Dates in zodiacs discovered inside Egyptian sepulchres

1.
THE ATHRIBIS ZODIACS OF FLINDERS PETRIE (AV + AN)

1.1. The decipherment of the primary horoscope. Six options of planetary identification

In CHRON3, Chapter 13, we give a detailed account of the zodiacs from Athribis and the previous attempts of their astronomical dating. In fig. 13.9 one sees a drawn copy of these zodiacs. Let us remind the reader that the zodiacs of Athribis are a drawing (possibly a fresco) done on the ceiling of a sepulchral cave in Egypt in a variety of colours. There are two zodiacs there, one under the other; they were discovered by Flinders Petrie, the famous Egyptologist. This happened in 1901, in the vicinity of Athribis, a town in southern Egypt, next to Sohag ([544], Volume 6, page 731). The Athribis zodiacs are therefore occasionally referred to as the zodiacs of Flinders Petrie.

It has to be mentioned that there's an ancient Egyptian temple in Athribis, of the same type as the temples of Dendera ([544]), Volume 6, page 731. It is possible that it contains zodiacs as well, likewise the temple of Dendera. However, we were unfortunate enough to find no detailed descriptions of this temple whatsoever. It would be very interesting to learn whether there are zodiacs in the temple of Athribis, and, should this prove to be the case, to discover the dates transcribed therein. As for the Athribis zodiacs of Flinders Petrie that we have under study, they were discovered in a sepulchral cave and not a temple. These zodiacs are obviously of a sepulchral nature, and contain dates related to the persons buried in the cave.

Attempts to date the Athribis zodiacs astronomically were made in the XIX-XX century by Knobel and Morozov; we discuss them in detail in CHRON3, Chapter 13:3. In particular, we demonstrate that both Knobel and Morozov made great allowances in their interpretation of the primary horoscopes from the zodiacs of Athribis; furthermore, the identifications of the primary horoscope's planets that they suggest are most likely to simply be incorrect, since they would identify the same planetary figures from the two zodiacs as two different planets.

We shall therefore begin the interpretation of the symbols from the zodiacs of Athribis from scratch, regardless of the versions suggested in the research of Knobel and Morozov. However, our final interpretation shall prove very close to the one suggested by Flinders Petrie initially.

We shall need more detailed copies of the Athribis

zodiacs than the ones seen in fig. 13.9. Respective drawn copies can be seen in figs. 18.1 and 18.2. Drawn copies and coloured versions of the Athribis zodiacs seen in figs. C10 and C11 shall give the readers an opportunity to follow every detail of our analysis.

Let us begin with our study of the symbols found in the zodiacs from Athribis – figures used for constellations, planets and secondary horoscope symbols. We shall begin with constellations, as usual.

Constellation figures in the zodiacs of Athribis are perfectly easy to understand – all of them are drawn very clearly, and in the correct sequence. We discussed them at sufficient length in CHRON3, Chapter 15:1, where we reproduced the drawn copies of all the constellations represented in the zodiacs of Athribis. We shall refrain from reiterations herein; the only thing that needs to be pointed out is the fact that the figure of the woman that holds on to Leo's tail isn't a figure of an "auxiliary Virgo" in Leo, which is the case in most other Egyptian zodiacs, but rather the primary figure of the Virgo constellation. All the constellations are highlighted red in the "coloured versions" of the zodiacs from Athribis, qv in fig. C10.

Now for the planets. All of the primary horoscope's planets, except for the Sun, the Moon and Mercury, are drawn as birds in the zodiacs of Athribis. This was understood by N. A. Morozov perfectly well, but noticed before that, in the works of the Egyptologists. Our analysis also confirms their corollary. The only question is the "role distribution" among the birds, or their respective planetary identifications. We shall get to it below; however, let us first point out the Sun, the Moon, and Mercury – objects that don't look like birds here.

The Sun. In each of the two zodiacs we see a circle that represents the Sun. It is underneath Taurus in the Upper Zodiac, and below the cusp of Capricorn and Aquarius in the Lower.

The Moon. In the Lower Zodiac of Athribis, the Moon is drawn under Sagittarius. A colour copy of the zodiac's respective fragment can be seen in [1215:1], page 22. The moon is drawn as a brick-red circle, with a wide and clearly drawn crescent on its lower perimeter, greenish in colour. The drawing leaves us with no doubts that what we see is the Moon. Nevertheless, bearing the red "solar" colour of the circle with the crescent in mind, we also accounted

for the solar identification option in case of this symbol, whereas the simple crescent-less circle would be hypothetically identified as the Moon. However, we didn't come up with a single solution pair for the zodiacs of Athribis, qv below. Thus, we find that the Moon in the Lower Zodiac is in Sagittarius.

It has to be pointed out that the circle in Libra with a bird inside it, as seen in both zodiacs of Athribis, isn't the Moon in the primary horoscope, but rather the Passover full moon. The lunar disc that reflects the light of the solar bird is drawn as a circle, as it was discussed in CHRON3, Chapter 15:9.1. We shall come back to this issue below. According to the coloured fragment from [1215:1], page 22, the circle's colour is brick red, and the bird inside it is yellow.

In the Upper Zodiac of Athribis the crescent is right underneath Gemini. The drawn copy makes it obvious that the crescent was extended into a full circle, as is the case with the Lower Zodiac. The artwork of the Upper Zodiac is damaged in this part – nevertheless, a comparison with the Lower Zodiac makes it obvious that we have a similar symbol in front of us. Therefore, the Upper Zodiac's Moon is in Gemini.

Mercury. Both zodiacs contain a lone male figure with a canonical planetary rod. There are no other such figures anywhere in the zodiacs of Athribis. We shall disregards the perimeter strip of secondary horoscopes that will be considered below (it also contains a figure with a rod).

The man with a rod is underneath Taurus in the Upper Zodiac, and below Pisces in the Lower. His figure has two faces, which is very obvious in the Lower Zodiac. The figure in the Upper Zodiac is damaged, with a part of the head and an arm missing.

The symbol of a two-faced man with a planetary rod is already well familiar to us – it represents Mercury in the primary horoscope, qv in CHRON3, Chapter 15:4.9. Therefore, Mercury in the Upper Zodiac of Athribis is in Taurus.

In the Lower Zodiac of Athribis Mercury is most likely to be drawn in Pisces. We must note that Mercury is included in the agglomeration of four planetary figures huddled together under the constellation triad of Capricorn, Aquarius and Pisces. It is therefore possible that the entire group, including Mercury, is located in the area of the three constellations specified above, possibly excluding Pisces. Strictly speak-

Fig. 18.1. The Upper Zodiac of Athribis (AV). A magnified drawn copy. Fragment of an illustration from [544], Volume 6, page 730.

ing, this implies that we have to consider the possibility of Mercury being in Aquarius and even in Capricorn. We shall refrain from it for the time being, and assume that Mercury is in Pisces, which is the sign we find right above it. Below we shall also consider the option with the random distribution of the four planets across Capricorn, Aquarius and Pisces.

Thus, Mercury in the Lower Zodiac can be found in Pisces.

We must now locate just four planets from the primary horoscope, namely, Saturn, Jupiter, Venus and Mars. It has to be pointed out that there are four fantasy birds underneath the constellation figures in both zodiacs, four on each – some of them have horns, others are drawn with serpent tails etc. These four birds obviously stand for the remaining four figures of the primary horoscope. Knobel and Morozov ad-

hered to this opinion, so we haven't given the reader any new information so far.

Let us carry on. It turns out that the sets of four fantasy birds as found in both zodiacs coincide. In other words, there is an obvious correspondence between the four fantasy birds from the Upper Zodiac and a similar four from the Lower, with identical birds standing for the same planet. It is quite unambiguous, qv in fig. 18.3.

Indeed:

1) In the Upper Zodiac of Athribis we see a bird with a crescent-like horns on its head underneath Pisces, whereas an identical bird in the Lower Zodiac is under Gemini. There are no other birds with a similar horn shape anywhere in the zodiacs of Athribis. The horns are the only distinctive characteristic possessed by these birds; they must therefore represent

Fig. 18.2. The Lower Zodiac of Athribis (AN). A magnified drawn copy. Fragment of an illustration from [544], Volume 6, page 730.

the same symbol that we encounter once in each of the Athribis zodiacs. It is therefore the same planet; let us refer to it as to "planet #1" for the time being.

2) In the Upper Zodiac we see a horned bird over Cancer. Its horns are vertical, long and slightly curved, like those of an antelope. In the Lower Zodiac, there's a spitting image of this bird under Aquarius and Pisces. There are no other birds with such horns anywhere in the Athribis zodiacs. The birds also possess no other special characteristics, which means we have two representations of the same symbol in front of us, drawn once in each of the zodiacs, or the same planet. Let us call it "planet #2" for the time being.

3) We see a bird with a serpent's tail and a large beak, its wings folded, underneath Capricorn in the Upper Zodiac. There is a double of this bird in the Lower Zodiac – complete with a serpent's tail, large beak and folded wings. This bird is also located underneath Capricorn. There are no other birds of this kind in the Zodiacs of Athribis. We see one bird with a similar tail in the Lower Zodiac, but its wings are spread, and it has a snake instead of a beak, and therefore symbolises something else. The birds we find underneath Capricorn in both zodiacs of Athribis coincide in all of their characteristics, and therefore stand for the same planet, found once in each of the two zodiacs. We shall dub it "planet #3" for the time being.

4) There is a single bird left to identify in each of

the two zodiacs. It is underneath Taurus in the Upper Zodiac, next to the Sun, and underneath Leo in the Lower Zodiac. However, a full identification is a non-option due to the fact that the bird from the Upper Zodiac is damaged to a great extent, with nothing left but the legs and the right wing. All we can say about the bird is that its wings are spread. The surviving bird under Leo in the Lower Zodiac is in good condition; it has the tail and the head of a serpent and spread wings. There is no other bird that looks like this anywhere amidst the whole and undamaged bird figures found in the Upper Zodiac, and it can only correspond to the semi-obliterated bird under Taurus. The correlation is obvious if we are to consider the spread wings of both figures; there are no other options for this pair. We have therefore found the symbol of the last missing planet from the primary horoscope of both zodiacs; we shall call it "planet #4" for the time being.

There are no more fantasy birds in the constellation row on the Athribis zodiacs. There's a perfectly ordinary bird without anything in the way of horns, serpent tails and the like. It looks the same in both zodiacs, and we find it in the circle over Libra. However, we already know that it stands for the Passover full moon. We discussed this symbol in detail above (see Chron3, Chapter 15:9.1). It is part of the auxiliary astronomical scene at the very bottom of both zodiacs. The entire scene is highlighted green in the coloured versions of the zodiacs. The bird in the circle is also drawn over Libra, whereas all the other figures in the zodiacs of Athribis are below the respective zodiacal constellations. This observation confirms our corollary that the bird in the circle over Libra isn't part of the primary horoscope in this case.

We are therefore left with the following picture of the primary horoscope in both zodiacs of Athribis. See the accordingly coloured zodiacs.

Upper Zodiac:
Planet #3 is in Capricorn,
Planet #1 is in Pisces,
Planet #4, the Sun and Mercury are in Taurus,
The Moon is in Gemini,
Planet #2 is in either Gemini or Cancer.
Lower Zodiac:
Planet #3 is in Capricorn.

The Sun is in either Capricorn or Aquarius; it is drawn at the cusp of the two constellations.
Planet #2 is in either Aquarius or Pisces.
Mercury is in Pisces.
Planet #1 is in Gemini.
Planet #4 is in Leo.
The Moon is in Sagittarius.

It has to be pointed out that all the planets in the Athribis Zodiacs are located underneath the corresponding constellation signs. Therefore, whenever a planetary figure winds up in between two constellations, one of which is above in the drawing, and the other below, there is no room for confusion. Nevertheless, we would consider both constellations as possible locations of planets in such cases.

Now let us sort through all possible identification options of the four planets – Saturn, Jupiter, Mars and Venus, and the four fantasy birds of the Athribis zodiacs. We shall calculate all the astronomical solutions for each of them with the aid of a computer and see whether any of the solutions might contain a pair of dates for both zodiacs that would correspond to the average human lifespan.

Let us explicate that the Zodiacs of Athribis are most likely to contain the dates of birth and death of the person buried in the cavern – or, possibly, the demise dates of close relatives buried together. However,

Fig. 18.3. Undisputed mutual correspondence between the planetary figures from the respective primary horoscopes of the Upper and the Lower Zodiac of Athribis (AV and AN). The Sun, the Moon and Mercury are the only figures we can identify instantly. The other four planets (Saturn, Jupiter, Mercury and Venus) look like fantasy birds with horns, tails and beaks of different shapes. We used circles with numbers 1, 2, 3 and 4 for referring to them. Which planet is represented by which bird exactly can only be estimated from astronomical computations.

in the latter case the interval between the two dates can't be all that great, either – it will be less than a century, which is the maximal order of magnitude possible in this case.

The choice of options for identifying the four fantasy birds from the Athribis zodiacs as planets shall be facilitated if we are to remember that Venus is never further away from the Sun than 40 degrees, and there cannot be more than two full zodiacal constellations between Venus and the Sun. In that case, none of the four planetary figures but that of planet #2 can represent Venus. Indeed:

There are three full constellations between the Sun and planet #1 in the Lower Zodiac at least, which means it cannot be Venus.

There are three full constellations between the Sun and planet #3 in the Upper Zodiac (Aries, Aquarius and Pisces). Therefore, this planet isn't Venus, either.

There are four full constellations at least between the Sun and planet #4 in the Lower Zodiac. This planet also cannot be identified as Venus.

Finally, planet #2 isn't separated from the Sun by more than one full constellation in any of the two zodiacs. The Sun is in Taurus in the Upper Zodiac, whereas planet #2 is in Cancer – the only full constellation between the two is Gemini. In the Lower Zodiac, the two are right next to each other – in Capricorn/Aquarius. Therefore, only planet #2 can be identified as Venus.

We have therefore discovered Venus in the zodiacs of Athribis. It is the bird with tall horns whose shape resembles an antelope's horns. None of the more "horrifying" birds with serpent parts became identified as Venus, which is only logical – it would

be really odd if Venus turned out to be represented by a bird with the tail of a serpent, or one with a large menacing beak. Planet #2 that became identified as Venus, on the other hand, is a bird that looks peaceful and even placid.

The three planetary birds that remain unidentified will have to be discovered by simple calculus. Readers familiar with combinatorial analysis will instantly realise that we shall have to sort through six possible identification options for the three planetary birds (Jupiter, Saturn and Mars). Let us briefly indicate them as A1, … A6. All of them are represented in Table 18.1. Let us explain its construction. The table has six rows corresponding to number of possible options. The rows contain the numbers of planets identified as Jupiter, Saturn and Mars, corresponding to one of the versions or another.

1.2. Secondary horoscopes and additional scenes in the zodiacs from Athribis

Symbols of secondary horoscopes in the zodiacs of Athribis are concentrated in the strip of figures that encloses the entire drawing, for the sole exception of the additional scene with the Passover Moon. This strip is highlighted in blue in the coloured versions of the zodiac. Its symbolism was already discussed above, in CHRON3, Chapter 15.

