

# How convincing are the arguments for a new Egyptian chronology?

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The Conventional Chronology (CC) links up with the Bible in the person of Pharaoh Shoshenk I, who is identified with the biblical Shishak. But David Rohl holds that the CC does not fit with other parts of the Bible. If the CC is followed, there is a huge gap, a 'dark age', where there should be evidence for Hebrew history. On the other hand, Egyptology professor Kenneth Kitchen, who is a firm supporter of the CC, accepts no clash. He states that 'absence of evidence is not evidence of absence'.<sup>1</sup>

The CC is based on the king list as compiled by the Egyptian priest Manetho, and additionally what Rohl identifies as 'four pillars'. Rohl claims that there are compelling anomalies in the CC, as well as serious weaknesses in at least three of the CC's four pillars. However, according to Chris Bennett, these anomalies alone are no basis for a completely new chronology; to be certain about the distant past is difficult. Some of what is presented on popular television as 'undisputed fact' appear after all to be based on questionable assumptions. Rohl's New Chronology may not be completely correct, but the weaknesses he documents in the CC show that the conventional wisdom regarding the ancient Egyptian timeline merits re-examination.

## Introduction

David Rohl is the first archaeologist in years to seriously question the Conventional Chronology (CC) of ancient Egypt. Rohl claims that the CC does not fit with the Bible and therefore needs to be shortened by several centuries.<sup>2</sup> He believes he has found archeological evidence for people named in the Bible (such as King Solomon) and for events recorded in the Bible, (such as the Exodus). Rohl explains in his book *A Test of Time*<sup>3</sup> how conventional chronologists searched for signs of Joseph and Moses only in the period of the 19<sup>th</sup> Dynasty, and found no evidence of any people of Asiatic origin.<sup>4</sup> Rohl however has explored the ancient city of Avaris in Egypt (close to the biblical city Pi-Ramesse); there he claims to have found evidences for these biblical accounts, but in an earlier time period (i.e. the 12<sup>th</sup> and 13<sup>th</sup> Dynasties by CC reckoning).

Rohl documents that Avaris, during this period, was full of people from today's Palestine and Syria.<sup>5</sup> Together with Austrian excavators, he has found evidence of a higher than expected percentage of infant burials compared with what is usually found in archaeological sites of the ancient world. This supports the biblical account of Pharaoh killing off Hebrew baby boys (Exodus 1:15–22). Thus, Rohl concludes that the reason for not finding any evidence for the historical events recording in the Bible is that until now archaeologists have, by presupposing the validity of the CC, looked in the wrong place (i.e. the wrong time period).

The leading expert on the Egyptian Third Intermediate Period (TIP), Kenneth Kitchen,<sup>6</sup> also believes that the Bible is history, but says that 'absence of evidence is not evidence of absence'.<sup>7</sup> However, most modern archaeologists dismiss the Bible as an historical document due to the apparent lack of archeological evidence for the biblical accounts as viewed through the lens of the CC.<sup>8</sup>

Most of the modern understanding of ancient Near East history is based upon the Egyptian time-line, as Sir Flinders Petrie noted back in 1901: 'Egypt is the sounding line for the unmeasured abyss of European history.'<sup>9</sup> This is therefore one of the main reasons why Rohl takes the CC as his starting point.<sup>10</sup> The current debate on Egyptian chronology involves a huge range of subjects, from genealogies to astronomy. For this paper, I have chosen to focus on those that are closely linked with what Rohl identifies as the four main pillars of the CC.<sup>11</sup> It is true that the CC seems to be almost universally accepted and Rohl is very much in the minority and criticized. There is even a website dedicated to attacking his ideas and promoting the CC as fact.<sup>12</sup> Rohl's proposed new chronology may not be the correct one either. He tries for example to eliminate the required amount of years from the TIP by claiming to have found three anomalies that would allow for this cut.<sup>13</sup> But according to Egyptologist Dr Chris Bennett, these 'anomalies' are really no anomalies at all and do not give any reasons for such a drastic compression.<sup>2</sup> But Dr Bennett also says that,

