

OH, NO—NOT ANOTHER CHRONOLOGY!*

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ABSTRACT

Re-excavation of the Theban tomb of Horemheb has revealed the existence of 46 dated wine docketts, none with a reign date later than Year 14. This information, together with other cogent evidence, provides a solid basis for reducing the reign of Horemheb from the previously conventional 28 years to 14 years. This article weighs the arguments for filling the “Horemheb gap” in various ways, and in particular 1) by lowering the accession date for Hatshepsut/Tuthmosis III from 1479 to 1468 BC or 2) by raising the accession date for Ramses II from 1279 to 1290 BC, and the consequences of each proposal for the history of Egypt, the Near East and the Aegean. The reign length of Seti I is considered as well. The analysis supports accession dates of 1479 BC for Tuthmosis III and 1290 BC for Ramses II.

We begin with the chronological implications of the proposed reduction in duration of the reign of Horemheb from 28 to 14 years resulting from 1) the re-excavation of his tomb in the Valley of the Kings at Thebes (KV 57) which disclosed a large number of wine docketts, but none later than Year 14,¹ and 2) the reconsideration of other evidence bearing on the length of his reign. 254 inscribed sherds comprising at least 60 wine

* It is a pleasure and an honor to dedicate this paper to Dorothea Arnold, scholar *extraordinaire*, curator supreme, and inspiring leader of the Egyptian Department of the Metropolitan Museum of Art. The title of this paper derives from the response of the honorand to my observation that the recent evidence from the wine docketts from the tomb of Horemheb at Saqqara published by Geoffrey Thorndike Martin and Jacobus Van Dijk provided cogent evidence for shortening the reign of Horemheb by 14 years, thereby requiring changes in the dates of other Egyptian rulers as well.

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¹ Geoffrey T. Martin, “Re-excavating KV 57 (Horemheb) in the Valley of the Kings,” paper presented at the Tenth International Congress of Egyptologists, University of the Aegean, Rhodes, 22–29 May 2008; Jacobus Van Dijk, “New Evidence on the Length of the Reign of Horemheb,” paper presented at the Tenth International Congress of Egyptologists, University of the Aegean, Rhodes, 22–29 May 2008; Jacobus Van Dijk, “New Evidence on the Length of the Reign of Horemheb,” *JARCE* 44 (2008) [published 2010]: 193–200.

dockets were found, of which 46 had a year date: 22 of Year 13, 8 of Year 14, and 16 incomplete, but of the incomplete inscriptions most appear to be of Year 13 and none later than Year 14.² The tomb of Horemheb contained the remains of at least three individuals, which raises a possible question as to whether the jars could have been placed in the tomb at the time of a different burial. No other names are attested in the tomb, however, and (granting that the tomb chamber was greatly disturbed by the 1908 excavation) no separate burial is traceable today. If these wine dockets belong with another burial, where then are the wine jars which would surely have accompanied the burial of Horemheb? Other sites also contain wine dockets from various years of the reign of Horemheb—Years 2, 4, 6, 8, 13 and 14 at Deir el-Medina and Year 12 at Sedment—but again nothing after Year 14.³

The wine-jar argument raises a number of questions. Wine jars marked with differing regnal years and even the regnal years of predecessors are found in many Egyptian tombs,⁴ which suggests that wine jars may have been reused and/or that wine may have been deliberately aged. A Ptolemaic text tells us that wine if properly stopped will keep many years,⁵ and Near Eastern texts distinguish between old and new wine.⁶ It is said that in Cyprus today, old *pitharia* (wine jars) cost much more than new ones

² Van Dijk, “New Evidence,” 2008; Van Dijk, “New Evidence,” 2008 [published 2010].

³ I am most grateful to Geoffrey Martin for this information, gathered by Jacobus Van Dijk (Van Dijk, “New Evidence,” 2008), who has kindly consented to its use here. Van Dijk suggests also that a 14-year rather than a 28-year reign better fits the unfinished state of the Theban tomb (Van Dijk, “New Evidence,” 2008; Van Dijk, “New Evidence,” 2008 [published 2010]).

⁴ Leonard H. Lesko, “Egyptian Wine Production during the New Kingdom,” in *The Origins and Ancient History of Wine*, ed. Patrick E. McGovern, Stuart J. Fleming and Solomon H. Katz (Canada, UK: Gordon and Breach Publishers, 1996), 223.

⁵ Lesko, “Egyptian Wine Production,” 223.

⁶ Stephanie Dalley, Christopher B.F. Walker and John D. Hawkins, *The Old Babylonian Tablets from Tell al Rimah* (London: The British School of Archaeology in Iraq, 1976), nos. 252, 266.

because they promote fermentation and produce a better tasting wine.⁷ Moreover, wine production may be interrupted for a number of years by infestations, most notably phylloxera, but also Pierce's disease (the bacterium *Xylella fastidiosa*) and by damage from a species of beetle, *Harmonia axyridis*. One further, if remote, contingency is perhaps worth noting. Egyptian wine production was apparently concentrated in the Nile Delta.⁸ Roughly contemporary reports refer to human plagues.⁹ Plagues historically travel initially by sea.

The wine-docket evidence is important, but perhaps not conclusive for the reasons stated. The evidence for a shortened reign for Horemheb is not limited to the wine-docket evidence, however. A further argument in favor of a reign of not more than 14/15 years for Horemheb is provided by the study of the career of the chief of police Mininiuy, who appears to have been in service from at least Year 7 of Horemheb to at least Year 21 of Ramses II, which would make Mininiuy, if the reign of Horemheb lasted 28 years, between 75 and 80 in his last recorded year as chief of police, a quite unlikely circumstance, as noted already in 1968 by John Harris.¹⁰ Moreover, as Wolfgang Helck argued in a 1987 publication, it would be strange if there were so much evidence for the first 13 to 14 years of Horemheb's reign but no evidence after that point, either for Horemheb or any official who served under him. Helck noted further that the list of pharaohs compiled by the Egyptian priest Manetho in the third century BC gave Horemheb only twelve years and three months and that the reliability of three inscriptions

⁷ Gloria London, "Why Milk and Meat Don't Mix," *Biblical Archaeology Review* 34.6 (2008): 68.

⁸ Patrick E. McGovern, *Uncorking the Past: The Quest for Wine, Beer, and Other Alcoholic Beverages* (Berkeley: University of California Press, 2009), 180–1.

⁹ Trevor Bryce, *The Kingdom of the Hittites* (Oxford: Clarendon Press, 1998), 223–5.

¹⁰ John R. Harris, "How Long Was the Reign of Horemheb?" *JEA* 54 (1968): 98–99; David A. Aston, "IN VINO VERITAS: A Docketed History of the New Kingdom between 1479 and 1279 BC," (forthcoming).

