

The Astronomical Meaning of the Donkey’s Jawbone used by Samson as a Weapon and the Gate of Gaza

*By Felice Vinci**

This article follows on from previous articles, in which we demonstrated that some of the bizarre exploits of the biblical hero Samson can be explained astronomically. Here, we will demonstrate that this approach also allows us to give logical meaning to other strange events in his life. Indeed, we will first see that the jawbone with which Samson slaughters his enemies corresponds in various mythologies to the Hyades star cluster, which is shaped like a jaw and often appears during solar eclipses. This is consistent with the fact that in a previous article, we showed that his hair, which holds the secret of his extraordinary strength, represents a metaphor for the solar corona, which indeed appears during total solar eclipses. We will then see that the doors of the Gaza Gate, which Samson carried to the top of the hill that faces Hebron, could allude to an astronomical gate, delimited by the two points on the eastern horizon of Gaza corresponding to the sunrises on the days of the solstices. This is a very ancient concept, present even in Homer and attested by archaeological finds dating back to the Early Bronze Age. In short, Samson's adventures, even that of the millstone he was forced to turn before the dramatic end of his life, make sense when reinterpreted from an astronomical perspective.

Keywords: *Samson, Sun, Sun’s corona, jawbone, Hyades, gate of Gaza, Hebron, World Mill*

Introduction

In this article, we will develop the hypothesis that some of the seemingly bizarre exploits of the biblical hero Samson—particularly the one in which he uses a donkey's jawbone as a weapon to slaughter the Philistines, and the one in which he carries the doors of the gate of Gaza “to the top of the hill that faces Hebron”—can be interpreted astronomically. We will see, in fact, that there is no shortage of reasons to suppose that both the jawbone and the Gaza Gate are astronomical metaphors, behind which lie, respectively, the constellation of the Hyades and an astronomical gate mentioned by Homer, for which archaeological evidence dating back to the Early Bronze Age has been found. These findings should therefore be added to those of previous articles, in which we have verified that other exploits of Samson can be interpreted in the same way.

To this end, we will adopt a methodology that consists of a new critical examination of reliable sources, not only classical but also from other literary and archaeological contexts, comparing and exploring analogies and similarities, as well as anomalies and enigmas. These, particularly in the field of mythology, can

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sometimes reveal hidden metaphorical meanings capable of opening new hermeneutic horizons. Indeed, a comparative reading of these testimonies with elements typical of other cultures fosters a broader and more transversal interdisciplinary approach to the issue as a whole, both diachronically and in the search for mythological, anthropological, and historical-religious connections. Furthermore, throughout this work, we will always keep in mind that, to adequately address issues such as the one in question, "a rationalistic approach is sterile without the effort to immerse oneself in the mentality of the times and people with whom we are dealing" (Ferri, 2010, p. 219).

The article is structured as follows. The next section provides background information on the figure of Samson, cites attempts by other authors to demonstrate that Samson was a solar figure, and then summarizes the conclusions of our previous articles, in which we demonstrated the plausibility of an astronomical interpretation of some of Samson's exploits. The subsequent section explains why the donkey's jawbone, which he uses as a weapon, can be interpreted as an astronomical metaphor. The following section focuses on another of Samson's exploits, when he "took hold of the doors of the city gate, together with the two posts, and tore them apart, bar and all. He lifted them on his shoulders and carried them to the top of the hill that faces Hebron", demonstrating that this too involves an astronomical dimension, supported by literary and archaeological evidence, which can be extended even to some final events of his life. The final section offers concluding remarks.

The Figure of Samson and His Astronomical Dimension

Samson is a biblical hero who was given superhuman powers by God in the form of extreme strength, and performed several exceptional feats, told in the Book of Judges (chapters 13-16), fighting against the Philistines, enemies of the Hebrews.

In the past, especially in the second half of the 19th century, some scholars proposed that Samson was a solar hero, as also suggested by the fact that the sun is present in his very name. In this regard, George Albert Cooke, an influential English academic, wrote that

The worship of the sun prevailed at one time in the neighbourhood of Samson's traditional home; and such indications as these seem to imply that sun-worship was familiar to the Israelites of the district, if not actually practised by them, until the religion of Jehovah gained supremacy (Cooke, 1913, p. 137).

But Cooke (p. 129) also argued that the idea that the figure of Samson could be traced back to a solar hero "is only an artificial ingenuity". Indeed, this idea was later virtually abandoned, as it did not seem to be based on sufficiently solid foundations. Here is how Gregory Mobley recently expressed himself on the subject:

Apart from the imaginative but forced allusions to astral activity—Samson's hair as the rays of the sun; the donkey jawbone as lightning; Delilah as a lunar goddess—the evidence for solar ideas in the narrative is minimal (Mobley, 2006, p. 7).

