



CHRONOLOGY & CATASTROPHISM

REVIEW 2020:3

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Plus **LETTERS** and **SOCIETY NEWS**



The Pyramids of Giza, seen from the South-East. To the right is the Great Pyramid of Khufu/Cheops, actually the largest of the three main pyramids. In the centre is the pyramid of Khafre/Chephren and that of Menkaure/Mycerinus is to the left.

The three subsidiary pyramids of Menkaure are in the left foreground.

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CONTENTS

SOCIETY NEWS	2
ARTICLES:	
<i>Ages Still in Chaos Revisited Part 4: Scientific Dating Procedures</i> by Trevor Palmer	3
<i>Trials on the Trails of Typhon and the Exodus part 2</i> by Marinus Anthony van der Sluijs	24
<i>Zeus: Thundergod Extraordinaire</i> by Ev Cochrane	41
<i>The Heliacal Rising of Sirius and Ancient History</i> by Peter Fairlie-Clarke	46
LETTERS:	
Robert Porter, Emmet Sweeney	55

Trials on the Trails of Typhon and the Exodus

Part 2

Marinus Anthony van der Sluijs

The Comet al-Kayd

In part 1, published in *C&C Review* 2020:2, pp. 3-22, classical reports on the comet Typhon were assessed and Rockenbach's sources for his handling of this comet and its link with the Biblical Exodus were definitively identified. The remaining part of this study will be dedicated to: an attempt to determine just how far back in time the idea of a comet associated with the Exodus or the destruction of Sodom and Gomorrah can be traced; an attempt to formulate a plausible context in the history of ancient Egypt for the comet Typhon with which classical authors from Pliny onwards were concerned; and a number of corollaries addressing related matters raised by Velikovsky and others.

Whether or not the comet Typhon ever manifested, at least the notion of it reaches back to antiquity. Can the same be said of an 'Exodus comet'? Two outstanding questions are: was there an earlier tradition tapped into by al-Dīn and ben Shushan when they spoke of a comet seen during the overturning of Sodom and Gomorrah and the Hebrew Exodus? And what was the elusive 'Mercurius Trismegistus' referenced by some of the German *literati*?

To start with the second challenge, the standard Hermetic text of the *Pymanter* was widely read in 16th-century Europe, but contains only the slightest reference to comets. [1] Some commentaries on it, notably that by the Calabrian Minorite theologian Annibale Rosselli (Hannibal Rosselius; 1525-1593) written between 1584 and 1586, expatiated on the comets, [2] but I have not found a match for the wheel-shaped object associated with the famine of *Genesis* in them. This is not to say that the notion of the wheel-shaped comet arrived out of thin air, however.

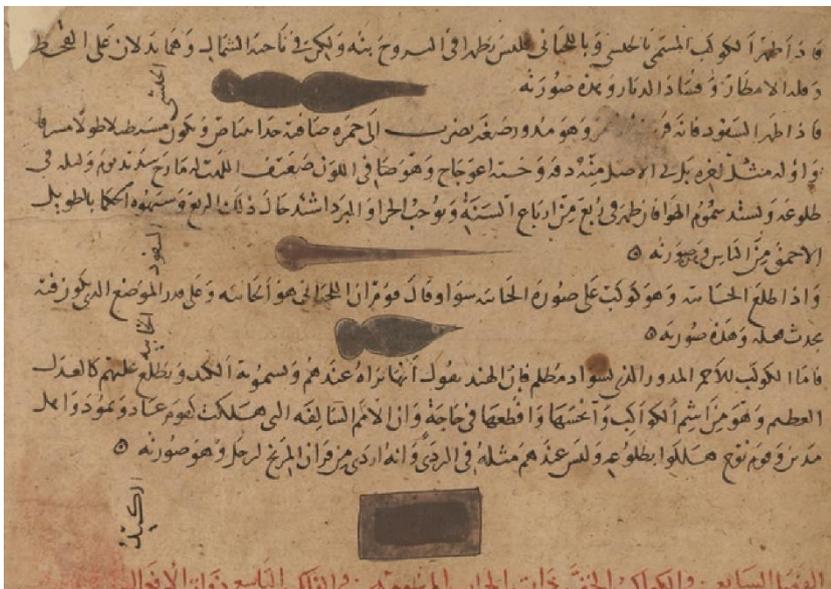


Figure 1: The top part of folio 14B of the Bodleian manuscript Arab. c. 90 (late 12th or early 13th century AD), showing the portion of the *Book of Curiosities of the Sciences and Marvels for the Eyes* (AD 1020-1050) which deals with several Ptolemaic types of comets, the one at the bottom being al-Kayd. Rapoport & Savage-Smith 2014: fol. 14v.

Lists of comet types and their properties supposedly defined by Hermes occur in at least two medieval Arabic treatises on astronomy. The closest approximation I have been able to locate so far comes from a precious manuscript which only came to scholars' attention in 2002, when it was acquired by Oxford's Bodleian Library. It appears to have been produced in the late 12th or the early 13th century AD, but the copied text itself is quite firmly dated to the period between AD 1020 and 1050. Written in Egypt, its title is *Kitāb Gharā'ib al-Funūn wa-Mulāḥ al-'Uyūn* (*Book of Curiosities of the Sciences and Marvels for the Eyes*). The anonymous author included two chapters on the astrological significance of comets. The first of these gives a general discussion, a list of the consequences of comets for their appearance in each astrological sign and a list of 11 comet types attributed to Ptolemy; the second enumerates 28

categories of comets and meteors ascribed to 'Hermes'. A sketch accompanies each *genus* of comet. [3] One of the Ptolemaic comets is the *Tayfūr*, [4] in which specialists recognise a survival of the Graeco-Roman 'Typhon'. [5] Of the various types, specific historical occurrences are given for only two. One dates to the early 11th century AD [6] and is irrelevant for the present purpose; the other, by contrast, is also the only one to qualify as a credible match for the wheel-shaped comet of the Lutherans (fig. 1):

As for the red, round star surrounded by a dark blackness, the Indians say that it is seen in their lands. They call it *al-kayd* (the deception). It ascends in their lands like a huge sack. It is one of the most inauspicious and ill-omened stars, and the most disruptive of essential needs. The ancient nations that have perished, such as ‘Ād and Thamūd, the people of Madyan, and the generation of Noah, all perished when this star appeared. The Indians believe that no other star brings destruction as this one, and that is more ominous than the conjunction of Mars with Saturn. [7]

Almost certainly, it was a passage much like this one which the unknown source mined by Schinbain, Grau and Herlitz used for the report on the wheel-shaped comet in Sagittarius. The Arabic author cited above grouped al-Kayd under the Ptolemaic comets, not the Hermetic ones. However, it was the last one in his Ptolemaic list and appeared on the same page as the first comets of Hermes. Consequently, if – for argument’s sake – the Germans relied on this very book the association of this particular comet with Hermes would be inaccurate, but understandable. Just as in the German accounts, the ‘star’ is ‘round’ and exceedingly horrific. ‘Ād and Thamūd were legendary pre-Islāmic civilisations in the interior of Saudi Arabia and Yemen, whilst Madyan is the Biblical Midian, in the northwestern part of the Arabian Peninsula. Al-Kayd was thus associated with India and Arabia, just like the wheel-shaped comet in the German sources, for which Syria, Babylonia and Egypt were given as further locations of observation. In the traditional cycle of Islāmic legendry, the successive destructions of ‘Ād and Thamūd by drought, wind and lightning occurred between Noah’s flood and the time of Abraham, while the people of Madyan met their demise in a giant earthquake and heat, at the time of the prophet Shu‘ayb between Joseph and Moses. [8] The passage cited above gives the impression of an ancient theory according to which al-Kayd foreboded all large-scale decimations of entire cultures, or at least those in the region effected by phenomena of fire and heat. While the annihilation of Thamūd resembles the Biblical tale of the overturning of Sodom and Gomorrah, the ruin brought upon the generation of Noah is the only event which is also directly mentioned in the Bible. For that reason, the passage cited above is the oldest known expression of the idea of a comet associated with one or more major Biblical catastrophes.

The famine at the time of Jacob and Joseph is not alluded to in the cited passage, but the connection with al-Kayd could easily be made if the comet had appeared in Sagittarius. For comets in that constellation, the anonymous Arabic author gave the following characteristics:

If it appears in the sign of Sagittarius, the air will become warmer, and it will be excessively hot. Land animals will die and perish. Winds carrying hot sandstorms will blow, killing wild beasts. Then there will appear in the sky a portent from the stars that would quell [these winds]. The king will become harsher towards the notables and the common people, and he will be intent on amassing property and humiliating his subjects, saddling them with injustice and oppression. One of the king’s most powerful enemies and foes will die in the east of that region. [9]

Someone with an interest in correlating the comet theory in this text with Biblical events could have gathered that the respective destructions of ‘Ād, Thamūd and perhaps Madyan all involved heat disasters; that they must have been heralded by al-Kayd in Sagittarius; and that Joseph’s famine belongs in the same category, as further confirmed by the shift in attitude causing the Pharaoh to enslave the Israelites where they had hitherto been guests. Recall also that Herlitz remained cautious about the association of this comet with Joseph’s famine.

All the same, there are reasons to assume that the text informing the hypothetical common source of Schinbain, Grau and Herlitz was not the exact version of the *Book of Curiosities* contained in the Bodleian manuscript or other known manuscripts. The comet’s eight-night duration mentioned by Schinbain and Herlitz remains unaccounted for and the accompanying illustration in the *Book of Curiosities* shows al-Kayd to be rectangular; despite the roundness indicated in the text, it is unlikely that a reader confronted with such a picture would take away the message that the object has the shape of a wheel.

Speculating further, it is even possible that the Constantinopolitans al-Dīn and ben Shushan obtained their knowledge of a red comet at the time of the ruination of Sodom and Gomorrah and the Exodus from this or a closely related source; were they identifying the Great Comet of 1577 with the red-black al-Kayd? Because Shu‘ayb was traditionally identified as the Biblical Jethro, Moses’ father-in-law, a flexible thinker could have linked the obliterations of Thamūd and Madyan with the destruction of Sodom and Gomorrah and Egypt’s ten plagues followed by the Exodus, respectively.

One manuscript of the *Book of Curiosities* was transcribed in 1564 in Syria, where it remains today. [10] Theoretically, al-Dīn could have shown this to associates of the Habsburg embassy in Istanbul, who could have passed on the information to European contacts. Other routes of transmission can be imagined. A manuscript produced in 1571 was donated to the Bodleian Library by Paul Pindar in 1611 [11] but could have been seen by Europeans long before that year. An undated copy, apparently also from the 16th century, made its way at an uncertain time to the Biblioteca Ambrosiana in Milan, Italy. [12] All these versions feature the rectangular picture of al-Kayd. [13]

Al-Kayd was a recurrent object in medieval Arabic and Byzantine astronomy. [14] The Christian ‘Iraqī astrologer ibn Hibintā (fl. AD 950) was the first known Arabic writer to mention it, indeed devoting a large subchapter to it in his *Complete Book on Astrology*, without providing an illustration. [15] In this, he stated that this tailed star appears every century and travels through the zodiac in retrograde direction. [16] He “provided a long list of dire consequences if *al-kayd* is configured with certain planets in particular zodiacal signs, and he attributed all this to the legendary Egyptian-Greek sage Hermes.” [17] Ibn Hibintā’s discussion is extant, but has not yet been translated from the Arabic. It was probably not the source of which the anonymous author of the *Book of Curiosities* availed himself, [18] but is a contender for the source which the early Lutherans recalled as ‘Mercurius Trismegistus’, who had ‘written much’ about the pertinent comet. Hopefully someone proficient in Arabic will be able to resolve this matter.

