

Question 7: The star of Bethlehem - Did it really happen?

After Christmas, all over German-speaking Europe, the 'star-singers' come, representing the three kings, who are said to have first visited the manger. They carry a star, representing the star that allegedly led them to Bethlehem. Did this star really exist? Can you tell me if you can believe in it or if it's just fiction?

The matter of the star of Bethlehem is neither invention nor "full of contradictions", as is always said to this day (even by the Vatican), but can be explained clearly and logically. It really happened!

However, to solve the riddle requires knowledge in three major areas: biblical exegesis, astronomy, and history. And you also have to be able to combine these three. That is why astronomers have not progressed further in this riddle, because they do not take into account biblical exegesis and history; and exegetes do not get on, because they do not take astronomy seriously in this text.

In fact, the majority of Bible scholars consider this star, which the Gospel of Matthew reports (chapters 2, 1-12), to be an invention, a legend, or an adornment to the nativity. After all, he became the Messiah, the Son of God, so there must have been miraculous events around his birth, as reported in antiquity by many great rulers of the world. In Christian textbooks, for example, a succinct statement is made that the star of Bethlehem is a "wandering miracle star".¹

Is this true? Or have too many researched too little here?

I believe that too little research has been carried out. For example, those writers who write, "Matthew the Evangelist (Matt. 2: 2, 9), in his childhood history let astronomers from the East (Arabia) follow a star in the stairway, who leads them to Bethlehem's newborn child."² Bethlehems' Star is accepted as an invention of the evangelist Mat-

¹ G. Theissen / A. Merz, "The Historical Jesus, A Textbook", Göttingen 3/2001, p.150. There also: "The tales of child murder and the wise are legends that can not be evaluated directly historical." To the tribute of the magicians states: "The motif of the star may come from the messianic prophecy Num 24,17 ... Conclusion: Jesus comes from Nazareth. The transfer of the birthplace to Bethlehem is a result of religious imagination and imagination ... " (p.158)

² Prof. dr. S. Schroer in WORLD AND ENVIRONMENT OF THE BIBLE, 4/2014 The Order of the Stars, S.12,2.

thew; Incidentally, the author of the above quote makes a mistake: Nowhere does it say that the star guides astronomers "to Bethlehem"! Other authors, who can be classified as amateur astronomers, write: "astronomically we could say nothing of the star of Bethlehem; it was probably a comet or a supernova."³ Professional astronomers make it clear: it was not a comet, and it was not a supernova (exploding distant star). But they do not go any further.⁴

The starting point of all these misinterpretations can be found in the astronomy historian Boll, who lived about 100 years ago.⁵ Firstly he made it clear that a star did not travel from north to south - but that the path of the star-following Magi led straight from north to south, from Jerusalem to Bethlehem. And secondly: A star cannot "stop" over a place.⁶

These two "insights" of Boll and his followers, direct and determine to this day almost all attempts to interpret the star of Bethlehem.

To show how to do more research, I turn firstly to Boll's second objection: A star cannot "stand still" above a place. In the science of astronomy, it is now one of the tasks of young students in their first semester to represent the "standing still" of a star geometrically (trigonometrically), as an exercise. In large Space and star atlases, you can even find photographic images of Mars, for example, as it travels through a loop on its orbit, where it seems - naturally and necessarily - to "stand still" twice!

This phenomenon is related to the movements of the planets around the sun. Our Earth runs on an inner orbit, the planets of Jupiter, and behind it Saturn, on outer, distant tracks. Only these two planets are interesting and important to our question because for their orbits they need many more days than our Earth does to orbit the sun. If you look from Earth to Jupiter (and to Saturn behind it) against the background of the fixed stars, and do so at regular intervals and exactly at the same time, it appears as if Jupiter is coming from the right to the left faster than Saturn behind it. Then it suddenly stops, walk back to the right, stop again and then continues to the left. The same can be observed for Saturn, only slightly delayed. This "looping motion" naturally leads to two "apparent" stoppages, namely, when the direction seemingly "reverses".

³ P. Chr. Gerhard OSB in *WORLD AND ENVIRONMENT OF THE BIBLE*, 4/2014 The Order of the Stars, p.20.

⁴ Prof. dr. H. Lesch in *MÜNCHNER MERKUR* from 21./22. December 2013: "Lesch does not have a clear answer either."

⁵ Franz Johann Evangelista Boll (born July 1, 1867 in Rothenburg ob der Tauber, † July 3, 1924 in Heidelberg) was a German classical philologist, astrology and astronomy historian and librarian.

⁶ Quoted from Th. Holtmann "The Magicians of the East and the Star", Marburg 2005, p. 13: "Although the possibility of an astronomical explanation of the star of Bethlehem can not be considered finished, not least since Franz Boll's contribution Try ... An influential author here is Konradin Ferrari d'Occhieppo. But all these attempts serve the purely apologetic interest of saving the historicity of the Matthew narrative."

In a drawing (by the astronomer Prof. Dr. Peeter Tenjes, Tartu) I have attempted to depict this phenomenon, which is familiar to all astronomy students (and is also valid for Mars). Likewise, "Loop motion of planets, Monika Maintz."⁷

