

EGYPTIAN CHRONOLOGY: RAMESSES II THROUGH SHOSHENQ III, WITH ANALYSIS OF THE LUNAR DATES OF THUTMOSES III

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Introduction

The traditional order of Shabaqo and Shebitqo has been questioned recently, implying that Bokchoris was overthrown ca. 712 BC by Shebitqo, rather than by Shabaqo in ca. 721 BC.¹ Bubastide and Dyn. 21 relative chronologies present severe uncertainties. It has been, and is still an open question whether Osorkon II reigned for three or four decades. Furthermore, I revive here the old idea that Herihor ruled Egypt between Ramesses XI and Smendes. By contrast, Ramesside relative chronology appears to be fairly certain, yielding at least 199 y or 200 y+ 303 d and thus more or less 200 or 201 full years for the interval between the accession of Ramesses II and the latest generally accepted attestation of [Ramesses XI] on I Shemu 25 in year 10 [*whm mswt* : corresponding to regnal year 28]. It irritates me that Aidan Dodson opts for replacing the linear succession of Ramesses IX, X and XI by a scheme of overlapping reigns.²

But how does TIP chronology relate to NK chronology, and in particular to 1 Ramesses II as determined by the lunar date in his year 52? Below I try to eliminate some of the uncertainties with the help of lunar dates as implied by Tepi Shemu dates, inductions of Apis bulls, and dates of the Feast of the Valley. A parallel study by Rita Gautschy will appear in JEH under the title “The Tepi Shemu feast: A tool for testing chronologies of Dynasty 21 to 25?” She has sent me her manuscript and asked me to refer to it below.

For the astronomical computations I use Uraniastar 1.1 which computes lunar positions on the basis of Ernest Brown’s lunar theory in the slightly

abridged version of Jean Meeus;³ for the reliability of Uraniastar, see Maria Firneis.⁴ As a control, I employ the more recent program Alcyone Ephemeris 4.3 (<http://www.alcyone.de/ae/documentation/Index.html>) which is based on Steve Moshier’s analytical ephemeris and the lunar ephemeris of Michelle Chapront-Touzé and Jean Chapront, both adjusted to Jet Propulsion Laboratory’s ephemeris DE 404.⁵ These programs allow corrections for Δt (delta t), the difference between Universal Time and Terrestrial Time that results from the slowing of the earth’s rotation.⁶

A list of first and last days of lunar visibility for Egyptian and Babylonian localities has been published online by Rita Gautschy.⁷ There might be occasional differences between Gautschy’s list and what I cite in what follows – namely in such cases where crescent visibility is computationally doubtful. I determine the odds of visibility in doubtful cases by an empirical uncertainty zone,⁸ according to the principle first formulated by Peter J. Huber.⁹ Note also that I occasionally cite a LD 1 which differs by 1 day from what I cited in earlier studies, especially in *Sothis- und Monddaten* (1985). In that publication, I relied upon the astronomical tables of Paul Viktor Neugebauer and the crescent visibility criteria of Carl Schoch which are now slightly outdated.

Late Bubastide chronology

Ptolemy’s Canon combined with Saite relative chronology enabled Egyptologists of the 19th century to establish the absolute chronology of Dyn. 26 barring the question of whether 1 Psamtik I was 663 or 664 BC. Richard A. Parker could

¹ BANYAI 2013, 46–129; for a critique of this thesis see BROEKMAN 2015.

² DODSON 2012, 187.

³ PIETSCHNIG 1992.

⁴ FIRNEIS 2003, 48.

⁵ LANGE 2005.

⁶ For the effect of Δt in the case of Babylonian eclipses listed in Ptolemy’s *Almagest*, see KRAUSS 2014, 32, with literature.

⁷ <http://www.gautschy.ch/~rita/archast/mond/mond.html>

⁸ KRAUSS 2012, 17–22.

⁹ HUBER 1982, 25–27; HUBER 2011, 189.

determine 1 Psamtik = 664 BC on the basis of a lunar date in a document of 12 Amasis.¹⁰ Serapeum stela CSSM No. 192 attests year 26 of Taharqa.¹¹ The induction date of the respective Apis is computable as IV Peret 9 = September 11 in 664 BC corresponding formally to 27 Taharqa, overlapping 1 Psamtik I; the result confirms Parker's date, 690 BC, for 1 Taharqa.¹²

Since, for example, as late as 713 BC Yamani of Ashdod could seek aid from a Pir'u (Pharaoh), the Kushite invasion does not yet seem to have taken place.¹³ Thus Shebitqo as predecessor of Shabaqo seems to have conquered Egypt in 712 BC at the earliest and ruled over Egypt at least until Sargon II's inscription of Tang-i Var,¹⁴ which shows that Shebitqo was in control of Egypt in 706 BC at the latest. Thus Shabaqo's reign would have begun between 706 and 704 BC and lasted 14 full years until Taharqa's accession in 690 BC, his highest attested date being year 15, Payni 11 [II Shemu 11].¹⁵ On the other hand, Kitchen points out that "Shilkanni/So (Osorkon IV) is not yet known to have been called 'Pharaoh' explicitly by either Egyptian or foreign sources. By contrast, in contemporary papyri the Nubian rulers in Egypt are called ... 'Pharaoh' ..."¹⁶ Under these premises the pir'u of 713 could be a Kushite.

If, alternatively, Shabaqo was the predecessor of Shebitqo, he may have invaded Egypt between 712 and 706 BC or possibly earlier. According to Auguste Mariette¹⁷ (with whom Mohamed Ibrahim Aly¹⁸ agrees) the Bokchoris Apis (XXIV.1) and its predecessor (XXII.7) which died in 37 Shoshenq V had been buried in one and the same vault. The latter mentioned another vault where he found a stela dated to 2 Shabaqo and also remains of a cartouche (?) with */// k3w*, indicative of *dd-k3w-r*, the throne name of Shebitqo.¹⁹ Jean Vercoutter misunderstood Mariette, as if the latter had found an inscription dated to Shabaqo's year 2 on a wall of the vault where Bokchoris had buried Apis

XXIV.1 in year 6.²⁰ In combination with the attested reign-length of Shabaqo and the Tang-i Var inscription, Vercoutter's mistake resulted in dating the Kushite invasion in 721 ± 2 BC, corresponding to 2 Shabaqo and 6 Bokchoris.²¹ In spite of the correction there is indeed a chronological connection between the Kushite conquest and Bokchoris via Apis XXIV.1. The latter bull was buried in 6 Bokchoris, the latest year attested for him who reigned, according to Manetho, for 6 years before his defeat. If the Manethonian tradition is correct, then the Kushite conquest would have taken place within a year or so after the death of Apis XXIV.1. Furthermore, Apis XXIV.1 connects Bokchoris and the Bubastide kings via his predecessor Apis XXII.7 which died in 37 Shoshenq V and had been inducted in 12 Shoshenq V. The latter's Apis predecessors – Apis XXII.6 and XXII.4 – determine the relative chronology between 28 Shoshenq III and 12 Shoshenq V.²²

Table 1 Apis bulls, inducted or buried between 28 Shoshenq III and 6 Bokchoris

Apis Mariette numbers	induction	burial	life span
XXIV.1	≥ 37 Shoshenq V	6 Bokchoris	?
XXII.7	12 Shoshenq V IV Peret 4	37 Shoshenq V III Akhet 27	ca. 25 years
XXII.6	≥ 2 Pami	11 Shoshenq V	17 (+ 3 ?)
XXII.4	28 Shoshenq III II Akhet 1	2 Pami	26 years

If Apis XXIV.1 lived the maximum life span of 26 years attested for Apis bulls,²³ then there would be an interval of about 21 undocumented years between 38 Shoshenq V and 1 Bokchoris, provided that Apis XXIV.1 was born and installed soon after the burial of Apis XXII.7 in 37 Shoshenq V.²⁴ At some time between 38 Shoshenq V and the accession of Bokchoris, Tefnakhte took over Mem-

¹⁰ PARKER 1957a, 208–212; see now DONKER VAN HEEL 1995, 93–99.

¹¹ For the objects with CSSM numbers see MALININE 1968.

¹² KRAUSS 2007a, 342–344.

¹³ See PAYRAUDEAU 2014, 10, for a concise presentation of the arguments which date the Kushite invasion in 712 BC.

¹⁴ FRAME 1999, 31–57; KAHN 2001, 1–3.

¹⁵ Block statue BM 24429, cf. LECLANT 1954, 16–18.

¹⁶ KITCHEN 2009, 164.

¹⁷ MARIETTE 1857, 24; 1904, 215.

¹⁸ ALY 1991, 309.

¹⁹ MARIETTE 1857, 26; MARIETTE 1904, 228.

²⁰ VERCOUTTER 1960, 65–67; for the corrected view see ALY 1991, 307–312, also PAYRAUDEAU 2014, 5 and KRAUSS 2005b, 177.

²¹ JANSEN-WINKELN 2006b, 261 n. 189.

²² Apis XXII.6 succeeded immediately on XXII.4; Mariette had Apis XXII.5 in the wrong place.

²³ VERCOUTTER 1958, 342 n. 4.

²⁴ The Serapeum inscriptions do not mention the birth or introduction of Apis XXIV.1 and refer only to the burial.

phis.²⁵ In his regnal year 20 (?) Piye drove a non-royal Tefnakhte out of Memphis;²⁶ whether Tefnakhte could return and when Bokchoris took over Memphis is moot.

Zoologists proved evasive when I enquired about the maximum life span of cattle. My impression was that ageing animals do not die of old age, at least not in the zoological garden of Berlin where I enquired, but rather are put down. For about 20 years and more as the natural life span of *Bos primigenius taurus*, see <http://es.wikipedia.org/wiki/Bos_primigenius_taurus>. The same source cites an extraordinary 49 years as documented-age-at-death of a cow, making it possible that an Apis could have lived more than 26 years. For the unexpected premature death of a formidable bull aged 11 years, see El País, 24 March 2013: “Muere ‘Ratón’, el toro estrella”, <http://sociedad.elpais.com/sociedad/2013/03/24/actualidad/1364149746_913556.html>.

Apis XXII.6 was buried in 11 Shoshenq V (CSSM 26); he was inducted at the earliest in 2 Pami, who ruled between Shoshenq III and V for at least 6 full years.²⁷ Apis XXII.4 died in 2 Pami (CSSM 22); he was inducted on II Akhet 1 in 28 Shoshenq III and lived for 26 years which implies that 1 Pami fell 52 years after the accession of Shoshenq III corresponding to 39 years of Shoshenq III + 13 years of Shoshenq IIIa or IV.²⁸

If $52 + 6 + x + 38 = 96 + x =$ regnal years from 1 Shoshenq III to 38 Shoshenq V are combined with the life span of Apis XXIV.1 which lived at least 5 years under Bokchoris and may have lived for the otherwise attested maximum of 26 years, $(96 + y + x + 5)$ to $(96 + x + y + 21)$ years result for the interval between 1 Shoshenq III and 5 Bokchoris; x refers to years of Pami after year 6 and y to the uncertain interval between the death of Apis XXII.7 and the birth of Apis XXIV.1. Note that intervals of 1, 2, and 3 years without an Apis are attested.²⁹ Under these premises and if reckoned from $713 \text{ BC} \pm 1$ for the death of Apis XXIV.1, then the years $814 \text{ BC} \pm 1 + x + y$ to $835 \text{ BC} \pm 1 + x + y$ result for 1 Shoshenq III.

As I have shown in a revision of Ludwig Borchardt’s “Apis-Inthronisationen bei Vollmond”,³⁰ it follows from Ptolemaic and Saite cases that the induction of Apis bulls took place around full moon or to be more precise on lunar day (LD) 15 ± 3 .³¹ The minimum distance between the inductions of Apis XXII.4 and XXII.7 is about 41.5 years, if 6 full years are assumed for Pami. The exact minimum distance of $41 \text{ y} + 183 \text{ d}$ corresponds to $15148 \text{ d} = 513 \text{ LM} - 1 \text{ d}$ which means that the induction of Apis XXII.7 fell on average one lunar day earlier than the induction of Apis XXII.4. If 9 regnal years are assumed for Pami, then the distance between Apis XXII.4 and *XXII.7 amounts to $16243 \text{ d} = 550 \text{ LM} + 1 \text{ d}$ which would mean that the induction of Apis *XXII.7 fell on average one lunar day later than the induction of Apis XXII.4.

An 11-year reign of Pami is assumed by Jürgen von Beckerath,³² which would result in a distance of $16973 \text{ d} = 574 \text{ LM} + 23 \text{ d}$ between the inductions of Apis XXII.4 and XXII.7. The two events would then not fall within the same narrow interval of lunar days as expected. There are also no coincidences if Pami’s reign length is presumed to have been 7, 8 or 10 years.³³ Under the present circumstances, a reign of Pami exceeding 9 years seems to be no option.³⁴ Table 2 presents the possible induction dates for Apis XXII.4 and XXII.7 with reference to 1 Shoshenq III, considering 6 (XXII.4) or 9 (*XXII.4) years for Pami.

The lunar induction dates for Apis XXII.4 and XXII.7 are connected via Shoshenq III with the lunar feast dates of *Tepi Shemu*. The feast lasted for 5 days; it began on LD 1 of civil I Shemu (Tepi Shemu) or on LD 1 of lunar I Shemu corresponding to lunar month IX (see Excursus 2). In Bubastide sources the feast is explicitly attested by the date Louvre C.258 and implicitly by frag. 7 of the Karnak priestly annals; further feast dates can be inferred from frag. 1b and frag. 2. At closer scrutiny frag. 1b may not be an event of the Tepi Shemu feast; for reasons of reference to earlier literature I retain here frag. 1b, though marked as questiona-

²⁵ For year 38, see BECKERATH 1995, 95.

²⁶ Piye ruled at least until a year 24. A year 30 (or 40) is by no means certain, see KITCHEN 1973, 152 n. 292.

²⁷ Cf. JANSEN-WINKELN 2006b, 245, referring to BICKEL 1998, 31–56.

²⁸ Cf. JANSEN-WINKELN 2006b, 244, citing DODSON 1993.

²⁹ VERCOUTTER 1958, 341f.

³⁰ BORCHARDT 1935, 62–68.

³¹ KRAUSS 2007a, 347f.

³² BECKERATH 1997, 98.

³³ 12 years yield borderline coincidences; 17 years would be okay.

³⁴ But see PAYRAUDEAU 2014, 127 n. 82.

ble. Note that the deletion of frag. 1b would have no consequences for the determination of 1 Shoshenq III (Table 2).

(Louvre C.258) I Shemu 11 in 11 Takeloth II, arrival in Thebes of HP Osorkon *m ḥ3b.f nfr n tpy šmw*; inscription of priest Hori.³⁵

(?) (frag. 1b) I Shemu [1] in 7 Pedubast I: introduction of *jt ntr P3-dj-Jmn*.³⁶

(frag. 2) I Shemu 19 in 8 Pedubast I: introduction of vizier *P3-nty-jw.f-ḥ*.³⁷

(frag. 7) I Shemu 26 in 39 Shoshenq III; *ḥb Jmn*; introduction of a vizier.³⁸

Louvre C.258 refers to the confirmation of an earlier priestly introduction on the day when HP Osorkon arrived at Thebes to take part in the Tepi Shemu feast. According to Ricardo Caminos this was the second time in year 11 of Takeloth II that HP Osorkon came to Thebes; the first time was about four months earlier, when he subdued a rebellion.³⁹

Jean-Marie Kruchten asserts as apparently self-evident that the *ḥb Jmn* of frag. 7 refers to the Tepi Shemu feast.⁴⁰ I adduce the following reasons for the identification. David Aston has coherently argued that Takeloth II and Pedubast I were rivals in Thebes when Shoshenq III ruled in Memphis.⁴¹ The interpretation of Nile Level Record (NLR) no. 24 as 12 [Shoshenq III] = 5 Pedubast I has been argued by Kenneth A. Kitchen and is now generally accepted.⁴² According to Aston year 22 of Shoshenq III must have followed soon on year 24 of Takeloth II or immediately on Takeloth II's year 25, as the latter's highest known year date. Louvre C.258 and frag. 7 coincided approximately with the same lunar day, if their distance is determined as 32 years + 15 days,⁴³ corresponding to 396 average lunar months + 0.9 days; the date of frag. 7 was on average one lunar day later than that of Louvre C.258. Since the latter refers explicitly to the Tepi Shemu feast it follows from the lunar distance that the *ḥb Jmn* of frag. 7 refers to the same feast.

Furthermore, provided that HP Osorkon arrived on time for the Tepi Shemu feast (Louvre C.258), it follows that the date of frag. 7 refers to an early feast day. Under these premises, frag. 2 and also frag. 1b would have fallen on late feast days. Table 2 lists the resulting lunar months (LM) and days (LD) which correspond to the civil dates of Louvre C.258, frgs. 1b, 2 and 7 in the time span between 855 and 813 BC. The time span accommodates the interval $814 \text{ BC} \pm 1 + \times + y$ to $835 \text{ BC} \pm 1 + \times + y$ for 1 Shoshenq III as argued above. The lunar months (Roman numerals) are counted within the civil year, taking I Akhet 1 as the earliest beginning of a lunar month and reckoning a blue month like a regular lunar month.⁴⁴

I accept LDs 30 to 5 as astronomically feasible interval for the Tepi Shemu feast days. The inclusion of LD 30 accounts for the possibility that an old crescent can be missed on this day and LD 1 declared one day early. I also accept an astronomically computed LD 6 as a rather improbable, but not to be excluded possible last day of the Tepi Shemu feast, taking into account that a lunar month could have begun a day late when a lunar month of 29 days is given 30 days by a mistaken guess.⁴⁵

Table 2 implies 852, 841, 830 or 816 BC as astronomically possible solutions for 1 Shoshenq III. In all four cases the lunar correspondences imply that 1 Shoshenq III = 5 Takeloth II and 5 Pedubast I = 12 Shoshenq III. The solutions – 1 Shoshenq III = 841 or 816 BC – are astronomically preferable over 830 BC, and they imply, in the case of Louvre C.258, that an old crescent was missed on a LD 30, so that the lunar month which ended by mistake on the preceding day still had a standard length of 29 days. Furthermore, it is quite possible that HP Osorkon arrived in year 11 of Takeloth II on I Shemu 11 on the eve of the Tepi Shemu feast.⁴⁶ Thus Louvre C.258 may refer not to the first feast day or LD 1, but to the previous day. In the latter case it would be unnecessary to presume an observational mistake on I Shemu 11 being a LD 30.

³⁵ KRUCHTEN 1989, 257–263.

³⁶ KRUCHTEN 1989, 25f.

³⁷ KRUCHTEN 1989, 36–44.

³⁸ KRUCHTEN 1989, 61–80.

³⁹ CAMINOS 1958, 10–42.

⁴⁰ KRUCHTEN 1989, 80.

⁴¹ ASTON 1989, 139ff.

⁴² KITCHEN 1973, §§ 106–107; cf. JANSEN-WINKELN 2006b, 248 n. 103.

⁴³ Implying 5 Takeloth II = 1 Shoshenq III, see KRAUSS 2006a, 409.

⁴⁴ A blue month is defined by a LD 1 on the first as well as on the last day of a 30-day civil month.

⁴⁵ For an estimate of how often this might occur, see KRAUSS 2006a, 401.

⁴⁶ For this possibility, see N.N. on Takeloth II in Wikipedia (accessed 4/4/2015).

Table 2 Alternative years for 1 Shoshenq III, corresponding to years of Tepi Shemu feasts and years of Apis inductions. The possible induction dates of Apis XXII.7 correspond to 6 full years for Pami; the alternative dates for *XXII.7 correspond to 9 full years.

1 Shoshenq III	lunar days (and months) of Tepi Shemu dates				Apis inductions		
	11 Takelot II Louvre C.258	? 7 <i>Petubast I</i> <i>frag. 1b</i>	8 <i>Petubast I</i> frag. 2	39 Shoshenq III frag. 7	XXII.4	XXII.7	*XXII.7
855	29	5	4	29	14	12	14
854	10	16	15	11	24	22	25
853	20	26	25	22	5	3	6
852	IX.1	<i>VIII.7</i>	IX.6	IX.3	15	14	17
851	12	17	16	13	26	25	28
850	23	28	27	24	7	6	9
849	4	9	8	5	18	17	19
848	15	20	19	15	29	28	29
847	26	1	30	26	10	9	10
846	7	12	11	7	20	19	21
845 BC	17	23	22	18	1	29	3
844	27	4	3	29	12	10	14
843	8	14	13	10	22	21	24
842	19	24	23	20	3	3	5
841	VIII.30	<i>VIII.5</i>	IX.4	IX.1	15	14	16
840	11	16	14	12	25	24	26
839	22	27	26	22	7	5	7
838	3	8	8	3	17	16	18
837	14	19	18	14	28	26	29
836	24	30	29	25	9	7	10
835	5	11	10	6	19	18	21
834	15	21	20	17	30	29	2
833	26	2	1	27	11	10	12
832	7	11	12	8	22	21	23
831	18	23	22	19	3	2	4
830	VIII.29	<i>IX.5</i>	IX.4	IX.29	13	12	14
829	10	16	15	10	24	23	24
828	21	26	25	21	5	4	6
827	IX.2	<i>VIII.7</i>	IX.6	IX.3	15	14	17
826	12	18	17	14	26	25	28
825	22	28	27	24	7	6	9
824	4?	9	8	5	18	17	19
823	14	20	18	15	29	28	30
822	26	1	30	26	10	9	11
821	7	12	11	7	21	19	21
820	17	23	22	18	2	30	2
819	28	4	3	29	12	11	13
818	9	14	13	10	23	21	24
817	19	25	24	21	4	2	5
816	VIII.30	<i>VIII.6</i>	IX.5	IX.2	14	13	16
815	10	16	14	12	25	24	26
814	22	27	26	22	6	5	7
813	3	8	7	3	17	16	18

Note that 852 BC is a formal possibility for 1 Shoshenq III, despite LD 6 as lunar correspondence for the civil date of frag. 2. The latter could have been interpreted as a LD 5 by a mistaken guess about the presence of old crescent on I Shemu 14 which would have been a LD 1 follow-

ing on a 29-day lunar month. The same mistake is not feasible if 1 Shoshenq III were 827 BC, since in that case the lunar month that preceded had 30 days.

Table 2 also indicates the lunar days on which the Apis induction dates XXII.4 and

Table 3 Month lengths preceding the dates of Louvre C.258 and frag. 7, provided 1 Shoshenq III = 830 BC.

Louvre C.258		frag. 7	
11 Takelot II, I Shemu 11 : 824 BC	length of lunar month	39 Shoshenq III, I Shemu 26 : 792 BC	length of lunar month
III Peret 13 = LD 1	30 days	III Peret 28 = LD 1	30 days
IV Peret 13 = LD 1	29 days	IV Peret 28 = LD 1	29 days
I Shemu 11 = LD 29		I Shemu 26 = LD 29	
I Shemu 12 = LD 1		I Shemu 27 = LD 1	

XXII.7/*XXII.7 fell in the respective years of Shoshenq III and V. Since the inductions occurred on LDs 15 ± 3 , regardless of whether Pami ruled for full 6 (XXII.7) or full 9 years (*XXII.7), the length of his reign cannot be determined on the basis of the Apis induction dates.

