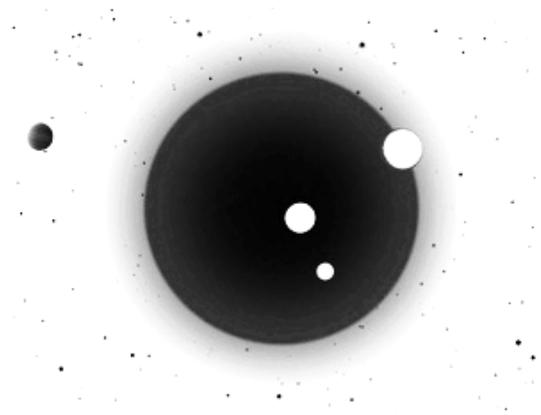


THE SUMERIAN K8538 TABLET  
THE GREAT METEOR IMPACT DEVASTATING MESOPOTAMIA  
- A 2019 TRANSLATION ADDENDUM

JOACHIM SEIFERT

FRANK LEMKE



*Correspondence to:* [weltklima@googlemail.com](mailto:weltklima@googlemail.com)

*Website:* <http://www.knowledgeminer.eu> • <http://www.climateprediction.eu>

FEBRUARY 2019

©2019 Joachim Seifert

**Abstract.** The paper adds new translation knowledge to our 2014 paper: "The Sumerian K8538 tablet, the great meteor impact devastating Mesopotamia". We present an improved, detailed fixing of the meteor impact day and impact hour, according to data provided on the tablet. A sky map for Northern Taurids meteor showers shows the comet flight path in the sky. Other useful information is given concerning climatic change, following the meteor impact, the meteor impact aftermath and new details for the relation of the cosmic impact to the Christian Bible, in particular to Genesis and Apocalypse. The meteor impact occurred at 10:56 am, on September 22, 2193 BC, after the meteor emerged at 5:34 am at dawn and after a flight time of 5 hours 22 minutes. These numbers can clearly be deduced out of observation data entries in the tablet's pictographic records and in comparison to LOD (length-of-day tables) for the corresponding Mesopotamian latitude. The K8538 tablet is property of the British Museum. Unfortunately, the museum is staunch in its opinion that this tablet represents the Babylonian sky as a so-called "planisphere". This opinion is based on an interpretation, which we, for the first time, analyze in comprehensive detail, item by item, in this paper. Result: The planispheric concept of the Babylonian sky on this tablet is a hoax: Not one single correct argument proves alleged recorded planispheric constellations on the tablet, except one, already found by L. W. King, over 100 years ago, back in 1912. As translated in our 2014 K8538 paper, the tablet has never been a planisphere, but is a pictographic "cartoon" story, probably the first recorded cartoon of the world, consisting of a sequence of 8 subsequent pictures, to be turned while reading, to advance the story. All 8 pictures exclusively show observations, recorded measurements and specific details of flight and impact of this disastrous meteor, which destroyed the nearby Akkadian capital in Mesopotamia. Because Southern Iraq in the impact area was swamp and marshland until recently, an exploration of the discovered impact crater, Umm-al-Binni, was impossible. For the first time, it is feasible from 2019 on, and a first crater inspection will soon be conducted. Due to missing explorations of the impact crater, Near-East historians, until now, did not recognize the historical cosmic impact event, but we may expect that this will change in the near future.

**Citation.** Seifert, J., Lemke, F.: The Sumerian K8538 tablet. The great meteor impact devastating Mesopotamia - a 2019 translation addendum, 2019, [http://www.knowledgeminer.eu/climate\\_papers.html](http://www.knowledgeminer.eu/climate_papers.html)

## 1. ADDITIONAL INFORMATION

- Historical eyewitness reports of the impact and its aftermath, please see our paper: "The Destruction of the

City of Akkad by a Cosmic Asteroid Impact and the Link to Global Climate Change"

- The meteor impact bolide was part of annual Taurids meteor showers, which occur every year in autumn. We present the Northern Taurids celestial map, which indicates the meteor flight path from Triangulum, out from the Taurids Meteor Shower origin, passing the Pleiades and moving towards Orion. The map also indicates the reason why the K8538 tablet was produced: Observation of annual Taurids meteor showers by astronomers, focussing on the celestial area around the Pleiades, discovered a persistent comet tail as a thin white streak in the night sky, which was thought as worth recording. The line prolonged every day and after day 6, the comet bolide was visible as well to the naked eye, starting on day 7 in the observational records. The unusual celestial feature was followed for 3 weeks until the comet finally impacted Earth.
- After the meteor impact, a centennial cold and dry climate period ensued. The relation of cosmic meteor impacts and the following climate evolution is explained in detail in our paper: "Climate Pattern Recognition in the mid-to-late Holocene (2900 BC to 1650 BC), part 4"
- The meteor impact and its enormous disaster left a huge imprint on human society. Many Sumerian tablets exist which present details of the impact event, but downgraded by Near-East history as myth and storytelling. The impact's great destruction in the Orient, also found its place in the Christian Bible, particularly in the early parts of Genesis and in Apocalypse, which draw on details of the disaster. A separate paper will be available at the end of 2019, with corresponding Bible quotations in relation to specific features of the Mesopotamian meteor impact of 2193 BC.
- A first archaeological inspection of the impact site is planned for this year 2019.