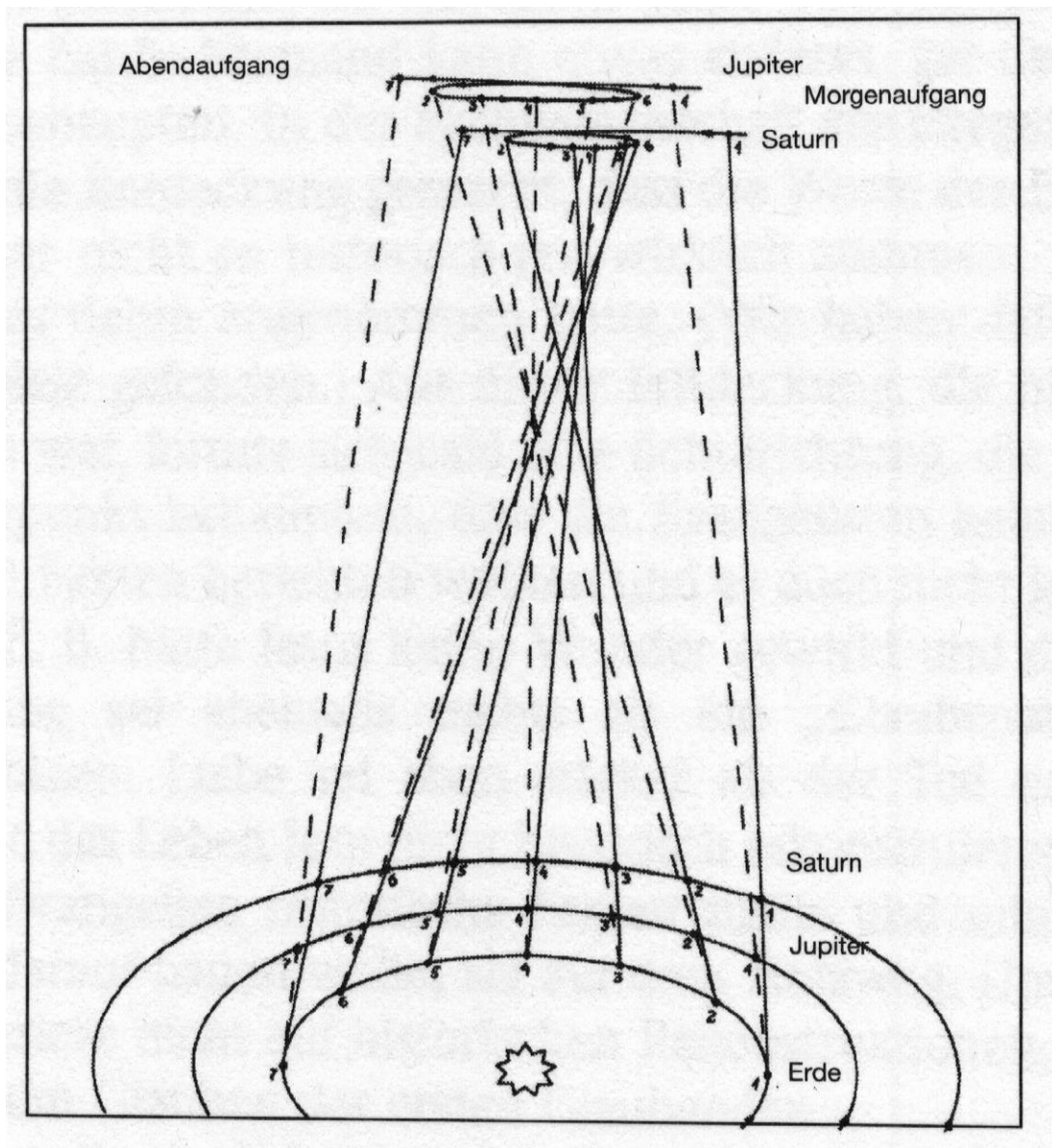


Fig.1 (According to Prof. Dr. Peeter Tenjes, Tartu): The (apparent) loop movements of the planets, as seen from the earth. They are caused by the different speeds of movement of the planets on their orbits.

But now there is a problem: anyone who uses software for the stars on their computer which has been adapted to our phenomenon, sees nothing of a loop and a standing still. Jupiter and Saturn just keep going. Why? Because in the above description and depiction, the earth's own rotation was neglected. This is common in astronomy and not a mistake. This is due to the Earth's own rotation, which never stops, and which

⁷ "Loop motion of planets, Monika Maintz." [Http://www.wissenschaft-schulen.de/sixcms/media.php/1308/WiS_Stern-von-Bethlehem%5B1%5D.pdf](http://www.wissenschaft-schulen.de/sixcms/media.php/1308/WiS_Stern-von-Bethlehem%5B1%5D.pdf)

transforms all the movements in the sky - we recognize this from long-exposure shots of the starry sky - into slightly rounded, line-shaped lines. For this reason, our star is running straight on the software of the computer and disappears behind the horizon at midnight. And that is exactly what the astrologers saw before Bethlehem.

So did the star not stay still over the crib? Yes and no.

Our absolutely certain knowledge of the astronomical looping of the planets, plus the absolutely certain knowledge of the rotation of the earth, will lead us eventually, to solving the "mystery" of the star of Bethlehem.

First, let us turn to the second objection of Franz Boll (which is still repeated to this day) and try to get to the bottom of the problem. In the text with Matthew, as the philologist and those who have talked about it said, the star "moved before them" ... He understood these words as moving from north to south before them; this, however, was a misjudgment that did not take into account the natural rotation of the Earth, which transforms all movements in the sky into West-East movements. The subject experts should look here to the original Greek text of Matthew, and not stop at a translation. For Matthew probably knew that stars do not travel from north to south. So what did he want to express?

The Greek word *proágo*, which Matthew uses, can be translated in different ways: it can mean leading forward, carrying on, coming out, moving on, advancing, forging ahead of someone, precedence ... So if you want to translate the Greek correctly, you have to ask what meaning is the more appropriate in the case of our star. But that means one first have to look up to the starry sky and explore the movements of the stars, so as to best determine which meaning of *proágo* is the more appropriate here. In any case, stars move from west to east (not from north to south); but when the loop movement had begun (they remain "standing" for the second time), they move from east to west.

This, for the astrologers, means: They themselves move from north to south and see in the upper left in front of themselves in the dark sky coming from the east (ie after the first stoppage) the stars that move to the west ... ie: the stars go - on their way to the place where the astrologers go on their way. They "carried them on", they "advanced", moved before them to Bethlehem, wherever they went (on their way). Matthew could not have better expressed the phenomenon in simple terms. But anyone who does not look in the Greek original text and weighs the meaning of the word after looking at the starry sky will not come up with this simple solution.

Now we have already gained four secure conclusions:

Firstly, the star of Bethlehem, astronomers tell us, was not a comet (Matthew does not use the then common word for comet, *astron*, but the normal for star, *aster*). Secondly, it was not a supernova either. Thirdly, there is a scientifically well-known, apparent loop motions of planets that include two apparent stalls. Fourthly, the words "moved in front of them" can also be interpreted as the stars on their way (from east to west) to the place to which the astrologers were traveling on their way (from north to south). Not only does it seem permissible, but even necessary, to take a closer look at the his-

torical, real phenomenon of the star above Bethlehem, of which Matthew the Evangelist speaks.

But the professional world of the exegetes has put more objections on the table in order to reinterpret the reality of this star into legendary, invented embellishment of the childhood history of Jesus.

Firstly, it is said that this is a "fulfilment legend". This means that there somewhere in the Old Testament, when the Messiah is born, this and that will happen, a special star will appear ... and since one now believed that Jesus was the Messiah, one also had to invent a "star" so that the ancient prophecy was valid and Jesus was proved as Messiah.

This hypothesis is reduced to absurdity by two considerations:

First of all, the Jews at the time thought of "fulfilment" in exactly the opposite way from today's exegetes. They thought there was an old text that claimed this and that, so the Jews invented an alleged fact as a fulfilment of the old prophecy ... But at that time the Jews demonstrably turned things the other way around: they started from a fact that happened right before their eyes and asked: there is already a word of God in our old texts - because only then could the fact that happened today be done by God and his Spirit be accepted. So at the moment of the "Star of Bethlehem" they started from the fact of the star over Bethlehem and asked, is there any word of God in our scriptures on this?