(one of doubtful authenticity) which had been interpreted to give Horemheb a reign of 27 to 28 years was questionable.¹¹ Accordingly, the argument for a 14- (or at most 15-) year reign for Horemheb based on the absence of wine dockets after Year 14 at two locations together with the absence of other evidence for his reign after the 14th year and the length of service/longevity question with respect to Mininiuy seems formidable indeed.¹²

During the 1970s, 1980s and early 1990s, most Egyptologists preferred the “High” or “Middle” chronologies with accession dates for Tuthmosis III and Ramses II at 1504 and 1304 BC (High) or 1490 and 1290 BC (Middle), respectively.¹³ By the beginning of the 21st century, however, a wide consensus had developed in favor of the Low Chronology accession dates for Tuthmosis III/Hatshepsut of 1479 BC and Ramses II of 1279 BC. In particular, Kenneth Kitchen’s analysis of the very difficult Third Intermediate Period, and especially the 21st and beginning of the 22nd Dynasties, was of critical importance.¹⁴ His analysis, by what has been called “dead reckoning,” produced an accession date of Ramses II of no later than 1265/63 BC, which was then amended to 1279 BC to fit the nearest appropriate astronomical date, and one then seemingly consistent with independently dated Near Eastern interconnections during his reign. (In

¹¹ Wolfgang Helck, “Was kann die Ägyptologie wirklich zum Problem der absoluten Chronologie in der Bronzezeit beitragen?” in *High, Middle or Low? Acts of an International Colloquium on Absolute Chronology Held at the University of Gothenburg, 20–22 August 1987*. Pt. 1, ed. Paul Åström (Gothenburg: Paul Åströms, 1987); Rolf Krauss and David A. Warburton, “The Basis for Egyptian Dates,” in *Time’s Up! Dating the Minoan Eruption of Santorini. Acts of the Minoan Eruption Chronology Workshop, Sandbjerg November 2007*, ed. David A. Warburton (Athens: The Danish Institute at Athens, 2009).

¹² We may soon learn more, for the reign of Horemheb is the subject of a forthcoming Metropolitan Museum of Art exhibition and catalogue organized by Dorothea Arnold.

¹³ For example, Donald B. Redford, in *Egypt, Canaan, and Israel in Ancient Times* (Princeton: Princeton University Press, 1992), employed an accession date of 1304 BC for Ramses II.

¹⁴ Kenneth A. Kitchen, *The Third Intermediate Period in Egypt (1100–650 BC)*, 2nd ed. (Warminster: Aris & Phillips, 1996); Kenneth A. Kitchen, “Egyptian and Related Chronologies—Look, No Sciences, No Pots!” in *The Synchronisation of Civilisations in the Eastern Mediterranean in the Second Millennium B.C. III. Proceedings of the SCIEM 2000–2nd EuroConference, Vienna, 28 May–1 June 2003*, ed. Manfred Bietak and Ernst Czerny (Vienna: Österreichischen Akademie der Wissenschaften, 2007), 163–71.

addition, the proposed exact 200-year difference between the accession dates provided an expedient aide-mémoire.) As a consequence, the Low Chronology with its accession dates of 1479 and 1279 BC has become what Kitchen once wittily described as the “currently traditional” chronology.¹⁵

There were nevertheless a few who dissented. For example, David Aston argued that the large amount of tomb building which took place under the reign of Tuthmosis IV, the large number of officials known to have served during his reign, and the significant amount of pottery innovation which took place during the Amenhotep II–Tuthmosis IV period suggested a longer reign than the c. 10 years allotted.¹⁶ Most, however, accepted the argument of Betsy Bryan that the reign of Tuthmosis IV was unlikely to have extended beyond a decade in view of the total silence of the sources regarding any event beyond his eighth year, in a dynasty otherwise well documented;¹⁷ that the numerous tombs in question are generally rather small, and that the large number of officials known from the reign of Tuthmosis IV may simply reflect the accidents of recovery.¹⁸ Another challenge to the “currently traditional” chronology was presented by W. Raymond Johnson, who proposed a long coregency between Amenhotep III and Akhenaten.¹⁹ This

¹⁵ Kenneth A. Kitchen, “The Strengths and Weaknesses of Egyptian Chronology—A Reconsideration,” *Egypt and the Levant* 16 (2006): 303.

¹⁶ David A. Aston, “Why Texts Alone Are Not Enough: Chronology in the Third Intermediate Period,” paper presented at Egypt and Time: SCIE2000 Workshop on Precision and Accuracy of the Egyptian Historical Chronology, Vienna, 30 June–2 July 2005; David A. Aston, “Radiocarbon and the Reigns of Tuthmosis III and Ramesses II,” (forthcoming); Aston, “IN VINO VERITAS.” Moreover, one could argue that a 23-year reign (9 documented years plus a 14-year half-lunar cycle) following a putative 11-year coregency with Amenhotep II would allow the Sed festivals of Tuthmosis IV to occur on his 30th and 34th regnal years in accordance with custom.

¹⁷ Betsy M. Bryan, *The Reign of Thutmose IV* (Baltimore: The Johns Hopkins University Press, 1991); Betsy M. Bryan, “The Eighteenth Dynasty before the Amarna Period (c. 1550–1352 BC),” in *The Oxford History of Ancient Egypt*, ed. Ian Shaw (Oxford: Oxford University Press, 2000).

¹⁸ Betsy M. Bryan, “The Reign of Tuthmosis IV,” PhD diss. (Yale University, 1980); Bryan, *Reign of Thutmose IV*.

¹⁹ W. Raymond Johnson, “Amenhotep III and Amarna: Some New Considerations,” *JEA* 82 (1996): 65–82; Aston, “IN VINO VERITAS.”

remains a distinct minority view (as may be observed in the vigorous responses of James Allen and Peter Dorman based on Amarna texts and other evidence²⁰) and becomes even less likely if one accepts the need to reduce the length of the reign of Horemheb by 14 years. In order to accomplish both changes, it is necessary either to lower the accession date of Tuthmosis III/Hatshepsut from 1479 BC by c. 14 years plus whatever length of time is allotted to the proposed coregency—a difficult prospect, as we shall see—or to raise the accession date of Ramses II from 1279 BC not only to 1290 BC (which now seems likely for the reasons set forth below) but to 1304 BC. Such an alteration would require somehow filling the 40 years between 1304 BC and the latest date established by Kitchen's dead reckoning for the accession of Ramses II at 1265/63 BC²¹ and would raise problems with Near Eastern interconnections as well (see below).

Conversely, lowering the conventional dates has been proposed, for example by Aidan Dodson, who argued in AD 2000 that 25 years should be removed from the Third Intermediate Period.²² Problems arise both on internal Egyptological grounds in terms of the interrelationships between the reigns of the pharaohs at Tanis and the high priests at Thebes, and on the basis especially of well-established interconnections with Near Eastern chronologies. Dodson's argument requires both a reign of three decades for Horemheb which now appears most unlikely and a lowering of the dates of the Amarna

²⁰ James P. Allen, "The Amarna Succession," in *Causing His Name to Live: Studies in Egyptian Epigraphy and History in Memory of William J. Murnane*, ed. Peter J. Brand and Louise Cooper (Leiden: Brill, 2009); Peter F. Dorman, "The Long Coregency Revisited: Architectural and Iconographic Conundra in the Tomb of Kheruef," in *Causing His Name to Live: Studies in Egyptian Epigraphy and History in Memory of William J. Murnane*, ed. by Peter J. Brand and Louise Cooper (Leiden: Brill, 2009).

²¹ Kitchen, "Egyptian and Related Chronologies," 167.