'Even if the debate is ultimately not resolved in his (Rohl's) favour, it is worthwhile because it forces a re-examination of long-held assumptions and of difficult problems. This can only be healthy for the discipline, and should be welcomed for this reason.'<sup>14</sup>

## What is the Conventional Chronology (CC)?

The CC is largely based on the writings of Egyptian historian Manetho (fl. 3<sup>rd</sup> century BC), who wrote down a king list of ancient Egypt consisting of 30 dynasties.<sup>15</sup> This arrangement is perhaps a good starting point for Egyptologists today to set up an orderly timeline. But one of the problems, as Rohl mentions,<sup>16</sup> is that factors such as co-regencies,

parallel dynasties and interregna<sup>17</sup> need to be taken into account, which makes the job a lot more complicated. Damien F. Mackey, who wrote his MA thesis on the Sothic Theory, describes how these dynasties are badly in need of a cementing chronology (which was one of the reasons why the Sothic Theory was proposed<sup>18</sup>).<sup>19</sup> Further, Manetho's writings have never been found, which seems to weaken this pillar even more. All we have of Manetho's work are references in the writings of various early Christians such as Africanus, Eusebius and Syncellus.<sup>20</sup>

However, the CC is not based solely upon Manetho's king list. Rohl has identified what he calls 'four great pillars to the chronological edifice of Egypt'<sup>21</sup>:

1. The sacking of Thebes by the Assyrians in 664 BC in year 1 of Psamtek I
2. The 925 BC campaign into Palestine in year 20 of Shoshenk I (that is, Shishak, the biblical pharaoh who went up against Jerusalem (I Kings 14:25–26 & II Chronicles 12:2–9))
3. The accession of Ahmose in 1550 BC (based on the heliacal rising of Sothis in 1517 BC, year 9 of Amenhotep I)
4. The accession of Ramesses II in 1279 BC (based on the year 52, or 1228 BC lunar date).

According to Rohl, pillar 1 is beyond reproach as a secure date in history, so he does not dispute it.<sup>22</sup> Rohl disputes pillars 2,3 and 4; we will discuss his case for each one. But first, let us examine in detail one of three anomalies Rohl documents<sup>3</sup> within the TIP, because he argues that these anomalies provide important support for a shortened Chronology that conforms to the biblical account.

### Rohl's anomalies

Rohl believes he has found three anomalies within the TIP that, when corrected, would allow the CC to be shortened by what he believes to be the required number of years. The second and third anomalies are documented in Rohl's book and Bennett's article 'Temporal Fugues'.<sup>2</sup> The first anomaly, however, is as follows.

#### The Apis Bulls

Buried bulls were found in the Serapeum<sup>23</sup> at Memphis.<sup>24</sup> The Apis bull had been worshiped in Egypt as a symbol of strength and fertility. There was only one Apis bull at a time and when one died, a replacement was chosen.<sup>25</sup> According to Bennett, it is well established that the average lifetime of an Apis bull was 18 years.<sup>26</sup> In spite of this, only 23 Apis bulls have been found for the period between the first Apis bull of Ramses II and that of Psamtek I (606 years in CC).<sup>26</sup> Thus at least 10 bulls are missing and Dr Bennett points out there are no signs of any bulls for the 21<sup>st</sup> dynasty or for the early reigns of the 22<sup>nd</sup>. Rohl concludes:

'The archaeological evidence derived from the Lesser Vaults of the Serapeum suggests that the

length of the Third Intermediate Period may have been artificially over-extended by historians.'<sup>27</sup>