Primarily, the strip consists of solstice and equinox symbols. In its upper part, over Gemini from the Upper Zodiac, we see a four-faced figure with a planetary rod. However, such figures rank with autumn and equinox symbols and have nothing in common with secondary horoscope's planets, qv in CHRON3, Chapter 15:8.

However, there is a single secondary horoscope with planetary figures – the summer solstice horoscope of the Lower Zodiac. We already studied this secondary horoscope attentively in CHRON3, Chapter 15:5.3, and have only recollected its contents briefly herein, qv in fig. 15.55 above.

The horoscope is quite spectacular, since it contains a total of five birds with human faces. They are likely to stand for Mercury, Venus, Jupiter, Saturn and Mars congregated around the Sun. Don't forget that in the zodiacs from Athribis planets were most often drawn as birds. As for the Sun, it looks differently

Interpretation option code	Jupiter	Saturn	Mars
A1	1	3	4
A2	1	4	3
A3	3	1	4
A4	3	4	1
A5	4	1	3
A6	4	3	1

Table 18.1. Possible interpretation options for the primary horoscopes in the Zodiacs of Athribis.

here – namely, as a figure of a man whose arm is raised into the air, which is a standard representation of the Sun during summer solstice in Egyptian zodiacs, qv in Chron3, Chapter 15.8. The Moon is apparently absent from this secondary horoscope, since it is always accompanied by the figure of a crescent or a circle in Egyptian zodiacs; however, we see none of the above here.

Two planetary birds can be seen on one side of the Sun as described above, and three more on the other. Next to the two planetary birds on the left we see inscriptions that were read as Meri-Hor and Ab-Ne-Mano by H. Brugsch ([544], Volume 6, page 729). Furthermore, we must note that the leftmost bird over the head of the Sun has a female face; it must therefore stand for Venus. The entire secondary horoscope is located on the opposite of the Gemini figure in the Lower Zodiac; in other words, right where is should be in Egyptian zodiacs, qv in Chron3, Chapter 15:8. Bear in mind that the Sun is in Gemini on the day of Summer Solstice.

What we see here indicates that Mercury, Venus, Jupiter, Saturn and Mars must have been in Gemini on the day of summer solstice, or close thereto. Two planets out of five, including Venus (the bird with a female face) are drawn "over the head of the Sun" in the zodiac, which is probably an indication of matutinal disposition. Other three planets of the secondary horoscope are under the feet of the Sun, or follow a vespertine rising pattern. We must explicate that planets in matutinal visibility rise before the Sun, or move in front of it – over its head, figuratively speaking. On the other hand, the planets visible at dusk follow the Sun, and are located under its feet, in a way.

Thus, the secondary horoscope of summer solstice in the Lower Zodiac of Athribis in its ideal form is as follows:

On the day of summer solstice, five planets (Mercury, Venus, Jupiter, Saturn and Mars) had to be in Gemini or close nearby. Two planets out of five are drawn "over the head of the Sun" – on the side of matutinal visibility, whereas three others are "under the feet of the Sun", or on vespertine visibility side. Venus was further away from the Sun than the second planet right next to it.

We have found no other secondary horoscopes in the zodiacs of Athribis. However, apart from the usual solstice and equinox symbols that the surrounding strip of zodiacal symbols consists of, which are quite useless for the verification of solutions, as we mentioned above, there is nevertheless a symbol here that may prove informative.

Mark the scene of the "meeting over Leo" drawn in the part of the perimeter strip that we see on the left of the Upper Zodiac. We see a lion (or a lioness) with a human head – possibly, a female figure. On its back there are two standing male figures holding hands, one of them has two faces. . It must be Mercury – after all, we often find it drawn as a two-faced man. On the other hand, a lion or a lioness with a human head would often refer to Venus in Leo or somewhere close nearby, as we have witnessed on numerous occasions (see Chron3, Chapter 15:4.8 in re the symbols of Venus in Egyptian zodiacs).

Therefore, the entire symbolic scene above is most likely to refer to the "meeting" (conjunction) of Mercury and some other "male" planet in Leo, also accompanied by Venus.

Naturally, the interpretation option of this Egyptian symbol that we suggest should neither be considered finite nor the only one possible. Nevertheless, once we attain an exhaustive solution of the Athribis zodiacs, the symbol's meaning shall become obvious. Let us point out that the two-faced figure of Mercury that we find here is an eloquent enough indication that the scene is dedicated to some planetary configuration that includes Mercury in Leo.

1.3. Results of calculations including six options with rigid planetary order

Now let us cite the results of computer calculations that involved all of the six possible interpretation versions (A1-A6) of the primary horoscopes from the zodiacs of Athribis. The results can be seen in table 18.2. The corresponding data files for the Horos program are given in Annex 4 indicated AN1 … AN6 for the Lower Zodiac and AV1 … AV6 for the Upper. Twelve files altogether – six for each of the two zodiacs from Athribis. As usual, the only solutions we consider involve the same planetary disposition order on the ecliptic as given in the zodiacs. Exceptions were only made for the planets found at the distance of 1 degree or less from each other, in which case

their order would become impossible to estimate with the naked eye. The solution search interval starts with 500 B.C. and ends with 2000 A.D.

Let us cite exact dates for all the solutions from the table. "Average deviation" shall refer to the "average deviation from the best points".

IDENTIFICATION A1. *Upper Zodiac:* (year –244, 21-23 May, average deviation equals 14 degrees); (1962, 21-22 May, average deviation equals 13 degrees). *Lower Zodiac:* no solutions.

IDENTIFICATION A2. *Upper Zodiac:* (year 408, 13 May, average deviation equals 17 degrees). *Lower Zodiac:* (year 1125, 2 February, average deviation equals 11 degrees).

IDENTIFICATION A3. *Upper Zodiac:* (year –447, 16-18 May, average deviation equals 14 degrees). *Lower Zodiac:* no solutions.

IDENTIFICATION A4. *Upper Zodiac:* (year –327, 11 April, average deviation equals 19 degrees); (year 1262, 20-22 May, average deviation equals 16 degrees). *Lower Zodiac:* no solutions.

IDENTIFICATION A5. *Upper Zodiac:* (year 1230, 15-16 May, average deviation equals 7 degrees). *Lower Zodiac:* (year 237, 7-8 February, average deviation equals 14 degrees).

IDENTIFICATION A6. *Upper Zodiac:* (year 79, 21-22 May, average deviation equals 15 degrees); (year 256, 12 May, average deviation equals 19 degrees); (year 1847, 2-3 June, average deviation equals 15 degrees). *Lower Zodiac:* (year –452, 10-11 January, average deviation equals 9 degrees); (year 225, 21-23 January, average deviation equals 8 degrees).

Table 18.2 demonstrates that there is just a single version of identifying the fantasy birds from the zodiacs of Athribis with planets; the pair of resulting solutions is separated by an interval of a suitable length. The solutions are as follows: 12 May 256 A.D. for the Upper Zodiac and 21-23 January 225 A.D. for the Lower. There are no other solutions with an acceptable difference between the dates of the upper and the lower zodiac in table 18.2. The next pair is separated by an interval of 150 years (79 and 225 for the same identification A6); the next interval is already one of 600 years.

It turns out that the pair of dates in question doesn't represent the exhaustive solution of the Athribis zodiacs. The matter is that the solution of 225 A.D. for the lower zodiac doesn't suit us insofar as the secondary horoscope of summer solstice is concerned (which we encountered on the zodiac and analysed

A1		A2		A3		A4		A5		A6	
Upper *AV* *AV1*	*Lower* *AV* *AV1*	*Upper* *AV* *AV2*	*Lower* *AV* *AV2*	*Upper* *AV* *AV3*	*Lower* *AV* *AV3*	*Upper* *AV* *AV4*	*Lower* *AV* *AV4*	*Upper* *AV* *AV5*	*Lower* *AV* *AV5*	*Upper* *AV* *AV6*	*Lower* *AV* *AV6*
–244	no solutions			–447	no solutions	–327	no solutions				–452
										79	
										-------	-------
									237		225
										256	
										-------	-------
		408									
			1125					1230			
						1262				1847	
1962											

Table 18.2. Astronomical solutions for the Upper (AV) and Lower (AN) Zodiac of Athribis for all six interpretation versions of the primary horoscope (A1 … A6). Only the solution years are given.

above). Don't forget that according to the horoscope, all five planets were in conjunction in Gemini that year (which also housed the Sun during summer solstice) – Mercury, Venus, Jupiter, Saturn and Mars.

We have two possible versions for the summer solstice that corresponds to the solution of 21-23 January 225; one of them is valid if the author of the Zodiac counted the year off the autumn equinox point or the winter solstice point, in September or January, that is. In this case, the January solution of 225 would precede the summer solstice day of the same year; we would then have to take June 225 as the date of the summer solstice. However, if the year began from the vernal equinox or the winter solstice according to the author of the zodiacs (in March or June, that is), our January solution shall postdate the summer solstice point of the same year. We shall then have to consider the preceding June of 224 A.D. However, since we don't know the author's opinion, we shall consider both versions (none of them will turn out valid, as a matter of fact).

If the year begins in September or January, that is, if the summer solstice day fell on 225 (20 June, qv in Annex 5), there were only four planets in Gemini and the neighbouring constellations of Leo, Cancer, Taurus and Aries, excluding the Sun and the Moon. Namely, Jupiter and Mars were in Leo, the Sun and Mercury in Gemini, and Venus in Taurus, from the side of the Gemini. The fifth planet (Saturn) was in Capricorn that day, on the opposite side of the ecliptic; we cannot ascribe it to the horoscope of summer solstice in this case. As a result, we come up with an astronomical situation that corresponds with this secondary zodiac, since we find all five planets in it, with the exception of the Sun. The Moon is of no assistance to us, since its symbolism (either a crescent or a circle) is absent from the secondary horoscope.

The beginning of the year in March or June also doesn't save the solution of 225 A.D. Indeed, in the March (or June) year that corresponds to this solution the summer solstice day fell on 20 June 224 A.D. – however, Saturn remained in Capricorn that day. In other words, the secondary horoscope of summer solstice presents conditions that cannot be satisfied yet again.

We must concede to having found no exhaustive solutions for the zodiacs of Athribis. However, we must point out that the abovementioned calculation involves exceptionally high criteria for the astronomical solutions of the Athribis zodiacs.

The matter is that we find planetary agglomerations next to the Sun in both of the zodiacs; this is especially manifest in the Lower Zodiac, where we see three planets (minus the Sun) next to each other, surrounding the luminary while being right next to each other. However, the agglomeration of planets around the Sun implies that some of them may have been invisible that day, which is the fate of every planet that approaches the Sun too closely. It is obvious that the respective order of the planets couldn't have been observed in the celestial sphere immediately. One could figure out the respective order of some planets knowing the average comparison rate of their speed; however, the order of invisible planets in relation to the Sun would have to be calculated. This was anything but an easy task in the olden times, when every arithmetical operation would take a great toll on time and effort.

Therefore, if the horoscopes in the Athribis zodiacs were compiled from actual observations and not accurate astronomical calculations, the order of the planets in relation to the Sun contained therein might be erroneous. We have to account for this possibility, since this minor detail might well be standing between us and the exhaustive solution of the Athribis zodiacs.

1.4. Calculation results for six versions with random order of invisible planets

We have performed extensive astronomical calculations for the zodiacs of Athribis, accounting for possible discrepancies in the order of the *invisible* planets. In the new calculations we allowed for a random order of invisible planets. The respective source data for the Horos program are given in Annex 4 (see data codes ANA, ANB, ANC, AND and ANF for the Lower Zodiac; the ones for the Upper Zodiac of Athribis are AVA, AVB, AVC, AVD and AVF).

Since the Horos program cannot estimate planetary visibility, our research was done in several stages.

In the first stage the Horos program would search for all possible astronomical solutions, allowing for random order changes of the planets within the

group of three, including the Sun, in the Upper Zodiac of Athribis, and a similar group of four with the Sun included in the Lower. As above, solutions were searched on the interval between 500 B.C. and the present day.

Then, in the second stage, we would study each of the solutions found in order to make certain that the difference between the solution in question and the specifications of the respective zodiac only concerns the *order of the invisible planets in relation to each other.* Visibility estimates were rough, based on the longitudinal declination of the planets exclusively. A planet would be considered visible if its solar declination equalled 12 degrees of longitude minimum. Our objective had been to get rid of all the cases where the planetary order in the solution would be broken for a priori visible planets.

In the third stage we would estimate all the possible pairs of close dates for both of the Athribis zodiacs. We would only allow for solutions where the dating for the Upper Zodiac would be at the maximal distance of 150 years from the estimated dating

of the Lower Zodiac. The visibility of planets found near the Sun would be calculated more accurately, with the aid of the Turbo-Sky software. We assumed that the observation point was located somewhere in Egypt – in either Cairo or Luxor. Considering observation points located further to the North was hardly a necessity, since the angle between the ecliptic and the local horizon is smaller in the northern latitudes, and that makes visibility conditions for the planets in solar vicinity even worse.

The end result of the first two stages of calculation is presented as Table 18.3. It is compiled in the same way as the table 18.2 above.

Let us cite the exact dates for all the solutions from the table. By "average deviation" we shall understand the "average deviation from best points". Bear in mind that it might differ from the one we came up with for the same solution in Table 18.2, since the best points were altered to some extent in order to allow for a different planetary order. See printouts of source data in Annex 4.

IDENTIFICATION A1. *Upper Zodiac:* (year -244, 21-

A1		A2		A3		A4		A5		A6	
Upper AV AVA	Lower AV AVA	Upper AV AVB	Lower AV AVB	Upper AV AVC	Lower AV AVC	Upper AV AVD	Lower AV AVD	Upper AV AVE	Lower AV AVE	Upper AV AVF	Lower AV AVF
−244	no solutions			−447	no solutions	−327	no solutions				−452
										79	
									237	256	225
		408									
			444							459	
			1125								
								1230			
1227						1262			1268		
										1847	
1962											

Table 18.3. Astronomical solutions for the Upper and Lower Zodiac of Athribis (AV and AN, respectively) for all six interpretation options of the primary horoscope *and a random order of invisible planets.* We only specify the years of solutions.

23 May, average deviation equals 15 degrees); (year 1227, 20 April, average deviation equals 17 degrees); (year 1962, 21-22 May, average deviation equals 13 degrees). *Lower Zodiac:* no solutions.

IDENTIFICATION A2. *Upper Zodiac:* (year 408, 13 May, average deviation equals 19 degrees). *Lower Zodiac:* (year 448, 18-20 January, average deviation equals 10 degrees); (1125, 30 January – 2 February, average deviation equals 10 degrees).

IDENTIFICATION A3. *Upper Zodiac:* (year –447, 16-18 May, average deviation equals 14 degrees). *Lower Zodiac:* no solutions.

IDENTIFICATION A4. *Upper Zodiac:* (year –327, 11 April, average deviation equals 19 degrees); (1262, 20-22 May, average deviation equals 16 degrees). *Lower Zodiac:* no solutions.