An obstacle in identifying 1 Shoshenq III as 830 BC is that old crescent would have been missed on LDs 29 in the cases of Louvre C.258 and frag. 7, resulting in month lengths of 28 days. Such month lengths would be acceptable if they resulted from mistaken observation at the end of two consecutive 29-day months. Parker and Dubberstein noted the possibility that Mesopotamian new crescent observation may have “resulted now and then in a twenty-eight-day month, when two months of twenty-nine days came together and bad weather conditions resulted in giving thirty days to the first month”.⁴⁷ They cite two Assyrian astrological reports which refer to lunar months of 28 days; in one case the report stated explicitly that “the moon st[ood there] on the 28th day”.⁴⁸ On analogy, Egyptian observers might have mistakenly surmised old crescent on a **LD 30 which actually was a LD 1 of a 29-day lunar month and then counted the last day of a subsequent 29-day month as day 28. Table 3 presents the corresponding data for Louvre C.258 and frag. 7 under the premise that Shoshenq III = 830 BC yielding 11 Takeloth II = 824 BC and 39 Shoshenq III = 792 BC. The situation of two subsequent 29-day months is not the case. Only one of the impeding 28-day lunar months could be removed by assuming that the date of Louvre C.258 refers to the eve of the Tepi Shemu feast. The same solution is not possible in the case of frag. 7 which asserts I Shemu 26 as a day of the Tepi Shemu feast.

The solution 1 Shoshenq III = 830 BC would close the gap of undocumented years between 38 Shoshenq V and 1 Bokchoris, but it would add 11 undocumented years to the interval between Osorkon I and Shoshenq III. By contrast, the solution 1 Shoshenq III = 841 BC adds 11 undocumented years to the interval between Shoshenq V and Bokchoris. Below, I consider 841 as well as 830 BC as possibilities for 1 Shoshenq III, despite the astronomical problems which are inherent in 830 BC; I am also aware that relative chronology barely allows 841 BC as the accession year of Shoshenq III, if the Kushite invasion took place in ca. 712 BC.

Finally, I mention that Gautschy in her study in a forthcoming issue of JEH tests certain alternatives, notably assigning year 12 in NLR 24 not to Shoshenq III, rather than to Takeloth II, and dating priestly introductions during the Tepi Shemu Feast on a specific day, rather than any of the five feast days.

Early Bubastide chronology

Between Shoshenq I and Shoshenq III the reign lengths of the following kings are to be taken into account: Osorkon I – Shoshenq IIa Heqakheperre – Shoshenq IIb Tutkheperre – Shoshenq IIc Makheperre – Takeloth I – Osorkon II. Shoshenq IIa, IIb and IIc for whom only their burials are known will have had very short reigns.⁴⁹ A year 33 is reported on linen along with a year 3 on another piece of linen from the same mummy dated by braces with the name of Osorkon I stamped on a *menat-tab*.⁵⁰ Since “normally, the braces and pendants are the *latest-dated* items on these mummies (unlike some of the bandages), and hence may pro-

⁴⁷ PARKER and DUBBERSTEIN 1942, 4.

⁴⁸ THOMPSON 1900, XLIII; see now HUNGER 1992, 11, 37.

⁴⁹ BROEKMAN 2011, 50, with literature; BROEKMAN 2014, 349–351.

⁵⁰ QUIBELL 1898, 10f.

visionally be taken as evidence for the general date of burial,”⁵¹ the interment can be dated to the time of Osorkon I or shortly thereafter. Under this premise it is generally assumed that year 33 refers to the reign of Osorkon I. The Manethonian tradition preserves 15 years for Osorkon I which Kitchen has tentatively understood as a corruption from 35 years.⁵²

The reign lengths of Osorkon II and Takeloth I present severe problems. Takeloth I's reign is poorly attested. Taking up a line of reasoning by Hermann Kees and others,⁵³ Gerard P. F. Broekman argues that NLR nos. 16–21 date to the reign of Takeloth I.⁵⁴ The texts form a cluster insofar as they cite the officiating HP of Amun and regnal years though without the name of a king. Three texts name HP Iuwelot, a son of Osorkon I; one of his texts preserves a regnal year 5. Kitchen points out that “according to the so-called *stèle de l'apanage*, Iuwelot was but a youth in Year 10 of his father Osorkon I. Hence, the Year 5 in which he was high priest cannot well be that of Osorkon I, but must belong to a successor: Takeloth I ...”.⁵⁵ The other three texts name HP Smendes III who is also inferred to be a son of Osorkon I;⁵⁶ his texts preserve regnal years 8 and 13 or 14.⁵⁷ Under these premises it is highly probable that the king to whose regnal years Iuwelot and Smendes III refer is their brother Takeloth I. Broekman concludes that Takeloth I probably ruled for 13 years; he points out that the Manethonian tradition as preserved in Africanus attributes 13 years to a Takelothis as successor of Sesonchis (Shoshenq I), Osorthon (Osorkon I) and “three others”; Eusebius omits the repetition of “three others”. Since the “three others” may well correspond to Shoshenq Iia-c, the identification of “Takelothis” with Takeloth I is quite acceptable.

It is generally assumed that Osorkon II was the predecessor of Shoshenq III,⁵⁸ at least as ruler of Memphis. The Serapeum stela CSSM 18 attests year 23 for Osorkon (II) Meriamun Si-Bast on the occasion of an Apis burial. Broekman attributes NLR no. 14 which is dated to year 29 of “User-

mare-setepenamun” to Osorkon II on the basis of the orthography of the word *h^cpj*.⁵⁹ Furthermore, Kitchen takes up the suggestion that year 22 (10+10+2) as date of the *sed*-festival of Osorkon II in Bubastis is a slip for year 30 (10+10+10), the normal year for a *sed*-festival and he presumes a total of 31 years.⁶⁰ On the other hand, Aston has argued on genealogical grounds that Osorkon II may have reigned for 40–45 years.⁶¹ In a critical review of Aston's arguments Jansen-Winkeln concludes that “it is not too bold to suggest a reign of at least 30–40 years for Osorkon II”.⁶² He points to the fact “that it is precisely from the reign of Osorkon II that we have so many more monuments, both royal and private: far more than from the eras of Shoshenq I, Osorkon I and Shoshenq III who are otherwise the best documented of the TIP”.⁶³ The induction of an Apis in 28 Shoshenq III implies that its predecessor was inducted around year 3 of Shoshenq III at the latest. If an Apis bull intervened between 23 Osorkon II and ca. 3 Shoshenq III and lived for the maximum span of 26 years, a maximum of ca. 45 years would follow for Osorkon II. For the astronomical possibilities of 31 or 42 regnal years of Osorkon II see Excursus 2.

Table 4 presents the chronological consequences up to 1 Shoshenq I, if 1 Shoshenq III is either 830 or 841 BC and if Osorkon II ruled for ca. 30 or 40 years, Takeloth I for 13 years, Shoshenq a–c together ca. 1 year and Osorkon I ca. 35 years.

Provided that 1 Shoshenq III is 830 BC and that Osorkon II ruled ca. 30 years, the latest resulting possibility for 1 Shoshenq I is ~930 BC. If 1 Shoshenq III = 841 BC and if Osorkon II ruled for ca. 40 years, then the earliest resulting possibility for 1 Shoshenq I is ~951. The possibilities result in ~951/940 BC to ~941/930 BC, corresponding to ca. 940 BC ± 10 years which includes the traditional 945 BC for 1 Shoshenq I.

Chronology of late Dyn. 21

As recognized by Eric Young,⁶⁴ frag. 3a of the priestly annals mentions the introduction of a

⁵¹ KITCHEN 1973, § 11 n. 57.

⁵² KITCHEN 1973, § 89.

⁵³ KEES 1964, 195f; BECKERATH 1966, 46 n. 22; KITCHEN 1973, §§ 95–96.

⁵⁴ BROEKMAN 2011, 49f.

⁵⁵ KITCHEN 1973, § 96.

⁵⁶ KITCHEN 1973, § 157.

⁵⁷ BECKERATH 1966, 48.

⁵⁸ JANSEN-WINKELN 2006b, 243.

⁵⁹ BROEKMAN 2002, 174f.

⁶⁰ KITCHEN 2006, 301; cf. BECKERATH 1994, 50 n. 289 with older literature.

⁶¹ ASTON 1989, 145–148.

⁶² JANSEN-WINKELN 2006b, 241.

⁶³ JANSEN-WINKELN 2006b, 241.

⁶⁴ YOUNG 1963, 99–101.

Table 4 Alternative first regnal years from Shoshenq I to Shoshenq III

1 Shoshenq III	(830) 841BC		(830) 841 BC	
1 Osorkon II	(~860) ~871	~30 years	(~870) ~881	~40 years
1 Takeloth I	(~873) ~884	13	(~883) ~894	13
Shoshenq IIc	–	–	–	–
Shoshenq IIb	(~874) ~885	~1	(~884) ~895	~1
Shoshenq IIa	–	–	–	–
1 Osorkon I	(~909) ~920	~35	(~919) ~930	~35
1 Shoshenq I	(~930) ~941	21	(~940) ~951	21

priest in 2 Osorkon the Elder; the son of the respective priest was introduced in 17 Siamun according to frag. 3b:

frag. 3a: introduction in 2 Osorkon the Elder on I Shemu 20.

frag. 3b: introduction in 17 Siamun on I Shemu [1];

If it is accepted that Osorkon the Elder ruled for 6 years as listed in Manetho,⁶⁵ then Young's identification of frag. 3a results in genealogically acceptable 21 years as the interval between the introductions. Furthermore it is possible to interpret the dates of frags. 3a & 3b as lunar Tepi Shemu dates, i.e. as LDs 1 to 5 and compute the corresponding possibilities in absolute chronology.⁶⁶

Recently Frédéric Payraudeau discovered a fragment (code: P) of the Karnak priestly annals which documents introductions of priests in three successive generations from Siamun to Osorkon I and simultaneously confirms the existence of Psusennes II:⁶⁷

introduction of Nesamun in year [///] Siamun on I Prt [///];

introduction of Nesanchefenmaat, son of Nesamun, in year 11 Psusennes II on I Shemu 13;

introduction of Hor, son of Nesanchefenmaat, in year 3 Osorkon I on II Akhet 14.

Payraudeau presumes that the introductions refer to eldest sons respectively and that at most 25 years elapsed between successive introductions. If so, it becomes quite improbable that Psusennes II ruled for more than the 13 years which can be attributed to him with probability. Kitchen cites "year 13 in Karnak priestly annals No. 3B line 6, *later than Siamun*, and hence *only* attributable to the next king, i.e. (Hor-) Psusennes II."⁶⁸ Since Shoshenq I apparently ruled for 21 years, as attest-

ed on the Silsile stela and also listed by Manetho, there would be about 25 years between the introductions of Nesanchefenmaat and his son Hor.

Note that in an earlier publication, I attributed 24 years to Psusennes II, suggesting that regnal year 19 of "Pharaoh Psusennes" which is cited in the text of the larger Dakhleh stela refers to Psusennes II.⁶⁹ Payraudeau argues that the introduction of a father and son in 11 Psusennes II and 3 Osorkon I implies 13 regnal years for Psusennes II. I accept his argument and the resulting attribution of the respective year 19 to Psusennes I.

Payraudeau interprets the introduction date "year 11 Psusennes II on I Shemu 13" of frag. P as LD 1 to 5 of the Tepi Shemu feast and combines it with the dates of frag. 3a and 3b as LDs 1 to 5.⁷⁰ Table 5 presents the possibilities which can be characterized by 954, 943 or 929 BC as alternative accession years of Shoshenq I. Under the premise that 1 Shoshenq I \approx 945 BC, Payraudeau decided in favor of Shoshenq I: 943–922 BC, Psusennes II : 956–943 BC, Siamun : 975–956 BC and Osorkon the Elder : 980–975 BC. Accordingly, Siamun ruled for 19 years, which corresponds to the general assumption that Manetho's 'Psinaches', the predecessor of Psusennes [II], refers to Siamun and also that the 9 years of Psinaches are to be emended in 19 years for Siamun.⁷¹

In the following, I reckon with the possibilities 1 Shoshenq I: 954, 943 or 929 BC. Let me remind the reader that these are the same astronomically computed possibilities which I based on the *wereh*-feast date of the larger Dakhla stela.⁷² My argument still holds good, but besides attributing the larger Dakhla stela to Shoshenq I, I now see the small possibility that its *wereh*-date refers to the reign of Shoshenq III (see Excursus 3). Under

⁶⁵ Cf. KITCHEN 1973, § 4, § 11 n. 55.

⁶⁶ KRAUSS 2006a, 408–411.

⁶⁷ PAYRAUDEAU 2008, 293–308.

⁶⁸ KITCHEN 1973, § 391, and, slightly different, KITCHEN 2009, 191.

⁶⁹ KRAUSS 2005a, 44; KRAUSS 2006a, 412.

⁷⁰ PAYRAUDEAU entrusted to me the honorable task of computing the lunar dates of frag. P.

⁷¹ Cf. KITCHEN 1973, § 31.

⁷² KRAUSS 2006a, 411–412.

Table 5 Alternative years BC for 1 Shoshenq I and corresponding years of Tepi Shemu feasts of Osorkon the Elder, Siamun, and Psusennes II.

1 Osorkon Elder	Lunar month and day of Tepi Shemu dates			1 Shoshenq I
	2 Osorkon frag. 3a	17 Siamun frag. 3b	11 Psusennes II frag. P	
991 BC	IX.5	IX.2	IX.5	954 BC
990	15	12	15	
989	26	23	26	
988	7	4	7	
987	17	15	17	
986	28	26	28	
985	9	7	9	
984	20	17	20	
983	1	28	1	
982	12	9	12	
981	22	19	23	
980	IX.3	VIII.30	IX.4	943
979	14	11	14	
978	24	22	24	
977	5	4 (3?)	5	
976	16	14	16	
975	27	25	27	
974	8	5	8	
973	19	16	19	
972	30	26	30	
971	11	8	11	
970	21	18	21	
969	2	29	2	
968	12	11	12	
967	23	21	23	
966	IX.4	IX.2	IX.4	929

these premises I use the *weresh* date as most probably referring to Shoshenq I.

Dates of the ‘Inscription historique’

Of further use for establishing the chronology of Dyn. 21 is the inscription of Djehutymose, a steward and granary archivist at Karnak Temple. The text was first published by Edouard Naville as ‘Inscription historique de Pinodjem III’ and recently presented by Kruchten.⁷³ It reports a series of oracles between regnal years 2 and 5 of a king whose name is not preserved, but who can be identified as Amenemope, Osorkon the Elder, or Siamun. These three possibilities result from the fact that Pinudjem II who acted as HP in the oracle sessions from year 2 to 5 is attested under Amene-

mope and until he died in 10 Siamun. Kruchten left the attribution open:⁷⁴

“Faute d’éléments déterminants, le relief et le texte gravé à l’initiative de Djéhoutymose sont, en général, attribués au règne de Siamon, probablement parce que des trois pharaons précités, Siamon est le plus souvent mentionné dans la documentation thébaine (n. 5: KITCHEN 1973, § 233). Mais rien n’exclut, à mon sens, qu’il ne soit plutôt du règne d’Osochor ou d’Amenemopé.”

Kruchten could determine the date of the first oracle of the Djehutymose inscription as IV Akhet 23 in year 2 being 65 days after the beginning of the Opet feast;⁷⁵ the latter began on the fixed date II Akhet 19.⁷⁶ According to Kruchten, “la fête d’Opet de l’année susdite (*rnpt tn*)”⁷⁷ fell also in regnal year 2. But note that the copy of the text has

⁷³ KRUCHTEN 1986.

⁷⁴ KRUCHTEN 1986, 323.

⁷⁵ KRUCHTEN 1986, 71f; cf. JANSEN-WINKELN 1990, 243; RÖMER 1994, 245 n. 390.

⁷⁶ SCHOTT 1950, 107.

⁷⁷ KRUCHTEN 1986, 71f, 311.

Table 6 Trial attribution of oracle 6 to year 3 of Osorkon the Elder

3 Osorkon the Elder	Lunar months and days of Tepi Shemu feast dates				1 Shoshenq I
	oracle 6	frag. 3a	Frag. 3b	frag. P	
1014 BC	IX.5	IX.5	IX.1	IX.5	979 BC
989	IX.5 or 6	IX.5	IX.2	IX.5 or 4	954
965	IX.5	IX.4	IX.2	IX.4	929

“this calendar year (*rnpt tn*)”, not “regnal year (*rnpt zp/h3t zp*)”. If I am not mistaken, the Djehutymose inscription presents “*rnpt zp/h3t zp*” in all the oracles dates preserved.⁷⁸ Thus it is possible that the regnal year count did change during the 65 days after the Opet feast, or it may have occurred before or after those 65 days.

In the case of oracle 3 on /// Shemu day 2 in year 2, Kruchten presumed that it could refer to LD 1 in II Shemu on which lunar day the Feast of the Valley began.⁷⁹ On the other hand, he definitely identifies year 3, I Shemu 10, the date of oracle 6, as the last day of the *Tepi Shemu* feast.⁸⁰ “La fête en question est facile à identifier: la seule festivité liée à Amon qui à ce moment de l’année s’étendait sur plus d’une journée et qui à ce titre comportait un jour de ‘rentrée du dieu (*s^cq-ntr*)’ était ‘sa première fête du premier (mois) de shemou.’” He notes that the *Tepi Shemu* feast lasted from LD 1 to LD 5. Thus year 3, I Shemu 10, as date of oracle 6, implies that I Shemu 6 was LD 1. If so, LD 1 of the Feast of the Valley would have fallen in the preceding year approximately on II Shemu 17, quite distant from /// Shemu 2 as date of oracle 3. In other words, oracle 3 does not refer to the Feast of the Valley.

The day number ‘10’ of oracle 6 was copied by Naville; today no legible traces remain. The writing of 5+5 digits one above the other is unusual, though not without parallel, as Kruchten noted. Since the date I Shemu 10 is unfavorable in the calendars of lucky and unlucky days whereas I Shemu 9 or 8 are favorable, Kruchten presumes that Naville’s reading is incorrect, and that he may have copied one or two digits more than actually present. Here I definitely do not follow Kruchten, since there are no indications that the calendars of lucky and unlucky days were of any practical importance. As far as I am aware, Rosemarie Drenkhahn’s study is the only one on this subject; she came to the conclusion that “ein intensiver

Gebrauch von Tagewählerei an Hand der Kalenderlisten ist weder im Bereich des Königiums noch im Alltag durch die datierten Inschriften nachweisbar”.⁸¹ Thus I presume that I Shemu 10 in Djehutymose oracle 6 was indeed a LD 5 and that the respective LD 1 was I Shemu 6.

There were only two astronomical possibilities between 1000 and 950 BC for I Shemu 10 being a LD 5, namely 989 (Jan 2) and 965 BC (Dec 26); the next possibility earlier than 989 BC (Jan 2) would have been 1014 BC which is too early for 3 Amenemope in any chronology. While the astronomical situation is clear in 965 BC, there is a slight problem in 989 BC insofar as it cannot be decided whether LD 1 fell on I Shemu 5 or 6, since at sunrise the crescent stood in the uncertainty zone and might have been sighted or not.⁸²

Oracle 6 cannot be attributed to 3 [Siamun], since counting backwards from frag. 3b (17 Siamun) or frag. P (11 Psusennes II) does not yield a LD 1 near I Shemu 6. Oracle 6 appears to be attributable to Osorkon the Elder and Amenemope as well, as shown in the trial tables that follow; the corresponding possibilities for 1 Shoshenq I are added for orientation.

Table 6 presents the chronological implications if oracle 6 is dated to 3 Osorkon the Elder. Provided that his *Tepi Shemu* date of year 2 (frag. 3a) is a late day of the *Tepi Shemu* feast, then I Shemu 6 in the following year is also a late feast day, whether the Djehutymose inscription is dated to the time of Osorkon the Elder or not.

The astronomical possibility 3 Osorkon the Elder = 1014 BC is chronologically out of the question, since it implies 1 Shoshenq I = 979 BC which is too far outside of 1 Shoshenq I = ca. 940 ± 10 years. If 3 Osorkon the Elder overlapped 989 or 965 BC, then 1 Shoshenq I corresponded to 954 or 929 BC which is just compatible with ca. 940 ± 10 years for 1 Shoshenq I.

⁷⁸ KRUCHTEN 1986, 29f.

⁷⁹ KRUCHTEN 1986, 317f.

⁸⁰ KRUCHTEN 1986, (237, 321), 246.

⁸¹ DRENKHAHN 1972, 94.

⁸² For the general situation cf. KRAUSS 2012, 18; for a similar specific situation see Fig. 1 below (on -1454/2/17).

Table 7 Trial attribution of oracle 6 to year 3 of Amenemope

3 Amenemope	Lunar months and days of Tepi Shemu feast dates				1 Shoshenq I
	oracle 6	frag. 3a	frag. 3b	frag. P	
1014 BC	IX.5	IX.3	IX.1	IX.4	968 BC
989	IX.5 or 6	IX.3	VIII.30	IX.4	943
965	IX.5	IX.4	VIII.29	IX.4	918

Table 7 presents the chronological implications if oracle 6 is dated to 3 Amenemope. The astronomical possibilities of 3 Amenemope overlapping 1014 or 965 BC and corresponding to 1 Shoshenq I falling in 968 or 918 BC, are at odds with 1 Shoshenq I = ca. 940 ± 10 years. By contrast, 3 Amenemope = 989 BC is compatible with ca. 940 ± 10 years for Shoshenq I. If 3 Amenemope = 989 BC, then I Shemu [1], the date of frag. 3b, was a LD 30 in 959 BC = 17 Siamun. It is possible that old crescent was missed on I Shemu [1] and the day mistakenly reckoned as LD 1.

If oracle 6 is attributed to Amenemope it follows from the distance to frag. 3a (2 Osorkon) that he would have had a reign of 10 years. According to Kitchen regnal year 10 of Amenemope might be attested on linen from mummy 124, although “this may just possibly be Year 10 of Siamun.”⁸³ The 9 years which Manetho listed for Amenophthis can be understood as 9 full years and × months. Thus a 10-year reign of Amenemope is quite possible.

Chronology of early Dyn. 21

George Daressy reported “Amenemope year 49” as bandage epigraph on a piece of *linges tombés*.⁸⁴ The reconstructions which are accepted nowadays are: “[year × of king] Amenemope; year 49 [of king Psusennes I]” or “[year × of king] Amenemope; year 49 [of HP Menkheperre]”.⁸⁵

If “[year × of king] Amenemope; year 49 [of king Psusennes I]” is reconstructed, then the possibilities for year × of Amenemope are determined by the attestations for HP Smendes II. The latter donated two pairs of bracelets to the burial of Psusennes I in Tanis and was thus in office at the beginning of the new king’s reign.⁸⁶ Furthermore,

HP Smendes II and king Amenemope are attested on pendants and braces from mummy 135 (second find of Deir el-Bahri).⁸⁷ Since no further documents with the name of HP Smendes II are known, a short tenure of office is evident, and HP Pinudjem II will have succeeded him early in the reign of Amenemope who appears to be the successor of Psusennes I.⁸⁸

If the Djehutymose inscription is attributed to Amenemope, then Pinudjem II was in office on IV Akhet 23 (oracle 1) in 2 Amenemope, and HP Smendes II will have died shortly before in year 1, if not early in 2 Amenemope. Since HP Smendes II donated objects for the burial of Psusennes I, the king must have predeceased the HP. If so, the last year of Psusennes I would have overlapped 1 Amenemope or the beginning of 2 Amenemope, be it within the frame of a coregency or in some other unknown way.⁸⁹

Africanus and Eusebius both have 40+x years for Psusennes [I]; therefore it is probable that year 49 of Daressy’s bandage epigraph would have been the last year of [Psusennes I],⁹⁰ corresponding in relative chronology to 1 or perhaps 2 Amenemope. If the 4 years which Manetho lists for Amenemnisut be accepted, together with the 26 years for Smendes, then Dyn. 21 would have begun about 78 years (= 26 + 4 + 48 y) before 1 Amenemope or in 1070/69 BC, provided that 3 Amenemope, I Shemu 10 = January 2, 989 BC corresponds in absolute chronology to the date of Djehutymose oracle 6. Note that this outcome is more or less identical with 1069 BC for 1 Smendes, which Kitchen proposes by adding 124 years for Dyn. 21 to 945 BC as 1 Shoshenq I.⁹¹

If, by contrast, oracle 6 is attributed to 3 Osorkon the Elder; “[year × of king] Amenemope;

⁸³ KITCHEN 1973, § 388.

