

# Former astronomical datings of the Egyptian zodiacs

## 1. THE ROUND AND THE LONG ZODIAC OF DENDERA

First attempts to date the Round and Long Zodiacs of Dendera date to the XIX century. The initial interpretation of their horoscopes had been suggested by the XIX century Egyptologists – in particular, the famous German Egyptologist H. Brugsch. The interpretation was based on the appearance of the figures depicted on the zodiacs as well as the hieroglyphic inscriptions over the head of some planetary figures. See [544], Volume 6, pages 652-655 for a detailed overview.

In particular, it was instantly pointed out that all the planets except for the Sun and the Moon are represented as wayfarers carrying rods on the zodiacs of Dendera as well as many other Egyptian zodiacs (see [544], Volume 6, page 652). The rods symbolized planetary motion across the sphere of the immobile stars. Planets were considered to be “mobile” or “wandering” stars in ancient astronomy – indeed, the very Greek word *planetes*, or “vagrant” ([393], page 40). Therefore, it is hardly surprising that the planetary figures on Egyptian zodiacs are usually equipped with rods; see more on this subject below, in the sections related to the astronomical symbols of Egyptian zodiacs.

The Sun and the Moon were represented as circles on Egyptian zodiacs, often containing figures ([544], Volume 6, pages 652-655). This is how they’re represented on the zodiacs of Dendera.

The initial interpretation of the Dendera zodiacs offered by the Egyptologists was subsequently corrected by Morozov (see [544], Volume 6, pages 651-672). In particular, Morozov had corrected Brugsch’s erroneous identification of Venus; we shall discuss this in more detail below.

Many renowned astronomers of the XIX century (such as Dupuis, Laplace, Fourier, Letron, Holme, Biod et al). Their result proved negative – there were no planetary combinations (or horoscopes) resembling those from Dendera anywhere on the real sky over the entire period between deep antiquity and the III century A.D., or up until the very Middle Ages ([544], Volume 6, page 651). There had been no calculations conducted at any latter point up before the research of N. A. Morozov.

N. A. Morozov employed his fundamental knowledge of the ancient astronomical symbols in order to verify the interpretation of the Dendera zodiacs as offered by the Egyptologists. In several cases – such as the abovementioned case of Venus, he corrected some of the obvious errors inherent said interpretations. Yet he did confirm the correctness of how the

zodiacs were deciphered by the Egyptologists for the most part. The amended interpretations of the Dendera zodiacs in Morozov's rendition are discussed at great length below.

The approach to the deciphering of the Egyptian zodiacs that was chosen by N. A. Morozov had been classical, the same as suggested in the works of the XIX century Egyptologists, which is why his interpretation had remained incomplete. Our research demonstrates that he ignored or misinterpreted a great deal of astronomical data contained by the Egyptian zodiacs apart from the horoscope. The reason is that Morozov, likewise his predecessors, had been of the false opinion that the astronomical content of an Egyptian zodiac is exhausted by the horoscope contained therein.

Having verified and corrected the interpretations of the Dendera zodiacs, N. A. Morozov started to calculate the datings of their horoscopes. Unlike his predecessors, he knew better than to trust the Scaligerian chronology and the "ancient" Egyptian chronology thereby implied. Therefore Morozov carried on with his calculations for epochs postdating the III century A.D., coming up with what can only be considered a spectacular solution in comparison to all the results of his predecessors:

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**The Long Zodiac of Dendera:**

6 May 540 A.D.

**The Round Zodiac of Dendera:**

15 March 568 A.D.

(N. A. Morozov, [544], Volume 6, pages 689-691.)

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The calculations made by N. A. Morozov for the zodiacs of Dendera were verified by the famous astronomer N. I. Idelson, who had performed control calculations of his own, confirming Morozov's correctness ([544], Volume 6, page 669).

Tables containing N. A. Morozov's interpretations of the Dendera zodiacs and the results of N. I. Idelson's control calculations are presented in figs. 13.1 and 13.2. Both tables were borrowed from N. A. Morozov's book ([544], Volume 6).

Morozov proved the first to have solved the "Dendera problem" in such a way that would be satisfactory from the astronomical point of view.

The solution of N. A. Morozov is based on the in-

terpretation of the Dendera zodiacs that he had used for the purpose, which makes his astronomical dating of the Dendera zodiacs to the VI century the only one possible on the entire interval between 964 B.C. and 1303 A.D. This is the time interval considered in N. A. Morozov's calculations ([544], Volume 6, page 667).

However, N. A. Morozov's solution was far from ideally strict. It contained a number of imprecise postulations that seemed minute, but proved to affect the end result to a substantial extent. Namely:

1) The figure of Venus on the Long Zodiac is placed between the Zodiacal symbols of Aries and Taurus. In Morozov's solution Venus is located between Aries and Pisces, which places it on the opposite side of Aries.

2) According to how N. A. Morozov himself deciphered the Long Zodiac, Mercury was to the west from the Sun, between Aries and Taurus. However, in Morozov's solution Mercury had been to the east from the Sun, between Taurus and Gemini, contrary to the zodiac's indications.

3) On the Long Zodiac we see no star above the head of Mercury, which implies that Mercury wasn't visible for sunrises, according to Morozov himself. However, in his solution Mercury proves to be plainly visible on the celestial sphere.

This is the commentary of N. S. Kellin and D. V. Denisenko: "The most difficult thing is to explain why Mercury, which was located 15-17 degrees to the east of the Sun on 6 May 540, is placed to the west of the sun, at so short a distance that it makes the planet invisible due to solar luminosity, which is confirmed by the absence of a star over Mercury's head. Yet at the distance of 15 degrees away from the Sun one can even see Mercury from the latitude of Moscow, let alone Egypt, where the angle between the ecliptic and the horizon is greater" ([376]).

Let us reiterate that the absence of a star over the head of a planetary figure implied the invisibility of said planet in the zodiacs of Dendera, as N. A. Morozov himself pointed out on a number of occasions. In other words, the planet would be too close to the Sun that day and hence impossible to see. On the other hand, the presence of a star over the head of a planetary figure would mean that the planet in question was visible that day ([544], Volume 6, pages 675, 678 and 679).

Дата 568 г. 15 марта, координаты 1900 г.	
Сатурн . . . . .	198°1 (Дева, ближе к Весам, как и показано двумя фигурами, одна под Девой, а другая зади Девы, впереди Весов).
Юпитер . . . . .	138°0 (Рак, ближе к Льву, вполне удовлетворительно: одна фигура под Раком, а другая над Раком, ближе к Льву).
Марс . . . . .	302°3 (Козерог, как показано двумя фигурами над головой и на спине Рака).
Венера . . . . .	36°1 (Овен, около середины, как и показано парочкой женских путниц под Овном).
Меркурий . . . . .	5°0 (Рыбы, около середины Рыб, но благодаря тому, что середина уже замещена Солнцем, Луной и знаком равноденствия, Меркурий поставлен по неволе впереди, ближе к Водолею, как и было).
Солнце . . . . .	16°44 (Рыбы, около середины, как и показано кружком над Рыбой, с глазом посредине его).
Луна . . . . .	Рыбы, как и показано.

Fig. 13.1. The Round Zodiac of Dendera (DR). N. A. Morozov's decipherment and the planetary positions in constellations for the date of Morozov's solution – 15 March 568 A.D. Control calculations by N. I. Idelson. Planetary longitudes are given in relation to the spring equinox point for the epoch of 1900. Table taken from [544], Volume 6, page 669.

The date: 15 March 568. Coordinates for 1900 A.D.	
Saturn . . . . .	198° 1 (Virgo, closer to Libra as shown by the two figures – one underneath Virgo, and the other behind it and in front of Libra).
Jupiter . . . . .	135° 0 (Cancer, closer to Leo – quite satisfactory: one of the figures is underneath Cancer, and the other – above the latter, closer to Leo).
Mars . . . . .	302° 3 (Capricorn, as demonstrated by the two figures over the head and on the back of Cancer).
Venus . . . . .	36° 1 (Aries, near the middle, as shown by the pair of female wayfarers underneath Aries).
Mercury . . . . .	5° 0 (Pisces, near the middle; however, due to the fact that the middle is already occupied by the Sun, the Moon and the equinox symbol, Mercury had to be placed in front, closer to Aquarius, which is indeed the case).
The Sun . . . . .	16° 44 (Pisces, near the middle, as indicated by the circle over the fish symbol with a circle in the middle).
The Moon . . . . .	Pisces, as demonstrated.

Совр. долготы.	
Сатурн . . . . .	212°0 (Дева у Весов)
Юпитер . . . . .	23°1 (Рыбы у Овна)
Марс . . . . .	18°8 (Рыбы)
Венера . . . . .	33°7 (Овен)
Меркурий . . . . .	90°6 (Между Тельцом и Близнецами)
Солнце . . . . .	76°3 (Телец у Близнецов)
Луна . . . . .	в Весах.

Modern longitudes.	
Saturn . . . . .	212° 0 (Virgo near Libra)
Jupiter . . . . .	23° 1 (Pisces near Aries)
Mars . . . . .	18° 8 (Pisces)
Venus . . . . .	33° 7 (Aries)
Mercury . . . . .	90° 6 (between Taurus and Gemini)
The Sun . . . . .	76° 3 (Taurus near Gemini)
The Moon . . . . .	in Libra.

Fig. 13.2. The Long Zodiac of Dendera (DL). N. A. Morozov's interpretation and the planetary positions in constellations for the date of Morozov's solution – 6 May 540 A.D. Control calculations by N. I. Idelson. Planetary longitudes are given in relation to the spring equinox point for the epoch of 1900. Table taken from [544], Volume 6, page 687.

4) In the Round Zodiac we see a star over Mercury's head, signifying the planet's visibility. In Morozov's solution, Mercury is too close to the sun to be visible, qv in fig. 13.1.

Bear in mind that the visibility of stars and planets requires the Sun to be at some 9-10 degrees under the horizon, while in Morozov's solution for the Round Zodiac the Sun had been at a mere 4-6 degrees below the horizon when Mercury rose at the latitude of Egypt, Mercury's luminosity equalling +0.4 on the photometric scale.

On the latitude of Moscow, for instance, the Sun and Mercury had risen at the same time that day; therefore, on the 15 March 568 A.D. (Morozov's dating for the Round Zodiac) Mercury's invisibility is known a priori (cited values were calculated with the aid of the Turbo-Sky software).

The Muscovite physicists N. S. Kellin and D. V. Denisenko had studied Morozov's solution meticulously in the early 1990's ([376], pages 315-329). They wrote the following on the subject: "N. A. Morozov's solution for the Long Zodiac contains several incon-

sistencies and can therefore be called an arbitrary one” ([376], page 323).

N. S. Kellin and D. V. Denisenko carried on with N. A. Morozov’s studies in the field of the astronomical dating of the Dendera zodiacs ([376], pages 315-329). As we already mentioned, N. A. Morozov only covered the epoch until 1303 in his calculations. Kellin and Denisenko widened that interval to include all the epochs up until the present age. They were using the same interpretation of the Dendera zodiacs as N. A. Morozov, trusting him completely in this respect.

However, unlike N. A. Morozov, N. S. Kellin and D. V. Denisenko were able to use a computer for their calculations. As a result, another solutions for the zodiacs of Dendera as deciphered by N. A. Morozov was found:

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**The Long Zodiac of Dendera:**

12 May 1394 A.D.

**The Round Zodiac of Dendera:**

22 March 1422 A.D.

(N. S. Kellin and D. V. Denisenko, [376], pages 315-329.)

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The solution offered by Kellin and Denisenko turned out even better than Morozov’s – for both zodiacs, the Round and the Long ([376], pages 321-325). However, their solution for the Round Zodiac did in fact contain a certain error, which made the authors write the following: “We are aware of the fact that our version is also far from ideal, and therefore this solution for the Long Zodiac [the 1394 solution – Auth.] is also an arbitrary one, although it is admittedly more satisfactory than the one found by N. A. Morozov” ([376], page 325).