²² Aidan Dodson, "Towards a Minimum Chronology of the New Kingdom and Third Intermediate Period," *BES* 14 (2000): 7–18.

period by about 30 years, a seeming impossibility given the Amarna correspondence with Near Eastern rulers, whose dates do not appear movable to this extent.²³

As the Amarna correspondence demonstrates, the significance of Egyptian chronology extends far beyond the borders of Egypt. Egyptian dates impact the Near East and the Aegean world and reach as far as the central Mediterranean. Central Mediterranean Late Bronze Age dating is based on the successive arrival of Late Helladic IIIA1, IIIA2, IIIB and IIIC pottery at sites on the Italian peninsula, Sicily and Sardinia, and the pottery chronology depends in turn on Egyptian contexts for its absolute dates.²⁴ (The central Mediterranean has no Aegyptiaca, nor has any central Mediterranean pottery been found in Egypt.) The Amarna deposit, with its tight chronological range of 30 years,

²³ The Dodson proposal was based in part on an article published by the present author which suggested a date for the Uluburun shipwreck, whose debris included a gold scarab with the name of Nefertiti, of c. 1300 BC (Malcolm H. Wiener, “The Absolute Chronology of the Late Helladic IIIA2,” in *Sardinian and Aegean Chronology: Towards the Resolution of Relative and Absolute Dating in the Mediterranean. Proceedings of the International Colloquium “Sardinian Stratigraphy and Mediterranean Chronology,” Tufts University, Medford, Massachusetts, March 17–19, 1995*, ed. Miriam S. Balmuth and Robert H. Tykot, *Studies in Sardinian Archaeology* 5 [Oxford: Oxbow Books, 1998]). The proposed date was based on a dendrochronological examination of a twig (probably carried aboard the ship as packing material) which was subsequently shown to be faulty and the twig incapable of producing a date for the shipwreck. The date of the shipwreck is now thought to be c. 1320 BC, based in good measure on the presence of Late Helladic (Mycenaean) IIIA2 pottery and the absence of Late Helladic IIIB pottery on board (the corrected date and the dating of the Mycenaean pottery is discussed in detail in Malcolm H. Wiener, “The Absolute Chronology of Late Helladic IIIA2 Revisited,” *Annual of the British School at Athens* 98 [2003]: 239–50).

²⁴ Fulvia Lo Schiavo, “Osservazioni sul problema dei rapporti fra Sardegna ed Etruria in età nuragica–II,” in *Etruria e Sardegna centro-settentrionale tra l’età del bronzo finale e l’arcaismo. Atti del XXI convegno di studi etruschi ed italici, Sassari–Alghero–Oristano–Torralba, 13–17 ottobre 1998* (Pisa: Istituti Editoriali e Poligrafici Internazionali, 2002), 51–70; Marco Bettelli, *Italia meridionale e mondo miceneo: ricerche su dinamiche di acculturazione e aspetti archeologici, con particolare riferimento ai versanti adriatico e ionico della penisola italiana* (Florence: All’Insegna del Giglio, 2002); Reinhard Jung, “Πότε? Quando? Wann? When? Translating Italo-Aegean Synchronisms,” in *EMPORIA: Aegeans in the Central and Eastern Mediterranean, Proceedings of the 10th International Aegean Conference, Athens, Italian School of Archaeology, 14–18 April 2004*, ed. Robert Laffineur and Emanuele Greco *Aegaeum* 25 (Liège: University de Liège, 2005), 473–84; Reinhard Jung, *Χρονολογία Comparata: Vergleichende Chronologie von Südgriechenland und Südtalien von ca. 1700/1600 bis 1000 v. u. Z.*, Veröffentlichungen der Mykenischen Kommission 26 (Vienna: Österreichischen Akademie der Wissenschaften, 2006); Reinhard Jung, “LH IIIC Middle Synchronisms Across the Adriatic,” in *LH IIIC Chronology and Synchronisms II: LH IIIC Middle*, ed. Sigrid Deger-Jalkotzy and Michaela Zavadil (Vienna: Österreichischen Akademie der Wissenschaften, 2007), 203–20.

provided the definition of Late Helladic IIIA2.²⁵ Any change in Egyptian dates, even by a decade, affects the history of the Near East and the Mediterranean (for example, with respect to the Sea Peoples) as well as the history of Egypt.

On the assumption that the “currently traditional” chronology based on accession dates of Tuthmosis III/Hatshepsut of 1479 BC and Ramses II at 1279 BC requires modification to accommodate a reduction of 14 years in the length of the reign of Horemheb, it becomes necessary to examine the two most plausible alternatives: lowering the accession date of Tuthmosis III to 1468 BC or raising the accession date of Ramses II to 1290 BC.

The first alternative was advocated in 1987 by Wolfgang Helck,²⁶ and has recently been taken up by Rolf Krauss and David Warburton.²⁷ Chart 1 displays the resulting changes in the dates of pharaonic reigns.

²⁵ Reports that the Amarna deposit contained two sherds of IIIB pottery were based on a misunderstanding of the definitional process. Furumark in his monumental work *Mycenaean Pottery* did not base his phasing of Mycenaean pottery on deposits found in Greece and then apply his criteria to the Amarna deposit, but rather took shapes and motifs of the closed and time-constrained Amarna deposit as his definition of Late Helladic IIIA2 (Arne Furumark, *Mycenaean Pottery*. 2 vols. [Stockholm: Kungl. Vitterhets, historie och antikvitets akademien, 1941]). Furumark studied as many of the approximately 1,600 sherds as he could locate. Some, however, he did not see, including two that Petrie, the first excavator of Amarna, had given to universities (Bonn and University College London). Because each sherd displayed motifs which continued into LH IIIB and which had not been included in Furumark’s depictions of LH IIIA2 motifs, the sherds were described by one student of Mycenaean pottery as LH IIIB (Vronwy Hankey, “Stirrup Jars at El-Amarna,” in *Egypt, the Aegean and the Levant: Interconnections in the Second Millennium BC*, ed. W. Vivian Davies and Louise Schofield [London: British Museum Press, 1995], 117). Had Furumark been aware of these sherds, he would surely have included them in his conspectus of the IIIA2 pottery. There is accordingly no justification for concluding on the basis of these sherds that the Late Helladic IIIB period had begun during the Amarna era. See Wiener, “The Absolute Chronology of Late Helladic IIIA2 Revisited.”

²⁶ Helck, “Problem der absoluten Chronologie.”

²⁷ Krauss and Warburton, “Basis for Egyptian Dates.”

CHART 1. Reign dates of Egyptian pharaohs preceding Horemheb, if the reign of Horemheb is reduced to 14 years, the accession of Tuthmosis III is lowered by 11 years, and 3 years are added by limiting the lengths of the putative coregencies between the death of Akhenaten and the accession of Tutankhamun.

Pharaoh	Consensus dates pre-Horemheb adjustment*	Revised dates if pre-Horemheb reigns including Tuthmosis III lowered by 11 years
Ahmoose	c. 1550/1540–1525/1515 BC	c. 1539/1529–1514/1504 BC
Amenhotep I	1525/1515–1504/1494 BC	1514/1504–1493/1483 BC
Tuthmosis I	1504/1494–1492/1482 BC	1493/1483–1481/1471 BC
Tuthmosis II	1492/1482–1479 BC	1481/1471–1468 BC
Hatshepsut	1479–1457 BC	1468–1446 BC
Tuthmosis III	1479–1425 BC	1468–1414 BC
Amenhotep II	1427–1401 BC	1416–1390 BC
Tuthmosis IV	1401–1391 BC	1390–1380 BC
Amenhotep III	1391–1353 BC	1380–1342 BC
Akhenaten	1353–1337 BC	1342–1326 BC
Ankh(et)kheperure (Smenkhare)	1338–1336 BC	1326–1322 BC
Tutankhamun	1336–1327 BC	1322–1313 BC
Ay	1327–1323 BC	1313–1309 BC
HOREMHEB	1323–1295 BC	1309–1295 BC