Secondly: Such prophecies existed, but Matthew did not use them! "Fulfilled prophecies," which are found especially in Matthew (because he was the only Jew, who as a Jew wrote for Jews in Judea) are always initiated by this evangelist with a stereotyped formulation: "This is done so as to fulfil what the prophet is written ... "These sentences are a message to the reader /listener of the gospel. But in the case of the star of Bethlehem this reference to the reader is missing! Matthew would have been able to quote the well-known prophecy from the book of Numbers (24:17) from the seer Balaam (who, 100 years later, was promptly applied to the supposed Messiah Bar Kochba): "A star rises from Jacob, a Zephor rises from Israel ... "But Matthew made no mention of this ancient prophecy in his scriptures. Perhaps he wanted to deliberately communicate what actually happened?

Something else must be noted in this connection: Matthew tells of the birth of Jesus, Messiah, with only half a sentence: "until she had given birth to her son" (Mt 1: 25). It cannot be any shorter, But that's the promised Messiah! Instead, the evangelist shares a long and detailed story of a star: the entire chapter 2 of Matthew is dedicated to this. Throughout the Old Testament, there is nothing comparable in which a thing of such a central and all-guiding nature forms the centre. Because the astrologers are not central, the star is. Through the star, Matthew says, they first became aware of the newborn king and set off. And when it comes to seeing the star in front of Bethlehem again (not the child), if you pay attention you realise that they are very happy. It is unequivocally the star that directs this chapter.

So no "fulfilment prophecy"!

However, the experts amongst the exegetes have considered further objections: were these Magi perhaps magicians or traveling astrologers, as they are known to us from the Bible in the time of Jesus? Comets were especially used by them gladly to predict something good or bad rulers.

Nonetheless, for wizards, traveling astrologers, part of their job was to make money. They could not afford to make predictions because they could have been sentenced to hell or even killed. So they had to really know the social and social circumstances, the political games of the ruling groups and the popular tendencies. They needed to be knowledgeable, and knowledgeable about each region, otherwise they risked making a prediction that could have put them in trouble themselves.

In Matthew's text, however, they seem like foreigners, ignorant and stupid: they must first inquire about the newborn king, they do not know where he was born, their questions bring about the distrust and jealousy of the ruling king, grave danger and leave everyone in the city in fear. They do not tell him his own good future, but that he will be replaced by a successor. A very awkward way of going about, you have to say. And in the end, they do not hold up their hands and pay the king, but give away precious gifts - to a nameless child. In short, what Matthew describes to us can not be explained with "magicians, traveling astrologers".

But, as other scholars say, in Moses and the Jacob Midrash (authoritative Jewish retellings of ancient Jewish texts) the same words can be found, exactly the same sentences as Matthew uses in his story about the astrologers. So, with the help of these ancient stories, the first Christians only wanted to say that Jesus was the new Moses, saved from Herod as Moses was before Pharaoh. So there was no Bethlehem, no infanticide, no escape to Egypt, etc., all pious legend to support the faith ...

Here is a logical mistake: From the striking similarity and correspondence of the texts mentioned follows for the reality that the childhood history of Jesus is based on nothing! But it is impossible to deduce from a particular style of speech what lies behind it as historical reality. The question of reality has to be answered differently. Rather, the question is: what second sense of truth did the author want to add using the Midrash form of the story about what really happened? Matthew adds a second level of meaning to the event that has actually happened (the salvation of Jesus through the flight to Egypt): Jesus is the new Moses. This fits perfectly with his entire gospel, which repeats this statement in several ways in various ways.

So far, all objections by scientists to the reality of the star about Bethlehem have vanished into nothing. So everything really happened like that? But this does not fit into the opinion of those who are convinced that the Bible makes no statements about historical realities. On the other hand, I say quite decidedly that, while the Gospels did not want to give full reality, but statements of faith, through which they have quite necessarily communicated reality! You just have to do your research correctly.

The matter of the star of Bethlehem contains for many people, even scientists, something enigmatic. Nevertheless, it is not a "pious invention", it is an astronomical reality, verifiable! I want to make that clear now.

How should one go ahead to solve the supposed riddle and prove the actual historic veracity of the event, against the mainstream of exegesis?

One has to start with the text in Matthew, from the Greek original, in many ways.

Even the reader who has not studied exegesis and who has no idea of theology, might notice something when he reads the paragraphs in Matthew, which are about the star, attentively. He might notice that certain words and terms often appear before and after the astrologer's story, they are not used in their own right. I graphed this fact and made it so clear for you to look at:

JOSEPH'S STORY I (1,18-25)

Now the birth of Jesus Christ was thus: for* when* his mother Mary was engaged to Joseph, before they came together, she was found to be pregnant from *the* Holy Spirit. Now **Joseph**, her husband, being a righteous man and not willing to disgrace her, planned to divorce her secretly. But when he was contemplating these things, behold, **a messenger of the Lord** appeared to him in a dream, saying, **Joseph**, son of David, do not fear to take Mary to you, *as* your wife for what was conceived in her is from *the* Holy Spirit. Now she will be bearing a son, and you will call his name Jesus, for he will be saving his people from their sins. **Now this whole thing has happened, in order that what was spoken by the Lord through the prophet might be fulfilled, saying,** 'Behold, the virgin will be pregnant, and will be bearing a son, and they will call his name Immanuel'; which is, *after* being translated, 'God with us.' Now having been aroused from his sleep, **Joseph** did as the **messenger of the Lord** commanded him and took his wife to him; and did not know her *intimately* until she bore her firstborn son, and he called his name Jesus.

MAGI STORY (2,1-12)

Now when Jesus was born in Bethlehem of Judea in the days of Herod the king, behold, wisemen/Persian Magi from the east came into Jerusalem, saying, Where is he who has been born *the* King of the Jews? For we saw his star in the east and have come to worship him. Now when Herod the king heard it, he was disturbed and everyone *in* Jerusalem with him. And having gathered together all the high-priests and scribes of the people, he inquired from them where the Christ should be born. Now they said to him, In Bethlehem of Judea; for thus it has been written through the prophet, 'And Thou, Bethlehem, a land of Judah, you are by no means least among the governors of Judah; for a leader will be coming forth from you, who will be shepherding my people Israel.' Then Herod, having called the wisemen secretly, ascertained accurately from them the time of the star's appearing. And he sent them to Bethlehem and said, While you are traveling, probe out accurately *the things* concerning the young child. And whenever you have found *him*, report to me, that I *may* also come and may worship him. Now having heard the king, they traveled *away*. And behold, the star, which they saw in the east, was preceding them until it came and stood above where the young child was. Now having seen the star, they rejoiced *with* extremely great joy. And they came into the house and saw the young child with Mary, his mother. They fell down and worshiped him. Opening their treasures, they offered gifts of gold and frankincense and myrrh to him. And having been divinely-warned in a **dream** not to revisit Herod, they departed into their own region through another way.