Thus, there was no ideal solution found for the zodiacs of Dendera in strictly Morozovian interpretation – indeed, it turns out that there is no such solution.

In 1999-2000 the problem of astronomical datings of Egyptian zodiacs (the ones from Dendera in particular) was confronted by T. N. Fomenko ([METH3]:3, Chapter 12). She analyzed Morozov’s interpretation once again and suggested to amend it somewhat; in particular, her work proposed to swap the solar and lunar symbols in the Morozovian version of deciphering the Round Zodiac.

T. N. Fomenko suggested that the eye in the circle that N. A. Morozov had considered the Solar symbol

was really the Moon, and vice versa – the young woman in the circle that Morozov deemed to represent the Moon refers to the Sun according to T. N. Fomenko. We shall not linger upon the discussion of this issue since we shall come back to it below, in CHRON3, Chapter 15. We consider both versions in our work.

T. N. Fomenko discovered another important fact that she relates in [912:3]. It turns out that the drawn copy of the Long zodiac from Bode’s *Uranography* that was used by N. A. Morozov ([544], Volume 6, pages 674 and 746-748) contains several substantial distortions ([912:3], pages 746-748). Having compared this copy (as reproduced by N. A. Morozov) to the much more precise copy from the Napoleonic album ([1100]), T. N. Fomenko noticed that the distortions were great enough to alter the astronomical content of the Long Zodiac. This renders the horoscope calculated by N. A. Morozov who had used the copy in question for reference to be an erroneous one. We cite a copy of the Long Zodiac from Bode’s *Uranography* as used by Morozov and reproduced in his book ([544], Volume 6, inset after page 673) in figs. 13.3 and 13.4. The first publication of this drawing was made in the *Voyage dans la Basse et la Haute Egypt* by Baron D. V. Denon dating to 1802. Baron Denon had accompanied Napoleon during the Egyptian expedition of 1798 and made many drawings of Egyptian antiquities that were subsequently published in his book. Many of these drawings were made in a hurry, virtually under enemy fire ([1378:1]). They would naturally contain errors. Later on, Denon edited the Napoleonic Egyptian album ([1100]) where the drawing of the Long Zodiac was a lot more correct and accurate than the first one. However, Morozov appears to have been unaware that a precise drawn copy of the Long Dendera Zodiac existed in the Napoleonic album and used the initial inaccurate copy by Denon that was reprinted in Bode’s *Uranography*.

T. N. Fomenko wrote the following in this respect: “He [N. A. Morozov – Auth.] had trusted this drawing completely, and got down to deciphering the Long Zodiac ‘according to Bode’. However, he had instantly encountered problems which he never managed to solve ... Let us study Bode’s drawing more attentively. One instantly notices that the actual figure on the left that represents the planet Saturn, as we already know,

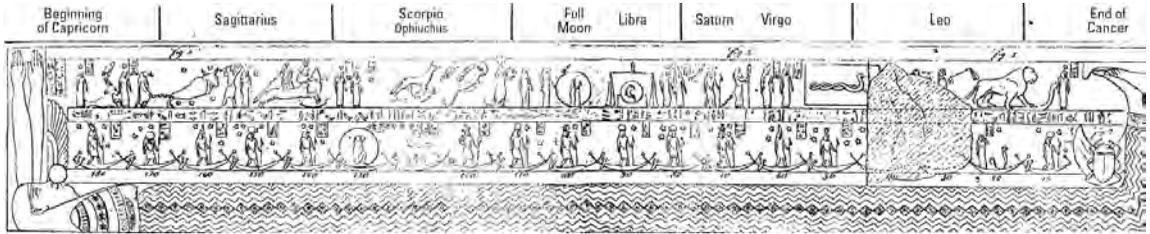


Fig. 13.3. Long Zodiac of Dendera (DL). A drawing from the *Uranography* by Bode as used by N. A. Morozov. The names of constellations and other indications were added by N. A. Morozov. Taken from [544], Volume 6, inset between the pages 671 and 672. First part of the drawing.

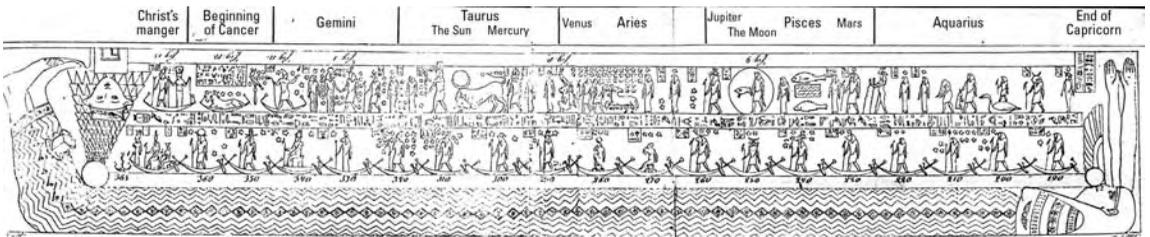


Fig. 13.4. Long Zodiac of Dendera (DL). A drawing from the *Uranography* by Bode. Second part of the drawing. Taken from [544], Volume 6, inset between the pages 671 and 672.

is drawn without a rod for some reason ... Bode's drawing thus 'writes Saturn out' of this part of the Long Zodiac ... however, for some reason the astronomer Bode does the contrary to the area between Libra and Virgo, adding a rod to one of the figures ... we see nothing of the kind on either copy of the Napoleonic artists. Figures in this part of the Zodiac have no rods ... as a result, N. A. Morozov, deceived by this fragment of Bode's drawing, placed the planet Saturn here. This proved to be erroneous" ([912:3], page 737).

In order to make the reader capable of estimating the difference between the two copies of the Long Zodiac of Dendera, we reproduce the same fragment of the zodiac as taken from the two sources mentioned above. One can plainly see that in Denon's drawing from the *Uranography* the female figure with a crescent on her head, apart from holding the rod that she isn't supposed to hold (which ascribes the planet qualities it does not possess in the Long Zodiac), is altogether transformed into a male for some reason, qv in fig. 13.5. A propos, it is this very figure that Morozov considered to represent Saturn because of the erroneously drawn rod.

T. N. Fomenko used the rather precise and accurate copies of the Long Zodiac of Dendera from the Napoleonic album ([1100]) in order to correct the errors in Morozov's interpretation that stemmed from the inaccuracy of the illustration found in the *Uranography*, and suggested a new interpretation of the Long Zodiac. See [912:3] for explanations of this interpretation.

The search for astronomical datings of Egyptian zodiacs in T. N. Fomenko's work ([912:3]) was performed with more exacting solution conditions than previously; these conditions can be related as follows.

1) One had to ensure perfectly strict correlation of how the planets were distributed across the Zodiacal constellations to the parameters specified in the zodiac under study.

2) The order of planets had to be adhered to scrupulously. This condition was absent from earlier works, and its first formulation can be found in [912:3].

Solutions which did not satisfy to the above conditions were rejected ([METH3]:3, Chapter 12).

Thus, the conditions for the astronomical solutions as applied to the Zodiacs the way they were for-

mulated in T. N. Fomenko's work ([912:3]) happened to be a great deal more demanding than it was the case with the works by Morozov and even Kellin-Denisenko.

One could say that T. N. Fomenko was the first to demand ideal correspondence between the calculated planetary positions and their location on the Egyptian zodiac (considering the indications she used and in accordance to the interpretation offered in her work). Unlike the approach of Morozov and Kellin-Denisenko, the work of T. N. Fomenko allowed for no "arbitrary" solutions.

This new idea proved extremely useful for the analysis of the Egyptian zodiacs. We fully follow it in our research.

However, T. N. Fomenko did not account for the presence or absence of stars over the heads of planetary figures from the Dendera zodiacs.

Let us remind the reader that, according to N. A. Morozov, a star over the head of a planetary symbol on the Dendera zodiacs is an indication of this planet's visibility; in other words, it is a sign that the planet in question could be seen with the naked eye at dawn or at dusk. On the other hand, the absence of stars near planetary figures (at least the ones drawn within immediate vicinity of the Sun) means that the planet in question was not visible on the date ciphered in the horoscope, according to [544], Volume 6, pages 675, 678 and 679). For the planets located at a certain distance from the Sun, the star sign could be omitted since the very distance between the Sun and the planet in question would testify to the visibility of the planet in question on the sky. We shall come back to this issue below.

Indications of a planet's visibility or a lack thereof are of the utmost importance for Venus and Mercury; they are close to the Sun, and become invisible due to solar rays every now and then. If one of these planets is specified as visible on the zodiac and it isn't such in the calculated solution or vice versa, the solution in question has to be rejected (naturally, on the condition that we interpret the planetary visibility symbols from the Egyptian zodiac correctly).

To jump ahead, let us mention that our approach to the problem of planetary visibility signs on the Egyptian zodiacs is as follows. One has to bear in mind that it is the furthest thing from obvious a pri-

ori which author was correct – N. A. Morozov in his presumption that Egyptian zodiacs contain indications of planetary visibility, or T. N. Fomenko who did not account for such indications in [912:3].

Therefore, we shall tentatively consider Morozov's hypothesis to be correct and account for it in our attempts to find such solutions for the Egyptian zodiacs that we know as would conform to the following specifications:

Primo, they have to be ideal according to T. N. Fomenko's stipulations, which imply strict correspondence to the Egyptian zodiac inasmuch as planetary dispositions in constellations and their respective order are concerned.

Secundo, Morozov's visibility indicators must also be taken into account.

However, the stipulations do not end here, and also include rigid correspondence to all the additional astronomical information that we found on the Zodiacs.

However, we shall not just consider the "best" Zodiacal interpretation, but all of them at once.

If one really finds such solutions for the Egyptian zodiacs (ones that will be ideal in every sense as described above), it will mean that N. A. Morozov had been correct in this particular instant, which indeed proves to be the case, according to the results of our

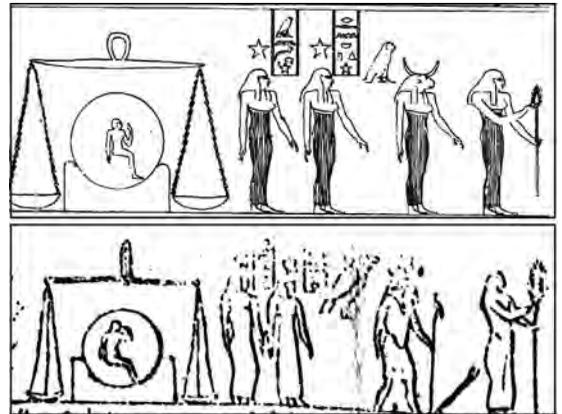


Fig. 13.5. Long Zodiac of Dendera (DL). One and the same fragment according to the Napoleonic drawing (top) and the poor-quality drawing from the *Uranography* by Bode as used by N. A. Morozov (bottom). Taken from [1100], A. Vol. IV, Pl. 20 (top fragment) and [544], Volume 6, inset after page 673 (bottom fragment).

calculations. N. A. Morozov's opinion on the visibility criterion was confirmed fully, *qv* below, in the sections related to the dating of actual zodiacs.

Let us return to T. N. Fomenko's work ([912:3]). Above we have given a brief account of the approach to the dating of Egyptian zodiacs used in the present book; it is rendered in more detail in ([912:3]).

The solution found for the Long Zodiac by T. N. Fomenko in [912:3] is the only one for the historical interval as seen in the framework of the general approach to the dating of the Egyptian zodiacs and the interpretation of the latter that she suggests, namely, 7-8 April 1727. As for the Round Zodiac, its dating did not change as compared to the datings suggested by Morozov and Denisenko/Kellin.