* As set forth in Kitchen, “Egyptian and Related Chronologies;” Kitchen, “Strengths and Weaknesses” and Kenneth A. Kitchen, “Regnal and Genealogical Data of Ancient Egypt (Absolute Chronology I): The Historical Chronology of Ancient Egypt, a Current Assessment,” in *The Synchronisation of Civilisations in the Eastern Mediterranean in the Second Millennium B.C. Proceedings of an International Symposium at Schloss Haindorf, 15–17 November 1996 and at the Austrian Academy, Vienna, 11–12 May 1998*, ed. Manfred Bietak (Vienna: Österreichischen Akademie der Wissenschaften, 2000). The dates for Ahmoose to Tuthmosis III vary depending on whether the Manethonian reference to the reign of Tuthmosis II should be read as three years or thirteen years (Kitchen, “Strengths and Weaknesses,” 303; Kitchen, “Egyptian and Related Chronologies”). Current opinion is divided. Compare Jürgen von Beckerath, *Die Chronologie des Pharaonischen Ägypten: Die Zeitbestimmung der ägyptischen Geschichte von der Vorzeit bis 332 v. Chr.* (Mainz am Rhein: Philipp von Zabern, 1997), 121, with Erik Hornung, “The New Kingdom,” in *Ancient Egyptian Chronology*, ed. Erik Hornung, Rolf Krauss and David A. Warburton, *Handbook of Oriental Studies* 83 (Leiden: Brill, 2006), 200–01; Rolf Krauss, “An Egyptian Chronology for Dynasties XIII to XXV,” in *The Synchronisation of Civilisations in the Eastern Mediterranean in the Second Millennium B.C. III. Proceedings of the SCIEEM 2000–2nd EuroConference, Vienna, 28 May–1 June 2003*, ed. Manfred Bietak and Ernst Czerny (Vienna: Österreichischen Akademie der Wissenschaften, 2007), 182; Luc Gabolde, “La chronologie du règne de Thoutmosis II, ses conséquences sur la datation des momies royales et leurs répercussions sur l’histoire du développement de la Vallée des Rois,” *SAK* 14 (1987): 74–75.

Any such shift would require Near Eastern dates to shift as well in view of the correspondence between Burnaburiash II of Babylon and Amenhotep III (EA 6), Akhenaten (EA 7–8), and Tutankhamun (EA 9) plus that of Assur-Uballit I of Assyria with Tutankhamun (EA 15) documented in the Amarna tablets.²⁸ For example, lowering the dates of pharaohs preceding Horemheb by 11 years absent a change in Babylonian dates would have Burnaburiash dying by the middle of Akhenaten's reign, whereas the evidence suggests that the correspondence between these rulers continued in all probability until the end of the reign, and would require that Horemheb become pharaoh early in the reign of the Hittite king Mursili II.

If instead of Near Eastern and Egyptian reign dates moving in tandem, Egyptian dates are lowered by a decade in relation to Near Eastern dates, significant questions arise, not least with respect to events in the Amarna period. For example, the seemingly remote possibility that it was Nefertiti rather than Meritaten, Kiya or Ankhnesenamun who wrote twice to the Hittite king Suppiluliuma asking him to send one of his sons to become her husband and the pharaoh of Egypt because she did not wish to be ruled by one of her subjects, would become somewhat less improbable. This proposition does not appeal to Dorothea Arnold, who believes that Nefertiti was very powerful to the end of her life.²⁹

²⁸ William L. Moran, *The Amarna Letters* (Baltimore: The Johns Hopkins University Press, 1992).

²⁹ Dorothea Arnold pers. comms. of 1 March 2010 and 19 March 2010. Of course one could argue that only a very strong queen could imagine that she could execute so astounding a coup, an act certain to arouse great discomfort and at least some opposition within Egypt. Moreover, the dispatch of such letters would appear to imply a queen well-known to the Hittite court, who had already established a trustworthy channel of communication, as was the case with Nefertiti. The second letter from the queen asks Suppiluliuma to hurry because she is afraid. Given the ferocity exhibited in the deletion from temples of the name of Amun during the reign of Akhenaten and the reciprocal ferocity of the subsequent removal of references to the Aten, there was presumably much to fear apart from any court intrigue. Such speculation becomes irrelevant, however, if the "Horemheb gap" is filled by raising the accession date of Ramses II to 1290 BC, as proposed below.

Lowering the accession date of Tuthmosis III from 1479 to 1468 BC raises issues regarding Egyptian astronomy as well. Ulrich Luft³⁰ believes such a change to be near impossible, while its chief proponents, Rolf Krauss and David Warburton, who had previously strongly supported a 1479 BC accession date principally on the basis of their interpretation of the text which provides Egyptian calendar dates for events during the Battle of Megiddo, now advocate 1468 BC.³¹

Moving the accession date of Hatshepsut/Tuthmosis III forward to 1468 BC raises challenging questions for Aegean chronology as well. A scarab of Amenhotep III from an undisturbed burial with Late Minoan and Late Helladic IIIA1 pottery in Sellopoulo Tomb 4 at Knossos shows that the reign of Amenhotep III must have begun by LM IIIA.³² Links between Tuthmosis III and the Late Minoan IB and Late Minoan II periods are clear.³³ The eruption of the volcano on Thera marks the transition from Late Minoan IA to IB. At various sites in the Near East and at Tell el Dab'a, the ancient Avaris, in Egypt, Thera pumice from the eruption is found in conjunction with Tuthmoside pottery. The sequence is clear, but encounters a counter-argument based on a small number of radiocarbon measurements alleged to support a higher date. The problem is created in large part by the oscillating nature of the radiocarbon calibration curve between c. 1615 and c. 1525 BC which makes it difficult to distinguish between measurements falling in these areas, whereas after 1525 BC the calibration curve descends sharply. Aegean chronology

³⁰ Ulrich Luft, "Priorities in Absolute Chronology," in *The Synchronisation of Civilisations in the Eastern Mediterranean in the Second Millennium B.C. II. Proceedings of the SCIEEM 2000–EuroConference, Haindorf 2 – 7 May 2001*, ed. Manfred Bietak (Vienna: Österreichischen Akademie der Wissenschaften, 2003), 199–204.

³¹ Krauss and Warburton, "Basis for Egyptian Dates."

³² Mervyn R. Popham, "Sellopoulo Tombs 3 and 4, Two Late Minoan Graves Near Knossos," *BSA* 69 (1974): 195–257; Wiener, "The Absolute Chronology of Late Helladic IIIA2 Revisited."

³³ Peter Warren and Vronwy Hankey, *Aegean Bronze Age Chronology* (Bristol: Bristol Classical Press, 1989), 138–44; Malcolm H. Wiener, "Egypt & Time," *Egypt and the Levant* 16 (2006): 325–39.

already struggles with New Kingdom (including early Tuthmoside) contexts for material associated in some manner with the eruption of Thera.³⁴ An 11-year reduction in the accession date would, *ceteris paribus*, increase somewhat the difficulty of reconciling the radiocarbon dates with the historical evidence. Of course if the question posed by the radiocarbon measurements stems from the “reservoir effect” of ¹⁴C-deficient carbon in the soil or air of the volcanic island of Thera, then the proposed 11-year shift in the Tuthmosis III accession date would in all likelihood be insignificant.³⁵

³⁴ Malcolm H. Wiener, “A Point in Time,” in *Cretan Offerings: Studies in Honour of Peter Warren*, ed. Olga Krzyszkowska, British School at Athens Studies 18 (London: The British School at Athens, 2010), 374; Manfred Bietak, pers. comm. 6 July 2009; Manfred Bietak and Felix Höflmeyer, “Introduction: High and Low Chronology,” in *The Synchronisation of Civilisations in the Eastern Mediterranean in the Second Millennium B.C. III. Proceedings of the SCIEM 2000–2nd EuroConference, Vienna, 28 May–1 June 2003*, ed. Manfred Bietak and Ernst Czerny (Vienna: Österreichischen Akademie der Wissenschaften, 2007), 13–23; Johannes H. Sterba, Karen P. Foster, Georg Steinhauser and Max Bichler, “New Light on Old Pumice: the Origins of Mediterranean Volcanic Material from Ancient Egypt,” *JAS* 36 (2009): 1738–44; Peter M. Fischer, “The Chronology of Tell el-‘Ajjul, Gaza: Stratigraphy, Thera, Pumice and Radiocarbon Dating,” in *Time’s Up! Dating the Minoan Eruption of Santorini. Acts of the Minoan Eruption Chronology Workshop, Sandbjerg November 2007*, ed. David A. Warburton (Athens: The Danish Institute at Athens, 2009), 253–65.

