-leaper fresco with the bulls and acrobats set on the meander “labyrinth” pattern. The latter is known from Middle Kingdom tomb ceilings in Egypt, but the border contains the characteristic half-rossette pattern that adorned the Knossos “Grandstand” fresco, generally dated to LM I slightly later than the Thera frescoes,<sup>77</sup> and thus part of the reconstructed LM IB Knossos palace and exactly contemporary with the Tell el-Dab<sup>a</sup> paintings.

Palace F could have been erected as a Keftiu post in Egypt’s royal shipyards contemporary with Final LM IA and LM IB Crete. This would explain why the Keftiu were next reported as coming from the “Great Green”, a designation for the Nile delta, in the tomb of Useramun, Thutmose III’s vizier appointed in his twenty-first regnal year.<sup>78</sup> As Useramun’s tomb was probably decorated after Hatshepsut’s death,<sup>79</sup> this second ambassadorial group may have appeared at the Theban court to pay tribute on the occasion of Thutmose III’s coronation ceremony in his twenty-second year.<sup>80</sup> Their gifts are LM IB in style; one bears a bovine head vase, probably an Aegean style of stone or metal head-shaped rhyton quite similar to some of the great icons of the LM IA<sup>81</sup> and LH I<sup>82</sup> periods, but also found in LM IB,<sup>83</sup> and later contexts.<sup>84</sup>

Besides their luxury goods and essential products, Minoans themselves must have gone to Egypt in such numbers that scribal students had to learn how “to make names of Keftiu”, as an exercise tablet from this time preserves.<sup>85</sup>

This close association continued for a time under Thutmose III’s sole rule, as the inscription that

<sup>73</sup> Bietak 2005a, 80.

<sup>74</sup> Spalinger 2006; Evans 1928, 755–7.

<sup>75</sup> Kantor 1947.

<sup>76</sup> Bietak, Marinatos & Palivou 2007.

<sup>77</sup> Hood 2005, 63–4.

<sup>78</sup> Duhoux 2003.

<sup>79</sup> Dorman 2006, 45–6.

<sup>80</sup> Koehl 2006, 345 Table 22.

<sup>81</sup> Hatzakis, 2005, 198 SF1; Koehl 2006, no. 307.

<sup>82</sup> Koehl 2006, no. 294.

<sup>83</sup> Koehl 2006, nos. 295–6.

<sup>84</sup> Koehl 2006, no. 298–300.

<sup>85</sup> Peet 1927.



accompanies the Keftiu portrayed in the tomb of Rekhmire, vizier to both Thutmose III and his son Amenhotep II, most likely describing the Keftiu emissaries at Thutmose III's second *Sed* festival in 1472 BC, reads:

The coming in peace by Keftiu chiefs and the chiefs of the islands of the sea, humbly, bowing their heads down because of His Majesty's might, the king Menkheperre [Thutmose III] – given life forever! When they heard his achievements in every foreign land, their gifts were on their backs, requesting the breath [of life], wanting to be loyal to His Majesty, so that His Majesty's might will protect them.<sup>86</sup>

The appearance of a LM IB/LH IIA jar in a collapsed cave, perhaps used as a cistern at Tell Ta'anneck, near Megiddo, in the LB I period, along with masses of burned mud brick debris from a nearby wall and many other vases comparable to Megiddo IX, the period of Thutmose III's first Palestinian campaign, demonstrates that LM IB/LH IIA pottery styles were in production by Thutmose III's twenty-third year, 1482 BC here.<sup>87</sup>

The Ta'anneck jar is one of the extremely high quality vases produced at a number of centres in the Peloponnese, Attica and Crete that are so similar they are regarded as the products of highly skilled itinerant potters.<sup>88</sup> They are not found in the Final LM IA deposits that follow the Thera eruption and tsunami at Knossos and Palaikastro but first appear in burnt LM IB destruction deposits throughout Crete. But, as they are based on painting and metal working styles prevalent at the time of the Minoan eruption, they are unlikely to be more than a generation removed. This short interval for the LM IB period is further demonstrated by the fact that the signet ring used to impress a clay sealing discovered in Thera's LM IA VDL impressed similar clay sealings found in burnt LM IB destruction deposits at Hagia Triada and Sklavokambos.<sup>89</sup> Unless such signets signified an office and not an individual, which we have no way of knowing at present, we could argue that the ring-bearer's official duties began before the Thera eruption and continued to the time of the LM IB destructions of Sklavokambos and Hagia Triada and that all three events, the eruption and

both burnt destructions, took place during the course of one official's career.