The reason for this last coincidence is that, despite the fact that the different interpretations given by N. A. Morozov and T. N. Fomenko make the signs for the Sun and the Moon swap places, both these signs are nevertheless located in the same constellation, namely, Pisces, *qv* in fig. 13.6. Therefore, the horoscope and hence the dating of the Round Zodiac remain unaltered when we swap the solar symbol with the lunar.

Thus, the solution of T. N. Fomenko is as follows:

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**The Long Zodiac of Dendera:**

7-8 April 1727 A.D.

(Our final dating of 22-27 April 1168 A.D. was also among the results, but got rejected due to insufficient decipherment precision.)

**The Round Zodiac of Dendera:**

15 March 568 A.D.

(T. N. Fomenko, [912:3].)

(The dating of 30-31 March 1185 A.D., which is close to our final dating, was also among the results, but got rejected due to insufficient decipherment precision.)

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Our study of the Dendera zodiacs demonstrated that, apart from the primary horoscopes considered in the abovementioned research, they contain rather detailed horoscopes of a more special nature. These yield additional astronomical information that gives us the opportunity to calculate all possible interpretation versions simultaneously. Such volume of extra data renders the chance of a random solution almost nonexistent. We shall consider this in more detail below. We shall merely refer the reader to the repro-

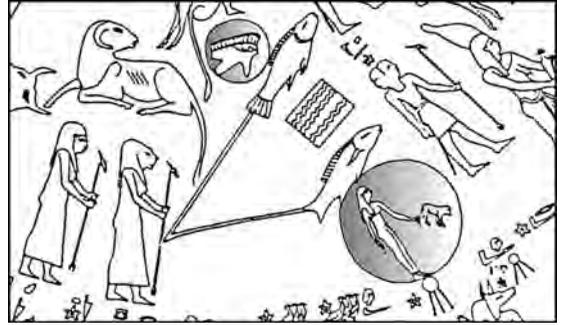


Fig. 13.6. Round Zodiac of Dendera (DR). The discrepancy between the interpretations of N. A. Morozov and T. N. Fomenko. We see two highlighted circles in the constellation of Pisces – one of them contains an eye, and the other – a figure of a young woman. N. A. Morozov was of the opinion that the circle with the eye stands for the Sun, and the circle with the young woman represents the Moon. T. N. Fomenko suggests the reverse interpretation. Drawn copy from [1062], pages 9 and 71.

ductions of both zodiacs where we point out the groups of symbols that contain astronomical information that supplements the primary horoscopes and allows for a more precise dating, *qv* in figs. 13.7 and 13.8. As one can see, there is a substantial amount of such symbols here.

See the description of the in-depth analysis, interpretation and dating of the Dendera zodiacs as performed according to our method below. The astronomical solution that we came up with for the Dendera zodiacs is the only one for the entire historical interval between 500 B.C. and the present epoch; it is as follows:

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**The Long Zodiac of Dendera:**

22-26 April 1168 A.D.

**The Round Zodiac of Dendera:**

morning of 20 March 1185 A.D.

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## 2. THE TWO ZODIACS FROM ESNA

The Egyptian town of Esna is located rather close to Dendera; this is the place where the Nile makes a great curve that spans a huge bight covered in hills

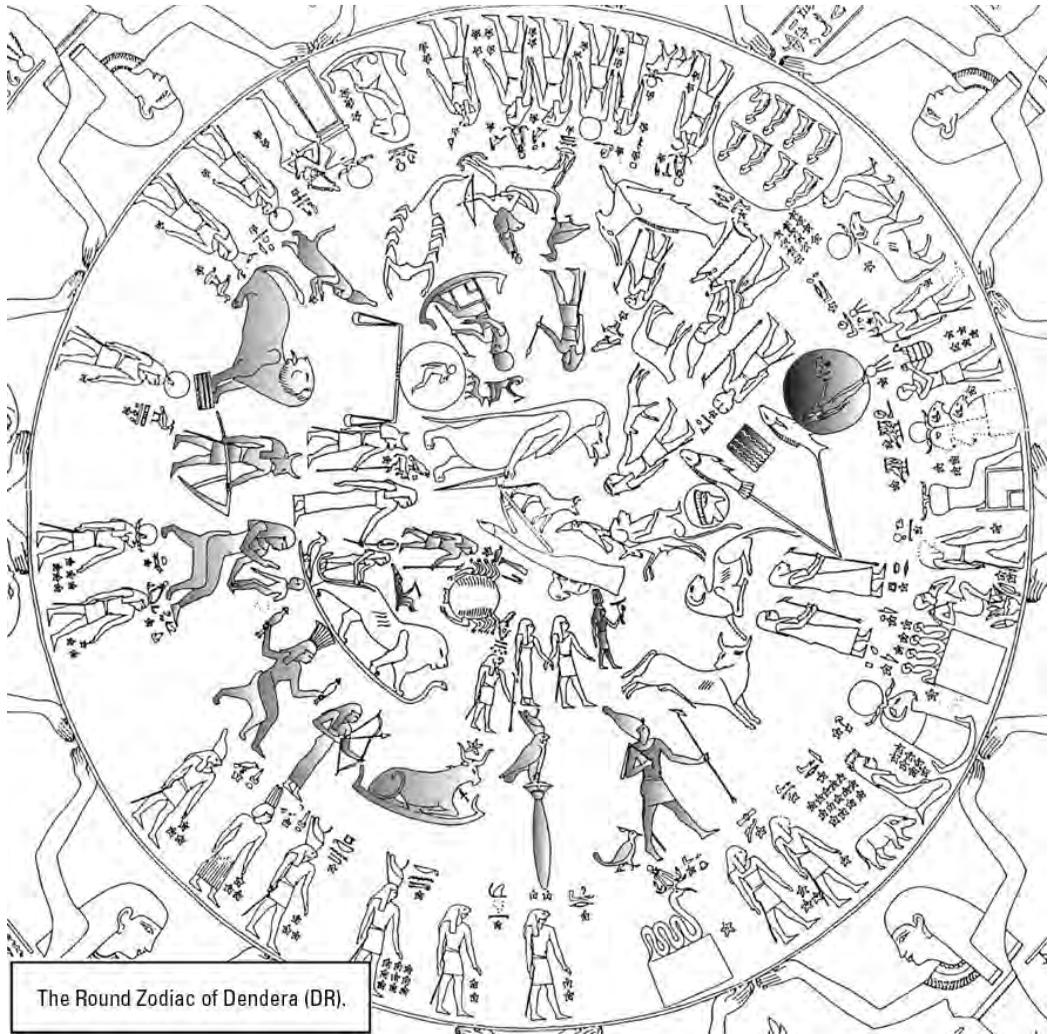


Fig. 13.7. Round Zodiac of Dendera (DR) with highlighted groups of symbols containing secondary astronomical data, which help us to make the dating more precise. Drawn copy from [1062], pages 9 and 71.

with many ancient Egyptian sepulchral caves carved into the rock. All the entrances were ingeniously concealed and walled-up. The city of Luxor (possibly a derivative of the Russian “*Luka Tsarei*”, or the Royal Bight) is right across the Nile; it is supposed to be the same city as the ancient Thebes as described by Herodotus. One finds the ruins of two great Egyptian temples in and around Luxor – the Temple of Luxor and the Temple of Karnak.

Two temples with zodiacs on their ceilings were

found in Esna. We shall refer to them as the Greater Temple and the Lesser Temple, since one of them is a lot bigger than the other. The zodiacs from the temples of Esna resemble the zodiacs of Dendera in the symbols they contain, although there are certain differences between them. See Chapter 17 of *CHRON3* for more information on the zodiacs of Esna and their astronomical imagery.

It is highly likely that all the ancient Egyptian constructions found in the “Royal Bight”, such as the gi-

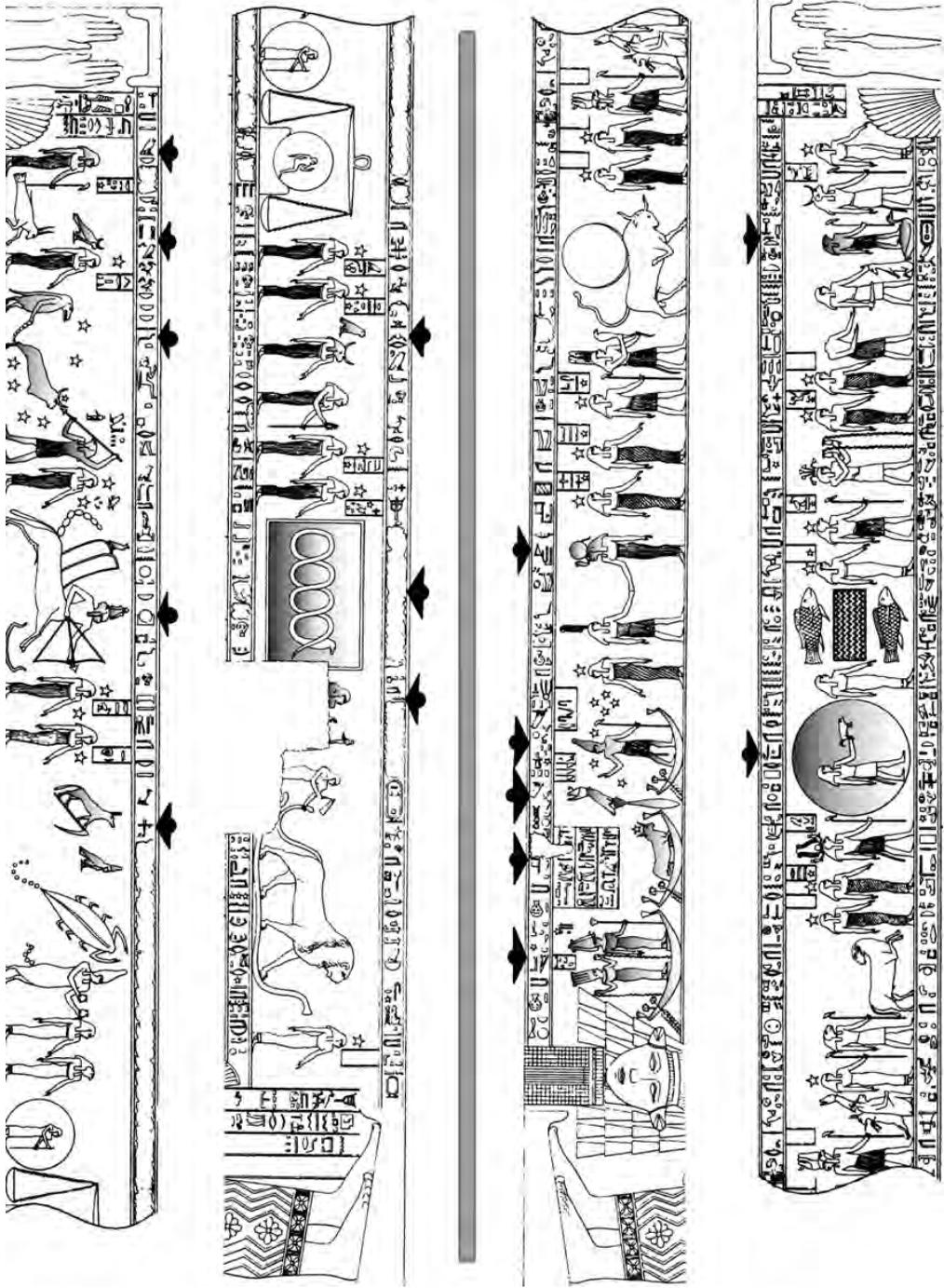


Fig. 13.8. Long Zodiac of Dendera (DL). Groups of symbols that contain additional astronomical information useful for making the dating more precise are shaded grey. Their locations are indicated by arrows. Based on the drawn copy from [1100], A. Vol. IV, Pl. 20.

gantic temples of Luxor, the sanctuary of Dendera, the Esna temples and so on, bear direct relation to the royal necropolis. In other words, all of them were built to be used for mortuary rites. It becomes clear why all the large stone zodiacs of the “ancient” Egypt (those from Dendera and Esna) were found at this site.