In the meantime, the quest is far from over as it will still need to be established whether the 11th- and 10th-century pronouncements on al-Kayd sprang from scholarly speculation or an orally transmitted memory of genuine events. Unlike most of the other comets listed in the *Book of Curiosities*, al-Kayd lacks an equivalent in the comet classifications known from classical sources, suggesting an origin in oriental tradition. Persian astrologers were acquainted with it; according to one anonymous Persian manuscript of uncertain date, held in Berlin, ‘The astrologers regard it as baneful and call it *shaiṭān-i-falak*, that is to say, the devil of the sphere’. [19] The ultimate provenance of the concept was incontestably Indian. [20] *Kayd*, meaning ‘deception’ in Arabic, was probably a folk etymology inspired by Sanskrit *Ketu*. In Hindū as in Arabic astronomy, it connoted the descending lunar node, that is, the point where the moon enters the southern ecliptic hemisphere. With Rāhu, the ascending lunar node, it was classed among the planets and invoked to explain eclipses:

When the sun and the moon find themselves simultaneously in the same node or sufficiently close to it, there is a solar eclipse; when one of the two stars occupies the ascending node and the other at the same the descending node, a lunar eclipse takes place. [21]

The supposition of the two ‘invisible planets’ Rāhu and Ketu to account for eclipses became obsolete when the orbital inclination of the moon was understood. In accordance with an archaic myth of an eclipse monster, encountered worldwide, Rāhu and Ketu were visualised as the creature’s dismembered head and tail, and this conception forms the mythological bridge to the additional function of ‘Ketu’ as the standard designation of comets, meteors, other assorted transient luminous phenomena and even sunspots. [22] Even if standard textbooks and encyclopedias often make it seem otherwise, the meaning ‘comet’ or ‘strange celestial object’ will have been more original than ‘lunar node’, possibly dating back to a prehistoric mythological world view. [23] In a classic text written in the 6th century AD, comets were classified in a large number of categories with distinct properties and names such as ‘Vasā Ketu’, ‘Hasti Ketu’ and ‘Kapāla Ketu’. [24] These types, with their characteristic shapes and colours, are reminiscent of the Ptolemaic and Hermetic types in the *Book of Curiosities* in that some of them are closely associated with one of the planets and many come in compact clusters with specific spatial arrangements.

Wherever it appears in Arabic literature, “the ‘comet’ *al-kayd* is always associated with India and its implications for humanity are always catastrophic.” [25] The Hindū origin of al-Kayd means that its alleged appearance in the days of Noah, ‘Ād, Thamūd and Madyan can only have been the fruit of astrological speculation, at best motivated by a similar association of Ketu with tumultuous events in the distant past of Hindū myth or legend. Accordingly, even this wispy trace of a possible comet linked with the formative stages in Israel’s history dissolves. This leaves only Typhon as an astronomical object with a plausible claim to veridicality.

Typhon’s Egyptian Origins

Ironically, the negative conclusions reached so far with respect to an ‘Exodus comet’ do not necessarily rule out that whatever celestial spectacle gave rise to the classical tradition of the comet Typhon was in fact of such hoary age as the Biblical time of the patriarchs.

The Petosiris cited by Servius Auctus and Hephaestio was the traditional author of a standard astrological text, featuring a typology of comets, which was co-authored by the equally legendary Egyptian scholar-king Nechepso; [26] both may have flourished in Hellenistic times. Nechepso would be the ideal candidate for Keith Mills’ notion – and Caudron’s [27] – of a real Egyptian king bestowing the Greek name ‘Typhon’ onto a portentous celestial object at a late time in Egyptian history. However, going by John of Lydia’s claim that ‘Typhons’ did not appear in Roman times Nechepso would probably have to be disqualified as the Typhonian king, depending on one’s definition of ‘Roman times’. At any rate, it is by no means requisite that the original name for the astronomical object had been in Greek. Nothing militates against the possibility that an Egyptian writing in Greek, like Petosiris, offered ‘Typhon’ as an *interpretatio Graeca* of an older Egyptian term.

As has long been recognised, [28] ‘Set’ (Egyptian *stš*, *śth*, *śth* and other variants) would be a feasible model, considering the well-established equivalence of that god and the mythical Greek monster Typhon since at least the 6th century BC. [29] Set, after all, as the ‘lord of foreign lands’ and itself an *interpretatio Aegyptiaca* of the West Semitic Baal (*Bá’lu*),

was the patron of adverse types of weather, along with military might and the red desert outside the fertile Nile valley. [30]

Because Pliny's Typhon is a clearly defined celestial body befitting a historical observation, the familiar cycle of cosmogonic myths in which Set appears alongside Horus, Isis and Osiris is not a viable source. [31] A modern chronology of the royal Egyptian dynasties no longer permits aligning the predynastic period with the Hebrew patriarchs, as was done in 16th-century Germany, so the mythical events involving Set which Herodotus and Diodorus were dealing with can no longer be linked with the time of the Israelite 'descent' into or 'ascent' out of Egypt. This stance is consistent with that articulated by Plutarch in his own day:

But those who relate that Typhon's flight from the battle was made on the back of an ass and lasted for seven days, and that after he had made his escape, he became the father of sons, Hierosolymus and Judaeus, are manifestly, as the very names show, attempting to drag Jewish traditions into the legend. [32]

Apparently and perhaps unbeknownst to them, Milich and his ilk had some predecessors in the 1st century AD in their efforts to give Typhon, who is Set, some historical semblance by integrating his mythology with Hebrew history. Yet where the Lutherans were inclined to cast Typhon as an Egyptian tyrant, Plutarch's anonymous targets were bent on identifying him with a Hebrew ancestor escaping from Egypt. The difference is not absolute insofar as the Typhon of myth was an oppressor who had acquired the throne through a *coup d'état* and was eventually expelled.



Figure 2: Victory stela of Thutmose III (c1425 BC), found in the Temple of Amun at Jebel Barkal (Sudan). Boston Museum of Fine Arts, Boston (Massachusetts, United States of America).
<https://collections.mfa.org/objects/145121/victory-stele-of-thutmose-iii>

In actual history, the rule of the Hyksos was admittedly a period which the Egyptians could only view as a symbolic echo of Set's tyrannical hegemony followed by his ousting. [33] In that vein, Bimson proposed in this same journal that the king Typhon of Rockenbach's and Pliny's text was the first Hyksos ruler, whose name 'Salitis' should be read 'Saites' – a "distortion" of 'Seth'. [34] He founded this argument on Rockenbach's description of Typhon as a despotic conqueror, possibly a foreigner, assisted by the Levantine Anakites as the 'giants'. This approach concords with the fact that Rockenbach's underlying chronology was that of Funck, who had put the reign of Typhon in the slot immediately preceding the 18th dynasty, where others like Manetho had placed the Hyksos. However, Bimson was unaware of Funck or any other of Rockenbach's sources, while Rockenbach himself does not seem to have known of the Hyksos, so that the agreement is accidental both for Bimson and Rockenbach. Nor does it help in the final analysis, as Funck's chronology was plainly wrong. The discovery of Rockenbach's sources reported above reveals incontrovertibly that the endeavours of Typhon and the giants, lifted from Diodorus and Herodotus, belonged squarely in the framework of primordial myths, having nothing whatsoever to do with the Hyksos. No one would argue today that the myth of Osiris' dismemberment and reconstitution or the birth of Horus had its *Sitz im Leben* at the time of the Hyksos. The same goes for Set's usurpation and expulsion. Moreover, all these attempts to couple Typhon with Israel's sojourn in Egypt, whether its beginning or its end, shed no light on Pliny's testimony of Typhon as a comet; a dead end is reached with them. [35] Even the Velikovskian scenario in which Typhon is the pillar of cloud and fire fails to convince, as the classical description of the former – bloody red, a fiery knot, globe or crescent of modest size with thin filaments – sounds nothing like the Biblical account of the latter.

At this point, it may be rewarding to reconsider the nature of the ‘naming’. How likely is it that an Egyptian king, especially a pre-Hellenistic one, would lend a disinterested hand in a matter of dry astronomical nomenclature? Would it not *a priori* be reasonable to suspect that the ruler, by conferring his name on the ‘star’ or *vice versa*, established his symbolic identity or a relation of patronage with it? There can be no argument that such a grandiose act would be very much in the spirit of archaic Pharaonic thought. For titles with a stellar component, Psusennes I (1047-1001 BC), II (976-943 BC) and III (976-943 BC) used the birth name “The star who has appeared in Niwt” (*p3 sb3 h' n niwt*), Niwt being Thebes. [36] An earlier and more elaborate case of royal identification with a prodigious star is on record for the 18th-dynasty king Thutmose III, one of Egypt’s greatest warrior pharaohs, who – on conventional dates – ruled from 1479 to 1425 BC. For *c*1446-1444 BC, this king reported on his victory stela a “miracle” (*bj3yt*) which involved the unexpected nocturnal appearance of a flaming “star” (*sb3*) during a confrontation between his army and that of Mitanni (fig. 2):

... then you will know the miracle of [Amun-Re] in the presence of the Two Lands. [...] not [...] sentr]ies were in the very act of being posted at night in order to do their regular watch. There were two astronomers (present). A star approached, coming to the south of them. The like had not happened before. It shot straight toward them (the enemy), not one of them could stand [...] falling headlong. Now then [...] was behind them with fire in their faces. Not one of them retaliated; no one looked back. Their chariotry is gone, they (the horses?) having bolted in [...] in order that all foreigners might see the awe of my majesty. [37]

In the prologue to this text, the triumphant king is himself eulogised as the embodiment of the “star” coursing between the two wings of his army as if between the ‘bows’ or ‘arcs’ of the sky and exercising his might through the serpent worn on his diadem:

He is one who immediately overwhelms all foreign lands while at the head of his army, as he shoots between the two divisions of troops, like a star he crosses the sky, entering into the throng, [while a bl]ast of his flame is against them with fire, turning into nothing those who lie prostrate in their blood. It is his uraeus that overthrows them for him, his flaming serpent that subdues his enemies, with the result that numerous armies of Mitanni were overthrown in the space of an hour, annihilated completely like those who had not existed, in the manner of those who are burned ... [38]

Despite this stylistic method of equating the king with the “star”, the assurance that “The like had not happened before” (*n hpr mjtt*) and the king’s attribution of the “miracle” to a god, apparently Amun-Ra, can only mean that the celestial apparition actually eventuated. [39]



Figure 3: The contrail left by asteroid 2008 TC3. © Shaddad. <https://www.nasa.gov/topics/solarsystem/tc3>

One could be forgiven for wondering whether this very incident was the singular extraordinary event behind the classical tradition of the comet Typhon. The “star” approached from the south and, mindful of Pliny’s statement that the ‘terrible one was experienced by the peoples of Ethiopia and Egypt’ it may not be irrelevant that the stela from which the cited

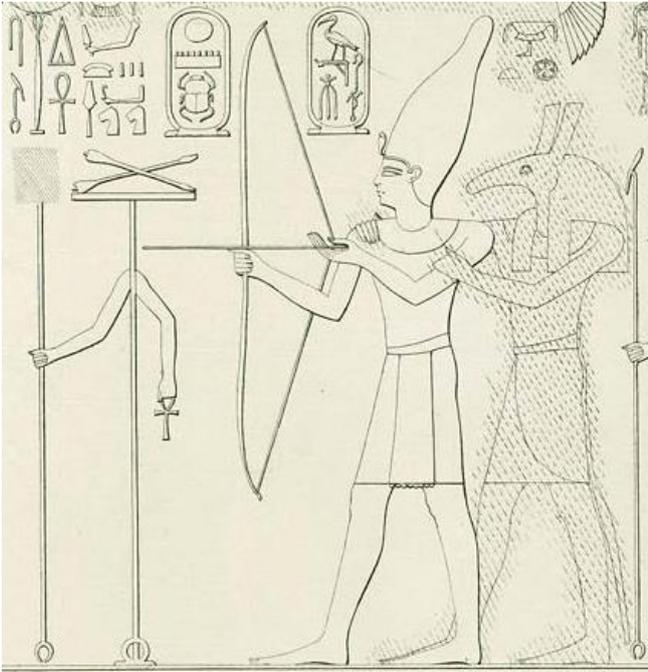


Figure 4: Set teaching archery to Thutmose III (15th century BC), Festival Hall of Thutmose III, Precinct of Amun-Ra, Temple Complex, Karnak (Egypt). Lepsius 1849-1858: plate 36b.