According to Kitchen, these bulls may well turn up or it could well be that some of them had been destroyed by flooding.<sup>28</sup> However, Bennett points out that there is no apparent sign of any activity at all in the Serapeum during the 21<sup>st</sup> and 22<sup>nd</sup> dynasties—which, he believes, requires explanation—and Kitchen is wrong to simply brush it aside.<sup>26</sup> However, Bennett also says there may be evidence for such activity among the 1,200 stelae<sup>29</sup> discovered in the Serapeum; unfortunately, nearly 400 of these stelae were destroyed by floods in the Bulaq museum in Cairo during the last century.<sup>26</sup> Egyptologist Dr David Aston suggests that the missing Apis bull burials may even have been moved to a new set of chambers elsewhere.<sup>30</sup> However, as Rohl argues, it would be strange if the Egyptians came back over a century after the initial burials and started re-burying the Apis bulls in the Lesser Vaults right next to where they left off so many years earlier. Not only is there no evidence for the presumed move: as Rohl puts it, the move would be 'totally illogical'.<sup>31</sup> Rohl explains this further in a personal email as follows:

'It would be like arguing that Atlanteans built the Great Pyramid because, although we have no evidence for it, it might still have happened. That is the fundamental weakness in the mantra "absence of evidence is not evidence of absence" (in other words "anything goes"). The fact is that absence of evidence is evidence of absence. It is not proof—but it is evidence.'<sup>31</sup>

According to Bennett, Rohl's arguments for a new Egyptian chronology are not convincing if they are based upon this anomaly<sup>32</sup> (Bennett makes the same assertion about the second and third anomalies put forth by Rohl). Kitchen and others likewise claim that what Rohl sees as anomalies, are not sufficient support for contracting the CC by a couple of centuries. However

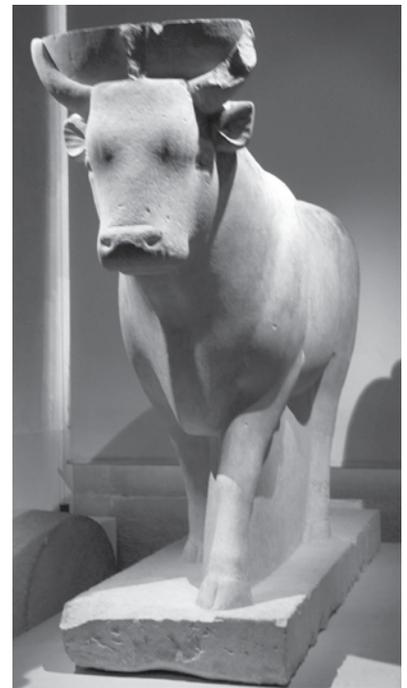


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Apis was a popular Egyptian bull-deity, a protector of the deceased. The Apis bull was also considered a manifestation of the Pharaoh, symbolizing the king's courageous heart, great strength, virility and fighting spirit.

it must be noted that the question of the validity of the CC timeline is an ongoing debate.

Rohl is aware of the 1,200 stelae that Bennett writes about which are from the Late Period and Ptolemaic Period, and makes it clear that these have nothing to do with the Lesser Vaults (19th Dynasty to early 26<sup>th</sup> Dynasty).<sup>31</sup> He claims that all the stelae from the Lesser Vaults are published in the *Louvre Catalogue*, except those found by Mohamed Ibrahim.<sup>33</sup> Rohl went to see these stelae for himself and claims that neither these nor the stelae published in the *Louvre Catalogue* can be dated to the 21<sup>st</sup> or early 22<sup>nd</sup> Dynasties.<sup>31</sup> Therefore Rohl concludes that this is still an anomaly and one worth about two centuries.

Even if what Bennett and Kitchen say about Rohl's anomalies is correct, Rohl has more than the three anomalies to support his shortened chronology. He goes further in his attack on the CC and digs down to the very foundation of what he believes the CC is really based upon. He calls this foundation 'the four pillars'. As mentioned previously, the first pillar is not in dispute. But if Rohl is able to knock down the three other pillars, the CC will no longer stand because the first pillar (the sacking of Thebes in the year 664 BC) is not significant to Rohl's revision of the CC and Rohl will therefore have paved the way for a completely new chronology. Rohl believes that a new chronology should be constructed based upon facts relating to two important timeline anchors: Shishak and the Sothic Star Theory.<sup>34</sup>

### Shishak and the Sothic Star Theory

Rohl argues<sup>35</sup> that the primary bases for the CC are two pillars: the link between the Egyptian Pharaoh Shoshenk I and the biblical Shishak, and the Sothic Star Theory. Rohl questions the validity of both.

