

# **The Deucalion catastrophe, Moses route in Sinai and the passage of Red Sea, explained in terms of the Phaethon explosion, following a key in Paulus Orosius**

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## **Abstract**

A rather forgotten passage in Paulus Orosius *Historiae contra paganos* states that the Deucalion Flood, the Exodus events, India conquered by Dionysus, climatic changes and large people migrations took place essentially at the same time. The cause was Phaethon according to pagan traditions. Here we provide a scenario which explains the above events in terms of the capture of two bodies, the Lampos and the Phaethon of the Greeks, by Earth, around year 1447 BC. Lampos probably crashed over Africa, leading to the eruptions of the hundred or so volcanoes in Dancalia, whose dust made the waters of the Nile to become red. Phaethon exploded after orbiting several times around Earth. The explosion was over the Eider river in northern Germany. The effects of the explosion easily explain how Moses could walk on the dried bed of a certain part of the Red Sea, overcoming a point where the route had been closed by rockfalls. Additional topics are also considered.

## **1. Introduction**

The book of Exodus contains some of the best known tales of the Bible. It deals with Moses who, aged 80, returns to Egypt after an absence of 40 years, mainly spent in the Arabian region of Madian. He returns to lead the Hebrew away from Egypt, where they were mistreated, into the land of Canaan, i.e. the *land of honey and milk*, that God promised to Abraham and his descendants, wherefrom they had left some 200 years before. Pharaoh allows the Hebrew to leave after the famous Ten Plagues strike Egypt, apparently following Moses request of the power of his God against the Pharaoh. Moses travels towards Canaan by a much longer and difficult way than the usual one. While the Hebrew are still far away from Canaan, they discover an Egyptian army pursuing them, in a place where apparently there is no escape. A windy night descends. Before sunrise they see that the sea level has lowered, allowing them to walk on former seabed. Once they have returned to land, they watch the Egyptian troops pursuing them over the seabed. Then Moses lifts the special baton that God had given him on the Mountain of God, and they watch the Egyptian army being drowned by the returning waters.

There have been several explanations of the extraordinary facts told in Exodus, the withdrawal and return of the waters of the Red Sea being particularly of interest for exegesis. Here we recall some:

- the orthodox/fundamentalist claim, where the events are seen as pure miracles performed by Moses
- the symbolist explanation, typical of many Fathers of the Church, see e.g. Gregory of Nissa *Life of Moses* [1], and Philon [5], where the events are considered as allegories

- the approach of several modern scholars, like Finkelstein and Silberman [2] or Liverani [3], who deny the Bible the traditionally attributed antiquity, claiming that it was composed after the Jews returned to Jerusalem from the exile in Babylon. A reason to compose the Bible, where many events are pure inventions according to these authors, was the desire of the Jews to show that they too had an ancient history as the people they had met during the exile
- the approach of scholars who think that the events appearing as miracles were been special natural events; among them we recall Ricciotti [4], Barbiero [6], Goedicke [7], Velikovsky [8], De Grazia and Milton [9], see de Vaux [10] for an extensive list.

Our solution belongs to the last category. It is based upon the following working hypotheses:

- 1 – the ancient documents are basically faithful descriptions of real events, apart from generally not important corrections to be done in the text due to errors in the translation or in the transmission; omissions, more than plain falsities, are typical features
- 2 – in ancient times our planet underwent catastrophic events of extraterrestrial origin; the events associated with Exodus, in particular with the passage of the Red Sea, have to be set in the last of the three great catastrophes that according to Plato affected Earth, namely the Deucalion catastrophe. The first catastrophe in Plato is associated with the destruction of Atlantis (also ending the last Ice Age, see Spedicato [11]); it can be argued that the second catastrophe is the biblical Universal Deluge associated with Noah, Ziusudra or Utnapishtim, Manu... to be dated at circa 3161 BC).

A connection between Exodus, Deucalion, Phaethon and the migration of the Aryans into India was suspected by Velikovsky [12], who apparently never read Orosius [16], where such a relation is provided, albeit in an implicit form. We use this connection to a fuller extent arriving at a natural explanation of the above events, at the light of the present knowledge of the consequences of the explosion in the atmosphere of a super-Tunguska object. Our solution apparently has never been considered before. It is consistent with the geographical and physical information in the Bible. In Part II we use our solution to give a new explanation for the end of the Minoan civilization. Our solution also confirms the claim of Velikovsky that the Amalekites are the Hyksos who ended the Egyptian Middle Kingdom, to be further identified with the Amu who often attacked Egypt during the Middle Kingdom.

## Part 1: Moses route and passage of the Red Sea

### 2. Textual information about the passage of the Red Sea and related events

Our solution of the problem of the passage of the Red Sea, namely where and how it happened, is based upon the following ancient documents. Other related material may probably be found in the *Legends of the Jews* collected by Ginzberg [13], in the Midrash or Talmud, in the Fathers of the Church and the Islamic scholars; also investigation of Indian, Chinese and Mayan documents might be useful. However a satisfactory solution is obtained using only the information given here.

From the book of Exodus, 14, 15-31, [14], Septuaginta Version, our translation

*And the Lord said to Moses: Why do you call me? Tell the sons of Israel to move the camp. And you, lift you baton, direct your hand towards the sea and open it, so that the sons of Israel enter in the middle of the sea walking on dry seabed. And I will harden the heart of the Pharaoh and*

*the Egyptians, who will enter the sea after them. And I will be glorified due to the Pharaoh, his army, his chariots and his horses. The angel of God who moved in front of the camp of the sons of Israel changed position and went behind them. The column of smoke also changed position and passed behind them, stopping between the camp of Israel and of the Egyptians. Darkness descended and the night passed without contact between the two groups. And Moses lifted his hand over the sea, and the Lord pushed away the sea by a strong wind from the south, for the whole night, which dried the sea and divided the water. The sons of Israel entered the domain of the sea walking on the dry bottom, the water being for them a wall on the right and a wall on the left. The Egyptians started to follow them and entered the domain of the sea after them, all the horsemen and the chariots. Now it happened, at the morning watch, that the Lord looked towards the camp of the Egyptians, within the column of fire and clouds, and put the camp of the Egyptians in disarray, blocked the wheels of their chariots and agitated them with violence. And the Egyptians said: Let us run away from Israel. Because the Lord is fighting against us on their behalf. The Lord said to Moses: Stretch your hand over the sea, so that the water comes back and covers the Egyptians, their chariots and their horsemen. Then Moses stretched forth his hand over the sea and by sunrise the water came back to its former place; the Egyptians were running against the water and the Lord threw them in the middle of the sea. And the returning water covered the chariots, the horsemen and all other part of the army that had entered the sea after these; not a single man survived. But the sons of Israel walked over the dry seabed, the water being for them a wall at the right and a wall at the left.*

From the Book of the Psalms, Piemme (1989), our translation, Psalm 113A/114:

*When Israel left Egypt*

....

*The sea saw and withdrew  
The Jordan inverted his course  
The mountains jumped as rams,  
The hills as the lambs of the flock.*

From Josephus Flavius, *Antiquities of the Jews*, [14], II, 3:

*(Moses)... did not lead his people by the direct route to Palestine, but decided to take a long and difficult way through the desert to invade Canaan. He was also motivated by the order given by God to lead his people to Mount Sinai to make there sacrifices to Him. However the Egyptians caught up with the Hebrew, closing them in a restricted area... they blocked all roads wherefrom they thought the Hebrew could escape, constraining them between the sea and inaccessible mountains; it was the sea where the mountain ended, a quite steep one; they thought it was impossible to escape by this way. Stopping close to the point where the mountain joined the sea, they blockaded the Hebrew....*

From Ginzberg *Legends of the Jews*, volume 4 of Adelphi edition, [15], pp. 140-165:

*Joseph had divided into three parts the riches made when selling the grain during the time of food shortage, one part being deposited in the sanctuary of Baal Sefon; from here it was taken away by the Hebrew [led by Moses].*

*...when he arrived to the sanctuary of Baal Sefon the Pharaoh was happy to notice that the statue of the God had not been destroyed, contrary to what had happened in the other temples; he offered sacrifices thinking that Baal Sefon agreed with his aim to destroy the Hebrew.*

.....