As we have already mentioned, Egyptian zodiacs are most likely to contain the birth or demise dates of the deceased. Ordinary representatives of the nobility would get zodiacs on the inside of their coffins. Great kings could have entire temples built to house their funeral zodiacs, which would be chiselled on the ceiling. Furthermore, some of the monumental funeral zodiacs from the ancient Egypt could bear some relation to Christ, his kin or the apostles. As we understand now, the “ancient” Egypt had been a Christian country, qv in CHRON5.

Copies of both zodiacs from Esna can be found in the Napoleonic album ([1100]), where one finds detailed shaded drawings of a considerable size, as well as drawn outlines of these zodiacs made by European artists during the Napoleonic military expedition to Egypt in the late XVIII – early XIX century.

As far as we know, the first attempt to interpret and date the Esna zodiacs astronomically was made in the work of T. N. Fomenko ([912:3]). We know of no other authors who wrote anything on this particular subject.

T. N. Fomenko appears to be the first to have suggested an interpretation of the Esna zodiacs. Her approach (as related above in brief) led her to the conclusion that both these zodiacs have a single solution (or dating) on the entire historical interval. The uniqueness of this solution was naturally tested according to the interpretation of the Esna zodiacs offered and documented in [912:3].

T. N. Fomenko’s solution for the zodiacs of Esna is as follows:

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**The Long Zodiac of Esna:**

1-2 May 1631 A.D.

**The Round Zodiac of Esna:**

2-3 May 1570 A.D.

(T. N. Fomenko, [912:3], pages 774 and 798.)

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Our analysis of the zodiacs from Esna demonstrated that some of the symbols included by T. N.

Fomenko in the primary horoscopes of the Esna zodiacs really pertain to the secondary horoscopes included in these zodiacs. It was discovered that the zodiacs of Esna, likewise the Dendera zodiacs, contain detailed horoscopes of a secondary nature. In other words, we have discovered a large volume of extra astronomical information in the Esna zodiacs; this information excludes the possibility of finding a random and extraneous solution on the entire historical interval, even considering that all possible zodiac interpretation options are accounted for in calculation.

See our detailed analysis and the results of dating the zodiacs of Esna by the method that we suggest below. We shall merely quote the solution here:

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**The Long Zodiac of Esna:**

31 March – 3 April 1394 A.D.

**The Round Zodiac of Esna:**

6-8 May 1404 A.D.

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This solution is unique for the entire historical interval between 500 B.C. and the present epoch.

### 3.

#### FLINDERS PETRIE’S ATHRIBIS ZODIACS

The Athribis zodiacs of Flinders Petrie were studied by N. A. Morozov in [544], Volume 6, pages 728-752. They can be seen in fig. 13.9. N. A. Morozov describes these zodiacs, as well as the preceding attempts of dating them, in the following terms:

“In 1902 the British School of Egyptology in London published the oeuvre of W. M. Flinders Petrie entitled *Athribis* and containing the descriptions of the findings that this Egyptologist made in Upper Egypt (near Sohag) in 1901. Athribis, formerly known as Hat-Repit (or the Repit fortress), is located to the south of Dekr-Amba-Shenudeh (White Monastery), where the Egyptologists had previously found the remnants of a monastic cell that they dated to the IV century A.D. And to the south from it, near Hargazeh, where the surrounding rocks form many terraces descending into the Valley of the Nile, the researchers discovered artefacts that they dated to the Archaean period of the Egyptian kingdom.

Two other temples were found in Athribis itself – one of them was dated to the epoch of Ptolemy IX,



Fig. 13.9. The Atrahis zodiacs of Flinders Petrie (AV and AN). Drawn copy published by Flinders Petrie (see [1340:1], for instance) and reproduced by N. A. Morozov in [544]. Taken from [544], Volume 6, page 730.



Fig. 13.10. The Atrahis zodiacs of Flinders Petrie (AV and AN). A fragment of the drawn copy. The man with his arm in the air and the birds are shaded grey and symbolise the planets that were close to the Sun on solstice day. Taken from [544], Volume 6, page 730; see also [1340:1].

and the other was said to have been ‘started by Ptolemy XIII Auletes (Court Theomachist) and finished by Claudius and Hadrian’. The town itself is located at the very edge of the desert, and so this ancient relic was covered in sand, which is a very rare case, since Egyptian sepulchres are usually buried in mud from the Nile that is a great deal more detrimental to their condition.

The last of the two temples mentioned above belonged to the same type as the Dendera temple (or the Edfu temple); however, the surrounding colonnade reveals a Greek influence, and the sculptural decorations of both pertain to the “Roman culture”.

The material used for their construction is limestone from the local middle quarries which becomes easily eroded due to atmospheric conditions; as a result, many local constructions are built from sandstone.

At a small distance from the excavation sites of these temples on the lower terraces of the plateau that descends into the Nile Valley which are anything but easily accessible, even when the sand is removed, Flinders Petrie discovered an artificial sepulchral cave whose walls were covered in artwork and inscriptions, with two horoscopes on the ceiling, drawn and painted in a multitude of colours; they formed a single composition and were most likely drawn by the same artist; that is to say, the upper horoscope predates the lower by thirty years maximum, and most probably, by a lot less than that. [N. A. Morozov’s presumption about the maximal interval between the two zodiacs equalling thirty years maximum had proved erroneous, and greatly hindered his astronomical dating – Auth.]. The zodiacal figures are Hellenistic in character; however, they also demonstrate several purely Egyptian distinctive traits. Thus, the constellation of Orion below, for instance (in the lower part of the drawing) looks like a man with his right hand raised, inviting the souls of Meri-Hor and his father Ab-Ne-Mani, as they are referred to in the hieroglyphic inscriptions nearby, to ascend into heavens; they are accompanied by their earthly sins presented as snakes and jackals (on the left of the picture). Both souls look like birds with human heads; the upper horoscope must have been drawn for the father, and the lower for the son. However, both horoscopes apparently refer to the dates of their ascension

and not their birth, which is the only case for which it would be apropos to portray them as birds here” ([544], Volume 6, page 731).

Let us interrupt Morozov’s narration for a while. We have just come across the vary point in his reasoning that greatly complicated his interpretation of Egyptian zodiacs. Namely, when faced with the symbols that he deemed to bear no relation to the horoscope of the zodiac in question, Morozov would have no qualms about declaring them to be of a religious or mystical nature, and with zero relevance to astronomy. In this case, for instance, he misinterpreted important astronomical information from the Athribis zodiacs as religious symbolism – namely, the signs of the secondary summer solstice zodiac, qv in fig. 13.10. We shall cover secondary horoscopes found upon Egyptian zodiacs in detail in CHRON3, Chapter 15.

The planetary figures of birds from the secondary horoscope were declared to represent “the souls of the deceased father and son” erroneously, despite the fact that Morozov himself made the perfectly justified assertions that the birds found on the zodiacs of Athribis stand for planets.

In this particular case, N. A. Morozov’s error stemming from his having confused the secondary horoscope for a mystical scene proved to be serious. Firstly, he had lost important astronomical information bearing direct relation to the dating. Secondly, Morozov’s erroneous interpretation of the Egyptian symbols confirmed his false presumption that the maximal interval between the two Athribis datings should equal 30 years. In reality, this interval equals 38 years as we shall see below in Chapter 18 of CHRON3. At the same time, Morozov’s assumption that the Athribis zodiacs stand for the demise dates of the father and son buried in this cave appears to be correct.

Let us carry on with quoting from N. A. Morozov:

“The dating of this sepulchre, likewise that of the abovementioned Dendera zodiacs, is all the more reliable due to there being two horoscopes separated by a short time interval in both cases.

Upon having received the fourth volume of the *British School of Egyptology* that contained these zodiacs from Professor Turayev in the summer of 1919 in order to date them with more precision astronomically, the first thing I did was to repeat Knobel’s calculations as cited in the book. Likewise other

<i>The Dating of the Horoscopes</i>		
By E. B. Knobel.		
<i>Second Horoscope.</i>		
	Geocentric Longitude.	Epoch, A. D. 52.
Sun in Taurus . . . . .	31° — 60°	May
Moon in Gemini . . . . .	61° — 90°	May 20 (New Moon, May 17)
Mercury in forepart of Taurus. . . . .	31° — 45°	?
Venus in hindpart of Taurus. . . . .	45° — 60°	25° Longitude greater than Sun
Mars in Cancer . . . . .	91° — 120°	92°
Jupiter between Capricornus and Aquarius . . . . .	300°	306°
Saturn in Pisces . . . . .	331° — 360°	358°
The year A. D. 52, May 20, suits well for Moon, Venus, Mars, Jupiter and Saturne:		
<i>First Horoscope.</i>		
	Geocentric Longitude.	Epoch, A. D. 59.
Sun between Capricornus and Aquarius . . . . .	300°	January 20
Moon in Sagittarius. . . . .	241° — 270°	About Last Quarter, January 25
Mercury in forepart of Capricornus . . . . .	271° — 285°	?
Venus in Pisces. . . . .	331° — 360°	250°
Mars in Aquarius. . . . .	301° — 330°	327°
Jupiter in Leo. . . . .	121° — 150°	148°
Saturn in Gemini. . . . .	61° — 90°	58°

Fig. 13.11. The Athribis zodiacs of Flinders Petrie (AV and AN). Knobel’s solution. According to Knobel himself, the solution in question is neither good, nor even a complete solution at all. For instance, the position of Mercury wasn’t calculated anywhere. The corresponding lines contain question marks. Taken from [544], Volume 6, page 732, as copied from Knobel’s work.

Egyptologists, he identifies the bird with the serpent’s tail as Jupiter casting serpent-like lightning bolts, the bird with a bovine head as Saturn, the falcon located at some distance from the Sun as Mars, and the two-headed Janus together with the bird bearing no special indications in the vicinity of the Sun as Mercury and Venus. My control calculations demonstrated Jupiter to lay a lot further to the left in both horoscopes, likewise Mars, whereas Saturn is further to the right than it should be in the lower horoscope. The result was even worse than Knobel’s” ([544], Volume 6, page 731).

It has to be said that Knobel himself was far from satisfied with his astronomical dating of the Athribis zodiacs to 52 and 59 A.D. In fig. 13.11 we cite Knobel’s calculation table as reproduced by N. A. Morozov in [544], Volume 6. The very first glance that we cast on this table demonstrates that in this case Knobel was far from attempting to find an independent astro-

nomical dating of the old zodiac, and merely tried to come up with the “most fitting” dating from the astronomical point of view that would be located in the a priori known dating interval as specified by the Egyptologists for the zodiac in question. It is clear that one can always find the most fitting date in a given interval. Whether or not it should really be satisfactory is an altogether different issue. Knobel’s dating proved horrendously bad.

The concurrence between the Athribis zodiacs and the calculated celestial sphere of Knobel is so bad that it can be achieved for any epoch at all. Knobel him-

self made the following perplexed comment in this respect:

“The horoscope positions are probably taken from tables and not from observations, and the positions are in signs and not in constellations. The year A.D. 59, January, suits well for Moon, Mars, Jupiter and Saturn, but is discordant for Venus. No attempt has been made to reconcile Mercury, Jupiter and Saturn would be in similar relative positions about every 58 or 59 years. In the epochs –118, –60, –1, 59, 117, the only year that suits the three superior planets is A.D. 59, but the position of Venus is quite wrong for that year” ([544], Volume 6, page 732.)

Let us return to the interrupted narration of Morozov. He writes further that “in order to decide which one of us had been right and in order to check for a better solution, I ordered the late M. A. Vilyev, who had been my assistant at the Department of Astronomy in the Lesgaft Institute of Science at the time, to run a special investigation for this artefact [the zodiacs of Athribis – Auth.].