Meanwhile, the idea that Samson is a Hebrew variant of the same Near Eastern folk hero, who inspired the Mesopotamian Enkidu and Gilgamesh and the Greek Heracles, has gained wide acceptance among contemporary scholars. Regarding the characteristics of this folk hero, Mobley (pp. 12-13) claims:

The basic pattern can be said to include four elements: (1) a special birth; (2) an alienating crisis in youth; (3) adventures in a foreign land, battle, or nature; and (4) a return to society. (...) Samson has three of the four aspects of the hero. He has: (1) a special birth (a divine message announces an imminent birth to a formerly childless couple in Judg 13:2-24); (3) adventures abroad in Philistia and nature (14:1-16:30); and (4) a return to Danite society (although with Samson it is only his corpse that makes it home in 16:31).

In any case, according to current scholars, the story of Samson “has extraordinary aspects and in some respects can be compared to that of Hercules” (De Capoa, 2019, p. 256). In turn, Philippe Wajdenbaum focuses on “the well-known similarities between Samson and Heracles” (p. 223), also recalling that both killed a lion and tore down the gates of a city (p. 227). But it has also been hypothesized that the story of Samson derives from an ancient Canaanite tale (Reinach, 1997, p. 661).

However, in attempting to make full sense of some of Samson's strange exploits, and taking advantage of scientific advances in the fields of archaeology and ethnography, we have recently become aware that some of his otherwise incomprehensible stories can be very satisfactorily explained in astronomical terms, although in a very different way than previously attempted.

Therefore, before addressing, in the next section, the question the true meaning of the jawbone with which Samson slaughtered the Philistines, we believe it is useful to briefly summarize the articles we have published so far on the subject.

Let us begin with the fact that Samson's name, שמשון, in Hebrew means “man of the sun” (van der Toorn et al., 1999, p. 404). It contains the Hebrew term for the sun (שמש). On the other hand, it is certainly no coincidence that Samson's relationship with fire is attested by the antecedents of his miraculous birth, which was foretold to his mother by an angel of the Lord who later, at the end of a sacrifice,

as the flame blazed up from the altar toward heaven, (...) ascended in the flame” (Jdg. 13:20).

That being said, in a previous article (Vinci, 2024a) we demonstrated the plausibility of the hypothesis that behind the image of Samson's hair, which Delilah cuts off to weaken him and deliver him into the hands of the Philistines (who will soon thereafter blind him), lies an extraordinary astronomical metaphor of the solar corona. It becomes visible at the height of a total eclipse, when the sun, hidden by the moon—to which the character of Delilah appears in many respects comparable—seems to be weakened (in fact, it loses its light and heat) and blinded (Figure 1).

Figure 1. *The Solar Corona Appears as a Glowing Head of Hair at the Height of Total Solar Eclipses*



As for the identification of Delilah with the moon, we have devoted ample space to it, finding numerous clues of great relevance (Vinci, 2024a), while the only argument that Heymann Steinthal—one of the most important nineteenth-century supporters of the solar dimension of the character of Samson—was able to adduce to prove this identification was that

Delilah may also signify the ‘Relaxed, Vanishing’, as a Moon-goddess (Steinthal, 1877, p. 405).

Furthermore, considering that a close connection between the solar and igneous-metallurgical dimensions is found in the myths of the Dogon of Mali, according to which the Sun was considered a large vessel of molten copper (Griaule, 1968, p. 25), all this fits perfectly into the metallurgical dimension which, as we have seen in another article (Vinci & Maiuri, 2023), is the key to solving the riddle that Samson posed to the Philistines: “Out of the eater, something to eat; out of the strong, something sweet” (Jdg. 14:14), referring to honey and a swarm of bees in the carcass of a lion that the hero had previously killed at Timnah (Jdg. 14:8).

Indeed, this riddle, reinterpreted in light of archaeological discoveries made since the last century in the Timna Valley (Ben-Yosef, 2018), where there was an Egyptian sanctuary associated with ancient copper mines and metallurgical activities, hides a metaphor that can be traced back to fire and the world of metallurgy, since the smelting furnace “eats” the mineral with fire, producing a dull noise, reminiscent of both the roar of a lion and the buzzing of bees around the hive, and then from it flows the copper, which has a color and appearance similar to that of wild honey.

It is important to note that this interpretation of Samson's riddle was not possible in the 19th century, since at that time the sanctuary, dedicated to the goddess Hathor and attesting to the importance of metallurgical activities at Timna as early as the 2nd millennium BC, had not yet been discovered. The same can be said of the information we have today about the culture of the Dogon people of Mali, which we owe to research conducted by Marcel Griaule in the last century.

Likewise, we have seen that the bizarre tale of the fiery foxes released by Samson to set fire to the Philistine fields (Jdg. 15:4-5), similar to that of the foxes

with burning tails unleashed in the Circus of ancient Rome (Ov. Fast. 4, 679 ff), can be immediately explained (Vinci, 2024b) by comparing them with the Fire Fox of Finnish tradition, believed to be the cause of the Northern Lights. In fact, the tail of this mythical animal emits sparks when it runs and touches the snowy ground, branches, or bushes. This corresponds to the fact that in the Finnish language the name of the Northern Lights is *revontulet*, “fox fires” (Ojanen & Linnea, 2019, p. 44). Moreover, the elongated shape of the fox’s tail, especially that of red foxes, lends itself well to representing the bright tongues of fire typical of the aurora borealis, that is, the Nordic “fox fires”.