*Moses addressed God: Lord of the world!... I do not know how to save my flock. Following me is the Pharaoh, north is Migdol, south is Baal Sefon, in front of us is the sea.*

....

*The people of Israel left the sea....they moved towards the desert of Sur, full of snakes and scorpions.....they began protesting because of scarcity of water....they found a source but the water was bitter.....[Moses] threw a branch of laurel in the water and it became sweet... this place Mara became famous.... from Mara the Hebrew moved to Elim, where there were seventy palms and twelve springs, a very dry and sandy place.... They stopped there several days.....*

Now we quote the passage from Orosius [16], *Histories against the pagans*, which has been crucial for our solution of the passage of the Red Sea. Orosius wrote this work, now essentially neglected, on the invitation of St Augustin. The quoted passages are from Book 1, 8-10, our translation.

*810 years before the foundation of Rome Amphithion was king in Athens. At his times a flood destroyed most of the people of Thessaly. Only a few could save themselves on the mountains, in particular on the Parnassus which was under the jurisdiction of Deucalion.....Plato states that at that time Ethiopia was affected by many terrible diseases, which almost destroyed the whole population.....at that time Father Liberus conquered India shedding lot of blood and killing many people.....against a nation that was never hostile to others and lived peacefully...*

*Pompeus [Trogus] and Cornelius [Tacitus] state that 805 years before the foundation of Rome, terrible disasters and diseases affected the Egyptians....they expelled Moses....he stole the sacred objects of the Egyptians....Cornelius Tacitus refers that...a pestilence deforming the bodies developed in Egypt at the time of king Boccoris, who after consulting the oracle of Ammon was ordered to deport out of Egypt certain people disliked by the gods...Moses, one among the expelled people, admonished his people to confide only in him, as a leader sent by the celestial power,,,,,*

*There were extreme heats, long lasting and unbearable; it was unusually hot in Ethiopia and the Scythians were unable to bear the hot weather.*

*This was also the reason why some people, not willing to recognize God's absolute power, have invented the ridiculous fable of Phaethon, in order to provide an explanation that is however lacking of basis.*

On Phaethon, from Hesiodus, *Theogony*, 984-989, [45]

*...Aurora....generated a glorious child to Kephalos, the powerful Phaethon, wholly similar to the gods....he was still a young boy...when Aphrodites who loves the smiles stole him and fled with him....*

From Plato's *Timaeus*, the Egyptian priest of Sais speaking to Solon, [19]:

*Your own story of how Phaethon, child of the Sun, harnessed his father's chariot but was unable to guide it along his father's course and so burnt up things on the Earth and was himself destroyed by a thunderbolt....*

From Ovid's *Metamorphoses*, I, 751 passim:

*Phaethon, the son of the Sun...he moves below the Moon...higher parts of Earth burn....towns burn with their walls....the mountains with their forests....rivers boiled....the crust of Earth broke....then the all powerful father sent a thunderbolt against Phaethon, destroying him, and stopping the fire with this fire....the chariot disintegrated... and fell over the great Eridanus....*

On the Eridanus river:

From Herodotus, speaking of the western parts of Europe, Book III, 115, see also [17]:

*I cannot speak with any certainty; for I do not allow that there is any river, to which the Barbarians give the name of Eridanus, emptying into the northern sea where, as the tale goes, amber is produced....*

From Lucianus *Dialogues of the Gods*, 24-25, [20]:

*What have you (Helios) done, most disgraced of the Titans? You destroyed everything on Earth, by giving the chariot to a stupid youngster who burnt parts of the Earth...and ruined others with cold....if I would not have stricken him with my thunderbolt mankind would have been destroyed....let his sisters put him to rest near the Eridanus, exactly where he fell when thrown out of the chariot, let them cry tears of amber and become poplars...*

From the above texts we obtain:

- 1- Before the passage of the Red Sea Moses and the Hebrew were located in a place between the sea and impassable mountains, with the Egyptians blocking the escape (Josephus *Antiquities*); the place was located between Baal Sefon, at the south, and Migdol, at the north (Ginzberg *Legends*)
- 1 While the Hebrew were desperate considering the difficulty of their situation, a strange phenomenon was observed in the sky: the *Angel of God* and the *column of smoke* appeared to stop and darkness came. During the night a strong wind flew from the south; close to the end of the night the sea had dried and the Hebrew could walk over the seabed. By morning time the Egyptians too entered the seabed. Then their chariots began shaking. Moses lifted his baton, the waters came back and destroyed all Egyptians who had entered the seabed (*Exodus*)
- 2 Mountains and hills *jumped* (*Psalms 113A*)
- 3 Phaethon crashed on Earth after wild movements in the sky, first burning forests then being destroyed by a strike of Jupiter (Plato, Ovid, Lucianus)
- 4 Phaethon is said by many to have crashed over a northern river named Eridanus, in a place associated with the production of amber (Herodotus, Lucianus)
- 5 Phaethon is considered to be responsible of several catastrophic events that appear to happen at the same time, or at close times, including an invasion of India by people who slaughtered many of its inhabitants, the Flood of Deucalion, extreme heats in Ethiopia and Scythia, and the Exodus events (Orosius).

Next we explain the events related to the passage of the Red Sea, within the context of a super Tunguska type event that took place at that time. In Parts II and III we discuss other important consequences of the event, namely the migration of the Aryans to Iran and of the Hindi to India, the Amu-Turanians-Amalek to Egypt, the Deucalion event, the destruction of the Minoan civilization, the chronology of the events and the Hebrew route in the Sinai.

## 2. The passage of Red Sea explained

We provide here a scenario explaining the Exodus events in terms of the interaction of Earth with an external object of significant size, say a few km diameters, that we propose was the minor god named *Phaethon* by Greeks. The object had been captured by our planet (probably together with the object named Lamos at the end of Odyssey), at some undetermined time, or it was an object of the recently discovered class of Cruithne objects. The Cruithne objects, of which at least two are now known, follow our planet essentially on its orbit, approaching to it to some close distance and then moving away, a dynamic phenomenon that was totally unexpected, another example of the incredible variety of phenomena allowed by the nonlinear laws of celestial mechanics. At the time of the considered Exodus events Phaethon had ceased this special relation with Earth, for a possible reason that we will discuss, becoming captured by Earth in an unstable orbit around it. It experienced fragmentation episodes that sent dust to our atmosphere and larger pieces that exploded in the atmosphere or impacted on continents and oceans. A similar fate must have touched also Lamos, that probably crashed on Earth sooner than the Phaethon explosion, possibly in the Sahara region, where craters have been found datable a circa 1500 BC. The core of Phaethon finally exploded as a super Tunguska event over the river Eider in Germany. The effects of the explosion reached the shores of the Red Sea and resulted in the wonderful events that are described in the quoted Exodus passages. In particular they allowed the Hebrew to escape from an impasse, while destroying the pursuing Egyptian army. The idea of an external body being responsible for the Exodus events was present in Velikovsky [8] albeit in terms a planetary entity (a young Venus as a giant comet, see, for further details on Venus, Ackerman [27,28]) that passed close to Earth). We do not attribute the capture of Phaethon and Lamos to an interaction with Venus, but more probably with the Moon. Our proposal is based on the above passage from Esiodus, where Aphrodites is stated to have fled with Phaethon. De Grazia [27] has argued that Aphrodites is not Venus, but the Moon, a statement that we accept also observing that the name Aphrodites, known to be not of Greek origin but of oriental origin, can be decrypted as *from the foam of the great blue*, noting that APHRO = AFAR = DUST, FOAM in Akkadian, DI = BLUE in Zhangzhung and TES = TA = GREAT in Chinese. A hybrid name based upon two or three widely spoken ancient languages is possible for ancient names, several examples could be provided. Now we have proposed, see Spedicato [28] that Moon was captured by Earth around 9500 BC from a planet passing close to our planet. It appeared in the sky after the clearing of the vapors produced by an immense amount of magma that poured out from the broken oceanic bottom following Earth crust deformation by the gravitational action of the body passing close. We believe that Velikovsky, a scholar of immense erudition, missed our scenario because he never read Orosius, an author forgotten by most researchers on Exodus. Moreover, he was not aware of the effects of a cometary-asteroidal impact that have been studied later, when Apollo type objects in collision orbit with our planet became known, following the paper of Whetherill [29] in 1979. Our theory validates all main points in the biblical text and explains the data from Greek and Latin mythology about Phaethon and Deucalion.