He performed exhaustive calculations for these zodiacs for the interval between 500 B.C. and 600 A.D. ... it turned out that Vilyev also failed to come up with any satisfactory results, as one can see from his own conclusions” ([544], Volume 6, pages 731-733).

Having discovered no satisfactory solution, N. A. Morozov was forced to revise his interpretation of the Athribis zodiacs and introduce certain corrections into it – namely, to make Jupiter and Saturn swap their respective positions, qv in [544], Volume 6, pages 738-739). The new interpretation yielded 1049 A.D. as the solution for the Upper Zodiac and 1065 A.D. for the Lower, qv in fig. 13.12, which is an actual drawing by Morozov that demonstrates his solution to be far from ideal. Furthermore, he had to assume that only the Lower Zodiac had been compiled from actual observations, whereas the Upper was calculated, and imprecisely so. Otherwise there could be no explanation why Mars fails to occupy its rightful place on the Upper Zodiac, qv in fig. 13.12.

Apart from that, the order of planets in Morozov’s solution differs from their order on the Athribis zodiacs. The order of planets on the Lower Zodiac in Morozov’s interpretation, for instance, is as follows: Mercury, Venus, the Sun and Mars (from right to left, qv in fig. 13.9). It is completely different from Moro-

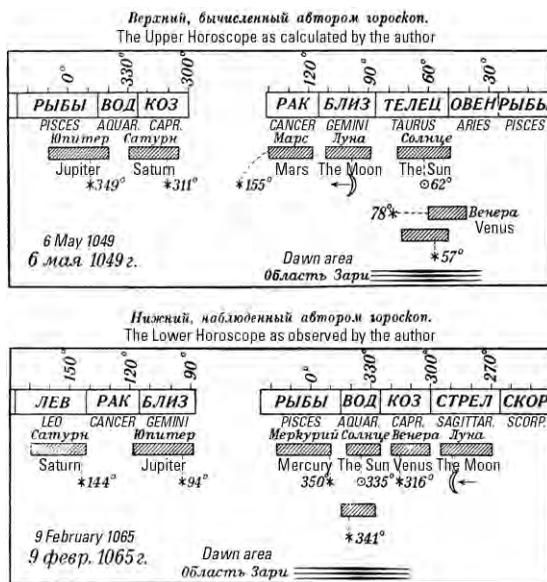


Fig. 13.12. The dating of Athribis zodiacs discovered by Flinders Petrie (AV and AN). The drawing is taken from the book of N. A. Morozov ([544], Volume 6, page 747), where it is accompanied by the following note: “All the planetary positions where the asterisks (planets) are located below the respective strip. In the lower horoscope everything is perfectly correct, since it is the only one that was really observed by the author. As for the upper ... Mars and Venus are shifted leftwards as compared to the positions they should occupy” ([544], Volume 6, page 747). Thus, N. A. Morozov concedes that the solution that he came up with for the Lower Zodiac is imprecise. Morozov tries to explain this lack of precision by the fact that the Lower Zodiac was compiled by the author from observations and not calculated, unlike the Upper Zodiac. However, we shall witness this presumption to be of a superfluous character, since there a precise solution of the Athribis zodiacs does in fact exist.

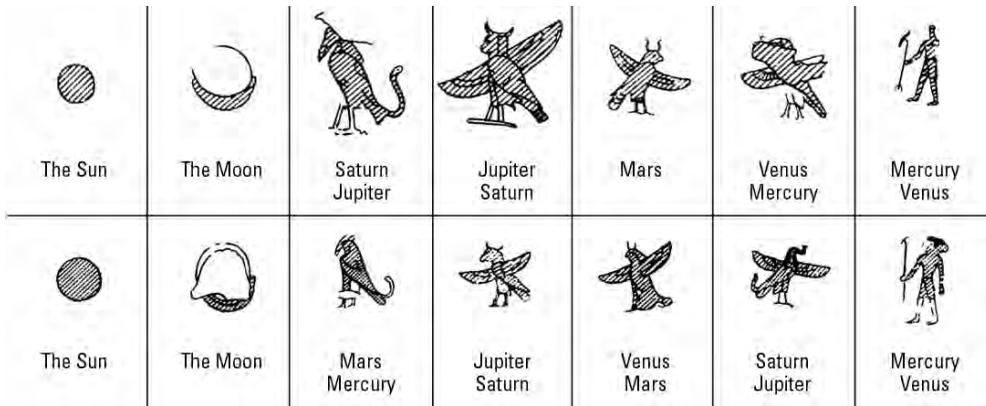


Fig. 13.13. The Atribis Zodiacs of Flinders Petrie (AV and AN). We see planets drawn as birds. The top row corresponds to the Upper Zodiac's planets, and the bottom row – to those from the Lower Zodiac. The top lines of inscriptions represent Morozov's identifications, and the bottom lines – the identifications made by Nobel (in cases where the two differ from each other). Similar planetary birds are drawn one over the other.

zov's solution – Mercury, Mars, the Sun and Venus (see fig. 13.12). Therefore, Morozov's claim that "everything is doubtlessly correct" in his solution for the Lower Zodiac is obviously an exaggeration ([544], Volume 6, page 746). In reality, Morozov's solution contains a number of distortions, the most substantial of which shall be discussed below.

N. A. Morozov wrote the following in re his new interpretation of the Atribis zodiacs: "The first issue that arose had been of just how correctly the British School of Egyptology identified the bird with a serpent's tail as Jupiter, and the bird with the bovine head as Saturn. The actual book of Flinders Petrie contains no indications concerning the legitimacy of this choice" ([544], Volume 6, page 738). Morozov proceeds to suggest swapping the respective positions of Jupiter and Saturn: "It is known that Jupiter turned into a bull, which had never been the case with Saturn. Saturn was considered an evil-boding planet ... it would therefore make sense to draw it with a serpent's tail, unlike Jupiter, a benevolent planet. Of course, one could also consider these snakes to represent lightning bolts à la Flinders Petrie" ([544], Volume 6, page 739).

N. A. Morozov's reasoning can hardly be considered finite. Let us point out that he had to resort to it once he discovered there were no solutions for the initial interpretation that he didn't object to initially.

As for identifying the bird with a bovine head as Saturn, as the Egyptologists suggest, it can also be validated to a sufficient extent, which wouldn't be any less viable than Morozov's validation of his new interpretation. As a matter of fact, the figure of Saturn is always accompanied by the symbol of an ox in the zodiacs of Dendera, qv in CHRON3, Chapter 15.

Therefore, the issue of identifying Jupiter and Saturn on the Atribis zodiacs remains poignant, especially considering how N. A. Morozov failed to have found a fitting solution.

However, it doesn't end here. Our analysis of the previous interpretations of the Atribis zodiacs – Morozov's as well as the one offered by the Egyptologists, demonstrates both to contain a grave inconsistency – namely, the fact that the same birds on both zodiacs are for some reason identified as different planets. In fig. 13.13 we cite the full set of planetary symbols as used in both zodiacs together with their identifications according to Morozov and the Egyptologists. The drawing demonstrates that none of these identifications satisfy to the simplest and most natural condition that the same planetary figure as used on both zodiacs has to refer to the same planet. It is clear that once we neglect this condition, we get plenty of opportunities to identify the planets in every which way, and arbitrarily at that, getting perfectly invalid datings as a result.

Let us explain the contents of fig. 13.13. In the upper row we see the planetary symbols used in the Upper Zodiac of Athribis, and in the lower – the respective symbols from the Lower Zodiacs. The actual zodiacs can be seen in fig. 13.9 above. All the planets are presented as birds, except for Mercury, which looks the same as on the Dendera zodiacs – a two-faced man carrying a rod. The upper row of text represents N. A. Morozov’s identifications, and the lower – Knobel’s, where they differ from the above ([544], Volume 6, page 732).

The bird-planets from both zodiacs that correspond to each other are drawn one above the other in fig. 13.13; one can clearly see that there are two horned birds on each zodiac (see figs. 13.9 and 13.13). It is significant that their horns are shaped differently – as a crescent in one case, and with curved ends in the other. The horn shape makes the birds correspond to one another perfectly; in general, in fig. 13.13 one sees that the birds, or planets, from both zodiacs represent the same set of figures. This is exactly how it should be, since the symbols used for the two zodiacs of Athribis that comprise a single composition should be the same, qv in fig. 13.13.

However, the least implication of the above is that similar birds stand for similar planets in both zodiacs. It turns out that neither Knobel, nor Morozov managed to accomplish this in their identifications, which should mean that their interpretation contained errors of some sort. Let us point out that Knobel (possibly, following Brugsch) makes a blatant mistake in his identification of Venus, a perfectly “female” planet, as the male two-faced figure, as we already mentioned above.

We shall refrain from analyzing the reasons why Morozov’s interpretation of the Athribis zodiacs should contain errors; they might be linked to his erroneous opinion that the interval between the datings ciphered in the two zodiacs should not exceed 30 years ([544], Volume 6, page 720).

In our analysis of the Athribis zodiacs we have tried every single option of identifying the “Athribis birds” as planets uniformly. Apart from that, we have used additional astronomical information from the secondary summer solstice horoscope contained in the lower zodiac. See more on our solution for the Athribis zodiacs in CHRON3, Chapter 18. We shall

just quote our end result here, which happens to be unique for the entire historical interval between 500 B.C. and the present. Our solution is as follows:

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The Upper Zodiac of Athribis:

15-16 May 1230 A.D.

The Lower Zodiac of Athribis:

9-10 February 1268 A.D.

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#### 4. THE THEBAN ZODIAC OF BRUGSCH

The Theban Zodiac of Brugsch was described and studied by Morozov in detail in [544], Volume 6, pages 695-728. A drawn copy of this zodiac made by Brugsch himself can be seen above in fig. 13.17. A close-in with the fragment containing the horoscope under study is presented in fig. 13.14. The names of the planets are written explicitly between the constellation figures, therefore, the interpretation of this horoscope presents no particular problems. N. A. Morozov had studied the issue of the horoscope’s dating with the utmost care. The account of his experience with Brugsch’s zodiac begins as follows:

“One day in 1913, N. V. Roumyantsev who had still been a student in the Institute of Philology and known that I was involved in the dating of the ancient horoscopes, brought me a book by Heinrich Brugsch from his institute’s library (Henri Brugsch: *Recueil des Monuments Egyptiens, dessinés sur lieux*. 1862), which, among other things, contained the description of a perfectly conserved coffin made of sycamore wood (which had looked relatively recent), with beautiful decorative artwork, which is in Monier’s collection presently. Brugsch reports to have made the discovery in 1857; however, the description was published as late as 1862.