⁸⁴ DARESSY 1896, 78.

⁸⁵ Cf. LULL 2006, 220–223, for an overview with commentary; more recent are remarks by DODSON 2012, 68.

⁸⁶ MONTET 1951, 149: nos. 598–601. For a discussion of the bracelets see KITCHEN 1973, § 30 (III) and LULL 2006, 248.

⁸⁷ DARESSY 1907, 35.

⁸⁸ KITCHEN 1973, § 25.

⁸⁹ For an overview of suggestions and possibilities see LULL 2006, 218–223.

⁹⁰ There are other attestations of a regnal year 49, presumably of Dyn. 21, cf. LULL 2006, 222f.

⁹¹ KITCHEN 2009, 191; the text has the slip 114 instead of 124 years for the length of Dyn. 21.

year 49 [of king Psusennes I]” may imply that year 1 Amenemope began during year 49 of Psusennes I without an overlap. Note that there is no connection between “Amenemope” and “regnal year 49” by for example *nty* or *hft*. Under these premises, the beginning of Dyn. 21 would have been in ca. 1080 BC (see also Excursus 4).

It is evident from the stela of banishment that HP Menkheperre did not count the years of his pontificate at first.⁹² He might have begun a year count sometime after the return of the banished which would account for the bandage epigraph “year 48 *n* HP Menkheperre” from mummy 105 (second find of Deir el-Bahri).⁹³ If such a count referred to the installment as HP, year 48 would include about 2 years under Smendes, 4 years under Amenemnisut and 42 years under Psusennes II. According to Beckerath, the length of Menkheperre’s life “scheint nun durch das Auftreten von Geschenken des Hohenpriesters Esbenede (Smendes), Sohn des Mencheperre, im Sarg Psusennes’ I. eindeutig entschieden: Mencheperre muss bereits vor diesem König gestorben sein ...”⁹⁴ Still, Psusennes I may have died in his regnal year 49 shortly before HP Menkheperre died, enabling Smendes II to become next HP and to donate bracelets for the burial of Psusennes I, dying himself very soon thereafter. Such a scenario does not allow for the reconstruction “[year × of king] Amenemope; year 49 [of HP Menkheperre]”.⁹⁵

A way out is a shared pontificate of HP Menkheperre and HP Smendes II as suggested by José Lull who argues that Menkheperre abdicated as HP in favor of his son Smendes II, after assuming a kingly role, finally dying under Amenemope.⁹⁶ He bases his argument on mummy braces depicting HP Menkheperre, which were made by HP Pinudjem II and used for mummy 113 from Bab el-Gasus in the time of Amenemope.⁹⁷ The braces possibly indicate, but do not prove, that HP Menkheperre was alive when HP Pinudjem II had them made; their purpose might have been to commemorate the deceased, but still highly revered HP Menkheperre.

⁹² For the Stela of Banishment see Excursus 4.

⁹³ DARESSY 1907, 30; LULL 2006, 221–223.

⁹⁴ BECKERATH 1968, 29.

⁹⁵ JANSEN-WINKELN 2006a, 231.

⁹⁶ LULL 2006, 250.

⁹⁷ LULL 2006, 252f

⁹⁸ JANSEN-WINKELN 1992, 22–37.

⁹⁹ EGBERTS 1998, 93 n. 4 and 5; JANSEN-WINKELN 2006a, 226 n. 47.

Transition from Dyn. 20 to 21

The traditional view that at the end of Dynasty 20 HP Payankh succeeded HP Herihor is no longer tenable. Jansen-Winkeln argues consistently in favor of HP Herihor as successor of HP Payankh.⁹⁸ A number of Egyptologists have accepted the revision, while others continue to oppose it.⁹⁹ Recently, Lull has approvingly discussed Jansen-Winkeln’s reasoning.¹⁰⁰

The revision calls into question the chronological relationship of Herihor to Smendes and Pinudjem I. There are attestations of Herihor once in a year 5 and twice in a year 6. The year 5 date, IV Shemu 16, is the day Wenamun departed Thebes at HP Herihor’s order.¹⁰¹ He came to Tanis “in (the area) where Smendes and Tentamun are”,¹⁰² both described as *n3 snntjw-t3 j.dj Jmn n p3 mht n p3jj.f t3* (II, 35).¹⁰³ Actually, the Wenamun-report leaves it open in whose “*rnpt-zp/h3t-zp 5*” Wenamun departed Thebes for Tanis.

Wenamun had orders to bring cedar wood from Syria for the construction of a new Userhat bark. A well-known text in the Theban temple of Khonsu asserts that Herihor carried out the construction of a new bark. There might not have been enough time for construction work by Herihor, since Wenamun spent at least two years in the Levant before eventually returning to Thebes. Herihor is last documented in a year 6, but perhaps also in a year 7 (see below). Lull suggests solving the chronological problem by interpreting the respective texts as anticipatory.¹⁰⁴ “Es posible que las escenas representadas en relación a la Userhet se adelantasen a los acontecimientos.”

The point is that Herihor uses royal titles in his inscriptions concerning the Userhat bark. The inscriptions may date soon after Wenamun’s departure, or perhaps after his return, or they may date before Wenamun’s departure, if they are anticipatory. There is also the possibility that Wenamun’s report and Herihor’s respective inscriptions as well are literary fictions.¹⁰⁵

¹⁰⁰ LULL 2006, 111–115.

¹⁰¹ GARDINER 1932, 61,1; 62,8.

¹⁰² EGBERTS 1998, 99.

¹⁰³ EGBERTS 1998, 101; LULL 2006, 134f, both with literature.

¹⁰⁴ LULL 2006, 115.

¹⁰⁵ For the literary analysis of “Wenamun”, see for example SCHIPPER 2005, 223–330.

Herihor's texts of year 6 refer to the renewal of burials:

year 6, II Akhet 7: HP Herihor commanded to renew the burial of Sety I; hieratic docket on coffin of Sety I.¹⁰⁶

year 6, III [Akhet? Peret?] 15: HP Herihor commanded to renew the burial of Ramesses II; hieratic docket on coffin of Ramesses II.¹⁰⁷

Maspero read and reproduced in his facsimile "III Peret 15", stating that the docket "a été effacée à l'éponge, puis surchargée. Le début en est encore visible en partie, et nous donne heureusement la date du procès-verbal." Daressy read and transcribed "III Akhet 15", commenting that Herihor's text "a été lavé, si bien qu'il est impossible de le rétablir en son entier et que je n'en donne la transcription que sous toutes réserves".

The problem cannot be solved by simply preferring Maspero's reading over Daressy's.¹⁰⁸ The point is that the docket has been washed off, and the traces remaining are indistinct. The coffin was shown in Paris on the occasion of the Ramesses II exhibition in 1976. The entry in the catalogue describes the washed off text as "presque illisible".¹⁰⁹ At that time, apparently no attempt was made to read what remained with the aid of UV light or to make infrared photos.

A year 7 might be added to Herihor's dossier. Within the layers of Sety I's mummy bandages, Maspero found a *toile* with the epigraph "year 7, II Peret 16: day of burying Sety I, l.p.h." In lower layers were "deux lambeaux de bandelettes" with epigraphs identifying the shreds as linen strips made by HP Pinudjem I in year 10 and by HP Menkheperre in year 6.¹¹⁰ Maspero concluded that the mummy was restored in year 7 which followed year 6 of Menkheperre's linen. As far as I can tell Maspero's conclusion has been generally accepted,¹¹¹ regardless of its implication that the re-burial would have taken place 25 years or more after Herihor commanded it. The mummy of Sety I was brought from his own tomb to the Inhapi cache in 10 Siamun.¹¹² The mummy might have been re-

wrapped in connection with the transfer, and linen might have been used from the re-burial at the time of Herihor, together with other old linen from year 10, time of Pinudjem I, and year 6, time of Menkheperre. If so, it is possible that Herihor's command was carried out within months and that year 7 is the year subsequent to year 6 of Herihor's command.¹¹³

But if a year 7 of Herihor be not accepted, then the dates which name Herihor and Pinudjem I could indicate that Herihor was active until a year 6 and that Pinudjem I succeeded him as HP in the same year 6 in which two of his dockets are attested:

Year 6, III Peret 7; HP Pinudjem I ordered to renew burial of Thutmose II;

Year 6, IV Peret 7: HP Pinudjem I ordered to renew burial of Amenhotep I.

If year 6 in the dockets of Herihor and Pinudjem I refers to the same regnal year 6 of [Smendes], then there would be an overlap, since Herihor would have been active in year 6, III Peret 15 (Maspero's reading) and Pinudjem I earlier in year 6, III Peret 7. There would be no overlap if Herihor's date is read with Daressy as III Akhet 15. Jansen-Winkel points out that Herihor and Pinudjem I may have had their own year counts independent of the regnal years of Smendes.¹¹⁴

The overlap could be eliminated by any year of Pinudjem I earlier than year 6. Such a date seems to be present on a mummy bandage of Nodjmet, the wife of Herihor.¹¹⁵ Maspero did not unwrap the mummy of Nodjmet completely.¹¹⁶ When Grafton Elliot Smith later examined the mummy he reported "on the sole of each foot there was a bandage bearing an inscription in hieroglyphics. That on the left foot simply read "High Priestess [sic] of Amun"; and that on the right foot contained a reference to "the first year of Pinotmou".¹¹⁷ Presumably, the one on the left read "High Priest of Amun",¹¹⁸ while the "first year of Pinotmou" on the right presumably referred to an anonymous "regnal year 1" in which HP Pinudjem I had the linen woven.

¹⁰⁶ MASPERO 1889, 553; Pl. XII; DARESSY 1909, 30.

¹⁰⁷ MASPERO 1889, 557 (facsimile); DARESSY 1909, 32 (hieroglyphic transcription).

¹⁰⁸ Cf. ČERNÝ 1946, 25; LULL 2006, 129.

¹⁰⁹ L[ETELLIER] 1976, 317.

¹¹⁰ MASPERO 1889, 554f.

¹¹¹ Cf. for example KITCHEN 1973, § 386 (38); LULL 2006, 216.

¹¹² ČERNÝ 1946, 27f.

¹¹³ If so, the regnal year change would have occurred between II Akhet 7 and II Peret 16.

¹¹⁴ JANSEN-WINKELN 2006a, 229.

¹¹⁵ LULL 2006, 157, with literature.

¹¹⁶ MASPERO 1889, 569f.

¹¹⁷ SMITH 1912, 96f.

For example, Kitchen dates the Nodjmet bandage to 1 [Smendes], arguing that the “date is of a piece with those of Pinudjem I as high priest ... from other bodies ...”.¹¹⁹ Since Kitchen identifies HP Herihor as the predecessor of HP Payankh, the dating of the Nodjmet bandage to 1 [Smendes] has no further implications. Lull, by contrast, dates the Nodjmet bandage to 1 [Psusennes I], pointing out that HP Pinudjem I would be unattested in years 2, 3, 4 and 5 of [Smendes], if the Nodjmet bandage of year 1 would refer to 1 [Smendes].¹²⁰ He accepts, on the other hand, a much larger gap of about 22 years between the first dated mention of Pinudjem I as king in 16 [Smendes] and in 8 [Psusennes I] as the second and last mention.

Pinudjem I is explicitly attested as HP in a series of ten dates between year 6, III Peret 7 and year 15, III Akhet 6.¹²¹ Thereafter, he is cited in a year 16 as king in the filiation of his son HP Masaharta;¹²² the text does not indicate whether Pinudjem I was dead or alive at the time. In a year 8 and in his capacity as king he ordered the osirification of King Ahmose. The same hand which wrote the Ahmose docket is seen in a docket on the mummy of Prince Siamun, citing an osirification at the command of his majesty (*hm.f*) on the same day in a year 8 as the Ahmose docket. The same hand is seen again in the epigraph on the *linceul* of princess Sitkamose’s mummy with the anonymously given order of an osirification in a year 7.¹²³ It is generally agreed that all three osirifications occurred on the order of King Pinudjem I in years 7 and 8. Nowadays, Egyptologists interpret the series of dates naming HP Pinudjem I from year 6 to 15 as regnal years of Smendes, whereas year 8 of Ahmose’s osirification is interpreted as regnal year of Psusennes I. Nevertheless, Elizabeth Thomas stated that the latter identification is only valid “if the priest and king [Pinudjem I] are to be distinguished and the years accepted in this sequence”.¹²⁴

In addition to the three osirifications in years 7 and 8, there is a fourth case, the osirification of Ramesses III in 13 [Smendes] on the command of HP Pinudjem I. Thomas pointed out that it is methodologically preferable to interpret the four

osirifications as being close in time, since these are the only cases of osirification known at all, whatever ‘osirification’ might have meant. Following the lead of Thomas, I suggest dating the osirifications of Ahmose, Prince Siamun and Princess Sitkamose to 7 and 8 [Smendes], five to six years prior to that of Ramesses III in 13 [Smendes]. Another point which favors the dating of all four osirifications to the time of Smendes is that restorations and re-burials of mummies in the time of Psusennes I would have been presumably the responsibility of the contemporaneous HP Menkheperre, not of a king Pinudjem who is otherwise unattested by any activity during the pontificates of Menkheperre and of Masaharta. I presume that HP Pinudjem I died in 15 or 16 [Smendes] and was succeeded by Masaharta.

Under these premises, I fall back on the old and nowadays mostly discarded idea that Herihor ruled Egypt between the death of Ramesses XI and the accession of Smendes. The equivalent idea is implied by Jansen-Winkel when he remarks about the possible chronological relationship of Herihor to Smendes:¹²⁵ “... es ist keineswegs sicher, ob Smendes gleichzeitig mit Herihor begonnen hat, Regierungsjahre zu zählen. War er, wie einige meinen, der Sohn des Herihor, wäre es sogar wahrscheinlich, dass seine eigene Zählung erst nach Herihor einsetzte.”

Marie-Ange Bonhême evaluated the kingly role of Herihor under the presumption that he was the predecessor of Payankh, concluding:¹²⁶ “... il ne semble pas, en droit, avoir été reconnu roi. Mais la théorie n’empêche pas la pratique, même si elle l’affaiblit. Quoiqu’institutionnellement Hérihor ne soit pas roi, il a cependant exercé presque toutes les fonctions royales alors même qu’en extension l’expression de son pouvoir régalien fut réduite. ...”. By comparison, Lull characterizes Herihor as “a ruler acting on behalf of the god Amun himself, and perhaps it was this position that placed some limitations on his royalty.”¹²⁷ Herihor might have ruled Egypt between the death of Ramesses XI and the accession of Smendes, regardless of the niceties of his protocol. Table 8 presents the chronological possibilities which result from the tenta-

¹¹⁸ Cf. KITCHEN 1973, § 38 with n. 182.

¹¹⁹ KITCHEN 1973, § 18.

¹²⁰ LULL 2006, 86, 124, 126, 154, 157.

¹²¹ LULL 2006, 154–158.

¹²² LULL 2006, 195.

¹²³ MASPERO 1889, 538, 541.

¹²⁴ THOMAS 1966, 257.

¹²⁵ JANSEN-WINKELN 1992, 37.

¹²⁶ BONHÊME 1979, 283.

¹²⁷ LULL 2009, 246.

Table 8 Chronological possibilities for a 7 year reign of Herihor

1 Shoshenq I	Oracle 6	1 Smendes	Herihor
929 BC	965 BC = 3 Osorkon	1055 BC	ca. 1063–1056 BC
943	989 BC = 3 Amenemope	1069	ca. 1077–1070
954	989 BC = 3 Osorkon	1080	ca. 1087–1081

tive attributions of oracle 6 of the ‘Inscription historique’, 126 years for Dynasty 21 and suggested 7 regnal years for Herihor.¹²⁸ Further consideration of Herihor’s possible reign requires a discussion of Ramesside chronology including the accession year of Ramesses II.

Chronology of Dyns. 19/20

The relative chronology of Dyns. 19 and 20 appears to be established within narrow limits.¹²⁹ Aidan Dodson and I presented the arguments which speak for Amenmesses as usurper within the reign of Sety II.¹³⁰ Furthermore, I date the reign of Amenmesses versus the reign of Sety II by interpretation of DB 3 of 7 Tewosre as the date of the lunar Feast of the Valley and its distance to the lunar date of 52 Ramesses II (see Excursus 1).

Recently, a year 4 of Sethnakhte became known, without indication of the month and day.¹³¹ The new date fits into the chronological framework of lunar Feasts of the Valley dates of Tewosre (DB 3) and Ramesses III (DB 10), if it refers to the very beginning of regnal year 4, followed within a few days by the accession of Ramesses III.¹³² In this case the distance between DB 3 (7 Tewosre) and DB 10 (7 Ramesses III) amounts to 10 y + 11 d or 124 mean synodic months minus 0.8 d, which means that the civil dates of DB 3 and DB 10 coincided with the same LD.

Gautschy assigns the Feast of the Valley date DB 9 to 6 Ramesses VII which results in a shift of all regnal years from 1 Ramesses VII up to the last one of Ramesses XI by one year in comparison to Ramesside relative chronology as set out by Erik Hornung in 2006.¹³³ I accept her attribution of DB 9 with little reservation.

For Ramesses VIII only year 1 is documented, but the possibility of a year 2 cannot be excluded.¹³⁴ There has been also some discussion about the length of Ramesses X’s reign.¹³⁵

Parker assumed that the Epiphi feast was celebrated on one and the same lunar day on the attested civil days IV Shemu 2 in 3 Ramesses X and on III Shemu 28 in year 7 of the era *wḥm mswt* or 25 Ramesses XI.¹³⁶ If so, 3 Ramesses X and 25 Ramesses XI would have been separated by 31 years, implying a 9 year reign for Ramesses X. But Parker’s suggestion was found untenable.¹³⁷

Morris Bierbrier pointed out the possible existence of a second HP Ramessesnakht in Dyn. 20 on the basis of Theban graffito 1860a, implying that regnal year 8 of the graffito could refer to the reign of Ramesses X.¹³⁸ Lull’s discussion is the most recent, subsuming the earlier arguments of Lanny Bell and Jansen-Winkel; he concludes that HP Ramessesnakht of graffito 1860a is the same HP who is known from 1 Ramesses IV to 2 Ramesses IX.¹³⁹

The highest date generally attributed to Ramesses XI is I Shemu 25 in year 10 [*wḥm mswt*: (corresponding to regnal year 28)] in LRL no. 9. On the day cited the scribe Dhutmose had received a letter sent to him from Thebes to somewhere in Nubia; it appears that the scribe Dhutmose accompanied the general Payankh on a campaign.¹⁴⁰ The date would have marked the end of Ramesses XI’s reign only by coincidence. Kitchen suggests that graffito Spiegelberg, no. 714, which mentions the General’s [Payankh] arrival at Thebes coming from the south on III Shemu 23, belongs to the same year 10 [*wḥm mswt*] as the date in LRL No. 9.¹⁴¹ Note that the graffito would date to year 11 *wḥm mswt* or regnal year 29, if the accession

¹²⁸ JANSSEN-WINKELN 2006a, 230 supposes „up to 8 years“.

¹²⁹ HORNUNG 2006, 211–217.

¹³⁰ KRAUSS 1976; KRAUSS 1977; KRAUSS 1997b; DODSON 2010, 31–82.

¹³¹ BORAİK 2009.

¹³² See BENNETT 2008a, 120 n. 39;

¹³³ GAUTSCHY 2014, 142; HORNUNG 2006, 210–217.

¹³⁴ HORNUNG 2006, 216.

¹³⁵ HORNUNG 2006, 216f.

¹³⁶ PARKER 1957b, 163f.

¹³⁷ Cf. for example BECKERATH 1994, 88.

¹³⁸ BIERBRIER 1972, 195–199.

¹³⁹ LULL 2006, 47–49.

¹⁴⁰ WENTE 1967, 11–12.

¹⁴¹ KITCHEN 1973, 417; for details see LULL 2006, 75–76.

date of Ramesses XI was indeed III Shemu 20.¹⁴² Furthermore, Edward F. Wente suggested that LRL no. 41 dates to year XII [*wḥm mswt*], corresponding to year *30 of Ramesses XI, since the recipient is known from graffito Černy no. 1393 dated to a year 12 on I Shemu 8–9.¹⁴³ Provided the graffito does indeed refer to [*wḥm mswt*] 12, then its date would be less than three months before the end of *30 Ramesses XI. These suggestions are justified if HP Herihor was in office after Payankh at the end of Ramesses XI's reign. If Payankh was still alive at the beginning of year *29, then Herihor could have spent the second part of year *29 and most of year *30 on work in the First Hypostyle Hall of the Khonsu temple which he achieved as HP in the name of Ramesses XI.¹⁴⁴

The computable intervals between the accession of Ramesses II and the last attestation of [Ramesses XI] add up to 199 y + 303 d, following Kitchen as cited above. If the possibilities of years *29 and *30 of Ramesses XI are accepted, then there would have been 200 y + 3 d and 201 y + 287 d between the accession of I Ramesses II and the presumed dates in *29 or *30 Ramesses XI. If the Feast of the Valley date DB 9 fell in 6 Ramesses VI as Gautschy suggests, and if Ramesses VIII ruled one year only, then the distance between the accession of Ramesses II and I Shemu 8–9 in *30 Ramesses XI (*wḥm mswt* year *XII) amounted to 202 y + 287 d.

The lunar date of Ramesses II

A LD 1 is recorded in a ship's log as occurring on II Peret 27 in 52 Ramesses II when the ship lay at anchor in Piramesses.¹⁴⁵ The most recent computations of the astronomically feasible solutions are by Rita Gautschy as cited above and Peter J. Huber. In detail, Huber's solution yields

"... 9 possible dates for the accession year of Ramesses II, namely 1340, 1329, 1315, 1304, 1290, 1279, 1265, 1254 and 1240 BC. Four of them (underscored) are fully supported by the recorded *psdntyw* date, and 1254 BC is partially supported. The remaining four possibilities cannot be *excluded*, but in my view it would be reckless to claim that the recorded *psdntyw* date *supports*

any of them. Presumably, the earliest two and the latest two chronologies are outside of the historically plausible range, and the five remaining chronologies 1315, 1304, 1290, 1279, 1265 have relative probabilities of 0.34, 0.07, 0.07, 0.07, 0.45 respectively. So we end up with 1315 or 1265 BC as the astronomically most probable chronologies for year 1 of Ramesses II."¹⁴⁶

Huber refers here to astronomical probability in the case of a single lunar date. I would argue that it is not justifiable to favor the astronomically more probable situation over the less probable one if a single lunar date is concerned which is not qualified by further information such as is available for the lunar dates of Thutmose III. The methodical approach is also different for a set of chronologically connected lunar dates which yields different possible solutions; here one should prefer the statistically most probable solution. I suggest that all astronomically possible solutions for the Piramesses lunar date have the same historical-chronological probability, regardless of their astronomical probability.

Note that Huber does not list 1 Ramesses II = 1268 or 1276 BC as astronomically viable solutions. If 1 Ramesses II = 1276/75 BC, then II Peret 27 fell in year 52 or 1225/25 BC on a LD 2; the preceding lunar month ended after 30 days on II Peret 25 in 1225 BC. Thus the identification of II Peret 27 by mistake as LD 1 would presuppose that the preceding II Peret 26 fell on a lunar day 31, which is otherwise unattested.

If 1 Ramesses II = 1268/67 BC, then year 52 is 1217/16 BC; II Peret 27 fell in 1217 BC on a LD 28. The identification of LD 28 as LD 1 by mistake is possible (see above). Such a situation was not given in 1217 BC: II Peret 27 fell in a lunar month of 29 days and the preceding lunar month had 30 days.