At this point, we note that the meanings we have attributed to some of Samson’s singular events are consistent with each other and converge with an astronomical, solar, and metallurgical interpretation. This interpretation, however, is much more credible today than it was a century ago because, as we have already noted, it is based on updated knowledge in several crucial fields, such as archaeology and ethnology, combined with the greater ease with which scholars from all disciplines can now access it almost in real time.

In this regard, we also note the growing importance of astronomy in deciphering myths. Indeed, it has been fundamental in enabling us to propose rational solutions to the meaning of the Phoenix (Vinci, 2026) as well as to the ancient enigmas of the number 666, cited in the Apocalypse of John (Vinci, 2025a), and of the star that, according to the Gospel of Matthew, guided the Three Wise Men to the cave of Bethlehem (Vinci, 2025b).

But now, having made these premises, the time has come to try to understand the original meaning of the donkey’s jawbone that Samson used as a weapon.

Samson and the Donkey’s Jawbone

The Philistines went up and camped in Judah, spreading out near Lehi. The people of Judah asked, “Why have you come to fight us?” “We have come to take Samson prisoner,” they answered, “to do to him as he did to us.” Then three thousand men from Judah went down to the cave in the rock of Etam and said to Samson, “Don’t you realize that the Philistines are rulers over us? What have you done to us?” He answered, “I merely did to them what they did to me.” They said to him, “We’ve come to tie you up and hand you over to the Philistines.” Samson said, “Swear to me that you won’t kill me yourselves.” “Agreed,” they answered. “We will only tie you up and hand you over to them. We will not kill you.” So they bound him with two new ropes and led him up from the rock. As he approached Lehi, the Philistines came toward him shouting. The Spirit of the Lord came powerfully upon him. The ropes on his arms became like charred flax, and the bindings dropped from his hands. Finding a fresh jawbone of a donkey, he grabbed it and struck down a thousand men. Then Samson said, “With a donkey’s jawbone I have made donkeys of them. With a donkey’s jawbone I have killed a thousand men.” When he finished speaking, he threw away the jawbone; and the place was called Ramath Lehi. Because he was very thirsty, he cried out to the Lord, “You have given your servant this great victory. Must I now die of thirst and fall into the hands of the uncircumcised?” Then God opened up the hollow place in Lehi, and water came out of it. When Samson drank, his strength returned and he revived. So the spring was called En Hakkore, and it is still there in Lehi (Jdg. 15:9-19).

At this point, we must verify whether in any mythology, even outside the world of the Bible, there is a jawbone somehow related to the one used by the biblical hero. In this regard, we note that a jawbone, which is used as a weapon and is also closely linked to the sun, appears in a New Zealand tale (Grey, 1885, p. 26). It tells of the hero Maui, the protagonist of many Polynesian myths, who went to visit his ancestor Muri-ranga-whenua, from whom he obtained a jawbone “with which great enchantments can be cast” and with it he decided to capture the sun. Armed with this magical jawbone and a large length of rope, he and his brothers set out eastward until they reached the place where the sun slept at night. There, they built a great clay wall, with huts made of tree branches at each end for hiding. They then made the loops of the noose and lay in wait until

The sun came rising up out of his place, like a fire spreading far and wide over the mountains and forests; he rises up, his head passes through the noose, and it takes in more and more of his body, until his fore-paws pass through; then were pulled tight the ropes, and the monster began to struggle and roll himself about, whilst the snare jerked backwards and forwards as he struggled. Ah! Was not he held fast in the ropes of his enemies! Then forth rushed that bold hero, Mau-tikitiki-o-Taranga, with his enchanted weapon. Alas! The sun screams aloud; he roars; Maui strikes him fiercely with many blows; they hold him for a long time, at last they let him go, and then weak from wounds the sun crept along its course. Then was learnt by men the second name of the sun, for in its agony the sun screamed out: ‘Why am I thus smitten by you! Oh, man! Do you know what you are doing? Why should you wish to kill Tama-nui-te-Ra? Thus was learnt his second name. At last they let him go. Oh, then, Tama-nui-te-Ra went very slowly and feebly on his course (Grey, 1885).

It should be noted that here, in addition to the jawbone, we also find the ropes used to bind the sun, which appear in Samson’s adventures both in his adventure with the jawbone (Jdg. 15:13) and in the one in which Delilah cuts off his hair (Jdg. 16:8; 16:12).

We find a similar tale in the mythology of an Australian aboriginal people, the Adnyamathanha. They had a savage and cannibalistic sun deity, to the point of roasting her victims over a fire, until two lizard-men intervened, one of whom, Kudnu, struck her with a boomerang and wounded her, causing her to disappear and leaving the world in complete darkness. But when Kudnu threw another boomerang eastward, a great ball of fire arose and slowly traveled across the sky until it disappeared below the western horizon, and thus day and night were created (Pianka & Vitt, 2003, p. 286). Here it should be noted that the boomerang has the same shape as a jaw.