IDENTIFICATION A5. *Upper Zodiac:* (year 1230, 15-16 May, average deviation equals 7 degrees). *Lower Zodiac:* (year 237, 7-8 February, average deviation equals 13 degrees); (1268, 8-11 February, average deviation equals 6 degrees for 9-10 February).

IDENTIFICATION A6. *Upper Zodiac:* (year 79, 21-22 May, average deviation equals 15 degrees); (year 256, 12 May, average deviation equals 19 degrees); (year 459, 18 May, average deviation equals 12 degrees); (year 1847, 2-3 June, average deviation equals 15 degrees). *Lower Zodiac:* (year –452, 10-12 January or 3-8 February, average deviation equals 10 degrees); (year 225, 20-24 January, average deviation equals 9 degrees).

As one can see from the table, there are just three pairs of dates situated close enough to one another, which leaves us with a total of three possible solutions for the zodiacs of Athribis:

1) 408 and 448 A.D. (average deviations from best points equalling 19 degrees and 10 degrees, respectively);

2) 1230 and 1268 A.D. (average deviations equalling 7 degrees and 6 degrees);

3) 256 and 225 A.D. (average deviations equalling 19 degrees and 9 degrees).

However, the third solution (256 and 225 A.D.) already surfaced in our primary calculations, qv in CHRON3, Chapter 18:1. It was rejected due to its failure to correspond with the secondary horoscope of summer solstice in the lower zodiac. Let us point out that the date we had to reject relates to the lower zo-

diac exclusively (225 A.D.) – it simply makes no sense to try a new date with it (namely, 79 A.D.), which isn't that far away on the time scale; the matter is that the Lower Zodiac date shall remain the same – namely, 225 A.D., and we have already rejected it.

We are thus left with two possible solutions, the first pair being 408 and 448 A.D., and the second – 1230 and 1268 A.D. As we shall see below, the first one will have to be rejected, whereas the second proves ideal (jumping ahead, we shall tell the reader that it turned out to be our final and exhaustive solution for the zodiacs of Athribis). We shall study it meticulously in the next couple of sections, and also demonstrate the non-existence of other exhaustive solutions, even if one were to allow for a much wider scope of interpretations, in Annex 6, with the aid of extensive additional calculations.

Let us first consider the solution of 408 A.D. for the Upper and 448 A.D. for the Lower Zodiac. Planetary positions on the days in question were as follows:

Julian day (JD) = 1870213.00 <The Upper Zodiac of Athribis>
Year/month/date = 408/5/13

Sun	Moon	Saturn planet 4	Jupiter planet 1	Mars planet 3	Venus planet 2	Mercury
75.1	96.6	38.6	338.4	298.6	98.3	91.2
Taurus	Gemini	Aries	Aquar.	Sag/Cap	Gem	Gem/Tau

Average deviation from "best points": 19 degrees.
Identification A2, data code AV2 or AVB (see Annex 4).

Julian day (JD) = 1884708.00 <The Lower Zodiac of Athribis>
Year/month/date = 448/1/19

Sun	Moon	Saturn planet 4	Jupiter planet 1	Mars planet 3	Venus planet 2	Mercury
322.1	286.0	175.0	91.6	315.7	319.1	336.9
Capric.	Sagitt.	Leo/Vir	Gem.	Capric.	Capric.	Aquarius

Average deviation from "best points": 10 degrees.
Identification A2, data code ANB (see Annex 4).

We must instantly point out that the above planetary positions don't quite satisfy to the specifications of the Upper Zodiac. Indeed, planet #4 (or Saturn in this identification) is drawn immediately underneath

Taurus in the Upper Zodiac of Athribis; there is some empty space left under Aries, and so the author of the zodiacs could have easily drawn the planet under Aries, had he wanted to. He had done nothing of the kind, as we can see, since he drew it under Taurus, right next to the two other planetary figures (the Sun and Mercury). Therefore, the position of Saturn for 13 May 408 A.D. can be presumed to coincide with the middle of Aries, at 12 degrees from the border with Taurus, and at a whole 36 degrees from the Sun, is in very approximate correspondence with the drawing on the Upper Zodiac.

Furthermore, the "meeting scene in Leo" as described above receives no astronomical explanation in 408. In the summer of 408 Venus was passing through the constellation of Leo alone; Mercury had turned back towards the Sun in Gemini/Cancer. Mars was between Capricorn and Aquarius – on the other side of the ecliptic, that is. Jupiter was in Aquarius, and Saturn in Aries; in other words, all of the above-mentioned planets were far enough from Leo (calculated in Turbo-Sky).

Thus, Mercury wasn't in conjunction with any "male" planet in Leo that year, and so the scene in question becomes suspended. It is easy enough to come up with mystical explanations, as previous researchers were very prone to doing. However, we already know that no "extraneous" scenes void of astronomical meaning were ever drawn in any Egyptian zodiac; the zodiacal symbolism reflected actual astronomical phenomena quite meticulously, and so an exhaustive solution should present us with the opportunity of giving an astronomical explanation to every symbol present in the zodiac under study. We don't find this to be the case here.

Now let us see how well the conditions specified in the Lower Zodiac are satisfied in the solution under consideration. The date we came up with in this case is 18-20 January 448 A.D.; it wasn't present in the previous calculation, which means that the order of some invisible planets for that date didn't coincide with their order in the zodiac. The planetary longitudes for 19 January 448 as cited above demonstrate that Venus was indeed located on the other side of the Sun on that date as compared to how the two are drawn in the zodiac. Nevertheless, its longitudinal declination from the Sun equalled a mere 3 degrees, which would

render the planet perfectly invisible, making it impossible for the telluric observer to determine the exact respective order of Venus and the Sun on the ecliptic. We have no right to reject the dating on these grounds. As for the distribution of planets across the constellations, it corresponds with the zodiac well enough.

As we already pointed out above, the secondary horoscope of summer solstice for the dating of 18-20 January 448 can have two options, the first one being the summer solstice of 448, which corresponds to the September or January beginning of the year. The other one is the summer solstice of 447, if the beginning of the years referred to in the zodiacs of Athribis fell on March or June. Let us point out that in every case studied above we saw Egyptian zodiacs specify a September year, which was apparently linked to the point of autumn equinox. However, this doesn't preclude us from coming across an Egyptian zodiac that will use a different system for the beginning of a year – one linked to the spring equinox point in March, for instance, or the summer solstice point in June. We shall therefore keep checking all possible options.

A Turbo-Sky calculation demonstrates that all five planets were in conjunction with the Sun in June of 447, likewise June 448, on the day of summer solstice (in Gemini), forming a configuration that resembles what we see in the respective secondary horoscope of the Lower Zodiac. However, the correspondence with the zodiac wasn't ideal in 448; nevertheless, it had been such in 447, which would imply a March or June beginning of a year.

Let us begin with the summer solstice of 448. On 19 June 448, on the day of summer solstice, the planetary disposition on the ecliptic had been as follows: Saturn and Venus in Leo; Jupiter, the Sun and Mercury in Gemini, and, finally, Mars in Taurus. Therefore, Venus ends up in the triad "underneath the feet of the Sun", on the side of vespertine visibility. The secondary horoscope specifies it as one of the two planets one sees over the head of the Sun. The correspondence remains, but it is incomplete.

On 19 June 447, which was the preceding day of summer solstice, the planetary disposition corresponded to the secondary horoscope ideally. The planetary order was as follows (calculated in Turbo-

Sky): Mars, Saturn and Mercury in Leo/Cancer (vespertine visibility, or "underneath the feet of the Sun"). The Sun was in Gemini. Jupiter and Venus were in Taurus, on the side of matutinal visibility, or "above the head of the Sun". Venus was further away from the Sun than Jupiter. This is just what we see in the secondary horoscope of summer solstice in the Lower Zodiac.

Let us sum up.

In the pair of dates under study (13 May 408 A.D. for the Upper Zodiac and 18-20 January 448 A.D. for the Lower), only the second satisfies to all the conditions set by the exhaustive solution. The first date corresponds to the Upper Zodiac very poorly insofar as the position of Saturn is concerned; moreover, it cannot explain "the scene of meeting in Leo" as found in the Upper Zodiac. Therefore, the solution of 408 and 448 cannot be the exhaustive solution for the zodiacs of Athribis – it could only be of use as a stopgap solution had we found no ideal one. However, there is in fact an ideal solution for this pair of zodiacs.

1.5. The exhaustive solution of the zodiacs from Athribis: 15-16 May 1230 for the Lower, and 9-10 February 1268 for the Upper Zodiac

The second solution that we came up with for the zodiacs of Athribis proved to be complete and exhaustive, rigidly corresponding to both the distribution of planets across constellations and the planetary order specified in the zodiacs, and also all of the additional information that the zodiacs contain, with no exceptions, namely:

15-16 May 1230 A.D. for the Upper Zodiac, with the average deviation from best points equalling a mere 7 degrees;

9-10 February 1268 A.D. for the Lower Zodiac, the average deviation from best points equalling just 6 degrees. It has to be noted that such small values of average deviation rate are very rare, and indicate exclusively high correspondence between the planetary positions in the solution and the zodiac.

Let us specify precise positions of planets on the ecliptic for the days in question. The first row of values contains planetary longitudes for the ecliptic J2000, as usual, with the positions of planets on the

"constellation scale", qv in CHRON3, Chapter 16:10, specified underneath, and the constellation housing the planet below.

THE SOLUTION OF THE ATHRIBIS ZODIACS. PRIMARY HOROSCOPE, IDENTIFICATION A5. DATA CODES: *AVE* FOR THE UPPER ZODIAC AND *ANE* FOR THE LOWER (SEE ANNEX 4)

Julian day (JD) = 2170451.00 <The Upper Zodiac of Athribis>
Year/month/date = 1230/5/16

Sun	Moon	Saturn planet 1	Jupiter planet 4	Mars planet 3	Venus planet 2	Mercury
72.6	104.9	4.4	81.0	329.6	116.3	87.8
1.55	2.53	11.45	1.77	10.01	2.92	1.95
Taurus	Gemini	Pisces	Taurus	Cap/Sag	Gem/Can	Tau/Gem

Average deviation from "best points": 7 degrees.

Julian day (JD) = 2184234.00 <The Lower Zodiac of Athribis>
Year/month/date = 1268/2/9

Sun	Moon	Saturn planet 1	Jupiter planet 4	Mars planet 3	Venus planet 2	Mercury
337.9	278.9	104.2	144.3	322.9	328.2	339.0
10.49	8.35	2.50	4.02	9.76	9.95	10.55
Aquar.	Sagitt.	Gem.	Leo/Vir	Capric.	Cap/Aqua (invisible)	Aquar. (invisible)

Average deviation from "best points": 5.5 degrees.

We have used the Turbo-Sky software in order to estimate which planets were visible in the solutions we came up with, and which were invisible a priori.

Visibility conditions for the Upper Zodiac. All the planets here were visible very well, except for Jupiter. Jupiter set in Cairo on 16 May 1230 with the solar submersion rate equalling 7 degrees; the luminosity of the planet had equalled –1.4.

These conditions must have made Jupiter invisible, with the possible exception of a few brief moments, at the very horizon. The nearby Mercury was already visible quite well, since the solar submersion rate had equalled 14 degrees when it rose. The new Moon just appeared in Gemini, looking like a narrow crescent; it had been two days of age.

Visibility conditions for the Lower Zodiac. Proximity to the Sun rendered Mercury and Venus invisible; the former was at the distance of one or two degrees from the Sun, and its visibility is quite out of the question. Venus was located on the side of matutinal visibility in relation to the Sun. It was also invisible, since it rose in Cairo on 9-10 February 1268 at the solar submersion rate of just 5 degrees, which is insufficient even for planet this bright (its luminosity had equalled –3.4 that day). Other planets were visible well enough. Mars had been the closest to the Sun; it rose at the solar submersion rate of 9 degrees, which would make the planet (whose luminosity had equalled +1.4) visible before dawn, albeit for a short time.

1.6. A comparison of planetary positions in the solutions with those specified in the zodiacs

Let us now compare the positions of planets in the solution that we discovered to the ones indicated in the zodiacs of Athribis. We must adhere to identification option A5 for Jupiter, Saturn and Mars, since this is the identification that gave us the solution under study. See above (Chron3, Chapter 18:1.1) for the interpretation of all identifications. Thus, the positions of planets in the zodiacs and in our solutions were as follows.

Planetary positions for the Upper Zodiac (identification option A5):
The Sun in Taurus.
Jupiter in Taurus, underneath the Sun and right next to it.
Mercury in Taurus, on the side of Gemini, right next to Jupiter.
Mars in Capricorn.
Saturn in Pisces.
Venus at the cusp of Gemini and Cancer.
The Moon in Gemini, close to Venus.
Planetary positions in the solution of 15-16 May 1230 for the Upper Zodiac:
The Sun in Taurus. The nearest planet to the Sun is Jupiter.
Jupiter in Taurus, right next to the Sun. Could only be visible at the very horizon right before sunrise.
Mercury in Taurus, near the border with Gemini.
Mars at the cusp of Capricorn and Aquarius.

Saturn in Pisces.
Venus at the cusp of Gemini and Cancer.
The Moon in Gemini, near Venus, two days of age. The crescent of the new moon appeared in the sky for the first time that day.
Planetary positions in the Lower Zodiac (identification option A5):
The Sun between Capricorn and Aquarius.
Venus in Aquarius or in Pisces, right next to Mercury and the Sun.
Mercury in either Pisces or Aquarius, right text to Venus.
Mars in Capricorn, touching the Sun with its serpent tail.
Saturn in Gemini.
Jupiter in Leo.
Moon in Sagittarius.
Planetary positions in the solution of 9-10 February 1268 for the Lower Zodiac:
The Sun in Aquarius.
Venus in Aquarius, near the border with Capricorn.
Mercury in the middle of Aquarius, close to Pisces (Aquarius occupies a mere 17 degrees on the ecliptic).
Mars in Capricorn, on the side of Aquarius – close to the Sun, yet visible.
Saturn is in Gemini.
Jupiter is at the cusp of Leo and Virgo.
Moon in Sagittarius as a 25-day-old crescent.

A comparison of planetary positions for the two zodiacs leads us to the following conclusion:
The concurrence is ideal for the Upper Zodiac. It is also ideal for the Lower Zodiac, given that Venus was invisible. It had been obscured by the Sun, which made it impossible for the compiler of the horoscope to see what side of the Sun it was on. This task would require some additional labour, which we cannot quite expect from the author of the zodiac. In other words, if we are to assume that the zodiacs of Athribis were compiled from accrual observations, without any additional astronomical calculations, both dates need to be recognized as ideal from the viewpoint of planetary disposition in both zodiacs – we see excellent concurrence for every planet in both zodiacs with no exceptions.
The only thing that we need to verify is the correspondence of the solution to the secondary horo-

scope of summer solstice in the Lower Zodiac, and the "scene of meeting in Leo" in the Upper.

The additional scene with the Passover moon located at the very bottom of the zodiacs from Athribis (it is highlighted green in the "coloured" version of the Lower Zodiac) was analysed meticulously in Chron3, Chapter 15:9.1. The scene itself is very interesting, but cannot help us with the choice of solutions.