Table 9 presents the combination of TIP and Ramesside chronological possibilities with the possibilities for 1 Ramesses II. The two sets differ depending on whether Herihor had an independent reign or not. The possibility that 1 Shoshenq I = 929 BC and 1 Smendes ≤ 1055 BC with Herihor having no independent reign, results in 1 Ramesses II = 1254 BC. This is barely feasible if the inter-

¹⁴² BECKERATH 1994, 89–91.

¹⁴³ WENTE 1967, 15, 17.

¹⁴⁴ For an overview and evaluation of the scenes on the walls and columns of the First Hypostyle Hall, see LULL 2006, 91–92, 97–99.

¹⁴⁵ JANSSEN 1961, 12, 33.

¹⁴⁶ HUBER 2011, 186–190.

¹⁴⁷ BECKERATH 1994, 96.

Table 9 Alternative years for 1 Ramesses II; Herihor 0 or 7 years; the sign \leq means „is less than or equal to“.

1 Shoshenq I	1 Smendes	distance Ramesses II : Ramesses XI	Herihor	1 Ramesses II	1 Ramesses II lunar referenced
929 BC	≤ 1055 BC	200/202	0 y	$\leq 1257/55$ BC	1254 BC
943	≤ 1069	200/202	0	$\leq 1271/69$	1265
954	≤ 1080	200/202	0	$\leq 1282/80$	1279
929 BC	≤ 1055	200/202	8	$\leq 1265/63$	1265
943	≤ 1069	200/202	8	$\leq 1279/77$	1279
954	≤ 1080	200/202	8	$\leq 1290/88$	1290

val between 1 Ramesses II and the end of Ramesses XI's reign amounts to 201 to 203 years which implies an overlap of Ramesses XI and Smendes. Ramesside and TIP chronology do not seem to allow for the lunar referenced year 1 of Ramesses II being earlier than 1290 BC or later than 1265 BC; a further narrowing can be achieved via the synchronisms between the NK and the Near East.

Egyptian New Kingdom – Near Eastern synchronisms

The use of synchronisms between the Egyptian kings Amenhotep III and IV and their contemporaries in Assyria and Babylon presupposes a determination of the interval between 1 Akhenaten and 1 Ramesses II. According to Beckerath the reigns of Amenhotep III and Amenhotep IV/Akhenaten are chronologically linked by wine jar docketts of 38 [Amenhotep III] and 1 [Amenhotep IV] found in Amenhotep III's palace at Molqata, Western Thebes.¹⁴⁷ The wine jar docketts of the period correspond to the time when the wine was bottled and the jars docketed in ca. II Akhet, or mid-August to mid-September in the Gregorian calendar.¹⁴⁸

Wine jar docketts which were found at Amarna document Akhenaten's regnal years 4 through 17. The year 4 docketts refer to the last vintage before the founding of Amarna in regnal year 5. Amarna vintages I to XIII correspond to Akhenaten's regnal years 5 to 17. Amarna vintages XIV and XV are datable to regnal years 1 and 2 of King Ankhkheprure Smenkhkare. Since the change in the respective royal year count occurred approximate-

ly during the vintage month II Akhet,¹⁴⁹ the few jars dated to year 3 will have belonged to the vintage of year 2.¹⁵⁰

Whether queen Ankhkheprure Nefernefruaten *3ht n hj.s*, widow and successor of King Ankhkheprure, had a year count of her own cannot as yet be determined. If so, then regnal year 1 of Amarna vintage XVI, the last attested vintage at Amarna, would be her year 1. Otherwise Amarna vintage XVI and the corresponding year 1 would belong to Tutankhaten/amun. The docketts of Amarna vintage XVI are characterized by *hrj k3mw* as the chief vintner's title which had been in use up until year 13 of Akhenaten when it was replaced by *hrj b3h*. The latter title was used from Amarna vintage IX, or 13 Akhenaten, until vintage XV.¹⁵¹ Note that vintages XIV to XVI attest that Amarna was occupied for three years after the death of Akhenaten, regardless of the attribution of the vintages to specific rulers.

Finds from the tomb of Tutankhamun show that nine vintages occurred in his reign;¹⁵² a wine jar docket of a year 10 refers presumably to the time of Akhenaten.¹⁵³ The death of Tutankhamun in III or IV Peret sets the accession time of Aya.¹⁵⁴ A wine jar docket from Deir el-Medina is dated to a year 2 and mentions the funerary temple of Aya; nevertheless, the date could belong to Haremhab's reign.¹⁵⁵ Securely dated monuments of Aya are a donation stela of the king of year 3 and two stelae both dated to IV Akhet 1 in year 4;¹⁵⁶ the latter date fell about 4 to 5 months before the end of regnal year 4. Under these premises 33 to 34 years elapsed between the beginning of 38 Amenho-

¹⁴⁸ HORNING 1964, 78 n. 51; HORNING 2006, 206.

¹⁴⁹ BECKERATH 1994, 99.

¹⁵⁰ BECKERATH 1994, 99; KRAUSS 1997a, 238; ASTON 2013, 294.

¹⁵¹ KRAUSS 1997a, 239–241.

¹⁵² ČERNÝ 1965, 1–3.

¹⁵³ TALLET 1996, 369–383.

¹⁵⁴ HORNING 2006, 208.

¹⁵⁵ HORNING 2006, 208f.

¹⁵⁶ *Urk.* IV 2109, 2110.

tep III and the end of 4 Aya. By contrast, Gautschy reckons 36 years from the beginning of 38 Amenhotep III to the end of 4 Aya, interpreting DB 36 and the date of Akhenaten's oath on the occasion of the foundation of Amarna as LDs 1.¹⁵⁷ DB 36 is not attributable to Amenhotep III, but is rather a date of Ramesses III;¹⁵⁸ Akhenaten's oath on IV peret 13 in his year 5 is not attested as a lunar date.

It is possible to determine the distance between Amenhotep III and Aya on the basis of visitor's graffiti from Saqqara. I have argued that two such graffiti from the time of Ramesses II imply dates of lunar regulated feasts in Memphis;¹⁵⁹ my interpretation has been accepted by Gautschy.¹⁶⁰ There are other graffiti of the same kind implying 33 years between the beginning of 38 Amenhotep III and the end of 4 Aya.¹⁶¹

Haremhab ruled for at least 14 years as recently argued by Jacobus van Dijk on the basis of wine jar dates from debris in Haremhab's tomb.¹⁶² He may have been buried shortly after bottled wine of year 14 reached Thebes or shortly before the arrival of wine from the year 15 vintage. According to Josephus' copy of the Manethonian king list, Harmais < Haremhab ruled 4 y + 1 m. Since Aya ruled at least for 4 years and Haremhab for more than 4 years, the Manethonian figure is usually thought to refer to Aya. Under the premise of 14 regnal years, I suggest that the 4 y + 1 m of Harmais belong to Haremhab himself, but should be emended to *14 y + 1 m, implying that Aya is missing in Josephus' copy of Manetho.

Ramesses I is attested in year 1 on I Shemu 10 and in year 2 on II Peret 20.¹⁶³ According to Manetho he would have ruled for 1 y + 4 m, but these figures look suspiciously like an inverse of the preceding 4 y + 1 m of Harmais. The comparatively sparse documentation for the reign of Ramesses I may be compatible with a year over and above the attested 2 years.

Of Sety I's reign the years 1 through 9 and 11 are attested.¹⁶⁴ Kenneth A. Kitchen once argued

for either an 11 or 15 year reign of Sety I,¹⁶⁵ which Peter Brand "dismissed as a chronological fantasy, leaving no proof for a long fifteen-year reign."¹⁶⁶ A reign of 18 years as suggested by Gernot Wilhelm is out of the question.¹⁶⁷ However, Jacobus van Dijk has cast doubt on the reading 'year 11' of the Gebel Barkal stela, and would date it by style to early in Sety's reign.¹⁶⁸ The arguments carry weight but are not conclusive. Furthermore, even if the Gebel Barkal stela were to be dated to year 3 rather than 11, the amount of archaeological remains from the reign of Sety I appears to allow more than 10 regnal years.

At least 10 full regnal years are implied by the information about the speos built by Sety I at Kanais. According to the text Kanais B, Sety I surveyed the deserts on III Shemu 20 in year 9,¹⁶⁹ i.e. in the last days of regnal year 9, since III Shemu 24 is the accepted regnal year change.¹⁷⁰ The excavation of the speos and its decoration will have taken some time and therefore the earliest possible date for Ramesses II's accession would have been 365 + 7 days after the survey on III Shemu 27,¹⁷¹ implying that the reign of Sety I lasted at least 10 full years.¹⁷²

To sum up: If full years are reckoned, then 59 to 60 dead reckoned years result for the interval between 1 Akhenaten (following on the incomplete year 38 of Amenhotep III) and 1 Ramesses II. If the Memphite visitors' graffiti are taken into consideration, one of the dead reckoned years is eliminated. Considering the uncertainties about the reign lengths of Aya, Ramesses I, and Sety I, some 3 to 5 years might be missing in the record.

The Assyrian king Aššur-uballit I corresponded with Akhenaten; his letters Kn 15 and 16 are preserved. The contents of the first letter appear to place it near the start of his reign.¹⁷³

Aššur-uballit I ruled from 1363–1328 BC according to John A. Brinkman.¹⁷⁴ Hermann Gasche et al. suggest a reduction of 7 years for Aššur-uballit I on the premise that a 354-day lunar calendar was used in Assyria until the reign of Tiglath-

¹⁵⁷ GAUTSCHY 2014, 142.

¹⁵⁸ See Excursus 1.

¹⁵⁹ KRAUSS 2006, 418.

¹⁶⁰ GAUTSCHY 2014.

¹⁶¹ KRAUSS 2015.

¹⁶² VAN DIJK 2008.

¹⁶³ KRI I, 3–4.

¹⁶⁴ HORNING 2006, 211; KITCHEN 2000, 43

¹⁶⁵ KITCHEN 1980, 170.

¹⁶⁶ BRAND 1998, 347.

¹⁶⁷ WILHELM 2009, 116.

¹⁶⁸ DIJK 2010, 325–332.

¹⁶⁹ RITA 1, 56f.

¹⁷⁰ BRAND 1998, 339–341.

¹⁷¹ BRAND 1998, 341–344.

¹⁷² For details see KRAUSS 2015.

¹⁷³ BECKERATH 1997, 61; KLINGER 2006, 314.

¹⁷⁴ BRINKMAN 1977, 345.

pileser.¹⁷⁵ By contrast, others argue consistently that the Assyrians intercalated lunar months resulting in a solar year chronology.¹⁷⁶ According to the short Assyrian chronology of Joachim Boese and Gernot Wilhelm, Aššur-uballit I ruled from 1353 to 1318 BC (+2 / -1 year).¹⁷⁷

If Kn 15 was written in 1 Aššur-uballit I at the earliest, corresponding to 16 Akhenaten, or in 35 Aššur-uballit I at the latest, corresponding to 2 Akhenaten, then 1 Akhenaten fell in an interval of 51 to 48 years between 1368 and 1319 BC (+2 / -1 year), according to the short Assyrian chronology. Thus the short Assyrian chronology implies the interval 1308 to 1259 BC (+2 / -1 year), for 1 Ramesses II, if at least 60 years are reckoned for the time between 1 Akhenaten and 1 Ramesses II. The interval accommodates the astronomical possibilities 1265, 1279, 1290 and 1304 BC for 1 Ramesses II.

Should the long Assyrian chronology be historically correct, then 1 Akhenaten fell in a 49 year interval between 1378 and 1329 BC and 1 Ramesses II were to be sought between 1318 and 1269 BC, implying the astronomical solutions 1315, 1304, 1290 and 1279 BC with 1265 BC not included. In combination with the possibilities for 1 Ramesses II on the basis of TIP and Ramesside chronology (see Table 9), the alternative Assyrian chronologies allow 1265, 1279 and 1290 BC for 1 Ramesses II, but definitely not 1304 or 1315 BC. The question is which Assyrian chronology is correct?¹⁷⁸

The Babylonian kings Kadašman-Enlil I and his successor Burnaburiaš II exchanged letters with Amenhotep III and his successor Akhenaten. Kadašman-Enlil I complained in letter Kn 3 that Amenhotep III did not invite him to a great festival.¹⁷⁹ The only corresponding event known to Egyptologists is a Sed festival. Amenhotep III celebrated three Sed festivals – in years 30, 34, and 37.¹⁸⁰ Since Kadašman-Enlil I does not mention a similar, earlier festive occasion, it is feasible that his complaint followed the first. It is improbable that Kadašman-Enlil I referred to the Sed festival of year 37, if Burnaburiaš II corresponded with

Amenhotep III towards the end of the Egyptian king's reign of 37 years + × months. There is at least a slight doubt whether Burnaburiaš II acceded to the throne before the death of Amenhotep III. According to Cord Kühne, the traces of the Egyptian king's name to whom Burnaburiaš II addressed KN 6 suit the throne name of Amenhotep III.¹⁸¹ Kühne's reading is accepted as possible, but not certain.¹⁸² Note that Burnaburiaš II protested against the Assyrian contact with Egypt in Kn 9, a letter which appears to be quite clearly directed to Akhenaten, notwithstanding the fact that the Egyptian king is addressed as 'Nibkhuriya'.¹⁸³

Babylonian chronology is linked to Assyrian chronology. The shortening of the latter by Boese and Wilhelm implies a shortening of Babylonian chronology as well. According to Boese's short Babylonian chronology, 1 Burnaburiaš II fell in the interval 1356 to 1343 BC or 1349 (+7/-6) BC.¹⁸⁴ These figures result from a) a 10-year reduction of Brinkman's figures for the Assyrian chronology of the 14/13th century BC; b) a variation of ± 5 years for the Kassite kings nos. 22–36 according to Brinkman; c) a variation of +2/-1 years for the middle Assyrian reign lengths according to Boese and Wilhelm.¹⁸⁵

If I understand Brinkman correctly, then Boese's figures for Burnaburiaš II are to be slightly modified. As cited above, Brinkman's variation of ± 5 years refers to Kassite kings nos. 22–36 which do not include Burnaburiaš II; Brinkman counts him as no. "?19". Since, according to Brinkman, "the dates for kings ?18–?21 are subject to an even wider margin of variation because of the more than usually hypothetical nature of the reconstruction of that part of the dynasty",¹⁸⁶ 1 Burnaburiaš II would have fallen in the interval 1349 (7+x/-6-x) BC corresponding at least to 1357 to 1342 BC.

Using Egyptian chronology as it was determined in the late 1970s (cf. Bierbrier, Wentze/van Siclen, and Krauss), Boese suggested narrowing the time span for Burnaburiaš II.¹⁸⁷ To avoid circular reasoning I reckon here with 1 Burnaburiaš II = 1349 (7+x/-6-x) BC as a strictly Assyrian-Baby-

¹⁷⁵ GASCHÉ 1998, 63.

¹⁷⁶ MEBERT 2009, 104.

¹⁷⁷ BOESE 1979, 38.

¹⁷⁸ For recently expressed doubts about the short Assyrian chronology, see DEVECCHI 2012, 158–166.

¹⁷⁹ MORAN 1992, 7f.

¹⁸⁰ BECKERATH 1994, 23f.

¹⁸¹ KÜHNE 1973, 129 n. 642.

¹⁸² BOESE 1982, 16f; MORAN 1992, 12 n. 1.

¹⁸³ See for example MORAN 1992, XXXVIII n. 137.

¹⁸⁴ BOESE 1982, 17.

¹⁸⁵ BOESE 1982, 15 n. 7.

¹⁸⁶ BRINKMAN 1976, 30 n. 86.

¹⁸⁷ BOESE 1982, 16.

Table 10 Alternatives for 1 Burnaburiaš II and resulting years 1 of Ramesses II

1 Burnaburiaš II	years of Amenhotep III	1 Akhenaten	interval of 1 Ramesses II	1 Ramesses II lunar referenced
	30			
	31			
1356+x/1343-x	32	1350+x/1336+x	1290+x/1276-x	1290 or 1279
1356+x/1343-x	33	1351+x/1337+x	1291+x/1277-x	1290 or 1279
1356+x/1343-x	34	1352+x/1338+x	1292+x/1278-x	1290 or 1279
1356+x/1343-x	35	1353+x/1339+x	1293+x/1279-x	1290 or 1279
1356+x/1343-x	36	1354+x/1340+x	1294+x/1280-x	1290 or 1279
1356+x/1343-x	37	1355+x/1341+x	1295+x/1281-x	1290 or (1279 ?)
1356+x/1343-x	38	1356+x/1342+x	1296+x/1282-x	1290 or (1279 ?)

Table 11 Chronological alternatives between Ramesses II and Shoshenq III with 1 Ramesses II dependent on Near Eastern synchronisms

1 Shoshenq III		830 BC	841 BC		830 BC	841 BC
1 Osorkon II	~30 y	~860	~871	~40 y	~870	~881
1 Osorkon I		~906	~920		~920	~930
1 Shoshenq I		929	943		943	954
1 Smendes		~1055	~1069		~1069	~1080
*1 Herihor		~1062	~1076		~1076	~1087
*30 Ramesses XI		~1063	~1077		~1077	~1088
1 Ramesses II		1265	1279		1279	1290

lonian date without any modification on the basis of absolute Egyptian chronology. Table 10 shows the results if the possible accession years of Burnaburiaš II and the interval of at least 59 years between 1 Akhenaten (following on the incomplete year 38 of Amenhotep III) and 1 Ramesses II are combined. For example, if Burnaburiaš II's accession occurred as early as in 32 Amenhotep III, then 1 Ramesses II fell in 1356+x BC minus 7+59 = 1290+x BC at the earliest and in 1343+x BC minus 7+62 = 1276-x BC at the latest.

As Table 10 shows, the short Babylonian chronology is compatible with both 1279 and 1290 BC = 1 Ramesses II, whereas 1265 and 1304 BC are not. If, according to Brinkman's long Assyrian chronology, the accession of Burnaburiaš II would have taken place $1359 \pm (5+x)$ BC,¹⁸⁸ then the lunar referenced year 1 of Ramesses II could have been 1290 or 1304 BC, but not 1279 BC as can be interpolated in Table 10 under the premise of an applicable value of x in $1359 \pm (5+x)$ BC. In combination with the Egyptian relative chronology between Akhenaten and Ramesses II, the long Assyrian and Babylonian chronologies imply 1304 and 1290 BC as alternatives for 1 Ramesses II,

whereas 1279 BC does not appear to be an option. The short Assyrian and Babylonian chronologies imply both 1290 and 1279 BC as possibilities for 1 Ramesses II, whereas the short Assyrian chronology alone implies 1265 BC.

The Assyrian synchronism yields an interval of 48 to 51 years for 1 Akhenaten. By contrast, the Babylonian synchronism yields an interval of only 20 years for 1 Akhenaten. If both synchronisms are valid, we could rely on the Babylonian synchronism alone which allows 1290 and 1279 BC for 1 Ramesses II, though not 1265 BC. Table 11 presents the possible combinations of 1 Ramesses II being either 1290 or 1279 BC with Ramesside and TIP chronologies.

Removing 1 Ramesses II = 1265 BC as viable, also removes the possibility of 1 Shoshenq I = 929 BC, together with the combination of 1 Shoshenq III = 830 BC and 30 regnal years for Osorkon II. 1 Ramesses II = 1279 BC can result from either 1 Shoshenq III = 830 or 841 BC, if in the first case, the reign length of Osorkon II was 40 years, or in the second case 30 years; the two possibilities are identical between Ramesses II and the accession of Osorkon II. If 1 Shoshenq III =

¹⁸⁸ BRINKMAN 1976, 31.

841 BC and Osorkon II ruled for ca. 40 years, then the resulting accession year of Ramesses II = 1290 BC. The scheme cannot be modified by removing Herihor, since this would result in an overlap between the last years of Ramesses XI and the accession of Smendes.

The uncertainties in Bubastide chronology (1 Shoshenq III; reign length of Osorkon II) and Dyn. 21 chronology (attribution of oracle 6 to either Amenemope or Osorkon the Elder) cannot be avoided. The possibilities of 954 or 943 BC for the accession year of Shoshenq I remain, whereas 929 BC can be relinquished.¹⁸⁹ The resulting possibilities for 1 Smendes are 1069 or 1080 BC. Reckoning from 1290 BC as the accession year of Ramesses II, and assigning DB 9 to Ramesses VII, year *30 of Ramesses XI would last from April 1088 at least to January 1087 BC or from April 1077 to January 1076 BC, if reckoned from 1279 BC. Thus there would be about 7 years between the end of Ramesses XI's reign and the accession of Smendes, corresponding to a reign of Herihor.

Lunar dates of Thutmoses III

The question arises how the chronology of Dyn. 18 can be correlated with the suggested Ramesside and Bubastide chronology. The lunar dates of Thutmoses III appear to be an anchor for the absolute chronology of Dyn. 18. In an initial reaction to the shortening of Haremhab's reign, David A. Warburton and I suggested retaining 1 Ramesses II = 1279 BC, but to lower 1 Thutmoses III from conventional 1479 to 1468 BC. We noted that the suggestion results in a difficulty with the lunar date of 24 Thutmoses III.¹⁹⁰ On closer scrutiny the difficulty proves to be insuperable.

Lunar dates are recorded for years 23 and 24 of Thutmoses III which are conventionally linked to 1490, 1479, 1468, or 1465 BC as astronomically possible first regnal years. Dead reckoning yields $126 + x$ years between 1 Thutmoses III and 1 Akhenaten; if Manetho's $9y + 8m$ for Thutmoses IV are accepted, then $128 + x$ years are available.¹⁹¹ Since $59 + y$ to $60 + y$ years elapsed between 1 Akhenaten and 1 Ramesses II, $185 + x + y$ to $188 + x + y$ years elapsed between 1 Thutmoses III

and 1 Ramesses II. Thus 1 Thutmoses III = $1464/1465 + x + y$ BC would result if 1 Ramesses II = 1279 BC, and $1475/1476 + x + y$ BC, if 1 Ramesses II = 1290 BC. This results in 1 Thutmoses III = 1465 or 1490 BC being barely possible to quite improbable.

The year 23 lunar date of Thutmoses III refers to the Battle of Megiddo on I Shemu 21 specified as *day of the feast of pesedjentyw exactly*. Although the text states precisely on which day *pesedjentyw* occurred, nevertheless a debate about an emendation of the recorded date began in the 1940s and came full circle about 60 years later.¹⁹²

The other lunar date of Thutmoses III refers to a foundation ritual in Karnak Temple. The king ordered preparations to be made for the ritual on II peret 30, when *waiting for the day of pesedjentyw* (*hr s3wt hrw n psdntyw*). Originally the text was understood as saying that *pesedjentyw* or LD 1 coincided with II Peret 30; this was also Parker's interpretation.¹⁹³ By contrast, Edward F. Wente argues that II Peret 30 was the day when the order was given in expectation of *pesedjentyw*.¹⁹⁴ Beckerath after collating the inscription confirms Wente's interpretation.¹⁹⁵

“Es handelt sich demnach an dieser Stelle nicht um das Datum des Neumondtages, an dem das Strickspannen hätte stattfinden sollen, sondern um den des Befehls zu seiner Vorbereitung. Es kann allerdings als sicher angesehen werden, dass das Wunder des Amun noch am gleichen Tag stattfand (Wente ist hierüber wegen der Lücken unseres Textes im Zweifel). Denn es ist ganz ausgeschlossen, dass man auf dieser Stele das Datum des Vorbereitungsbefehles, nicht aber das des im Mittelpunkt der Erzählung stehenden Ereignisses verewigt hätte. Außerdem wird dort gesagt, dass der Befehl erlassen wurde, ‘während man auf den Neumondtag wartete’. Dieser Ausdruck kann sich aber nur auf den 30. Tag eines Mondmonats beziehen.”

Thus according to Wente and Beckerath the order was given at an unspecified time on II Peret 30, the day being a LD 30; their interpretation implies that III Peret 1 was a LD 1. On these premises, I suggest that the order was given at the beginning of calendar day II Peret 30, before it could have been known whether the day would be

¹⁸⁹ For the vexed problem of Shoshenq I's campaign to Palestine see Excursus 5.