text is taken was erected in Nubia (today northern Sudan), where Thutmose III waged his last campaign. Professional “astronomers” (*wnwtj*) were present, who, besides being “experts in reading signs in the heavens to predict the outcome of his ventures”, [40] could have preoccupied themselves with the matter of classifying and naming the “star”, naturally in accord with the king’s wishes. Also, the “star” seems to have been of a similar nature as Typhon. Its devastating effects upon the pharaoh’s enemies in the guise of a fiery uraeus and the proclaimed uniqueness of the event indicate something truly alarming like an impacting bolide. Weinfeld inferred that “a comet fell out of its fixed place” and referred to the object as a “meteorite”. [41] Younger guessed that the phenomenon could have been “a comet or supernova”. [42] Cumming preferred “a meteorite or possibly the phenomenon called ball lightning”. [43] Helck suggested ‘meteor’, but also remarked: ‘But what kind of ‘star’, then, rises towards them exactly ‘from the south’ remains indeterminable.’ [44] Similarly, Keith Mills and others long before him recognised a bolide rather than a comet proper in the descriptions of Typhon. [45] Comets are seen throughout the hemisphere, but the Typhon which Pliny and his successors were concerned with was visible in a geographically restricted region, more in line with a meteoric phenomenon. Caudron drew attention to a recent

repetition of this type of event in the same part of the world: on 7 October 2008, the micro-asteroid 2008 TC3 exploded over northern Sudan at an altitude of 37 km, illuminating the pre-dawn landscape up to 725 km away and leaving a meandering trail visible long enough to be filmed at dawn (fig. 3). [46] As a competing view, comparable to Cumming’s take on Thutmose’s star, van Doorn explained Typhon in terms of ball lightning, with intrinsic vortical properties. [47]

Further, although Thutmose III is not known to have borne a ‘stellar’ epithet, he did on occasion style himself ‘beloved of Set’ (*mry sth*). [48] In the sumptuous Festival Hall at the rear of his temple complex at Karnak, he had himself depicted being taught the use of the bow by Set (fig. 4). [49] Presumably, Set received such honours in military settings above all: “It seems to have been especially in the circles of the colonial army that Seth was held in honour.” [50] And: “Seth is the extraneous source of a king’s manic strength and capacity to do violence, qualities that it was necessary for him to tap in time of war. In the account of the battle of Megiddo, the strength of Seth was said to pervade Thutmose’s limbs; and in the height of the battle of Kadesh, Ramesses II was perceived as the very embodiment of Seth by the enemy, who fled before him. Examples of such interweaving of divine and human energies in the ancient world could be multiplied almost ad infinitum.” [51] Moreover, a dreadful atmospheric event such as the disintegration of a bolide or ball lightning would have been judged to be within the province of Set or Baal as a storm god, even without circumstances of armed conflict.

All things considered, it would perhaps not be absurd to suggest that Thutmose III, with his astronomers, viewed the decisive mid-air explosion or impact of a fireball in the course of his battle against Mitanni as an intervention by his divine patron Set and that sufficient knowledge of this event survived for Hellenistic astronomers to define ‘Typhon’ as a category of dire ‘comet’ which was ‘named’ by and in some sense even after a king.

Going further still, the date of Thutmose’s fireball comes uncannily close to the orthodox date of the Hebrew Exodus as calculated following the Masoretic text of the Hebrew Bible. While this is not the place to go into the complexities of Biblical dating and I remain uncommitted on that subject, suffice it to consider that the conventional dates of Thutmose III’s reign must almost certainly be revised downwards [52] and the Biblical dates, too, are far from certain, assuming that the Exodus was even a real event. As for the identification of Typhon with Thutmose’s star, it ought to be observed that Thutmose III seems to have credited the astronomical ‘miracle’ to Amun-Ra, not Set; that the classical descriptions of Typhon contain visual details not found in Thutmose’s text, so that different versions would have had to have existed; that Thutmose’s “star” arrived from the south, whereas Servius Auctus and Hephaestio located Typhon in the northern part of the sky; and that Thutmose’s “star” worked in Egypt’s favour against the people of Mitanni, whilst Typhon harmed the Ethiopians and Persians in Servius Auctus’ account and ‘shook Egypt’ according to John of Lydia. The latter two objections are not insuperable; it may be that the meteor appeared to the north from Egypt, but to the south from Mitanni, while John of Lydia unhesitatingly limited Typhon’s origin to the south, in contrast to all other comet types. Noteworthy, too, is that only John of Lydia portrayed Typhon as adversarial to Egypt, Pliny and Servius Auctus strictly speaking

claiming no more than that the Egyptians ‘experienced’ or ‘saw’ it. Regardless, the object of this paper is not to insist that the enigmatic ‘king Typhon’ was Thutmose III, but merely that the notion of a king nominally associated with an ominous celestial object, even a bolide, is not at all out of place in pre-Hellenistic Egypt. Pliny’s Typhon has a ring of ancient Egyptian truth to it.

The ‘evil star’

Recapitulating, it has been seen that the notion of an Exodus comet can be traced back no further than medieval Arabic astrological speculation at the very earliest, but that the ancient tradition of a comet Typhon bears the hallmarks of an authentic event in Egypt’s heyday, possibly the spectacular fall of a bolide in the time of Thutmose III. The balance of this paper will focus on a few dangling threads brought to bear on the subjects of Typhon and the Exodus by Velikovsky and others.

One loose end to tie up is the Hebrew legend of the star Rā‘ā (‘Evil’) accompanying the Israelite Exodus. Velikovsky mentioned it only in passing, misspelling the name of the star as ‘Ra’. [53] Cardona suspected that the legend encapsulated a memory of the comet known as Typhon to Pliny and his congeners. [54] Keith Mills demonstrated that Cardona had misconstrued a single source as two sources and countered that this star could not have been an ‘Exodus comet’ as, according to that very legend, it never actually materialised. [55] But did he give Cardona’s suggestion a fair hearing? Has the legend been given too short shrift?

As before, there is much to disentangle. That Rockenbach was conscious of this legend is out of the question, not because Rockenbach created the Exodus comet by muddling up his editing, as Keith Mills saw it, but because his sources have now been confidently identified as Grau, Schinbain and possibly Bachmann and Sturm. Versed though 17th-century European scholars were in Hebrew, sometimes even in the *Talmūd*, they were not as a rule *au courant* with post-Talmūdic *haggādā* (‘folklore’). And contrary to Keith Mills’ claim, Cardona did not deem it likely that Rockenbach had knowingly used the legend of Rā‘ā as a source.

A pivotal question is the legend’s age. That the rabbis fabricated it out of whole cloth, or rather a scroll, is a possibility suggested by the fact that it appeared as a learned commentary on this single verse from *Exodus*: ‘Yahwē had better be with you when I let you and your little ones go! Beware, for evil is ahead of you.’ [56] With these sarcastic words, the pharaoh addressed Moses and Aaron upon being threatened with the plague of locusts. The word translated as “evil” is *rā‘ā* and it was this that some anonymous rabbis expounded as a reference to a star. [57] According to the *Midraš Šīr ha-Šīrīm* (*Midraš on the Song of Songs*), apparently redacted in the 11th century AD, Moses received this response just when he had announced the plague of locusts:

He [sc. Pharaoh] said to him, ‘I see through my astrology a star rising to meet you, and its name is Ra‘a, and it is a sign of blood and killing. [58]

This *midraš* was cited by distinguished authorities. For example, the French rabbi Solomon ben Isaac *alias* Rashi (1040-1105) wrote: “And I have heard a Midrashic interpretation: There is a certain star whose name is רַעַר (evil). Pharaoh said to them, ‘I see by my astrology that star rising towards you in the desert, and it is a sign of blood(shed) and slaughter.’” [59] And the Spanish-Jewish commentator and philosopher Abraham ibn Ezra (c1090-c1167) explained in a comment on *Exodus* 32. 12:

The meaning of *be-ra‘a hotzi’am* (for evil did He bring them forth) is, as our ancients hint, that they went out of Egypt under a star called *ra* (evil). [60]

Based on a collocation of *Exodus* 10. 10; 32. 12 and *Joshua* 5. 9, some of these Haggadists deduced that the danger of the star was still impending at the time when the Israelites worshipped the golden calf and Moses interceded on their behalf with God, but that it was finally averted when God commuted the promised bloodshed from a massacre into Joshua’s circumcision of the Israelites at Gilgal. Only then “that ridicule was removed; for the mixed multitude that went up with them [from Egypt] were still taunting them.” [61] Rashi, in his commentary on *Joshua*, credited Moshe ha-Darshan (11th century AD) of Narbonne (France) with this interpretation.

By the modern standard of logic, this ingenious manner of exegesis really comes down more to ‘isegesis’, that is to say, reading ideas into the text with complete disregard to original, historical context. [62] The enunciations of the rabbis were often more akin to hypotheses in the Popperian sense of wild speculation, restrained only by the requirement of providing a link – however tenuous – with sacred writ, or at least of not contradicting that writ. Still, the rabbis also had a way of communicating genuine folklore in a format suggesting its direct derivation from one or another line in the sacred scriptures. In such cases, the febleness of the link with the Bible does not diminish the value of the tradition.

Remarkably, some elements in this and related versions of the legend could be understood as references to the Egyptian god Set. To the Egyptian mind, of course, Set was the embodiment of evil. Furthermore, some *midrašīm* which make no mention of the star do refer to the flight of Egypt’s ‘guardian angel’ or ‘prince’ (*šar*). According to these, the Egyptians

hoped that this entity would confront Israel at Baal Saphon (*Bá'al-Šəpon*), a town at Egypt's frontier just before the Red Sea where – as also indicated by the name – the syncretistic cult of Baal-Set was well established. [63] Thus the *Midraš Rabbā* on *Exodus* (11th or 12th century AD):

All the idols of the world perished then, except their Baal-Zephon. ... Then the Prince of Egypt came down to destroy them ... It does not say Pharaoh pursued after them but 'Egypt'; this means their Prince. [64]

... when Pharaoh and the Egyptians began to pursue them, they raised their eyes heavenwards and saw the guardian angel of Egypt hovering in the air and became sore afraid ... the name of their guardian angel was Mizraim, and God does not cast down a nation before He destroys their guardian angel first. ... 'Mizraim' was the name of Pharaoh's guardian angel, and he it was who was winging his flight in pursuit after them; before God drowned the Egyptians in the sea, He first drowned their guardian angel ... [65]

'Mizraim', or rather *Miṣrāyim*, means 'Egypt'. In two much older texts which are closely related to each other, the pharaoh pauses his hot pursuit of the Israelites to make obeisance to Baal Saphon at the location of that name, expecting that god to harry the escapees:

Baal-zephon alone was left of all the deities, to mislead the minds of the Egyptians. ... When Pharaoh saw the Israelites encamping by the sea, he said: 'Baal-zephon approves of my decision. I had planned to destroy them in water and now Baal-zephon approves of my decision to destroy them in water.' He then began to sacrifice, offer incense and libations and to prostrate himself to his idol. [66]

Baal-zephon remained for them, of all the [Egyptian idolatrous] gods, in order to entice the hearts of the Egyptians. ... When Pharaoh saw Baal-zephon, he rejoiced, saying, 'Baal-zephon agrees with my decree. I said to drown them in water, [and] Baal-zephon agrees with my decree to drown them in water!' He began [to prepare] an altar and incense before his idol. [67]