According to Exodus, Moses obtains from the (unnamed) Pharaoh permission to leave Egypt after the last of the Ten Plagues that affected Egypt during a period of probably several weeks, or months. We do not discuss here the plagues in terms of the effects on Egypt of the Lampos and Phaethon related events, mainly earthquakes and volcanic eruptions, that produced dust which obscured the Sun and led to dramatic drop in temperature at the high latitudes. An eruption at Santorini, located some 950 km from Heliopolis, the very ancient sacred Egyptian centre, is unlikely to have caused phenomena like the waters of the Nile becoming red and poisonous or the sky completely darkened. There are a few volcanoes in the Mediterranean, almost all of them in Italy (word *Italia* probably deriving from the Greek *Aithalia*, meaning the *smoking land*, from the volcanic activity that characterizes many places in southern Italy, see Vinci [21]), but we must take into account the many volcanoes in the Arabian peninsula and especially in the Dankalian depression between Ethiopia and Erythrea. Here, about 2100 km from Heliopolis, there is the highest concentration of volcanoes in the world, over one hundred, many of them of small size indicating a recent origin. Part of this region is called *Afar*, a word that in Akkadian and generally in Semitic languages means *dust*, see Semeraro [22], and our decryption of word Aphrodites. It is quite possible that the word *Africa* originates from *afar*, therefore meaning *the land of (volcanic) dust*. We could also suggest that the word *Red Sea*, *Erythreum Mare*, now applied to a sea that is remarkable for the deep blue and transparency of its waters, in the past applied to the whole of Indian Ocean between Africa and India, goes back to when frequent eruptions in the Dankalian depressions formed deep red floating islands of pumice. The many volcanoes of Dancalia certainly could obscure the sky in Egypt more than the few volcanoes in the Mediterranean, even if they were located at twice the distance. Moreover since winds in Ethiopia originate from NE and SE, they would push the volcanic dust over the Ethiopian plateau, where the rain waters end up into the Nile. Hence during a period of intense volcanic eruption in Dankalia the waters collected in Ethiopia would be enriched of volcanic dust, especially of the special red pumice produced by the Dankalian volcanoes, containing poisonous components and deeply coloring them. This would thereby explain the first plague, a fact virtually impossible if the dust came from Santorini, since such dust would mainly settle in the Egyptian desert and just remain there.

When Moses left Egypt the core of Phaethon was still orbiting around Earth. It was seen move, as seen from the Goshen area in the Delta where many Hebrew were located, on an orbit from SE, i.e. from over the Indian Ocean and SW Arabia, towards Greece and northern Europe, to the NW direction. The SE direction is compatible with the location of the Land of Canaan, the *Land of Honey and Milk*, where Abraham settled and Moses wanted to take back his people. Canaan has been identified by the Lebanese great historian Kamal Salibi in several books [23,24,25] as the region of SW Arabia, between Meccah and Yemen, now called *Asir*. The identification of the land of Canaan by Salibi, based upon hundreds of toponima in the Pentateuch, is at variance with the standard identification with Palestine.

By our assumption on the orbital movement of Phaethon we can explain the properties of the *pillar of light and smoke*. The core had to be active, as a normal nucleus of a comet close to the Sun, emitting ionized dust that appeared during the day as smoke, and with plenty of thermal and electrical activity that made it source of light during the night. Hence the direction where to move was given to the Hebrew by the point in the sky where the core would appear, a fact that repeated itself several times during the 24 hours, once the distance from Earth was less than the distance corresponding to a stationary orbit.

We consider now the crucial day when Moses, faced by destruction from the Egyptian army, was able to cross the Red Sea, while the pursuing Egyptian army was destroyed. From Josephus we

know that he found himself in a restricted area between the sea and impassable mountains. This passage in Josephus is important for two reasons:

- Moses was in a place with impassable mountains reaching down to the sea. This geographic information excludes that the event took place along the coasts of the Mediterranean, as suggested for instance by Goedicke [7] or Anati [30], since here the Sinai coast is quite flat and there are no "impassable" mountains. It excludes the area of Suez or the Sinai coast along the Suez gulf, as suggested e.g. by Barbiero [6], Phillips [31] and Manher [32], where either there are no mountains or they do not reach close to the coast (assuming that the sea level has not changed significantly since the Exodus time). It also excludes most of the coast of Arabia, which is characterized by a long narrow plane, the Tihamah, rising steeply by a series of escarpments to the western Arabian plateau, that reach over 3000 meters in the Asir. The requirement of Josephus is however satisfied by the Sinai coast facing the Aqaba gulf. About half way this coast, moving north from Ras Muhammad, the mountains, that before rose a few km inland letting a narrow coastal plain now heavily exploited as a resort area, reach down the coast, so that from near Nuweiba the road to Eilat goes inland by an inner valley crossing a pass of modest elevation. So the passage in Josephus suggests for the crossing of the Red Sea some place midway of the eastern coast of the Sinai; see Part III for a more detailed identification.

- Moses probably had personal knowledge of the road he decided to take, not the usual and shortest way to Canaan. He had lived many years in Arabia after marrying Sipporah, a daughter of Iethru, a man of religious and political power in Madian, possibly to be identified with the region of present Iathrib/Medina, not too far from Sinai. Notice that Sipporah was not his first wife, since according to the *Legends* he had had another wife, named Adoniah, in Kush, when he was for military reasons; we will argue that Kush is not Ethiopia as usually assumed, but probably present Badakshan. As shepherds in Asia often move their flocks over long distances, it is quite likely that Moses traveled widely in Arabia and surrounding regions. Moreover he certainly had knowledge of regions not visited personally by talking with other people, the normal way for ancient people to share information. So the fact that he was blockaded between the sea and impassable mountains cannot be explained by ignorance of the route. We think that since his last visit to that place, a catastrophic event had blocked the road. The event was very likely a rock-fall that closed the road where it passed a narrow defilé between mountains and sea. Rock-falls certainly occurred in the Sinai mountains due to the earthquakes that must have affected the region during the Ten Plagues. In particular earthquakes must have occurred during the ninth plague, when there were three days of darkness, that can be explained either by volcanic dust of catastrophic eruptions (Santorini? The Arabian and Dankalian volcanoes?) or by dust associated with an episode of fragmentation of Phaethon or even by local impacts of fragments of Phaethon (several craters of relatively recent origin are known in Irak, Arabia, Oman, Sahara, not to say of an extensive tektite field in northern Arabia). Now a rock-fall blocking a road requires plenty of work for removal, a feat that cannot be accomplished in a few hours or days. Even if the depth of the sea was only a couple of meters, bypassing a rock-fall by entering the sea for a certain distance would have been virtually impossible.