JOSEPH'S STORY II (2: 13-23)

Now when they had departed, behold, a messenger of the Lord appears to Joseph in a dream, saying, When you arise, take the young child and his mother, and flee into Egypt, and be there until I should speak to you *again*, because Herod is about to seek the young child to destroy him. Now Joseph arose, and took the young child and his mother by night, and departed into Egypt; and they were there until the end of Herod; in order that what was spoken by the Lord through the prophet might be fulfilled, saying, 'Out of Egypt I called my son.' Then Herod, having seen that he was mocked by the wise-men, was exceedingly furious, and sent forth soldiers and assassinated all the boys who were in Bethlehem, and in all her borders, from two years and downward, according to the time which he had ascertained accurately from the wise-men. Then what was spoken by Jeremiah the prophet was fulfilled, saying, 'A voice was heard in Ramah, mourning, and weeping, and much anguish, Rachel weeping for her children. And she did not wish to be comforted, because they are not there.' But when Herod was dead, behold, a messenger of the Lord appears in a dream to Joseph in Egypt, saying, When you arise, take the young child and his mother, and travel into the land of Israel, for those seeking the young child's life have died. Now he arose and took the young child and his mother and entered into the land of Israel. But when he heard that Archelaus is reigning over Judea instead of his father Herod, he was afraid to go there, and having been divinely-warned in a dream, he departed into the parts of Galilee, and he came and dwelt in a city called Nazareth; that what was spoken through the prophets might be fulfilled, that he will be called a Nazarene.

So we have a clear "Joseph story I" (it starts in Mt 1,18 and goes to 1:25), then the astrologer story (2,1 to 2,12), and then the "Joseph story II" (2,13 to 2,23) - and these visibly differ, in that four concepts from the two Joseph stories (Angel/Messenger of the Lord 4x, Of the Lord through prophets spoken 4x, Joseph 6x, dream 4x) in the 12 verses of the story with the astrologers (except for 1x "dream") does not occur. Anyone who objects, but there is also talk of "prophets" ("it is written by the prophets", v. 5), must note that this is a different form of citation than the Stages of Joseph's story.

For the first time, the assumption arises that we are dealing with two different authors: one had written the stories of Joseph, another the astrologer's story. The two were finally neatly put together in such a way that the astrologer's story was embedded in a now two-part Joseph's story.

But further: the twelve verses, which deal with the astrologers, not only stand out strikingly from the other verses before and after due to the absence of certain terms, they even seem to be something of their own. Because in these twelve verses, the language and writing style deviates significantly from the surrounding text of Matthew: Here are lively dialogues, tension is built, surprises happen, great joy comes suddenly, the child is found, the star is certainly leading the way. As soon as the astrologer's report is over, Josef reappears, as previously, in the role of the lead man.

In the two stories of Joseph, Joseph therefore leads the "direction". He is the hearer and the doer. In the astrologer's story, on the other hand, the star directs, through which the astrologers become visionaries and doers.

Slowly, we arrive at a question. From whom does the report about the star come from?

If you then look closely at the 12 verses of the astrologer's story (but this now requires specific expertise in the history of astronomy), one finds in them, (it may be hard to believe) five or six astronomical terms from the Akkadian Astronomy. These are also terms that are only written in the Gospel of Matthew in this precise part, which only occur in the New Testament here: For example, *ho astēr* singular, *pynthánomai*, *akribóō*. And: *en tē anatólē* (singular with article).

The following is added to this last phrase:

Again and again there are official translations that reproduce this phrase "in the East" (we have seen its star "in the East" or "in the East", 2, 2). This is translated incorrectly. A verse before that (2: 1) Matthew writes *apò anatólēn* (the same word, but in the plural without an article), that is, "from the East". But here in 2,2 he writes the word in singular and with article - and that means "in the rising". But this was the astronomical rising of a star in the morning (or even in the evening). It is an astronomical term!

This leads us to question whether Matthew has used any other astronomical terms in these 12 verses. And indeed, he has!

The little word "and see" (which he himself likes to use) often appears in ancient astronomical texts from Babylon in his Akkadian form "*tammar* / see". Further: The strange grammatical form *toù phaiménénou astéros*, which has to be translated as "the appearing and still appearing" star, could be a reference to Jupiter (*phāéthōn*). This word would have been completely unknown in the New Testament, so Matthew may have replaced it with the more familiar *pháinomai*. We have already explained the phrase "*en tē anatólē* / in the ascent.

There is another word that is supposed to reflect an astronomical process: the word "while walking" (... stopped), in Greek: *elthōn* (*estáthē*). This is to describe the apparent stagnation of the star on its circular path. In all these terms, we must take into account that Matthew wrote for the common man and did not want to use any specialist terminology, in so far as these existed in Jewish Greek for the aforementioned phenomena. The Greek form *elthōn* would have to be translated exactly as "after he had come", "after he had gone his way", "after he had arrived". The next word *estáthē* would have to be translated as "was put".

The whole passage reads something like this: "until it was put down / arrived / after it arrived" (above where ...) One still feels like the evangelist is dealing with a relatively complicated and unknown process in the starry sky (which even experts today do not even know) which he tries to explain using common and well-known words.

Finally, still *epánō hoū*, "above about where" (the child was). We will point out that behind this peculiar formulation, which seems to involve pointing to a well-defined point, there is a final astronomical phenomenon.

Briefly, something about the word "dream", which also appears in the astrologer's story, but without an angel/messenger: For the term "instruction" (in the dream), Matthew uses the word *chrēmatízo*. It appears in his gospel only here in chapter two. It means to do official business, to negotiate, to proclaim the divine will, to say, to reveal, or to receive a divine command. It can be shown that this notion among non-

Jews is to replace that which is the "angel of the Lord" in the chosen people of God. *Chrēmátízo* stands for the "pagan" way of the revealed God! Of course in a dream, but without an angel/messenger. God leads everyone, some through the "angel of the Lord," who appears in the dream and announces or orders, others only by a "directive in the dream". But he reveals himself to all as He wills. And his revelation is accessible to everyone.

All in all, we actually come up with six scientific concepts that are intended to reflect Astrological phenomena. However, according to our knowledge of this evangelist, Matthew could not know such a thing. From whom, then, do these 12 verses, which represent a self-contained whole, (conceded as a subject matter in exegesis), come with their six astronomical terminologies, and a style other than that commonly used by Matthew? Astronomical terms that cannot come from Israel because there was no sophisticated astronomy back then.

We are increasingly drawn to the idea that the astrologer's story is not from Matthew! That this is not his style, and more important: this is outside of his knowledge base.

On the other hand, there is growing suspicion that these 12 verses have been given to the evangelist by someone else as a whole. From the Magi themselves? Matthew then cleverly built them into his Joseph story? Let's just leave that assumption.

Rather we now ask, who were these Magi?