1.7. Checking correspondence to the secondary horoscope of summer solstice

Let us cite the positions of planets on the ecliptic for both the summer solstice day of 12 June 1268 A.D. and the summer solstice day of 12 June 1267 A.D. In the first case we assume that the Athribis zodiacs employ a September or January year, and in the second case – a year beginning in March or June.

As above, the first line indicates the longitude of a planet on the J2000 ecliptic, whereas the second specifies the planetary position of the "constellation scale" (qv in Chron3, Chapter 16:10) and the third one corresponds to the name of the constellation where the planet was located. All the planets are arranged by longitude for the sake of convenience.

SEPTEMBER OR JANUARY BEGINNING OF YEAR

Julian day (JD) = 2184358.00 <Summer solstice of 1268 A.D.>
Year/month/date = 1268/6/12

Mars	Sun	Moon	Saturn	Mercury	Venus	Jupiter
57.1	98.6	101.6	112.4	117.4	121.0	148.1
1.15	2.31	2.41	2.79	2.96	3.10	4.15
Taurus	Gemini	Gemini	Gemini	Gemini	Cancer	Leo

The figures are telling us that we do indeed see a correspondence with the secondary zodiac, and a good one at that. All the planets congregated around the Sun in Gemini, just as they had to. Nevertheless, we cannot say the concurrence is ideal. The disposition of planets in relation to the Sun differs from what we see specified in the secondary horoscope, where we see three planets to one side of the Sun, and two more to the other. However, on the summer solstice of 1268 there were four planets that had con-

gregated on the same side of the Sun, apart from the Moon. There was just a single planet on the other side of the Sun – namely, Mars. It is therefore obvious that we can find no ideal correspondence with secondary horoscopes here.

Now let us try the other version, with the year beginning in March or in June. In this version, the summer solstice falls over 12 June 1267 on the year of our solution, give or take a day. Let us explain that this date falls over a different year than the 8-11 February 1268 specified in the Lower Zodiac due to the fact that nowadays we begin the year from January, and not June or March.

Let us cite the planetary positions on the ecliptic for 10 June 1267, two days before solstice, when the correspondence with the secondary zodiac is simply spectacular. However, it was virtually ideal on 12 June 1267 as well, since planetary positions couldn't alter all that greatly over two days. The only difference is that Mercury, having been right next to the Sun, resurfaced on its other side. Still, Mercury had been so close to the Sun on each of the days under consideration that it couldn't possibly be seen under any circumstances; the author of the Athribis zodiacs could therefore do nothing but guess what side of the Sun to draw the planet on. We must also bear in mind, that it had taken the mediaeval astronomers quite a while to learn the art of estimating solstice and equinox days with precision – even in XIV century books one encounters 5-6-day errors in their estimation, qv in Chron6, Chapter 19. The position of planets for 10 June 1267 on the days of summer solstice was therefore as follows:

JUNE OR MARCH BEGINNING OF YEAR

Julian day (JD) = 2183990.00 <Summer solstice of 1267 A.D.>
Year/month/date = 1268/6/10

Venus	Mercury	Sun	Saturn	Jupiter	Mars	Moon
76.5	95.0	96.0	99.7	122.6	151.6	301.3
1.66	2.19	2.22	2.35	3.16	4.26	8.99
Taurus	Gemini	Gemini	Gemini	Cancer	Leo	Capric.

The correspondence with the secondary horoscope from the zodiacs of Athribis is ideal, with all of the minute details coinciding.

Indeed, on 10 June 1267 all five planets (Mercury, Venus, Jupiter, Saturn and Mars) congregated near the Sun, as it is drawn in the secondary horoscope. Furthermore, two planets out of five (Venus and Mars) turned out to be "over the head of the Sun", just as it is specified in the Egyptian drawings, likewise the three other planets on the side of vespertine visibility (under the feet of the Sun). Venus is one of the planets "near the head of the Sun", which is what we see in the drawing.

Another parallel with the Egyptian drawing is the fact that Venus had been further away from the Sun than the second planet next to it. One also has to point out that the Moon, which we find absent from the present secondary horoscope, had been very far away from the Sun, and couldn't have been drawn in the horoscope by definition. On the days of summer solstice in 1267 the Moon had almost been at the opposite end of the ecliptic from the Sun. On the other hand, all the remaining planets had been close to the Sun and entered the secondary horoscope. Mercury and Saturn were in Gemini, right next to the Sun, and Venus in Taurus, closer to Gemini. Jupiter was in Cancer, near the border with Gemini. Mars was at the beginning of Leo, somewhat further away from the Sun than the four other planets – its solar declination rate equalled circa fifty degrees; Mars was at the border between the two respective secondary horoscope areas of summer solstice and autumn equinox. In this situation, the inclusion of Mars into the secondary horoscope of summer solstice is perfectly legitimate and even necessary from the viewpoint of ancient Egyptian astronomical symbolism.

As a result, the correspondence with the secondary horoscope proves exceptionally precise. We found no flaws here whatsoever.

Finally, one cannot fail to mention that the above-mentioned Egyptian names as discovered and read by Brugsch came from this particular area of the zodiac that is usually reserved for the summer solstice horoscope; according to our solution, these names refer to Venus and Mercury. We see a remote similarity between the Egyptian names and the modern ones. Indeed:

Meri-Hor = Mer-Gor = Mer-Cur (Mercury), or
Mer(cury)-*Horus.*
Ab-Ne-Mani = BN-Mani = VN-Mani = VeNus-Mani.

Bear in mind that Egyptian names were spelt as consonants only, and their vocalizations are random in most cases. Apart from that, the sounds B and V were often subject to flexion, especially in names – it suffices to recollect name pairs such as Barbara vs Varvara, Benedict vs Venedikt etc. Therefore, the consonants BN in the name Ab-Ne-Mani might well stand for Venus – VEN being the root, and "us" – a standard Latin suffix. It is therefore possible that Venus was simply referred to as VN or BN in Egyptian zodiacs, which is what we see in the present case.

However, even regardless of how the Egyptian names become interpreted, we can state with perfect certainty that we see perfect correspondence between our solution and the zodiacs of Athribis in the area of the summer solstice horoscope. Even the minor details coincide. Apart from that, we have discovered a very noteworthy phenomenon – apparently, the beginning of the year as implied in the zodiacs from Athribis isn't counted from September, as we find it to be the case with other Egyptian zodiacs that we studied, but rather June or March; in the next section we shall decide which of the two marked the New Year in the zodiacs under study.

1.8. Verification by the "scene of meeting in Leo"

Let us now check the dating we got for the Upper Zodiac for correspondence to the additional "scene of meeting in Leo". This scene is present in the perimeter scene, to the left from the Upper Zodiac; we have studied it in detail above, in CHRON3, Chapter 18:1.8. The symbolic scene represents the meeting of a two-faced man (most probably, Mercury) and another male figure, which must stand for another "male planet". It can be Saturn, Jupiter or Mars. Both figures are standing on the back of a lion holding hands; the lion (lioness?) has got a human (possibly female) face. Bear in mind that a lioness – especially one with a female head, stood for Venus in Leo according to the general laws of Egyptian astronomical symbolism. We came across this symbol in a variety of different zodiacs from Egypt.

Let us consider the situation in Leo when Venus and Mercury were passing through the constellation on the year of our solution. These planets are never

too far away from the Sun, and so we know the approximate time of this event – namely, the period between July and September when the Sun travels through the constellations of Gemini, Cancer, Leo and Virgo.

We are once again forced to consider two options at once that correspond to different traditions of beginning a year. Since the date of the Upper Zodiac fell on May in our solution (13 May 1230), we shall have to search for whatever phenomena the scene stands for in July-September 1230, whereas in case of a summer year, or one that would begin around the time of summer solstice, the previous year will have to be considered (1229). In that case, the May dating for the Upper Zodiac from 1230 shall wind up in the June year that began in June 1229 and ended in June 1230.

It will also be extremely interesting to find out what tradition of beginning a year the authors of the zodiacs from Athribis adhered to. We already discovered that the years reflected in these Zodiacs had an unusual beginning, which fell over June or March. On the other hand, the zodiacs from Athribis also stand alone due to containing no other secondary horoscopes except for the horoscope of summer solstice. The three other constellations that house the solstice and equinox points (Virgo, Pisces and Sagittarius) aren't singled out in any way at all. One should mark that the symbols of these points are still present in the perimeter strip of figures found in the Athribis zodiacs, but summer solstice obviously enjoys very special attention. The symbols of all other equinoxes and solstices are separated from corresponding constellations and simply placed in the perimeter strip. Once again, let us emphasise that none of the above is typical for Egyptian zodiacs.

And so, let us commence with searching the "scene of meeting in Leo" in 1229 or 1230. Our astronomical calculations, as well as verification in Turbo-Sky, demonstrate that in July-September 1230, when Venus and Mercury were passing through Leo, the three other planets (Mars, Saturn and Jupiter) were at a considerable distance from the pair, Mars being in Aquarius, Saturn in Pisces, near the border with Aquarius, and Jupiter in Gemini. There could therefore be no "meeting" between Mercury and any male planet in Leo that year. In general, we failed to find
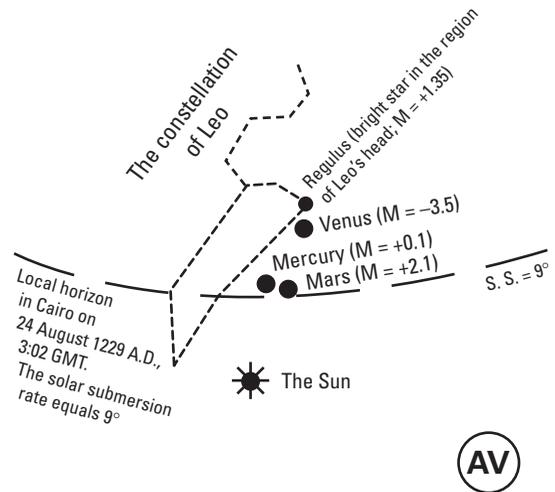

Fig. 18.3a. Mercury meeting Mars in the sky above Cairo before the dawn of 24 August 1229, the same June year that contains the date of the Upper Zodiac from Athribis. We see the moment that Mars rose at 3:02 AM GMT, when the solar submersion rate had equalled 9 degrees. It was still rather dark, in other words. One could see Mars and Mercury near the horizon and Venus somewhat further above, next to Regulus. The correspondence with the "scene of meeting in Leo" from the Upper Zodiac of Athribis is ideal. The drawing is approximated (calculated in Turbo-Sky).

any other astronomical situation that would relate to this rather vivid Egyptian scene in 1230.

However, we instantly find a correspondence in 1229, and an ideal one at that – namely, on 24 August 1229, the constellation of Leo rose before sunrise in Cairo; it had housed three planets – Mercury, Mars and Venus. In full accordance with the scene, Mercury and Mars are very close to each other (the distance between the two only equalled one degree). Venus was at the distance of two degrees from Regulus (the Alpha of Leo) – the brightest star in this part of the sky, located approximately near the head of Leo.

All the abovementioned planets, likewise Regulus, were visible well before sunrise in Cairo, at 3 AM GMT, at the solar submersion rate of 9 degrees. Mercury and Mars rose simultaneously at this point; Venus and Regulus had already risen over the horizon noticeably, qv in fig. 18.3a. The luminosity of Mercury had equalled +0.1, and that of Mars, +2.1, which made them resemble bright stars. Therefore, Mars and Mer-

cury were visible perfectly well before dawn in Cairo, let alone Venus and Regulus. Don't forget that the brightest stars become visible when the solar submersion rate equals 7-8 degrees, qv in CHRON3, Chapter 16:7.3. However, dim stars disappear from sight at the solar submersion rate of 9 degrees already.

As a result, the celestial sphere in Cairo looked as follows before dawn: Mercury and Mars were right next to each other over the very horizon. A little above them one could see another pair of exceptionally bright stars – Venus and Regulus. All the other stars in this area of the sky had grown dim.

This is in perfect correspondence with the symbolic Egyptian scene with Mercury meeting another male planet. They meet on the back of a lion – in the constellation of Leo, that is. The proximity of planets to one another is emphasized by the fact that we see them hold hands. The lion they are standing on has a female head, which is a very explicit reference to Venus next to Regulus.

And so, all the astronomical conditions specified by the zodiacs of Athribis are satisfied to ideally in the solution of 1230 and 1268 that we discovered, which makes this solution exhaustive. Below we shall demonstrate there to be no other exhaustive solution for the zodiacs of Athribis, even in case of significant variations in their interpretation. The exhaustive solution in question therefore appears to be the only one possible.

1.9. The archaic June year as used in the zodiacs of Athribis

The corollary that we come to here is that the year would begin with summer solstice in the Athribis zodiacs, or in June according to the Julian calendar. Indeed, our verification of the secondary horoscope of summer solstice demonstrated that a year should begin in spring or in the summer – there can be no ideal correspondence between the solution and the secondary horoscope otherwise. On the other hand, after the verification of the "scene of meeting in Leo" we learnt that the year began with the summer solstice, according to the opinion of the zodiacs' author – in June, that is. All of the above is telling us that the beginning of a year really fell upon June – we simply have no other option.

It becomes clear why the summer solstice horoscope is emphasised in the Athribis zodiac, with no other secondary horoscopes present. If summer solstice marked the beginning of a year, the special attention that it gets is perfectly understandable – otherwise it would seem rather odd.

Nevertheless, in every other Egyptian zodiac that we studied the beginning of a year always fell on September and was tied to the point of autumn equinox. This may be an indication that the Athribis zodiacs are the oldest Egyptian zodiacs known to us, and so they represent the archaic tradition of beginning the astronomical year in the summer, making the summer solstice mark the beginning of a new year.

This assumption is also confirmed by the dating of the Athribis zodiacs. The solution that we came up with dates them to the second half of the XIII century; they must have undergone no alterations ever since, remembering as how the funereal cave with the zodiac had remained completely buried in the sand for a long time. They were discovered during excavations, when the sand was removed, by the famous English archaeologist Flinders Petrie at the very beginning of the XX century, qv above.

It is therefore most likely that all the other zodiacs that we had to study date to a much more recent epoch than the ones from Athribis, although the dates transcribed in them could be more ancient in some cases – the Dendera zodiacs, for instant, contain dates from the XII century A.D.

Let us also point out that the zodiacs of Athribis contain direct indications that they were compiled from actual celestial observation, with no additional astronomical calculations involved, which is yet another characteristic that makes them differ from other Egyptian zodiacs. The matter is that these zodiacs prove extremely precise about everything that concerns the visible part of the celestial sphere; however, once the invisible part comes into play (or the immediate solar vicinity), they instantly begin to yield minor errors and discrepancies.

We don't find anything in the way of such drastic differences between the way the visible and invisible celestial areas are drawn in any other Egyptian zodiac, which indirectly confirms our theory that most of them were either calculated, or at least backed up by additional astronomical calculations. However, we

don't find a single trace of such calculations anywhere in the zodiacs from Athribis, which would be only natural for truly ancient zodiacs.