We have now Moses and the Hebrew stranded in a location where they had from one side the pursuing Egyptian army and on the other side impassable mountains and the sea. Now the following sequence of events took place, that can be explained by the Phaethon event:



*The angel of God who moved in front of the camp of the sons of Israel changed position and went behind them. The column of smoke also changed position and passed behind them, stopping between the camp of Israel and of the Egyptians. Darkness descended.....*

*The mountains jumped as rams, the hills as the lambs of the flock...*

*And Moses lifted his hand over the sea, and the Lord pushed away the sea by a strong wind from the South, for the whole night, which dried the sea and divided the water. The sons of Israel entered the domain of the sea walking the dry bottom*

*The Egyptians started to follow them and entered the domain of the sea after them, all the horsemen and the chariots. Now it happened, at the morning watch, that the Lord looked towards the camp of the Egyptians, within the column of fire and clouds, and put the camp of the Egyptians in disarray, blocked the wheels of their chariots and agitated them with violence.*

*The Lord said to Moses: Stretch your hand over the sea, so that the water comes back and covers the Egyptians, their chariots and their horsemen. Then Moses stretched forth his hand over the sea and by sunrise the water came back to its former place; the Egyptians were running against the water and the Lord threw them in the middle of the sea. And the returning water covered the chariots, the horsemen and all other part of the army that had entered the sea after these; not a single man survived.*

The above statements are from the Septuaginta version of Exodus, except statement 2 that is from Psalms and that we have entered here because of the logical temporal sequence in our scenario. We explain the above events as follows.

The Angel of God, associated (during the day) with smoke, is Phaethon of Greek mythology. The Exodus passage appears to describe the final stage of the evolution of this body. We think it describes a final explosive fragmentation, one large piece continuing in a north-western direction that will end up in an explosion over Denmark, other pieces appearing to stop or move back over the Egyptian army, located south of the place where the Hebrew were camped, darkening the sky in the direction of the Egyptians. The event takes place in full day.

A short time after the fragmentation, Phaethon enters the uppermost layers of the atmosphere over the Mediterranean, moving on an almost tangential orbit. The contact with air sent a heat wave to the surface of Earth. Crete was probably on the path of the body, hence fires started in its cities. Continuing on his way, Phaethon passed over Greece, the Balkans and Central Europe, at those times heavily forested. Here the heat wave led to fires in the forests. As the elevation of Phaethon decreased, the effects of air pressure and of the extremely high temperature of the body led finally to its explosion, over Eridanus. It had to be an immense explosion, much more powerful than the Tunguska explosion, one that could be observed at great distance, with a bright tail extending along the temporary tube made by the body in the atmosphere (hence the claim that Phaethon had been destroyed by a thunderbolt of Jupiter). The explosion took place on the Eridanus river that can be identified with the present Eider River in Schleswig Holstein in Germany, not the Po river of Italy. The identification with the Eider is based upon the following consideration:

a – from Lucianus, see above, and other authors, the sisters of Phaethon cried his death by tears of amber. Now amber is found in the Northern Sea near Denmark and in the Baltic Sea, not in the Mediterranean. The explosion must have broken the upper sediments of the sea around Denmark, freeing amber that was embedded at depths that would not be disturbed by normal waves. Hence a good byproduct of the event must have been an increase in the availability of amber. From Spanuth [33] we know that in the Middle Ages amber was more easily found than now. Even large blocks were found, that were burnt for heating if not of the best quality.

b – until the 14-th century, according again to Spanuth, the Eider river and the Schlei river were essentially connected, providing a direct access to the Baltic sea from the North sea that avoided circumnavigating the Jutland peninsula. The passage represented one of the most important ways for navigation. Now it has been claimed by Wirth [25] that the constellations in the sky which are named usually according to animals or heroes have these names only as popular names, while their real meaning is not related to animals or heroes. They actually represent “secret” maps of the coasts of the Atlantic and the Mediterranean or of important passages for navigation. There is a constellation named *Eridanus*. Its shape bears no relation with the Po river but has an uncanny similarity to the profile, zigzagging, of the Eider river.

The above elements support the identification of Eridanus with the Eider river, in northern Germany. We do not know at which height Phaethon exploded nor the energy. Detailed discussion of the effects of the explosion requires such knowledge. To leave such a memory of disaster, related as we will discuss later to the Deucalion Flood, i.e. to the last of the three great catastrophes alluded to by Plato, it must have been an event of enormous power. The following consequences are important for the analysis of the Exodus text:

A – the explosion must have compressed the soil in Denmark, originating an enormous earthquake, to be felt over much, if not all, of Eurasia and Africa, hence in Sinai. Seismic waves travel fast, between 2 and 6 km/sec depending on the type of rock they traverse. The Gulf of Aqaba being about 3500 km from the Eider river, the earthquake would have reached there say after about 20 minutes

B – the explosion would lead to the radial propagation of a pressure wave in the atmosphere, generating a hot wind, whose temperature and speed would decrease with the distance from the point of explosion, while the duration would increase. Detailed computation of these effects is a very complex mathematical task, requiring, in addition with the height and energy of the explosion, detailed knowledge of Earth surface features.. Preliminary estimates, but for the case of an object impacting an ocean, are given for instance in Strelitz [35]. See also Part III.

From A we have an immediate explanation of the above sentence 2 in Psalms: the earthquake due to the explosion reaches Sinai with great violence shaking the mountains.

From B we have the explanation of the wind that flows during the night, for several hours. The Septuaginta says that it was a wind from the south (the Masoretic text says from east). It was neither from south nor east (the difference in the texts being possibly explained by the strangeness of the wind, that *should* have come from south, but somehow appeared as coming from another direction), but from north, believed to come from south because a wind coming from the south should be a *hot* wind, in Egypt hot winds coming from south,

cool winds from north, a truth by default, as stated in *Pistis Sofia* [34], Jesus being supposed to speak:

*...when the wind comes from the north, you know that it will be cold, when the wind comes from the south you know that it will be hot and dry....*

Before proposing our explanation of the crossing of the Red Sea, notice that an inspection of a terrestrial globe shows that the Red Sea, about 2500 km long, 200 km wide, ending in the straights of Bab el Mandeb, is perfectly aligned with the direction of radial propagation of an atmospheric wave, i.e. of a wind originating from a point say on the Eider river. This means that a strong wind active for many hours over the Red Sea would push the waters south in the direction of its narrow exit, with two effects:

- lowering of the water level in the north, particularly in the Gulf of Aqaba (and of Suez)
- increase of the water level in the south.

In other terms we expect that the Phaethon explosion generated along the Red Sea effects similar to those today generated by the wind in the Adriatic sea (the high waters and low tides that so annoy the people in Venice), but on a much larger scale. We have therefore a mechanism that provides for the lowering of the waters of the Red Sea, and the explanation to the statement that the sea bottom was dry, an obvious effect of the hot wind. How much the sea lowered is impossible to say without a mathematical computation, but it is clear that if the problem of Moses was how to bypass a rock-fall, even a lowering of the sea level by a few meters would have been enough to allow the passage.