Much of Thutmose III's sole rule coincided with the Minoan "renaissance" of the LMIB period, when Minoan art and architecture was at its finest. The palaces at Knossos, Gournia, Kato Zakros, and perhaps Khania were rebuilt in their grandest forms in fine ashlar masonry, and numerous other expensive monuments were built at Hagia Triada, Mochlos, Pseira and Palaikastro. Some of the most characteristic Minoan creations belong to this time: the relief decorated stones vases, Marine and Floral Style pottery in the Special Palatial tradition,<sup>90</sup> and the sumptuous chryselephantine statuary including "the Palaikastro Kouros".<sup>91</sup> Peter Warren estimates that the volume of Egyptian finds in LM IB Crete increased four-fold from what it was in LM IA.<sup>92</sup> Glass first appeared in Crete at this time, no doubt coincident with its sudden popularity in Thutmose III's reign in Egypt. But, this "Minoan Indian summer", as Nicolas Coldstream and George Huxley see it,<sup>93</sup> ended late in the pharaoh's career.

## Achaean/Danaans in Crete

The depiction of Keftiu envoys in the tomb of Useramun's nephew and successor Rekhmire, which was sealed after Thutmose III's death, may have first represented a tributary court visit during Thutmose III's reign, perhaps for his second *Sed* festival in his regnal year 33, 1472 BC, the year that he drove the Mittani from the Mediterranean coast back across the Euphrates a decade after the battle of Megiddo. This was also when Rekhmire became Thutmose III's vizier. But, the costumes in the painting were altered before the tomb was sealed during Amenhotep II's reign. The Keftiu loincloth and codpiece was painted over with Myc-

<sup>86</sup> Panagiotopoulos 2001, 263–4.

<sup>87</sup> Lapp 1967, 14–15 fig. 8, 33–4, Fig 23.

<sup>88</sup> Mountjoy 2004.

<sup>89</sup> CMS VS.3, 391.

<sup>90</sup> Müller 1997.

<sup>91</sup> MacGillivray *et al.* 2000.

<sup>92</sup> Warren 1995.

<sup>93</sup> Coldstream & Huxley 1984.

enaean style kilts, perhaps to record the new look of the Keftiu envoys at Amenhotep's coronation celebrations.<sup>94</sup> This costume change is taken to reflect the political change from Minoan to Mycenaean in Crete after Rekhmire became vizier in 1472 BC and before Amenhotep's accession in 1450 BC.<sup>95</sup>

The archaeological record contains strong evidence of demographic change in Crete beginning in the later part of the LM IB period. Most telling is the new funerary practice in LM II, dubbed "warrior graves" by Sinclair Hood primarily because they contain inhumations of tall and sturdy males often accompanied by luxury goods and weapons.<sup>96</sup> These represent a significant change from the previous Minoan funerary practices, which did not include single inhumations.<sup>97</sup> These warrior graves first appeared at Khania and Knossos with pottery styles clearly derived from the Peloponnese, which may indicate that their occupants were part of the vanguard of newcomers who took control of those two strategic Cretan centres, the former by force, if Sinclair Hood is correct in his theory that the fiery LM IB destructions represent aggressive invasion,<sup>98</sup> the latter with little violence. The strategic port at Kommos on the south coast also appears to have been occupied in LM II without resistance, as there are no signs of fiery destruction in LM IB there.

The earliest records in the Linear B script, adapted from Minoan Linear A to suit the Greek language, belong to the end of this LM II period. They make it clear that Knossos at that time was the centre of a large territory now ruled by a *wanax* (lord) in his *wanaktoron* (palace) who collected taxes on agricultural products.<sup>99</sup> Thus, these warriors are generally regarded as Mycenaean Greeks. Their stature recalls the males in the shaft graves at Mycenae, which span the Thera eruption period. The origin of their Ephyraean style pottery, named for its abundance at ancient Ephyra, modern Korakou, on the Corinthian gulf, was certainly in LH IIA Greece,<sup>100</sup> as were new LM II pottery forms,<sup>101</sup> and LM II sponge pattern decoration, which originated in the Corinthia where it was quite popular in LH IIB.<sup>102</sup>