Making no further mention of Baal Saphon, both texts go on to describe the downfall of Egypt's tutelary angel:

As soon as the Israelites saw the guardian angel of the Egyptian kingdom falling down into the sea, they began to render praise. In this sense it is said: (*ramah*) 'hath He thrown down' from on high. And you also find that in the future the Holy One, blessed be He, will punish the kingdoms only after He has first punished their guardian angels ... [68]

When Israel saw that the guardian angel of Egypt had fallen, they began to give praise before Him. Thus it is said, '... He has hurled (into the sea)' ... And thus you find that God does not exact punishment from kingdoms until their guardian angels first fall. [69]

In the first text, the term translated loosely as "the guardian angel of the Egyptian kingdom" is *šārāh šəl malkūt* ('the prince of the kingdom'); in the second, "the guardian angel of Egypt" is *šārāh šəl miṣrāyim* ('the prince of Egypt'). [70] The drowning of the *šārāh šəl miṣrāyim* is also mentioned in another comparatively early commentary: "That is, He saw the guardian angel of Egypt falling. You find that the Holy One, blessed be He, will exact retribution from nations in the future only after He has punished their guardian angels ..." [71] And a *midraš* of the early 11th century AD well known for its elaborate angelology identifies this "tutelary Angel of the Egyptians" (*šar šəl miṣrāyim*) by the name 'Uzzā and features him disputing with the archangel Michael to return Israel to Egypt for it to remain in bondage there for some more centuries. [72] This tale is also told in a different *midraš* of the same century. [73] Bringing the argument full circle, yet another text from this period pithily annotates the verse from *Exodus* in which the pharaoh announces Israel's meeting with Rā'ā with the words: 'This is Baal Saphon ...' [74]

The star Rā'ā, the guardian angel 'Egypt' or 'Uzzā and the god Baal Saphon all appear to be different expressions of the same extraordinary aerial entity intimidating but ultimately not damaging the Israelites as they flee from Egypt. To the extent that the book *Exodus* itself mentions an "angel of God" (*mal'ak hā'ēlohīm*) defending Israel and apparently in charge of the pillar of cloud and fire, [75] the belief that a similar spirit would have been in Egypt's service is not far-fetched and may well reach back to antiquity. [76]

Then again, scholars have acknowledged that the threat of *rā'ā* in *Exodus* 10. 10 was "Pharaoh's Pun" – a *double entendre* connoting the sun god Ra or Re in Egyptian and 'evil' in Hebrew. [77] Put differently, "rabbinic interpretation claimed that the god Ra' persecuted the Israelites during the Exodus." [78] Or: "Pharaoh mocks the Israelites, telling them that their God had better come to their assistance, because in the desert they would be facing his god Re', the hot desert sun, who would burn them to death." [79] As if to discredit the commination uttered by the pharaoh, the two plagues following it – the locusts and darkness – both involved diminution of sunlight, while the next and last plague struck at midnight, again underscoring Ra's weakness. The way the arrival of the locusts is described in *Exodus* is atypical in Hebrew idiom and is exposed as a play on the winged Egyptian expression *jr.t r'* ('eye of Ra'):

And they covered the eye of the whole earth and the earth was darkened ... [80]

The more common expression is ‘on the face of the (whole) earth’ (*‘al-pānē [kōl-]hā’āreṣ*). By changing the bodily metaphor to the eye, the author subtly evoked the image of the Egyptian sun god shamefully obscured, along with the earth. [81] This suspicion of a solar allusion receives support from the *Targūm Onqelos* (early 2nd century AD), in which ‘eye of the whole earth’ is rendered as ‘eye of the sun of the whole earth’ (*‘ēn šimšā dā-kōl ‘ar’ā*), [82] at the further expense of clarity. [83] “Thus, the terms ‘evil eye’ or ‘evil’ in some instances refers [*sic*] to the Egyptian sun-god.” [84]

In short, the star ‘Evil’ can hardly be divorced from the ‘eye of Ra’. What the scholars cited above appear to have missed in this context is that the ‘eye of Ra’ could be more than a circumlocution for the sun itself. [85] As is well illustrated in the famous Egyptian myth of *The Destruction of Mankind*, the eye could be conceived as a distinct physical entity emanating from the sun god, female in gender and capable of bringing the world to ruin. There is every chance that Egypt’s king, whether the incident was historical or not, would have wished for the ‘eye of Ra’ to wreak such havoc upon the Hebrews as it had done to humanity in mythical times. And whilst the astronomical identity of this ‘evil eye’ remains contentious, it would be far from surprising if the tradition at least as embedded in *The Destruction of Mankind* incorporated the memory of a deleterious fireball or comet, the latter possibly in the capacity of morning or evening star. [86] On the Hebrew side and then only in post-Talmūdic sources, Rā‘ā was only specified as a ‘star’ (*kōkāb*), but the imprecision of premodern astronomical terminology would not forbid a cometary or meteoric interpretation. It is not preposterous to imagine that an ancient intimation of the comet-like ‘eye of Ra’ evolved in medieval rabbinical tradition into the idea of an Egyptian guardian angel or protective star. Even Set may still have had a rôle, in his aspect as a deity “who so excellently protects Re” and “might be interpreted as the violent aspect of Re.” [87] For what it is worth, the Egyptians of the late 3rd millennium BC apparently saw no contradiction in the notion of the eye of Horus endowed with the strength of Set: “Pepi’s strength is Seth the Ombite’s strength. ... Pepi is the eye of Horus that is powerful against people and forceful against the gods.” [88]

From the medieval legend in which Moses pleads for Israel in the desert, Keith Mills inferred – as hinted above – that the star Rā‘ā “never actually manifested to trouble the Israelites or anyone else”. [89] This claim is quite premature, to be sure. The legend of the flight and drowning of the ‘prince of Egypt’, not considered by Keith Mills, contravenes it, but even going by the texts mentioning only the star Rā‘ā it has not remotely been demonstrated from the sources that no such object manifested at all.

It must be remembered that prior to the mid-16th century, no one – or at least no scientist – thought of comets as ‘proximate causes’, doing harm in direct, causal terms of physical contact; rather like aurorae and haloes, comets were solely baleful signs, unrelated to meteorites, whose terror resided in their astrological property of *portending* calamities, but the exact mechanism by which they could foreshadow or bring about the cataclysms remained mystical. The closest some had come to a causal theory, from the early 13th century onward, was to treat comets as ‘barometers’ symptomatic of the same physical causes which eventually produce the effects on Earth. [90] In other words, medieval comet theories were exclusively uniformitarian, the comets not being directly responsible for the expected catastrophes on Earth, and even in the modern period cosmic catastrophism was always consigned to the fringes of officially endorsed views. Thus it is that the Jewish legend introduces the pharaoh as predicting trouble based on astrology.

Such foretold disasters could at times be forestalled. Accordingly, it is conceivable that Egypt’s king was pointing to an actual comet, if not a bolide, as he uttered his warning and – in the case of a comet – even that this object was still looming when Moses interceded for the Israelites at Sinai, but that it never came to cripple the migrants in its unfathomable way. Assuming that there was some historical truth to the legendary material examined above, it would corroborate the impression that a transient astronomical object inspired fear, but ultimately proved benign to Israel. In itself, it has not even been ruled out that the column of cloud and fire was a comet, as Velikovsky supposed it to be, albeit Rockenbach would not have thought in such terms and the comet would be incompatible with Pliny’s Typhon and the star Rā‘ā, which latter was perceived as a force antagonistic to Israel.

To detect the ‘eye of Ra’ in subtle word play in *Exodus* or even the legend of the star ‘Evil’ is still a far cry from a full-blown catastrophist plot. Adventurous minds may like to run further with some of the information discussed above and ponder whether the angel’s drowning in the Red Sea could be a veiled reference to a cosmic impact. Those of a Velikovskian bent might seize upon the Egyptian association of Set with the planet Mercury or the pre-Islāmic Arabian or Syrian identification of ‘Uzzā as the morning star. [91] However, all such intriguing scenarios will probably remain flights of fancy. The Jewish descriptions of Rā‘ā, sparse and devoid of detail as they are, are as incompatible with a planetary identity as are the classical accounts of Typhon, and the chronological gap between them and the planetary characterisations of Set and ‘Uzzā is almost insurmountable. Although the rabbinical opinions regarding the ‘evil star of the Exodus’ and the intervention of Egypt’s guardian angel are fully consistent with the Biblical tradition and even with the classical comet Typhon, they are plainly not in evidence prior to the 5th century AD at the very earliest; as ‘Re-ifications’ of a simple pun, they are perhaps hardly more than a Jewish precursor to the Protestant chain of claims commencing with Milich. There is no trace of the star Rā‘ā in Islāmic legends of the Exodus either. In them, the angels Gabriel and Michael lure the pharaoh and his host into the Red Sea, but are not even located in the air as they do so. [92]

Certainly, as the Jewish-American rabbi Samuel Rosenblatt (1902-1983) advised, it has never been proven that “the rabbis of the Talmud and the Midrash may not have been in possession of ancient traditions going back beyond their own age which throw light on passages of Sacred Writ that have long been misunderstood.” [93] That much is beyond cavil, but even Rosenblatt’s minimal hypothesis, that some rabbis of the 1st millennium AD interpreted the word *rā’ā* in the passage at hand as the name of the god Ra, [94] remains conjectural; the rabbis’ characterisation of *Rā’ā* as a ‘star’ unrelated to the sun and in the purview of astrology shows how little, if anything, then survived of an originally solar tradition of which even Onqelos retained only a faint awareness.

Granting the historicity of the Exodus tradition, the use of ‘*Rā’ā*’ by the author of *Exodus* as a pun on the sun god Ra, signalling the king’s wish for the detached eye of Ra to discipline the Hebrews, is perhaps the most one can ever hope to make with some confidence of Velikovsky’s ‘Exodus comet’, with or without a connection with Set-Typhon. That anything out of the ordinary was actually seen in the firmament, other than perhaps the column of cloud and fire, cannot at all be inferred from the earlier sources – and the column was realistically rather the plume of a massive Plinian eruption, a tremendous volcanic event whose tectonic and atmospheric accompaniments could also shed light on most associated phenomena, such as the ten plagues and the parting of the Red Sea. [95]

The Catacomb Star

Another suggested clue to the concept of an Exodus comet is afforded by a palaeo-Christian wall painting in chamber O of a catacomb beneath Via Latina, Rome, dated to the mid-4th century AD and discovered in 1955 (fig. 5). In this work of art, a conspicuous eight-pointed star in a roseate sky irradiates the scene of the Egyptians chasing the Israelites as they cross the Red Sea. [96] The motif is practically unparalleled in Christian art. [97] The original investigator dismissed the idea that the pink sky represented the Biblical column of cloud and fire. [98]



Figure 5: Christian scene of the Exodus depicted in cubicle O of the catacomb beneath Via Latina, Rome (mid-4th century AD). Ferrua 1960: Tav. CXV = 1991: 141 Fig. 134.

A committed Velikovskian, the American politicologist Charles Raspil staked his claim on the star being Velikovsky’s incandescent comet Venus. [99] Taking a cue from Raspil but rejecting any involvement of Venus, Cardona proposed that the figure harked back to a “widespread” but nonetheless non-Biblical tradition of a special celestial object coinciding with the Exodus, such as *Rā’ā*. [100] The idea is certainly more compelling than some alternatives. For example, it could be supposed that the star was the star-sceptre rising out of Israel and symbolic of a future king, as divined by Balaam. [101] The drawback to that is that Balaam acted well after the Exodus, so the painting would have to have been anachronistic. Was the scene of the crossing of the Red Sea, then, a visual reference to Constantine the Great’s battle at the Milvian Bridge in AD 312, when a marvellous cross appeared in the sky over the combattants? [102] This is a fair and interesting proposition, but it seems contrived considering that nothing else in the image suggests a deeper meaning

and all other paintings in the catacomb were straightforward illustrations of Biblical episodes; [103] besides, the apparition seen over the Milvian Bridge was solar and cruciform, not stellar.