Matthew says they came "from the East". At that time there was only one country left in the East where highly qualified astronomy was practiced. That was Mesopotamia, more precisely Babylon with its observatory in Sippar. From documents we know that Jews also lived there, those which had remained there after their release in 530. Other countries in the east with any noteworthy astronomy are unknown. They would have been known, owing to the significance of this science, for its necessary centuries of research time, for the number of staff required, for the amount of special equipment needed, and so on. That's why we can say with some certainty: they did not exist.

The science of the stars was considered a sacred and secret art. It was maintained and archived by the priesthood at a few old-fashioned temples dedicated to the gods. Magi" was the official title for the star observers in the service of religion and the state. Their records always begin with the formula: At the command of my Master and my Mistress (referring to the gods), a (pre-)determination.

The Babylonian astronomer Kidinnu lived at the famous Sun Temple of Sippar around 320 BC. Thanks to him we have our system for counting the hours, including minutes and seconds. The astronomy of schools in Babylon and the observatory in Sippar, which lasted until the first century AD, was surprisingly well developed. They had already calculated the average length of a calendar year as 365.2468 days - only the Gregorian year (1582) was more precise. A precise calendar, exact angle and degree measurement through complicated equipment, accurate clocks, writing down the measured data and the periods of the stars are all indispensable components of star research, which they engraved into permanent clay tablets.

At the beginning of the 20th century, such a clay tablet was found in the sands of Sippar, with cuneiform characters in abbreviations. Scholars took seven days to decipher them. Then to their surprise they discovered it referred to all important astronomical events from the year 7 BC. One of them had the makings of a scientific sensation: the pre-calculation of the great conjunction of Jupiter and Saturn in the sign of the fish.

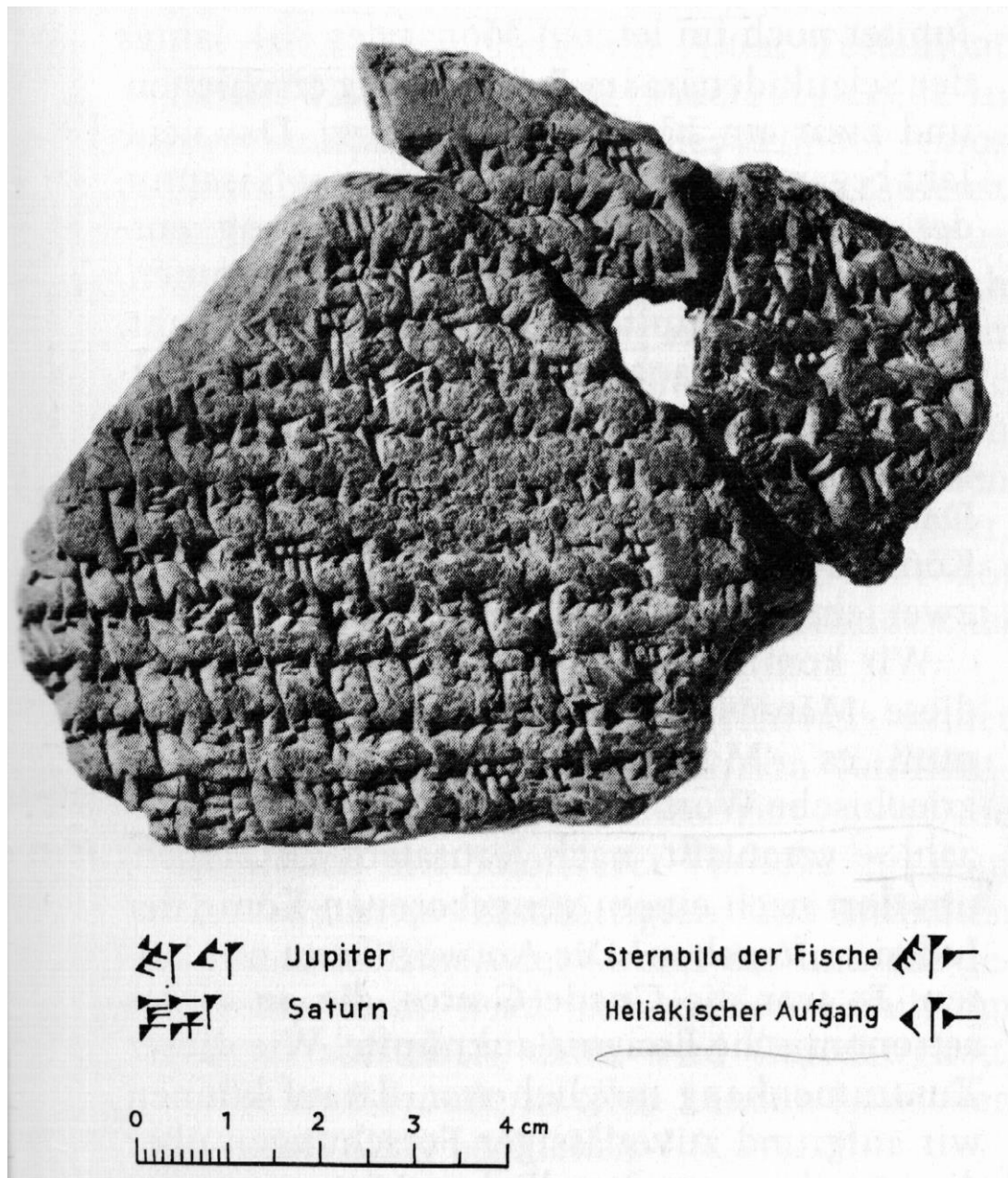


Fig.2: The famous cuneiform tablet from the sand of Sippar. It contains an astronomical calendar with the pre-calculated information of certain priority phases of planets. The tablet is in the Staatliche Museen of Berlin.

(The graphic and the following text on the graphic after G. Kroll "In the footsteps of Jesus", Benno-Vlg Leipzig, 10/1988, p.65.) Further precise information on this constellation of stars.)

Although only the front side was preserved and edges were broken off from the tablet, the missing pieces and month names could be supplemented by comparison with other pieces. The tablet describes in shorthand the ascents and descents of the individual planets of the year 305 of the Seleucidae (SE), that is our year 7/6 BC. The text reads:

8th line: [Du'uzu - our June / July - ... Jupiter and Sa] turn in the fish; Venus in the lion; amars in Libra. (Venus reaches the young) woman on the 14th. On the 14th - 10th of July - Full Moon Mornings. [...] 9th line: [...On ...] Jupiter is resting in the end of the fish (for the first time). On the 28th - 23rd of July - Old Light. On the 29th - 24th of July - Saturn will be standing in the end of the fish (for the first time) [...]

The 13th line mentions the acrimonious (evening) rising of Jupiter with exact dates, i. its last visible rising at dusk, shortly before the opposition of the sun: [Ululu (August / September) [... On 1] 4 - 7 September - Full Moon Mornings. 21st - 15th September - Jupiter is standing against sunset for the last time.

(The date of the 2nd western standstill on 13th /14th November 7 BC, which is of interest to us, and can be calculated from the tablet.)