1.10. Final identification of the planetary birds

Let us now consider the final identifications of planetary birds from the Athribis zodiacs implied in our solution. According to identification option A5, which led us to the exhaustive solution, the three planets that had remained without identification primarily – namely, Jupiter, Saturn and Mars, are represented in the zodiac as follows:

Jupiter is the bird with the head and the tail of a serpent. It is marked as number 2 in fig. 18.3.

Saturn is the bird with the crescent-shaped horns on its head, marked as number 1 in fig. 18.3.

Mars is the bird with folded wings, the tail of a serpent and a large beak of a predator marked as number 3 in fig. 18.3.

What can we say about the resulting identifications? The primary thing is that they do not contradict any planetary symbols that we found in other Egyptian zodiacs. The crescent over the head of a planetary figure is really an attribute of Saturn; this is the case with the zodiacs from Dendera and Esna. Mars looks like a bird of prey, which corresponds well with the "militant" reputation of the planet. Bear in mind that, according to mythology, Mars is the god of war. As for the "serpent-like" appearance of Jupiter, it concurs with the opinion of Flinders Petrie, who was the first to study the zodiacs. He had been of the opinion that the bird with the bodily parts of a serpent is Jupiter, who "casts serpent-like thunderbolts" ([544], Volume 6, page 731). This doesn't confirm the correct identification of Jupiter per se, but somehow indicates it to be quite natural.

Thus, we see that all three planets (Saturn, Jupiter and Mars) became identified just like one should expect, taking into consideration everything that we already know about Egyptian astronomical symbolism. Let us emphasise that we did not choose identifications specifically; they became clear from our exhaustive solution automatically. Therefore, excellent concurrence between the arising identifications and the symbolism of other Egyptian zodiacs serves to confirm the correctness of our approach once again.

1.11. Verification of the solution's stability

We have performed some additional calculations in order to estimate whether the exhaustive solution that we came up with for the Athribis zodiacs can be affected by possible (although unlikely) changes in their interpretation.

Firstly, we have calculated all the options where the solar and lunar symbols can swap places. We often witnessed that the symbols of the Sun and the Moon in Egyptian zodiacs are often easy to confuse for each other. Although the symbols of the Sun and the Moon in the zodiacs of Athribis speak for themselves eloquently enough, we decided to perform these calculations nonetheless, for the sake of security. However, no new pair of solutions was found. We came up with a total of two solutions for the Upper Zodiac, identification option A1 (6-9 June 1108 A.D. and 14-16 June 1962 A.D.), and a single solution for the same Upper Zodiac, identification option A3 (19-22 June 1522 A.D.). There are no solutions for the Lower Zodiac whatsoever. Therefore, the problem of identifying the Sun and the Moon in the zodiacs from Athribis can therefore be considered solved.

Secondly, we have performed calculations applying less rigid criteria to the distribution of planets across constellations – namely, the planets forming groups and located under Taurus in the Upper Zodiac and under Capricorn, Aquarius and Pisces in the Lower Zodiac, were allowed to form random orders, not necessarily in the constellations located above them. The assumption was that whenever a large group of planetary figures becomes congregated in a particular area of a zodiac, their correspondence with constellation figures might be broken due to lack of space. Respective calculations for the Athribis zodiacs are described in detail in Annex 6. However, we came up with no new exhaustive solutions.

Thus, the solution that we discovered for the zodiacs from Athribis is most probably unique.

1.12. Corollaries

The astronomical solution found for the zodiacs from Athribis was successfully verified by both of the primary horoscopes, as well as the entire bulk of additional astronomical information present in the zo-

diacs with no exceptions – namely, the secondary horoscope of summer solstice in the Lower Zodiac and the auxiliary astronomical "meeting scene in Leo" in the Upper. We discovered absolute correspondence between the solution in question and the zodiacs from Athribis, stipulating that the year began with summer solstice in June. It turned out that the one of the zodiacs at least (the Lower) was compiled directly from the results astronomical observations, with no additional astronomical calculations for invisible planets.

The date transcribed in the Upper Zodiac is 15-16 May 1230 A.D.

The date transcribed in the Lower Zodiac is 9-10 February 1268 A.D.

Therefore, the zodiacs from Athribis were created in the second half of the XIII century A.D. the earliest.

The Athribis zodiacs imply that the year began in June, before the day of summer solstice or right on that day. This is where they differ from most of the other Egyptian zodiacs, where the year begins in September and happens to be linked to the autumn equinox point. This might imply that the zodiacs of Athribis were created much earlier than all the other Egyptian zodiacs that we studied.

2.
THE THEBAN ZODIAC OF BRUGSCH ("BR")

We already discussed Brugsch's Theban Zodiac in detail above, in CHRON3, Chapter 13:4. In particular, we related the history of how an "extremely ancient" Egyptian wooden coffin was discovered in the XIX century, whose manufacture involved the use of modern joinery techniques. The coffin was presented to Heinrich Brugsch, the famous German Egyptologist of the XIX century. Brugsch discovered an "ancient" Egyptian zodiac on the inside of the coffin lid. A drawn copy of this spectacular zodiac made by Brugsch himself can be seen above, in fig. 12.17.

In the middle of the zodiac we see "the goddess Nuit" wearing an elegant tunic, with zodiacal constellations and other figures drawn to her left and right, as well as a number of demotic subscripts near the constellation figures to the left of Nuit. Brugsch had developed a great interest in the finding, and

published the zodiac in his work shortly afterwards ([1054]).

Having read the demotic subscripts, Brugsch discovered that they stand for the names of planets. In other words, there was a horoscope inscribed on the zodiac – one that we refer to as the demotic subscript horoscope from Brugsch's zodiac.

The problem of dating the demotic subscript horoscope was studied by N. A. Morozov ([544], Volume 6). Morozov performed a great body of work in order to date the horoscope astronomically. We must emphasize that there were no interpretation problems involved in this case. The names of all planets were written explicitly next to the figures of the constellations that housed them, qv in fig. 13.14 above.

The result of Morozov's research proved totally flabbergasting. The demotic subscript horoscope only has two precise solutions for the entire historical interval between deep antiquity and the present. They are as follows:

1682 – the first solution obtained by N. A. Morozov for the demotic horoscope;

1861 – the second solution obtained by N. A. Morozov for the demotic horoscope.

Qualitatively, both solutions are virtually equal, qv in CHRON3, Chapter 13:4, where we discuss N. A. Morozov's solutions in detail. The horoscope has no other remotely satisfactory solutions.

N. A. Morozov decided to choose the first solution (1682 A.D.), having considered the second one too recent to be true. Indeed, Brugsch published the zodiac in 1862, which postdates the dating suggested by the solution by just one year (see [1054]).

However, we have discovered two more full horoscopes in the very same zodiac of Brugsch; these aren't subscripts, and form an integral part of the zodiac's artwork. These zodiacs were neither noticed by Brugsch, nor by Morozov. Each of them conceals a certain date. The case we have here is extremely convenient for the purposes of astronomical dating. The same zodiac contains a whole of three full zodiacs – three dates, in other words. It is clear that we are most likely to come up with a reliable dating for a zodiac such as this one, since three dates from a single sarcophagus must all belong to the same epoch.

The two new horoscopes in Brugsch's zodiac became dubbed "the horoscope without rods" and "the

Fig. 18.4. A fragment of Brugsch's zodiac (BR) with the "horoscope without rods". The horoscope figures are located in a separate strip underneath the constellation figures. We see the following figures in this strip (found on the right of the "bullfighting" scene): Venus (with a lioness and a crocodile underneath), an ape (additional symbol, possibly related to Venus), the Sun (a bird), Mercury, Jupiter, Saturn and Mars. Taken from [544], Volume 6, page 696.

horoscope with boats", qv in Chron3, Chapter 13:4, where we study the issue meticulously.

Let us proceed with the interpretation of the dates transcribed in the horoscopes from Brugsch's zodiac.

2.1. The demotic subscript horoscope in Brugsch's zodiac

We hardly have anything to complement N. A. Morozov's analysis. We have verified all of his calculations very carefully; they proved perfectly correct, qv in Chron3, Chapter 13:4.

Thus, the horoscope of demotic subscripts has two solutions – 1682 and 1861 a.d. However, we shall not reject the second solution like Morozov had done. Should it prove erroneous, it will be rejected automatically, once we estimate the dates from the two other horoscopes of Brugsch's zodiac. It will be most edifying to see whether the solutions shall be closer to the epoch of 1682 or that of 1861. After all, we must be prepared to any sort of surprises now that we know of the chaos reigning in the traditional version of Egyptian history and chronology.

2.2. The horoscope "without rods" from Brugsch's zodiac

Planetary figures of the horoscope "without rods" are presented as a separate strip in Brugsch's zodiac; we see it to the left of Nuit, where we found the de-

motic subscripts. We cite a close-in of a fragment of Brugsch's zodiac in fig. 18.4; see also the coloured version of Brugsch's zodiac compiled by the authors in fig. C12, where the planets are highlighted yellow.

We have conducted an extensive study of all the planetary figures from this horoscope in Chron3, Chapter 15 – see also Chron3, Chapter 15:4, or the section on the planetary symbolism of the primary horoscope. We shall refrain from reiterating the analysis, and merely formulate its result once again (see fig. 18.4).

The following scenes and figures from the primary horoscope are drawn in the zodiacal strip "without rods" (as shown in fig. 18.4, observed left to right):

1) The scene with the slaughter of a calf, or "bullfighting" ("corrida"), qv in Chron3, Chapter 15:9.5.

2) The symbol of Venus – a lioness with a crocodile underneath, qv in Chron3, Chapter 15:4.8.

3) A sitting baboon. We are uncertain about the exact meaning of this symbol; however, the information that we have at our disposal suffices to assume it to be an auxiliary symbol of the Sun or Venus; alternatively, it can represent the Moon. See more in re the possible identification of the baboon as a lunar symbol below, in Chron3, Chapter 18:2.5. For the meantime, let us assume that the baboon represents one of the following:

3a) It might be an auxiliary symbol of the Sun, which is represented by the bird on the right. This interpretation is viable, since the figures of baboons ac-

companied the Sun drawn at sunrise or sunset in Egyptian symbolism ([1051:1], pages 45-46).

3b) Another option is that we are confronted with an auxiliary symbol of Venus. We see the planet right next to the sign, on its left. Indeed, we see the dusk/dawn symbol that looks like two little animals with their backs grown together; one of them is a similar baboon, qv in CHRON3, Chapter 15:9.3 above.

Let us point out that since the figure of the baboon is located right in between the symbols of the Sun and Venus, both of the options mentioned above lead to the same interpretation of the zodiac "without rods", and therefore also a single astronomical solution thereof. Another possibility is that the baboon is a lunar symbol. This affects the interpretation of the horoscope to some extent, but we come up with the same solution nevertheless, qv in CHRON3, Chapter 18:2.5 below.

4) The solar symbol that looks like a large bird. Such birds often stand for the Sun in Egyptian horoscopes, qv in CHRON3, Chapter 15:4.13.

5) The figure of Mercury – a male with a human head, qv in CHRON3, Chapters 15:4.2, 15:4.3 and 15:4.9.

6) The figure of Jupiter is a man with a simian head, qv in CHRON3, Chapters 15:4.2 and 15:4.6.

7) The figure of Saturn looks like a man with the head of a jackal, qv in CHRON3, Chapters 15:4.2 and 15:4.3.

8) Mars is represented by a male figure with the head of a falcon, qv in CHRON3, Chapters 15:4.2 and 15:4.7.

A comparison of these symbols to the figures of constellations one finds nearby, in the adjacent zodiacal strip (see fig. 18.4) gives us the following horoscope.

THE HOROSCOPE "WITHOUT RODS" FROM BRUGSCH'S ZODIAC:

Sun in Virgo or Libra.

The Moon isn't drawn anywhere.

Saturn in Scorpio.

Mercury in either Libra or Scorpio. We find it in Libra, but it is possible that all four planets (Mercury, Jupiter, Saturn and Mars) are drawn in conjunction. All of them must therefore be in Scorpio.

Mars in Sagittarius or in Scorpio.

Venus in Leo.

Jupiter in either Libra or Scorpio.

The corresponding data file for the Horos application is cited in Annex 4.

The horoscope has a total of three solutions on the historical interval – 73 A.D., 250 A.D. and 1841 A.D.

Odd as it might seem, the only date that is close to the solution from the demotic subscript horoscope is 1841 A.D., no less.

Let us cite the precise positions of planets on the ecliptic for the solution of 1841 that we came up with for the horoscope "without rods". As usual, we specify the longitude of a planet on ecliptic J2000 in the first row of numbers underneath the names of planets, with the respective positions on the "constellation scale" provided below (see CHRON3, Chapter 16:10).

Julian day (JD) = 2393762.00 <The horoscope "without rods">
Year/month/date = 1841/10/6 (old style) = 18 Oct 1841 A.D.

Sun	Moon	Saturn	Jupiter	Mars	Venus	Mercury
207.2	254.1	270.5	259.4	271.1	174.5	229.9
5.80	7.58	8.11	7.76	8.13	5.00	6.69
Virgo	Scorpio	Sagitt.	Scorpio	Sagitt.	Vir/Leo	Libra

Average deviation from "best points" (sans Moon): 13.3 degrees.

However, let us refrain from jumping to conclusions and see what we learn from the third and final horoscope in Brugsch's zodiac – the horoscope "with boats".

2.3. The horoscope "with boats" in Brugsch's zodiac

The planets from the horoscope "with boats" as found in Brugsch's zodiac are also secluded in their own strip, likewise the planets from the previous horoscope, but to the other side from the figure of Nuit – to the right and not to the left. We cite a close-in of the related fragment of Brugsch's zodiac in fig. 18.5; see also the coloured version of Brugsch's zodiac in fig. C12, where the planets are highlighted in yellow, which was also the case with the zodiac above. Both zodiacs are located on different sides of the goddess Nuit, so as to keep the figures of the two from mingling and evade the otherwise inevitable confusion.
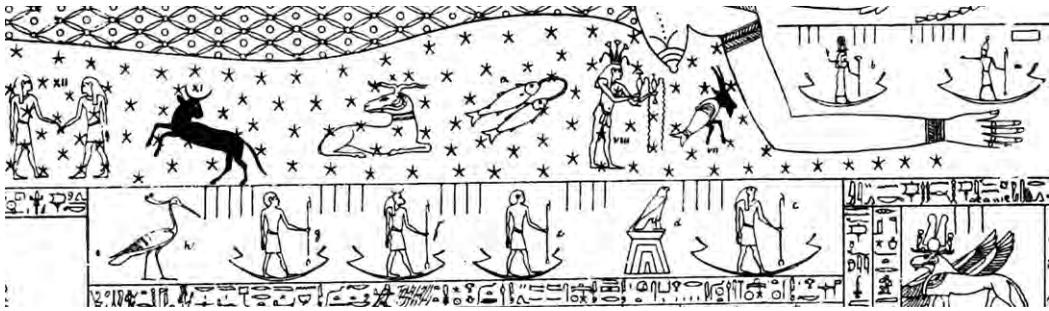
Fig. 18.5. A fragment of Brugsch's zodiac (BR) depicting the "horoscope with boats". Left to right: Mercury – Saturn – Mercury (the fast Mercury takes over the slow Saturn), the Sun (bird on a dais), Mars, Venus (already over the arm of Nuit in the other half of the zodiac) and Jupiter (reaching a hand out to Venus). Taken from [544], Volume 6, page 696.