The coffin contained a mummy that looked just like the regular Egyptian mummies ... the most interesting thing for either a historian or an archaeologist who would want to know the exact dating of this coffin could be found on the inside of its lid. The female figure of Nuit was drawn in its middle in such a way that it looked as if it were covering the mummy ... with the 12 zodiacal constellations to the left and to the right looking exactly the same way as in the as-

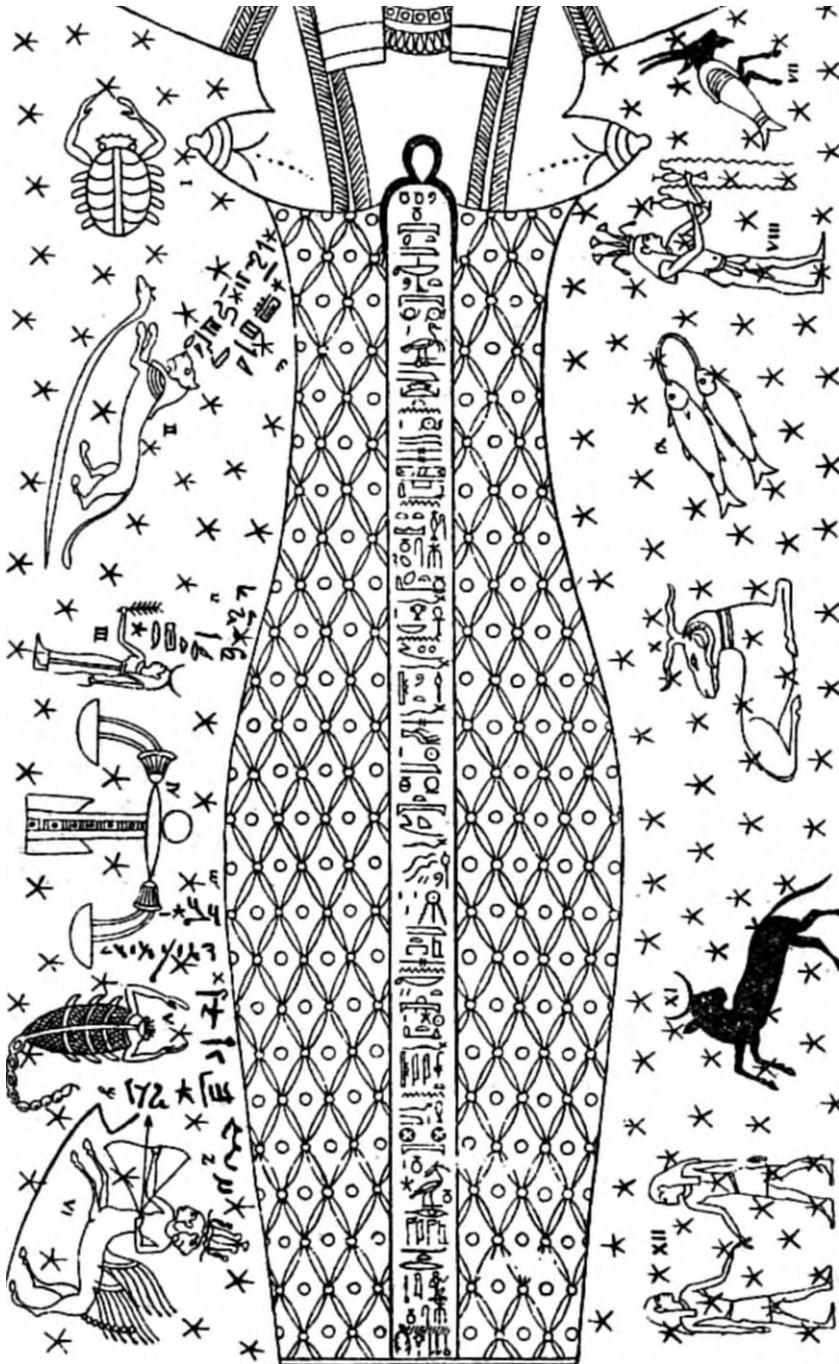


Fig. 13.14. Brugsch's Theban Zodiac (BR). Fragment of the drawn copy published by H. Brugsch. Near the constellation figures of Leo, Virgo, Libra, Scorpio and Sagittarius one can plainly see the row of demotic subscripents with planetary names comprising a horoscope. This horoscope was discovered by H. Brugsch and then dated by N. A. Morozov. The possible dating for this horoscope is either 1861 (ideal astronomical solution) or 1692 (solution chosen by Morozov). Taken from [544], Volume 6, page 696.

tronomical oeuvres from the epoch of the Enlightenment. An even more remarkable thing can be seen on the outline of the lid, namely, 24 identical human figures before altars. They clearly stand for 12 diurnal hours and 12 nocturnal hours; both bear indications in Arabic numerals done by Brugsch himself and should not confuse the readers, likewise the other (literal) indications that one sees in our drawing” ([544], Volume 6, pages 694-695).

This drawing of Brugsch is reproduced by Morozov in [544], Volume 6, page 696 (see fig. 13.17 and 13.14). Let us carry on with quoting from N. A. Morozov:

“We see four mythological creatures on four angles of the coffin lid, apparently having the same meaning as they do in the Apocalypse: Taurus, Leo, Centaurus and Aquila. On the right there are human figures in boats which appear to be crossing the Acheron, and also an ibis and something resembling a dais; to the right we see a scene of a sacrifice. The hieroglyphs scattered across the lid do not contain any historical indications of any kind and name the deceased “Osirien”.

The figure of Scorpio among the twelve zodiacal constellations is shaded, which signifies its invisibility in the rays of the Sun, which happens in November; the figure of Taurus that opposes it is blackened, which symbolizes its nocturnal reign, or the fact that it culminates during the night. The Moon can be seen over the head of Virgo as a crescent, which is how it looks with the Sun in Scorpio, and the circle over Libra that I initially deemed to represent the Sun in Libra (ignoring the shaded Scorpio and the blackened Taurus) simply symbolizes the fact that the autumn equinox that the civil year begins with was counted from the moment when the Sun left Virgo and moved into Libra, according to the Byzantine Christian tradition [Morozov is referring to the ecclesiastical beginning of the year in September – Auth.] ... This very symbol of Libra with the solar circle on the balance-beam is frequently encountered in ancient astronomical zodiacs, and therefore cannot serve as a horoscope indication ...” ([544], Volume 6, page 697).

Let us interrupt N. A. Morozov for a second. He was wrong to have written off the circle in Libra quite as easily. Our analysis of the Egyptian zodiacs demonstrates that this circle usually stands for the Passover

full moon and is directly relevant to astronomical dating. We shall relate the issue in more detail since it is crucial for understanding the symbols used in Egyptian zodiacs.

The Passover full moon is the name used for the first full moon to follow the spring equinox. It takes place in March or in April, within a month counting from the day of the spring equinox. This is the time when the Sun passes the constellation of Pisces and moves into Aries. However, two thousand years ago the Sun would pass the constellation of Aries after the spring equinox and then move into Gemini, qv in fig. 13.15. Therefore, over the last two thousand years the first vernal full moon would often be located in Libra, since it is the constellation directly opposing Aries. Let us explain that a full moon is always located on the opposite side of the ecliptic from the Sun. Therefore, if the Sun is in Aries during full moon, the Moon can be seen in Libra.

This is exactly the reason why the circle in Libra that Morozov refers to can often be seen in Egyptian zodiacs. However, it stands for the Passover full moon and not the Sun, as he had thought. We shall consider this issue below and provide the necessary examples.

This error made by N. A. Morozov in his interpretation of the astronomical meaning of the circle in Libra isn’t too grave in the present case since it provoked no errors in astronomical dating due to the fact that it does not pertain to the primary horoscope on the zodiac of Brugsch, which is the case with many other Egyptian zodiacs. Nevertheless, such errors can be detrimental to the actual understanding of the Egyptian astronomical symbols as used in zodiacs, which would in turn lead to serious errors in their interpretation and astronomical dating.

Let us now return to N. A. Morozov’s narration in re the zodiac of Brugsch. We must point out that Morozov only managed to find a single horoscope in this zodiac, namely, the one transcribed in demotic symbols, qv in figs. 13.17 and 13.14. One sees planetary names near the constellation figures. However, our analysis of Brugsch’s zodiac demonstrates that it contains two more horoscopes, which were overlooked by N. A. Morozov. Unlike the “demotic” horoscope, they are part of the actual zodiac and not mere subscripts. It is odd that neither Brugsch, nor Morozov happened to notice it.

*Среднее соответствие юлианских месяцев и созвездий Зодиака за последние 2½ тысячи лет.*

I Янв. — Солнце в Козероге	VII Июль — Солнце в Раке
II Февр. — Солнце в Водолее	VIII Август — Солнце в Льве
III Март — Солнце в Рыбах	IX Сент. — Солнце в Деве
IV Апрель — Солнце в Овне	X Октябрь — Солнце в Весах
V Май — Солнце в Тельце	XI Нбр. — Солнце в Скорпионе
VI Июнь — Солнце в Близнецах	XII Дек. — Солнце в Стрельце

*Average correspondence between the Julian months and the Zodiacal constellations for the last 2.5 thousand years*

I January — Sun in Capricorn.	VII July — Sun in Cancer.
II February — Sun in Aquarius.	VIII August — Sun in Leo.
III March — Sun in Pisces.	IX September — Sun in Virgo.
IV April — Sun in Aries.	X October — Sun in Libra.
V May — Sun in Taurus.	XI November — Sun in Scorpio.
VI June — Sun in Gemini.	XII December — Sun in Sagittarius.

Fig. 13.15. Average correspondence between the Julian months (old style) and the position of the Sun on the Zodiac as observed from the Earth for the last 2500 years. The table was compiled by N. A. Morozov. Taken from [544], Volume 6, page 711.

Morozov proceeds to tell us that “the documental and therefore important symbols here are just the ones rendered in demotic writing and less even lines on the left hand side ... The coffin was apparently crafted by some professional according to specimens used at the time, whereas the demotic inscriptions must have been made by a professional astrologer specializing in horoscopes, whose subscribers must therefore be taken very seriously indeed.

The most remarkable lines are the two found between Cancer and Leo, directed towards Leo’s head. One of them says Hor-pe-Setah and the other – Hor-pe-Ka, referring to the respective planets Saturn and Jupiter; the very proximity of the lines to one another, given the amount of free space available, demonstrates that Jupiter and Saturn had been in close conjunction, that is, Jupiter took over Saturn with the Sun in Scorpio. The date must therefore pertain to the end of the Julian month of October or November, somewhere along the historical interval. Near Virgo, closer to Leo, we encounter the legend Hor-Teser in demotic writing, standing for the planet Mars. Between Scorpio and Sagittarius (curving towards the head of the latter) we find the demotic subscript saying Pe-Nether-Tau, or the Morning Luminary, alias Venus – despite the fact that Venus could only be seen in this position in the evening, which testifies to the fact that the astrologers of that epoch knew the morning and the evening Venus to be the same planet. Finally, there is a line saying Sebek, or Mercury, between Scorpio and Libra; however, we cannot trust the precision of its topography, since there is no more space for Mercury left to the right of Scorpio, and, apart from that, it isn’t visible at such a close distance from the Sun. Therefore, the author

of the horoscope was guided by certain ulterior considerations of his own, and not actual observations.

Demotic writing had first been deciphered by Akerblad in 1802, 20 years before Champollion had deciphered the hieroglyphic script. It is considered to be more recent than the hieroglyphs ... Brugsch dated his finding to the time of the “Roman rule in Egypt”, which couldn’t possibly postdate the first century A.D.

It goes without saying that I put my best effort into estimating the time when this most remarkable document was created ... but the solution I ended up with – the single date of the 17 November 1682 A.D., was so amazing that I could hardly believe my eyes ... I can admit that a solution such as this one would render any modern Egyptologist unconscious, and I confess to having fallen unconscious myself” ([544], Volume 6, pages 697-698 and 727).

However, Morozov proceeds to admit candidly that his solution of 1682 is far from being the only one. It turns out that there is another fine solution whose date we shall cite below, one that is even better than the first, the only difference being that the conjunction of Jupiter and Saturn takes place near the tail of Leo and not the head. However, it is easy to see that the zodiac of Brugsch allows for their conjunction in any part of Leo and not just the head (see fig. 13.14). The fact that the lines with the names of Jupiter and Saturn wound up near the head and not some other part of Leo tells us nothing, since these lines must have approached Leo at some point. The person who wrote the planetary names on Brugsch’s zodiac wasn’t too likely to estimate their precise position within a constellation. In general, Egyptian zodiacs don’t allow for such precision, and the zodiac of Brugsch is no exception (see fig. 13.14).

It is therefore most doubtful that the author of Brugsch's zodiac would try to attain this degree of precision. It is unlikely that even the reference zodiac that he got from astronomers and followed in his work would contain exact positions of planets in constellations.