It has been shown that the information from these panels complement and confirm each other's data. With today's astronomical calculations we can also find that the calculations of the Magi from Sippar are exactly right to the decimal place. We even have the ability to compute pieces that we lack and thus to reconstruct, what their longer tables must have said. But if we want to know if the astronomical data on the tablets and the evangelist's account of Matthew 2: 1-12 belong together, we must know something about the planets, especially Jupiter, as it was understood in Sippar. And we need to know the geography between Jerusalem and Bethlehem. And Herod and his constitution in the years before his death. For he was still alive when the Magi came to Jerusalem; he died in early April 4 BC.

The god of Babylon was Marduk, his star was Jupiter. He was the subject of most of the careful calculations of the Magi of Babylon / Sippar. In ancient times, Jupiter was generally considered the star of the world ruler. It was the king star. According to the most important astronomer of antiquity, Claudius Ptolemy (100-178), Jupiter's effect was most powerful when it was in the sign of the fish, its "house". The zodiac sign of the fish extended to Babylonian star interpretation on the fertile arc of land from the Nile to the Tigris. In its centre, it was related to Syria and Palestine.

This text was found on a cuneiform tablet: "If such and such happens, 'a great king will rise in the west, then justice, peace, and joy will reign in all lands, and make all peoples happy." This does not seem to mean Rome, and the Magi of Sippar looked with special fondness to the land "amurru" (Westland, Israel). The reason may be that a respectable Jewish community lived in Sippar.

The Magi's predictions of Jupiter's phenomena spanned several decades, centuries, as if they were a kind of "foresight." Tables were also found for this in the sands of Sippar. For the year 7 BC, it was calculated that Jupiter would achieve maximum brightness (due to its sunniness) and shine with the highest possible lustre. According to

other finds and the working principles of the Magi, the data of at least one and a half centuries were stored in their archives. They knew about the early dawn of Jupiter, according to Babylonian planetary theory, on March 15, 7 BC. (I use our today's calendar here, the Magi counted on the calendar of the Seleucid era, abbreviated SE). They had also calculated the rising and the respective stoppages of Saturn (and other planets); We can see that from the combination and addition of several reconstructed clay tablets.

The special thing of that year was that Jupiter and Saturn were approaching each other more and more. The important evening sunrise for Jupiter and Saturn for the Magi was September 15 7 B.C. It has been calculated; They also knew the longitudes of the planets. Jupiter, the King of Stars, came to the side of Saturn, the Cosmic Representative of the People of the Jews, with the utmost brilliance. Together, they moved from sunrise to sunset in a majestic arc over the night sky.

A second peculiarity was that both planets would at the same time "stay" mathematically (the apparent stagnation before the fixed stars), and in the greatest possible proximity to each other.

But they would never "merge" into a double star, which is used again and again as an argument for the star of Bethlehem or against it. They stay at a considerable distance (1° = two lunar diameters) from each other; but in the vastness of the night sky, they stood as two stars strikingly close to each other - if you discovered them as just these stars and saw them! For the skies of those southern latitudes are so littered with stars on clear nights that one thinks one has never seen the sky. In this abundance, brightly-shining stars are less noticeable than in ours, where haze and scattered light oppress the less bright ones and leave only the brightest ones. The leading star among the two was Jupiter, the king star; It made the statement: Great King! "We have seen his' star in the rising ..." Saturn gave the location of where this king was.

The third peculiarity of this year, however, was that the three meetings of Jupiter with Saturn - plus the two apparent deadlocks of the pair (in the context of the fixed stars) and their close proximity to each other for almost the same time length - happened in the same constellation Pisces. From their tables and period calculations, they knew that this encounter occurred in the constellation of Pisces, the house of Jupiter, only every 854 years. So it was a millennium event that happened before their eyes.

In other words, it was of the highest importance.

What was thought to be the message of the constellation of stars?

It was clear: A great king is born (Jupiter, in the brightest possible lustre: we have seen "his" star in the rising), with the Jews (Saturn with Jupiter, stopping twice and passing in close proximity), and it must be an extraordinary event (the two planets in the constellation Pisces with such stasis and such proximity, an event that only occurs every 854 years).

The cuneiform tablet found above in the sand of Sippar also gives the date of the western standstill of Jupiter, near Saturn and (almost) simultaneous with this. It would be on November 13, 7 BC. Now the following must be noted: This Western

standstill, as well as the early and evening sunrise of the two stars, was observable by the Magi from their observatory in Sippar. They did not have to especially travel to Jerusalem just to see the rare conjunction plus standstill,. So something has to be clarified.

Why did the Magi travel to Jerusalem? To answer this question, we include two facts that are historically established in our reflections and historical reconstructions: First, it was one of the Magi's high standards that they first proclaimed a message of the stars, especially such an important one, to the king , There was no king in Babylon. In addition, the message of the stars concerned the king in Israel. There was no observatory and no school of astronomers there. No one there could tell the king this wonderful message. So it was their duty to respectfully tell the King of the Jews what the stars had revealed to them.

Furthermore, Jews lived in Sippar.⁸ It is almost inevitably suggested that the Stargazers shared their knowledge from the stars with the Jews living in Sippar and Babylon. The message of the stars concerned their people. For these Jews there was also a reason to make a pilgrimage to their homeland to pay homage to the new king. From contacts with Israel, historically proven, they knew that they were expecting a great prophet, if not the Messiah. So they went with them to Jerusalem - and we hear, in the Gospel of Matthew, of their arrival there with Herod ...

But now there is one last thing to clarify, namely the question:

Are the Magi of Sippar the astrologers of Matthew?

Let's go back to the text of the Evangelist Matthew. His introduction to the Magi's story is as follows: "When Jesus was born in Bethlehem in Judea in the days of King Herods, behold, Magi came from the east to Jerusalem and said, Where is the newborn King of the Jews? We saw his star in the (early / evening) rising ... "How can we definitively determine that the Gospel astrologers are identical to the" historical "Magi of Sippar / Babylon? Could they not have been other astrologers? Or could not it have happened at another time? We have already excluded invention or legend and came across real history.

But how do we prove the identity of these two "groups" of Magi?

For the answer, we note what we know for certain about the Magi of Sippar and what we know for sure about the Magi of Matthew. From the Magi in Sippar we have the legacy of cuneiform tablets, for the Magi of Matthew, we have the 12 precisely detailed Greek verses of his Magi story. This results in the following conclusion:

The Magi in Sippar worked at a traditional observatory, they owned archives, they knew about Jupiter, and for them Jupiter was the king's star. They knew the date of September 15 as that of the evening rise for both planets, they knew the calculations (of the first and the second) on November 13th. Saturn referred to the land of the Jews.

⁸ S. my book "Quirinius, the tax and the star, why Christmas really took place in Bethlehem," topos-plus 2006, p. 220.