But why did some cultures see a jawbone or boomerang in the sky? The answer lies in the fact that the Babylonians called the Hyades cluster in the constellation Taurus “the jawbone of the Taurus” (de Santillana & von Dechend, 2003, p. 201). In fact, its five brightest stars form a “V”, or jawbone, shape within the cluster, clearly visible in the night sky between Orion and the Pleiades (Figure 2).

Figure 2. *The Constellation of the Hyades, between Orion and the Pleiades*

It is, therefore, not surprising that also in Norse mythology the Hyades cluster is called “the wolf’s jaw”:

A direct reference of the association in Scandinavian sources between the Hyades and the Old Norse wolf is found in an Icelandic manuscript (GKS 1812 4th, *De ordine ac positione stellarum in signis*), in its section dated 1192 AD, there is mention of the constellation of the Hyades using their native name, before Christianization: *Ulf's Keptr* (wolf’s jaw). The detail of the wolf’s jaw is fundamental in the narrative of Ragnarok (Langer, 2018, pp. 7-8).

In short, there is no shortage of reasons to consider plausible the hypothesis that the enigmatic jawbone of Samson, “the man of the sun”, has an astronomical dimension, as we have already seen with the story of his hair, that of the fiery foxes, and the riddle he posed to the Philistines.

At this point, it is reasonable to ask whether the theme of the jaw and that of the solar eclipse are also related in Norse mythology, and, in particular, whether there is a direct astronomical connection between wolf’s jaw, the Hyades, and eclipses. Here is the answer:

By analyzing the occurrence of ten solar and lunar eclipses during the Early Middle Ages (which were at that time visible in Scandinavia), we have found that nine of these phenomena occurred between 713 and 894 AD, and happened close to the Hyades cluster (interpreted by us as the constellation of Wolf’s jaw to the Norse people). In the case of total eclipses of the sun (...) the cluster was visible (at the time of totality, when the whole sky got dark), and in the case of eclipses of the moon, it was visible throughout most of the night (...) In the mythical tale, the first cosmic event that precedes the battle field Vigrid is the time when wolves swallow the Sun and the Moon (*Gylfaginning* 51), a clear reference to eclipses of both celestial corps (...) After Jörmungandr (also called “sea dog” in some poems) arose out of the sea and into the earth, Fenrir runs with its mouth open and its jaw protruding from earth to heaven. This is a crucial detail in the story, because soon after Odin is killed by the wolf, and then his son Vidar steps with his foot in Fenrir’s jaw and then divides it with his hands, killing the beast (*Gylfaginning* 51). Earlier, during Fenrir’s imprisonment, the gods have

inserted a sword in his mouth (*Gylfaginning* 34). All these details converge to a strong symbolism of the wolf's jaw (Langer, 2018, pp. 13-14).

All this shows that both the story of Delilah's betrayal, who cuts off Samson's hair, and the episode of the donkey's jawbone conceal a metaphor for the solar eclipse.

This interpretation is also confirmed by the conclusion of the story of the jawbone, which tells us that Samson, after throwing away the jawbone after the massacre, "was very thirsty," and the Lord caused a spring to gush forth there, which "is still there in Lehi". Indeed, in classical mythology, the Hyades, or, as we have just seen, the jawbone, are closely linked to rain (which feeds the springs), and in ancient Greek "to rain" is *hyein*, which has the same root as the name of the Hyades. Here is what Ovid tells us about it:

The head of the Bull sparkles radiant with seven flames,
which the Grecian sailor calls the Hyades after the word for rain (Fast. 5:165-166).

In conclusion of this section, we believe it is appropriate to mention here the interpretation that Heymann Steinthal gave of this episode at the time (which, in our opinion, immediately explains Mobley's skepticism about the old solar hypotheses about Samson, as we saw in the previous section):

For surely the jawbone cannot be anything but the Lightning, just as in Aryan mythology the head of an ass, or still more that of a horse, denotes a storm cloud, and a tooth, especially the tusk of a boar, signifies the lightning (Steinthal, 1877, p. 402).

Let us now return to our interpretation of the jawbone episode. It is entirely consistent with the interpretative framework emerging from Samson's other adventures analyzed previously, and so at this point it seems natural to ask whether even what might be considered the strangest of his bizarre exploits, the one in which he carried the doors of the gate of Gaza to the top of a hill, can be interpreted astronomically.

Samson and the Gate of Gaza

Here is Samson's feat that the Book of Judges tells immediately after the one with the jawbone and before Delilah cuts off his hair:

One day Samson went to Gaza, where he saw a prostitute. He went in to spend the night with her. The people of Gaza were told, "Samson is here!" So they surrounded the place and lay in wait for him all night at the city gate. They made no move during the night, saying, "At dawn we'll kill him." But Samson lay there only until the middle of the night. Then he got up and took hold of the doors of the city gate, together with the two posts, and tore them loose, bar and all. He lifted them to his shoulders and carried them to the top of the hill that faces Hebron (Jdg. 16:1-3).