At any rate, we aren't entitled to making such assumptions without having substantial grounds for doing so. And our analysis of the Egyptian zodiacs demonstrates that their authors never attempted to specify the positions of planets inside constellations with precision, even in those cases when the amount of detail in a zodiac and the size thereof could allow it. This was never the case, as Morozov himself points out.

For instance, the Long Zodiac of Dendera has two additional figures for each constellation, each representing the ten-grade mark; we therefore have three figures instead of one for each constellation, qv in CHRON3, Chapter 15:2.1, as well as the analysis of the Dendera zodiacs in Morozov's book ([544], Volume 6, pages 675-688). These ten-grade marks allow to specify planetary position with the precision of 1/3 constellation as marked by those figures; thus, the author of the zodiac could have used the middle ten-grade figure in order to specify the position of a given planet in the middle third of the constellation in question etc. However, Egyptian artists did none such thing, although it appears that they could have easily used this excellent opportunity to make the planetary positions on their zodiacs more precise.

The planets in the Long Zodiac are distributed across these ten-degree marks chaotically, which was mentioned by N. A. Morozov ([544], Volume 6, page 688). This was confirmed by our analysis, qv below. Therefore, making the planetary positions more precise appears to have been beyond the interests of the authors of the Egyptian zodiacs. It is therefore dangerous to refer to considerations concerning precise planetary locations inside constellations for the dating of Egyptian zodiacs.

Therefore, Morozov's second solution for Jupiter and Saturn also turns out to be strict. It might be somewhat worse than the first, but this "somewhat" is already beyond the principal precision limit of the Egyptian zodiacs. However, in the second solution the planetary order ideally corresponds to that indicated on the zodiac ([544], Volume 6, page 726), while

in the first 1682 solution Mercury wound up between Scorpio and Sagittarius, whereas its name is written between Scorpio and Libra, qv in fig. 13.16. The problem here is that the planetary order is changed, placing Mercury on the opposite side of the Sun as compared to its zodiacal position.

However, the change of planetary order is absolutely unacceptable for solving the Egyptian zodiacs. Below we shall witness that the planetary order on the ecliptic would always be adhered to rigidly in those, although Morozov hadn't been aware of this important circumstance, which was first pointed out by T. N. Fomenko in [912:3].

Let us explain why the swapped places of Mercury (planet) and Scorpio (constellation) affect the order of planets as well. The matter is that the Sun is in Scorpio, and it ranked among the seven planets known to ancient astronomy and was also considered a planet, as we already mentioned. The sign of Scorpio on Brugsch's zodiac is shaded to signify that it contained the Sun – which "blazed" in the rays of sunshine, qv in fig. 13.14. N. A. Morozov had noticed this, and was perfectly correct to have interpreted it as an indication of the Sun being in Scorpio. Thus, Mercury and Scorpio with their positions swapped result in the swapping of positions between Mercury and the Sun, or a planetary shift.

This makes the 1682 solution less strict. Morozov had been aware of this and tried to provide explanations, which we cannot consider substantial enough. The poor placing of Mercury in the 1682 solution, for instance, was explained in the following manner: "the name of Mercury couldn't be crammed into its proper position, and so it became misplaced" ([544], Volume 6, page 727). This is a possible explanation, yet it does not eliminate the inconsistency.

As for the second solution – its shortcomings are as follows, according to N. A. Morozov. Firstly, as we already mentioned, he disliked the fact that Jupiter and Saturn ended up near the tail of Leo, whereas on the zodiac their names are closer to Leo's head. Secondly, Mars in Virgo is closer to Libra than to Leo in this solution, contrary to Morozov's aspiration.

However, Brugsch's drawing of the Zodiac once again doesn't allow us to estimate the position of Mars in Virgo with more precision, qv in fig. 13.14. The inscription containing the name of Mars is directed ver-

	СТРЕЛЕЦ SAGITTARIUS	СКОРПИОН SCORPIO	ВЕСЫ LIBRA	ДЕВА VIRGO	ЛЕВ LEO	РАК CANCER	
1682 г. н. э., 17 ноября (новолуние 20 ноября) 1682 A.D., 17 November (New Moon on 20 November)	300° *290° Венера Venus	270° 262°* Меркурий Меркурий (невидим) Mercury (invisible)	240° 250° ☉ 250° Солнце The Sun	210° 207°* Марс Mars	180° 182°* Луна The Moon	140° 143°** 142° Сатурн Saturn	120° Юпитер Jupiter
1861 г., 18 ноября (новолуние 21 ноября) 1861 A.D., 18 November (New Moon on 21 November)	296°* Венера Venus	249°☉ Солнце The Sun	*233° Меркурий Mercury	207°* Марс Mars	174°** 172° Луна The Moon	Юпитер Jupiter	Сатурн Saturn
	Место Венера Venus location	Место Солнца Sun location	Место Меркурия Mercury location	Место Луны и Марса Moon and Mars location	Место Юпитера и Сатурна Jupiter and Saturn location		

Fig. 13.16. Brugsch's Theban Zodiac (BR). The two solutions of the “demotic” horoscope from Brugsch’s zodiac that were discovered by N. A. Morozov – 17 November 1682 and 18 November 1861. Morozov had rejected the second solution, which predates Brugsch’s publication of the zodiac by a mere year, as an absurd one. However, as we shall see below, it is this very solution that corresponds to reality. The solution of 1682 is imprecise insofar as Mercury is concerned – we see that the planet is on the wrong side of the Sun in comparison with the zodiac. Moreover, Mercury was invisible in this position. All the planets in the 1861 solution are located in the constellations indicated in the zodiac, meeting the order stipulations as well; all of them were visible. The drawing is made according to the one cited by Morozov in [544], Volume 6, page 726.

tically upwards as seen from the figure of Libra, making a slight curve towards Leo in the end, directed away from the figure of Nuit. Nevertheless, this inscription is closer to Leo than to Libra, qv in fig. 13.14. One can hardly obtain any substantial data concerning the position of Mars in Virgo from this drawing. The only obvious thing is the actual location of Mars in Virgo – nothing apart from that. This renders the “shortcoming” mentioned by Morozov null.

Thus, although N. A. Morozov had tried to prove that his second solution is a great deal worse than the first one (dating to 1682, qv in [544], Volume 6, page 726), a closer study reveals the fact that both defects that he brings to our attention happen to be beyond the precision threshold of the Egyptian drawing, and are thus completely uninformative. The important thing is that the planetary order and the constellation are specified correctly.

It is peculiar that N. A. Morozov had confused the respective order of Mars and the Moon on his drawing for the second solution, which would make the second solution look somewhat worse – however, the order of Mars and the Moon in relation to each other is of no relevance, since the Moon, which moves very

fast, would have occupied both locations to the left and to the right of Mars by definition.

Let us now cite the dating of the second, *ideal* solution of the “demotic” horoscope. It is 1861 A.D., which predates 1862, the year of Brugsch’s publication, by a single year. The dating falls on the second part of the XIX century, no less!

It is now obvious why N. A. Morozov would reject this solution as absurd. He even made the following ironic commentary in re the possibility of dating this zodiac to 1861: “first and foremost, we shall have to admit that Brugsch himself had created this zodiac, thus dating his description of this sepulchre to 1861 when everything was exactly as it is stated in the horoscope, save for the fact that the close conjunction of Jupiter and Saturn took place near the tail of Leo and not the head” ([544], Volume 6, page 728).

Indeed, in such circumstances we would most probably also have chosen the 1682 solution, although it is worse from the astronomical point of view. However, further analysis of Brugsch’s zodiac reveals many other interesting details.

The matter is that we have discovered two more full primary horoscopes in Brugsch’s zodiac, and ones

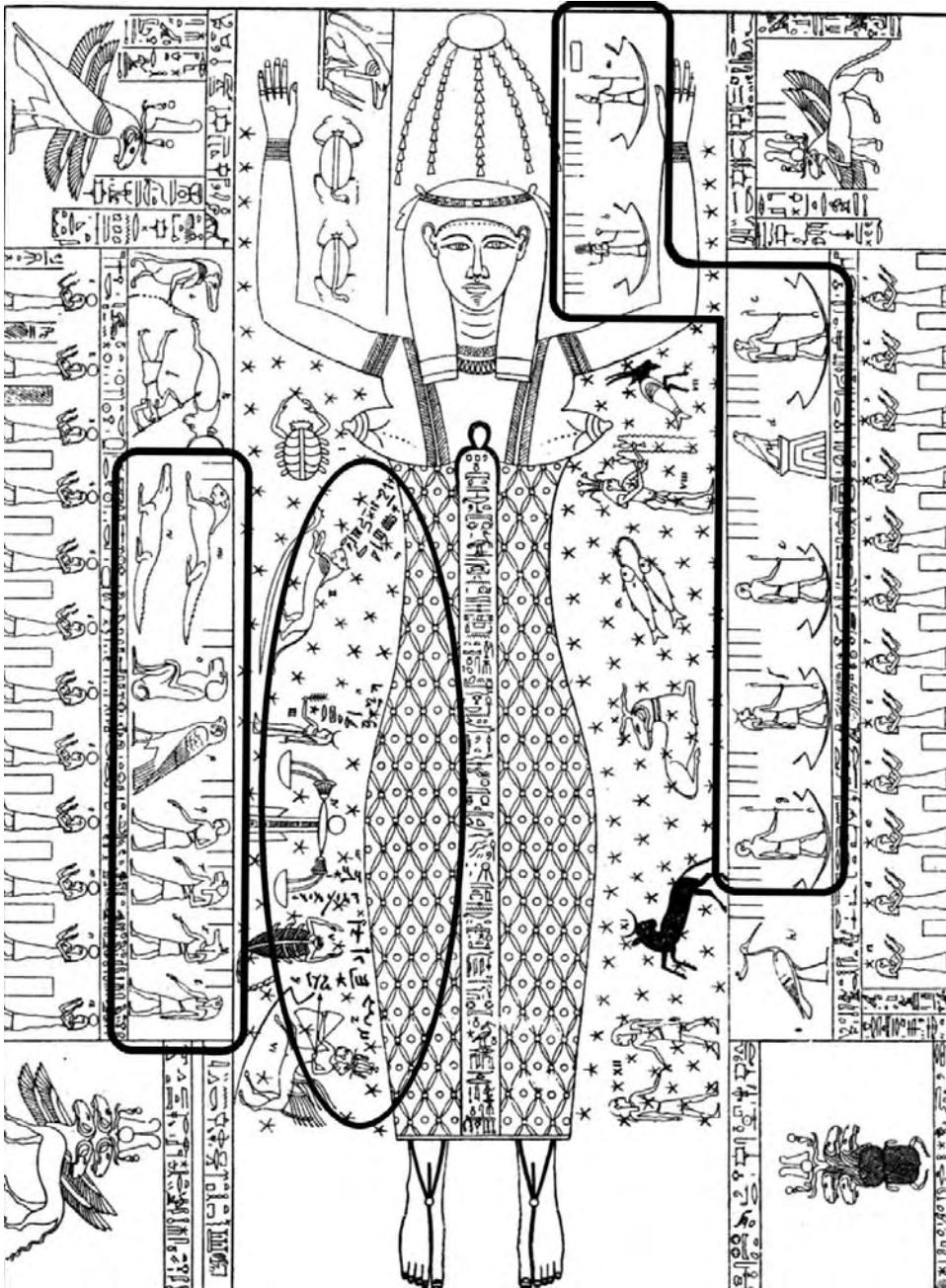


Fig. 13.17. Brugsch's Theban Zodiac (BR). The demotic subscript horoscope is highlighted by an oval. Apart from that, we highlighted the two other horoscopes that we discovered – the ones that weren't found by either Brugsch or Morozov. These horoscopes are an integral part of the entire artwork, and yield a single pair of close datings – 6-7 October 1841 and 15 February 1853. They are likely to be the dates of birth and death of the person buried here – a boy or a girl of 12. Several years later, the coffin with the mummy was sold to European collectors and came into Brugsch's possession. Somebody had used demotic writing to add a 1861 horoscope to the zodiac – as a joke or a mockery. Taken from [544], Volume 6, page 696.

that serve as an integral part of the zodiac itself. The “demotic” horoscope clearly dates to a later epoch, which wasn’t left unnoticed by Morozov, *qv* above.