All the planetary figures from the horoscope "with boats" were already studied above, in Chron3, Chapter 15. This is also where we explain our choice of all the planetary identifications used herein. The reader can find more information on the subject in the respective subsection of Chron3, Chapter 15:4, where we analyse planetary symbolism of primary horoscopes from Egyptian zodiacs. We shall simply quote the end result here.

We find the following planets in the strip that contains the "horoscope with boats" as seen in Brugsch's zodiac. We shall list them from left to right, in accordance with how we see them presented in fig. 18.5.

1) The first symbol from the left of the strip is a bird with a long beak and long legs is of an auxiliary nature and doesn't represent any planet.

2) Mercury is the man in a boat who's got a human head and a canonical planetary rod in his hand.

3) Saturn is the man in the boat with a bovine head and a pair of crescent-shaped horns; he is also holding a canonical planetary rod in his hand.

4) The second figure of Mercury is just like the first, but already shown on the other side of Saturn. What we see here is two figures of Mercury – one in the horoscope and the other next to Saturn. Alternatively, it could have "taken over" Saturn during the days covered by the horoscope.

5) The Sun is the bird on a dais. A similar bird with no dais underneath also stands for the Sun in the horoscope "without rods" on the other side of Nuit.

6) Mars is the man in a boat with the head of a falcon and a canonical planetary rod in his hand.

7) Venus is the woman in a boat holding a canonical planetary rod. It is drawn separately, over the arm of Nuit. The meaning might be that Venus had migrated towards the other half of the celestial Zodiac that we see on the left of Nuit – namely, the constellation of Sagittarius (however, it is possible that it is still drawn in Capricorn, qv in fig. 18.5).

8) Jupiter is the man in a tall headdress with a similar planetary rod. He is drawn giving his hand to Venus, drawn right next to the latter, over the arm of Nuit. We see no more figures further to the right – Jupiter is located at the very edge of Brugsch's zodiac.

A comparison of the symbols' disposition to the constellation figures in the nearby zodiacal strip (see fig. 18.5) shall give us the following horoscope.

HOROSCOPE "WITH BOATS" FROM BRUGSCH'S ZODIAC:

The Sun is in either Aquarius or Capricorn.

The Moon is absent from the horoscope.

Saturn in Aries.

Mercury is shown twice – in Pisces and in Taurus. It passes Saturn by.

Mars in Capricorn.

Venus is either in Capricorn, or already in Sagittarius, on the other half of the Zodiac.

Jupiter is in either Capricorn or Sagittarius.

The input data file for the Horos program that corresponds to this most noteworthy horoscope, which must finally tell us the date when Brugsch's zodiac was manufactured, are cited in Annex 4. Astronomical calculations demonstrate that the horoscope

"with boats" from Brugsch's zodiac only has two solutions on the entire historical interval, namely, 999 A.D. and 1853 A.D.

We are getting clear indications that Brugsch's zodiac dates from the XIX century! There is no other explanation to the fact that the dates of all three horoscopes only converge once on the entire time axis, their scatter range being minimal – 1841, 1853 and 1861 A.D. The date of the demotic subscript horoscope, which was apparently the last one transcribed in the zodiac, is indeed the most recent one of the three – 1861.

We must point out that there are very few possible solutions for each of the three horoscopes from Brugsch's zodiac – one to three of them on the entire historical interval. Therefore, the chances that they might converge in one point randomly are all but nonexistent. Since they did in fact converge, all we can do is admit that we have finally discovered the correct dating of Brugsch's zodiac in the second half of the XIX century.

Let us specify exact planetary positions on the ecliptic for the 1853 solution of the "horoscope with boats".

Julian day (JD) = 2397912.00 <The horoscope "with boats">
Year/month/date = 1853/2/15 (old style) = 27 Feb 1853 A.D.

Sun	Moon	Saturn	Jupiter	Mars	Venus	Mercury
340.9	210.2	45.0	263.9	333.9	321.7	341.9
10.67	5.87	0.74	7.91	10.25	9.72	10.73
Aquar.	Virgo	Aries	Scorp.	Aqua/Cap	Capric.	Aqua/Pisc

Average deviation from "best points" (sans Moon): 26.5 degrees.

Let us provide some explanations for the solution.

1) Mercury was in Aquarius. However, it had been at a mere five degrees from the cusp of Aquarius and Pisces. Therefore, according to our rule that the borders between constellations can be crossed by 5 degrees maximum due to a certain vagueness in the definition of said borders, qv in CHRON3, Chapter 16. The position of Mercury in the solution of 1853 still conforms to the specifications of the "horoscope with boats". However, if we're to turn to the copy of Brugsch's zodiac, we shall see that Mercury may well
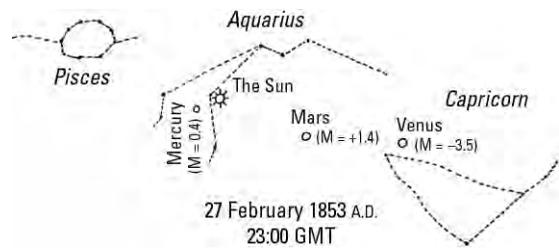

Fig. 18.6. "Horoscope with boats" from Brugsch's zodiac (BR). The celestial disposition of the planets that wound up in the vicinity of Aquarius on 27 February 1853 A.D. (15 February in the Julian calendar). Calculated in Turbo-Sky. The drawing is approximated.

have been in Aquarius near the cusp with Pisces, qv in fig. 18.5. Its figure is close enough to Aquarius. Let us point out that Mercury was invisible in the sky that day, since it had been too close to the Sun. The disposition of the Sun, Mercury, Mars and Venus on the celestial sphere for 27 February 1853 is shown in fig. 18.6.

2) It turns out that the second figure of Mercury that we find in a boat on the left of Saturn isn't part of the horoscope. However, it must mean something – most likely, the "meeting" of Mercury and Saturn. Indeed, when Mercury was passing Saturn by in 1853, they had been very close to one another. The distance between the two only equalled some 30 minutes on 30 May 1853 (Gregorian calendar). Both Saturn and Mercury were visible in Cairo at dawn quite well, since they rose on 30 May 1853 at the solar submersion rate of 9-10 degrees; it was dark enough for even the less bright stars to be visible ([393], page 16). Both planets had high luminosity levels – +0.2 for Mercury and +0.7 for Saturn on the photometric scale, which made them look like stars of the first magnitude. Their conjunction was therefore visible perfectly well in the sky at dawn.

3) The average deviation from the "best points" in the 1853 solution proved to be rather tangible – circa 27 degrees. It is acceptable, nonetheless. Bear in mind that the precision of Egyptian zodiacs cannot be higher than half of a zodiacal constellation's longitude, or 15 degrees on the average. Therefore, the average discrepancy between the calculated planetary positions and their approximate "best points" as spec-

ified by the actual zodiac can occasionally equal 20-30 degrees, which is possible if the zodiac wasn't drawn very accurately. One might well assume that Egyptian zodiacs didn't all conform to the same standards of accuracy.

For the sake of completeness, let us also cite the planetary positions from the second solution of the horoscope "with boats" – 14 February 999 A.D.

Julian day (JD) = 2085987.00 <The horoscope "without rods">
Year/month/date = 999/2/14

Sun	Moon	Saturn	Jupiter	Mars	Venus	Mercury
344.9	289.1	49.0	265.7	322.6	301.6	.4
Aqua/Pisc	Sagitt.	Aries	Sco/Sag	Capric.	Cap/Sag	Pisc/Aqua

Average deviation from "best points" (sans Moon): 13.5 degrees.

This solution corresponds to the disposition of planetary figures in the horoscope "with boats" from Brugsch's zodiac – however, it lies at too great a distance from the possible solutions of the two other horoscopes in the same zodiac. The temporal gap between them equals more than 600 years, which is perfectly unacceptable for funereal horoscopes from the same coffin lid. The dates from a coffin must be close to each other. We must therefore stop at the solution of 1853, which – and we must stress this specifically, also corresponds to the horoscope "in boats" quite satisfactorily.

However, it becomes clear why neither of the "original" horoscopes (as opposed to the subscripts) from Brugsch's zodiac contains the moon. Indeed, we might recollect that the Moon was absent from both the zodiac "without rods" and the one "with boats". The horoscopes in question date to the XIX century, when the fact that the Moon is a satellite of the Earth and not a planet had been known widely enough, whereas in ancient astronomy the Moon always ranked amongst planets.

Indeed, we have seen that the compilers of the authentically old Egyptian horoscopes always tried to include the Moon, whereas their XIX century descendants could already "neglect" it, having learnt of the fact that the Moon wasn't really a planet from textbooks on astronomy.

2.4. Corollaries

We are therefore led to the conclusion that Brugsch's zodiac was manufactured in the second part of the XIX century. Brugsch's acquaintance with the zodiac took place shortly afterwards; he was careless enough to have mistaken it for an "ancient" specimen of Egyptian funereal art. The "demotic horoscope" must have been inscribed in the zodiac right before it was shown to Brugsch. Also, it was most probably calculated for a date in near future. It was a simple enough task in the XIX century – one would simply need some astronomical reference book, and those could be purchased in any shop. The "ancient" demotic names of planets could be copied from the works of the very same Brugsch, for instance, or one of his fellow Egyptologists.

By the way, "ancient" Egyptian coffins such as the one found by Brugsch can be seen in almost every large museum. However, their lids are hardly ever shown to us from the inside at all – and this is where the funereal zodiacs were drawn most frequently. Apparently, it's safe enough to view them from the outside, whereas the reverse remains taboo for some reason. Some of the historians who work as museum consultants must have read Morozov's works and realised that these zodiacs are best left beyond the reach of the general public, lest the latter might begin to ask uncomfortable questions about the Scaligerian version of Egyptian history and chronology. Egyptologists must value their quite lives spent in solving the "insoluble riddles of the Ancient Egypt" high enough.

2.5. The version with the baboon representing the moon in the "horoscope without rods"

In the present section we shall study the above-mentioned interpretation version of the "horoscope without rods" from Brugsch's zodiac where the sitting baboon represents the Moon and not the Sun, qv in fig. 18.4. The interpretation shall remain the same in every other respect, and so the end answer is unlikely to be affected much. Nevertheless, the considerations that we voice below might prove crucial for the dating of other Egyptian zodiacs that we haven't had the chance of studying as to yet, ones whose symbolism is identical to that of Brugsch's zodiac.

Fig. 18.6a. Ancient Egyptian figurine of a sitting baboon with a crescent and the solar circle on his head. Egyptologists are of the opinion that this baboon represented Thoth, the Egyptian lunar god. Taken from [1215:1], page 86.

Above, in our analysis of the "horoscope without rods" from Brugsch's zodiac, we were of the opinion that it doesn't contain the Moon at all. However, it was noted that the baboon figure in the horoscope might stand for the missing Moon, qv in fig. 18.4. We couldn't identify the baboon as a lunar symbol, since we found no such precedent in any of the zodiacs that we had studied previously.

Let us turn to other "ancient" Egyptian artwork that doesn't necessarily relate to zodiacs of any kind and see whether we can find a similar baboon figure, and, if so, its usual context. It turns out that the symbol of a baboon (known as *cynocephalus*, or the ape with a canine hear) is known rather well to Egyptologists ([1051:1], pages 45-46). It is indeed used as a solar and lunar symbol ([1051:1], pages 45-46; also [1215:1], page 86). For instance, it is presumed that these baboons accompany the Sun at dusk or at dawn in Egyptian symbolism ([1051:1], pages 45-46). On the other hand, the very same baboon is considered "the Egyptian Moon god" ([1051:1], pages 45-46; also [1215:1], page 86). Once again we witness the fact

that Egyptian solar and lunar symbols would often resemble each other to the extent of being indistinguishable.

Furthermore, we discover that the Egyptian baboon (or cynocephalus) would often be drawn with a crescent and a circle over its head – solar and lunar attributes, in other words. Corresponding references are found in [1215:1], page 86, [1378:1], page 64, [1009:1], page 151, and also [1291], Tables 29(b) and 33(c). One of such drawings was cited in fig. 18.6a. Sometimes we find no such symbol on the head of the baboon, which is the case with Brugsch's zodiac; however, in such cases we usually find a solar figure close nearby. For instance, in the so-called "Tomb of Sennedjem" (the Luxor necropolis) we find drawings of two baboons similar to the ones from Brugsch's zodiac, sitting on either side of the solar boat as if they were protecting it, or merely serving as members of its entourage, qv in [1378:1], page 170, and [1009:1], page 200.

Thus, we see that the baboon was related to either the Sun or the Moon in Egyptian symbolism. As for Brugsch's zodiac, we already considered the possibility of identifying the baboon as a secondary solar figure above. Let us now see what result we shall get with the version where the baboon identifies as the Moon. Bear in mind that we're referring to the horoscope "without rods" from Brugsch's zodiac.

If the baboon is a lunar symbol, we shall get the following particularised interpretation of the horoscope. It coincides with the above completely, the only exception being that before we didn't specify the position of the Moon on the ecliptic, whereas now it is defined by the figure of the baboon. Therefore, the Moon must be located in Leo or in Virgo, qv in fig. 18.4. It is natural that the number of solutions can only diminish, since we introduce additional conditions. However, we already found a satisfactory solution, and a unique one, at that – 1841 A.D. Thus, all we need to do is verify the position of the Moon in the solution. It turns out that the new conditions are met as well; the best date is shifted by a mere two days – from the 6 to the 4 October 1841 (as usual, all the calculated dates are given in accordance with the Julian calendar).

Let us cite the source data and the planetary positions for the more precise solution of the horoscope "without rods" with the lunar position accounted for.

The horoscope "without rods" including the Moon:

> *Sun* in either Virgo or Libra.
>
> *Moon* in either Leo or Virgo (sitting baboon).
>
> *Saturn* in Scorpio.
>
> *Mercury* in either Libra or Scorpio.
>
> *Mars* in either Sagittarius or Scorpio.
>
> *Venus* in Leo.
>
> *Jupiter* in either Libra or Scorpio.

Calculations demonstrate that the same horoscope with the lunar position and the planetary order accounted for retains the same three solutions on the entire historical interval, namely:

> 19 October 73 a.d.;
>
> 13 October 250 a.d.;'
>
> 4 October 1841 a.d.

We use a single day out of the few that fit the conditions of the horoscope for each solution. All the dates are Julian; bear in mind that the Julian date of 4 October 1841 corresponds to the Gregorian date of 16 October 1841, since the difference between the two calendars equalled 12 days in the XIX century.

The solution of 1841 is presented in fig. 18.6(b), which is where we see planetary positions for the morning of 4 October 1841 a.d. (equalling 16 October in the Gregorian calendar).

One needs to make the following observations in re the solution.