## 2. REVISED TRANSLATION OF IMPACT DAY AND IMPACT MONTH

After re-reading the tablet many times over, we concluded that 2 sections, story image No. 8 and story image No. 5 may substantially be improved. Since the tablet constitutes a detailed document of measurements, data on meteor impact time, sunrise and sunset of the event must be found recorded on the tablet:

### 2.1. Starting with the image No. 8

The arrow, or spear, is the flight path in the sky. The meteor flight was a vigorous event, as described above the flight path: B 13 - B 144 - B 84, or "AN" - "BAN-DA" - "SI" (ZI, ZIG), thus: AN (celestial object) - BAN-DA (short duration of the distance run between measurements, fast)

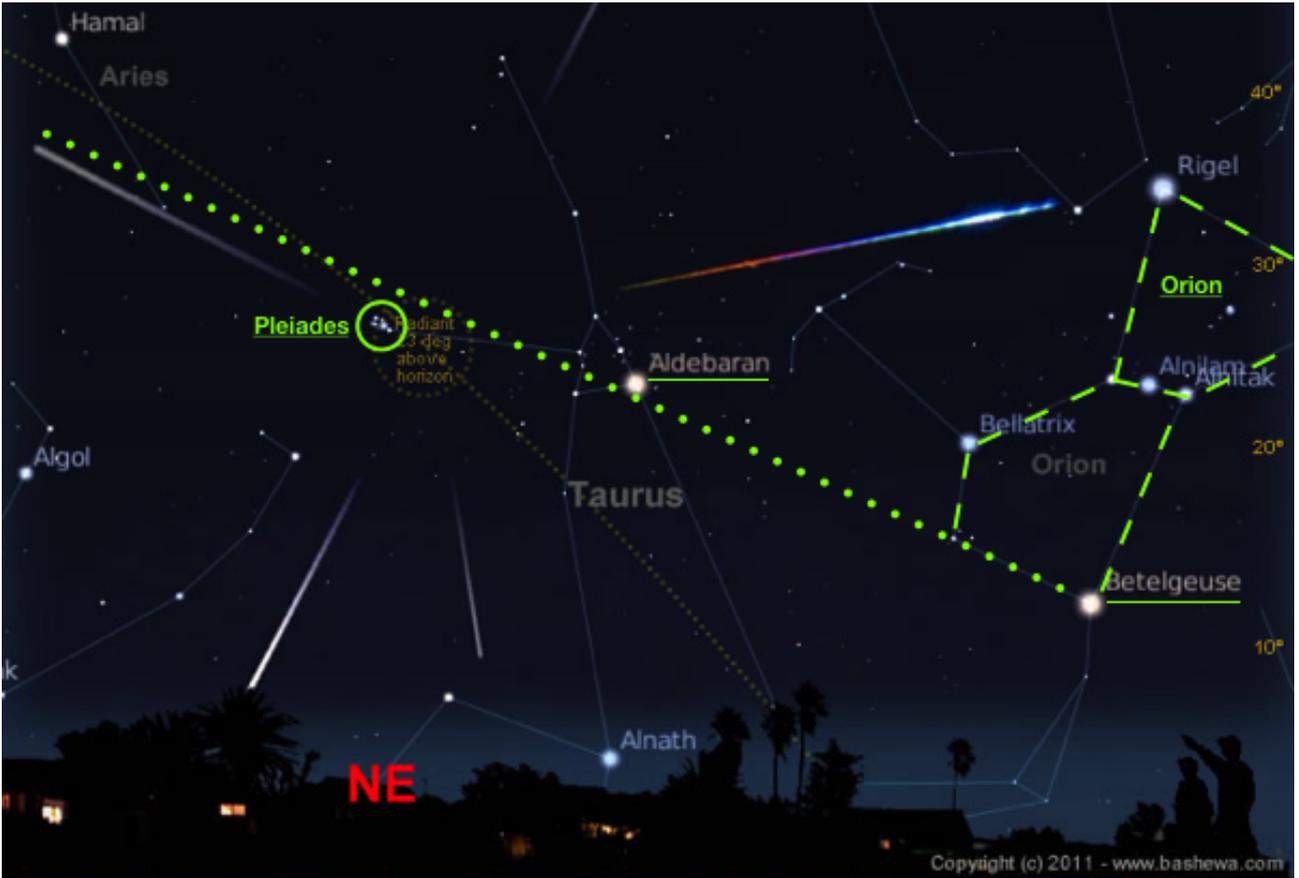


Figure 1. Northern Taurids meteor shower

- SI (run away, run off, running, escape) - The meteor flew fast in the distance between measurement triangles.

There are two measurement triangles given on the bolide's flight path. But, to cover the entire flight path of this impact day, there must be more than two recorded triangles: One additional triangle for the start of the flight,

emerging on the sky horizon, and another one, positioned in the curve from the bolide's vertical rise out of the horizon, turning into an horizontal downcoming path. We will add this missing, broken-off part to the image No. 8 (fig. 2).