Could it be that the star represented the Rā'ā of Jewish speculation, regardless of the legend's historicity? The upshot of that would be that the rabbinical interpretation of *Exodus* 10. 10 as a star existed as early as the 4th century AD and was known to the decorator at Via Latina. On different grounds, art historians have, in fact, contemplated Jewish influence on the art in this catacomb. [104] As an offshoot of the old Hebrew faith and close kin to Judaism, Christianity counted many Jews among its early converts and it may be that the catacomb in question was used by a community of Jewish Christians. The same catacomb also housed several paintings with subjects from Graeco-Roman mythology, so a fairly relaxed outlook on Christian theology could be indicated. This interpretation of the painting is a double-edged sword, however, for – as Cardona conceded – the depicted object, like Rā'ā, is a star and not a comet. While it is true that ancient scientists such as Pliny set up categories of tailless comets, such as the *disceus* mentioned earlier and also the “Tub-star” (*pitheus*), [105] the artistic convention would presumably still have been to portray a comet with a tail.

Perhaps the correct explanation is far simpler. The coexistence of Christian and classical art could simply mean that adherents to both religions were members of the same family, sharing a catacomb in which the deceased received art corresponding to their individual faith. [106] And looking at *Exodus* 14. 19-20, the painter of the Crossing of the Red Sea could have added the star to indicate that the crossing took place by night, maybe as a representation of the normal morning star, or as a way of depicting the ‘angel’ standing between the Israelite and Egyptian sides. Yet even if the star in the catacomb turned out to signify Rā'ā, this would still not by a long stretch constitute evidence that the legend was rooted in truth.

Byzantine Reflections

The star ‘Evil’ may illuminate a further mystery which has occasionally been discussed in connection with an Exodus comet. [107] In 1679, the French diplomat and Orientalist Édouard de la Croix (c1640-1704), then a secretary at the embassy in Istanbul, reported on the doings of Moses Suriel, Saraval or Serviel in the city in 1666. Suriel was a young Qabbālist rabbi from Bursa defending the cause of the Ottoman Messiah claimant Sabbatai Zevi (1626-1676):

Moses Suriel acquired such a great reputation among the Jews that they filled his house every day, where he lectured them, & gave them rules of virtue; he based his doctrine on a comet which was seen at that time, convincing the people that a similar sign had appeared in the sky at the time of their deliverance from Egypt, that Jacob's dream was fulfilled, that the angels descended from heaven, & took possession of human bodies, filling the earth with the knowledge of the Lord, according to Isaiah in chap. II. [108]

The celestial body to which Suriel was pointing was undoubtedly the Great Comet of 1664-1665. Whence came his knowledge of a similar object – perhaps not necessarily a comet – attending the Exodus? Short of confabulation and the low likelihood that he had read a Lutheran cometographer, he could very well have had the legend of the star ‘Evil’ in mind. Note that his statement leaves it unclear whether the celestial apparition would have been a deterrent or a facilitator of the Exodus, a bad or a good omen. The *Yalqūt Rə'ubēnī* (*Reuben's Anthology*) was a collection of *midrašīm* gathered by the Czech-Jewish rabbi Reuben Höschke Kohen (1605-1673) and first printed at Prague in 1660. Containing elements of the legends of ‘Uzzā, the patron of Egypt, and probably also the star Rā'ā, it could easily have been the sole foundation of Suriel's claim. Even if this particular opus was not accessible to Suriel, he would have learned the legend through other texts.

Yet hereby hangs a further tale. Suriel did not exactly blaze a trail, as there had been a precedent for his proclamation in Istanbul, involving another Jew. The reader will recall that the Great Comet of 1577, which had inspired Schinbain and Grau to compose their cometographies, was declared to have appeared earlier on the occasions of the overturning of Sodom and Gomorrah and the Hebrew Exodus by the Syrian Taqī al-Dīn and David ben Shushan of Thessalonica. Suriel could well have been aware of that history. On what ground would the Istanbul astrologers have made their extravagant claim? As argued earlier, they could have been thinking of the comet al-Kayd mentioned in such works as the *Book of Curiosities*. Because of ben Shushan's involvement, chances are, again, that the rabbinical teaching of the star Rā'ā also played a part. Rā'ā is never associated with the destruction of the cities of the plain of the Dead Sea. Speculating freely, perhaps al-Dīn adduced a text linking al-Kayd with the destructions of ‘Ād, Thamud and Madyan, and this triggered ben Shushan to associate the first two with the annihilation of Sodom and Gomorrah and the third with the ten plagues of Egypt, supposing that al-Kayd's appearance at that time could have been enshrined in the legend of Rā'ā.

Conclusion

Velikovsky was naïve in enlisting an early 17th-century author to his cause without an inkling of sensitivity for the complex history of ideas. His blithe belief that Rockenbach was part of a continuous chain of reliable tradition reaching all the way back to the time of Moses is now overturned; Rockenbach's elusive sources have been identified and all leads therein to an Exodus comet, whether identical with Typhon or not, have been exposed as smoke and mirrors. It is

theoretically possible that the exegetical tradition of the star Rā‘ā partly fuelled ben Shushan’s pontifications regarding the comet of 1577 and that these reached Rockenbach through the writings of Bachmann, Sturm and just possibly also Wolf or Kraus. In that case, even the legend of Rā‘ā would indirectly have been one of Rockenbach’s sources for the comet Typhon. This hypothesis would not, however, vindicate Cardona’s hunch in any degree, as it gravitates towards the opposite position of that taken by Cardona by arguing that the star Rā‘ā was represented among Rockenbach’s sources, but was not an actual historical comet at the time of the Exodus. It looks like the legend was no more than an imaginative excrescence of a garbled memory that there was something astral about the pharaoh’s warning to Moses, the original allusion to the eye of Ra having been forgotten. The strange natural phenomena associated with the Exodus, if essentially real, are perhaps fully explicable in volcanic and seismic terms.

Yet not all is lost; the above is only the most parsimonious interpretation fitting all the facts. Certainty is not to be had and, of course, Typhon stands unperturbed as a formidable celestial power with every chance of having had roots in actual ancient history. So, did a menacing object traverse the heavens as the Israelites poured out of Egypt? Although the odds are against it, it is still up in the air.

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12. Milan, Biblioteca Ambrosiana, MS. & 76 sup., item 1 (= MS. M), in Rapoport & Savage-Smith, *op. cit.* (2014), p. 8.
13. Rapoport & Savage-Smith, *op. cit.* (2014), p. 21 Fig. 0. 11 D.
14. E. S. Kennedy, ‘Comets in Islamic Astronomy and Astrology’, *Journal of Near Eastern Studies* 16. 1, 1957, pp. 44-51; ‘Astronomical Events from a Persian Astrological Manuscript’, *Centaurus* 24. 1, 1980, pp. 162-177; O. Neugebauer, ‘Notes on Al-Kaid’, *Journal of the American Oriental Society* 77. 3, 1957, pp. 211-215; W. Hartner, ‘Le Problème de la planète Kaïd’ (1955), in W. Hartner (ed.), *Oriens-Occidens; Ausgewählte Schriften zur Wissenschafts- und Kulturgeschichte; Festschrift zum 60. Geburtstag*, ‘Collectanea’ 3, Georg Olms Verlagsbuchhandlung, Hildesheim, 1968, pp. 268-286; *op. cit.* (1997), pp. 809-811; J. Samsó, ‘Astrology’, in A. Y. al-Hassan, M. Ahmed & A. Z. Iskandar (eds.), *The Different Aspects of Islamic Culture*, vol. 4: *Science and Technology in Islam*, part 1: *The Exact and Natural Sciences*, UNESCO Publishing, Beirut, 2001, p. 281; T. Heidarzadeh, *A History of Physical Theories of Comets, from Aristotle to Whipple*, ‘Archimedes; New Studies in the History of Science and Technology’ 19, Springer, Dordrecht, 2008, pp. 29-30.
15. ibn Hibintā, *Kitāb al-Muġnī fī Aḥkām al-Nujūm* (Complete Book on Astrology), 1. 363-365; 2. 143-144 (vol. 2, fols. 67v, 71v), eds. F. Sezgin, M. Amawi, A. Iokhosha & E. Neubauer, *The Complete Book on Astrology: Al-Muġnī fī*