If Homer's geography as set out in the *Iliad's* Catalogue of Ships may be applied to the Late Bronze Age,<sup>103</sup> the southern shores of the Corinthian gulf

were controlled from Mycenae by Achaean king Agamemnon.<sup>104</sup> Although his citadel overlooked the Argive plain, his harbours were in the Corinthian gulf at sites like ancient Ephyra, west of modern Corinth, well connected to Mycenae by three major built roads.<sup>105</sup> The Achaean navy based in the well-protected Corinthian gulf would have been one of the few fleets in the eastern Mediterranean to survive the tsunami's ravages, and the Achaean army, derived from the towns in the Mycenaean territory, also would have survived largely unscathed. Another harbour that may have suffered relatively minor damage then because of its situation in the well-protected Gulf of Pagasae is Iolkos in Thessaly, home of the mythical king Deucalion whom legend records survived the deluge Zeus sent to wipe out the Bronze Age Greeks. There is little evidence for Mycenaean pottery and its imitation at Iolkos until after the Thera eruption.<sup>106</sup>

This historical reconstruction would remain largely speculative were it not for the results of recent DNA studies that demonstrate an influx of Peloponnesians and Thessalians into the Cretan population in the Late Bronze Age.<sup>107</sup>

One warrior grave, at Katsambas near Knossos, contained a number of Egyptian alabaster vessels, one of which was inscribed with the cartouche of Thutmose III.<sup>108</sup> These Egyptian vessels may have been reciprocal gifts in exchange for tribute. Thus, their owner may have accompanied the tributaries to Thutmose III's Theban court, perhaps on the occasion of the pharaoh's fifth *Sed* festival in his forty-second regnal year, 1463 BC, when the

<sup>94</sup> Koehl 2006, 344.

<sup>95</sup> Wachsmann 1987.

<sup>96</sup> Hood 1956; Preston 2004; Andreadaki-Vlasaki 1997, 2000.

<sup>97</sup> MacGillivray 2003, 65; Alberti 2004.

<sup>98</sup> Hood 1971; 1985.

<sup>99</sup> Dickinson 1994, 305.

<sup>100</sup> Mountjoy 1983; 1999, 57–8, 200.

<sup>101</sup> Alberti 2004.

<sup>102</sup> Mountjoy 1999, 200.

<sup>103</sup> *Iliad* 2.494–759.

<sup>104</sup> French 2002, 17.

<sup>105</sup> French 2002, 15 fig. 3.

<sup>106</sup> Mountjoy 1999, 823.

<sup>107</sup> King *et al.* 2008.



“Chief of Keftiu”, as he is titled, appeared dressed in the Mycenaean Greek kilt on the tomb walls of Menkheperreseneb (Theban tomb 86).

Menkheperreseneb was appointed First Prophet of Amun in Thutmose III’s forty-second regnal year, during pharaoh’s fifth *Sed* festival in 1463 BC. The Mycenaean “Keftiu Chief” in his tomb is depicted bearing a bovine-head vase decorated with quatrefoil patterns exactly similar to those on the bovine-head vase found with what Warren calls “the superlative group” of Egyptian alabaster vessels in the LM II Royal Tomb at Isopata at Knossos.<sup>109</sup> Could the Isopata tomb’s owner have kept one of a pair of quatrefoil-patterned bovine head rhyta for himself and given the other to Thutmose III? If so, it could indicate that the opulent Isopata tomb was the final resting place of the same Mycenaean Keftiu Chief portrayed in the Egyptian painting. He may have been one of the first Achaean *wanakes* of the Mycenaean Greek Knossian palace. The correspondence is striking and would push Eric Cline’s suggestion that formal ruler-to-ruler relations between the pharaoh and the Aegean rulers, which he postulates for Amenhotep III, back to Thutmose III and the very beginning of Mycenaean rule at Knossos in 1463 BC.<sup>110</sup>

This first appearance of the Mycenaean Keftiu coincides exactly with the start of Thutmose III’s erasing Hatshepsut’s names and destroying her images at Karnak and Thebes in his year 42, 1463 BC, the year of his fifth *Sed* festival, when he began to distinguish himself overtly from Hatshepsut.<sup>111</sup> In that same year, Thutmose III received tribute including a silver vessel of Keftiu workmanship and other valuable gifts from the Prince of “Tanaja”. Egyptian *Tanaja* is generally linked to Homer’s Danaans, descendents of mythical King Danaos of Argos in the Greek Peloponnese near Mycenae. In Homer, Danaans is another name for the Achaeans, also sometimes called Argives.<sup>112</sup> But, curiously, there was nothing for Thutmose III listed from the Keftiu.<sup>113</sup> This may indicate that the Mycenaean had superseded the Minoans in Aegean supremacy by 1463 BC. Whatever agreement the Minoans had with Hatshepsut ended with her death in 1483 BC. But, they continued to pay tribute to Thutmose III, as portrayed in Useramon’s and Rekhmire’s tombs,