¹⁹⁰ KRAUSS 2009, 134.

¹⁹¹ HORNING 2006, 201ff.

¹⁹² SPALINGER 2005, 91f; KRAUSS 2006a, 420–422.

¹⁹³ PARKER 1957c, 40.

¹⁹⁴ WENTE 1975, 265–272;

¹⁹⁵ BECKERATH 1981, 48.

a LD 30 or LD 1. If 1 Thutmose III fell in 1479 BC, then the calendar day II Peret 30 of year 24 corresponded to February 17 in 1455 BC, beginning at dawn, around 5 h 55 m (local time zone).¹⁹⁶

The determination of II Peret 30 as old crescent day or first day of lunar invisibility (*pesedjentyw*) depended on whether the moon was sighted or not. To an observer at Karnak Temple the moon rose on II Peret 30 or February 17 in 1455 BC at an azimuth of 116.4°, coinciding more or less with the azimuth of sunrise on winter solstice in 1995 as observed by Luc Gabolde who also determined the respective horizontal elevation.¹⁹⁷ As seen from Karnak the eastern horizon line is 39.75 km away and rather low; at an azimuth of 116.4° the horizon has an elevation of ca. 1°. If refraction is considered, then the moon could have become visible at topocentric altitude of 1.5° or about 6 h 10 m on February 17 in 1455 BC. If the crescent was sighted at all, it attained Bruin's optimum visibility altitude at 6 h 23 m,¹⁹⁸ whereas the sun rose about a quarter hour later. Thus there would have been enough time for the king to order the preparation of the ritual between the beginning of the calendar day and shortly before sunrise, when it was clear whether the day was *pesedjentyw* or not. As indicated in Fig. 1, the astronomical situation was such that the crescent might have been sighted or not in 1455 BC on II Peret 30. In other words, the *pesedjentyw* Thutmose III awaited, fell according to astronomical computation either on III Peret 1 or on II Peret 30.

II Peret 29 or February 16: x: lunar position after UraniaStar 1.1; ○: lunar position after Alcyo-

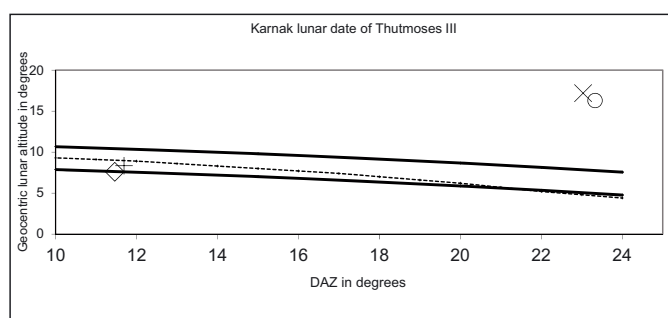


Fig. 1 Geocentric lunar positions on February 16 and 17 in 1455 BC at solar altitude 0°.

¹⁹⁶ KRAUSS 2004, 282ff.

¹⁹⁷ GABOLDE 2009a, 5 n. 14, 170. Note that in an email to Gabolde dated Nov 2, 2008, I retracted with apologies my criticism (as voiced in KRAUSS 2006b) of his determination of the orientation of the Akhmenu towards the rising sun at winter solstice.

ne Ephemeris; Δt of JPL horizons; II Peret 30 or February 17: +: lunar position after UraniaStar 1.1; ◇: lunar position after Alcyone Ephemeris; Δt of JPL horizons; uncertainty zone between solid lines.

Table 12 presents the astronomical possibilities for the lunar dates of Thutmose III, complemented by the respective LD of II Peret 30 in year 24. It ought to be a LD 30 according to Beckerath's reasoning. The criterion is unrestrictedly compatible with 1 Thutmose III = 1479 or 1454 BC and restrictedly with 1504 BC, though not at all with the other years which are tested in Table 12.¹⁹⁹

As Table 12 implies, the lunar dates of years 23 and 24 per se could refer to 1479 and 1454 BC, but not to 1465, 1468, and 1490 and 1493 BC and barely to 1504 BC as first years of Thutmose III.²⁰⁰ If 1 Thutmose III were 1490 BC, then both recorded lunar dates would not match the computed dates. If 1 Thutmose III were 1468 BC, then recorded and computed Megiddo date coincide, but the computed Karnak date is off by +2 days. If 1 Thutmose III were 1465, then there is a 50:50 chance that recorded and computed Megiddo date coincide, but the computed Karnak date is off by at least -1 day.

Recorded and computed lunar dates agree in the same way, be 1 Thutmose III = 1454 or 1479 BC. The time of moonrise on February 11 in 1430 BC, corresponding to 1 Thutmose III = 1454 BC, was more or less the same as on February 17 in 1455 BC (1 Thutmose III = 1479 BC). There was a difference insofar as the moon rose at an azimuth of ca. 108.5° for which there are no exact elevation values available. Nevertheless, Gabolde assures me that the difference in elevation between azimuth 116.4° and 108.5° must be very small and if so, the moon would have become visible or not more or less at the same time as in 1455 BC (1 Thutmose III = 1479 BC). Note that 1454 BC is too late for 1 Thutmose III, since it implies that 1 Ramesses II is later than 1279 BC which is to be excluded, at least according to the results presented above.

Huber recently calculated the lunar dates of Thutmose III. For the Megiddo date as I Shemu

¹⁹⁸ For BRUIN's optimum cf. YALLOP 1997, 14 and KRAUSS 2012, 14.

¹⁹⁹ Note that the LD of II Peret 30 has to be counted forward in time.

²⁰⁰ ASTON 2012, 291f, 307, 310 takes the risk of accepting 1493 BC as accession year of Thutmose III.

Table 12 Correspondences in absolute chronology for the lunar dates of Thutmoses III

1 Thutmoses III	Computationally Megiddo <i>pesedjentyw</i> Would fall on	Computationally Karnak <i>pesedjentyw</i> would fall on	LD of II Peret 30 (Karnak date)
1504 BC	I Shemu 20 in 1482 BC	III Peret 1 in 1480 BC	29 or 30
1493 BC	I Shemu 22 in 1471 BC	III Peret 2 or III Peret 3 in 1469 BC	28 or 29
1490 BC	I Shemu 20 in 1468 BC	II Peret 29 in 1466 BC	2
1479	I Shemu 21 in 1457	II peret 30 or III Peret 1 in 1455	30
1468	I Shemu 21 in 1446	III Peret 2 in 1444	28
1465	I Shemu 20 or 21 in 1443	II peret 29 in 1441	2 or 3
1454	I Shemu 21 in 1432	II Peret 30 or III Peret 1 in 1430	30

21 and the Karnak date as II Peret 30, “the years 1479, 1454, and 1429 BC give exact matches for Thutmoses III, year 1 for both moon dates”. By contrast, the Megiddo date as I Shemu 20 and the Karnak date as III Peret 1 yield “only one perfect fit for both dates, namely 1504 BC”.²⁰¹ For all practical purposes, Huber’s results and mine are formally identical, if the historically excluded years 1504 and 1429 BC are disregarded.

Any interpretation of the astronomical results has to consider that both lunar dates of Thutmoses III are qualified by contemporaneous information. The Megiddo date is qualified as *day of the feast of pesedjentyw exactly*, the Karnak date as *when waiting for the day of pesedjentyw*, which expression can only refer to the “30. Tag eines Mondmonats”. Thus the leeway for assuming observational mistakes is restricted; and in my opinion, there is no leeway at all.

The problem remains how to harmonize 1 Ramesses II = 1279 or 1290 BC and 1 Thutmoses III = 1479 BC which corresponds to a distance of 189 or 200 years respectively. Since dead reckoning yields 185/186+x+y years between 1 Thutmoses III and 1 Ramesses II, it would appear that 1 Thutmoses III = 1479 and 1 Ramesses II = 1290 BC are historically correct; the three years which would be not documented might be hidden in the reigns of Ramesses I, Sety I, and perhaps Aya. By contrast, the 200 year distance between 1479 and 1279 leaves an undocumented gap of about 14 years which cannot be hidden between Amenhotep III and Ramesses II. Thutmoses IV and Amen-

hotep II are candidates for increased reign lengths as suggested, for example, by Aston.²⁰² The proportional relationship between presumed 10 regnal years of Thutmose IV and the number of his preserved scarabs has irritated me, ever since Bertrand Jaeger published his lists of Dyn. 18 seal amulets.²⁰³ By comparison with the number of scarabs preserved from the reigns of Amenhotep II and III I felt tempted to conclude that Thutmoses IV had a reign of about 20 years. I am no longer tempted, despite Aston’s general arguments in favor of a long reign of Thutmoses IV.

I cite the following reasons for preferring 1 Ramesses II = 1279 BC. According to Luc Gabolde, the orientation of the Small Aten Temple was determined by sunrise seen in the *akhet*-like gap in the eastern mountain ridge on IV Peret 13 in 5 Akhenaten, the day when the city was founded.²⁰⁴ Taking up Gabolde’s argument Juan A. Belmonte asserts that the solar alignment could have been observed “between 19–20 February in the proleptic Gregorian calendar, equivalent to the margin of a day to IV Peret 13 of the year 1335 BC. In fact, considering the dynamics of the Egyptian calendar, in all the four years focused on 1335/36 BC If this is true, we would have a new key archaeo-astronomic date that would fix year 5 Akhenaten in 1335 ± 4 BC.”²⁰⁵ Furthermore, there was the omen of the sun god which Murshili II received on his campaign to Azzi in regnal year 10. If the omen was indeed an eclipse, then it could have been that of June 24 in 1312 BC. According to Jared Miller, it was around his year 7 that Murshi-

²⁰¹ HUBER 2011, 192.

²⁰² ASTON 2012, 298–306.

²⁰³ JAEGER 1984a; 1984b.

²⁰⁴ GABOLDE 2009b.

²⁰⁵ BELMONTE 2013, 421.

li II dealt with the Egyptian official named *Ar-ma-a(-aš)* who is to be identified with Haremhab before he became king.²⁰⁶ Murshilis' dealings with Haremhab would date about a decade after the death of Nipkhururiya which occurred in one of the last years of Šuppiluliumas, implying that Nipkhururiya was identical with Napkhururiya Akhenaten. If Akhenaten died about 1325 BC, then 1 Ramesses II = 1279 BC, whereas 1 Ramesses II = 1290 BC would be excluded. These arguments are impressive and I would like to accept 1279 as 1 Ramesses II, even if the odds are in favor of 1290 BC.

Excursus 1: Dates of the Feast of the Valley and of a Nile ferrying by Amun

According to Medinet Habu Calendar (*MHC*) 135, the Feast of the Valley began on LD 1 in II Shemu. *MHC* 135 & 159 state that Amun was to rest in the funerary temple of Ramesses III and to receive offerings on LD 1 and LD 2, described as the first and second day of the feast.²⁰⁷ Thus it appears that the cult statue of Amun departed Karnak on the first feast day, crossed the Nile, visited Deir el-Bahri in a procession, and spent the night in Ramesses' funerary temple.²⁰⁸ Various inscriptions mention points along the processional route at the Feast of the Valley, usually without chronological information.²⁰⁹ The material from Deir el-Medinah is meagre.²¹⁰ For example, oDM 127, vs 1–2, datable to the time of Ramesses II, notes a “day of offering to Amun at the Valley Festival”,²¹¹ whereas the *Giornale* of 3 Ramesses X does not mention the Feast of the Valley, although all entries of II and III Shemu are preserved.²¹²

Numerous Ramesside visitors left graffiti in western Thebes on pillars of the Djoser-Akhet temple. The texts refer to a feast of Hathor in IV Akhet and offerings to Hathor and Amun in II and III Akhet; the texts also refer to offerings for Meretseger or Hathor in III and IV Peret and, finally, to offerings for Hathor and Amun in II

and III Shemu. Marek Marciniak published and commented on these graffiti;²¹³ Ashraf I. Sadek translated the texts and provided a philological commentary.²¹⁴ Marciniak ascribed the graffiti which are dated to II and III Shemu to participants in the Feast of the Valley. Four graffiti on pillars VII and VIII mention that Amun “rested” (*jw Jmn htp m ...*) or “was in” (*jw Jmn m ...*) a funerary temple:

DB 3 : year 7, II Shemu 28; Amun rested in the funerary temple of Tewosre.²¹⁵

DB 9 : year 6, III Shemu 9; *jw Jmn-R^c nswt [ntrw] m t3 hwt ʿ3t jmntt W3st t3 hwt nswt-bjt Wsr-m3^ct-R^c stp ////jmntt W3st.*²¹⁶

DB 10 : year 7, III Shemu 9; Amun rested in the funerary temple of Ramesses III.²¹⁷

DB 32 : year 3, II Shemu 20; Amun was in the funerary temple of Ramesses II.

Since the Feast of the Valley is the only known occasion when Amun of Karnak rested in a funerary temple, Marciniak accepted not only the graffiti of II Shemu, but those of III Shemu, as well as references to the Feast of the Valley. He dated the ensemble of the graffiti paleographically to the “deuxième moitié” of Dyn. 20,²¹⁸ “quoique certains d’entre eux peuvent être légèrement antérieurs”.²¹⁹ Nevertheless, DB 17 is dated explicitly in 32 Ramesses II, though Marciniak considers attribution to Ramesses III.²²⁰ This is out of the question, since the 32nd and last year of Ramesses III lasted only from I Shemu 26 to the accession of Ramesses IV on III Shemu 15, whereas DB 17 is dated to IV Akhet 1 in regnal year 32.

Table 13 presents the possible fits of DB 3, 9, 10 and 32 into Ramesside chronology according to exact computation. The absolute dates for the 20th dynasty correspond to the relative chronology as currently established.²²¹ The absolute dates depend a) on the alternatives 1 Ramesses II = 1290 or 1279 BC and b) on the premises that DB 3 (Tewosre) and DB 10 (temple of Ramesses III) refer to a LD 1 or LD 2. The latter days are preferable to the lunar date of 52 Ramesses II. Under the

²⁰⁶ MILLER 2007.

²⁰⁷ NELSON 1934, 42.

²⁰⁸ SCHOTT 1934, 73f.

²⁰⁹ KRUCHTEN 1989, 345 n. 3.

²¹⁰ For a possible description of the feast in the time of Ramesses VI, see KRI VI 341.13–342.1.

²¹¹ KRI III, 557.

²¹² BOTTI 1928, Pls. 54–59.

²¹³ MARCINIAK 1974.

²¹⁴ SADEK 1984.

²¹⁵ KRI IV 376; PEDEN 2001,

²¹⁶ KRI VI 102; but cf. PEDEN 2001, 122 n. 395.

²¹⁷ KRI V 337.

²¹⁸ Perhaps a slip for “première moitié”?

²¹⁹ MARCINIAK 1974, 38–40.

²²⁰ MARCINIAK 1974, 42.

²²¹ HORNUNG 2006, 214–217.

premise that the reign of Amenmesses was included within the reign of Sety II, the interval between the lunar date of 52 Ramesses II and DB 3 (Tewosre) corresponds to the proper lunar interval between LDs 1 or 2 which amounts in this case to $36 \text{ y} + 121 \text{ d} = 449 \text{ LM} + 1.7 \text{ d}$.²²² If, by contrast, the interval between the two dates is extended by an independent 4 year reign of Amenmesses, then the interval results in a LD 15 (full moon) for DB 3, while a LD 1 or 2 is to be expected on the basis of MHC. The interval between the lunar date of 52 Ramesses II and DB 10 (Ramesses III) corresponds to the sum of the distances 52 Ramesses II : DB 3 + DB 3 : DB 10, i.e. $(36 \text{ y} + 121 \text{ d}) + (10 \text{ y} + 11 \text{ d}) = 573 \text{ LM} + 1 \text{ d}$.

The attribution of DB 3 to Tewosre is certain, since she was deposed and her memory prosecuted. When Amun is said to rest in the funerary temple of a specific king, that pharaoh is not necessarily the ruling king as shown by an inscription in the tomb of Neferhotep (TT 49; temp. Aya) stating that Amun spent the night during the Feast of the Valley in the funerary temple of Thutmoses III (or I).²²³ To do justice to this premise I test the dates of DB 9, 10 and 32 against the regnal years of other Ramesside kings. No one seems to doubt that DB 10 dates to Ramesses III; nevertheless, a later king cannot be excluded out of hand. Since the accessions of Ramesses III and VII are possibly 50 years or two full lunar cycles apart, civil III Shemu 9 of DB 10 could have coincided with a LD 1 in 7 Ramesses VII.²²⁴

There is another possibility which is linked to DB 9. Following Kitchen,²²⁵ Peden ascribes DB 9 and its fragmentary throne name Usimare-setepen/// to Ramesses IV though noting “the unexpected use of the ... early prenomen in this text ...”.²²⁶ Peden alludes to the well-known fact that Ramesses IV changed his nomen in his 2nd year from Usimare Setepenamun to Heqamare Setepenamun.²²⁷ Since DB 9 is dated to a year 6, it should not be ascribed to Ramesses IV. The restoration “setepen[amun]” is open to question; the traces are indistinct and would also suit the throne name of Ramesses II or of Ramesses VII.

In *Sothis- und Monddaten* I assigned DB 9 to Ramesses VII. Klaus Ohlhafer pointed out to me an obstacle insofar as no funerary temple is attested for Ramesses VII. He also noticed that the date of DB 9 would fit in 6 Siptah. If so, Amun would have spent a night of the Feast of the Valley in the temple of Ramesses II, not in the temple of Siptah. Now Gautschy assigns DB 9 to Ramesses VII.²²⁸ The assignment to Siptah has no repercussions for absolute chronology, but the alternative results in a shift of one year of all regnal years from 1 Ramesses VII up to the final regnal year of Ramesses XI. I accept Gautschy’s choice despite the lack of evidence for the existence of a funerary temple of Ramesses VII. (The reader may remember Kitchen’s dictum:²²⁹ “Absence of evidence *so far* is **not** of itself valid evidence of historical absence in the distant past. Please note!”).

DB 32 fits in year 3 of Ramesses VI and would also fit in 3 Ramesses X, if DB 9 is assigned to Ramesses VII (or if Ramesses VIII had a regnal year 2, a possibility which I do not intend to follow up, to avoid a yet more complicated time table). In both cases, Amun would have rested in the funerary temple of Ramesses II.

Table 13 is based on the alternatives 1 Ramesses II = 1290 or 1279 BC. The latter difference of 11 years which corresponds to a lunar “half” cycle is reflected in Table 13 by pairs of lunar days which are in general one day apart. For example, the date of DB 3 (Tewosre) corresponds to a LD 3 if 1 Ramesses II = 1290 BC, but to a LD 2 if 1 Ramesses II = 1279 BC. Since according to MHC Amun was to rest on LDs 1 and 2 in the funerary temple, 1 Ramesses II = 1279 BC might be preferred over 1290 BC. Furthermore, Table 13 provides alternative calendar years for the regnal years of Ramesses IX, X and XI, to allow for the possibility that DB 9 be assignable to Ramesses VII.²³⁰

DB 32 (temple of Ramesses II) would possibly fit in two reigns. There are two possible fits for DB 10 (temple of Ramesses III) or only one fit. There is only one fit for DB 3 (Tewosre) and two possible fits for DB 9 (temple of Usimare-setepen///). Under

²²² KRAUSS 1997b, 175–177; KRAUSS 2006a, 415f.

²²³ DAVIES 1933, 57 n. 15.

²²⁴ If Sethnakhte had 4 full regnal years, then DB 10 would date neither to 7 Ramesses III nor to 7 Ramesses VII. The alternative would be 7 Ramesses IX, under the additional premise of a year 2 of Ramesses VIII.

²²⁵ KRI VI 102.

²²⁶ PEDEN 2001, 122 n. 395.

²²⁷ BECKERATH 1984, 246f.

²²⁸ GAUTSCHY 2014, 142.

²²⁹ KITCHEN 2009, 178.

²³⁰ HORNING 2006, 216.

Table 13 alternative years for DB 3, 9, 10 and 32; modified after KRAUSS 2006, Table III.8.9.

alternatives for regnal year 1	Tewosre	Usimare setepen///	Usimare meriamun = Ramesses III	Usimare setepenre = Ramesses II
	DB 3: year 7 II Shemu 28	DB 9: year 6 III Shemu 9	DB 10: year 7 III Shemu 9	DB 32: year 3 II Shemu 20
	LM & LD	LM & LD	LM & LD	LM & LD
Ramesses II 1290/1279 BC	–	X.27 / X.27	–	X.6 / X.7
Merneptah 1224/1213	–	X.22 / X.20	–	IX.29 / IX.28
Sety II 1214/1203	–	X.28 / X.27	–	X.6 / X.6
Amenmesses 1214/1203	–	–	–	X.17 / X.17
Siptah 1198/1187	–	XI.3 / XI.2	–	X.11 / X.10
Tewosre 1202/1191	XI.3 / XI.2	–	–	–
Sethnakhte 1201/1190	–	–	–	IX.28 / IX.25 !
Ramesses III 1198/1187	–	X.21 / X.21	XI.2 / XI.2	IX.29 / IX.28
Ramesses IV 1167/1156	–	X.7 / XI.6	–	X.16 / X.14
Ramesses V 1161/1150	–	–	–	X.20 / X.19
Ramesses VI 1157/1146	–	X.24 / X.24	X.6 / X.5	X.3 / X.2
Ramesses VII 1148/1137	–	X.21 / X.20	XI.2 / XI.1	IX.30 or X.1 / IX.28
1147/1136	–	XI.2/XI.1	–	–
Ramesses VIII 1141/1130	–	–	–	–
Ramesses IX 1140/1129	–	X.28 / X.27	XI.9 / XI.9	X.7 / X.6
1139/1128	–	XI.9 / XI.9	X.20 / X.20	X.17 / X.16
Ramesses X 1122/1111	–	–/–	–/–	X.21 / X.20
1121/1110	–	–/–	–/–	X.2 / X.1
Ramesses XI 1117/1106	–	X.26 / X.25	XI.8 / XI.6	X.4 / X.4
1116/1105	–	XI.8 / XI.6	X.18 / X.16	X.15 / X.15

these circumstances I draw conclusions as regards relative and absolute chronology on the basis of DB 3 (Tewosre) and DB 10 (temple of Ramesses III).

Other relevant Djeser-akhet graffiti

Besides the four graffiti which mention Amun resting in a funerary temple, there are other Djeser-

akhet graffiti dated between II Shemu 10 and III Shemu 3.²³¹ The time span makes it probable that these graffiti were written in connection with the Feast of the Valley. The texts refer mostly to Hathor in accordance with private rituals at the festival.

DB 31 is the only Djeser-akhet graffito which cites an explicit date in connection with the Feast of the Valley: “year 22, II Shemu 23; offering to

²³¹ MARCINIĄK 1974, 41, Table I.

Hathor during the Beautiful Feast of the Valley of Amun-Re, King-of-Gods.”²³² Note that Marciniak transcribes the day number as ‘23’ which I have corrected into ‘22’.²³³ Now I would like to retain ‘22’ only as a possibility and to accept Marciniak’s reading. (I thank Günther Vittmann for his advice on the hieratic writing of this number.)

My earlier attempts to analyse the DB graffiti assigned DB 31 to Ramesses XI, though I did not fail to note that a rock fall might have destroyed Djeser-akhet during or even shortly before his reign since the temple still functioned under Ramesses IX.²³⁴ Now I no longer consider Djeser-Akhet accessible to visitors in 22 Ramesses XI, attributing DB 31 to Ramesses III or to Ramesses II. Since the text mentions neither the resting of Amun nor offerings as noted in *MHC*, there is no compelling reason why DB 31 should refer to a LD 1 or 2. The civil date II Shemu 23 corresponded in 22 Ramesses III to X.27 and to X.4 in 22 Ramesses II.