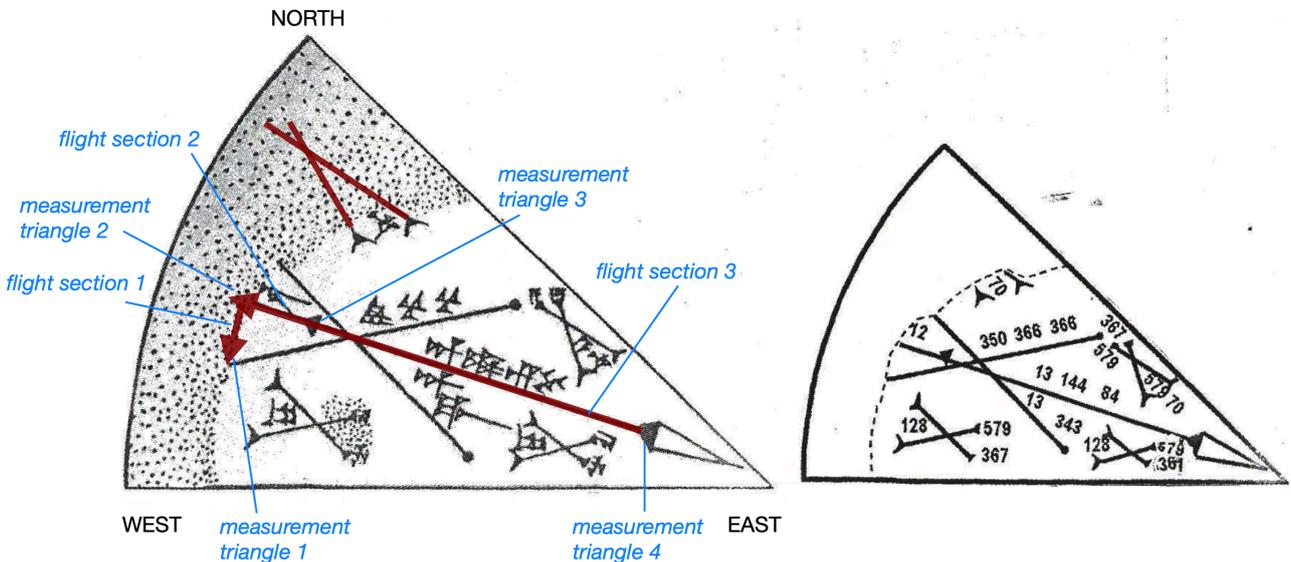


Figure 2. Sector No. 8

We can see that the flight path, in color, consists of 3 sections, contained by 4 measurement triangles.

Above the flight path arrow, two inclination angles for the comet flight sections 2 and 3 are shown as mini-crosses: Both mini-crosses show the signs B 579+70, or sign "A" for water and "NA" for the "smoke"-line of the comet tail. The "water smoke" signifies "white smoke," as opposed to "black smoke" of combustion. Another mini-cross "A" signifies the horizontal line, as the "water" level horizontal line. The same signs A-NA appear as well in the first tablet image 1, where the top script line shows the approaching comet tail for 8 days.

The horizontal flight path is not entirely horizontal, the sign B 367 of the Rykle Borger list, "SE", is translated as a downcoming inclination of 15°, shown by the top two mini-crosses, indicating downward meteor tail inclination angles.

Especially interesting is the large cross as a grand background for the comet flight. Here we have to take into account, that the comet rise was early in the morning at dawn and this large background cross could only be observed and placed onto the tablet for a short time, at dawn until sunrise, but not later in the light of day. More details on this are given in the following text. The large visible cross was drawn at dawn, as soon as the comet appeared on the horizon.

All 8 tablet images show the direction West situated on the far left side, and East on the far right hand side. The comet rose in the Western direction on the left of the tablet and moved toward the center of the background cross, then further towards the East. Therefore, the background cross is definitely not a cross for indicating a general Western direction, as assumed in our previous paper, in which we followed the opinion of other meteor impact authors (Bond and Hemsell, 2008). The background cross should rather be interpreted as a celestial star cross for pinpointing the location of the comet emerging out of the horizon. The bottom left corner of the background cross has to be the emerging point of the comet on the horizon. Furthermore, the emerging point is not located straight west, but rather in WNW, e.g., in an about 20 degrees angle toward the North.

The observer placed two mini-crosses below the flight arrow, in order to demonstrate once more in detail the angles of the background cross.

All mini-crosses do not indicate a meteor flying time, as previously assumed, but only show flight angles and star positions in the sky.

We summarize: The image No. 8 covers the entire meteor flight from its rise out of the horizon in WNW direction, moving vigorously towards the right hand side, to the East. In the center of image 8, the flying bolide

already reached a massive size: B 13 - B 343, or AN.GAL., celestial object, now large. Another interesting feature is the sign B 12 (TAR) on the left above the flight line: In ePSD, translated as "cut in pieces, scattered, dispersed". Here we have the comet tail, dispersed into streaks, four in number, as recorded three times before in image 5. A further observation is that the text AN-BANDA-SI, "the object running fast" is placed between the third and the last measurement triangle. This indicates that the meteor ran faster towards the end of its flight to reach the ground, compared to its visible velocity during the rise on the horizon.

In image 8, no measurements for meteor flying time from one triangle point to the next triangle point along the flight arrow are given. But where can we find the time measurements for the flight?

Those are given in image No. 5, upside down, in such a way that they are readable after having turned the tablet 180 degrees, and which concern all three flight arrow sections in image No. 8.

Now, what we need to extract is the flight time duration for each of the three meteor flight sections, plus one more important measurement for the hour of sunrise, required to be able to calculate the total length of the impact day.

## **2.2. Image No. 5 contains all flight time measurement results**

All measurements are not listed as narrative, but are given as crude pictographic values (fig. 3). We obtain in image 5, top line above, at the left, with the Rykle Borger system: B 471 - B 570 - B 471 - B 570 - B 471 - B12. In Sumerian: NIS - MIN - NIS - MIN - NIS - TAR (KUD).

Translation: 20 / 2 / 20 / 2 / 20 / fraction of 1 (a cut-off time unit). Those numbers on the left concern the cuneiforms at the right hand side, where three times the B 318 (KUS-ammarru), a measurement for length of a distance, is given. They signify the three meteor flight path sections in image 8.