³⁵ ¹⁴C is primarily produced at high latitudes in the lower stratosphere by the collision of cosmic ray-produced neutrons with nitrogen” (Paula J. Reimer, “A New Twist in the Radiocarbon Tale,” *Science* 294 [2001]: 2494–5). Carbon in the earth lacks the ¹⁴C isotope. For each 1% of ¹⁴C-deficient carbon in a sample, the measurements for the Late Bronze Age result in dates c. 80 radiocarbon years earlier than the true dates (*ceteris paribus*). See Malcolm H. Wiener, “Cold Fusion: The Uneasy Alliance of History and Science,” in *Tree-Rings, Kings, and Old World Archaeology and Environment: Papers Presented in Honor of Peter Ian Kuniholm*, ed. Sturt W. Manning and Mary Jaye Bruce (Oxford: Oxbow Books, 2009), 283. For the effect of gas emission fields on radiocarbon dates from Italy, see C. Cardellini, G. Chiodini, F. Frondini, S. Giaquinto, S. Caliro and F. Parello, “Input of Deeply Derived Carbon Dioxide in Southern Apennine Regional Aquifers (Italy),” *Geophysical Research Abstracts* 5 (2003), <http://www.cosis.net/abstracts/EGS02/05731/EGS02-A-05731.pdf>; G. Chiodini, C. Cardellini, A. Amato, E. Boschi, S. Caliro, F. Frondini and G. Ventura. “Carbon Dioxide Earth Degassing and Seismogenesis in Central and Southern Italy.” *Journal of Geophysical Research* 31 (2004): L07615; G. Chiodini, F. Frondini, D.M. Kerrick, J. Rogie, F. Parello, L. Peruzzi and A.R. Zanzari, “Quantification of Deep CO₂ Fluxes from Central Italy. Examples of Carbon Balance for Regional Aquifers and of Soil Diffuse Degassing,” *Chemical Geology* 159 (1999): 205–22; A. Minissale, G. Magro, O. Vaselli, C. Verrucchi and I. Perticone, “Geochemistry of Water and Gas Discharges from the Mt. Amiata Silicic Complex and Surrounding Areas (Central Italy),” *Journal of Volcanology and Geothermal Research* 79 (1997): 223–51; John D. Rogie, “Lethal Italian Carbon Dioxide Springs Key to Atmospheric CO₂ Levels,” Penn State Earth and Environmental Systems Institute. News and Events: News Archives (1996), http://www.eesi.psu.edu/news_events/archives/Lethal.shtml; John D. Rogie, Derrill M. Kerrick, Giovanni Chiodini and Francesco Frondini, “Flux Measurements of Nonvolcanic CO₂ Emission from Some Vents in Central Italy,” *Journal of Geophysical Research* 105(B4) (2000): 8435–45; Malcolm H. Wiener “Times Change: The Current State of the Debate in Old World Archaeology,” in *The Synchronisation of Civilizations in the Eastern Mediterranean in the Second Millenium B.C. III:*

Finally, we consider the option of closing the “Horemheb gap” by raising the accession dates of a number of following pharaohs by 11 to 14 years. The reign of Shoshenq I, the first pharaoh of the 22nd Dynasty c. 945–925 BC on the traditional chronology, is regarded as approximately fixed not only by “dead reckoning” but also by the biblical references to the invasion of Shishak in the fifth year of Rehoboam.³⁶ Biblical scholars have proposed dates for the reign of Rehoboam through analysis of the overlapping reigns of the Kings of Judah and Israel preceding Ahab.³⁷ The prominent reign and wealth of Ahab and his role at the Battle of Qarqar in 853 BC are recorded in the Assyrian annals, whose dating is generally accepted as secure.³⁸ An invasion of Judah and Israel is described at length in a massive relief on a wall near a portal of Shoshenq I’s Karnak temple.³⁹ Whether both sources describe the same campaign in Israel by

Proceedings of the SCIEEM 2000–2nd EuroConference, Vienna, 28 May–1 June 2003, ed. Manfred Bietak and Ernst Czerny (Vienna: Österreichische Akademie der Wissenschaften, 2007), 25–47.

³⁶ 1 Kgs 14: 25–26; 2 Chr 12: 2–9.

³⁷ Edwin Thiele, whose publications beginning in the 1950s concerning the chronology of the Divided Monarchy provided a point of departure for all subsequent research, acknowledged the indeterminate and partly conjectural nature of his analysis, which posits an elaborate series of coregencies and a complicated series of variations in calendars leading to the 926/25 BC date for the invasion (Edwin R. Thiele, *The Mysterious Numbers of the Hebrew Kings*, rev. ed. [Grand Rapids, MI: Kregel, 1983], 39–49). Subsequent analogies have proposed slight modifications, placing the fifth year of Rehoboam in 922/21 BC (John H. Hayes and Paul K. Hooker, *A New Chronology for the Kings of Israel and Judah and its Implications for Biblical History and Literature* [Atlanta: Westminster John Knox Press, 1988]) or 918 BC (James M. Miller and John H. Hayes, *A History of Ancient Israel and Judah* [Philadelphia: Westminster, 1986]). A small number of scholars known as biblical ‘minimalists’ has denied all validity for dating purposes to biblical accounts of this period (Frederick H. Cryer, “Chronology: Issues and Problems,” in *Civilizations of the Ancient Near East*, vol. 2, ed. Jack M. Sasson, John Baines, Gary Beckman and Karen S. Rubinson [New York: Charles Scribner’s Sons, 1995]; William H. Barnes, *Studies in the Chronology of the Divided Monarchy of Israel*, Harvard Semitic Monographs 48 [Atlanta: Scholars Press, 1991]; H. Tadmor, “The Chronology of the First Temple Period: A Presentation and Evaluation of the Sources,” in *The Age of the Monarchies: Political History*, ed. Abraham Malamat and Israel Eph’al, World History of the Jewish People 4.1 [Jerusalem: Massada Press, 1979]; Mordechai Cogan, “Chronology: Hebrew Bible,” in *The Anchor Bible Dictionary*, vol. 1, ed. David N. Freedman [New York: Doubleday, 1992], 1007).

³⁸ Thiele, *Mysterious Numbers*, 76; Kitchen, *Third Intermediate Period*, 74–75; contra M. Christine Tetley, *The Reconstructed Chronology of the Divided Kingdom* (Winona Lake, IN: Eisenbrauns, 2005), whose drastic proposal to raise the date of both Rehoboam and Shoshenq I by 40 years seems impossible in terms of Egyptian chronology, whereas her critique of Thiele’s methodology may have merit and allow some upward movement of the Rehoboam date.