There might have been propitious days for offerings to Hathor. Visitors might have come to Deir el-Bahri on specific days during the month-long festival or on other days which were coincidentally convenient. An example is DB 36 dated to III Shemu 1 in year 21 [Ramesses III]; the date fell on a LD 24. In this case a scribe Mery-Ptah and User-Montu, *Sm*-priest and steward of the *hwt Nb-m3ct-Rc* prayed to Hathor and Amun. The text of DB 36 does not imply that its date coincided with Amun’s resting in a mortuary temple on a LD 1 or 2. Gautschy assigns DB 36 to Amenhotep III,²³⁵ evidently interpreting the citation of the mortuary temple of *Nb-m3ct-Rc* as contemporaneous with Amenhotep III. By contrast, Sadek identified Woser-Montu as a well-known Ramesside person:²³⁶ “Wosermontu is almost certainly the same man who appears both in the undated Tomb 277 of Amenemone, and Tomb 148 of Amemope who served under Ramesses III, IV and V”.

It remains open whether the assertion of *MHC* 135 that the feast began on LD 1 in II Shemu is to be interpreted as “first LD 1 in civil II Shemu” or as “LD 1 of lunar II Shemu, i.e. lunar month X

since I Akhet 1”. The calendric settings of the four graffiti which refer to Amun’s resting in a funerary temple are as follows:

DB 3: in lunar month XI which began in civil II Shemu;

DB 9 & 10: in lunar month XI which began in civil III Shemu;

DB 32: in lunar month X which began in civil II Shemu.

Thus not only the civil month of the feast appears to be variable, but also the lunar month of which X and XI are attested. Without taking notice of the DB graffiti Anthony Spalinger presumed that the feast began on the first LD 1 which occurred in civil month II Shemu:²³⁷ “... the Valley Feast was conditioned by the civil month of Payni, not by lunar month 10. (If the latter were the case then *hb Int* might turn up in civil month 11, Epi-phi, from time to time.” Although civil month 11 turns up from time to time, the Beautiful Feast of the Valley does not seem to be determined by lunar month X, since lunar month XI occurs. The variable timing of the Beautiful Feast of the Valley remains to be explained.²³⁸

Ferrying Amun across the Nile in II Shemu

Deir el-Medina ostraca mention days when Amun crossed the Nile or was expected to do so. I have discussed these cases in my “Sothis- und Mond-daten”.²³⁹ It seems possible that such ferrying was associated with the Beautiful Feast of the Valley since it occurred in II Shemu.²⁴⁰ Table 14 lists the sources, some of which are included in KRI.

Table 14 sources of ferrying dates

source	regnal year	civil date of ferrying
oGardiner 11 (KRI VI, 248f)	2 [Ramesses V]	II Shemu 25
oCG 25265	5 [Ramesses IV]	II Shemu 1
oTurin 57044 (KRI V, 510)	26 [Ramesses III]	II Shemu *29 ²⁴¹
oTurin 57034	22 [Ramesses III]	II Shemu 12
oCG 25538 (KRI IV, 315)	6 [Sety II]	II Shemu 25

²³² SADEK 1984, 89.

²³³ KRAUSS 1985, 137.

²³⁴ LIPINSKA 1967, 28–30; PINCH 1993, 10–11; PEDEN 2001, 122.

²³⁵ GAUTSCHY 2014, 142.

²³⁶ SADEK 1984, 65; citing HELCK 1961, 100.

²³⁷ SPALINGER 1995, 32.

²³⁸ MARCINIAK 1984, 32f; KRAUSS 1985, 141–144.

²³⁹ KRAUSS 1985, 145–148.

²⁴⁰ HAIKAL 1972, 14–15; MASSART 1957, 183; SCHNEIDER 2011, 448–449 who refers to CG 25538 (Sety II) alone, omitting any reference to KRAUSS 1985, 145–148.

Evidently, ferrying in years of Ramesses III, IV and V occurred on average on the same LD \pm 2 d in civil II Shemu.

Table 15 relative lunar distances of ferrying dates

	distance in y and d	distance in LM and d
oTurin 57044 : oTurin 57034	4 y + 17 d	50 LM + 0.5 d
oTurin 57034 : oCG 25265	14 y + 354 d	185 LM + 0.8 d
oCG 25265 : oTurin 57044	10 y + 337 d	135 LM + 0.4 d
oCG 25265 : oGardiner 11	3 y + 24 d	38 LM – 3d
oTurin 57044 : oGardiner 11	13 y + 361 d	173 LM – 2.8 d
oTurin 57034 : oGardiner 11	18 y + 13 d	223 LM – 2.3 d

The average lunar day of the ferrying in years of Ramesses III, IV and V can be determined by reference to DB 3 (7 Tewosre) and DB 10 (7 Ramesses III). Furthermore, the average lunar ferrying day in 6 Sety II can be determined by its distance to the lunar date of Ramesses II.²⁴² (Coincidentally there is a distance of exactly 50 years or two lunar cycles between 6 Sety II, II Shemu 25 and 2 Ramesses V, II Shemu 25). As Table 16 shows, the ferrying dates are on average 13.5 (lunar) days later than DB 10/DB 3 or the lunar date of Ramesses II. Provided that DB 10 and DB 3 fell on LD 1 or 2, it follows that the ferrying dates refer on average to days just before full moon.

Table 16 relative lunar months and days of ferrying dates

	average distance to DB 10	average distance to DB 3
oTurin 57034	184 LM + 14.4 d	308 LM + 13.6 d
oTurin 57044	234 LM + 14.8 d	358 LM + 14.0 d
oCG 25265	369 LM + 15.2 d	493 LM + 14.4 d
oGardiner 11	407 LM + 12.1 d	531 LM + 11.3 d
	average distance: lunar date of Ramesses II to 6 Sety II, II Shemu 25	
oCG 25538	29 y + 118 d	362 LM + 12.9 d

Table 17 presents the astronomically exact values for lunar month and day of the ferrying dates under the premise of 1 Ramesses II = 1290 or 1279 BC.

Table 17 lunar months and ferrying dates referred to 1 Ramesses II.

1 Ramesses II	1290 BC	1279 BC
oCG 25538	X.14 or 15	X.14
oTurin 57034	X.17	X.16
oTurin 57044	X.17 or 18	X.16
oCG 25265	IX.17 or 18	IX.16
oGardiner 11	X.13 or 14	X.14
	average: LD 16	average: LD 15.2

It appears that the Nile ferrying of Amun took place around full moon on LD 15 ± 2 in lunar month X, except in the case of oCG 25265 when it occurred in lunar month IX. The latter case was a month too early for the Beautiful Feast of the Valley,²⁴³ whereas the other cases occurred in the civil month of the feast. Since MHC does not remark on the return of Amun from the festival, it remains open whether it lasted only for those two days which are specified in MHC. By comparison, the five days of the Tepi Shemu feast are listed one by one in MHC 1451ff.

I am tempted to suggest that Amun could have rested the first two days in the funerary temple of the ruling king and then afterwards spent a series of days in the temples of earlier kings. Under this premise the ferrying dates II Shemu 12, II Shemu 25 and 28 could refer to Amun's return to the east bank. But given the dates of DB 9 and 10 in III Shemu, the known ferryings in II Shemu could have taken place before the Beautiful Festival of the Valley. It remains only a possibility that the ferrying dates are to be associated with the festival or had another objective.²⁴⁴ By contrast, the DB graffiti DB 3, 9, 10 and 32 are associated with the feast by Amun's resting in a funerary temple which is in turn asserted in MHC.

Excursus 2: Tepi Shemu feast dates

The Tepi Shemu feast is documented at Thebes from Dyn. 20 to 26;²⁴⁵ according to MHC 1451ff. The feast began on LD 1 in the first month of Shemu (Tepi Shemu) and lasted 5 days. LD 1 in I She-

²⁴¹ Day 28 is designated as "eve" of the ferrying, see KRAUSS 1985 145 n. 3, and RITA V, 414.

²⁴² Note that 6 Sety II began on II Peret 29/III Peret 6 (mid-December 1199 BC) and ended on IV Akhet 28/I Peret 1 (mid-October) 1198 BC, see BECKERATH 1994, 73. For a convoluted lunar dating of the ferrying in oCG 25538, see BORCHARDT 1935, 77–78.

²⁴³ Since the feast took place at times in III Shemu (DB 9 and DB 10), after II Shemu as its proper month, it may have been celebrated a month earlier as well, in I Shemu.

²⁴⁴ In one case Amun ferried over to libate (*w3h mw*) for the "Kings of Upper and Lower Egypt" (oCG 25265); a libation is also mentioned 4 days before the ferrying on oTurin 57034.

²⁴⁵ SCHOTT 1950, 104–105.

Table 18 dated Tepi Shemu feasts of the early Saite era and of the Third Intermediate Period

source	type	regnal year	civil date
Demotic Pap. Vienna	oracle	14 Psametik I ²⁴⁷	I Shemu [5]
frag. Fitzw. 68	introduction	18 Osorkon III	I Shemu 6
frag. 9b	introduction	?	I Shemu 15
frag. 7	feast, introduction	39 Shoshenq III	I Shemu 26
frag. 2	introduction	8 Pedubast I	I Shemu 19
frag. 1b	introduction	7 Pedubast I	I Shemu [1]
Louvre C.258	arrival for Tepi Shemu feast	11 Takelot II	I Shemu 11
frag. 5d	<i>wḥm ḥzwt</i>	11 ///	I Shemu ///
frag. 5c	[introduction?]	23 [Osorkon II]	I Shemu [1]
frag. 5b	[introduction?]	14 [Osorkon II]	I Shemu [1]
frag. 26–27	introduction	11 T[akelot I]	I Shemu 25
frag. P	introduction	13 Psusennes II	I Shemu 13
frag. 3b	introduction	17 Siamun	I Shemu [1]
frag. 3a	introduction	2 Osorkon the Elder	I Shemu 20
Djehutymes inscription	oracle	3 [Amenemope] or 3 [Osorkon]	I Shemu 10

mu can be interpreted as “LD 1 in civil I Shemu” or as “LD 1 in lunar I Shemu, corresponding to lunar month IX”; in the latter case the first feast day could have occurred on one of the last days of civil IV Peret. For the relationship of civil months to lunar months see Excursus 3.6. The Tepi Shemu dates of Dynasties 21 and 22/23 occurred between the end of November and mid-December in the proleptic Gregorian calendar and thus during a season when weather conditions might have been unfavorable for astronomical observation. This is at least implied by the astronomer Arthur von Auwers in a 19th century report on observational conditions at Luxor in November/December.²⁴⁶

Table 18 presents a list of attested or inferred Tepi Shemu feasts, primarily from the fragments of the Karnak Priestly Annals (code: frag.).

The Tepi Shemu feast is attested in Bubastide sources explicitly by Louvre C.258 and implicitly by frag. 7. Most of the introductions which are known from the Priestly Annals are datable to the Tepi Shemu feast by inference, as originally suggested by Pascal Vernus²⁴⁸ and formulated by Jean-Marie Kruchten as follows:²⁴⁹ “l’introduction de nouveaux prophètes intervenait principalement pendant le premier mois de Chemou (*tpj šmw*). De fait, sur les seize entrées dont le mois est connu

un total de onze, soit 69%, est daté de Paschons.” Kruchten cites the following introduction dates which did not fall in I Shemu: I Akhet [...]; III Akhet 17; III Peret 9; III Peret [...] and IV Shemu 5.

The relatively high number of unequivocally documented priestly introductions in I Shemu; the coincidence of the Tepi Shemu feast and an introduction in the case of frag. 7; and further, the telling way in which the introduction dates are distributed throughout I Shemu (days 1, 6, 12, 13, 20, 25, 26) make the assumption probable that introductions regularly took place during the Tepi Shemu feast, i.e. on lunar days 1 to 5. The assumption can be supported in the case of frag. 2 by determining its distances to Louvre C.258 and frag. 7. Note that introductions during the Tepi Shemu feast have nothing to do with the moon as such; rather they are indirectly related to the moon insofar as they took place during the Tepi Shemu feast which was lunar regulated.

In my earlier studies of the Tepi Shemu feast days, I was unaware that there are 4 out of altogether 15 dates which coincide with I Shemu [1]. In all four cases the date is written “I Shemu” without day number. Following Egyptological convention I read in each case *I šmw sw* [1] albeit I have a slight doubt whether such a reading always

²⁴⁶ AUWERS 1877, 37 n. 1.

²⁴⁷ PARKER 1962, 7–8.

²⁴⁸ VERNUS 1975, 24.

²⁴⁹ KRUCHTEN 1989, 243.

corresponds to the ancient scribe's intention. Since on average I Shemu 1 and a LD 1 coincide only every 25 years, it is to be expected that the documented introductions on I Shemu 1 are in general not dates of the Tepi Shemu feast. One or the other of the four introductions could have been chosen to fall on the first day of a decade. This could be the case in frag. 1b from 7 Petubastis I, which I have used as Tepi Shemu feast day.²⁵⁰ Since the introductions frag. 1b (7 Petubastis I) and frag. 2 (8 Petubastis) are 384 days or 13 average lunar months apart, they did not fall in general in the same lunar month although they coincided approximately with the same lunar day. Whereas the LD 1 that corresponded to frag. 2 was a day in civil I Shemu or, respectively, in lunar month IX, the LD 1 that corresponded to frag. 1b was a day in civil IV Peret or in lunar month VIII of the respective calendar year. Nevertheless, if 7 Petubastis II = 817 BC, then the date of frag. 1b fell in lunar month IX resulting from the preceding I Akhet 1 being LD 1 and II Akhet being a blue month (II Akhet 1 and II Akhet 30 being LDs 1). The odds were 50 : 50 that the situation repeated itself 14 years after 817 in 803 BC and 25 years before 817 in 842 BC.

One might argue that frag. 7 implies that the Tepi Shemu feast ought to have begun in 7 Petubastis I approximately on I Shemu 26. The reason is that the date of frag. 7 is 25 years or a full lunar cycle later than frag. 1b, implying that I Shemu 26 as the recorded day of the Tepi Shemu feast in 39 Shoshenq III, would also have been a day of the Tepi Shemu feast, 25 years earlier in 7 Petubastis I. Nevertheless, a calendar year in which I Shemu 26 is a LD 1, is possibly one in which a blue month occurs which could result in I Shemu [1] being a day in lunar month IX. Thus it remains open whether frag. 1b refers to an introduction which did take place during the Tepi Shemu feast or not.

Frag. 3b is dated to 17 Siamun, I Shemu [1]. If 17 Siamun was 970 BC (corresponding to 1 Ramesses II = 1290 BC), then I Shemu [1] was LD 2 of lunar month IX that had begun on IV Peret 30. In this case frag. 3b would correspond to a day of the Tepi Shemu feast. If, by contrast, 17 Siamun was 959 BC, then I Shemu [1] was LD 30 of lunar month VIII that had begun on IV Peret 2. Nevertheless, in this case, frag. 3b could be a mistaken

date of the Tepi Shemu feast, if old crescent was missed on I Shemu [1].

A more complicated case is presented by frags. 5b and 5c which are both dated to I Shemu [1] and refer to introductions by inference. As shown below, it is possible that either none or only one of the dates is a day of the Tepi Shemu feast. Thus of the four cases in which an indicated or inferred introduction took place on I Shemu [1], one appears not to be on Tepi Shemu feast days (frags. 5c), while in the remaining three (frags. 1b, 3b and 5b) the question remains open.

In what follows I attempt to interpret frags. 5 and 26–27 as dates of the Tepi Shemu feast. Frag. 5 refers to a series of introductions; the text may be rendered as follows:²⁵¹

frag. 5a: year /// *nswt [Wsr]kn*; day of [introduction] ///
 5b: year 14, I Shemu [1]/// *nswt Wsr-m3^ct-R^c-stp.n-Jmn z3 r^c ///*
 5c: year 23, I Shemu [1]/// *Wsr-m3^ct-R^c-[stp.n]J[mn]*
 5d: *whm hzwt* year 11, I Shemu ///[king];
 5e: year ///
 5f: *Wsr-m3^ct-R^c-stp.n-[R^c] Mry-Jmn ššnq z3 B3st [= Shoshenq III]*
 (introduction of a vizier)

Since the king mentioned in frag. 5f is Shoshenq III, Kruchten argues that the royal names of 5b and 5c refer either to Shoshenq III or to Osorkon II:²⁵²

“De ces deux hypothèses, la première me paraît la plus vraisemblable, si on tient compte de la circonstance que les textes 5c et 5d concernent la même personne ‘introduite’, comme Pa-di-Amen [of frag. 1], en deux temps à Karnak, ce qui suppose une date pas trop éloignée pour les deux inscriptions. De fait, en admettant que l’an 23 du text 5c appartienne à Chéchonq III, il faudrait nous reporter au règne d’Osorkon III, une quarantaine d’années plus tard, pour rencontrer un ‘an 11’ auquel rattacher le text 5d.” Thus Kruchten concludes that year 11 of frag. 5d refers to year 11 of Takelot II.²⁵³ In Aston's chronology, there would have been 15 years between 23 Osorkon II and 11 Takelot II, provided Osorkon II ruled for 31 years. If, by contrast, frag. 5c is attributed to Shosh-

²⁵⁰ KRAUSS 2006a, 409–411.

²⁵¹ KRUCHTEN 1989, 52–55.

²⁵² KRUCHTEN 1989, 55.

²⁵³ KRUCHTEN 1989, 55.

Table 19 combinations of frags. 26–27 and 5b/c as Tepi Shemu dates of Takeloth I and Osorkon II, if 1 Shoshenq III is either 830 or 841 BC.

1 [Osorkon II] BC / length of reign in years		Lunar month and day of KPA fragments		
last regnal year 831 BC	last regnal year 842 BC	frag. 5c: I Shemu [1], 23 [Osorkon II]	frag. 5b: I Shemu [1], 14 [Osorkon II]	frag. 26–27: I Shemu 25, 11T[akeloth I]
853 BC / 23 y		IX.4	VIII.26	IX.27
854/24		VIII.23	VIII.16	IX.17
855/25		VIII.12	IX.5	IX.6
856/26		IX.1	VIII.24	IX.25
857/27		VIII.20	VIII.13	IX.14
858/28		VIII.9	IX.2	IX.3
859/29		VIII.28	VIII.21	IX.22
860/30		VIII.17	VIII.10	IX.12
861/31		VIII.7	VIII.29	IX.1
862/32		VIII.26	VIII.19	IX.20
863/33		VIII.16	VIII.8	IX.10
864/34	864 BC / 23 y	IX.5	VIII.27	VIII.29
865/35	865 / 24	VIII.24	VIII.16	VIII.18
866/36	866 / 25	VIII.13	VIII.5	IX.7
867/37	867 / 26	IX.2	VIII.24	IX.26
868/38	868 / 27	VIII.21	VIII.14	IX.15
869/39	869 / 28	VIII.10	IX.3	IX.4
870/40	870 / 29	VIII.29	VIII.22	IX.24
871/41	871 / 30	VIII.19	VIII.12	IX.13
872/42	872 / 31	VIII.8	IX.1	IX.3
	873 / 32	VIII.27	VIII.20	IX.22
	874 / 33	VIII.16	VIII.9	IX.11
	875 / 34	VIII.5	VIII.28	VIII.30
	876 / 35	VIII.24	VIII.17	IX.19
	877 / 36	VIII.14	VIII.7	IX.8
	878 / 37	IX.3	VIII.26	IX.27
	879 / 38	VIII.22	VIII.15	IX.17
	880 / 39	VIII.12	IX.5	IX.6
	881 / 40	IX.1	VIII.24	IX.25
	882 / 41	VIII.20	VIII.13	IX.15
	883 / 42	VIII.9	IX.2	IX.4

enq III, then year 11 of frag. 5d would presumably be 11 Iuput I, 9 years after 23 Osorkon II.²⁵⁴

If frags. 5b and 5c date to the same reign, then 8 years = 98 LM + 26 days separate them. The distance implies that either none or only one date refers to a day of the Tepi Shemu feast. The attribution of 5b or 5c to Osorkon II rather than to Shoshenq III is probable, provided that one of the pair was a date of the Tepi Shemu feast, since neither can accommodate the Tepi Shemu date of 39 Shoshenq III (frag. 7). Below I combine frags. 5b and 5c with frag. 26–27. The latter concerns a

priestly introduction on I Shemu 25 in year 11 of a king T[akelot] whose identity Kruchten left open.²⁵⁵ If this date refers to a Tepi Shemu feast day, it cannot be attributed to Takeloth II, since in his year 11 the feast began on I Shemu 11 or 12 (see main article).

Frag. 26–27 cannot be assigned to Takeloth III, should the introduction on I Shemu 6 in 18 Osorkon III as recorded on frag. Fitzwilliam Museum E SS 68d refer to a day of the Tepi Shemu feast.²⁵⁶ Provided that the synchronism 28 Osorkon III = 5 Takeloth III in NLR 13 means that

²⁵⁴ Cf. JANSEN-WINKELN 2006b, 249f.

²⁵⁵ KRUCHTEN 1989, 122.

²⁵⁶ For the Fitzwilliam Museum fragment see KRUCHTEN 1989, 144.

the dates of frag. 26–27 and the Fitzwilliam fragment are 16 years + 19 days or 198 LM + 12 days apart, then frag. 26–27 is not a day of the Tepi Shemu feast, if the Osorkon III date is such a day.²⁵⁷ The dates would match Tepi Shemu feast days if their distance were 15 years + 19 days. Under these circumstances I test frag. 26–27 as date of Takeloth I. Table 19 sets out the combination of the dates of frag. 26–27 and frags. 5b and 5c under the following premises: corresponding to the possibilities of 1 Shoshenq III, the final year of Osorkon II fell in 842 or 831 BC and his reign lasted at least (sic) 23 years; Takeloth I ruled 13 years (see main text). It is evident that the respective civil dates of regnal years 14 or 23 Osorkon II and 11 Takeloth I can only pertain to the Tepi Shemu feast, if they fall in the interval LD 1 to 5 in lunar month IX.

As Table 19 shows, there are cases (shaded) in which I Shemu [1] in 14 Osorkon II and I Shemu 25 in 11 Takeloth I fall in IX.1–5; accordingly, Osorkon II could have ruled for 28, 31 or 42 years, if his reign ended either in 842 or 831 BC. If his reign ended in 842 BC there is also the possibility of 39 regnal years; the computational possibility of a 53 regnal years seems not to be an option.

Excursus 3: The *wrš*-date of the larger Dakhleh stela

The text of the larger Dakhleh stela relates the circumstances of an oracle on the occasion of a *wrš*-feast of Seth, Lord of the Oasis, on IV Peret 25 in year 5 of a pharaoh Shoshenq who had long been identified as Shoshenq I or III.²⁵⁸ Recently, however, Olaf Kaper,²⁵⁹ Troy Sagrillo,²⁶⁰ and I have all proposed Shoshenq I.²⁶¹ Now Anthony Leahy has reopened the question by pointing out quite correctly that Shoshenq III could have sent an envoy to Dakhleh in his year 5.²⁶²

According to my interpretation, the *wrš*-feast of the Dakhleh stela is a lunar event which can be dated to 939 BC, implying 1 Shoshenq I = 943 BC, provided 1 Ramesses II = 1279 BC. Understanding the *wrš*-date as lunar has been criticized by Kenneth A. Kitchen:²⁶³ “there is no evidence whatsoever

that the *weresh*-feast date of the god Seth on the Dakhleh stela was a lunar feast (no mention of *pesdjentyu*, etc.) rather than an ordinary calendar-feast; hence it should not arbitrarily be so treated, and this imaginary lunar occurrence can be deleted, leaving us with the normal 945 date”.