We can find exactly the same method on the bottom of the first image 1 of the tablet, not displayed here in the text, which shows daily measurements of the meteor tail, twice B 318 (KUS-ammarru), and various numbers given at the left, before the two KUS signs, which follow afterwards.

The measured time numbers once again: The first KUS - meteor flight section - was 22 time units, followed by 22 time units for meteor flight section two, and afterwards, a shorter meteor flight section three, of 20 time units plus a cut-off fraction added - for which we decided to take a ½ time unit.

The total flight time measured in image 5 is 22+22+20,5 = 64.5 Sumerian time units. The measure "time unit"

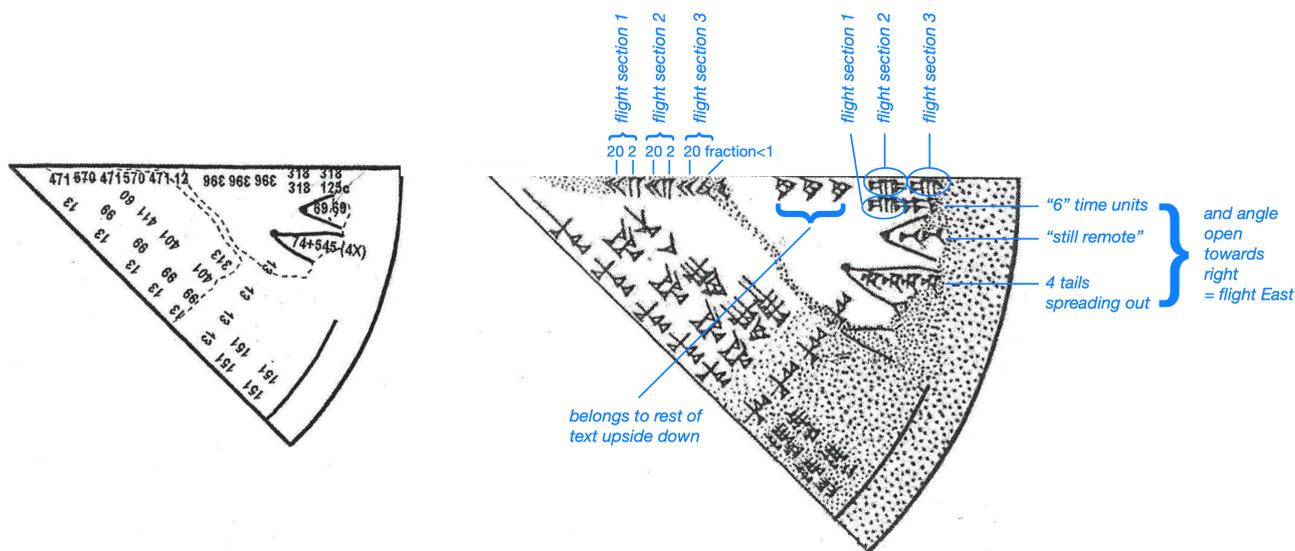


Figure 3. Sector No. 5

signifies one fraction of an hour. The Sumerians divided the day into 12 hours and the night as well into 12 hours, the smaller unit of today's "minute" had not been invented yet. We therefore have to figure out, how long this mentioned small Sumerian time unit as fraction of an hour is (known as "US") and translate this value into minutes, used today.

Three possibilities exist: A time unit of 6 minutes, of 5 minutes or 4 minutes, which, in other words, constitutes a division of one hour in either 10, in 12, or in 15 time units. Other time lengths are impossible, because, considering our following calculations of the LOD (length of day), time fractions longer than 6 minutes and shorter than 4 minutes do not yield sensible length of day values. Only the three possibilities, 6 min, 5 min, 4 min do produce feasible LOD length of day values. This can be verified by checking shorter or longer time lengths in LOD calculations. We select the variant of 5 min time length, which means that one hour was divided into 12 time units, similar to the 12 hour division method for the daytime. This view is supported by the tablet's image 1, on the bottom line, the sequence of 2-3-6-12-24 followed by KUS-ammuru, which demonstrates that this type of division by 12 is the applied method for fractionating the KUS measure, both in image 1 and image 5.

It is also quite logical: Fractionating one hour into 12 units makes sense in an 2-3-4-6-12-24 division system. Dividing by other numbers 15 (4 min) or 10 (6 min) is more cumbersome.

The decimal system has not been invented yet. In case that this 5 min time fraction length does not yet feature in other cuneiform analyses, then our calculations would represent additional historical information.

As next step, we are able to calculate the length of the impact day (LOD):

The 64.5 time units for the entire flight at 5 minutes each per unit result in a total of 322 ½ minutes of flight duration on this day, which amounts to 5 hours and 22 ½ minutes of meteor flight from the start of meteor rise and flight until the meteor impact on the ground. We already know the time passed from the impact moment until sunset, 7 hours, as given in image No. 6, top row: 7 times B 532 (ME - the plural sign): "a lot of", "plenty" of dust clouds for 7 hours until sunset, done in horizontal measurement repetition for every successive hour, as consistently applied for all day and hour measurements on the tablet. Only the fractions of hours are given in numbers for measured time units, here in image 5.

Now, only one last but most important time span has yet to be revealed: The time span between meteor rise and sunrise, which is necessary to complete an entire LOD (length of day). This measurement is given at the right hand side: B 125c (AS) - the number 6, time units, therefore: 6 x 5 minutes = 30 minutes given for the time span between the two rises. The observer probably measured half of one complete hour, then noted this time span as 6 time units.