#### The Shoshenk I – Shishak link

There have been numerous attempts to link biblical and Egyptian history.<sup>36</sup> Unfortunately, some pharaohs in the Bible are not mentioned by name but simply referred to as 'Pharaoh'; or, if a name is given, the name may be a Hebrew version. Pharaoh Shishak is an example of the latter:

'In the fifth year of King Rehoboam, Shishak king of Egypt attacked Jerusalem. He carried off the treasures of the temple of the LORD and the treasures of the royal palace. He took everything, including all the gold shields Solomon had made' (Kings 14:25–26 (NIV)).

'With twelve hundred chariots and sixty thousand horsemen and the innumerable troops of Libyans, Sukkites and Cushites that came with him from Egypt, he captured the fortified cities of Judah and came as far as Jerusalem' (2 Chronicles 12:3–4 (NIV)).

The question is: Which Egyptian pharaoh are the Hebrews referring to when they mention Pharaoh Shishak?

Until now, Shishak has conventionally been identified with Pharaoh Shoshenk I primarily because of linguistic similarities.<sup>37</sup> Also, the dates for Shishak's reign as calculated from the biblical chronology are in harmony with the CC dates suggested for Shoshenk I by counting down regnal years for the Egyptian pharaohs.<sup>37</sup> Rohl believes that the CC should be lowered by several centuries to fit with his observations; to be able to do that he has taken a closer look at the link between Shishak and Shoshenk I.

A text of Shoshenk I's Triumphal Relief has been found which, according to Champollion<sup>38</sup>, seems to include the words 'Kingdom of Judah'.<sup>37</sup> The actual hieroglyphic signs of this so-called Number 29 were Y-w-d-h-m-`-l-k (note similarity to Hebrew Yehwdim=Jew, melek=king).<sup>39</sup> However, beginning with Heinrich Brugsch,<sup>39</sup> this was re-examined and many of the names before and after No. 29 were identified as belonging to Israel as well as Judah; therefore, it would not make sense for the words 'Kingdom of Judah' to be placed in the middle of its cities as if the Kingdom of Judah also was an Israelite city. In 1888, Wilhelm Max Müller was the first to claim that the letters should rather be read as Yad-ha(m)melek meaning 'Monument (or stela) of the King'.<sup>40</sup> Bimson also points out that the city of Jerusalem is not to be found in this triumphal list of Shoshenk I either.<sup>39</sup> This is very significant, because according to the Bible, Shishak not only attacked Jerusalem but plundered it as well. In dealing with this problem, Kitchen suggests that as long as the city was not captured, it would not be included in the list: 'the city was not stormed or captured and other Judean controlled places do appear in it'.<sup>28</sup> Müller and T. Nicol<sup>39</sup> argue that Shoshenk's list includes not only cities captured in battle, but also any which paid tribute or in some other way were considered subject to him; the Bible records that Jerusalem certainly did submit and pay tribute (2 Chronicles 12:1–9). Moreover, according to Bennett, there seems to be no archaeological evidence in support of the link between Shoshenk and Shishak.<sup>41</sup>

In order to fit his New Chronology, Rohl identifies Shishak as Ramesses II.<sup>42</sup> One of the reasons for this is that in Ramesses II's name-list of the Moabite Campaign,<sup>41</sup> the word Shalim is mentioned, which some would identify as Jerusalem.<sup>42</sup> He also says that the short name of Ramesses II, Sese, (a hypocoristicon,<sup>43</sup>), fits well with the original Hebrew text for the name Shishak.<sup>44</sup> Kitchen, however, argues that the apparent Shalim in Ramesses II's name-list may have nothing to do with Jerusalem: its context in the list is too far north.<sup>28</sup> Kitchen also claims that 's' is always reproduced as 's', never 'sh'; and, 'sh' never becomes an 's' when converting between Egyptian and biblical Hebrew.<sup>45</sup> On the other hand, Rohl gives examples of when 's' is actually reproduced as 'sh':<sup>31</sup>