***Therefore in our interpretation the passage of the Red Sea does not mean that the Hebrew went from one coast to another, but that they bypassed a rock-fall by walking over a seabed suddenly become accessible and dry.***

We have been however unable to explain the passage saying that *...the Lord ... divided the water. The sons of Israel entered the domain of the sea walking on the dry bottom, the water being for them a wall on the right and a wall on the left*. This problem has now probably a solution thanks to Mauro Biglino. He is a specialist in Hebrew that is providing a literal translation of the Masoretic consonantic code of the Bible, known as the Leningrad code, the most ancient extant, whose correctness was confirmed by the identity of its Isaiah book with the one found in Qumran. In a email communication of end 2010 Biglino has written to this author that the sentence *the water being for them a wall on the right and a wall on the left* simply does not exist in the Leningrad code! It has been added by the translators and vocalizers, a fact that he found quite common in the Bible! The code simply states that *the waters provided a protection*, which is quite acceptable in our context.

We can propose a partial explanation, allowing for parts of the passage to be an inaccurate rendering of the event, that was experienced by people bewildered by what they could interpret only as a miracle performed by the Lord on the request of Moses. The Gulf of Aqaba is mostly very deep, with a depth around 1600 meters; however in front of Nuweiba, where the passage most likely happened, the sea bottom rises as a kind of subwater dike, reaching a level quite close to the sea surface at least not too far from the coast. We cannot be sure now how the Gulf of Aqaba bathymetry was at the time of Moses, this region been tectonically very active. However we cannot exclude that the wind reduced the sea level so much that at least part of the dike emerged, hence dividing the

Gulf of Aqaba into two separate basins, at least close to the coast. Notice that it was night and visibility was limited, being provided by the light of Phaethon explosion.

We now consider the destruction of the Egyptian army. The Egyptians saw the Hebrew walk on the dry seabed and moved in their direction after sunrise. Exodus says that the wind flew during the night, so we may now assume that it had stopped. This means that the waters pushed south towards the Bab ed Mandeb started to return to their normal position. The return of the waters was a catastrophic event itself, whose mathematical modeling would be a challenge even for today's algorithms and computers. The waters returned as a kind of rebound tsunami, probably with a turbulent high front wave. The following features are expected to characterize the arrival of the waters:

A – a moderate earthquake with peculiar soil vibrations. This would explain the loss of the chariots wheels before the water arrival, terror striking the pursuing Egyptians

B – the complete washing up of the Egyptian army (save people that might have been located in high places; among them possibly the Pharaoh) into the Gulf of Aqaba. Hence archaeological support of this scenario should look for objects in the sea bottom of the Gulf of Aqaba that may be related to the Egyptian army: weapons, pieces of chariots, gold objects....

The waters came back after Moses lifted his baton, so the event appeared as a miracle performed by the Lord on his call. It was not only a wonderful event but a scaring one, such to leave indelible memory to those who witnessed it. The wave went down the whole Aqaba gulf and certainly rebounded, so that a sequence of waves, albeit of decreasing intensity, must have rocked the coast for several hours if not days. This must have led Moses to the prudent decision to stay for a number of days in a high place until the waters calmed.

We observed that archaeological support of the given scenario should be provided by findings on the sea bottom in the Gulf of Aqaba. Such findings have been reported by a Swedish expedition from the Karolinska Institute in Stockholm, see [26]. On the sandy sea bottom in front of Nuweiba sub-water archaeologists found coralline structures. This was in an area lacking of rocks, where coral was not expected to grow, since to grow coral needs a seed that may be a metal or a wooden object. Once the coral grows, the seed might slowly decay by rusting, and finally disappear, while leaving intact the coralline structure that has grown on it. Not only unexpected coral structures were found, but some of these have the geometric aspect of spiked wheels, same form and size of wheels of Egyptian chariots, or of other components a chariot. The investigated area is part of a submarine park, where objects cannot be removed, so radiocarbon dating has not yet been made. Metal detectors have shown the presence of metal inside the corals.

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## Part 2 : effects of the Phaethon explosion outside the Egyptian region

### 1. Introduction

In Part I of our presentation we used a passage in Orosius to hypothesize that the events associated with Exodus were mainly due to the interaction with Earth of an asteroidal body, the one named Phaethon by the Greeks, which finally exploded over the Eider river in northern Germany as a super Tunguska event. The passage of the Red Sea was explained as an effect of the hot wind produced by the explosion, that pushed the waters of the Red Sea south, lowering their level in the Gulf of Aqaba, on whose western coast Moses had been stranded because a rock-fall had closed the road passing between the sea and steep mountains. After Moses bypassed the rock-fall by walking on the sea bottom that had been exposed by the lowering of the waters, the pursuing army of the Egyptians was destroyed by the returning waters. In this Part II we examine some effects of the Phaethon explosion in other parts of the world. Particularly we consider Greece and Central Asia, providing a new explanation of the demise of the Minoan civilization, an explanation how the Myceneans could easily settle in Greece, and providing more insight on the so called Hyksos invasion of Egypt. In Part III we will consider in some detail Moses' itinerary in Sinai and some chronological questions, that support our chronology, essentially the internal chronology of Bible in whose favor Velikovsky provided many arguments. For convenience of the reader we rewrite the passage from Orosius [1], *Histories against the pagans*, already given in Part I.

*810 years before the foundation of Rome Amphithion was king in Athens. At his times a flood destroyed most of the people of Thessaly. Only a few could save themselves on the mountains, in particular on the Parnassus which was under the jurisdiction of Deucalion.....Plato states that at that time Ethiopia was affected by many terrible diseases, which almost destroyed the whole population.....at that time Father Liberus conquered India shedding lot of blood and killing many people.....against a nation that was never hostile to others and lived peacefully...*

*Pompeus [Trogus] and Cornelius [Tacitus] state that 805 years before the foundation of Rome, terrible disasters and diseases affected the Egyptians....they expelled Moses....he stole the sacred objects of the Egyptians....Cornelius Tacitus refers that...a pestilence deforming the bodies developed in Egypt at the time of king Boccoris, who after consulting the oracle of Ammon was ordered to deport out of Egypt certain people disliked by the gods...Moses, one among the expelled people, admonished his people to confide only in him, as a leader sent by the celestial power,....*

*There were extreme heats, long lasting and unbearable; it was unusually hot in Ethiopia and the Scythians were unable to bear the hot weather.*

***This was also the reason why some people, not willing to recognize God's absolute power, have invented the ridiculous fable of Phaethon, in order to provide an explanation that is however lacking of basis.***

Also we recall some passages on Deucalion. From Plato's Critias, see [2], noticing that from the Greek way of counting inclusively the sentence *the third before that of Deucalion* means three deluges overall including the one of Deucalion

*(the one of Atlantis) ...the third terrible deluge before that of Deucalion*

In other authors, e.g. Ovid's *Metamorphoses*, see [3], the Deucalion story appears mixed with the story of a previous more severe flood, where few people survived in boats, a type of survival not compatible with the events that we associate with Phaethon

## 2. Effects of the Phaethon explosion in northern Europe and the Mediterranean

The Phaethon explosion over the Eider river in Schleswig Holstein was an event of probably hemispheric extent, with enormous consequences on other parts of Eurasia, Africa, and even North America. In this section we will consider some effects in Northern Europe and the Mediterranean.