It must have been a definitely rare and interesting observation in the morning sky: Two, with 30 minutes difference only, almost simultaneous rises of the Sun out of the Eastern horizon and the much stronger glowing meteor rise out of the Western horizon, and the observer positioned in the middle between those two rises on opposite sides.

Below the 30 minute measurement, references to this observation are made: A large "V"-angle, opening to the right as a flight towards the East. The flying object is

shown as small triangular point, positioned within the tip of the open V-triangle. To this is added: B 69 - B 69 ("BAD"): "still remote," the flying object rising still far on the horizon. Just below it, another V-angle containing four times B 74 + B 545 ("BAR+SUS"): "spreading out" + "cloud over," which are four white "cloudy" streaks of four meteor tails, visibly spreading out to both sides of the flight path. A third V-shaped angle is placed below it, its message, not readable, would, most likely, give information on the flying bolide itself: e.g. "fiercely shining".

Our reading thus revealed the important detail that the Sun rose 30 minutes following the meteor rise. Now we may calculate the time passed from the moment of sunrise to the meteor impact hour on the ground: This time span is 30 minutes less than the duration of the meteor flight of 5 hours 22 ½ minutes: We therefore subtract 30 minutes from the meteor flight time and obtain the duration of 4 hours and 52 ½ minutes for the time span from sunrise to the impact moment.

This duration will yield the total length of the day: 4 hours and 52 ½ minutes from early morning sunrise to impact moment, plus 7 hours to be added from the impact moment to sunset. In total, the (LOD) length of day was 11 hours and 52 ½ minutes. Checking the LOD tables in the internet for a 30 degree north latitude of Sumer (Day length, 2019) results in two possible impact dates with this exact day length: The 22<sup>nd</sup> of September and the 23<sup>rd</sup> of March. The 22<sup>nd</sup> of September corresponds to a historical record of a large meteor sighting in the summer of 2193 BC, in the 6<sup>th</sup> lunar month, as calculated from the equinox, noted in the Annals of the Xia Dynasty in China. The late September date also corresponds to the Bible, Genesis 19:31-35: Lot and his daughters lived on ripe grapes, and produced themselves wine. They were able to find edible dried-up grapes after the great destruction event. This matches the end of September date, and not supporting the March date.

After obtaining the 22<sup>nd</sup> of September as impact day, the exact hours of sunrise, meteor rise and ground impact on this day are still open:

Calculations are done for the high Sun-stand, at 12 hours noon: The total length of day was 11 hours, 52 ½ minutes, of which half occurred before Sun highstand and half after the noon Sun highstand. We subtract half a LOD, 5 hours and 56 minutes, from the highstand, to obtain sunrise: The sunrise would be at 6:04 am in the morning, the meteor rise occurred 30 min earlier at 5:34 am.

To impact time calculation: The meteor appeared on the horizon at 5:34 am, and the meteor flight time was 5 h and 22.5 min, which will set the meteor impact hour to

10:56 am. After the impact hour, the Sun set 7 hours later, at 17:56 pm.

The length of day, therefore, on September, 22<sup>nd</sup>, lasted from 6:04 am to 17:56 pm; as calculated above, a total LOD of 11 hours and 52 ½ minutes.

All meteor impact event dates, according to tablet observations, summarized in a list:

1. meteor rise at 5:34 am
2. sunrise at 6:04 am
3. impact hour at 10:56 am
4. sunset at 17:56 pm.
5. length of the day 11 hours and 52.5 minutes
6. observed meteor flight from meteor rise to impact: 5 hours, 22.5 minutes
7. the impact day: 22<sup>nd</sup> of September 2193 BC

### **3. THE K8538 TABLET IN THE BRITISH MUSEUM, AN UNCORRECTED "PLANISPHERIC CONCEPT"**

A collection of circular Babylonian tablets is kept at the British Museum (BM), which includes the K8538 tablet from Nineveh. The famous Assyrian cuneiform specialist L. W. King did the transcription onto paper and the tablet was published as a so-called "planisphere" in 1912. He identified small tablet holes and small triangles as stars. The tablet clearly depicts the constellation (mul Apin) Triangle, the star group Pleiades as a group of 7 holes and the constellation Orion (Sipa-zi-an-na). Without further study, King considered the tablet as an example of a planisphere, showing the sky over Babylon. Three years later, in 1915, Ernst Weidner, a Babylonian sky specialist, analyzed the tablet, drawing the clear conclusion that the tablet was not a planisphere, but something different. The curators of the BM, however, remained convinced that the tablet was a true planisphere, and, at the end of the 1980<sup>th</sup>, they wanted the assumed celestial constellations identified and confirmed. Renowned assyriologists declined to do this task, even when paid for. Further efforts to find a person for placing the Babylonian sky onto the tablet lead to a hobby clergyman, who was willing to deliver the wanted constellations. The BM promised to pay for the publication of his future book on Babylonian star constellations, but not for the translation of the book into English.

J. Koch, in his book, written in German, admitted, that he believed the BM's view, that constellations needed to be placed onto the tablet, and that he should not translate the text or search for other tablet meanings.

All agreed, Koch went to work, and as the first step, he entirely wiped the tablet clean of all scripture, leaving only lines and points, see his figure No. 15 on page 112 in his book. The original King tablet is given at the left and the cleaned Koch tablet at the right for comparison (fig. 4).