- Aḥkām al-Nujūm*, ‘Publications of the Institute for the History of Arabic-Islamic Science’, series C: ‘Facsimile Editions’ 41-42, Institute for the History of Arabic-Islamic Science at the Johann Wolfgang Goethe University, Frankfurt, 1987 (*non vidi*); cf. F. Sezgin, *Geschichte des arabischen Schrifttums*, vol. 7: *Astrologie – Meteorologie und Verwandtes bis ca. 430 H.*, E. J. Brill, Leiden, 1979, p. 163; M. Ullmann, *Die Natur- und Geheimpwissenschaften im Islam*, ‘Handbuch der Orientalistik’, part 1: ‘Der nahe und der mittlere Osten’ 6. 2, E. J. Brill, Leiden, 1972, p. 329.
16. Rapoport & Savage-Smith, *op. cit.* (2014), p. 379 n. 37.
 17. Rapoport & Savage-Smith, *op. cit.* (2018), p. 58; cf. Kennedy, *op. cit.* (1957), p. 45. For Hermes Trismegistus in Arabic astrology, see further Ullmann, *op. cit.*, pp. 274, 284, 286, 289-293, 302, 305-306, 309, 315, 321, 327, 332, 334, 338-341, 343, 345, 373; P. Kunitzsch, ‘AL-NUDJŪM’, in C. E. Bosworth, E. van Donzel, W. P. Heinrichs & G. Lecomte (eds.), *The Encyclopaedia of Islam*, vol. 8: *Ned-Sam*, E. J. Brill, Leiden, 1995², p. 100. Hermes was also the main source in a Persian book by Muẓaffar ibn Muḥammad Qāsim Junābadī entitled *Tanbīhāt al-Munajjimīn* (*Admonitions for Astrologers*) and dated to the period between AD 1587 and 1629, in which comets also figure – Kennedy, *op. cit.* (1980), p. 171.
 18. Rapoport & Savage-Smith, *op. cit.* (2018), p. 57.
 19. “Les astrologues la regardent comme funeste et l’appellent *shaitân-i-falak*, c’est-à-dire le diable de la sphère”, Hartner, *op. cit.* (1968), p. 276.
 20. Rapoport & Savage-Smith, *op. cit.* (2018), p. 57; Hartner, *op. cit.* (1997), p. 810; (1968), pp. 270-275, 282.
 21. “Quand le soleil et la lune se trouvent simultanément dans le même nœud ou suffisamment près de lui, il y a une éclipse solaire; quand l’un des deux astres occupe le nœud ascendant, et l’autre en même temps le nœud descendant, une éclipse lunaire a lieu.” Hartner, *op. cit.* (1968), p. 269. Cf. M. A. van der Sluijs, ‘The Dragon of the Eclipses – A Note’, *Culture and Cosmos; A Journal of the History of Astrology and Cultural Astronomy* 13. 1, 2009, pp. 63-75.
 22. e.g., A. Scherer, *Gestirnnamen bei den indogermanischen Völkern*, ‘Indogermanische Bibliothek’ 3: ‘Untersuchungen’, ‘Forschungen zum Wortschatz der indogermanischen Sprachen’ 1, Carl Winter Universitätsverlag, Heidelberg, 1953, pp. 102-105.
 23. So Hartner, *op. cit.* (1968), p. 282. Not mentioned in the astronomical literature on Ketu is that the word (*Ketūh*) already appears in the *Ṛg-Veda*, in a song attributed to Kutsa Āṅgīrasa: 1. 103. 1d (103), eds. B. A. van Nooten & G. B. Holland, *Rig Veda; A Metrically Restored Text with an Introduction and Notes*, ‘Harvard Oriental Series’ 50, Harvard University Press, Cambridge, MA, 1994, p. 60. There, it indicates a prominent heaven-spanning object in which the celestial and terrestrial powers of the god Indra commingled equally. It has been translated as “banner” (S. W. Jamison & J. P. Brereton [trs.], *The Rigveda; The Earliest Religious Poetry of India*, ‘South Asia Research’, Oxford University Press, Oxford, 2014, p. 244, cf. 243), but could also stand for “bright appearance ...; lamp, flame, torch ...; sign, mark, ensign, flag ...; any unusual or striking phenomenon, comet, meteor, falling star” (M. Monier-Williams [ed.], *A Sanskrit-English Dictionary Etymologically and Philologically Arranged with Special Reference to Cognate Indo-European Languages*, Clarendon Press, Oxford, 1979, p. 309 s.v. ‘ketū’). J. Gonda (*The Indra Hymns of the Ṛgveda*, ‘Orientalia Rheno-Traiectina’ 36, E. J. Brill, Leiden, 1989, p. 17) would allow the latter meaning for this passage. E. Cochrane (‘Indra: A Case Study in Comparative Mythology’, *Aeon; A Symposium on Myth and Science* 2. 4, 1991, p. 65, reworked in *Martian Metamorphoses; The Planet Mars in Ancient Myth and Religion*, Aeon Press, Ames, IA, 1997, p. 106) understood it to mean “the fiery comet-like debris which extended along the polar axis, thus uniting, as it were, heaven and earth.”
 24. Varāhamihira, *Bṛhat-Saṃhitā* (*Great Treatise*), 11. 1-62, tr. N. C. Iyer, *The Bṛhat Saṃhitā of Varāha Mihira; Translated into English with Notes*, ‘Sri Garib Dass Oriental Series’ 43, Sri Satguru Publications, Delhi, 1987² (1884), pp. 65-71. Varāhamihira cited the works of various ancient precursors, including Garga, Parāśara and Asita Devala. Compare M. A. van der Sluijs, *Traditional Cosmology; The Global Mythology of Cosmic Creation and Destruction*, vol. 6: *Miscellaneous Themes*, All-Round Publications, Vancouver, Canada, 2018, pp. 71-72.
 25. Rapoport & Savage-Smith, *op. cit.* (2018), p. 57.
 26. E. Riess (ed.), ‘Nechepsonis et Petosiridis Fragmenta Magica’, *Philologus; Zeitschrift für das classische Alterthum; Supplementband* 6. 1, 1892, pp. 325-394.
 27. D. Caudron [‘L’Oncle Dom’], ‘Chronique des prodiges celestes antiques (et souvent en toc)’, ‘1510 AC: comète de l’Exode’, at <http://oncle.dom.pagesperso-orange.fr/paranormal/ovni/catalogue/prod-1510.htm>, last edited 7 March 2017.
 28. e.g., G. Winkler & R. König (trs.), C. Plinii Secundi: *Naturalis Historia; Libri XXXVII: Liber II = C. Plinius Secundus d. Ä.: Naturkunde; Lateinisch-deutsch; Buch II, ‘Sammlung Tusculum’*, Artemis & Winkler, Düsseldorf, 1997², p. 233; H. te Velde, Seth, God of Confusion; A Study of his Role in Egyptian Mythology and Religion, ‘Probleme der Ägyptologie’ 6, E. J. Brill, Leiden, 1967, p. 149; Scherer, *op. cit.*, p. 108; [W. K. O.] Gundel, ‘Kometen’, in G. Wissowa (ed.), *Paulys Real-Encyclopädie der classischen Altertumswissenschaft; Neue Bearbeitung unter Mitwirkung zahlreicher Fachgenossen*, vol. 11. 21: *Katoikoi-Komödie*, J. B. Metzlersche Verlagsbuchhandlung, Stuttgart, 1921, p. 1152.
 29. J. G. Griffiths, ‘The Flight of the Gods before Typhon: An Unrecognized Myth’, *Hermes* 88. 3, 1960, p. 376.
 30. e.g., Ph. J. Turner, *Seth – A Misrepresented God in the Ancient Egyptian Pantheon?*, doctoral dissertation, Manchester, 2012, pp. 14, 16-18, 55, 61-62, 64, 73, 83, 109, 118, 120, 126-128, 138, 144, 149-156, 159-160, 162, 181, 204, 235; C. Bonnet, ‘Typhon et Baal Ṣaphon’, in E. Lipiński (ed.), *Studia Phoenicia V: Phoenicia and the East Mediterranean in the First Millennium B. C.*, ‘Orientalia Lovaniensia Analecta’ 22, Peeters, Leuven, 1987, p.

- 121; te Velde, *op. cit.* (1967), pp. 25, 62-63, 66-67, 109-151; ‘Seth’, in D. B. Redford (ed.), *The Oxford Encyclopedia of Ancient Egypt*, vol. 3, Oxford University Press, New York, 2001, pp. 269-270.
31. [A. G.] Pingré, *Cométographie ou traité historique et théorique des comètes*, vol. 1, L’Imprimerie Royale, Paris, 1783, p. 252. In Egyptian astronomy, Set represented Ursa Major, leading F. Boll (*Sphaera; Neue griechische Texte und Untersuchungen zur Geschichte der Sternbilder*, B. G. Teubner, Leipzig, 1903, p. 164) to suppose that Pliny’s Typhon had been a comet once seen to pass through this constellation. The classical sources give no reason to suspect such an astral connection, however.
 32. Plutarch, *Moralia: On Isis and Osiris*, 46 (369e), tr. F. C. Babbitt, *Plutarch: Moralia*, vol. 5, ‘Loeb Classical Library’ 306, Harvard University Press, Cambridge, MA, 1936, pp. 76-77.
 33. See, conveniently, Turner, *op. cit.*, pp. 18, 53, 55, 58-62, 64, 73, 78, 83, 118, 120, 153, 159-160.
 34. J. J. Bimson, ‘Rockenbach’s ‘De Cometic’ and the Identity of Typhon’, *Society for Interdisciplinary Studies Review* 1. 4, 1977, pp. 9-10.
 35. *contra* D. Cardona, ‘Typhon and the Comet of the Exodus: Rockenbach’s Lost Source’, *Aeon; A Journal of Myth, Science and Ancient History* 5. 5, 2000, p. 76.
 36. R. J. Leprohon, *The Great Name; Ancient Egyptian Royal Titulary*, ‘Writings from the Ancient World’ 33, Society of Biblical Literature, Atlanta, GA, 2013, pp. 139, 141, 143.
 37. *Jebel Barkal Stela*, 33-37, ed. W. Helck, *Urkunden der 18. Dynastie*, vol. 4. 17: *Historische Inschriften Thutmosis’ III. und Amenophis’ II.*, ‘Urkunden des ägyptischen Altertums’, Akademie-Verlag, Berlin, 1955, pp. 1238-1239 (#365), tr. J. K. Hoffmeier, ‘The Gebel Barkal Stela of Thutmose III (2. 2B)’, in W. W. Hallo & K. L. Younger (eds.), *The Context of Scripture; Canonical Compositions, Monumental Inscriptions, and Archival Documents from the Biblical World*, vol. 2: *Monumental Inscriptions from the Biblical World*, Brill, Leiden, 2003, p. 17.
 38. *Jebel Barkal Stela*, 5-7, ed. Helck, *op. cit.*, pp. 1229-1230 (#365), tr. Hoffmeier, *op. cit.*, pp. 14-15. On the word here translated as “blast” (*sšd*), see B. Cumming (tr.), *Egyptian Historical Records of the Later Eighteenth Dynasty*, vol. 1, Aris & Phillips, Warminster, 1982, p. 6. For some complex and not necessarily correct background to this word, see A. Volten, ‘Das Harpunierergestirn’, *Mitteilungen des Deutschen Archäologischen Instituts; Abteilung Kairo* 16. 2, 1958, pp. 356, 359.
 39. So also J. Friedrich, ‘Himmelszeichen in ägyptischen und hethitischen Kriegsberichten’, *Orientalistische Literaturzeitung* 39. 3, 1936, p. 139.
 40. Cumming, *op. cit.*, p. 7.
 41. M. Weinfeld, ‘Divine Intervention in War in Ancient Israel and in the Ancient Near East’, in H. Tadmor & M. Weinfeld (eds.), *History, Historiography and Interpretation; Studies in Biblical and Cuneiform Literatures*, The Magnes Press, Jerusalem, 1983, pp. 127, 139.
 42. K. L. Younger, *Ancient Conquest Accounts; A Study in Ancient Near Eastern and Biblical History Writing*, ‘Journal for the Study of the Old Testament Supplement Series’ 98; Sheffield Academic Press, Sheffield, 1990, p. 217.
 43. Cumming, *op. cit.*, p. 7.
 44. “Meteor”, “Welche Art von ‘Stern’ da jedoch gerade ‘von Süden her’ gegen sie aufgeht, bleibt undeutbar.” W. Helck (ed.), *Urkunden der 18. Dynastie*, vol. 4: *Übersetzung zu den Heften 17-22*, ‘Urkunden des ägyptischen Altertums’, Akademie-Verlag, Berlin, 1961, pp. 6, 10 n. 5. Cf. J. K. Hoffmeier, ‘The Structure of Joshua 1-11 and the Annals of Thutmose III’, in A. R. Millard, J. K. Hoffmeier & D. W. Baker (eds.), *Faith, Tradition, and History; Old Testament Historiography in its Near Eastern Context*, Eisenbrauns, Winona Lake, IN, 1994, pp. 165-179. For some Assyrian parallels, see Weinfeld, *op. cit.*, pp. 139-140; G. Steiner, ‘Ein Bolid in Anatolien als Manifestation einer Gottheit’, in H. O. Galter (ed.), *Die Rolle der Astronomie in den Kulturen Mesopotamiens; Beiträge zum 3. Grazer Morgenländischen Symposium (23.-27. September 1991)*, ‘Grazer Morgenländische Studien’ 3; GrazKult, Graz, 1993, pp. 223-224 and, without a military context, 228-229.
 45. e.g., D. Keith Mills, ‘Rockenbach Falls – and King Typhon Tumbles’, *Chronology & Catastrophism Review* 2019: 3, p. 38; Caudron, *op. cit.*; C. Alexandre (ed.), *Caii Plinii Secundi Historiæ Naturalis Libri XXXVII cum Selectis Commentariis J. Harduini ac Recentiorum Interpretum Novisque Adnotationibus*, vol. 1: *Continens Cosmologiam*, ‘Bibliotheca Classica Latina sive Collectio Auctorum Classicorum Latinorum cum Notis et Indicibus’, Nicolaus Eligius Lemaire, Paris, 1827, pp. 296-297 n. 10; and, more generally, Gundel, *op. cit.*, p. 1179. However, if the original Typhon was a bolide, it cannot have exemplified the disceus, which was a true comet – M. A. van der Sluijs & P. James, ‘Saturn as the ‘Sun of Night’ in Ancient Near Eastern Tradition’, *Aula Orientalis* 31. 2, 2013, p. 292 n. 104.
 46. Caudron, *op. cit.*, citing S. Chesley, P. Chodas & D. Yeomans, ‘Asteroid 2008 TC3 Strikes Earth: Predictions and Observations Agree’, at <https://cneos.jpl.nasa.gov/news/2008tc3.html>, 4 November 2008.
 47. P. van Doorn, ‘A Case of Genuine Crop Circles Dating from July 1880 as Published in *Nature* in the Year 1880’, *The Journal of Meteorology* 25. 245, 2000, p. 22.
 48. e.g., on a sandstone jamb and model grinder in the temple to Set at Kom Ombo (W. M. Flinders Petrie & J. E. Quibell, *Naqada and Ballas. 1895*, Bernard Quaritch, London, 1896, p. 68 and plate LXXIX). The title ‘beloved of Set’ was also used by Ramses II (Leprohon, *op. cit.*, pp. 117, 224) and Seti II (p. 123), while Psusennes I seems to have called himself ‘chosen by Set’ (p. 140).
 49. Turner, *op. cit.*, p. 66.
 50. te Velde, *op. cit.* (1967), p. 134.
 51. J. Naydler, *The Future of the Ancient World: Essays on the History of Consciousness*, Abzu Press, Oxford, 1994, no page number.