### A – Effects in Northern Europe

The Phaethon explosion must have destroyed everything within hundred of km of its epicenter. This means the destruction of most vegetation, animals and men in present Denmark, northern Germany, Poland and southern Scandinavia. Very heavy destructions also in Finland, Baltic states, Holland, Belgium, eastern Britain. At the date of the event given by us, 1447 BC, see Part III, in these countries the bronze civilization was in full bloom, as attested by the rich findings in many tombs. Most buildings were in wood and have not survived. The extremely strong hot wind in the vicinity of the explosion must have flattened everything, thereby explaining why many great megalithic monuments of the bronze age are found in Ireland and western Britain, more distant from the explosion and moreover to some extent protected by the Pennine hills, while they are lacking in the eastern part of Britain. People may have survived in the Hartz, northern Germany, since mountains afford some protection from high winds and usually have caves where people can hide and temperature changes take place more slowly. The survival of people in the Hartz may explain why this area preserves the greatest richness of ancient traditions and myths of Germany that should be reconsidered at the light of the present scenario. People certainly could survive in the Norwegian fjords, protected by the explosion. The civilization that followed the event must have differed from the previous civilization, which had a significant urban life. Here we should recall the work of Vinci [4], who argued a Baltic setting for the original stories of the Iliad and Odyssey, before people left the Baltic area to the south, due to climatic changes. Our scenario is apt to provide the motivation for the migration of the Baltic people (Danai and Achaeans from Denmark and Trojans from southern Finland, in particular). Indeed, before its final explosion, Phaethon had already significantly affected our planet by a sequence of disintegrations that sent pieces to crash on Earth and dust to darken the skies. These events happened during a period of several weeks if not months. While in Egypt they contributed to the Ten Plagues, some of them with terrible effects, in northern Europe they must have led to no less dramatic effects, and in particular to a much colder weather than usual and possibly to very intense snow. These events terrified people so much that those who had courage and strength, i.e. mainly young fit men, decided to leave to southern Europe. They followed probably, as suggested by Vinci, the natural way to the south provided by the great rivers of Russia and Ukraine, whose sources are close to the Baltic. Crossing eastern Europe under these unusual conditions must have taken a few weeks. It is likely that these migrating people were still inside the European continent when the explosion occurred. They were therefore saved from the effects of the tsunami that raged in the Mediterranean. The tsunami savaged the Mediterranean coasts, emptying them of their former inhabitants. Hence it was an easy task for the northern people to occupy places that formerly belonged to other nations.

Another effect that should be considered is that the immense pressure provided by the Phaethon explosion over the Schleswig Holstein area led to a significant compression and



depression of the soil. So not only amber was liberated from consolidated sediments to appear in great quantities on the shores of North Sea and the Baltic, but the average elevation of Schleswig Holstein and nearby areas may have decreased. Hence the presently observed positive bradisism, usually attributed to a rebound effect originated by the melting of the ice cover circa 11.500 years ago, might be due, at least in part, to the Phaethon explosion.

## B – Effects in the eastern Mediterranean

Eastern Mediterranean at the time of Exodus, 1447 BC according to our date, was a region dominated in the south by Egypt, in the north by the Minoan civilization and the Pelasgians located on the coasts of Greece and possibly of western Turkey. Egyptians were not particularly interested in navigation. Their overseas trade was taken care in the Mediterranean by the Minoans and the Pelasgians, and possibly occasionally by the Pani, the usually ignored great Indian navigators, who could reach the Nile by way of the Wadi Hammamat from ports within the northern Red Sea. Present Lebanon was not yet a basis of the Puni/Phoenici (very likely related to the Pani, as suggested by a statement at the very beginning of Herodotus stories), albeit Byblos, which existed at the time of the First Kingdom, had certainly significant activity. The Red Sea, and present Indian Ocean (the name Red Sea referred in ancient times to the whole Indian Ocean) was under control by the Indian navigators, the Pani ( a word meaning *water* in sanskrit and present say bengali and hindi...), see [19], who knew how to exploit the monsoons, hence were able to reach easily Africa, Arabia, Iran, Southeast Asia, possibly even China, Australia and the Americas. Moreover they were able to build vessels of large size, whose planks were not connected by nails, but by very strong coconut fiber ropes, as is done even today in the Laccadive islands. By this technique they were able to dismantle their big boats and to carry overland small boats that could then be used along rivers (by this way they probably reached the Nile from the Red Sea, maybe from present Safaga or Safaji Jezirat; and from there the Mediterranean, probably even reaching inland to important places as Val Camonica, center of the oldest known continuous civilization....). Trade in the Mediterranean was in the hands of the Minoans and the Pelasgians (whose basis was Athens), with possible contrasts among them, as suggested by the story of Theseus and the Minotaurus. The Minoan civilization, enriched by the profits of the trade (some of which coming from outside the Mediterranean, as tin from Cornwall, silver from Tartessus, copper possibly from the Isle Royale in the Superior Lake...) had developed in the northern part of Crete, with several towns rich of splendidly decorated palaces. Less is known about the Pelasgians, see however Pincherle [5], who were possibly devoted more to piracy than trade. They were considered by classic authors, e.g. Herodotus, Hellanicus, Diodorus, Dionysius of Halicarnassus, as the ancient inhabitants of Greece, who partly moved to Italy. Here we quote a passage in Thucydides, *War of Peloponnesus*, I, 2-4

*...before the Flood of Deucalion, Greece was inhabited by the Pelasgians: Then the Hellenes came....*

And a passage from Herodotus, *Histories*, I, 3, 57

*...the main people of ancient Greece were the Spartans and the Athenians.... If we investigate their origin, we find that the first were Hellenes while the Athenians were Pelasgians....the Pelasgians were local stable populations while the Hellenes were nomads arriving from Thessaly....we do not know the language of the Pelasgians....on the*



*fact that their descendants still live in Crestona (now Cortona) near Tuscany and others...on the Marmara sea, it appears that they spoke a strange language made only of syllables. Therefore Greece changed language after the invasion of the Hellenes....*

Anyway Greece had at that time a number of cities that survived into later times, including Athens. This Pausanias [6] associated with the domain of Deucalion, also in charge of Thessaly and other parts of Greece.

So let us consider the effects of the Phaethon event on eastern Mediterranean. The south-eastern coast of the Mediterranean probably did not experience the heat wave that characterized the first contact of Phaethon with the atmosphere. It was rocked by the earthquake following the explosion and was affected by the surge of the sea due to the wind, that flew with about the same speed and duration experienced by Moses. The waters were moved from the north side towards the south side of the Mediterranean, with a surge that only mathematical modeling can evaluate, but that might have reached many meters. So the waters would have invaded part of the coast of Sinai, destroying any army or people that would be found there. More dramatically, the waters would have invaded much of the Delta, which is very low lying, with enormous destruction of life, cattle, fields, villages, towns, temples. Hence an Egypt already severely beaten by the Ten Plagues experienced another probably greater dramatic disaster. Only the part of Egypt south of Memphis probably escaped the tsunamic surge. Rebound effects after the wind ceased certainly did additional damage. The surviving Egyptians found themselves in a country thoroughly devastated and must have thought to have been abandoned by their gods.

Let us consider now Crete. If Phaethon entered the upper atmosphere over the Mediterranean, it is possible that the signs of fires noticed in the ruins of the buildings in Crete are due to the heat wave produced by the attrition of Phaethon with the air. Notice that people inside buildings would have escaped the heat effects, as it happened in Hiroshima, where surviving depended in many cases of being exposed directly or not to the heat wave from the atomic bomb. It is interesting to note that the Deucalion story makes no mention of fire, albeit Ovid in the *Metamorphoses* quotes the fires due to Phaethon in many places in Greece, including the Parnassus. This can be explained by Phaethon rebounding after his first encounter with the atmosphere, an effect that has been observed in the case of fireballs and that might happen also for bodies of substantial size. Then Phaethon re-entered the atmosphere, burning the forests over the Balkans and Central Europe, before the final explosion over Eridanus-Eider.