Even in this case, if we interpret the gate of Gaza literally, as if it were a real city gate, Samson's enterprise appears senseless, indeed even more absurd than the others we have previously examined.

However, considering the now-established solar dimension of the character, which has allowed us to give full meaning to his other adventures and is reflected in his very name, we can now try to see if ancient mythologies speak of "gates" in an astronomical sense, and then verify whether it is possible to give full meaning to this story as well.

Let us read, therefore, a passage from the Iliad, which refers to the moment when the goddess Hera comes up from Olympus with her chariot:

Hera swiftly touched the horses with the lash, and self-bidden groaned upon their hinges the doors of heaven which the Hours had in their keeping, to whom are entrusted great heaven and Olympus, whether to throw open the thick cloud or shut it to. There through the gate they drove the horses (Hom. Il. 5, 748-752).

Here the movement of the celestial vault is admirably visualized, regular as a clockwork and marked by the Hours (Ἵρραι in Greek, that is, the seasons). We find the same concept in a phrase that the Latin poet Ovid has Janus, the god of gates (whose name corresponds to the Latin word *ianua*, "door"), say:

I sit at Heaven's Gate with the gentle Hours,
Jupiter himself comes and goes at my discretion.
So I'm called Janus (Fast. 1, 125-127).

Before continuing, it is worth noting that the two faces with which Janus is represented can be interpreted as the result of a long development process, starting with the Sumerian cultures, from the two solar pillars located on the eastern side of the temples, each of which marks the direction of the rising sun on the dates of the two solstices respectively. In particular, the southeastern pillar corresponds to the winter solstice, and the northeastern one to the summer solstice:

Janus is two-faced because, for an observer positioned appropriately with respect to the two pillars, he represents the direction of the rising sun at the summer and winter solstices (...) In Egypt, the temples were positioned so that the rising sun would be between the two columns located in front of the entrance. In Jerusalem, the gate of Solomon's Temple faced east and was flanked with two bronze pillars called Yachin and Boaz. On Mount Lycaeus, in the centre of the Peloponnese, the altar of Zeus was framed, on the side of the rising sun, by two columns adorned with golden eagles (...) All three are open towards the east and preceded by two columns, which delimit the stretch of the sky where the sun rises every morning (...) Every day the sun rises from a different point, but this oscillation has as its limits two fixed points: the summer solstitial east to the north-east, and the winter solstitial east to the south-east, where the sun stops before reversing its course. (...) They were naturally conceived as the jambs of a door (...) From a fixed place, rigorously marked on the ground, the observer notes the variations in the point where the sun rises. The two solstitial points are marked by two poles. Every day the sun rises between these poles and, at each solstice, in correspondence with one of the two, conceived as the uprights of the gate through

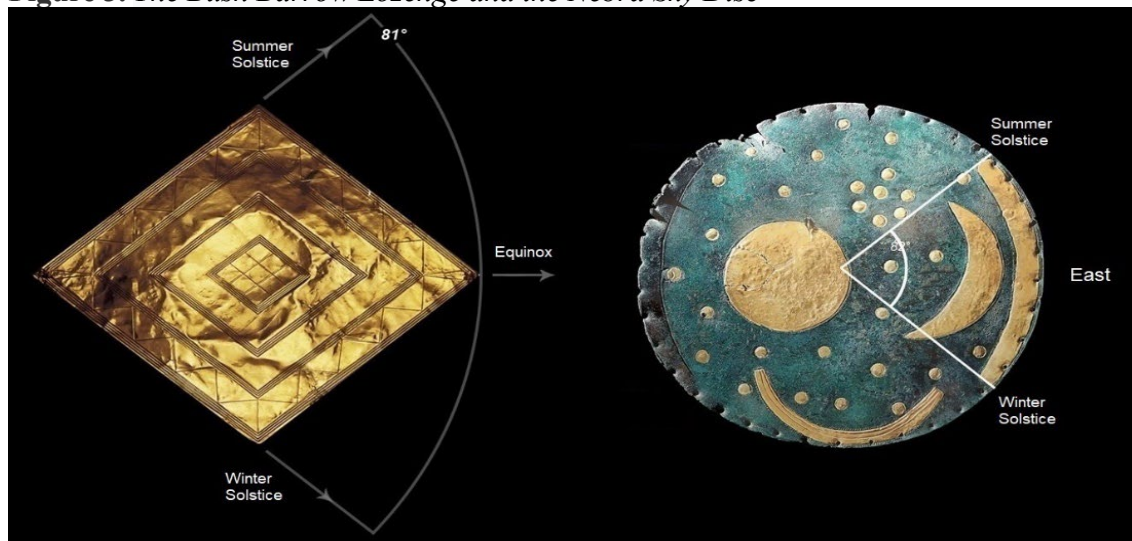
which the sun enters (...) The Japanese *torii*, consisting of two poles joined by a double transverse beam and erected in front of the doors of the temples, corresponds as well to the scheme of the monument with two pillars as the Gate of the Sun of the classical tradition (Audin, 1956).