until the start of Hatshepsut’s proscription in 1463, when they were replaced by the Mycenaean. This dates the Peloponnesian and Thessalian Greeks seizure of Crete, beginning with Knossos, to judge from the earliest LM II Mycenaean warrior graves there, to approximately 1463 BC, less than forty years after the Thera eruption. Calibrated radiocarbon dates from LM IB conflagration deposits generally taken to mark the Greek conquest cluster at exactly this time: 1460–1440 BC.<sup>114</sup>

The Keftiu’s altered status at the close of Thutmose III’s reign, 1450 BC here, is best illustrated in two texts. The Karnak “Hymn of Praise” lists the lands Thutmose III “smited” on behalf of his principal god Amun. The list begins with the princes of Zahi in the highlands of Phoenicia and Syria, then the Asiatics of Retenu [Lebanon], in Syria, and the eastern lands. He then turns to “the western land”, where “Keftiu and Cyprus are in terror; I have made them see thy majesty as a young bull, firm of heart, ready-horned and unstoppable”. These are followed by the Mitanni who were made to “tremble under fear”, then “those who are in their isles in the midst of the great sea”, followed by the Libyans, and ending with the sand-dwellers of North Africa.<sup>115</sup> In the inscription he commissioned at Gebel Barkal Thutmose III declares, “I have gathered together the Nine Bows [Egypt’s traditional enemies], the islands in the midst of the ocean, the [Aegean] isles, and the rebellious foreign lands”.<sup>116</sup>

In these we read that the Keftiu were beholding to the most powerful man in the region. The Keftius’ subdued status is confirmed further by their appearance alongside the Syrians and oasis dwellers paying tax in the tomb of Intef, Thutmose III’s chief steward.<sup>117</sup> This placed the Minoans clearly

<sup>108</sup> Alexiou 1967.

<sup>109</sup> Warren 1995, 8.

<sup>110</sup> Cline 1991.

<sup>111</sup> Laboury 2006, 280–2; O’Conner 2006, 8.

<sup>112</sup> Kirk 1985, 58.

<sup>113</sup> Panagiotopoulos 2006, 373, 394; Redford 2006, 336–7.

<sup>114</sup> Soles 2004b.

<sup>115</sup> Breasted [1906] 1962, 318–9.

<sup>116</sup> Der Manuelian 2006, 414.

under the pharaoh's mantle, which required tribute, perhaps collected by the Mycenaeans, allied with pharaoh. But, this allegiance lasted only as long as pharaoh did. His death in 1450 BC may have left the Mycenaean lords in Crete vulnerable. This could account for the violence attested by burnt LM II destruction deposits in the palace at Knossos and in the nearby Unexplored Mansion, which gave calibrated  $^{14}\text{C}$  dates of  $1448 \pm 43$  BC.<sup>118</sup> This violence at Knossos could be the work of a Minoan population that continued to resist Mycenaean Greek rule and took the opportunity of Egypt's inter-regnum to rebel. This Minoan population, particularly in the east, where the Mycenaean Greek language is not attested, continued to produce pottery in the LM IB styles until they were subjugated.

The Knossian warrior graves often contained precious objects produced in the preceding LH I/LM I period, for example the gold cup with arcade and spiral decoration from a grave at Ayios Ioannis.<sup>119</sup> This decoration is well attested on a LH I jug from Mycenae and is copied in LM IB/LH IIA ceramics, which were exported to Egypt and Southwest Asia during the reign of Thutmose III, as we saw with the Ta'anneck jar. Given the strong evidence for Greek newcomers to Crete, the gold cup, like the jug from Mycenae and much of the LH IIA pottery that copies them, may have been made in the Argolid and deposited with its Mycenaean owner who died at Knossos. The gold cup may have been acquired early in its owner's life, if he fell during the initial stages of the conquest of Knossos in 1463 BC, thirty-seven years after the Thera eruption.