A king, a great king's son, is born in the capital (naturally in the royal palace); there they had to ask for him, there they would find him.

We can rule out that astrologers came from elsewhere; There were no other observatories at that time and in the East with similarly high astronomical knowledge. It can also be ruled out that they had traveled to another city, Saturn referred them to Jerusalem. It can similarly be ruled out that they would have moved to Jerusalem at another time (in the sense of other years), because the data of the cuneiform tablets from their archives gives the exact year, month and day of the stoppages. It can also be ruled out that these stoppages would have been uninteresting to them, for their quotations on the tablets emphasized them as a unique event with divine significance.

Let's go to the Matthew text.

The time is correct in the context of the years, since Herod was still alive, so before 4 BC. Jesus was already born. The location, Jerusalem, fits correctly into the message of Saturn. The question about the newborn King of the Jews fits in perfectly with the message of Jupiter. The Magi's message to Herod fits in with their duties to inform the king first. The reference to the rising of "his" star fits correctly with the cuneiform tablets. The horror of Herod and all of Jerusalem also fits in with our knowledge of the old, suspicious, jealous king. The later joy of the Magi on the way to Bethlehem, where they saw the star that led them, fits in the astronomical course of the stars of Jupiter and Saturn: Only on the way from Jerusalem to Bethlehem could the "pointing" See movement of the stars, and correctly only at the time of the second stoppage, on 13./14. November 7 B.C.

I mean, we've come so far that we can say that the data we found in Sippar is exactly the same as the one we read in Matthew's text. What's more, since we have to rule out other astronomers, just as we have to rule out another time, we have to rule out other places, there is only one conclusion left which is logical:

The Magi Matthew reports of are the Magi of Sippar and Babylon!

The Magi traveled about 800 Roman miles -No star had to lead them on this journey, for every caravan leader knew the way. They arrived in Jerusalem, and according to their tradition, they first told the King of the prediction of the stars and solemnly asked of the audience: "Where is the newborn King of the Jews? We have seen his star in the rising and have come to pay homage to him ". There they experienced an irritating surprise: Nobody knew anything about the birth of a king's son! Nor does King Herod, as the text in Matthew suggests. He was shocked instead of pleased. The Magi were barely able to properly classify these reactions. They must have suspected that their stars were wrong.

The text in Matthew further indicates that Herod was careful to keep the Magi away from the people of the city of Jerusalem. Especially from the religious leaders who were decidedly against the king. The reason for this is obvious from our historical knowledge: he feared that a new coalition could form against him. Because the high priests wanted to get rid of him as soon as possible and also expected a Messiah, as historical sources reveal. Herod had become more and more suspicious and jealous as his age progressed, and had already killed hundreds of suspects, including eight of

his ten legitimate wives, (amongst which his favorite wife Marianne), as well as his barber and officers and his own sons. Perhaps he was afraid that there would be a son left to another woman, and that he would now come to dispute the throne. That's why both he and Jerusalem were "startled": it would start a bloody slaughter again.

Herod was not a scientific astronomer, but interested in the message of the stars. He supposedly suspected that Jupiter's early or evening rising had marked the day of the rival's birth. This early dawn, according to the Babylonian era, was already in the past year for the Magi. Therefore, Herod later had all children killed "up to the age of two". The Magi noticed that the old king had no idea, for the rising of Jupiter did not say anything about the day the new King was born. In general, Matthew's account is not focused on Herod, but vividly portrays the experience of Magi. They learned of the gathering of all the chief priests and scribes of the king, of his questioning where the Messiah was to be born (Herod was not a Jew), of whose answer as quotation from the prophet Micah, "You are not in Bethlehem of the Judah the least ... for a prince will spring forth from you, the shepherd of my people Israel".

Herod called the Magi a second time, but this time "secretly". Here we hear clearly of Herod's mistrust and his care so as not to create an alliance between the Magi and the high priests; for the high priests the message of the Magi would have come at just the right time.

Herod now calls the place of birth to the foreign astrologers - a name they had not heard before! - and sends them there. They should find the child and then report it to him. One can understand this statement as a mixture of treachery and fear, precautionary and not-quite-serious-taking. For the Magi, the instruction was strange enough to make them even more alert. Whether Herod secretly sent spies to watch them, is debatable.

They were sent to Bethlehem, a place they did not know until then, and they did not know where it was. Bethlehem, however, was just south of Jerusalem, about two hours' walk away, about 8 km. In order to find their way there, they did not need a star.

Since the Magi certainly wanted to see the millennium event of the two stars, which was better viewed from the open field and elevated location, they left Jerusalem in the evening. The sun went down on Friday, November 13, 7 B.C. at 5:18 PM in the west. Nightfall began at 6:40. Today's scientific astronomy has calculated that that night was a very dark night and the stray light was zero. So it was likely a very clear night sky, especially for those with the trained eyes of stargazers.

The road to the south, to Hebron, leads first over a flat hill before it narrows to Bethlehem. From this point at 817 m altitude, they must have had an incredible view of the sky - and discovered a spectacle that they had not expected! It was not noted on their tablets: from the left, from the east, came Jupiter and Saturn (about 50 ° high) and moved westward on Bethlehem! They themselves moved to Bethlehem on their way from the north! The stars preceded them, leading them to the place where the child was. At the intersection of both paths lay the place where the newborn king was. The message of their science was even more true now than they had ever imagined. "And

they rejoiced with great joy!" According to the text in Matthew. Not about the child! But about how their centuries-old stargazing had known everything.

How do we know that it was exactly this "group" of the stars? Would not another night in another year in question?

Those concerned enough to find a suitable star chart, finds an undoubted answer. First: Jupiter and Saturn in the sign of the fish three times near each other and two times standing still close to each other - that happens only every 854 years. Second, Jupiter and Saturn were originally from the west, with Jupiter running faster and above Saturn. Their first close meeting happened between May 29th and June 8th; after that, they ran east, faster Jupiter beyond Saturn. The first shutdown of both happened to 24./25. July in the west. (The exact degrees are omitted.) Thereafter, both stars moved (on their cycle around the sun), viewed from Earth seemingly backwards. For the middle of September their common sunrise had been forecast, which the Magi, I believe, solemnly observed in Sippar. Between the 26th of September and the 6th of October, the two planets approached each other for the second time, and the faster Jupiter passed this above Saturn. On our 12./14. November, the second standstill of both, the western; after that, both stars moved east again and got very close to each other between the 5th and the 15th of December.

Let us return to the question after these explanations: Was another coincidence of two stars possible in another year?