Contrary to Kitchen’s assertion, there is evidence that the *wrš*-feast of the Dakhleh stela is lunar. Using Hellenistic sources, Chris Bennett has recently shown that the lunar temple service month was called *3bd* or *wrš*. It began on LD 2 in the Egyptian standard lunar month and ended after a full synodic period on the first day of lunar invisibility or LD 1 in the standard lunar month.²⁶⁴ Egyptologists presumed for a long time that the lunar temple service month was identical with the standard lunar month beginning on LD 1 and ending on a last LD, be it LD 29 or LD 30. Two decades ago Ulrich Luft realized that the lunar temple service months which are attested in the MK archive of Illahun began on LD 2 and ended on LD 1.²⁶⁵ Following the lead of Bennett and with reference to the Roman Period in Egypt, Sandra Lippert and Maren Schentuleit state that “der Phylenwechsel fand am ... zweiten Tag des Mondmonates (*3bdw*) statt, wie bereits aus den Illahun-Papyri hervorgeht”.²⁶⁶ This implies that the lunar temple service months for the intervening centuries, including the Third Intermediate Period, also began on LD 2.

The *wrš*-feast of the Dakhleh stela or rather its name implies that the related temple service is to be understood as the lunar temple service month called *wrš* and thus the feast was no “ordinary calendar-feast”, i.e. a civil calendar feast. If so, the question arises on which day of the lunar temple service month the *wrš*-feast took place. It was decided on IV Peret 16 to let the oracle judge in the legal matter at hand; the *wrš*-feast took place nine days later on IV Peret 25. The interval of nine days does not help in determining the lunar day of IV Peret 25. It implies nevertheless that the *wrš*-feast was either a single feast day or the first day in a series of feast days.

In an earlier publication I deduced the lunar day of the *wrš*-feast on the basis of passages in the

²⁵⁷ For NLR 13, cf. v. BECKERATH 1966, 50, and KITCHEN 1973, § 73.

²⁵⁸ GARDINER 1933, 19–30.

²⁵⁹ KAPER 2001, 77.

²⁶⁰ SAGRILLO 2005.

²⁶¹ KRAUSS 2005a, 43–44.

²⁶² LEAHY 2010, 45–53.

²⁶³ KITCHEN 2009, 167.

²⁶⁴ BENNETT 2008b; KRAUSS 2012, 23–43.

²⁶⁵ LUFT 1992, 233f.

²⁶⁶ LIPPERT 2006, 183.

²⁶⁷ KRAUSS 2005a, 46.

Demotic Chronicle.²⁶⁷ According to Heinz Felber, Chronicle II 9 provides the information that “das Asche(?) -Fest das Ende des (*3bd*-) Monats ist”. Felber notes that Joachim Quack suggests emendation of the otherwise unknown $\epsilon\check{s}$ in *wrs̄*.²⁶⁸ Chronicle II 10 informs us that “das *Nebti*-Fest der Anfang des (*3bd*-) Monats ist”. Jürgen Osing found proof in the hieratic Tebtunis Papyrus I that the *nbtj*-feast is identical with the feast of LD 2 or *hrw n 3bdw*.²⁶⁹ Citing examples in Erichsen’s Glossar, he points out that the reading is *nbtj*, not *3btj* as the name of LD 2 is usually written in Demotic; but Quack prefers the reading *3btj*.

The *3bd*-month of Chronicle II 10 is apparently not a 30-day month of the civil calendar. The latter is referred to in certain passages of the Chronicle by specific terms like $\epsilon r q j$ (last day = day 30 of a civil month) and *sw*, the word for ‘calendar day’ (e.g. Demotic Chronicle II, 1;2). Since the *3bd*-month of II 10 begins with new crescent day or *3btj/nbtj*, it is rather a lunar month (for the designation of a lunar month by the name of a civil month see below). Since Demotic Chronicle II 9 and 10 are parallel assertions as set out below, I conclude that the *3bd*-month of II 9 which ends on $\epsilon\check{s}$ -feast > *wrs̄*-feast is also lunar.

Demotic Chronicle II 9	Demotic Chronicle II 10
$\epsilon\check{s}$ occurs in Pe in month II peret	<i>3btj</i> occurs in Dep in month III peret
$\epsilon\check{s}$ is the end of the month	<i>3btj</i> is the beginning of the month

The *3bd*-month to which Chronicle II 10 refers, begins on *3btj/nbtj* and is thus shifted by one position relative to the enumeration of the days in the standard lunar month. Therefore the $\epsilon\check{s}$ -feast > *wrs̄*-feast as the end of the *3bd*-month in II 9 ought to be shifted accordingly; the end of an *3bd*-month that begins on LD 2 is in any case a LD 1. By contrast, Quack identifies the $\epsilon\check{s}$ -feast > *wrs̄*-feast and the end of the *3bd*-month in Chronicle II 9 as the last day of the standard lunar month which would be a LD 29 or 30.²⁷⁰

Since the Demotic Chronicle dates to the 3rd century BC,²⁷¹ I considered the possibility that the lunar month in question is the Macedonian lunar month.²⁷² But in the interim Bennett has argued

that the Egyptian lunar temple service month began with LD 2. Now it can be asserted that the lunar interval of Demotic Chronicle II 9–10 which is called *3bd*-month beginning on LD 2 and ending on the $\epsilon\check{s}$ -feast > *wrs̄*-feast is formally identical with the interval of the lunar temple service month *wrs̄* or *3bd*. My former explanation of the *wrs̄*-feast as LD 1 hinges on the emendation $\epsilon\check{s}$ -feast > *wrs̄*-feast. The emendation is quite possible, but cannot be taken for granted. In what follows I shall try to deduce LD 1 as day of the *wrs̄*-feast on the basis of the relevant literature on *wrs̄* in general as it is known to me.

Attestations for p3 wrs̄ = lunar month.

1) The paleography of the magical papyrus London-Leiden dates it to the 3rd century AD or slightly later.²⁷³ The citations below follow the translation of Janet H. Johnson with additions in parentheses.

VIII 17: “... [Say it] opposite Ursa Major (*hpš*) on the third day of the lunar month (*p3 wrs̄*).”

IX 8: “... your (*hn*) is a lunar month”. – Osing translates *p3j.k hnw n wrs̄* as “dein (zeitlicher) Bereich ist ein Mondmonat”.

X 22: “you do it from the fourth day of the lunar month (*p3 wrs̄*) until the fifteenth day, which is the half-month (half-month day)²⁷⁴ when the moon fills the sound-eye (*wḏ3t*).”

XII 3: “... one day before the beginning of the lunar month (*p3 wrs̄*); when the lunar month (*p3 w(rš)*) occurs, ...”.

XXI 19: “you do it also on the third of the lunar month (*p3 wrs̄*)”.

It follows from the description of the lunar days cited in X 22 that *wrs̄* evidently means “standard lunar month”; the remaining cases can be interpreted accordingly. This was how Griffith und Thompson understood it in the *editio princeps* and the way Janet H. Johnson does now. Erichsen doubted the interpretation of *wrs̄* as lunar month, though without indicating a reason.²⁷⁵

2) Myth of the sun’s eye.

The Demotic texts date to the 2nd century AD; the Greek translation dates a century later.²⁷⁶ *wrs̄*

²⁶⁸ FELBER 2002, 76f; cf. QUACK 2007, 185 n. a.

²⁶⁹ QUACK 2007, 185 n. b.

²⁷⁰ QUACK 2007, 354 n. a.

²⁷¹ FELBER 2002, 68.

²⁷² KRAUSS 2005a, 46 n. 37.

²⁷³ GRIFFITH & THOMPSON 1904, 1–13; JOHNSON 1986, LVII.

²⁷⁴ HUGHES 1958, 148.

²⁷⁵ ERICHSEN 1954, 95.

²⁷⁶ QUACK 2007, 195.

is cited in VIII 19–20: the Nubian cat addresses the cynocephalus in his capacity as moon god. Under the premise that *wrš* and *wš*/time are related,²⁷⁷ Wilhelm Spiegelberg translated *wrš* in VIII 19–20 as “Zeit”: “du trittst ein in das Udje-Auge, denn du bist Herr der Zeit.”²⁷⁸ He was followed by Françoise de Cenival who translated:²⁷⁹ “Tu entres dans l’œil-oudjat (ou: Puisse-tu entrer dans ...) de manière à devenir maître du temps (*wrš*).”

Quack considers *wš* and *wrš* etymologically unrelated and translates: “Du trittst in das Udjat-Auge ein, so dass du Herr des Mondmonats wirst.”²⁸⁰ Note that the Greek translation of the myth does not include VIII 20 and thus provides no translation of *wrš*.²⁸¹

3) Tebtunis-Papyrus I; presumably 2nd century AD.²⁸²

Osing renders the assertion that LD 30 (*snhm*) ends (?) on the morning of *psdnt wrš*: “30. Tag: [er endet (?)] am Morgen des 1. Tages der Mondperiode”. He presumes *wrš* has the same meaning in the expression *šbd n wrš*, explaining the latter as “Monat der Mondperiode im Gegensatz zu dem allein als *šbd* bezeichneten Monat des Wandeljahres”.²⁸³ In other words, in Tebtunis-Papyrus I *wrš* apparently designates the standard lunar month.

4a) Book of the Dead; Pleyte 162, 7–9, after Leyden M. 46–47; Late Period.²⁸⁴

“You appear (*h^c*) as/like the moon (*j^ch*) at the time of the *weresh*” (*tr n wrš*; the latter written with sun-determinative). The translation of *wrš* as “lunar month” conforms to the examples 1–3 above.

4b) Nesmin-Papyrus; Talfest-Ritual; pBM 10209, III, 24, same wording as in 4a.

Fayza Haikal translates: “thou risest as the moon at the time of the *weresh*-feast”,²⁸⁵ and comments on *weresh*: “here clearly the name of a feast (cf. Wb., I, 336, 3) which from the context seems

to have been celebrated once a year.”²⁸⁶ Haikal gives no reason why *weresh* should be understood here as an annual feast. *Weresh* is written with *hb*- and sun-determinatives which cannot be taken as proof that “feast” is meant rather than “month”. Bennett cites a possible case for a *wrš*-feast on a LD 1 in pOx. Griffith 41, following on information provided by Sandra Lippert.²⁸⁷ In an email of October 8, 2012, she informed me that her supposition rests on the writing of *wrš* with the *hšb*-determinative rather than with the sun-determinative. She takes this as an indication that the *wrš*-feast could be meant, rather than the lunar temple service month, but does not accept it as proof.²⁸⁸

5) Stela Vienna Nr. 147; Saite Period.²⁸⁹

The funerary wish *wḥm nḥ tp rnpt tp wrš* is rendered by Osing: “mögest du erneut leben jedes Jahr und jedes *wrš*”.²⁹⁰ The translation of *wrš* as ‘lunar month’ seems to be appropriate. Anthony Spalinger comments that the Vienna stela “provides the not very useful phrase *tp rnpt* followed by *tp wrš*. Should we translate them by ‘each year and each periodic lunar-based interval’ or, less satisfactorily, as ‘the beginning of the year and the beginning of each periodic lunar-based interval’?”²⁹¹

6) A Demotic papyrus in Vienna which is apparently a Roman copy of an older text reflects Babylonian omen literature of the sixth century BC.²⁹² As Parker showed, the text contains concordances between the twelve Babylonian lunar months I Nisan to XII Adar and Egyptian lunar months as follows (restorations are not indicated):²⁹³

(I) Nisan = <i>pš wrš</i> IV Akhet	(VII) Tishri = <i>pš wrš</i> II Shemu
(II) Iyyar = <i>pš wrš</i> I Peret	(VIII) Marḥeshwan = <i>pš wrš</i> III Shemu
(III) Siwan = <i>pš wrš</i> II Peret	(IX) Kislev = <i>pš wrš</i> IV Shemu

²⁷⁷ ERICHSEN 1954, 95.

²⁷⁸ SPIEGELBERG 1917, 27, 108.

²⁷⁹ CENIVAL 1988, 23.

²⁸⁰ QUACK 2007, 210; cf. QUACK 2004, 50–51.

²⁸¹ WEST 1972.

²⁸² OSING 1998, 17.

²⁸³ OSING 1998, 207–210.

²⁸⁴ Cited after DZA 22.540.650: Thesaurus Linguae Aegyptiae <<http://aaew.bbaw.de/tla/>>.

²⁸⁵ HAIKAL 1972, 20.

²⁸⁶ HAIKAL 1972, 41.

²⁸⁷ BENNETT 2008b, 534f; KRAUSS 2012, 30.

²⁸⁸ Note that on the Dakhleh stela the determinatives in *hb nfr wrš* are *hb* and sun, whereas in the case of *hb wrš* in TT 390 the determinative is the sun only.

²⁸⁹ WRESZINSKI 1906, 83; WB I 336.

²⁹⁰ OSING 1998, 209 n. 1014.

²⁹¹ SPALINGER 1996, 5.

²⁹² PARKER 1959; JONES 1994, 47 n. 55.

²⁹³ Note that the source of concordance does not include one of the Babylonian intercalary lunar months, i.e. a second Elul or a second Adar.

(IV) Tammuz = <i>p3 wrš</i> III Peret	(X) Tebeth = <i>p3 wrš</i> I Akhet
(V) Ab = <i>p3 wrš</i> IV Peret	(XI) Shebat = <i>p3 wrš</i> II Akhet
(VI) Elul = <i>p3 wrš</i> I Shemu	(XII) Adar = <i>p3 wrš</i> III Akhet

The concordance was valid between 625 and 482 BC when IV Akhet fell between March 22 (IV A 1 in 482 v. Chr.) and April 26 (= IV Akhet 1 in 625 BC; IV Akhet 30 = May 25 in 625 BC) as the interval for the beginning of Nisan.²⁹⁴ Bennett states that the term *wrš* in the concordance “is clearly explicable as referring to a month starting on *3bd*, lunar day 2, in the Babylonian style, rather than *psdntyw*.”²⁹⁵ This explanation is possible, although it might be too specific. I understand, for example, the concordance between (III) Siwan and *p3 wrš II prt* to mean that Siwan corresponded to the Egyptian lunar month of 29 or 30 days that began on average on I Peret 29 at the earliest and on II Peret 28 at the latest. Since the interval amounts to about 60 days, it does not seem to matter whether the respective lunar month began on Egyptian LD 1 or 2.

Parker understood the concordances, for example, to mean that: “Nisan (is) the lunar month IV Akhet”, thus accepting an ambiguity, since IV Akhet is known at least to Egyptologists as a month of the civil year, not as a designation of a lunar month. An apparently certain example for such an ambiguous designation is presented by a Demotic horoscope in the Ashmolean Museum from 14 Cleopatra VII: (civil) I [*šmw*] 4 coincided with LD 22 of (lunar) IV Peret, the first day of which was (civil) IV Peret 13.²⁹⁶ pLouvre 7848, a document of Amasis year 12,²⁹⁷ provides another example:²⁹⁸ civil date II Shemu 13 is the equivalent of the 15th (day) of [lunar] I Shemu.²⁹⁹

p3 wrš = lunar temple service beginning on LD 2

MH Graffito 43 (2 dates)³⁰⁰

MH Graffito 44³⁰¹

MH Graffito 47³⁰²

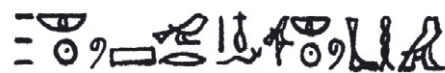
stela Moscow 145³⁰³

Demotic papyrus CG Cairo 30801³⁰⁴

In these cases *wrš* designates the lunar temple service month, explicitly beginning on LD 2 and implicitly ending on LD 1. Parker paraphrased *wrš* of Demotic papyrus CG Cairo 30801 as “service in the temple, by lunar months, of the various phyles”.³⁰⁵ Presumably, the basic meaning of *wrš* is simply “lunar month”; depending on the context, it could also have been understood as the monthly lunar temple service of a full lunar period from LD 2 to LD 1.

wrš-FEAST AND *hrw wrš*

The *wrš*-feast of the Dakhleh stela is expressed as



Wilhelm Spiegelberg read and translated *m ḥb.f nfr wrš* as “an seinem schönen *wršw* Feste”.³⁰⁶ Gardiner initially interpreted *nfr* + stroke as “beauty”, translating “in his feast Beauty-of-Daytime”.³⁰⁷ Subsequently, he translated “in his beautiful day-festival”, interpreting *nfr* + stroke as in error for *nfr+f+r*.³⁰⁸ Thus Gardiner introduced the question of whether *wrš* were to be rendered as “day”; he also doubted whether the event referred to a specific feast. Gardiner encountered another case of *wrš* in Chester Beatty Papyri VIII, Rt. 5, 4 which preserves the title of a book: “*md3t nt hrw wrš*”. Gardiner translated the title as ‘Book of the Daytime (?)’, explaining that “*hrw wrš* probably means ‘daytime’ emphasizing the contrast between this and ‘night’ more emphatically than *hrw* alone would have done.”³⁰⁹ The contents of the book are more completely preserved in pChester Beatty IX vs. B 13. Gardiner translated B 13, 8–9: “and thou art purified on the day of the sixth-day festival, and protected in the daytime

²⁹⁴ PARKER 1959, 30.

²⁹⁵ BENNETT 2008b, 534 n. 39.

²⁹⁶ NEUGEBAUER 1968, 231–234; BOHLEKE 1996, 20f; KRAUSS 2012, 40.

²⁹⁷ DONKER VAN HEEL 1996, 93–99.

²⁹⁸ PARKER 1957a, 210–211.

²⁹⁹ KRAUSS 2012, 37.

³⁰⁰ BENNETT 2008b, 533; KRAUSS 2012, 29.

³⁰¹ BENNETT 2008b, 534; KRAUSS 2012, 29.

³⁰² BENNETT 2008b, 534; KRAUSS 2012, 29.

³⁰³ SPIEGELBERG 1931, 42–43; BORCHARDT 1935, 39; PARKER 1950, §§ 69–71; BENNETT 2008b, 534; KRAUSS 2012, 24, 29f.

³⁰⁴ PARKER 1950, § 89–98; cf. also PARKER 1959, 8–9; BENNETT 2008b, 535f; KRAUSS 2012, 30–31.

³⁰⁵ PARKER 1950, § 70.

³⁰⁶ SPIEGELBERG 1899, 16.

³⁰⁷ GARDINER 1933, 26.

³⁰⁸ GARDINER 1935, 68 Anm. 8.

³⁰⁹ GARDINER 1935, 68 Anm. 8.

(?)”. He conceded that *hrw wrš*, translated ‘day-time’, might refer to a specific feast day.³¹⁰ Perhaps he intended simply to interpret *hrw wrš* as “day-time (?)”, because *wrš* is determined with sun-sign and stroke. As far as I can see he did not point out that lunar day 6 (“sixth day festival”) parallels *hrw wrš*.

In his commentary, Gardiner cites WB I 336 for a Saite example of *hb wrš* “as the name of a particular festival, but the evidence (kindly furnished by Prof. Grapow) hardly bears out this view”. The source is an inscription in the tomb of Irtieru copied by Champollion. The tomb (TT 390; see PM II 441) was lost for some time,³¹¹ because, as Erhart Graefe informs me, the Abd er Rassul compound covered the site. It is now part of the concession of the South Asasif Conservation Project. Gardiner understood the respective text as “a summing up of 59 festival days, described as *hb wrš hrw pr* ‘festival(s) of daytime and house-day(s)’, which does not at all suit the idea that *hrw wrš* refers to a single particular festival.”³¹²

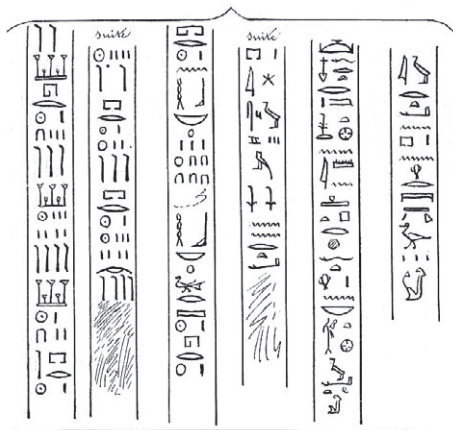


Fig. 2 list of feast days in TT 390; after CHAMPOLLION, *Notices descriptives* I 512.

By contrast to Gardiner, the *Wörterbuch-Zettel* renders the text:³¹³ “Monat x.: y Tage usw., [macht zusammen]: Festtage 59(?). Fest der Tagfeier, Tag des Hauses (?). Der Lohn für dieses ist, ...”, separating the “59 feast days” from *hb wrš* and *hrw pr* as singulars. This would allow the conclusion that *hb wrš* and also *hrw wrš* of Chester Beatty IX vs.

B 13 were specific feasts, despite Gardiner’s reservations.

Spalinger characterizes Gardiner’s ‘festival(s) of daytime and house-day(s)’ as “an attempt that does not really hit the mark.”³¹⁴ Nevertheless, he concludes that “*wrš* and *hrw* close to it [in TT 390 and pChester Beatty] may simply indicate a passage of time rather than, narrowly speaking, a lunar based interval.” He does not take into account that in Chester Beatty IX vs. B 13 *hrw wrš* is cited in parallel to the sixth lunar day; it would be awkward to define the latter as “a passage of time”. Finally, a line in the Demotic “Fragmente memphitischer Religion und Astronomie” shows that Gardiner’s interpretation of *hrw wrš* as ‘daytime’ is inappropriate. Quack reads the line in question:



and translates: “ [...] ihr Fest des Monatsendes ist exakt, ihr Fest des 6. Monatstages [...]”.³¹⁵ He cites pChester Beatty IX vs. B 13, 9 as a parallel, presumably interpreting both – the *hrw wrš* and the *wrš*-feast – as feast days. Since *wrš*-feast and *hrw wrš* are cited parallel to the explicitly lunar *snwt*-feast or LD 6, the former also appear to be lunar days. Further to this effect is the assertion “their *wrš*-feast is exact”. To be exact is a potential quality of certain lunar days. There are two lunar events which can be determined exactly by direct observation over a series of a few days, namely first visibility and the first day of invisibility. pSalier I 8,11 alludes to the situation in a general way, asserting that thanks to Merneptah’s accession “the moon comes regularly” (*j^ch jw n mtj*).³¹⁶ In all probability, the correct interpretation is that first visibility occurs on LD 2 and not on LD 3.³¹⁷ By contrast, and, for example, the exact time when the moon is full is not easily determined by observation with the naked eye.³¹⁸ Along this line of reasoning the *wrš*-feast could have coincided with a LD 1 or LD 2.

Furthermore, the lunar component of the civil-lunar double date of the Battle of Megiddo on I

³¹⁰ SCHOTT 1955, 290 cites Gardiner and translates *hrw wrš* as ‘Tagesdienst’, interpreting *wrš* as ‘Dienstag’.

³¹¹ SCHOTT 1934, 89.

³¹² GARDINER 1935, 68 Anm. 8.

³¹³ DZA 22.540. 720: Thesaurus Linguae Aegyptiae <<http://aaew.bbaw.de/tla/>>.

³¹⁴ SPALINGER 1996, 5.

³¹⁵ QUACK 2004, 471–473.

³¹⁶ CAMINOS 1954, 323–325.

³¹⁷ See PARKER 1950, 13 (§ 46).

³¹⁸ Esna 417 asserts that the moon shines “exactly” (*r mtr*) on LD 15. Could this imply that full moon and LD 15 coincided? LIEVEN 2000, 84–88 does not comment on this detail.

Shemu 21 in 23 Thutmoses III is qualified as *day of the feast of pesedjentyw exactly* (*hrw n ḥb n psdntyw r-mtr*). The assertion implies that the feast of *pesedjentyw* could have been celebrated on a day other than *pesedjentyw* itself. It will indeed have happened that a crescent was missed on a LD 30 and *pesedjentyw* was declared and celebrated a day early. The qualification *r-mtr* implies that old crescent was observed on I Shemu 20, and that on the next day, the moon was not visible; under these premises the dating of *pesedjentyw* to I Shemu 21 was exact to the day. On the basis of this parallel, it is possible that the qualification of the *wrš*-feast as “exact” indicates that it fell on the first day of lunar invisibility or LD 1. There remains the alternative that the exactness of the *wrš*-feast refers to first visibility, although this is not confirmed by the position of the *š*-feast in the Demotic Chronicle.