³⁹ A monograph by Wilson (Kevin A. Wilson, *The Campaign of Pharaoh Shoshenq I into Palestine*, *Forschungen zum Alten Testament* 9, 2nd series [Tübingen: Mohr Siebeck, 2005]) questions many aspects

Shoshenq, and when in his reign the campaign described in the biblical sources occurred, are questions open to some discussion, but upward movement of 11–14 years in the reign dates of Shoshenq I seems unlikely.⁴⁰

Between Horemheb and Shoshenq I, on the other hand, opportunities clearly are present for adding to reigns. There is independent evidence that the two years previously allotted to Setnakht, the predecessor of Ramses III, must be increased to at least the beginning of a fourth year because of the discovery in 2007 of a stela of the High Priest Bakenkhonsu dated three years and one month into Setnakht's reign.⁴¹ The Third Intermediate Period between 1100 BC and Shoshenq I remains an area of uncertainty, particularly with regard to the late 20th Dynasty and the 21st Dynasty, where an additional 11 years may well be located.⁴²

Closing the "Horemheb gap" by raising subsequent reign dates of course requires moving the dates of Ramses II. His 66-year reign, 1279–1213 BC on the conventional chronology, may initially appear difficult to move given the intensive documentation of

of the account. While exaggeration of the extent and the degree of success achieved is of course always possible, it seems highly unlikely that the account of a major campaign could be wholly or largely fictitious.

⁴⁰ Krauss has proposed that an astronomical observation allows us to date the accession of Shoshenq I to 943 BC instead of 946/45 BC (Rolf Krauss, "Lunar Dates," in *Ancient Egyptian Chronology*, ed. Erik Hornung, Rolf Krauss and David A. Warburton. Handbook of Oriental Studies 83 [Leiden: Brill, 2006]: 411–12; Krauss, "Egyptian Chronology"); Wiener, "Egypt & Time." The Shoshenq question is discussed in detail in Wiener, "A Point in Time."

⁴¹ Thomas Schneider, "Bericht zum Abschluss des Werkvertrages: Detailuntersuchungen zur Chronologie des 2. Jahrtausends v.Chr. Absprache mit Professor Bietak, 1 September 2008–28 Februar 2009," (forthcoming); Mansour Boraik, "Stela of Bakenkhonsu, High Priest of Amun-Re," *Memnonia* 18 (2007): 119–226; Mansour Boraik, "Re-writing Egypt's History: The Stela of Bakenkhonsu," *Ancient Egypt* 9.3 (2008/2009): 24–27; Joe Baker, post on The Ancient Near Eastern Chronology Forum, 13 June 2007, 7:39am, <http://disc.yourwebapps.com/discussion.cgi?id=177754>; article=7295.

⁴² For example, Chris Bennett has observed that "by raising Psusennes II five years on the basis of the Dakhla stela...three more to Ramses XI...one to two more to Siptah/Tawsret...; one more to Seti II by having him die at the end of Year 6 rather than its beginning; and the remaining two to three...somewhere among the uncertain regnal years of the 21st Dynasty" (Bennett, pers. comm. of 29 December 2008, for which I am most grateful). See also Joe Baker, post on The Ancient Near Eastern Chronology Forum, 3 February 2009, 8:19 am, <http://disc.yourwebapps.com/discussion.cgi?disc=177754;article=8992>; Krauss, "Lunar Dates;" Schneider, "Bericht zum Abschluss."

the epoch. The evidence includes correspondence with other rulers and with Egyptian vassals whose approximate dates are independently established via Assyrian and Babylonian chronologies; closely dated visits to Egypt by the Hittite king Hattusili III, and the analysis of astronomical dates, where current opinion somewhat prefers 1279 BC as the accession date, while acknowledging a considerable degree of uncertainty, as noted above. The next higher potential lunar calendar date for the accession of Ramses II is 1290 BC.

Recent developments in Near Eastern chronological studies point toward raising the accession date for Ramses II. The Boese-Wilhelm Assyrian chronology currently in favor points toward raising the accession date of Ramses II from 1279 BC to 1290 BC.⁴³ Alexandre A. Nemirovsky (in a series of six papers published in Russian) has proposed a number of revisions to Near Eastern dates which would require raising the accession date of Ramses II.⁴⁴ Nemirovsky argues (in part and in brief) that the reinterpretation of one critical text in particular (KBo I 10) from the correspondence between Near Eastern rulers indicates that Kadashman-Turgu must have died after Ramses II's 21st year, that Tukulti-Ninurta must have assumed the throne several years after Ramses II's 43rd year, and that accordingly the reign of the Hittite ruler Hattusili III should be moved earlier by

⁴³ Johannes Boese and Gernot Wilhelm, "Aššur-dān I, Ninurta-Apil-Ekur und die mittelassyrische Chronologie," *Wiener Zeitschrift für die Kunde des Morgenlandes* 71 (1979): 19–38.

⁴⁴ See, for example, Alexandre A. Nemirovsky, "Западные владения Касситской Вавилонии в XV–XIV вв. до н.э. и Арамейское (Ахламейское) переселение," *ВЕСТНИК* 1 (1999): 146–63; Alexandre A. Nemirovsky, "Синхронизмы эпохи Хаттусилиса III и "Короткая" Хронология Позднебронзового века," *ВЕСТНИК* 2 (2003): 3–15; Alexandre A. Nemirovsky, " 'Да будет это ведомо богам': EA 43 и политическая история Амарнского времени," *ВЕСТНИК* 4 (2005a): 108–27; Alexandre A. Nemirovsky, " 'Пространные Анналы' Мурсилиса II: текстологическая условность?" *ВЕСТНИК* 1 (2005b): 3–14; Alexandre A. Nemirovsky, "Письмо Хаттусилиса III Кадашман-Эллилю II (KBo I 10) и вопросы ближневосточной хронологии," *ВЕСТНИК* 3 (2007): 3–27; Alexandre A. Nemirovsky, "К истории Хетто-Ассирийских отношений в конце XIII–начале XII в. до н.э.," *ВЕСТНИК* 2 (2008): 3–24.

about a decade. Such a change would take Ramses II up a decade as well.⁴⁵ Joe Baker has also proposed that the accession of Ramses II should be raised to 1290 BC, following Nemirovsky but adding additional arguments favoring an upward shift in the dates of Near Eastern rulers who intersect with Merneptah, Amenmesse and Seti II, the Egyptian pharaohs who succeed Ramses II, which of course would entail raising the dates of Ramses II as well.⁴⁶ Chris Bennett believes that while the lunar observation evidence appears somewhat to favor an accession date for Ramses II of 1279 BC, the textual evidence significantly favors 1290 BC.⁴⁷