- Egyptian Mose = Hebrew Moshe
- Egyptian Askelana = Hebrew Ashkelon<sup>46</sup>
- Sysa = Shysha (the hypocoristicon of Ramesses II<sup>31</sup>)

It is important to note that similarities between names among different languages are not at all conclusive. Also, the same person or place can have dissimilar names in different languages. E.g. today Sverige and Deutschland are known in English as Sweden and Germany. The important approach is to adopt a chronology that identifies all the Pharaohs of the Bible. Ashton and Down have proposed revised identification of the Pharaohs who were reigned contemporaneously with Abraham, Joseph, Moses and Rehoboam; in particular, they identify Shishak with one of the greatest Pharaohs, Thutmose III of the 18<sup>th</sup> Dynasty.<sup>47</sup>

Bennett does not offer any alternatives himself but says that none of the pharaohs proposed is a perfect match for the biblical Shishak.<sup>48</sup> However, I believe the most important point Rohl is making is that the Shoshenk–Shishak pillar fails to support the CC on the basis of the archeologic and linguistic problems.

### The Sothic Star Theory<sup>49</sup>

In response to Rohl's challenge to the Sothic Star Theory and its supposed link to the Egyptian calendar, Kitchen wrote:

‘... as we know that the calendar was *correct* [sic] in the second century AD, and in the 13th century BC (and before that at about 2700 BC), there can be little doubt that Year 1 of Merenptah in this little text fell in the 13th century BC ... [emphasis added]’<sup>28</sup>

From this we can see that Kitchen is taking this astronomical dating system for granted. But Mackey's work shows that Kitchen was only making an assumption. Mackey actually mentions at least nine others who argue against taking the Sothic Star Theory as fact,<sup>50</sup> which would leave the CC hanging from a very thin thread. So, what is this Sothic Star Theory?

Nobody really knows exactly what the ancient Egyptian calendar was like, although there are various documents indicating that the ancient Egyptians used the Dog Star Sirius<sup>51</sup> to find out when their harvest should begin. One such document reads as follows:

‘You should know that the going forth of Sopdet will happen on the fourth month of Peret, day 16.’<sup>52</sup>

The heliacal rising of Sothis<sup>53</sup> only happened once every year.<sup>54</sup> The Nile would then start flooding as it usually did every year and when the

waters finally drained away again it was time for planting.<sup>55</sup> But according to Mackey, the Egyptians probably had more than just one calendar<sup>56</sup> and at least at some stage during the Old Kingdom they had a calendar consisting of 365 days.<sup>57</sup> If, for example, the rising of Sothis happened on the Egyptian New Year the first time the calendar was introduced, there would be a noticeable problem after four years; that is, the calendar would be short by one day. The helical rising would then be on the second day of the Egyptian calendar, and after eight years it would be three days out of rhythm and so on. Evidently after 1,460 years ( $0.25 \times 1,460 = 365$ ) the rising of Sothis would once more be on the same day and at the same observational site as when they first introduced this calendar.<sup>49</sup> This was later in the Classical era known as the ‘Great Year’.<sup>58</sup> It may be that the Egyptians used this period of 1,460 years as a kind of long-term calendar.<sup>49</sup> Hence, assuming that was the case, it could perhaps be possible to develop a mathematical system for this based upon ancient Egyptian astronomical documents. This is exactly what Eduard Meyer of the Berlin School of Egyptology did in 1904; today Meyer's work is known as the Sothic Theory.<sup>49</sup>

Meyer did not only rely upon old Egyptian papyri. Classical texts such as those written by Theon, an Alexandrian astronomer (late 4th century AD), and the Roman author, Censorinus (3<sup>rd</sup> century AD), were also used to find what Meyer called the first ‘definite’ date of the Sothic rising.<sup>49</sup> According to Meyer's interpretation of the Sothic data provided by Censorinus, there had been a coincidence between the helical rising of Sirius and the Egyptian New Year in the year AD 140.<sup>59</sup> One weakness in Censorinus' testimony is that Censorinus had not actually witnessed this himself.<sup>60</sup> Also, Censorinus had not even connected the 1,460 year period with Sirius.<sup>49</sup> Despite these problems, Meyer took this date as the starting point for his Sothic series and simply by subtracting 1,460 years each time he ended up with the ‘definite’ anchoring points of: 140 AD; 1320 BC; 2780 BC and 4240 BC.<sup>49</sup> Then from this, the regnal years of the different pharaohs were added by looking at papyri like the one mentioned above.