Given Gardiner’s authority it might have been difficult to argue that “day” is an inappropriate interpretation of *wrš* on the Dakhleh stela, but the parallels with “Fragments” and Chester Beatty B 13, 8–9 should decide the question. Note that in 1931 Spiegelberg published a building inscription which asserts that day 6 of the *wrš* coincided with IV *pṛt* 23 (Alexandrian calendar) in 12 Nero; he cited Ludwig Borchardt’s assumption that *wrš* meant “lunar month”.³¹⁹ If Gardiner had known Spiegelberg’s article he should have mentioned the possibility that *wrš* on the Dakhleh stela referred to the lunar month. Actually he proceeded as if the verb *wrš*, “to spend the day”, was the only premise for the interpretation of *wrš* on the Dakhleh stela. Gardiner was in any case not interested in Egyptian lunar time-keeping. In Excursus C (The Divisions of Time and Method of Dating) of his *Grammar* he omits any mention of the moon and of Egyptian lunar time-keeping; he went so far as to deny the existence of any lunar calendar.³²⁰

Whether the *wrš.w*-feasts which Pieter W. Pestman published from the “archives privées d’Hôros, fils de Petosiris, prêtre des Enfants décédés d’Apis” refer to the *ḥb wrš* and *hrw wrš* as cited above is open to discussion.³²¹ These documents concern the distribution of revenues from a “sanctuaire, appelé <le lieu de repos du Veau> et

situé dans le territoire du Sérapéum”.³²² A portion of them derived from *wrš.w*-feasts which were celebrated in the Serapeum itself.

pBrooklyn 37.1781(6), dated to 181 BC, lists revenues and distribution as follows:

“... ta moitié des revenus-*jnj* du lieu de repos susnommé du Veau, (venant) des fêtes-*wrš* que l’on célèbre dans le Sérapéum – durant l’année; et ta moitié des revenus-*jnj*, (venant) des fêtes (*n3 ḥb.w*) et des processions (*n3 ḥ^c.w*) du lieu de repos susnommé du Veau.”³²³

pBrooklyn 37.1839 (6), dated to 201 BC, lists revenues and distribution as follows:

“... et ta moitié des revenus-*jnj* du lieu de repos susnommé du Veau, (provenant) des fêtes-*wrš* qui ont lieu dans le Sérapéum, durant chaque année; et ta moitié des revenus-*jnj*, (provenant) des fêtes et des processions (*n3 [ḥb.w n3] ḥ^c.w*) du lieu de repos susnommé du Veau; ...”³²⁴

pBrooklyn 37.1839 (6), includes a list of eight feasts on specific days of the civil year and five feast days at the end of the civil year. The text does not indicate which of the feasts are *ḥb.w* and which are *ḥ^c.w*, and it remains open whether the *wrš*-feasts in the Serapeum are included in the list. None of the feasts in the list could have been celebrated on a monthly basis, since there are so few feast dates altogether. Not all of these dates are necessarily fixed; some might have been moveable to be celebrated only in the year 201 BC on the civil dates that are listed.

Pestman comments about the *wrš.w*-feasts that “il est permis de conclure des données de notre texte qu’il s’agit de fêtes. Cela peut être déduit non seulement du déterminatif «fête», mais également du fait que les revenus provenant de ces *wrš.w* sont des revenus-*jnj* ... En outre, les *wrš.w* sont mentionnés au même niveau que les fêtes *ḥb* et *ḥ^c* citées dans ce qui suit.”³²⁵ Furthermore, he asserts that “il ne s’agit pas donc de services mensuels: *wrš* <the service in the temple, by lunar months, of the various phyles>,” as it was known at the time from Parker’s comments on Demotic papyrus CG Cairo 30801 (see above). Pestman was

³¹⁹ SPIEGELBERG 1931, 43.

³²⁰ GARDINER 1955, 9–31.

³²¹ PESTMAN 1977, 3.

³²² PESTMAN 1977, 9.

³²³ PESTMAN 1977, 11.

³²⁴ PESTMAN 1977, 23.

³²⁵ PESTMAN 1977, 15f.

Table 20 lunar day correspondences for the *wrš* feast in 5 [Shoshenq III]

1 Shoshenq III	IV Peret 25	5 Shoshenq III	LD of IV Peret 25 in 5 Shoshenq III
841 BC	beginning of regnal year	837 BC	22
841	end of regnal year	836	3
830	beginning of regnal year	826	21
830	end of regnal year	825	2

Table 21 lunar day correspondences for the *wrš* feast in 5 [Shoshenq I]

possibilities for first years and reign lengths				Shoshenq I		LD of IV Peret 25
1 Shoshenq III	reign length Osorkon II	1 Osorkon II	interval 1 Shoshenq I: 13 Takelot I	year 1	year 5	
					953 BC	29
					952	10
					951	20
841 BC	ca. 40 y	ca. 880 BC	ca. 70 y	954 BC	950	1 or 2
					949	12
					948	23
					947	5
					946	15
					945	26
					944	6
					943	17
					942	28
					941	9
					940	20
830	ca. 40	ca. 870	ca. 70 y	943	939	1
841	ca. 30	ca. 870	ca. 70 y	943	939	1
					938	12
					937	22
					936	3
					935	14
					934	24
					933	5
					932	16
					931	27
					930	8
					929	18
					928	29
					927	10
					926	21
830	ca. 30	ca. 860	ca. 70 y	929	925	1

unaware of the possibility that *n3 wrš.w* could be feasts pertaining to the monthly *wrš*-service. Alternatively, the *n3 wrš.w* of the archive of Hôros could be related to the *wršy*, “dated / specific event(s) in the obsequies of certain cows” (mothers of the Apis), according to Harry S. Smith.³²⁶

To sum up: *p3 wrš* is amply attested as a designation for the standard lunar month and also as a designation for the monthly lunar temple service beginning on LD 2 and ending on LD 1. Presumably the context sufficed to make it clear which of the two meanings was intended. Since the the

³²⁶ SMITH 1992, 204–205; cf. BARBOTIN 2001, 32, 35.

wrš-feast of the Dakhleh stela occurred on the occasion of a procession and an oracle by Seth of the Oasis, the latter implying the shrine of Seth at Mut el-Kharab,³²⁷ the feast refers to lunar temple service, less probably to the standard lunar month. *hrw wrš* and *wrš*-feast are cited in parallel to LD 6 and thus both appear to be lunar days like LD 6; *hrw wrš* and *wrš*-feast might be the same or not. The qualification of being “exact” indicates that the *wrš*-feast fell on LD 1 or LD 2. This conclusion complements my earlier determination of LD 1 as the day of the *wrš*-feast which depends on the emendation $\zeta\check{s} > wrš$ in the Demotic Chronicle.

In my earlier study, I computed the lunar days which could correspond to IV Peret 25 in 5 Shoshenq III, provided that 1 Shoshenq III fell in 841 BC; now the possibility 1 Shoshenq III = 830 BC must be considered. Since the regnal year change did not occur between I Schemu 26 and II Achet 1,³²⁸ IV Peret 25 might be a date at the beginning or end of the regnal year which results in two possibilities for the lunar day of IV Peret 25 for each of the years 841 and 830 BC (Table 20). Of the four possibilities for the lunar day of IV Peret 25 in 5 Shoshenq III, one is a LD 2 which is in turn one of the possibilities for the day of the *weresh*-feast.

Table 21 contains my earlier and still valid computation of the years 925, 939 and 954 as those years when the *hb wrš* date of the Dakhleh stela coincided with LD 1 or possibly LD 2.³²⁹ Tables 20 and 21 imply that the question of whether ‘Shoshenq’ of the Dakhleh stela is Shoshenq I or III cannot be decided on the basis of the astronomical possibilities for the date of the *wrš* feast, though the odds favor Shoshenq I.

Excursus 4: Stela of Banishment (Maunier stela)

Jürgen von Beckerath renders the dates on the stela as follows:³³⁰

Datum A: “(Zeile 1) Jahr 25, 3. Sommermonat, [Kalender-]Tag 29, zur Zeit des Festes des Amon-*rasonther* in seinem [schönen] Fest [des (Mond-

monats) Epiphi, indem der ... (Titel)] /// (2) Esheri unter ihnen (war). Da [erschien (o.ä.)] die Majestät dieses erhabenen Gottes, A[menre ... in] /// (3) Theben. Darauf nahm er (= der Gott) den Weg zu den Schreibern, den Aufsehern und den (übrigen) Leuten ///”

Datum B: “(Zeile 4) Jahr 25, 1. Überschwemmungsmonat, [Tag] 4 (oder 5). [An diesem Tage (?) Spruch (??)] der Majestät [dieses] erhabenen [Gottes], Amen[re] Herrn von Karnak.”

According to lines 5 to 8, Menkheperre, son of King Pinudjem I, arrives at Thebes, overcomes his enemy and is confirmed as HP by Amun, who appears in procession and pronounces oracles.

Datum C: “(Zeile 8) Nun aber [danach, im Jahre {1, 2, 3, 4, 5, oder auch 10, [11], 20}]

(Zeile 9) 4. Sommermonat, Epagomenen, Geburt(stag) der Isis, zur Zeit des Festes des Amun im (Mondmonat) Wp-rnpt. Prozession der Majestät dieses erhabenen Gottes, des Herrn der Götter, Amon-*rasonther*.”

The lines that follow cite oracles concerning the return of the *b3kw ttw* (quarrelling or quarrelsome servants/priests of Karnak temple) who had been banished to the oasis, a decree against future banishments, and the command to erect a stela with the decree. After some deliberation, Beckerath accepted the sequence of the dates as they appear on the stela, attributing both citations of year 25 to Smendes. Following this line of argument, Kitchen interprets date A as “activities in Thebes pending arrival of Menkheperre”.³³¹

In an earlier study, I modified Beckerath’s idea that year 25 of date A refers to the “Errichtung der Stele und läge dann zeitlich später als die beiden anderen (Daten)...”.³³² He himself had abandoned the idea, since the sequence of dates B, C, and A cannot be accommodated within a single year. Following the lead of Jansen-Winkel,³³³ I suggested that year 25 of date A could be a year 25 in a year count of Menkheperre’s own. Now I suggest another possibility which I had overlooked, despite its obviousness. It is evident that date B (25 [Smendes] I Akhet 4 or 5) refers to the installation of Menkheperre as HP after he had overcome his

³²⁷ HOPE 2001, 49, 57.

³²⁸ JANSEN-WINKELN 2006b, 235; KRAUSS 2007a, 345.

³²⁹ Note that these possibilities for 1 Shoshenq I follow without recourse to the Dakhleh *weresh*-date from the Tepi Shemu feast dates of 11 Psusennes II, 17 Siamun, 2 Osorkon the Elder and the premise of a 13 year reign of Psusennes II.

³³⁰ BECKERATH 1968, 9, 12.

³³¹ KITCHEN 1973, § 384.

³³² BECKERATH 1968, 33.

³³³ KRAUSS 2008, 42f.

Table 22 lunar correspondences of dates B and A, referred to 3 Amenemope

interval	Distance in civil years and days	distance in lunar months and days
25 Smendes, I Akhet 4 (5) (date B) / 3 Amenemope, I Shemu 6 (= LD 1)	53 y + 282 d + 325 (324) d = 54 y + 242 d	675 LM + 18 to 19 d
	55 y + 242 d	688 LM
	56 y + 242 d	700 LM + 10 to 11 d
	57 y + 242 d	712 LM + 21 to 22 d
	58 y + 242 d	725 LM + 2.3 d
25 Smendes, III Shemu 29 (date A) / 3 Amenemope, I Shemu 6 (= LD1)	54 y + 282 d	677 LM – 0.2 d
	55 y + 282 d	689 LM + 10 to 11 d
	56 y + 282 d	701 LM + 21 d
	57 y + 282 d	714 LM + 2.1 d

anonymous enemy. On date C (year ///, Epagomene 4), HP Menkheperre received an oracle about the return of banished *b3kw ttw*. By contrast to my earlier attempt, I now presume that date A (25 [Smendes], III Shemu 29) refers to the banishing which occurred between dates B and C; the text might have pointed to [the official] Esheri as the one who received the oracle. According to Beckerath, the space available on the stela allows the restoration of date C only as a regnal year which would belong to a successor of Smendes. Under these premises, year 25 of date A can barely be other than the same regnal year 25 as that of date B; date A would be later than date B by 325 (or 324) days. The respective accession date would lie between III Shemu 29 and I Akhet 4.

If, according to Kitchen, 1 Smendes = 1069 BC,³³⁴ then 25 Smendes = 1045/44 BC. In 1045 BC, a LD 1 coincided with I Akhet 4 of date B when Menkheperre was confirmed by Amun as HP; provided that date A is 325 days = 11 synodic months later than date B, then date A also coincided with a LD 1, though in 1044 BC. Thus Kitchen's chronology implies, if unintentionally, that two dates of the stela of banishment coincided with a LD 1, a day which is known for processions in temples on which latter occasions oracles might have been given. In my earlier study of the stela, I came to the same conclusion about the lunar correspondence of date B, though on the basis of more circumstantial arguments. In what follows I revise my earlier reconstruction along the lines of the main article above.

Dates A, B, and C are qualified as feast and/or procession days of Amun. Since A and B are 325

(or 324) days apart, i.e. 11.0 synodic months of 29.53 days (or 11 synodic months minus a day), A and B fell on the same lunar day. As the starting point for deducing the lunar days of A and B on the basis of relative chronology, I use the LD 1 which is implied by “year 3, I Shemu 10”, the date of oracle 6 of the ‘Inscription historique’. Oracle 6 can be attributed to Amenemope or Osorkon the Elder; here I exemplify the attribution to Amenemope. The latter and Psusennes I can be linked through Daressy's bandage epigraph, reconstructed as “[Psusennes I, year] 49; Amenemope [year x]” with \times being not higher than 1 or 2. According to Manetho Amenemnisut ruled for 4 years and Smendes for 26 years. Under these premises the distance between date A and I Shemu 6 = LD 1 in 3 Amenemope amounts to approximately (1+4+48+2 = 55) years + 282 days; the corresponding distance between date B and oracle 6 is larger by 325 days. The distances might be larger than 55 or 56 years, but barely smaller, and therefore I reckon them as 54 to 58 years.

Table 22 shows that dates A and B coincided on average either with a LD 1 or with LDs 10/11, 18/19, 21/22 or 2/3, if 54 to 57/58 full years elapsed between dates B and A in 25 [Smendes] and I Shemu 6 in 3 Amenemope. Since B and A are qualified as feast days and/or procession days of Amun, I assume that both dates coincided with LDs 1 or 2, rather than with LDs 10/11, 18/19 or 21/22, implying 55 y + 242 d between date B (early in 25 Smendes) and 3 Amenemope, I Shemu 6 or 54 y + 282 d in the case of date A (late in 25 Smendes).

As argued in the main article, only the possibilities 3 Amenemope or 3 Osorkon the Elder = 989

³³⁴ KITCHEN 2009, 191.

Table 23 alternative solutions for dates A and B, depending on the alternatives for oracle 6 in absolute chronology

Shoshenq I	oracle 6	distance date A : oracle 6	years of dates B/A	dates A and B
943	3 Amenemope = 989 BC	54 y + 282 d	1045/1044	LD 1 (date A) LD 1 (date B)
954	3 Osorkon = 989 BC	(54+11) y + 282 d	1056/1055	LD 3 (date B) LD 2 (date A)

BC are viable. Table 23 presents the results of Table 22 in absolute chronology; the corresponding accession years of Shoshenq I are added for orientation. The question whether oracle 6 ought to be attributed to Amenemope or Osorkon the Elder remains open and cannot be decided by preferring LD 1 over LD 2 or vice versa.

To sum up: I attribute date B of the stela of banishment, as the oracular approval of Menkheperre as HP, early in regnal year 25 of Smendes. I interpret date A, as the date when the *b3kw ttw* were banished, to the end of 25 Smendes. On the basis of relative chronology, dates A, B appear to be LDs 1 or LD 2. Neither lunar day can be preferred, since the procession or oracles of dates A and B might have occurred on the second or third day of a feast which began on LD 1 or LD 2. The return of the banished, according to date C, may have been under either Amenemnisut or Psusennes I.

Excursus 5: Shoshenq I's campaign to Palestine

According to the Biblical Book of Kings 14, 25–28, Pharaoh Shishak ransomed Jerusalem in regnal year 5 of the Judaeen king Rehobeam. Shishak is identifiable as Shoshenq I who appears to have campaigned in Palestine at an unknown time preceding his 21st regnal year. For example Jeremy Hughes points out that “most Egyptologists, including Hornung and Kitchen, have agreed with Breasted (1906:I:45) in dating Shoshenq's reign from 945 BC to 924 BC, which is in line with earlier reconstructions of Israelite and Judean history – beginning with Rühl 1894/95, and including Thiele ³1983 and Anderson 1969 – in which the start of Rehoboam's reign is dated to 931 BC or thereabouts.”³³⁵ Hughes himself argues in favor of 1 Rehoboam = 937 BC.³³⁶

The Egyptological premises for dating the campaign are the relief of Shoshenq I on the Bubastite gate in Karnak and a stela in Silsile dated to year 21 describing the preparation for the building project in Karnak.³³⁷ The text of the Silsile stela does not intimate that the Karnak monument should commemorate a campaign to Palestine nor indeed any other military action. Nevertheless it is regularly assumed that the Palestinian campaign was immediately followed by its monumental commemoration. Ursula Kaplony-Heckel accordingly states:³³⁸ “Aus der Felsenstele erfahren wir folgendes: Wie stets nach der Heimkehr aus dem Krieg werden die Truppen zu friedlichen Aufgaben, vor allem beim Bau von Prachtbauten, eingesetzt. So eröffnet Scheschonq I. in seinem 21. Jahr einen neuen Steinbruchabschnitt in Gebel-el-Silsile. Dies kann nur nach der Rückkehr aus Palästina, und zwar unmittelbar danach, geschehen sein: Also haben wir in der Felseninschrift einen der seltenen historischen Belege, in dem Ägyptens Berührung mit den Völkern und Geschehnissen des Alten Testaments exakt zu erkennen und zu fixieren ist.”

By contrast, Jansen-Winkeln argues that the supposed temporal connection of campaign and building project is “presumably supported by the wish [of modern-day specialists] for at least one fixed point ... There is no reason why it [the campaign] could not have taken place several years earlier. In that case, the beginning of Shoshenq's reign would have to be set slightly later, and thus the entire Dyn. 21”³³⁹

Focussing on the problems of Deuteronomistic history writing, Israel Finkelstein writes “... the vicious circle of dating the campaign according 1 Kgs 14, 25 and dating Solomon and Rehobeam according to the campaign must be eliminated. ... The biblical references to the length of reign of the

³³⁵ HUGHES 1990, 191.

³³⁶ HUGHES 1990, 189.

³³⁷ CAMINOS 1952, 46–61.

³³⁸ KAPLONY-HECKEL 1985, 53.

³³⁹ JANSEN-WINKELN 2006a, 232–233.

early Davidides are completely schematized. The fifth year of (the) Rehoboam datum may have been schematically arranged to fit the theology of the Deuteronomistic Historian ...".³⁴⁰ Finkelstein's views of the history of Judah and the city of Jerusalem in the 10th century BC do not inspire confidence in the historical authenticity of the Biblical account of Shishak's campaign:³⁴¹ "In the time of the Shoshenq campaign Judah was a marginal dimorphic chiefdom in the southern highlands and was ruled from a small village." If so, why should Shoshenq I have bothered to deal with the chiefdom of Judah at all? For example, Frank Clancy evaluates the Biblical reference to Shishak's campaign as second-hand historiography:³⁴² "As I believe the reference [to Shishak] probably was written in the Hasmonean period, I have no problem believing the scribe gained his knowledge of 'Shishak's' campaign from Egyptian sources and not from 'royal' archives in Jerusalem."

Thus it is uncertain whether the Biblical dating of the campaign in 5 Rehoboam is authentic; furthermore there is an uncertainty in Rehoboam's chronology itself. The conventional conclusions (5 Rehoboam = 926/925 BC; Shoshenq's campaign took place in his year 20 and therefore his accession fell in 945 BC) would have been correct to the year by luck only. As argued above, the years 943 or 959 BC ought to be considered as possibilities for 1 Shoshenq I despite the howls of the Βοιωτοί, whereas the date of the campaign remains open.

It is also a mostly open question how and whether the list of toponyms in the Karnak inscription relates at all to the course of a campaign; the list may be nothing other than a description of contemporary Canaan by naming cities and also regions as, for example, partly Egyptianized *p3-emek* (the valley). Megiddo is the single case within the list which is archaeologically associated with Shoshenq I (thanks to a fragmentary stela with his name). Megiddo VIA which is thought to have been contemporaneous with Shoshenq I was destroyed like other Canaanite cities in the Jezreel Valley and further north like Kinnereth. Such devastation, together with Shoshenq I's stela, raises interpretational problems as made clear by the following deliberations of Finkelstein:³⁴³

"Had Shoshenq been interested in a long-lasting domination of the country and exploitation of its economic resources, why would he destroy its most elaborate cities, located in the most fertile region, along the international trade routes? And assuming that victory steles are erected in settled places, had Shoshenq destroyed Megiddo, where would he establish his stela? One possible answer to these questions is that Shoshenq took over Megiddo VIA and its contemporary cities in a looting spree, without planning a continuous domination. Another explanation could be that he took Megiddo VIA peacefully in order to stay, and erected his stela there. But the Egyptians did not manage to hold their territorial gains and upon their withdrawal destroyed the late-Canaanite system in the north."

In other words, it was probably not Shoshenq I who destroyed the northern cities. Alternatively, I suggest that the cities were destroyed by attackers who came from further north, perhaps as an initial wave of the Arameans. There is a passage in the Karnak text which might indicate such a historical situation. The text designates the Asiatics conventionally as *Fnhw*, *3mw*, *Jwntjw* *Šttjw* and *Mntjw* *Šttjw*. The mentioning of Mitanni in Amun's speech to the king is unexpected:³⁴⁴ "I have trampled for thee them that rebelled against thee, overthrowing [for] thee the Asiatics, the army of Mitanni." The "army of Mitanni / *mš' n M'ṯn*" could refer to a northern enemy, provided it is not rhetoric using an archaic or at least outdated expression. Mitanni disappeared from history when Shalmaneser made the Euphrates the border of Assyria in the 13th century BC. According to Donald Redford, Mitanni "degenerated into a loose designation of the Syrian enemy", as shown by the Karnak inscription.³⁴⁵ By contrast, Manfred Görg presumed that there was a tradition in which the name Mitanni headed a group of geographical names and could be used alone in lieu of the complete group.³⁴⁶ Furthermore, and with reference to the Karnak inscription, he pointed out that "der Ländername (ist) sonst weder in die gleiche syntagmatische Beziehung noch in eine übliche Phrasologie eingebunden." Görg's remarks imply that the mentioning of Mitanni in Amun's speech is indeed unconventional.

³⁴⁰ FINKELSTEIN 2002, 110.

³⁴¹ FINKELSTEIN 2002, 112.

³⁴² CLANCY 2001, 14.

³⁴³ FINKELSTEIN 2002, 123.

³⁴⁴ RIK III, Pl. III., 23; translated by BREASTED 1906, IV, 357.

³⁴⁵ REDFORD 1982, 149.

³⁴⁶ GÖRG 2005, 5–6.

Attacks on northern Canaanite cities from outside might have prompted Shoshenq I to intervene with the intention of preventing a dangerous enemy to become Egypt's northern neighbor and changing radically the political situation in Canaan. If so, some time might have elapsed between the beginning of the attacks and an Egyptian

reaction which could have consisted in more than one campaign. Thus Shoshenq's stela could have been erected in Megiddo in connection with the intervention, by a pharaoh who sought to protect the city in Egypt's interests, but failed to do so.

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