In short, an astronomical gate, or solstitial gate, can be defined as the arc of the horizon between the two points where the sun rises from a given location, at the winter solstice and the summer solstice respectively. Thus, the arc marks the entire range of points on the horizon where the sun rises in a solar year (Garrow & Wilkin, p. 146), and its extent depends on latitude. At the center of the arc is the point on the horizon from which the sun rises on the days of the two equinoxes, which corresponds exactly to the east of the location in question.

Archaeology tells us that the issue of the solstitial gate must have been known as early as the second millennium BC, as attested by two important finds, both dating to the Early Bronze Age. We are referring to the Bush Barrow gold lozenge and the Nebra sky disc. The Bush Barrow lozenge is an ancient diamond-shaped carved artefact, 184 mm long and 156 mm wide, found in a burial mound near Stonehenge. It is very interesting for our purposes because it was found that

the pair of acute angles of the basic diamond pattern [of the Bush Barrow lozenge] to be 81° (...). This was the angle between midsummer and midwinter sunrises (and sunsets of course) on a low horizon at the latitude of Stonehenge (51.17° N) four thousand years ago (MacKie, 2009, p. 31).

The Nebra Sky Disc is a circular bronze plate 32 cm in diameter, with gold applications, also dating to the Early Bronze Age. It was found in a cave on the Mittelberg hill, near Nebra (Saxony-Anhalt, Germany), and is considered the oldest representation of the sky. For our purposes, the most interesting aspect of this disc is the "horizon arc" applied to its right edge, marking an angle equal to that between the points where the sun rises at the winter and summer solstices at the site where it was found (Figure 3). The arc spans an angle of 82° , correctly indicating the angle between the positions of sunsets at summer and winter solstice at the latitude of the Mittelberg (McIntosh, 2010, p. 16).

Figure 3. *The Bush Barrow Lozenge and the Nebra Sky Disc*

In short, "both the Nebra disk and the Bush Barrow lozenge appear to be designed to reflect the annual solar cycle" (MacKie, 2009, p. 41). Therefore, these two archaeological finds, both dating to the Early Bronze Age, support the possibility that behind the gate of Gaza lies a metaphor for a solstitial gate, perfectly in line with the solar dimension of Samson's character that we have already highlighted in his other adventures.

But now we must see more precisely how the concept of the solstitial gate can be applied to the world of Gaza. Let us return then to Samson, who "lay there only until the middle of the night. Then he got up and took hold of the doors of the city gate, together with the two posts, and tore them loose, bar and all. He lifted them to his shoulders and carried them to the top of the hill that faces Hebron".

This corresponds to the situation of an observer who, looking eastward from Gaza at dawn, glimpses the Hebron Hills (Figure 4) on the eastern horizon. Hebron actually lies almost exactly east of Gaza (these two cities, both very ancient, are at nearly the same latitude: Gaza at $31^{\circ}30'N$, Hebron at $31^{\circ}32'N$), approximately 60 km away.

Figure 4. *Gaza (bottom left) and, to the East, the Hebron Hills on the Gaza Horizon*

Thus, reading that Bible verse in the astronomical key discussed earlier, that is, considering the solstitial gate as it appears from Gaza along the horizon toward Hebron, one immediately realizes that the two “posts” of the gate are marked by the two hills from which the sun rises at the respective solstices, and that the two “doors” correspond to the two halves of the “gate”. The latter, in fact, like any double-door gate, is made up of two equal, adjacent, and symmetrical halves, divided in the center by the point where the sun rises on the days of the two equinoxes. Indeed, this equinoctial point east of Gaza (i.e., on the same parallel) lies almost exactly in the direction of present-day Hebron.

In this picture, “the top of the hill that faces Hebron” can only refer to the center of the solstitial gate, that is, the point where the sun rises at the two equinoxes, which, looking from Gaza in an eastward direction, actually corresponds to “the hill that faces Hebron” which, located on the horizon line of Gaza, is on the parallel of the latter, that is, exactly east of Gaza. Furthermore, to complete the metaphor, “the bar” carried by Samson with the doors and the posts represents the stretch of horizon that extends between the “posts” of the two “doors”, that is, between the two points, seen from Gaza, corresponding to the two solstices on the horizon line.

We would like to emphasize that in this case it is the biblical text itself that provides us with clear proof of the astronomical dimension of the episode, when it mentions “the hill that faces Hebron”, which, therefore, can only be located exactly east of Gaza (if the text had indicated a different direction, this interpretation would have left room for doubt).

In short, the solstitial gate east of Gaza has provided us with the hermeneutic key that allows us to immediately open an interpretative gate that had remained closed for millennia.