The earthquake due to the explosion reached Crete in a few minutes, with a strength probably greater than that experienced in Sinai, where hills appeared to jump. This event must have destroyed most of the buildings. It might also have influenced the Santorini volcano, either activating an eruption or being the event that led to the collapse of its caldera, if the eruption had been going on for enough. The problem of dating the Santorini event – actually several eruptions took place in the mid second millennium BC – has always been discussed by volcanologists, see [20], but very recent C14 analysis of the branch of an olive tree has shown that the great eruption happened in the last thirty years of the 17<sup>th</sup> century BC, see [7], thereby eliminating Santorini as a cause of the Exodus events. The eruption of the 17<sup>th</sup> century in our opinion might be associated with the climatic perturbation that led to the famous seven years of food shortage in Egypt and other countries. It was also probably the cause of the rather forgotten Inachos flood, which took place seven generations before the Deucalion flood.

A few hours after the earthquake, the wind arrived, hotter and faster than in Sinai, but for a shorter time. So the north coast of Crete was affected by the surge of the sea, a tsunami due to the wind. When the wind ceased additional rebound waves, also affecting the south coast, must have taken place. At the end of the event Crete had been thoroughly savaged, albeit people certainly were able to survive in the high places that form much of the surface of the island. Anyway it was the end of the Minoan supremacy, to be followed by the emergence of the Mycenaean city states, whose activity on the sea was in the following centuries more based on piracy than on trade. The Mediterranean returned to be a sea of trade only about four hundred years later, with the birth of the Israel state under the kings Saul, David and Solomon, the expulsion of the Hyksos (by Saul and Thutmose in the Velikovsky chronology that we accept) the great 18<sup>th</sup> dynasty in Egypt, the development of the marine trade by the Phoenicians, whose entrance in the Mediterranean, from their previous bases in the Red Sea was, we believe, the result of a wise decision of the great Solomon.

Let us now consider the Deucalion event, that took place about 400 km north of Crete. It was so well remembered that at the time of Solon it was considered as the most ancient event that could be dated *by counting generations* (Plato does not give the number of generations, but Herodotus states that they were 25 to the beginning of the first Olympics: this is compatible with our date of 1447 BC). The event was stated by Plato to be the last of three great catastrophes. Deucalion was in control of Thessaly and probably part of Attica, where his tomb still existed at the time of Pausanias [6]. He survived, with his wife Pyrrha and other people, on the mount Parnassus. This mountain is about 2400 meters high, with steep walls. It is famous for the presence, on the south side at about 600 meters over sea level, of a sanctuary that has been in use from very ancient times, predating the period that we are considering now. It is likely that Deucalion was a high priest in Delphi, kingship and high priesthood being often joint in ancient civilizations. He might have visited the sanctuary to inquire about the disasters that were affecting Greece due to Phaethon. The Deucalion story, as noted before, makes no reference to fires, which we have tentatively explained assuming that Phaethon rebounded after the first contact with atmosphere. Deucalion must have seen the body moving in the sky as a fireball. Similar view was reported by people in western China, over a distance of some thousand km, in relation with the Tunguska explosion in June 1908; similar view may have also appeared to Genghis Khan, in relation with the multiple impacts in the Pacific Ocean that likely happened in 1178 AD, according to the evidence collected by us [8].

Then the earthquake came. This is also not related in the surviving description of the event, which can be explained by the fact that Greece is quite prone to earthquakes (possibly in the past more common than now). Moreover the sanctuary at that time probably had no sizable stone building, being an open place with sacred trees (as in Dodona) and endowed by a cave where the responses were given (stimulated, as recently discovered, by the presence of methane).

Then the wind came. Now Delphi is located on the southern side of Parnassus. So the huge mountain shielded it from the unusually strong wind coming from north, hence explaining the lack of reference to the wind in Deucalion stories. Then the Flood came. It was due essentially to the action of the wind on the Adriatic sea, that is aligned quite well, albeit not almost exactly as the Red Sea, with the direction of the wind flowing radially from the explosion point over Eridanus. The Adriatic waters were pushed south, part of them rebounded on the high coast of Abruzzi and Molise and on the promontory of Gargano, whose top is about 1000 meters. So there was an eastwards deviation that pushed the waters towards the opposite coast of (present) Montenegro, Albania, northern Greece. Part of them entered the area between Corfu, Kefalonia and the Etolian coast and were pushed

inside the Patras-Corinth-Alkuonessi Gulf, about 150 km long, mainly surrounded by steep mountains. When they reached the end of the Gulf, part of them, with a front wave possibly a hundred meters high, were able to cross over the low lying Corinth isthmus, invading the Gulf of Salamis and destroying the area of Athens. Another part entered the small Amphissa plain, at the basis of Parnassus, and ran up the Parnassus to a certain elevation. Delphi was too high for the waters to reach. So Deucalion witnessed a wonderful and terrible event that destroyed much of the people in his land and whose memory he was able to transmit due to his special position of priest and king.

Two more observations are interesting. The Patras Gulf is bounded on the south by mount Erymanthus, 2224 meters high. The Erymanthus shielded the interior of Peloponnesus from the wave that entered the Patras Gulf. The region just south of the Erymanthus in the central part of Peloponnesus is called Arcadia. The inhabitants were considered to be the original people of Greece, see Pausanias, Book 5, 1-2, lending their name to the word that describes extremely ancient things. By our arguments, these were the people who escaped the destruction, not being affected by the heat wave and being shielded from the incoming waters by the Erymanthus.

What we have described is the initial wave due to the continuous action of the wind. When the wind stopped, rebound tsunamic waves must have raged for several hours, if not days. Since similar events occurred essentially over the whole Mediterranean, it is fair to conclude that most of the coasts were savaged with full destruction of the local settlements. It is also very difficult that people on boat on open seas survived, due to the very strong wind (generally a tsunamic wave is not dangerous on high seas, since it has a long wavelength and a small surge; the wave swells dramatically only near the coasts, see Bryant [9]). But the following two considerations are of interests:

- according to Herodotus VII, 170, Minos left Crete to get hold of Daedalus, who had returned to his native Sicily, where king Cocalus reigned. But the fleet of Minos was destroyed by a storm in front of Iapygia (present Salento). Several of the men survived, founded a number of towns and changed their name to Messapian Iapygians. It is possible that they did not return to Crete having known that the island had been severely ruined by the described events. Cretans were known for the love of bull games. So perhaps the present town of Taurisano, close to Ugento, the Messapian main city, takes its name from the breeding of bulls (Latin *tauri*) to be used in games originated in Crete
- there is evidence that Pelasgians settled in central and southern Italy, see Pincherle [5]. Since Pelasgians were involved in sea trade, a number of them might have been visiting ports in Italy at the time of the event. Now settlements on the Adriatic coast of Italy were probably all destroyed by the tsunamic wave, in addition of being fully subject to the immensely strong wind. Settlements on the Tyrrhenian coast were in many cases shielded by mountains from the wind and, due to the geometry of Italy, they were subject to initial lowering of the water levels, only after some time (say a few hours) being affected by the return of the waters and the rebound waves. Hence it is likely that people living near the coast, who certainly were accustomed to tsunamis albeit of smaller size, understood the danger and escaped to the nearby hills, the Tyrrhenian coast being mostly hilly (note that the aboriginals in the Andaman islands survived the great tsunami of December 2005 by running uphill when they saw the lowering of the waters that precedes an earthquake generated tsunami). The survived Pelasgians later knew not only of the destruction of their settlements in Greece, but also that strong armed people had arrived from the Baltic. So they began a new life in Italy, living in megalithic towns on the top of hills, perhaps to be safer from another strong wind....