52. e.g., P. James, I. J. Thorpe, N. Kokkinos, R. Morkot & J. Frankish, *Centuries of Darkness*, Jonathan Cape, London, 1991, p. 258 Table 10. 4.
53. Velikovsky, *Worlds in Collision*, The MacMillan Company, New York, 1950, p. 95 n. 13.
54. Cardona, *op. cit.*, pp. 75-76.
55. Keith Mills, *op. cit.*, p. 37.
56. *Exodus*, 10. 10, eds. K. Elliger, W. Rudolph & A. Schenker, תורה נביאים וכתובים *Biblia Hebraica Stuttgartensia*, Deutsche Bibelgesellschaft, Stuttgart, 1997⁵, p. 102, tr. adapted from A. L. Farstad (ed.), *The Holy Bible Containing the Old and New Testaments; NKJV; New King James Version; Reference Edition*, Thomas Nelson, Nashville, TN, 1982, p. 56. This literal translation of *neḡeḏ* ('ahead') is preferable to variations on "in your view, or purpose" (F. Brown, S. R. Driver & Ch. A. Briggs [eds.], *A Hebrew and English Lexicon of the Old Testament with an Appendix Containing the Biblical Aramaic Based on the Lexicon of William Gesenius as Translated by Edward Robinson Late Professor in the Union Theological Seminary, New York*, Clarendon Press, Oxford, 1906, p. 617 s.v. 'נָגַד').
57. The following discussion relies as much as possible on primary sources. Although it is often convenient and more dramatic to use L. Ginzberg's epic collection for access to Jewish legends, as Velikovsky, Cardona, Keith Mills and others did, one runs the risk of studying words and ideas which are not as such attested anywhere. This is because Ginzberg's presentation, however faithful to the spirit of the sources, is a paraphrase resulting from an attempt to carefully interweave widely scattered sources into a single chronologically arranged narrative. For serious research, reliance on Ginzberg is as misguided as using Robert Graves' compendium for Greek myth or indeed any encyclopedia for any subject. In this case, Ginzberg's paraphrases are in *The Legends of the Jews*, vol. 2: *Bible Times and Characters from Joseph to the Exodus*, tr. H. Szold, The Jewish Publication Society of America, Philadelphia, PA, 1910, p. 358; vol. 3: *Bible Times and Characters from the Exodus to the Death of Moses*, tr. P. Radin, 1911, pp. 13-14, 17, 126; vol. 5: *Notes to Volumes I and II: From the Creation to the Exodus*, 1925, p. 431 n. 196; vol. 6: *Notes to Volumes III and IV: From Moses in the Wilderness to Esther*, 1928, pp. 4 n. 18-19, 5 n. 28, 21, 53 n. 275.
58. Midraš Šīr ha-Šīrīm, on 1. 12, ed. L. Grünhut, Midrasch Schir ha-Schirim; Zum ersten Male nach einer aus dem .12 Jh. stammenden in Egypten aufgefundenen Hs. edirt, kritisch untersucht, mit Quellenangabe und einer Einleitung versehen, Wilhelm Gross, Jerusalem, 1897, p. 15a, tr. G. [A.] Rendsburg, 'YHWH's War against the Egyptian Sun-God Ra; Reading the Plagues of Locust, Darkness, and Firstborn in their Ancient Egyptian Context' (2016), at <https://www.thetorah.com/article/yhwhs-war-against-the-egyptian-sun-god-ra>, emphasis omitted; cf. 'The Egyptian Sun-God Ra in the Pentateuch', Henoah; Historical and Textual Studies in Ancient and Medieval Judaism and Christianity 10, 1988, p. 6.
59. Rashi, *Commentary on Exodus*, 10. 10, trs. A. Ben Isaiah & B. Sharfman, *The Pentateuch and Rashi's Commentary: A Linear Translation into English*, vol.: *Exodus*, S. S. & R. Publishing Company, Brooklyn, NY, 1950, pp. 87-88.
60. Abraham ibn Ezra, *Sēpār ha-Yāšār (Book of the Just): Šəmōt (Exodus)*, on 32. 12, tr. H. N. Strickman, *Ibn Ezra's Commentary on the Pentateuch: Exodus (Shemot)*, Menorah Publishing Company, New York, 1988, p. 670 (*non vidi*). Compare D. U. Rottzoll (tr.), *Abraham ibn Esras langer Kommentar zum Buch Exodus*, vol. 1: *Parascha Schemot bis Beschalach (Ex 1-17) Eingeleitet, übersetzt und kommentiert*, 'Studia Judaica; Forschungen zur Wissenschaft des Judentums' 17. 1, Walter de Gruyter, Berlin, 2000, p. 984: '(The) meaning (of this expression is), as the (sages who were) before us, blessed be their memory, indicated, that they left Egypt in an evil star (constellation). See, they said: There is no ability for God to vanquish the power of the star (constellation), in order to save those adhering to it. But when he (i. e., God) saw that there was (ostensibly) no ability for him (to do so), (to save them), he killed them; this is a desecration of God.' = "(Die) Bedeutung (dieses Ausdrucks ist), wie die vor uns (gewesenen Weisen), ihr Gedenken sei zum Segen, andeuteten, daß sie in einem bösen Stern(bild) aus Ägypten auszogen. Siehe, sie sagten: Es gibt keine Fähigkeit für Gott, die Kraft des Stern(bilds) zu besiegen, um die ihm Anhängenden zu retten. Als er (sc. Gott) aber sah, daß ihm (angeblich) keine Fähigkeit (dazu zu eigen) ist, (sie zu retten,) tötete er sie; dies ist eine Entweihung Gottes." Cf. pp. 258 n. 64, 985 n. 142. The *midraš* was also cited in Simeon ha-Darshan of Frankfurt (ed.), *Yalqūt Šim 'ōnī (Simeon's Anthology; 13th century AD): Šəmōt (Exodus): Kī Tiššā*, 32 (392), ed. anonymous, תורה נביאים וכתובים, ילקוט שמעוני מדרש על תורה נביאים וכתובים, vol. 1: חמשה חומשי תורה, Pardes Publishing House, New York, 1944, p. 234, tr. Rottzoll, *op. cit.*, p. 984 n. 139; cf. *Yəhōšua' (Joshua): Kī Tiššā*, 372, tr. R. Ulmer, 'The Egyptian Gods in Midrashic Texts', *Harvard Theological Review* 103. 2, April 2010, p. 185.
61. Rashi, *Commentary on Joshua*, 5. 9, tr. at https://www.sefaria.org/Rashi_on_Joshua.5.9?lang=bi; cf. *Commentary on Exodus*, 10. 10, trs. Ben Isaiah & Sharfman, *op. cit.*, pp. 87-88; Simeon ha-Darshan of Frankfurt (ed.), *Yalqūt Šim 'ōnī: Šəmōt: Kī Tiššā*, 32 (392), ed. anonymous, *op. cit.*, p. 234, tr. Rottzoll, *op. cit.*, p. 984 n. 139.
62. Compare M. A. van der Sluijs, *On the Origin of Myths in Catastrophic Experience*, vol. 1: Preliminaries, All-Round Publications, Vancouver, Canada, 2019, pp. 25-26; Traditional Cosmology; The Global Mythology of Cosmic Creation and Destruction, vol. 5: Solar and Lunar Anomalies, 2018, pp. 72, 117 n. 393, 118 n. 394, 214 n. 659.
63. The vexing question of a possible etymological or folk-etymological relationship between 'Šāpōn' ('Zaphon') and 'Typhon' will not be addressed here.
64. *Šəmōt Rabbā (Exodus Rabbā)*, 15. 15, on *Exodus* 12. 2, tr. S. M. Lehrman, *Exodus*, 'Midrash Rabbah; Translated into English with Notes, Glossary and Indices', The Soncino Press, London, 1939, pp. 178-179. The cited proof passages are *Daniel* 6. 22 and *Exodus* 14. 23. "Prince of Egypt" translates *sārān šēl mišrāyim*, "their Prince" *šar šēllāheḥen*. Lehrman (p. 179 n. 1) qualified the word "Prince" as "Patron, 'guardian angel'".
65. *Šəmōt Rabbā*, 21. 5, on *Exodus* 14. 15, tr. Lehrman, *op. cit.*, pp. 264-265. The cited proof passages are *Exodus* 14. 10, 27. The words "the guardian angel of Egypt" translate *sārān šēl mišrāyim* and "Pharaoh's guardian angel" *sārō šēl par'ō*.