1) The Moon was new that night, and therefore invisible. It is little wonder, then, that the position of the Moon in the horoscope "without rods" corresponds to the last moment of its visibility in the morning of 1 October 1841. Since the moon was invisible on the two nights between the 2/3 and 3/4 October, this "shifted" position of the corresponding figure in the horoscope is easy to explain and also quite natural. We cannot expect the ancient Egyptian zodiacs to contain positions of invisible planets calculated with precision. Our analysis of the Egyptian zodiacs demonstrates that the compilation of regular funereal zodiacs did not involve complex astronomical calculations. Au contraire, in case of the monumental temple zodiacs one gets the feeling that their manufacture was accompanied by complex calculations aimed at raising precision.

2) Saturn and Mars were virtually at the same longitude in the solution of 4 October 1841, but their lat-
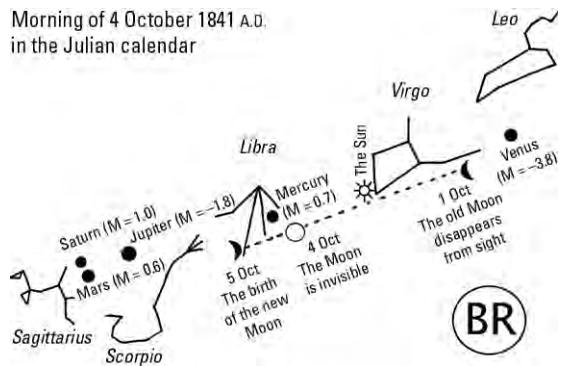

Fig. 18.6b. The solution of the "horoscope without rods" as seen in Brugsch's zodiac, with the Moon accounted for. We see the planetary positions for the morning of 4 October 1841 a.d. (16 October in the Gregorian calendar). The Moon was invisible that night, likewise the night before. Brugsch's zodiac indicates the last visible position of the Moon. The respective latitudes of Saturn and Mars all but coincided. Calculated in Turbo-Sky.

itudes differed from each other drastically, qv in fig. 18.6b. Therefore, the exact order of Mars and Saturn on the ecliptic was extremely different to estimate from either observations or approximate calculations. The implication is that their order in the zodiac is likely to be arbitrary.

Let us conclude with citing the precise ecliptic longitudes of the planets for the solution of 4 October 1841. As usual, the first row of numbers underneath the names of the planets contains planetary longitudes for the ecliptic J2000. We find the respective planetary positions on the "constellation scale" as described in Chron3, Chapter 16:10 right below.

Julian day (JD) = 2393760.00 <Horoscope "without rods">
Year/month/date = 1841/10/4 (old style) = 16 October 1841.

Sun	Moon	Saturn	Jupiter	Mars	Venus	Mercury
205.2	228.1	270.4	259.1	269.7	172.0	227.4
5.75	6.60	8.11	7.75	8.09	4.92	6.56
Virgo	Libra	Sagitt.	Scorpio	Sagitt.	Leo (inv.)	Libra

Average deviation from the "best points": 10.5 degrees.

Corollary. The solution of 1841 for the horoscope "without rods" that we came up with above

satisfies to the zodiacal data perfectly well if the sitting baboon is a lunar symbol, which corresponds to its interpretation in literature on Egyptology. The most fitting date becomes shifted from the 6 to the 4 October 1841 (18/16 October in the Gregorian calendar, respectively), and the average deviation of the planets from their "best points" falls from 13 to 10 degrees, including the Moon this time. Once again, the excellent quality of the solution obtained is confirmed insofar as planetary positions are concerned.

3.
THE "COLOUR ZODIAC FROM THEBES" ("OU")

Let us now turn towards "OU", the coloured zodiac from Thebes as shown in fig. 12.3.

The zodiac was discovered by the participants of the Napoleonic expedition into one of the sepulchres in the "Valley of the Kings" in Egypt. It is likely to have looked like a coloured fresco on the ceiling of the sepulchre. The zodiac was copied by the Napoleonic artists and published in the "Egyptian album" ([1100]), accompanied by the following inscription in French: "Tableau astronomique peint au plafond du 1er tombeau des rois à l'Ouest". The copy of the OU zodiac that we have used comes from this very album.

Above, in Chapter 17 of CHRON3 we already mentioned the royal Egyptian necropolis in the "Valley of the Kings", where the zodiac in question was found. Bear in mind that the temples of Dendera and Esna where the abovementioned zodiacs were found are also located near the same valley. As we have witnessed, the dates they contain relate to the epoch of the late XII – XV century A.D. The date transcribed in the Theban coloured zodiac OU, which was discovered in the actual Valley, would be most edifying deciphered and compared to the ones from the zodiacs of Dendera and Esna.

Let us proceed with the analysis of the zodiac. We must point out that we appear to have been the pioneers here, since we know of no earlier attempts of deciphering and dating the coloured zodiac of Thebes.

The Theban coloured zodiac OU has two halves, each of them a procession-like row of figures with a "goddess Nuit" of its own, qv in fig. 12.3. In one half of the zodiac, human figures have circles over their heads. In accordance with fig. 12.3, we shall be referring to this half as the top. The other half, whose figures have no circles over their heads, shall be known as the bottom half of the OU zodiac. As we shall see below, the primary horoscope of the coloured zodiac from Thebes is concentrated in the bottom half. The top half hardly contains any vital data at all. All we see here is the additional "bullfight" scene with the slaughter of a calf that we mentioned in CHRON3, Chapter 15:9.5, as well as a simplified duplicate rendition of the horoscope from the bottom half.

3.1. Constellation figures

In the centre of the zodiac's bottom half we see an agglomeration of figures; among them we instantly recognize the constellations of Leo, Scorpio and Taurus that look the same as they do in other Egyptian zodiacs.

Leo is drawn as an incumbent lion whose tail is stretched out; we see a tiny figure of Scorpio underneath. Likewise Leo, Scorpio is drawn with perfect precision. Furthermore, we see a man who holds something that resembles a dish or a tray in his hand underneath Taurus. We have therefore identified three constellation figures out of twelve. However, we don't recognize any members of their kin, which means the latter either look different, or were eschewed altogether.

We must point out that although it is of no importance to our further analysis, the nine remaining constellations are apparently present in the zodiac; however, they're drawn in a very abstract and unusual manner. Take a closer look at the figures from the left half of the bottom row. We see nine human figures here, one of them female. The bodies of the male figures are covered with dots of some sort; they resemble constellations, whose stars are also represented by dots in star charts, a great deal. These nine figures must therefore represent the remaining nine zodiacal constellations – Libra, Sagittarius, Capricorn, Aquarius, Pisces, Aries, Gemini, Cancer and Virgo. Obviously enough, the female figure (rightmost) represents Virgo. However, we must reiterate that their identity is of little importance to us, since there are no planetary symbols anywhere amongst the nine figures.

3.2. Planetary figures

Let us now try and locate the figures that represent planets. One should naturally expect to find them near constellation figures, since the very nature of a horoscope implies a certain distribution of planets across the constellations. Therefore, if the planetary symbols in our horoscope were at a great distance from the figures that stand for constellations, it would be impossible to determine the correct correlation, and the horoscope would cease to exist. If we are actually looking for a horoscope, we should expect to find planets right next to the constellations.

It has to be noted that there are no other symbols except for the actual figures anywhere in the abovementioned part of the horoscopes that contains the alleged constellation figures covered with dots. We see nothing remotely resembling a planetary symbol except for the inscription near the head of the woman that must stand for the constellation of Virgo, qv in fig. 12.3.

Planetary figures are however present next to the "real" constellation figures – Leo, Scorpio and Taurus. First of all, let us consider the three men in the bottom row, to the right from Leo's tail. The one in front simply touches the very tip of the lion's tail; all three have inscriptions next to their heads and point at something with their hands. They are followed by a few more male figures, whose hands aren't pointing at anything, and there aren't any inscriptions nearby, which must imply that the figures are silent, unlike the previous three that are clearly talking. Whatever it is that they're saying must be written next to their heads. They might be pronouncing the names of certain planets, as well as pointing at them. The planets must be "male", according to the figures that represent them.

Therefore, if there really is a horoscope in the zodiac, we must find three male planets in Leo or near Leo's tail (in Virgo, close to the border with Leo). Apart from that, we are beginning to realise that most of the planets we find in this zodiac have inscriptions next to them. Therefore, we must notice the presence of the latter in our search for the other planets.

We instantly find Venus – the only "female" planet. It must be represented by the female figure over Leo that also has an inscription next to its face. One can-

not help but notice that Venus wasn't included in the general group for some reason – it "looms over" the procession, as it were; we aren't quite certain as to what this should mean so far, but will mark this for later. We have witnessed it many a time that such details are hardly ever of a random nature and contain astronomical information of some sort, which will be clarified by the exhaustive and final solution.

The presence of Venus in Leo is by another symbol that we find here as well – the crocodile underneath Leo. We have already seen a similar pair of symbols in Brugsch's zodiac ("horoscope without rods"), where it stood for Venus in Leo. This must mean the same thing here, seeing as how the symbolism of Egyptian zodiacs conforms to certain general rules; otherwise it would be impossible to come up with any interpretations at all, let alone the extensive number of exhaustive solutions yielded in the course of our research. In other words, we are acting that all Egyptian zodiacs were using a uniform symbolic astronomical language. This language was naturally far from minimal, and could employ several symbols for referring to the same astronomical object. Nevertheless, a similar set of symbols encountered in the same constellation would mean the same thing in the most diverse zodiacs.

Therefore, the coloured zodiac from Thebes is telling us Venus was in Leo; there were four planets altogether in Leo or the part of Virgo that is the closest thereto, near the lion's tail. Let us try to estimate the identity of these planets.

Let us consider the row of figures on the right of Leo once again. We see the abovementioned three men with inscriptions near their heads in front. Then we see another male figure without any remarkable attributes – he isn't making any gestures, and there are no inscriptions nearby. We also see three similarly unremarkable male figures at the very end of the procession. These figures are likely to have no particular meaning, and serve the purpose of filling the space; otherwise they would possess individual distinctive characteristics. If we are to disregard the four clones, we end up with three male figures that take part in the procession and have very explicit planetary attributes already known to us from other Egyptian zodiacs. One of them has got the head of a jackal, another has got the head of an ibis, a bird with

a long beak that is curved near the tip, and the third one has the head of a falcon. We know all of these attributes perfectly well, qv in CHRON3, Chapter 15:4.2, 15:4.4 and 15:4.7. The head of a jackal or an ibis is an attribute of Mercury or Saturn. Bear in mind that Saturn has got the head of an ibis in the Lesser Zodiac of Esna, while Mercury has the head of a jackal in the Greater Zodiac. See CHRON3, Chapter 15:4.3 for more details. Finally, a falcon's head is the most usual attribute of Mars in Egyptian zodiacs, qv in CHRON3, Chapter 15:4.7.

Thus, we see Mercury, Saturn and Mars either in Leo or in Virgo closer to Leo.

It has to be pointed out that the confusion between Mercury and Saturn that can arise from similarity in their symbolism (see CHRON3, Chapter 15:4.4) are of little to no importance in the present case, since we see both planets in the same constellation – namely, Leo.

The only planets that remain are the Sun, the Moon and Jupiter. We shall try to find them.

Right underneath Leo, between the lion and the crocodile, we see the constellation figure that represents Scorpio. Since we see a "real" constellation here, Scorpio must house a planet (or several planets). We realise that the concept of the Theban coloured zodiac implies that only the constellations that contain planets are represented explicitly, whereas others are either missing altogether, or drawn very schematically.

In this case, there must be some planetary symbol near Scorpio. Indeed, we see a hieroglyphic inscription that resembles a semicolon to its left, and a very explicitly drawn crescent. The disposition of the crescent and its small size that corresponds to the size of Scorpio (and not Leo) is a direct indication that the Moon was in Scorpio. If we are to look at the crescent through a magnifying glass, we shall see that it is really a small crescent-shaped lizard.

Thus, the Moon is in Scorpio.

The planets that remain are the Sun and Jupiter. It is easy enough to locate them, since there are no other options left. Since we see Taurus here, it must house either Jupiter or the Sun. The latter cannot be in Taurus for purely astronomical reasons – it would be at too great a distance from Mercury and Venus otherwise (we have already seen that the two were in

Leo, separated from Taurus by two full constellations, Gemini and Cancer, occupying around 50 degrees of the ecliptic on the whole). Neither Venus nor Mercury can ever be found at this great a distance from the Sun. This means that Jupiter was in Taurus. It is drawn as a male figure that holds the symbol of Taurus high above its head on a tray. The corresponding inscription can be found at the level of Taurus – a little to the left, but further right than the two fantasy monsters that mark the boundary between the primary horoscope's scene as discussed presently and the "schematic constellations", or figures covered with dots. The inscription consists of three hieroglyphs and a bird underneath them.

Now we just need to find the Sun. However, there's just a single inscription left in the zodiac – several hieroglyphs and a bird that we see over the head of the woman at the very edge of the row of dotted figures, qv in fig. 15.49. The figures in question were hypothetically identified as "empty" constellations that contain no planets of the horoscope, whereas the actual female figure became identified as Virgo. We are therefore informed that the Sun was in Virgo.

Virgo is in the row of the "schematic" constellations for some reason, and not in the part of the horoscope where we find all the "real" constellation figures and all the rest of the planets. However, its figure isn't covered in dots, which makes it very unlike the rest of the figures in the row.

The position of the Sun in Virgo corresponds with the fact that Venus and Mars were in the neighbouring constellation of Leo perfectly well. The two other possibilities for the Sun (Leo and Cancer) that don't contradict the location of Mercury and Venus aren't confirmed by the actual zodiac in any way and are therefore considered redundant.

Moreover, the coloured Theban zodiac contains more indirect evidence to the fact that the Sun was in Virgo or close nearby on the date transcribed in the horoscope, but neither in Leo, nor in Cancer. Let us wonder why the figure of Taurus is raised high upon a tray? From the astronomical point of view, this must refer to the constellation reaching its culmination, or the highest possible point of the celestial sphere. As we already explained in CHRON3, Chapter 15:4.13, the culmination of Taurus indicates that the Sun was on the opposite side of the ecliptic, and could be in

Virgo, Libra, Scorpio or Sagittarius; Cancer and Leo are right out.

We can therefore be certain that the Sun is shown in Virgo.

3.3. The primary horoscope and the extra conditions

Our decipherment of the horoscope from the Theban coloured zodiac ends here. We have discovered all seven planets of the antiquity – the Sun, the Moon, Mercury, Saturn, Jupiter, Mars and Venus. All of them proved to be distributed across their respective constellations evenly. All the hieroglyphic inscriptions found in the zodiac were accounted for; there are seven of them, one for every planet.

It turns out that the entire horoscope is concentrated in the bottom half of the coloured zodiac from Thebes. There isn't a single inscription in the top half; the figures we find there are simplified duplicates of the same scenes and symbols that one finds in the bottom half. Thus, we see Mercury, Saturn and Mars right opposite the very same planets in the bottom row. The figures and the positions of their arms remain the same, but there are no inscriptions. Venus is represented by the pair of the lion and the crocodile, without a separate female figure. Jupiter is a one-armed figure accompanied by a very approximated drawing of Taurus. The lunar lizard is under the paw of the fantasy beast. The Sun is nowhere to be found, likewise the constellation of Virgo that housed in. However, one still sees an obvious similarity between the figures from the top row and the ones in the bottom row that oppose them.