One of the new horoscopes that we discovered in Brugsch’s zodiac is located on the left – the same side as the demotic subscripts, but closer to the edge of the zodiac. The second horoscope is on its opposite, *qv* in fig. 13.17. All the planetary figures of the second horoscope stand in boats, so we shall simply refer to it as to “the boat horoscope”. All the planetary figures of the first horoscopes were drawn without rods, possibly in order to avoid confusion with the boat horoscope. We shall therefore be referring to the first horoscope as to the “horoscope without rods”.

In fig. 13.17 we see a drawn copy of Brugsch’s zodiac with 3 horoscopes pointed out explicitly – the “demotic” horoscope dated by N. A. Morozov as well as the two “original” ones that escaped the attention of both Morozov and Brugsch. See more details concerning the dating of all three horoscopes from Brugsch’s drawing below, in *CHRON3*, Chapter 18. We shall simply cite the end result herein.

Both the “boat horoscope” and the “horoscope without rods” from Brugsch’s zodiac only have a single pair of solutions close to each other, namely, 6-7 October 1841 for one of them and 15 February 1853 for the other.

The two horoscopes on the coffin lid may have referred to the dates of birth and death of whoever was buried there – apparently, a boy or a girl of 12 years.

However, this implies that the “demotic” horoscope refers to a XIX century date and not a XVII century one, since it was added somewhat later. It turns out Morozov’s second solution, the one he rejected on the grounds of its being “too recent”, is in fact the correct one, whereas the first solution of 1682 is too early. One gets the impression that what was presented to Brugsch as an “ancient” sepulchre had been a freshly-made coffin that couldn’t have been older than a mere couple of years. N. A. Morozov had every right to be surprised about the fact that this coffin looked just like new ([544], Volume 6, page 695).

One could assume that in the XIX century Egypt the old Mameluke burial traditions were still observed in some of the families. Bear in mind that the Mamelukes in Egypt had been wiped out as late as 1811 ([85], Volume 15, page 455), or a mere 40 years be-

fore Brugsch’s zodiac was manufactured – 1853, according to the horoscope.

It appears that the tradition of burying the dead in the old Egyptian fashion had been kept alive by patriarchal Mameluke families for a considerable amount of time, with the XIX century instruments used for the creation of typical “ancient” Egyptian wooden coffins complete with an old-fashioned zodiac painted on the lid in traditional colours. The coffin would then be hidden. One would think these coffins were guarded well against thieves, but this wouldn’t always succeed, since rich European collectors paid hefty sums of money for such coffins if they were presented as “exceptionally ancient”. Therefore those who made a living stealing and selling the coffins in question were hardly in short supply. They would occasionally succeed, as was the case with the coffin studied by Brugsch. It is most likely to have been stolen shortly after the burial and instantly sold, to be shown to Brugsch in 1857.

Someone must have scribbled a horoscope for 1861 on the coffin lid in jest. One can hardly learn the identity of its author nowadays; however, this person clearly counted on the Egyptologists to decipher his horoscope and try to ascribe an antediluvian dating to it, ignorant of the coffin being modern.

It is clear why the hoaxer would use demotic script for the horoscope. He would need nothing for this purpose except for a fitting book on Egyptology – or a mere dictionary, mayhap. Demotic script was deciphered by Akerblad as early as in 1802 ([544], Volume 6, page 698). Thus, the forger must have been a contemporary of Brugsch; both used the same dictionary in order to write the cryptic inscription and to decipher it a year or two later.

One should hardly ascribe the subscript authorship to Brugsch himself the way N. A. Morozov does, albeit jocularly. The author of the subscripts must have been perfectly certain that neither Brugsch, nor any other specialist in Egyptian history would attempt to find the solution for this zodiac in the XIX century, thus remaining unaware of the real situation.

It is also possible that the horoscope was compiled for a future date several years in advance. Thus, Brugsch may already have seen the subscripts in 1857 which he claims to be the date of his first acquaintance with the zodiac in question ([544], Volume 6, page 695).

Astronomical calculations necessary for this purpose did not present a problem in that epoch, since it was already the second half of the XIX century.

Thus, we came up with the following solutions for Brugsch's zodiac (see fig. 13.17):

1) N. A. Morozov's solution:

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The horoscope of demotic subscripts:

17 November 1682 A.D.

(the solution of 18 November 1861 A.D.  
had been found, but rejected)

"Horoscope without rods": not found.

"Boat horoscope": not found.

(N. A. Morozov, [544], Volume 6, pages 694-728.)

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2) Our solution:

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The horoscope of demotic subscripts:

18 November 1861 A.D.

"Horoscope without rods": 6-7 October 1841 A.D.

"Boat horoscope": 15 February 1853 A.D.

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## 5.

### ASTRONOMICAL DATING IN THE WORKS OF THE EGYPTOLOGISTS

Let us give a brief overview of the works written by various Egyptologists that are concerned with the astronomical dating of the Egyptian zodiacs. We consider discussing this issue in detail to be superfluous for the following reasons: firstly, these works are based upon the Scaligerian chronology to a great extent and thus have got nothing to do with independent astronomical dating, which is the topic of our research (see [1062] and [1062:1], for instance). Secondly, the analysis of astronomical symbols contained in Egyptian zodiacs is rather superfluous as carried out in these works. Its level is a great deal lower than that of the respective research conducted by N. A. Morozov. Furthermore, the examples of Egyptian zodiac analysis found in the works of Egyptologists postdating the publication of Morozov's book ([544]) usually demonstrate a great willingness to evade the problem of astronomical dating altogether from the part of the author. We have already discussed this above, citing [1291] as an example.

Another example that we would like to mention is the astronomical dating of the Round Zodiac of Dendera as offered by the Egyptologists in the fundamental monograph [1062:1]. This five-volume monograph was written by Sylvia Cauville, a French Egyptologist, in the 1970's, and is concerned with the ceiling artwork of the Dendera Temple exclusively, as one can gather from its title. In particular, it contains a discussion of the Round Zodiac's astronomical dating. A separate book by the same author is dedicated to this particular issue, namely, [1062], a condensed version of the monograph ([1062:1]). Let us point out that the astronomical dating of the Long Zodiac found in the same temple in Dendera isn't tackled anywhere in [1062] at all.

The very beginning of the section of [1062] entitled "The Dating of the Zodiac" makes it clear that the author isn't even going to consider a dating of the Round Zodiac that would be independent from the consensual chronology of Egypt. The discussion about astronomical dating begins with quotations from Egyptian chronology. For instance, in the first few sentences we find the categorical postulation that Ptolemy Auletes, the Egyptian king who had "renovated" the Temple of Dendera for the last time, had ruled during a certain explicitly specified epoch preceding the new era ([1062], page 11). This was followed by the reign of Cleopatra in Egypt, whose years are also "known to the Egyptologists perfectly well" ([1062], page 11). It goes on like this, and the categorical conclusion that the Round Zodiac from the Temple of Dendera dates to the interval between 51 and 47 B.C. is made prior to any mention of astronomy (*ibid*).

The role of the zodiac's astronomical analysis in [1062] and [1062:1] is a very insubstantial one – it serves to confirm the Egyptian chronology that is already known to the author of [1062] perfectly well one more time. Let us quote: "Partant de cette donnée assurée, E. Aubourg a cherché si, dans se laps de temps (51-43 av. J.-C.), la place des planètes parmi les constellations du zodiaque était astronomiquement possible" ([1062], page 11). S. Cauville is telling us that E. Aubourg, the astrophysicist, confirms the fact that the planetary positions in relation to the constellations presented on the Round Zodiac are "astronomically possible" for the period between 51 and

43 B.C. However, further explanations that we encounter in [1062] testify to the contrary.

Indeed, on the very next page of [1062] it turns out that the horoscope of the Round Zodiac, or a simultaneous combination of all the planets in the zodiacal constellations specified in the Zodiac didn't appear on the sky at any point on the interval between 51 and 43 B.C. as specified by the author. Therefore, in order to "confirm" the chronology of the "ancient" Egypt, the correlation between the Round Zodiac and the calculated star chart sought in [1062] indicates different dates for different planets, no less. Moreover – not all of the planets, but just two of them, qv in [1062]. It is quite obvious that such "astronomical proof" can be obtained for any a priori specified time interval spanning several years or more.

Thus, the correlation for Mars between the calculated star chart and the Round Zodiac is given for the 16 June 50 B.C. in [1062], page 12. The correlation for Mercury is for an altogether different date two months away – 12 August 50 B.C. (*ibid*). The interval is too great, considering the relatively fast ecliptic motion of Mars and even faster motion of Mercury, which can pass through two zodiacal constellations over this time.

The positions of other planets on the Round Zodiac aren't compared with the calculated star chart at all anywhere in [1062]. The circles symbolizing the Sun and the Moon are considered to stand for solar and lunar eclipses for some reason (see [1062], pages 19-22). This interpretation isn't validated anywhere in [1062] and appears to be most dubious indeed. Let us however assume it to be true for a moment. What are we being offered as an astronomical solution? Nothing of substance, as we shall duly witness.

Let us begin with lunar eclipses. Two candidates are suggested: the eclipse of 1 April 52 B.C. (maximal phase reached at 21:28 GMT) and that of 25 September 52 B.C. (maximal phase reached at 22:56 GMT). See page 20 of [1062] for details. However, none of these eclipses is total; they are ordinary astronomical events that happen almost every year. Let us point out that there is no exact correlation with the dates by Mars or by Mercury here – the difference equals two years. Once again, this proves nothing, since a partial lunar eclipse can be found on any time interval spanning several years; the observation point is also of little importance since one can observe lunar eclipses from

any location upon the nocturnal surface of the Earth. It is hardly surprising that the author of [1062] should have found two such eclipses on the interval between 51 and 43 B.C. as specified a priori.

Let us now consider the solar eclipse. The "astronomical solution" that we find in [1062] names the solar eclipse that took place on the 7 March 50 B.C. at 11:10 GMT, allegedly "almost full" as observed from Dendera, qv in [1062] on page 22. However, the control calculations that we conducted demonstrated that the phase of this eclipse had been so minute in the Nile region that one would have problems observing it with the naked eye. The sky didn't darken; the track of the maximal phase of this eclipse lay hundreds of kilometres to the west from Nile. Once again, this presumed date of "astronomical concurrence" as offered by [1062] doesn't correspond to any dates suggested in [1062] earlier, qv above. Rough coincidence proves nothing since it also results from the fact that the search is conducted on a very narrow interval of 51-43 B.C. specified a priori. The probability of finding a partial solar eclipse on such an interval is high enough, since partial eclipses aren't that much of a scarcity. Let us point out that such events aren't visible to the naked eye and require a piece of shaded glass.

Apart from that, we must reiterate that the very fact of a solar eclipse represented on the Round Zodiac (likewise a lunar one) is highly dubious and not validated anywhere in [1062].

We shall cease with our study of the Round Zodiac's "astronomical dating" as performed in [1062] and [1062:1], since a list of all the contradictions and inconsistencies that can be spotted in [1062] would take up too much space. The same symbols are considered to stand for planets in one instant, and non-zodiacal constellations in another (see [1062], page 9). What we see is a recurrence of Heinrich Brugsch's old error in identifying Venus on the Round Zodiac. This error has been found a while ago and studied by N. A. Morozov in detail in [544], Volume 6, pages 652-653. And so on, and so forth.

And yet, as we have already seen, no strict astronomical solution for the Round Zodiac was found anywhere in [1062], even within the interval spanned by the tendentious interpretation offered by the author, with its multitude of inconsistencies and presumptions.