But now let's also see what Steinthal's interpretation was in this case:

Samson broke open the gates of the well-bolted Hades (...) The cause for which Samson went down into the netherworld was forgotten, and a new motive was invented by the legend for his visit to Gaza, in keeping with the licentiousness of his character. The fact that he starts at midnight, and does not sleep till morning, is certainly not without significance, but contains a remembrance of the circumstance that the deed took place in the darkness, i.e. in the netherworld. And the feature of the story which tells that Samson carries the gates to the top of a hill, must have been suggested by some local peculiarity in the form of the rock (Steinthal, 1877, p. 404).

Here too it comes naturally to observe that this interpretation by Steinthal, comparable to the one reported above regarding the jawbone with which Samson massacred the Philistines, immediately explains the reason for Mobley's very sceptical judgment on the old hypotheses regarding the solar dimension of the figure of the biblical hero.

On the other hand, the very fact that, as we said before, this feat of Samson's appears at first sight completely surreal and utterly absurd—while the astronomical interpretation, supported by both archaeological and literary evidence, fits it like a glove—makes even more plausible the idea that this hermeneutic key is truly the only one applicable to this hitherto enigmatic character.

At this point, it is reasonable to suspect that even the final events of Samson's life, following Delilah's betrayal, can be interpreted astronomically. Indeed, the Philistines, taking advantage of his weakness, seized him, gouged out his eyes, took him down to Gaza, binded him, then set him to grinding grain in the prison mill. But the hair on his head began to grow again after it had been shaved. Then the Philistines assembled to offer a great sacrifice to their god and to celebrate, because he had delivered Samson into their hands. So they called Samson out of the prison, and he performed for them. But when he was then made to stand between the central pillars on which the temple rested, Samson, bracing himself against them, prayed to the Lord, said, "Let me die with the Philistines!" Then he pushed with all his might, and down came the temple on the rulers and all the people in it (Judges 16:21-30).

Here we note that the sequence of events in the final part of Samson's story, from the cutting of his hair (which we have likened to a solar eclipse) to the catastrophic conclusion, seems to correspond in Norse mythology to the eclipse in which "the wolf will swallow the sun" (*Gylfaginning* 51), which will mark the beginning of the terrible Ragnarok, the end of the world.

Thus, also considering the overall picture that has emerged of the figure of Samson and the importance of the astronomical dimension connected to it, which has allowed us to give a complete meaning to the main events of his life, it seems reasonable to suppose that the mill to which he was chained (and which in the unfolding of events shortly precedes the final catastrophe) can be compared to the World Mill, mentioned in many mythologies, including the Norse one. It is

the very image of time that incessantly grinds the eras, bringing to completion the measure assigned to them (...) The mill par excellence of the Norse myth is Grotti, who grinds the prosperity and abundance of the god of fertility (...) The World Mill disappears into the depths of the celestial ocean when the old cycle must be replaced by the new (Chiesa Isnardi, 1996, p. 183).

The World Mill is closely connected to astronomy:

The idea of the World Mill originated as a result of the seasonal revolution of the constellation of the Great Bear (MacKenzie, 1926, p. 88).

In short, the cosmic-astronomical dimension we have highlighted in so many seemingly bizarre episodes of Samson's life is also found, with admirable coherence, in the final feat of the biblical hero who, after being forced to turn the mill, is then led into the temple where he causes everything around him to collapse. Indeed, this final episode truly seems to allude to the end of an era.

Conclusions

In this article, we have attempted to examine whether some of Samson's adventures, the unfolding of which often seems to defy common sense, can be interpreted astronomically using information recently made available to scholars by

science, as we have already observed in previous articles regarding other equally bizarre exploits attributed to him in the Book of Judges.

In the first case examined here, in which Samson, armed only with a donkey's jawbone, slaughters his enemies, we were led to an astronomical interpretation by indications from various mythologies according to which the Hyades star cluster is called the Jawbone, due to its characteristic V-shape. In particular, in Norse mythology, the Hyades were called "the constellation of the wolf's jawbone", which appears to swallow the sun at the height of a total solar eclipse. This is because the Hyades, given their proximity to the ecliptic plane, are often found at the time of a total eclipse in the area of the sky where the sun appears to temporarily disappear.

Subsequently, we found several pieces of evidence (both literary, starting with Homer, and archaeological) that what the biblical text calls "the gate of Gaza" does not refer to what is commonly understood as a city gate, but to a sophisticated astronomical reality, already known since the Early Bronze Age, as demonstrated by some archaeological finds from that period. It is, in fact, identifiable with the arc of the eastern horizon—which in this case is the horizon seen from Gaza in the direction of Hebron—which extends between the point where the sun rises on the winter solstice and the point where it rises on the summer solstice.

All this, moreover, makes it plausible to compare the millstone to which he was chained shortly before the catastrophic outcome of his last enterprise to the World Mill, mentioned in various mythologies, which marks the destinies of the eras that cyclically follow one another, from their beginning to their inevitable end.