⁴⁵ Nemirovsky, “Синхронизмы эпохи Хаттусилиса III;” Nemirovsky, “Письмо Хаттусилиса III.” I am most grateful to Chris Bennett for bringing these references to my attention and for providing Baker’s English translation of one of these articles. Abstracts in English have also been published. The critical passage reads “This paper treats anew the chronological value of KBo 110: 55–75 arguing against some existing views on the matter and stressing that the second «quarrel» between Hatti and Egypt depicted in the named passage (caused by Ramesses II’s refusal to hand back to Hattusili III some foe of the latter, which foe had escaped to Egypt and lived there under Ramesses’ protection; one of the final consequences of this «quarrel» was a diplomatic conflict between Kadashman-Turgu of Babylonia and Ramesses) could have taken place only some time after the Hittite-Egyptian peace treaty of the 21st year of Ramesses II. This fact would imply the 24th year of Ramesses II as the earliest possible date for Kadashman-Turgu’s death. We can learn from KBo 110 that the next Kassite ruler Kadashman-Ellil II after not less than 5 years of his own reign re-established friendly relations with Egypt, but expressed some fear of possible negative reaction of Hattusili III to this diplomatic step. This fear would not have been possible after such a manifestation of closest Hittite-Egyptian friendship as the dynastic marriage between Ramesses II and Hattusili’s daughter in the 34th year of Ramesses. Thus, the 29th year of Ramesses can be accepted as the latest possible date for Kadashman-Ellil’s accession/Kadashman-Turgu’s death. On the other hand, the synchronism between Kashtiliash IV of Babylonia and Tukulti-Ninurta I of Assyria (1233–1197 BC), as well as our present knowledge of the chronological distribution of eponyms of Tukulti-Ninurta I’s reign makes it possible to date Kashtiliash and his predecessors more precisely than it was done before and to set Kadashman-Turgu’s reign in 1281–1264 +5/-4. This date agrees with the date of Kadashman-Turgu’s death between the 24th and the 29th year of Ramesses (inclusively) as long as the «middle» chronology (Ramesses’ reign in 1290–1224 BC) is accepted.”

⁴⁶ Joe Baker, post on The Ancient Near Eastern Chronology Forum, 26 January 2009, 8:15 am, <http://disc.yourwebapps.com/discussion.cgi?disc=177754;article=8940>. It should be noted that while the dates of these reigns may be moved, their duration cannot be lengthened significantly for, as Morris L. Bierbrier, *The Late New Kingdom in Egypt, c. 1300–664 B.C.* (Warminster, UK: Aris & Phillips, 1975), 15, has shown, the documented careers of very long-lived senior officials under these pharaohs cannot reasonably be extended by more than five years.

⁴⁷ Chris Bennett, post on The Ancient Near Eastern Chronology Forum, 3 February 2009, 10:53 am, <http://disc.yourwebapps.com/discussion.cgi?disc=177754;article=8997>; Chris Bennett, pers. comm. of 7 June 2009. Thomas Schneider has also concluded that while all astronomical dates are problematic to some extent, the chronology of the Third Intermediate Period is particularly unsettled. He believes accordingly that raising dates after Horemheb provides the most likely means of filling the 14-year gap (Schneider, “Bericht zum Abschluss”; Schneider, pers. comm. of 9 June 2009). The inherently problematic nature of all astronomical observations stems from a number of factors, including: the uncertainty in many cases of

Further support for a Ramses II accession date of 1290 BC is provided by the recent publication of 80 New Kingdom radiocarbon dates from contexts attributable to specific pharaonic reigns. The radiocarbon year measurement ranges obtained were refined by the incorporation of information regarding the chronological order of pharaonic reigns and their duration where known.⁴⁸ The calibrated calendar dates determined in this manner favor raising the Ramses II accession date to 1290 BC and retaining the 1479 BC accession date of Hatshepsut/Tuthmosis III. Forty-nine measurements of short-lived samples from Hatshepsut/Tuthmosis III contexts provided a calibrated 2-sigma range of 1498–1474 BC, appropriate for an accession date of 1479 BC, but not for 1468 BC as proposed by Krauss and Warburton.⁴⁹ Moreover, the analysis cited employed the conventional 28-year reign for Horemheb, whereas a 14-year reign accompanied by raising the dates of subsequent reigns would bring the calibrated radiocarbon dates into even closer alignment with the revised Egyptian historical chronology proposed in this article to the point that an accession date of 1279 BC for Ramses II would fall outside the two-sigma probability range of radiocarbon dates for his reign.⁵⁰

whether the information recorded represents an observation or instead a prediction or estimate (for example, of when a festival should begin); the latitude of the place of observation; whether the observer was at ground level; whether the lunar crescent or rising of Sothis appeared at ground level or over a temple or geological feature; and the clarity of the atmosphere on a particular day. With regard to the general accuracy of lunar dates, see Chris Bennett, "Egyptian Lunar Dates and Temple Service Months," *BiOr* 65 (2008): 525–54.

⁴⁸ Christopher Bronk Ramsey, Michael W. Dee, Joanne M. Rowland, Thomas F.G. Higham, Stephen A. Harris, Fiona Brock, Anita Quiles, Eva M. Wild, Ezra S. Marcus, Andrew J. Shortland, "Radiocarbon-Based Chronology for Dynastic Egypt," *Science* 328 (2010): 1554–7.

⁴⁹ Bronk Ramsey et al., "Radiocarbon-Based Chronology," 1556; Krauss and Warburton, "Basis for Egyptian Dates."

⁵⁰ M. Dee, a coauthor of the article, as cited in Werner Nahm, post on The Ancient Near Eastern Chronology Forum, 1 March 2011, 5:15am, <http://disc.yourwebapps.com/discussion.cgi?id=177754;article=11122>. Christopher Bronk Ramsey concurs with this assessment (pers. comm. of 20 June 2010, for which I am most grateful).

An additional question relevant to the foregoing discussion as well as the history of the New Kingdom in general is presented by the proposals of Peter Brand and Jürgen von Beckerath to reduce the reign of Seti I from the 15 years allotted by Kitchen to 11 years, given the lack of evidence of any activity after Year 11 at the latest in an otherwise well-documented reign and era. (Cf. the similar arguments with respect to the reigns of Horemheb and Tuthmosis IV). Aston would further reduce the reign of Seti I to nine years in light of the fact that the latest wine docket in his tomb is said to be from Year 8, and the latest inscription of his reign is from Year 9. (The proposal of an 11-year reign rests on an inscription from Gebel Barkal, where the reading of the year is tenuous.)⁵¹ The Year 9 inscription records Seti I opening the Aswan rock quarries which supplied the stone for obelisks and colossal statues. The fact that the Flaminian and Luxor obelisks were only partially finished and/or decorated at the time of Seti I's death and were completed by his son Ramses II has been cited as possible evidence of a reign not extending much beyond part of his ninth year.⁵² On the other hand, Manfred Bietak believes that a reign of longer than 9–11 years is strongly indicated, given that Seti I built a huge tomb with many high quality sculptures and reliefs in the Valley of the Kings and finished a major program in his temple at Abydos, built the mortuary temple in Qurna, the Great Hypostyle Hall in Karnak, and the Wadi Miya temple, rebuilt the Seth temple at Avaris, carried out the construction of the Ramses Town and fortresses along the Horus road, and waged extensive warfare in the Near East, Libya and Nubia.⁵³

⁵¹ I am grateful to Manfred Bietak for calling this question to my attention and to David Aston for providing me with his publications dealing with the question and information regarding the wine dockets in the Tomb of Seti I.

⁵² Peter J. Brand, "The 'Lost' Obelisks and Colossi of Seti I," *JARCE* 34 (1997): 114; von Beckerath, *Die Chronologie des Pharaonischen Ägypten*, 117–8.

⁵³ Manfred Bietak, pers. comm. of 11 January 2011, for which I am most grateful.

As noted above in the discussion of the length of reign of Horemheb, the absence of wine docket after a particular reign year, while certainly significant evidence, is in itself not conclusive. In the case of Seti I, moreover, the wine-docket evidence comes from one tomb rather than two as in the case of Horemheb. More importantly, there is no analog to the strong evidence regarding unlikely length of service/longevity of officials as in the case of Horemheb. All in all, the evidence for reducing the length of reign of Seti I appears substantial, but not as preponderant as the evidence for a shortened reign for Horemheb.