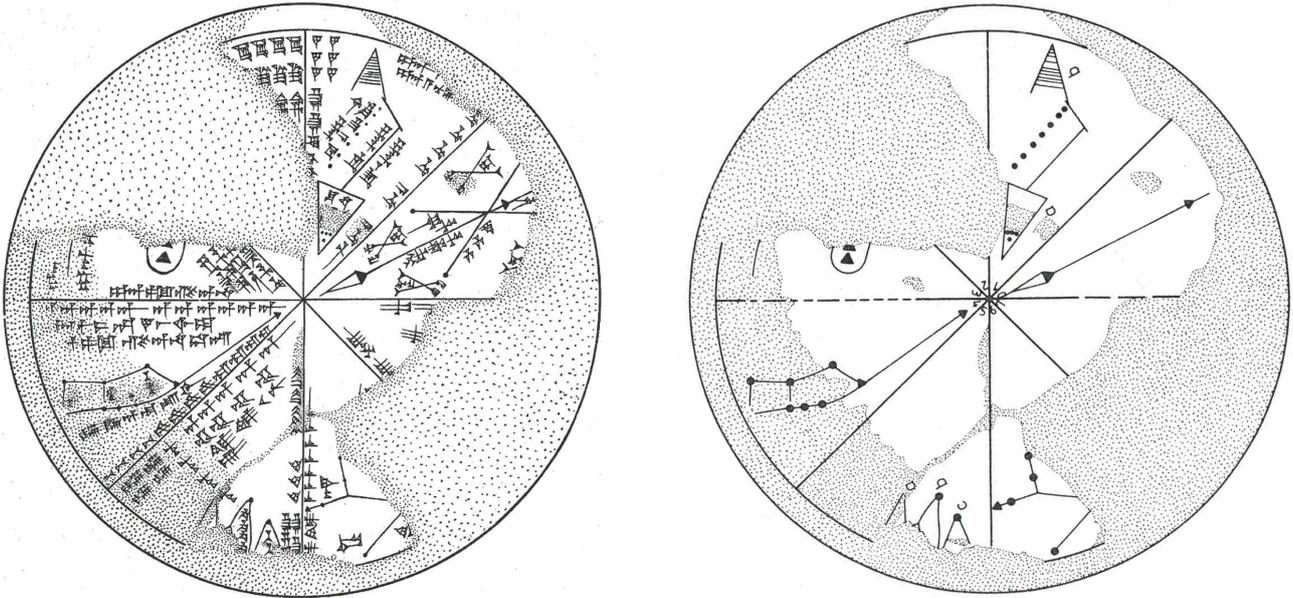


Figure 4. King tablet (left) vs Koch tablet (right)

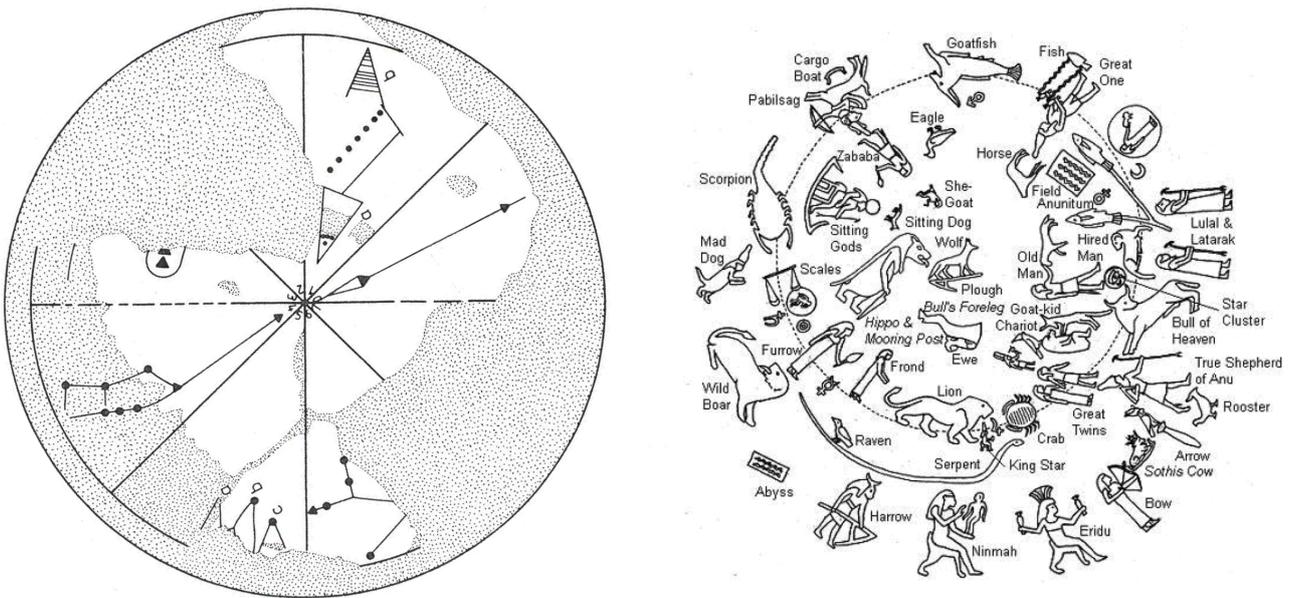


Figure 5. Koch tablet (left) and Babylonian constellations (right)

As second step, he tried to fit, turn and jiggle star constellations onto the tablet (fig. 5).

This task is, of course, a senseless undertaking, because the tablet has nothing to do with a planisphere.

We will demonstrate this impossibility or hoax by conducting an itemized analysis of Koch's cleaned tablet and its "constellation identifications". Here, the Koch "identification list" (fig. 6).