66. Məkil̄tā də-Rabbī Yīšmā'ēl (Rule of Rabbi Ishmael; after the 4th century AD): Bəšallaḥ, 2 (on Exodus 14. 1-9); 3 (on 14. 9-14), tr. J. Z. Lauterbach, *Mekhilta de-Rabbi Ishmael; A Critical Edition, Based on the Manuscripts and Early Editions, with an English Translation, Introduction, and Notes*, vol. 1, 'JPS Classic Reissues', The Jewish Publication Society, Philadelphia, PA, 2004², pp. 128-129, 137, cf. 68. Numbers 14. 1, 29 are cited in support.
67. Məkil̄tā də-Rabbī Šim'ōn bar Yōḥai (Rule of Rabbi Simeon bar Yoḥai; after the 4th century AD): Bəšallaḥ, 21. 1. 3B (48) (on Exodus 14. 2); 22. 1. 2B-C (53) (on 14. 9-10), tr. W. D. Nelson, *Mekhilta de-Rabbi Shimon bar Yoḥai; Translated into English, with Critical Introduction and Annotation*, 'Edward E. Elson Classic', The Jewish Publication Society, Philadelphia, PA, 2006, pp. 87, 95.
68. Məkil̄tā də-Rabbī Yīšmā'ēl: Širtā, 2, on Exodus 15. 1, tr. Lauterbach, *op. cit.*, p. 181.
69. Məkil̄tā də-Rabbī Šim'ōn bar Yōḥai: Širtā, 28. 2. 5C-E (76), on Exodus 15. 1, tr. Nelson, *op. cit.*, p. 126. *Isaiah* 24. 21 is cited in support.
70. M. Jastrow (*A Dictionary of the Targumim, the Talmud Babli and Yerushalmi, and the Midrashic Literature*, vol. 2: ל-ן, Luzac & Co., London, 1903, p. 1627 s.v. 'רש') gives "prince, chief.; ... guardian angel, genius" for *śar*.
71. Midraš Tanḥūmā Yəlammedēnū (late 8th or early 9th century AD): Šəmōt (Exodus): Bəšallaḥ, 13. 2, on Exodus 15. 1, 9. 5, tr. S. A. Berman, *Midrash Tanhuma-Yelammedenu; An English Translation of Genesis and Exodus from the Printed Version of Tanhuma-Yelammedenu with an Introduction, Notes, and Indexes*, Ktav Publishing House, Hoboken, NJ, 1996, p. 430 and at https://www.sefaria.org/Midrash_Tanchuma%2C_Beshalach.15?lang=bi. *Isaiah* 14. 12; 24. 21; 34. 3 are cited in support.
72. *Midraš Abkīr*, in Simeon ha-Darshan of Frankfurt (ed.), *Yalqūt Šim'ōnī: Šəmōt: Bəšallaḥ*, 14 (241), ed. anonymous, *op. cit.*, p. 147, tr. Ginzberg, *op. cit.* (1911), p. 17.
73. *Midraš Vayōša'*, ed. A. Jellinek, *Bet ha-Midrash. Sammlung kleiner Midraschim und vermischter Abhandlungen aus der ältern jüdischen Literatur. Nach Handschriften und Druckwerken gesammelt und nebst Einleitungen herausgegeben*, vol. 1, Friedrich Nies, Leipzig, 1853, p. 39, tr. Au. Wünsche, *Aus Israels Lehrhallen; Kleine Midraschim zur späteren legendarischen Literatur des Alten Testaments zum ersten Male übersetzt*, vol. 1, E. Pfeiffer, Leipzig, 1907, p. 88.
74. 'zē bā'al šəpōn', Tobias ben Eliezer, *Midraš Leqaḥ Tōb (Midraš Good Doctrine; late 11th century AD)*, on Exodus 10. 10, at https://www.sefaria.org/Midrash_Lekach_Tov%2C_Exodus.10.11?lang=bi; cf. Rendsburg, *op. cit.* (1988), p. 6.
75. *Exodus*, 14. 19, eds. Elliger *et al.*, *op. cit.*, p. 109.
76. For more on such angels or 'princes' of the nations, see B. J. Bamberger, *Fallen Angels; Soldiers of Satan's Realm*, The Jewish Publication Society, Philadelphia, PA, 2006, pp. 108-111, 139-142, 144.
77. Rendsburg, *op. cit.* (2016); 'Targum Onqelos to Exod 10: 5, 10: 15, Numb 22: 5, 22: 11', *Henoch; Historical and Textual Studies in Ancient and Medieval Judaism and Christianity* 12, 1990, p. 15; *op. cit.* (1988), pp. 5-7, 14. He also interpreted *Exodus* 32. 12 in the light of Ra (p. 8).
78. Ulmer, *op. cit.*, p. 185.
79. S. Rosenblatt, 'A Reference to the Egyptian God Re' in the Rabbinic Commentaries on the Old Testament', *Journal of Biblical Literature* 60. 2, 1941, p. 185.
80. "vaykas 'eṭ-ēn kōl-hā'āreš vatteḥšak hā'āreš", *Exodus*, 10. 15, eds. Elliger *et al.*, *op. cit.*, p. 102; cf. 10. 5. Lexicologists (e.g., Brown *et al.*, *op. cit.*, p. 744 s.v. 'רש' #4a) allow "surface" as a possible 'transferred meaning' of 'āyin ('eye').
81. Rendsburg, *op. cit.* (2016); (1990), p. 15; (1988), p. 7.
82. *Exodus* 10. 15 (Targūm Onqelos), ed. I. Drazin, *Targum Onkelos to Exodus; An English Translation of the Text with Analysis and Commentary (Based on the A. Sperber and A. Berliner Editions)*, Ktav Publishing House, New York, 1990, p. 113. So, too, 'the eye of the earth' is rendered as 'the eye of the sun of the earth' in 10. 5, yet in 10. 10 Onqelos certainly saw no solar implication of rā'ā (pp. 111 and 111-112 n. 15).
83. Rendsburg, *op. cit.* (2016); (1990), pp. 16-17. Drazin (*op. cit.*, pp. 110, 112, cf. 111 n. 8) tried to remedy the confusion by translating "the sight of the sun over the (entire) earth", but missed the pun on Ra.
84. Ulmer, *op. cit.*, p. 185. Ulmer (pp. 185-186) went on to discuss rabbinical references to *naḥaš ra'* ('evil snake' or 'snake of Ra'), which very likely alluded to the symbolism of the *uraeus* on the pharaoh's headdress.
85. Elsewhere ('The Divine Eye in Ancient Egypt and in the Midrashic Interpretation of Formative Judaism', *Journal of Religion and Society* 5, 2003, p. 4), R. B. Kern Ulmer had in fact written about the "detached, separate eye", which the sun god could dispatch with "the task to destroy those Egyptians that have committed evil deeds against the sun god." However, she did not relate this to the *Exodus* passage scrutinised here.
86. Compare M. A. van der Sluijs, *Traditional Cosmology; The Global Mythology of Cosmic Creation and Destruction*, vol. 4: *Disintegration*, All-Round Publications, London, 2011, pp. 227-228. E. Cochrane & D. Talbott ('When Venus Was a Comet', *Kronos; A Journal of Interdisciplinary Synthesis* 12. 1, 1987, pp. 14-16; cf. D. Talbott & E. Cochrane, 'The Origin of Velikovsky's Comet', *Kronos; A Journal of Interdisciplinary Synthesis* 10. 1, 1984, pp. 32-38) argued that the eye of Ra was the planet Venus as a comet.
87. te Velde, *op. cit.* (1967), p. 106, cf. 99-101, 107. On the slight basis of the Egyptian penchant for syncretism of gods, Rosenblatt (*op. cit.*, p. 185) postulated that Ra and Baal Saphon could both have been meant in *Exodus* 10. 10.
88. *Pyramid Texts*, 510 (1145-1147), tr. J. P. Allen, *The Ancient Egyptian Pyramid Texts; Translated with an Introduction and Notes*, 'Writings from the Ancient World' 23, Society of Biblical Literature, Atlanta, GA, 2005, p. 153 (*Pepi I*, 449). Note that the 'eye of Horus' could have been another entity than the 'eye of Ra'.
89. Keith Mills, *op. cit.*, p. 37.

90. e.g., S. Schechner Genuth, *Comets, Popular Culture, and the Birth of Modern Cosmology*, Princeton University Press, Princeton, NJ, 1997, pp. 20-101, especially 91, 96, 99-101; M. E. Bailey, S. V. M. Clube & W. M. Napier, *The Origin of Comets*, Pergamon Press, Oxford, 1990, pp. 21-22, 29, 80-82, 100-103.
91. For Set, see O. Neugebauer & R. A. Parker, *Egyptian Astronomical Texts*, vol. 3: *Decans, Planets, Constellations and Zodiacs; Text*, 'Brown Egyptological Studies' 6, 'Brown University Bicentennial Publications', Brown University Press, Providence, RI, 1969, p. 180. For both Set and 'Uzzā, see, conveniently, M. A. van der Sluijs, 'Who Are the 'Attendants of Helios'?', *Journal of the American Oriental Society* 129. 2, 2009, pp. 171, 173.
92. e.g., al-Ṭa'labī, 'Arā'is al-Majālis fī Qiṣaṣ al-Anbiyā', tr. Brinner, *op. cit.*, pp. 329-330.
93. Rosenblatt, *op. cit.*, p. 183.
94. Rosenblatt, *op. cit.*, p. 185. Rendsburg (*op. cit.* [1988, 2016]) was only slightly more cautious.
95. e.g., C. J. Humphreys, *The Miracles of Exodus; A Scientist's Discovery of the Extraordinary Natural Causes of the Biblical Stories*, Continuum, London, 2003, pp. 164-171.
96. Ferrua, *Le Pitture della nuova catacomba di Via Latina*, 'Monumenti di antichità Cristiana' 2. 8, Pontificio Istituto di Archeologia Cristiana, Vatican City, 1960, p. 81, reworked as *The Unknown Catacomb; A Unique Discovery of Early Christian Art*, tr. I. Inglis, Geddes & Grosset, New Lanark, Scotland, 1991, p. 144.
97. "Kötzsche-Breitenbruch cites for comparison only the star in the scene of the miracle of the quails on the right small side of a sarcophagus in Aix-en-Provence whose front shows the Crossing of the Red Sea." W. Tronzo, *The Via Latina Catacomb; Imitation and Discontinuity in Fourth-Century Roman Painting*, 'Monographs on the Fine Arts' 38, The Pennsylvania State University Press, University Park, PA, 1986, p. 66 n. 61.
98. Ferrua, *op. cit.* (1960), p. 81 n. 2; *op. cit.* (1991), p. 170 n. 14.
99. Ch. Raspil, 'Trisms and Planetary Iconography', *The Velikovskian; The Journal of Myth, History and Science* 2. 2, 1994, p. 73 Figure 42, *cf.* 71.
100. Cardona, *op. cit.*, pp. 75-76.
101. Numbers, 24. 17. H. I. Newman ('Stars of the Messiah', in M. Kister, H. I. Newman, M. Segal & R. A. Clements [eds.], *Tradition, Transmission, and Transformation from Second Temple Literature through Judaism and Christianity in Late Antiquity; Proceedings of the Thirteenth International Symposium of the Orion Center for the Study of the Dead Sea Scrolls and Associated Literature Jointly Sponsored by the Hebrew University Center for the Study of Christianity*, 22-24 February, 2011, 'Studies on the Texts of the Desert of Judah' 113, Brill, Leiden, 2015, pp. 272-303) offered an excellent treatment of the motif of the 'star of the Messiah', but (p. 292 n. 64) did not commit to a particular interpretation of the star shown in the Via Latina catacomb.
102. e.g., G. Noga-Banai, *Sacred Stimulus; Jerusalem in the Visual Christianization of Rome*, 'Oxford Studies in Late Antiquity', Oxford University Press, Oxford, 2018, p. 83 n. 86.
103. J. Elsner ('Pharaoh's Army Got Drowned [sic]': Some Reflections on Jewish and Roman Genealogies in Early Christian Art', in H. L. Kessler & D. Nirenberg [eds.], *Judaism and Christian Art; Aesthetic Anxieties from the Catacombs to Colonialism*, University of Pennsylvania Press, Philadelphia, PA, 2011, p. 14) judged it "rather fanciful".
104. Tronzo, *op. cit.*, p. 76. See Elsner, *op. cit.*, p. 34 (*cf.* 28-33, 35) for the Judaising trend in the decoration of 4th-century sarcophagi, in the sense of "a cipher absent of any intrinsic or original meaning but correspondingly rich and open to a multitude of competitive Christian understandings."
105. Pliny, *Natural History*, 2. 22 (89-90), tr. H. Rackham, *Pliny: Natural History*, vol. 1: *Praefatio, Libri I, II*, 'Loeb Classical Library' 330, William Heinemann, London, 1949, pp. 232-233.
106. Ferrua, *op. cit.* (1960), p. 94; (1991), pp. 158, 163-165.
107. B. Feldman, 'Typhon', *Kronos; A Journal of Interdisciplinary Synthesis* 6. 2, 1981, p. 92; Cardona, *op. cit.*, p. 62.
108. "Moÿse Suriel s'acquît une si grande reputation parmi les Juifs qu'ils remplissoient tous les jours sa maison où il leur faisoit des leçons, & leur donnoit des regles de vertu; il appuyoit sa doctrine sur une Comette que l'on voyoit en ce temps-là, persuadant au peuple qu'il avoit paru un semblable signe au Ciel au temps de leur délivrance de l'Égypte, que le songe de Jacob s'accomplissoit, que les Anges descendoient du Ciel, & s'emparoiert des corps humains, remplissant la terre de la science du Seigneur, selon Isaye au chap. II." de la Croix, fifth letter from Istanbul (10 January 1679), ed. [É.] de la Croix, *Memoires du sieur de la Croix, cy-devant secretaire de l'ambassade de Constantinople. Contenant diverses relations tres-curieuses de l'Empire Othoman*, vol. 2, Claude Barbin, Paris, 1684, pp. 358-359. The translation "the same sign" in G. G. Scholem, *Sabbatai Ševi: The Mystical Messiah, 1626-1676*, tr. R. J. Zwi Werblowsky, 'Princeton Classics', 'Bollingen Series' 93, Princeton University Press, Princeton, NJ, 1973, p. 438, repeated by Feldman (*op. cit.*), is a tad misleading.