The LM II period at Knossos overlaps with LM IB elsewhere, notably at Mochlos and Palaikastro.<sup>120</sup> The transition from Minoan LM IB to Mycenaean LM II-III A1, therefore, may have been comparable to the change from MB to LB in the Levant, which took place during Thutmose III's conquests spanning thirty-two years. Once the Mycenaean Greeks established themselves at Knossos in 1463 BC, they set out to dominate the rest of the island beginning with Khania, as the fiery destruction deposits with LM IB pottery there suggest. The variety of dates for the end of LM IB across Crete is indicated both

by the variance in LM IB archaeo-magnetic dating,<sup>121</sup> and by the range of  $^{14}\text{C}$  calibrated dates for LM IB destruction deposits.<sup>122</sup>

A LM III A1 warrior grave at Knossos, Sellopoulo Tomb 4, produced an Egyptian type scarab carved by a foreigner with the cartouche of Amenhotep III on a necklace worn by the grave's third and last occupant.<sup>123</sup> The scarab's excellent condition precludes its interpretation as an heirloom and suggests that it was acquired soon before its owner's demise. Amenhotep III acceded to the throne thirty-nine years after Thutmose III and ruled from 1411 to 1382 BC in the high chronology. This indicates that the LM III A1 period must have started by his reign. The subsequent LM III A2 period is linked firmly to the reign of Akhenaten, 1382-1365 BC here, so the change from LM III A1 to LM III A2 must be placed in the reign of Amenhotep III, perhaps during the later part, *c.* 1390 BC, in order to allow for the acquisition and deposition of the Sellopoulo scarab.<sup>124</sup>

The change from Minoan to Mycenaean throughout Crete appears to have been completed during the LM III A1 period. This gives us approximately seventy-three years, more than two generations, from 1463 to *c.* 1390 BC, for the violent transition from Minoan to Mycenaean Greek throughout Crete.

## Absolute dates

If we accept that the Thera eruption occurred at the outset of Hatshepsut and Thutmose III's fifth regnal year, the following dates combining the high Egyptian chronology and calibrated  $^{14}\text{C}$  dates for the fifteenth century BC may be proposed:

<sup>117</sup> Bryan 2006, 90-1.

<sup>118</sup> Manning & Weninger 1992, 650-1.

<sup>119</sup> Hood 1956.

<sup>120</sup> MacGillivray 1997; Barnard & Brogan 2003, 107-9.

<sup>121</sup> Downey & Tarling 1984.

<sup>122</sup> Soles 2004b.

<sup>123</sup> Popham *et al.* 1974.

<sup>124</sup> Warren & Hankey 1989, 148-9.



- 1572 -beginning of LM IA
- 1500 -Thera eruption in Mature LM IA
- c.1495 -start of LM IB
- 1483 -Hatshepsut's death
- 1482 -Battle of Megiddo
- 1463 -Hatshepsut's proscription begins;  
- Mycenaean conquest of Knossos and  
start of LM II there
- 1450 -death of Thutmose III
- 1448 -revolt at Knossos; start of LM IIIA1 there.
- c.1390 -beginning of LM IIIA2 in Crete

## Epilogue

The intensity of the Minoan eruption of Santorini and the magnitude of the tsunami it generated allow us to draw a horizontal bar across our chronological charts for the eastern Aegean at the transition from Mature to Final LM IA when LH I and LC IA:2 pottery wares and styles were popular, early in Thutmose III and Hatshepsut's reign. This may have been in their fifth regnal year – 1500 BC in the high Egyptian chronology – when she assumed the pharaonic titles and took full control of Egypt to deal with the crisis. The history of those pre- and post-diluvian periods may now be considered more fully. The sudden and short-lived appearance of the Keftiu during Hatshepsut and Thutmose III's early years may now be interpreted as an appeal by the last of the Minoans to the most powerful leader of their day. The response was positive, to judge by the renaissance in art and architecture in LM IB Crete, when the Keftiu, some based in the Nile delta, may have enjoyed the benefits of their loyalty. The Keftiu continued to pay tribute on festive oc-

casions after Hatshepsut's death, but were replaced by the Danaans/Achaeanes at the start of her proscription in 1463 BC.

These dates, 1500 BC for the Thera eruption and 1463 BC for the beginning of the Greek conquest of Crete, are quite close to those proposed by prominent Aegean archaeologists like Sinclair Hood before the calibrated <sup>14</sup>C dates introduced uncertainty in the case of the former.<sup>125</sup> I trust that closer scrutiny and re-calibration of those samples with dates averaging at approximately 3350 BP will remove that uncertainty and allow us to return to our task of writing this important chapter of early European, Egyptian and Southwest Asian history with the confidence that scholars displayed before the <sup>14</sup>C dispute.

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<sup>125</sup> Hood 1971, 54–5; 1978, 24.