Koch numbered the 8 cleaned sectors from 0 to 7, shown in the tablet center.

The sector details:

1. Sector 0 (story image No. 8): It only shows one straight arrow. Here, Koch not only eliminated all text, but even wiped off most drawings, such as the large background cross, with its 4 star points at cross ends, as well as each of 4 mini-crosses of the comet flight angles. Evidently, those drawings did not fit into Koch's planisphere, so they had to be eliminated. Afterwards, Sirius and Betelgeuse were placed onto the arrow, without providing any reason. Looking at Sirius, and the Betelgeuse of Orion, it is evident that both are completely off real sky dimensions, considering their distance relation to constellation

Sektor	Kurzbezeichnung	Sternfigur	Babylonisches Sternbild	Sternidentifizierung
0	Pfeilfigur		<sup>mul</sup> gag-si-sá	Sirius + Beteigeuze
1	Figur zweier	a	<sup>mul</sup> AŠ-iku	α72,78ψPegasi
	Dreiecke	b	<sup>mul</sup> apin	Dreieck aus 41χβγ Andromedae
3	Ellipse mit eingeschlossenen Dreiecken		<sup>mul</sup> mul	Pleiades
			<sup>mul</sup> gu <sub>4</sub> -an-na	αθ <sup>1,2</sup> γδεTauri
4	Figur mit Zeigerstab		<sup>mul</sup> maš-tab-ba-gal-gal	α + βGeminorum
			<sup>mul</sup> maš-tab-ba-tur-tur	δ + ζGeminorum
			<sup>mul</sup> maš-tab-ba ša ina	
			<sup>mehret</sup> <sup>mul</sup> Sipa-zi-an-na <sup>izzazu</sup> <sup>meš-zu</sup>	γ + εGeminorum
5	Kleinfiguren	a	Schwanzende des <sup>mul</sup> muš	αβγδCrateris
		b	<sup>mul</sup> uga <sup>mušen</sup>	Corvus
		c	<sup>mul</sup> ab-sín	74,82αVirginis
6	Waage-Figur		<sup>mul</sup> GI-GI ( <sup>mul</sup> zi-ba-an-na)	β(γ)λα <sup>2</sup> ισLibrae + 381G. Centauri

Figure 6. Original "identified constellations" of the Koch book (Koch, 1989, p.112)

- Triangulum in sector 1 and the alleged Pleiades in sector 3. Furthermore, Betelgeuse is a main star of Orion, therefore Orion should be present in Koch's sector 0, but there is no mention of Orion. Obviously, the constellation Orion did not fulfill the large background cross design. He therefore eliminated the constellation Orion entirely from the tablet, in spite of its character as a major and well-known Sumerian constellation. Orion is explicitly mentioned twice in the tablet's text, in image 3 and image 4, plus, the Orion constellation is depicted in image 4.
- Sector 1 (story image No. 1): Here, the constellation Triangulum ("Mul apin") was long before known by the BM and L. W. King, 1912 by its written constellation name on the tablet and a triangle shape. Therefore, J. Koch did not identify Mul apin. A second triangle is shown within this sector 1, "identified" by Koch as "mul as-iku," the constellation Pegasus. This constellation is not named in the tablet script and forms a rectangle in the sky. J. Koch strangely reasons: "The Pegasus rectangle is placed on the tablet in the shape of a triangle, and triangles in the sky are very much like rectangles, therefore the rectangle Pegasus constellation is presented". In reality, this "Pegasus" is the constellation Pleiades group, which consist of 7 stars, clearly depicted by 7 star holes in this sector 1, four of which are easy to see, the remaining 3 need a closer look onto the original BM clay tablet. In spite of clearly existing 7 Pleiades holes in sector 1, Koch moved the Pleiades further into the sector No. 3.
  - Sector 3 (story image No. 3). Here, the ellipse with 2 measurement triangles was "identified" as alleged Pleiades and the constellation Taurus. No reason provided. This was done even contrary to a clear position of the Pleiades within the story image 1.
  - Sector 4 (story image No. 4): Here, the tablet drawing of Orion is "identified" as constellation Gemini. Constellation Orion (Sipa-zi-an-na) is written in the text of sector 4, and a second time named in the previous image 3. The constellation Orion is of high importance for the Sumerians. Eliminating this constellation altogether from the Babylonian sky is a grave error.
  - Sector 5 (story image No. 5): Three smaller triangles exist in this field at the right hand side. Back in 1915, the assyriologist Ernst Weidner in his book about the Babylonian sky admitted to have failed his attempt to read and interpret K8538. He made a guess that one bent triangle of those three shapes seems to resemble the hind half of a bird. For this reason, Koch "identified" one triangle as constellation Raven and next to it, Virgin.
  - Sector 6: (story image No. 6): The presented angle is named as constellations Librae and Centauri, no reason provided. Further in the book text, he mentions three more constellations as "identified": Mul pan, Mul lugal and Mul is+le, which he added without indicating their locations on the tablet. We conclude that it is impossible to place the Babylonian sky onto this tablet, because it is not a planisphere. Koch's attempt to substantiate the planispheric concept on K8538 entirely failed. Happy about the "identified constellations" received, the British

Museum paid the author his publishing costs. They regarded the list of eagerly awaited planispheric constellations as worth paying for. But no payment was made for a Koch book translation into English, obviously, this would make it easier to check on details. The Koch book, therefore, remained without translation. A few short reviews of the book do exist in later literature, but all those comments are limited to short general praises, no one was willing to take time to look at details.