However, dating the Sothic Rising is more complicated than this because the observation site is a critical factor. The Sothic rising can be seen at different times when standing at different observational



Photo from <www.wikipedia.com>

Tutmosis III: the 6<sup>th</sup> Pharaoh of the 18<sup>th</sup> Dynasty, who created the largest empire Egypt ever saw, conquered from Niy in north Syria to the fourth waterfall of the Nile in Nubia. After this, he built over 50 temples, and his reign saw unique architectural developments. Could he have been the biblical Shishak?

points. Mackey explains that because of this there are difficulties in interpreting the so-called Ebers Papyrus.<sup>49</sup> In it, he explains, there is yet another reference to Sothis in the 9<sup>th</sup> year of an unnamed king who has been identified<sup>19</sup> as pharaoh Amenhotep I. This time the observational site is assumed to have been Thebes (although some scholars argue that it may have been Memphis or Heliopolis, which would alter the dates by about 20 years).<sup>61</sup>

Many of the documents used to connect the Sothic series to various pharaohs have been difficult to read<sup>49</sup>, and different interpretations of them can be made. For instance, Theon states that ‘Since Menophres and till the end of the era of Augustus, or the beginning of the era of Diocletian, there were 1605 years.’<sup>62</sup> The question arises: was ‘Menophres’ a ‘someone’ or a ‘something’? Rowton argues that ‘Menophres’ refers to a city.<sup>63</sup> On the other hand, some argue that Menophres could refer to Ramses I, whose throne name was Menpehtire, although according to Mackey this is not a perfect linguistic match.<sup>49</sup> According to Rohl:

‘There is only one king whose name matches the Greek version exactly—Menneferre of the late Second Intermediate Period. This would date that era to 1320 BC and not 1700 BC as in the CC. Menpehtire (the prenomen/throne name of Ramesses I) is no match at all.’

Either way, the connection does not seem to be a stronghold for the CC.

Some documents do not even include the name of a pharaoh, but simply mention a Sothic rising. Mackey explains how the Sothic date of 2780 BC is connected with the seventh year of Sesostri III because of a reference made in the Illahûn Papyrus.<sup>49</sup> However, he goes on to explain how the Illahûn Papyrus does not give the name of the pharaoh, so identifying him as Sesostri III is based purely upon epigraphical<sup>64</sup> grounds. Mackey also says that this particular rising is assumed to be at Itj-Taway, the capital of the Twelfth Dynasty; this location would be different from the site that Censorinus was assumed. Thus this second Sothic date looks shaky because of what P. O’Mara has stated as ‘numerous technical complexities’.<sup>65</sup>

In fact most scholars now agree that the earliest date of 4240 BC should be abandoned in favour of the current date of 3100 BC,<sup>49</sup> which shows the general uncertainty about the Sothic Theory.

It is also interesting to read Rose<sup>66</sup> quoting Sir Alan Gardiner, who had the following to say about one of the later ‘sure dates’:

‘To abandon 1786 BC as the year when Dyn XII ended would be to cast adrift from our only firm anchor, a course that would have serious consequences for the history, not of Egypt alone, but of the entire Middle East (JNES 94-4-237).’