Hittite texts are relevant to the discussion of the reign dates of both Horemheb and Seti I. Joins of a Hittite tablet by Jared Miller reconstruct correspondence between Mursili II and an Egyptian ruler (or possibly Army Commander) called “Arma‘a,” whom Miller reasonably identified as Horemheb. The correspondence is described in Years 7 and 9 of the Annals of Mursili II. The entry for Year 10 reports dramatic consequences at Hattusa while Mursili II is on campaign as a result of an “omen of the sun.” Miller following other scholars proposed the total eclipse of the sun at around noon on June 24, 1312 BC as the likely origin of the “omen,” while also noting the possibility that the omen may have referred to a colorful sunrise or a halo. In accordance with the “currently traditional” chronology which incorporates a 28-year reign for Horemheb and an accession date for Ramses II of 1279 BC, Miller proposed Horemheb reign dates of 1319–1292 BC.⁵⁴

⁵⁴ Jared L. Miller, “Amarna Age Chronology and the Identity of Nibhururiya in the Light of a Newly Reconstructed Hittite Text,” *Altorientalische Forschungen* 34 (2007): 252–93; Jared L. Miller, “Mursili II’s Dictate to Tuppi-Teššub’s Syrian Antagonists,” *KASKAL* 4 (2007): 121–52; Jared L. Miller, “The Rebellion of Hatti’s Syrian Vassals and Egypt’s Meddling in Amurru,” *Studi Micenei ed Egeo-Anatolici* 50 (2008): 533–54; Jared L. Miller, “The Kings of Nuhhašše and Muršili’s *Casus Belli*: Two New Joins to Year 7 of the Annals of Muršili II,” in *Tabularia Hethaeorum: Hethitologische Beiträge Silvin Košak zum*

If, however, we assume 1) a 14-year reign for Horemheb; 2) a 9-year reign for Seti I; 3) an accession date for Ramses II of 1290 BC; and 4) the “omen of the sun” corresponds to the total eclipse of 1312 BC, then the consequences for Egyptian chronology are as follows:

Tutankhamun	1328–1318 BC
Ay	1318–1314 BC
Horemheb	1314–1300 BC ⁵⁵
Ramses I	1300–1299 BC
Seti I	1299–1290 BC

A reign of 15 years for Seti I plus the addition of 3 years elsewhere (together with raising the accession date of Ramses II by 11 years) would also fill the Horemheb gap, whereas a reduction from 15 to 9 years for the reign of Seti I requires the insertion of 9 years (3 in any event, plus the additional 6) between the proposed date for the accession of Hatshepsut/Tuthmosis III in 1479 BC and an accession date for Seti I of 1299 BC. A further reduction or elimination of the conjectural pre-Horemheb coregencies described above, the addition of one or more years to the reign of Ay, and the addition of several

65. *Geburtstag*, eds. D. Groddek and M. Zorman. *Dresdner Beiträge zur Hethitologie* 25 (Wiesbaden: Harrassowitz, 2008), 521–34.

⁵⁵ The references in the *Annals of Mursili II* Years 7 and 9 to 'Arma'a present a puzzle, noted by Miller: there is no reference to 'Arma'a as LUGAL, the normal Hittite designation for a great ruler, and no reference to a throne name such as Egyptian pharaohs assumed upon succession; conversely, there is no precedent for a Hittite ruler to correspond directly with a subordinate. If 1312 BC corresponds to Mursili II Year 10, then Year 9 corresponds to 1313 BC and Year 7 to 1315 BC. On a chronology reflecting a nine-year reign for Seti I and an accession date of 1290 BC for Ramses II, Horemheb would have been pharaoh in Year 9, and may have become pharaoh by the time the *Annals of Year 7* were composed, or already known to be about to become pharaoh. If however the reign of Seti I extended beyond nine years, then the references must be to Horemheb as Commander of the Army, and under Tutankhamun as well as Ay. Gernot Wilhelm (“Muršilis II. Konflikt mit Ägypten und Haremhab's Thronbesteigung,” *Die Welt des Orients* 39 [2009]: 108–16), aware of the wine-docket evidence regarding Horemheb, proposed an accession date for Horemheb of 1314 BC, identical to the date suggested here, but because he adhered to a Ramses II accession date of 1279 BC rather than 1290 BC, required an extension of the reign of Seti I to 18 years (and allotted 2 years to the c. 18-month reign of Ramses I), rather than a reduction of the reign of Seti I to the nine years consistent with the date of 1290 BC for the accession of Ramses II.

years to the reign of Tuthmosis IV, or some combination, offer the most likely opportunities for filling the years required by a shortened reign of Seti I.⁵⁶ (It is perhaps worth noting that a consistent methodology of limiting the length of reigns to documented years encounters difficulties because of astronomical constraints, for if the reign of Seti I is limited to nine years, then it would appear that the reign of Tuthmosis IV must be extended beyond nine years. Of course the documentation for the earlier period is less extensive, both in general and in particular with regard to Near Eastern interconnections.)

⁵⁶ Aston, "Why Texts Alone," discussed in Wiener, "Egypt & Time;" Bryan, *Reign of Thutmose IV*; Bryan, "Eighteenth Dynasty;" von Beckerath, *Die Chronologie des Pharaonischen Ägypten*; Brand, "The 'Lost' Obelisks." I am grateful to Chris Bennett for his observations in this regard.

CHART 2. Reign dates of Egyptian pharaohs following Horemheb, if the reign of Horemheb is reduced to 14 years and the accession dates of Ramses II and succeeding pharaohs of the 19th Dynasty are raised 11 years. The proposed revision would further require the addition of between three and nine years (depending on the length of the reign of Seti I) to reigns preceding Horemheb to reach the astronomically appropriate date of 1479 BC for the accession of Hatshepsut/Tuthmosis III. (Two years have been added to the reign of Setnakht as required by the recently discovered text discussed above.)

Pharaoh	Consensus dates pre-Horemheb adjustment	Revised dates if Ramses II accession date raised by 11 years
HOREMHEB	c. 1323–1295 BC	c. 1320–1306 BC or 1314–1300 BC
Ramses I	1295–1294 BC	1306–1305 BC or 1300–1299 BC
Seti I	1294–1279 BC	1305–1290 BC or 1299–1290 BC
Ramses II	1279–1213 BC	1290–1224 BC
Merneptah	1213–1203 BC	1224–1214 BC
Amenmesses	1203–1200 BC	1214–1211 BC
Seti II	1200–1194 BC	1211–1205 BC
Siptah	1194–1188 BC	1205–1199 BC
Tawosret	1188–1186 BC	1199–1197 BC
Setnakht	1186–1184 BC	1197–1193 BC
Ramses III	1184–1153 BC	1193–1162 BC
Ramses IV	1153–1147 BC	1162–1156 BC
Ramses V	1147–1143 BC	1156–1152 BC
Ramses VI	1143–1136 BC	1152–1143 BC

All in all, on present evidence it seems highly probable that 1) the reign of Horemheb should be reduced to c. 14 years and 2) 11 of the years removed should be added to the beginning dates of reigns of succeeding pharaohs including Ramses II, whose accession date becomes 1290 BC. The proposed revision of Egyptian chronology in turn has major implications for the dating of Near Eastern reigns and for various events including the incursions of the Sea Peoples. Changes in Egyptian chronology affect the chronology and history of Anatolia, the Levant, the Aegean and the Central Mediterranean as well as Egypt.

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