No, this is not possible. Astronomically this was only on 13th November (a short time window) 7 B.C. Astronomically it was possible for the Magi to see Jupiter (kings star) and Saturn (Star of the Jews) leading them to Bethlehem, as Jupiter and Saturn "preceded" them on their way to the city, to which they were traveling on their way from north to south. Both events fir together exactly for that night and that night only! What Matthew describes is exactly what we saw - and what we can verify in every planetarium. Furthermore, this astronomical event was only "visible" to someone who went from the north, from Jerusalem to the south. In addition, one must consider that the Magi knew exactly, regardless of the natural observation of where and when exactly the stars would remain mathematically. For them everything was so accurate, so correct and unexpected, so unpredictable in and out, that they must have been delighted.

Let's add something important here: The stars did not stop for the beholders - we already mentioned the earth's own rotation. The eyes of Magi followed the stars, as they moved on. But on the basis of their mathematical and trigonometric calculations, they knew that the western standstill of the Millennium occurred that night.

And now something else needs to be mentioned. Something they did not know, which was not noted on their cuneiform tablets anywhere.

We call it the Zodiacal Light.⁹

⁹ Already in 1968, Prof. dr. K. Ferrari d'Occhieppo in his book "The Star of the Wise - History or Legend" (Herold, Vienna / Munich) graphical representations to the "sink-

When the Magoi had moved to Bethlehem on their way through a hollow, they must have seen this phenomenon. Thanks to our astronomical facilities, we can now reconstruct it exactly: They saw a faint glow that seemed to emanate from Jupiter and Saturn and descended over Bethlehem, which lay about 70 meters higher on the hill. It had the shape of a narrow parabola from top left to right below, its thin end pointing to the stars, while its broader "foot" rested on the right hill of Bethlehem. Perhaps the faint glow did not reach the ground, but to the astrologers it must have seemed to emanate from the two stars and descend like a cone of light on Bethlehem.

The Zodiacal light has nothing to do with the two stars. It is a reflection of the sunlight at the level of the ecliptic using the finest particles in space. The sun was far below the horizon at this time. But the two stars stood exactly in the plane of the ecliptic that night. The apparent gleam came astronomically "from below", from the sun, but the Magi did not know that. To them, the whole picture was as if the stars were emitting a gleam of light on Bethlehem. (That was the impression, even if that light did not reach all the way from the stars, but in those southern latitudes on this clear night without stray light, the zodiacal light might actually have been seen all the way to the stars.)

To see the real Zodiacal light, taken from the big telescope in the Atacama desert in Chile, one can look under

<http://apod.nasa.gov/apod/ap140911.html>

There was something else to be added: in its upper, narrow end, the cone of light, according to the ecliptic or the earth's own rotation, moved a little further to the right, to the west; The stars sank almost imperceptibly with the cone down. But the foot of the cone of light always remained fixed on the same surface (which is connected with the ecliptic), on the same surface of Bethlehem. This too can be scientifically reconstructed. If one drew an imaginary axis from the tip of the cone of light to the center of its foot, then this center point would always point to almost the same place, while the upper part moved slightly to the right and down.

The beam of light from Jupiter and Saturn also pointed to a point in Bethlehem. Unrelated. Almost exactly on this one. If we now look in the text in Matthew, then we read and see almost tangibly, as Matthew obviously tries to describe this phenomenon in generally simple terms: "The star (Jupiter, the king star) moved before them, led them, until he got there, where it was placed above the one where the child was. "

It can not be described more precisely.

But this "pointing" is not about the whole place of Bethlehem. Bethlehem had been called by Herod, which they found without a star and without any special light. It was more difficult to find that unique child in this small town. But now the stars, with the

ing of the Zodiacal light on 12 November 7 B.C. "Drawn. (P. 97, the "cone of light") D'Occhieppo, professor of theoretical astronomy at the University of Vienna, unfortunately passed away too early at 100 years of age to answer his critics. My books and this short article have the honor of continuing his work (on which Kroll SJ's "In the Footsteps of Jesus," pp. 63-68) was based.

lower point of the axis of their cone of light, pointed steadily to one point. The Magi only needed to set their equipment at the intersection of the "imaginary central axis of the cone of light" and the "skyline of Bethlehem" - and the next morning in daylight they could make out a house there.

But one last thing:

We can reconstruct which area in Bethlehem that central axis of the zodiacal light had smeared that night. It is not the place where the birth church stands today, under which we enter the cave of the birth of the Son of God! It was an area about 100 to 200 meters west of it, roughly in the present-day Great Square in front of the Nativity. What is that supposed to mean? In the texts of Matthew and Luke, the experts have noted oddities that seemingly cannot be harmonised:

After Luke, Mary and Joseph had gone to a "cave stable", where Mary gave birth to her son, wrapped him in swaddling cloths and laid him in the crib with the straw for the animals. According to Matthew, the astrologers entered "the house" and found Mary (without Joseph) and the child there! There is an old papyrus that reports that Magi saw the child "standing" next to his mother ... This suggests that the Magi had come to Bethlehem ten, eleven months after birth, and then "into the house ". Then the birth date of "24. December " would not be so unlikely!

What they found was not a king, it was a child, like any other, inconspicuous. But the stars had said: This child is HE!

Thus, we have now received comprehensive confirmation from the stars and zodiacal light for Bethlehem and for the accuracy of Matthews report:

The Magi (they are not kings – this denomination and idea came up centuries later), three of them, (as concluded from the three gifts) come at a later time, at a time when Joseph and Mary have left "makeshift cave" again. This is normal: Josef had sought as quickly as possible a suitable accommodation in this city, which was completely overcrowded because of the "*apographē*" (Luke 2, 2 and also Josephus Flavius), the first act of census and residence survey. Officials had to report on of all the men of Joseph's family who had their homes and land in Bethlehem, and who lived near the Romans in their place of birth. Apparently, officials report a house 100 or 200 metres to the west on the hill, while the town itself was more likely to be on the eastern slope (to keep the sewage out of the city).

I hereby conclude the clarification of the "riddle".

There is no need to simply believe, as this was no product of religious imagination, and everything is verifiable. Our faith is based on knowledge: With certainty the house understands Israel – and understands all of the world!

One thing I would like to emphasize once again: nobody could see this "stagnation" of the stars - because of the earth's own rotation. Everyone could see only the two stars, and the strange light that seemed to emanate from them and showed them Bethlehem. Standing still is a highly scientific calculation of centuries of star observation. Matthew and the Magi could not see the deadlock. But the latter knew about the second stagnation, which was confirmed by the light shining from these stars, and the mathematicaltrigonometric uniqueness of the night.

Therefore, what we read in the 12 verses at the beginning of Chapter 2 of Matthew, must have been written in later years. According to my research, he wrote his Gospel between the mid-40s and about the end of the 50s in Jerusalem - from the Magi, from one who may have communicated directly with him.

Because only they, the astronomers, knew about this secret. Hence the European "Festival of the Star Singers" is less a feast for children who disguise themselves as kings, and much more a feast for astronomers, for astrophysicists and all scientists who are astonished at sensing the mystery of God in his creation.

This article may be used in whole or in part, but only with reference to the author.

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Notes