Further, Censorinus’ ‘Great Year’ appears to contradict that of Theon who claims that this ‘Great Year’ happened in 26 BC<sup>67</sup> rather than in the year AD 140.<sup>49</sup> Mackey also points out that if a heliacal rising of Sirius happened in

the period when the most celebrated Egyptian astronomer of the time, Claudius Ptolemy, was writing, why should Ptolemy fail to mention it in his writings?<sup>49</sup>

According to Egyptologist Jéquier,<sup>68</sup> ‘The Sothic periods, far from simplifying the chronological calculations for us, have no other effect than to introduce a new element of uncertainty and perhaps a new opportunity for error.’

By pinpointing the weaknesses of the CC, Rohl believes he has found the key to harmonize our understanding of the Egyptian chronology with the biblical account.

## Conclusion

Since Rohl’s publication, questions have been raised, such as whether Rohl’s New Chronology accommodates what is known of contemporary peoples of the Middle East, such as the Philistines. This is worth investigating, and John Bimson has already published a good article exploring this topic.<sup>69</sup>

Although David Rohl’s New Chronology may not be correct, it encourages a much needed re-examination the Conventional Chronology, which suffers from serious problems regarding dates earlier than the 7th century BC. David Rohl is still very much in the minority, but thanks to him the debate continues.

## References

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2. Bennett, C., *Temporal Fugues*, 1996 <members.aol.com/Ian%20Wade/Waste/Bennett1.html>, accessed 20 August 2007.
3. Rohl, D., *A Test of Time*, Century, London, pp. 13–14, 1995.
4. See also review by John Osgood, *Journal of Creation* 11(1): 33–35, 1997.
5. Rohl, ref. 3, pp. 269–273.
6. Rohl, ref. 3, pp. 12–13.
7. Rohl, D., Absence of evidence is not evidence of absence, *Journal of Ancient Chronology Forum (JACF)* 8:47–49, 1999; p. 47.
8. Rohl, ref. 3, p.7.
9. Petrie, W.; cited by P. James in *Centuries of Darkness*, p. 20; cited by Damien F Mackey in his summary of his MA Thesis: *General Chronologico-Historical Problems and Proposed Solutions*. See also MA Thesis section on the Sothic Star <www.specialtyinterests.net/sothic\_star.html>.
10. Rohl, ref. 3, p. xiv (Foreword by Professor Robert Steven Bianchi, New York).
11. Rohl, ref. 3, pp. 133–153.
12. Waste of Time Home Page, <members.aol.com/Ian%20Wade/Waste/Index.html>, accessed: 20 August 2007.
13. Rohl, ref. 3, pp. 13–14.
14. Bennett, ref. 2, p. 2.
15. Rohl, ref. 3, p.16.
16. Rohl, ref. 3, p.11.
17. When the succession is interrupted and no king sits on the throne (Rohl, ref. 3, p.11).