Therefore, we aren't likely to find anything new apart from what we already found in the bottom row. We should therefore consider the primary horoscope sufficient; in the present case, we managed to interpret it fully.

The horoscope is as follows:

Sun in Virgo;

Moon in Scorpio;

Mercury, Saturn, Mars and *Venus* in Leo or Virgo, close to the border with Leo (near the "lion's tale", in other words);

Jupiter in Taurus.

The coloured Theban zodiac demonstrates a paucity of additional astronomical data. We neither find any secondary zodiacs here, nor planetary visibility indicators.

The order of planets isn't defined rigidly; the additional "bullfighting" scene ("corrida") with the slaughter of a calf is of no use to us in filtering out the extraneous solutions, as we already know.

Nevertheless, there is *some* additional information in the zodiac. More precisely:

1) Three planets (Mercury, Mars and Saturn) are drawn together in the zodiac, and the triad is distinctly separate from Venus. Therefore, the above-mentioned three planets must be arranged in a sequence on the ecliptic. The astronomical solution shall only correspond to our zodiac well if the calculated position of Venus sets it apart from the other three planets.

2) The unusual sideways disposition of Venus is distinctly emphasised in the coloured zodiac of Thebes. From the astronomical point of view, this is most likely to mean that Venus drifted away from the ecliptic considerably, whereas the other planets formed a row that was parallel to the ecliptic. Venus lay to the side as a result, away from the line.

Thus, we have a total of two extra conditions for the verification of our horoscope's solutions. Our chances of getting an unequivocal answer are therefore far from great. However, let us refrain from despairing prematurely; the quantity of preliminary solutions available on the historical interval shall be decisive. We shall turn to astronomical calculations for answers.

The input data file for the Horos program that correspond to the horoscope are cited in Annex 4.

3.4. Preliminary solutions of the primary horoscope

Astronomical calculations demonstrate that the above horoscope has very few solutions on the interval between 500 B.C. and the present era. There are only three of them:

16 August –349 (350 B.C.);

30 August 268 A.D.;

6 September 1182 A.D.

We have given a single date for each solution to keep things simple; in reality, the horoscope's condi-

tions were satisfied to for intervals of several dates that included the ones cited above.

Let us make a brief digression and mention the method used for referring to the years before Christ in the present book. There are two such methods, generally speaking. The one we're adhering to presently is the so-called "astronomical method" that contains year zero. The other method, known as "historical", contains no such year – 1 A.D. is preceded by 1 B.C. Thus, "year zero" as used in the astronomical method corresponds to the year "minus one" of the historical method, or 1 B.C. Therefore, the numbers of all years before Christ are shifted by one.

So, when we write "year –349" (astronomical method), it corresponds to the historical year 350 B.C. As a rule, the historical method is used in literature; however, astronomical literature is more likely to use the astronomical method, since the other one is less convenient for calculations. One needs to be careful with astronomical software that performs calculations. Some programs use astronomical years by default, whereas others use the historical method. Moreover, the indications used are exactly the same – the years before Christ are preceded by a minus sign. The Turbo-Sky program, for instance, uses the historical method; therefore, the year of our first solution (–349 in the astronomical system) shall become the year –350 in Turbo-Sky. If the readers intend to use some other astronomical software for calculations of their own, they have to find out about the method it uses for referring to the years before Christ. It can be done in the following manner: try specifying year zero as the date of observations. Should you succeed, the software uses the same method as the authors of the present book. Alternatively, it shall employ the historical method, in which case the values of all the years preceded by a minus sign in our book shall have to be reduced by one.

Let us return to the coloured zodiac from Thebes. We stopped at the choice of three solutions for its horoscope on the entire interval between 500 B.C. and the present, namely, –349, 268 and 1182.

The fact that there are so few solutions gives us hope that we can arrive at an unambiguous dating for our zodiac. Let us emphasise that the three solutions mentioned above are of a preliminary nature, and weren't tested for correspondence to extra specifica-

tions. Only the solutions that can withstand the test successfully shall be considered final. If it turns out that there's just a single finite solution, we shall consider the date as transcribed in the zodiac to have been estimated without ambiguity. Below we shall witness this to be the case. The date transcribed in the coloured zodiac from Thebes can indeed be reconstructed unambiguously as 5-8 September 1182 A.D.

Let us cite precise planetary longitudes on the ecliptic for each of the preliminary solutions mentioned above. As usual, we give planetary coordinates on the ecliptic J2000 in the first row underneath the names of the planets, and planetary positions on the "constellation scale" in the second row, qv in Chron3, Chapter 16:10. Below we see the names of the zodiacal constellations that housed the planets. If a planets winds up on the cusp of two constellations, it is always specified explicitly (for instance, Sag/Sco means that the planet was on the cusp of Sagittarius and Scorpio).

Julian day (JD) = 1593813.00 <preliminary solution>
<350 B.C.>
Year/month/date = –349/8/16

Sun	Moon	Jupiter	Venus	Saturn	Mars	Mercury
170.0	267	58	143	160	160	163
4.8	8.0	1.2	4.0	4.5	4.5	4.6
Leo/Vir	Sag/Sco	Taurus	Can/Leo	Leo	Leo	Leo

Julian day (JD) = 1819187.00 <preliminary solution>
<268 A.D.>
Year/month/date = 268/8/30

Sun	Moon	Jupiter	Saturn	Venus	Mercury	Mars
180.7	247.2	64.5	141.8	148.8	168.0	176.7
5.15	7.35	1.34	3.93	4.17	4.79	5.05
Virgo	Scorpio	Taurus	Can/Leo	Leo	Leo	Vir/Leo

Julian day (JD) = 2153032.00 <final solution>
<1182 A.D.>
Year/month/date = 1182/9/6

Sun	Moon	Jupiter	Saturn	Mercury	Mars	Venus
181.4	258.3	86.4	151.2	170.2	169.8	173.2
5.17	7.72	1.92	4.25	4.86	4.85	4.96
Virgo	Scorpio	Taurus	Leo	Leo	Leo	Leo/Vir

Now let us carry on with verifying the compliance of the solutions to additional criteria. We have formulated two of them above, see Chron3, Chapter 18:3.3. Let us recollect them:

1) Mercury, Mars and Saturn must form a row on the ecliptic. Venus should be positioned separately from the group of three planets (Mercury, Mars and Saturn).

2) Venus should lay "sidewise" from the neighbouring Mercury, Mars and Saturn, or the general planetary line.

3.5. Verification by compliance to additional criteria

Let us begin with the first solution – 16 August –349 (350 b.c. on the historical scale). Planetary positions as seen by an observer in Luxor are shown in fig. 18.7. We see the moment when Mercury rose, when the solar submersion rate equalled circa 7 degrees. Other planets (Venus, Saturn and Mars) had risen earlier, while it was still dark, and were in good visibility. Mercury may have been visible in Luxor at dawn; its luminosity equalled +0.2. We have selected Luxor as the observation point since Mercury could not be seen in Cairo, where it rose at the solar submersion rate of 5 degrees. See more in re the choice of possible observation points for Egyptian zodiacs in Chron3, Chapter 15:11.

We must instantly note that the solution of –349 satisfies to the source zodiac rather approximately, since the Sun, which must be in Virgo according to the Zodiac, lingers at the edge of Leo; it will be in Virgo in a few more days. However, had the Sun been in Leo, it would be specified in the zodiac in some way; the leonine figure is present there, after all. However, there are no indications that the Sun was in Leo anywhere in the zodiac.

Let us now consider just how the auxiliary conditions (or additional criteria) are met. The first condition is that Venus must lay outside the group consisting of Mercury, Saturn and Mars; it is indeed met here, qv in fig. 18.7. However, the second condition about Venus located "sideways" on the zodiac already fails to be met in this solution, since Venus is in line with the rest of the planet on the ecliptic. There are no reasons to draw it perpendicular to the general

planetary route according to the solution in question. And we remember the unusual position of Venus emphasised in the Theban zodiac; Venus is perpendicular to the general line of planets, and lays sideways.

This solution should therefore be rejected since it fails to comply with the additional criteria implied by our zodiac. We must also mention that the solution of 350 b.c. would be too early even from the Scaligerian point of view, according to which the earliest epoch when zodiacs with "Graeco-Roman" astronomical symbolism could appear in Egypt is the II century b.c. (see a discussion of this issue in Chron3, Chapter 12). However, we see that the "Graeco-Roman" constellation figures are explicitly present in the coloured zodiac from Thebes (Leo, Scorpio and Taurus).

Let us try the second solution – 30 August 268 a.d. The planets were distributed across the ecliptic as follows:

Sun	Moon	Jupiter	Saturn	Venus	Mercury	Mars
5.15	7.35	1.34	3.93	4.17	4.79	5.05
Virgo	Scorpio	Taurus	Can/Leo	Leo	Leo	Vir/Leo

One can instantly see that the solution doesn't satisfy to the first additional criterion – Venus wound up in between Saturn and Mercury. The planetary order in this solution is as follows: Saturn, Venus, Mercury, Mars and the Sun. This is clearly at odds with the zodiac where Mercury, Saturn and Mars are drawn at a certain distance from Venus. The planetary order as given in the solution under study will place Venus in line with Saturn, Mars and Mercury. Therefore, we must reject this solution as well, since it fails to demonstrate correspondence with the zodiac. Yet we managed to come up with an ideal solution for every other Egyptian zodiac; there should be one for the coloured zodiac from Thebes as well.

Indeed, the last preliminary solution that we found (1182 a.d.) corresponds to the zodiac perfectly. The best correlation between the zodiac and the solution was reached on the interval of 6-7 September 1182; however, this correlation is also valid for 5 and 8 September. Thus, the final and complete solution of the coloured Theban zodiac is as follows:

5-8 September 1182 a.d.

Planetary positions in the solar vicinity for the morning of 6 September are shown in fig. 18.8. We
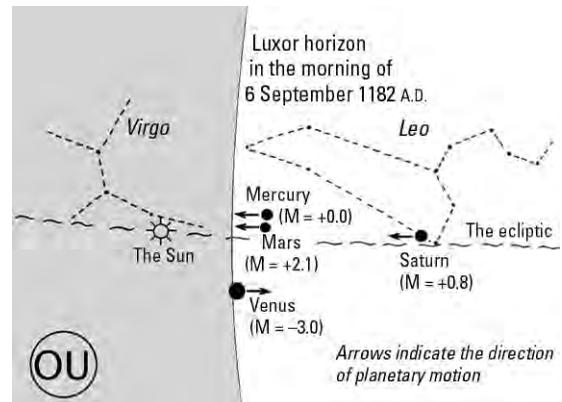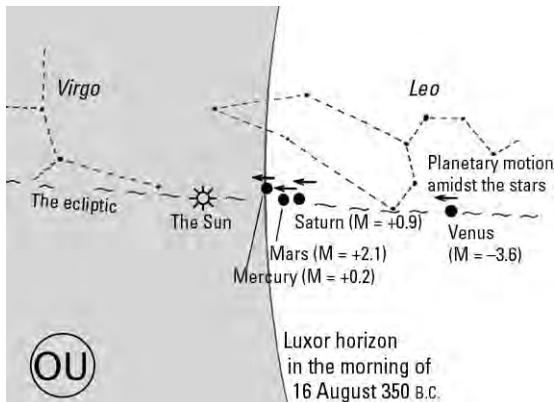
Fig. 18.7. A preliminary (incomplete) solution of the Coloured Theban Zodiac (OU). The morning sky before sunrise in Luxor on 16 August –349, that is, 350 B.C., on the moment when Mercury had risen at the solar submersion rate of 7 degrees. Mercury and Mars may have been visible that day, albeit badly. The dotted tilde line marks the ecliptic. One sees that all the planets, including Venus, are located almost directly on the ecliptic. Venus does not deviate from the general line of planetary motion across the ecliptic. Calculated in Turbo-Sky.

have once again chosen Luxor as the observation point. One sees that the Sun was indeed in Virgo that day, as the zodiac stipulates. Mercury, Mars and Saturn were in Leo – once again, just as it is shown in the zodiac (fig. 18.8). Venus was at the very edge of Leo, close to Virgo; the important fact is that it had drifted sideways from the ecliptic. It left the general planetary route and was located to the side, at the distance of some 5 degrees from the ecliptic – just as we see it in the zodiac. The other planets were more or less on the ecliptic, not deviating from it by more than one degree. Let us see what the solution of 1182 can give us.

1) The first additional condition is met, since Venus is indeed placed at some distance form the planetary group of Mercury, Saturn and Mars; it is shifted sideways from this group, in the direction of Virgo.

2) The second additional condition is also met, since Venus drifted away from the ecliptic and was located to the side from the general planetary route on the ecliptic.

Apart from that, the distribution of planets across

constellations as suggested by the solution of 1182 A.D. corresponds with the zodiac ideally.

3.6. Corollary: the date transcribed in the OU zodiac is 5-8 September 1182 A.D.

We are brought to the conclusion that the date transcribed in the coloured zodiac of Thebes by the "ancient" Egyptians is really the interval between the 5 and 8 September 1182 A.D. – the same epoch as the dates of the Dendera zodiacs, right in between the dates of the Long and Round zodiacs from Dendera.

One gets the impression that Egyptian tradition ascribed a special meaning to the end of the XII century – possibly, due to the fact that some important events took place during that epoch. The events must have been of a holy nature, since their dates were written on the ceilings of cyclopean Egyptian temples. However, it is too early to make final conclusions, since the dates that we decipher from Egyptian zodiacs only reflect the opinion of their "ancient" authors on the chronology of ancient events; this opinion can just as easily prove true as false. Yet we can be certain

that these very "ancient" Egyptian authors lived in the XII century A.D. the earliest – most probably, a great while later.

We must note that our solution of the coloured Theban zodiac coincides with one of the holiest days in Christian tradition – the birth of Our Lady. The Orthodox Church celebrates it on 8 September (old style, or Julian calendar). The day is covered by the interval between 5 and 8 September 1182, which is the solution that we came up with for the zodiac. The correspondence may be of a chance nature; however, it is also possible that the date of a Christian feast was written on the ceiling of a royal tomb from the Egyptian Valley of the Kings.

This wouldn't be all that surprising, given all that we already know.

Fig. C10. The coloured version of the Upper Zodiac from Athribis (AV). Top of the zodiac. Based on the drawn copy from [1340:2]. The colours are represented by the following codes: *R* for red, *J* for yellow, *B* for blue, *G* for green and *BR* for brown.

Fig. C11. The coloured version of the Lower Zodiac from Athribis (AV). Bottom of the zodiac. Based on the drawn copy from [1340:2].

Fig. C12. The coloured version of Brugsch's zodiac (BR). The colour yellow marks all three individual horoscopes contained in the zodiacs; each one of them is an independent primary horoscope. They are as follows: the horoscope "without rods", the horoscope "with boats" and the demotic subscript horoscope. Based on the drawn copy from [544], Volume 6, page 696.