This is the latest state of the K8538 “planisphere translation” at the BM in London, until the year 2019.

The authors would like to add one more thought: It is highly unusual, that an important tablet, transcribed and published back in 1912, was never translated for almost 100 years, until Bond and Hemsell's attempt in 2008. The cuneiform was all provided by L. W. King - but nobody else afterward published a complete or partial translation. The reason for this is that cuneiform assyriologists are specialists, which are trained with linguistic and onomastic background. The K8538 pictographic tablet on the other hand, required a meteor and comet science background, an interdisciplinary approach, to comprehend the tablet's scientific observational entry records, which, naturally, none of Assyriologist specialists possess. For this reason, belonging to an assyriologist group was and is insufficient to distill the message out of K8538, which the 100 year translation gap clearly proves.

Ernst Weidner, in his Babylonian sky book, lamented that he was missing the clue, what the tablet was all about. He could not figure out, why the tablet had horizontal cuneiform repetitions. This unusual repetition feature, nowhere found elsewhere, seemed to him as an indication of “witchcraft use”. J. Koch, as well, lamented about a missing clue, also tried to find one by suggesting possible uses or applications of the tablet during Sumerian times. He had no better inspiration than tablet uses as a planispheric reference for some sort of unknown events.

Certain is as well, that other assyriologists tried to tackle the tablet translation during the past 100 years, but without the necessary breakthrough clue of the tablet's message, they all were bound to fail. The latest attempt was tried by a Ashurbanipal group in Berlin in 2015, when a public K8538 study presentation was held, but no paper was published, the content obviously was too speculative or embarrassing. It was Ernst Weidner himself, who remarked in his Babylonian sky book, that the person, who got the clue to crack the tablet's code, should count on his highest esteem.

After a long 100 years, in 2008, Bond and Hemsell, not being assyriologists, but engineers and airplane technicians, were inspired by the correct clue: “Some object was recorded as flying in the sky”: A recorded

meteor flight and impact. They started their translation setting the tablet cuneiform into the Rykle Borger number system, so everyone was able to check and follow their translation. To mention that this Rykle Borger system is highly useful, deserves praise and we regard it as superior to ePSD.

Of course, Bond and Hemsell's work contain many shortcomings. Their comet flight, ending in the Alpine Mountains, only was a novel translation attempt. Anyone, who is interested, may get our version and their version and compare. But, leaving all shortcomings aside, we need to give credit that their book must be counted as good pioneering work and was a most important step, with the correct clue, done into the right direction. Ernst Weidner would have been pleased and would have handed out his honors. Six more years passed after 2008 until, finally, their book found the way into the hands of people who specialize in cometary impacts on Earth, the real topic recorded on the tablet. The meteor flight and impact was clear from the beginning, since Bond and Hemsell's book. But many details required additional work and more thought. Nine months of study passed for entirely comprehending the tablet's pictographic message.

#### 4. SUMMARY

The tablet recordings are an enormous Sumerian astronomical and scientific achievement. Its translation casts new light on the history of the destruction of Akkad and Sumer.

Many more tablets with disaster eyewitness reports survived 4000 years, but all of them, until today, are not taken at face value, but are downgraded by historians as to be nothing more than theatrical prose, entertainment text, long story telling and pure phantasy, instead of being real historical observations. The views of present historians will undoubtedly be corrected in the coming years, a mea culpa can certainly not be expected for their disregard of ancient eyewitnesses.

An inspection of the meteor impact crater and of Akkad city walls is planned for this year, 2019.

#### REFERENCES

- Bond, A.; Hemsell, M.: A Sumerian Observation of the Koefels Impact Event, 2008, Alcuin Academics, UK, ISBN 1904623646
- Day Length for Various Latitudes: <https://orchidculture.com/COD/daylength.html>, last accessed February 2019
- Details of the meteor impact on Akkad: In Seifert, Lemke: “The destruction of the city of Akkad by a cosmic asteroid impact and the link to global climate change”, 2013

Details on the climate change after this meteor impact: In

Seifert, Lemke: "Climate pattern recognition in the mid-to-late Holocene (2900 BC to 1650 BC), part 4, 2016

King, L. W.: Cuneiform Texts from Babylonian Tablets in the British Museum, Part XXXIII, 1912

Koch, Johannes: Neueste Untersuchungen zur Topographie des Babylonischen Fixsternhimmels, Otto Harrassowitz, 1989

Northern Taurids Meteor Shower:

<https://www.bashewa.com/wxmeteor-showers.php>

Planisphere picture The British Museum: [https://](https://britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&assetid=467620001&objectid=303316)

[britishmuseum.org/research/collection\\_online/collection\\_object\\_details/](https://britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&assetid=467620001&objectid=303316)

[collection\\_image\\_gallery.aspx?](https://britishmuseum.org/research/collection_online/collection_image_gallery.aspx?partid=1&assetid=467620001&objectid=303316)

[partid=1&assetid=467620001&objectid=303316](https://britishmuseum.org/research/collection_online/collection_image_gallery.aspx?partid=1&assetid=467620001&objectid=303316)

Weidner, Ernst F.: Handbuch der Babylonischen Astronomie, 1915

Sumerian sign lists:

1. ePSD:

<http://www.psd.museum.upenn.edu/nepsd-frame.html>

2. ETCSL sign list

<http://www.orinst.ox.ac.uk/edition2/signlist.php>

3. Rykle Borger Zeichenliste

<https://archive.org/details/Assyrisch-babylonischeZeichenliste>