We believe, therefore, that we have verified that this particular astronomical dimension of Samson's character, which also emerges from the meaning of his very name, can immediately reveal the metaphorical meaning of the most bizarre events of his life. Retracing them according to the order proposed in the Book of Judges, they are: the riddle posed to the Philistines regarding the lion's carcass in which he had found bees and honey; the no less enigmatic episode of the foxes with flaming tails; the massacre carried out with that extraordinary, deadly donkey's jawbone; the seemingly absurd moving of the gate of Gaza to the top of a hill; the secret of the immense strength connected to his hair; the obligation to turn the millstone, which is a prelude to the catastrophic end of him and his world.

In any case, given the novelty of this approach to the biblical figure of Samson, we believe that everything that has emerged so far on this topic should be further verified by specialists in the field and, if the outcome is positive, considered not as a point of arrival, but as a starting point for further investigations, from which new surprises may emerge in the future.

In particular, we believe it is appropriate for future studies to thoroughly investigate the possible direct or indirect contacts between the various civilizations involved in this research, whose mythologies have revealed surprising convergences. This broader context is beyond the scope of this analysis, but we believe it merits further exploration and future research. After all, it is well known that in every field of knowledge, a proposed solution to a problem often leads to the need to address new ones.

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References

- Audin, A. (1956). Dianus bifrons ou les deux stations solaires, piliers jumeaux et portiques solsticiaux. *Revue de géographie de Lyon*, 31(3), 191–198.
- Ben-Yosef, E. (Ed.). (2018). *Mining for ancient copper: Essays in memory of Professor Beno Rothenberg*. Tel Aviv: Institute of Archaeology, Tel Aviv University.
- Chiesa Isnardi, G. (1996). *I miti nordici*. Milan: Mondadori.
- Cooke, G. A. (1913). *The book of Judges*. Cambridge: Cambridge University Press.
- De Capoa, C. (2019). *Comment regarder l'Ancien Testament*. Vanves, France: Hazan.
- de Santillana, G., & von Dechend, H. (2003). *Il mulino di Amleto: Saggio sul mito e sulla struttura del tempo*. Milan: Adelphi (Original work published 1969 as *Hamlet's Mill: An essay on myth and the frame of time*, Boston).
- Ferri, G. (2010). *Tutela urbis*. Stuttgart: Franz Steiner Verlag.
- Garrow, D., & Wilkin, N. (2022). *The world of Stonehenge*. London: The British Museum Press.
- Grey, G. (1885). *Traditional Polynesian mythology and ancient history of the New Zealand race*. Auckland: Brett.
- Griaule, M. (1968). *Dio d'acqua*. Milan: Bompiani.
- Langer, J. (2018). The wolf's jaw: An astronomical interpretation of Ragnarök. *Archaeoastronomy and Ancient Technologies*, 6(1), 1–20.
- MacKenzie, D. (1926). *The migration of symbols and their relations to beliefs and customs*. New York: Knopf.
- MacKie, E. (2009). The prehistoric solar calendar: An out-of-fashion idea revisited with new evidence. *Time and Mind*, 2(1), 9–46.
- McIntosh, J. (2010). *Lost treasures: Civilization's great riches rediscovered*. London: Carlton Books.
- Mobley, G. (2006). *Samson and the liminal hero in the ancient Near East*. New York: T&T Clark.
- Ojanen, E., & Linnea, S. (2019). *Suomen myyttiset eläimet*. Helsinki: Minerva.
- Pianka, E., & Vitt, L. (2003). *Lizards: Windows to the evolution of diversity*. Berkeley: University of California Press.
- Reinach, S. (1997). *Cultes, mythes et religions*. Paris: Laffont.
- Steinthal, H. (1877). Legends of Samson. In I. Goldziher, *Mythology among the Hebrews and its historical development*. London: Longmans.
- van der Toorn, K., Becking, B., & van der Horst, P. (1999). *Dictionary of deities and demons in the Bible*. Grand Rapids, MI: Eerdmans.
- Vinci, F., & Maiuri, A. (2023). A hypothesis of solution of Samson's riddle. *Athens Journal of Mediterranean Studies*, 9(4), 271–278.
- Vinci, F. (2024a). A hypothesis on the original meaning of Samson's hair. *Athens Journal of Mediterranean Studies*, 10(2), 139–152.
- Vinci, F. (2024b). The hidden meaning of Samson's foxes. *Journal of Anthropological and Archaeological Sciences*, 9(2), 1212–1214.
- Vinci, F. (2025a). A hypothesis of solution to the riddle of Revelation on the number 666 (in connection with an enigmatic verse from Dante's Inferno). *Athens Journal of Mediterranean Studies*, 11(2), 105–112.

- Vinci, F. (2025b). The star of Bethlehem and the conjunction between Saturn and the Pleiades. *Journal of Anthropological and Archaeological Sciences*, 10(5), 1433–1445.
- Vinci, F. (2026). The astronomical meaning of the mythical Phoenix. *Athens Journal of Mediterranean Studies*, 12(1), 39–62.
- Wajdenbaum, P. (2014). *Argonauts of the desert: Structural analysis of the Hebrew Bible*. New York: Routledge.