18. The Sothic Theory is an astronomical dating system and will be explained in more detail in Chapter Three.
19. Mackey, D.F., *Sothic Dating Examined, the Sothic Star Theory of the Egyptian Calendar*, October 1995, <www.specialtyinterests.net/sothic\_star.html>, accessed 7 October 2007.
20. Gardiner, A., *Egypt of the Pharaohs*, Oxford University press, Oxford, p 46, 1961, as quoted by Mackey, ref. 19.
21. Rohl, ref. 3, pp. 133–153.
22. Rohl, ref. 3, p.134.
23. A Serapeum is a temple or other religious institution dedicated to the syncretic Hellenistic-Egyptian god Serapis, who combined aspects of Osiris and Apis
24. Memphis was the ancient capital of the first nome of Lower Egypt, and of the Old Kingdom of Egypt from its foundation until around 2200 BC.
25. Rohl, ref. 3, pp. 66–77.
26. Of the remaining 800 stelae, only 268 have been published. Bennett, ref. 2, p.5.
27. Rohl, ref. 3, p. 77.
28. Kitchen, K., Trial by Television, <members.aol.com/lan%20Wade/Waste/Trial.html>, from his 1995 Preface of *The Third Intermediate Period In Egypt*, accessed 20 August 2007.
29. An upright stone slab or column bearing an inscription or design.
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39. Bimson, J., ‘Shoshenq and Shishak—A Case of Mistaken Identity?’, <www.newchronology.org>, 1993, accessed 20 August 2007. Dr Bimson is a lecturer in Old Testament studies and Hebrew at the University of Bristol.
40. Bimson explains how Muller believed these words were rather referring to an unknown area located somewhere in the north-west coastal plain of Israel.
41. Bennett, ref. 2, p. 9.
42. Rohl, ref. 3, p. 176.
43. ‘Hypocoristic’ comes from the Greek *hupokoristikos* meaning ‘call by pet names’. In this context it probably means the nickname of a Pharaoh.
44. Rohl, ref. 3, p. 187.
45. Kitchen gives examples in his preface for the third edition of *Third Intermediate Period*: the Hebrew name Pi-Beseth is from Egyptian Pi (r)-Baste, Hebrew Phineas comes from Egyptian Panhesi, and Hebrew Shoshana (t) from Egyptian Sh-sh-n(t).
46. He claims more examples could be given here, and includes an example of when ‘s’ is reproduced as ‘sh’ when interchanging between Egyptian and Canaanite and Akkadian
47. See details in Ashton, J. and Down, D., *Unwrapping the Pharaohs: How Egyptian Archaeology Confirms the Biblical Timeline*, Master Books, Green Forest, AR, ch. 17, 2006.
48. Bennett points out (ref. 2) that if Shishak were to be identified with Ramesses the II, the duration of the 19th and 20th dynasties would have to be reduced by 200 years. The problem with this is that Ramses II reigned 66 years, Ramses III reigned 31 years, and Ramses XI reigned 28 years, making 125 years before any of the other 13 Ramessid kings are even considered.
49. Mackey, D.F., Fall of the Sothic theory: Egyptian chronology revisited, *J. Creation* 17(3):70–73, 2003.
50. ‘Special Supplement on Sothic Dating’, *Kronos* VI:1, pp. 51–85 (as cited by Mackey, ref. 19).
51. Also referred to as Sothis or Sopdet.
52. Rohl, ref. 3, p. 492.
53. The first visible rising shortly before sunrise.
54. That is, almost exactly every 365.25 days.
55. Rohl, ref. 3, p. 146.
56. Mackey, ref. 19 Chapter Two: The development, and related astronomy, of the Egyptian civil calendar, accessed 26 October 2008.
57. Mackey, D.F., personal email.
58. Mackey, ref. 19, a summary of his MA Thesis which can be found on <www.specialtyinterests.net/sothic\_star.html>.
59. *Ägyptische Chronologie*, p. 28; cited in Mackey, ref. 49.
60. The event was recorded as having taken place 100 years before he wrote his book *De Die Natali Liber*.
61. Rohl explains this problem of observational place in ref. 3, p. 14. The date of the heliacal rising observation has more recently been adjusted downwards by twenty-five years as a result of a scholarly consensus that the observation probably took place at Thebes (where the papyrus was found) rather than Memphis. The difference in latitude between the two cities would require a lowering of the date because the heliacal rising of Sothis would have been one day earlier at the more southerly latitude on account of the earth’s curvature. Thus the currently accepted date for Year 9 of Amenhotep I is 1517 BC and the beginning of the 18th Dynasty set at 1550 BC with the accession of Ahmose I, Amenhotep’s father.
62. Theon of Alexandria; cited in Mackey, ref. 49.
63. Rowton, M., Mesopotamian chronology and the ‘Era of Menophres’, p. 109; cited in Mackey, Ref. 49.
64. Epigraphy is the study of ancient inscriptions.
65. The Chronology of the Palermo and Turin Canons, p. 37, as cited by Mackey, ref. 49.
66. Down, D., University Scholar Attacks the Sothic Cycle, *Archaeological Diggings* 3(2):23–24, April/May, 1996.
67. I.e. the 5th year of Emperor Augustus.
68. *Histoire de la Civilisation Égyptienne*, as translated by Mackey, ref. 49.
69. Bimson, J., The Philistines; Their Origin and Chronology Reassessed, *JACF* 4, 1990/91, <www.newchronology.org>.

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