- There is evidence, see Arecchi [10], that a huge lake existed in the second millennium BC in the interior of southern Tunisia. Arecchi has considered this vast inner basin in the context of a scenario for Atlantis located in that area, a hypothesis also considered by other authors. In our scenario the basin was certainly replenished during the Deucalion Flood. No theory of Atlantis can be accepted that sets Atlantis after Deucalion!  
The following sentences in Pomponius Mela, VI, apply to Numidia, i.e. present Algeria, suggesting that a tsunami, possibly the Deucalion one, reached over there: *in the interior, and quite far away from the sea, if you accept to believe, there is a wonderful finding: they say that on very dry areas one finds skeletons of fish, broken shells of mussels and oysters, smooth pebbles like those found on beaches, anchors fixed on rocks... all signs that the sea surged up to there.* The reference to anchors should exclude that the objects were ancient fossils, quite common in the rocks of the Mediterranean and not worth of mention.

## C – Effects in Russia, Siberia and Central Asia

The climatic effects considered above, leading to the migration from the Baltic to the Mediterranean, were certainly present possibly at a more severe degree in northern Russia and north-western Siberia, considered by many, see for instance Tilak [11] and Godwin [12], to be the original “Arctic” motherland of the Indo-Aryans. These people seem to have invaded Iran and India around the mid second millennium BC, at a time that, on the basis of the quoted passage of Orosius, we identify as the time of the Phaethon explosion and Exodus. We therefore propose the climatic effects of the explosion as the reason why the Indo-Aryans moved south, one group, the Aryans, towards Iran (where they gave name to the province Ariana), another group, the Hindi or Sindhi, towards India. The detailed story of the invasion is yet to be written, a difficult task since the invading people left no history. Clues may be found in the Persian Shahnama, in Indian documents in Sanskrit and Tamil, in the little known Kirghisian epic (6 million verses...), in Nonnus of Panopolis *Dionisiaca*, since from the Orosius passage Dionysius or Liberius or Bacchus appears as an invader of India.

Reaching Iran and India required the Indo-Aryans to cross the Syr Darya (the river of the Lion), possibly defining the southern border of the area controlled by them (notice the related names *Hindi, Sindhi, Syr, Sindh, Sundh, Singh, Senge, Simba*, all meaning *lion*, which suggests that at least part of the invading people called themselves *the people of the lion*, an obvious reference to their military prowess). Then they crossed the territory of the Turanians, who lived between the Syr Darya and the Amu Darya, and finally the river Amu Darya. Passage into Iran was rather easy, while to enter India they had to cross Hindukush, defended by Afghan tribes who have never liked foreign people in their land.

It is our opinion that the Turanians, who too had been scared by the celestial events, decided not to fight the invading Indo-Aryans, but moved away before their arrival to a far away land, Egypt. For their decision we see two reasons:

- while the Turanians were great warriors, as shown in the Shahnama [13], often attacking Iran (Iran in the Shahnama context probably defines a country whose borders are the Indus River, the Amu Darya with an Aral then joined to the Caspian, and the Tigris...), they probably did not possess the iron technology that had been developed by the Indo-Aryans. Such a technology was probably based upon the exploitation of the iron nodules that are found in the northern Europe or west Siberia marshes and on the bottom of the lakes in Scandinavia (recently the iron ore of the Kiruna mines has ceased to be exploited, being

more convenient to use nodules from the Swedish lakes. A technology retrieved after 3500 years!). Iron appears, but as an uncommon metal, also in Homer, suggesting that the iron technology had been recently discovered and kept secret. Bronze weapons are no match for iron weapons, so the Turanians did not try to stop the invasion.

- the Turanians were the people living north of the Amu river, a large river, always full of water, not easily crossable, whose sources are found in a very special land, by us identified with the Biblical Eden and the Sumerian Kharsag, see [14,15]. It is very likely that they are the people known in the Egyptian documents as the *Amu* and in Exodus and other Biblical passages as *Amalek* (to be interpreted as *people of Amu /Amol*, *Amol* being a very ancient town quoted in the Shahnama, near the Amu River, whose name has been changed only recently; *Amu* may be a word obtained by contraction of *Adamu*, see [14]). It is known, see Cimmino [16], that the Amu invaded Egypt several times during the second kingdom. As a protection against their invasions a wall had been built near where the present Suez canal by Pharaoh Sesostri II, see Manher [17]. We may here suggest that the brick construction work done by the Hebrew in Goshen was finalized to improve that wall. So the Turanians/Amu knew their way to Egypt, that it was a country with pleasant weather, with many riches to boot, and far away from the lands where the Indo-Aryans were moving. It is also our suspicion that they wanted to take revenge for a defeat suffered not many years before at the hands of the Egyptians, an argument that may involve Moses. Lapis lazuli were an important item in Egyptian imports since they were used both as talismans and medicines. Lapis lazuli in ancient world (and so even until not many years ago) were produced in only one place in the world, the so called *blue mountain* in Badakhshan, north-eastern Afghanistan. This mine represented an enormous value from the point of view of the income it produced and the sacred meaning attributed to the lapis lazuli. Protecting this mountain had to be a very important task for the local population, and may explain the extreme determination that Afghans have always shown in defending their country. Being located not far from the Amu Darya it is quite plausible that the Amu tried several times to conquer it. So the expedition that, according to the *Legends*, the Egyptians carried on in Kush under the leadership of young general Moses may have been motivated to help the Kushite against the invading Amu. The Amu were repelled and Moses married the local princess Kushite Adoniah. After several years Moses returned to Egypt, not having begotten sons from Adoniah (he later had two sons, Gershom and Eliezer, from Sifforah). But we cannot exclude that he had daughters and that he kept good relations with the family of Adoniah. When arrival of the Indo-Aryans became known, it is possible that his relatives in Kush informed him that the Amu would move towards Egypt. This time it had to be an invasion by most of the Amu people, which required some time to be organized, with the likely prospect of defeat and destruction of Egypt. Moses as the leader who had defeated the Amu some years before was certainly in the list of the persons to be punished, with his own people. So it is possible that the main motivation for Moses to take the unusual long and difficult way through the Sinai was to avoid the arriving Amu. A motivation of course not to be stated in writing since not "honorable". It is also possible that his relatives in Badakhshan realized that they too would be attacked by the Indo-Aryans and this time could not resist. So while a strong resistance was anyway put by the Afghans against the Indo-Aryans, which led *Kush*, the *place of the killing* (of *Abel* we suggested in [14]) to be renamed *Hindukush*, i.e. *the place of the killing of the Hindi*, it is possible that some groups, especially important families, fled to safer places. Such places probably included over-sea regions in Africa (where both a *Kush* and a *Meluhha* are documented), in south eastern Asia (*Moluccas*) and in the mountains of northern India, at those times well protected by jungles, forests and narrow passes, not the type of terrain with which the Indo-Aryans, coming from Russia and Siberia, were

familiar. About 150 km north of Srinagar in Kashmir a small village exists, named Hasbal (possibly a variation of *Mosbal*, *Lord Moses*; also possibly the village named as *Heshbon* in Deuteronomy 4-46, where geographic details are given about the place where Moses died, all corresponding to places found in the Hasbal area). Here a dozen Hebrew families live and a so called *tomb of Moses* exists, of which the Wali Rishi family takes care since about 2700 years, see Kersten [18]. Notice that about 2700 corresponds to the years passed since the Ten Tribes of Israel were deported to the region of Halah, Habor and Gozan by Sargon II of Assyria. In a forthcoming paper we will argue that such a region is eastern Afghanistan, i.e. Kabulistan. In the Pentateuch no information is given about the tomb of Moses, whose whereabouts are said to be unknown. We conjecture that at the end of his mission, perhaps due to contrasts with the younger people, including his violent and mentally unstable son Ghersom, he left the Arabian desert to reach the relatives of the first family, and died in the far away Kashmir.

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### Part 3 : chronological and geographical questions

#### 1. Introduction

In the first two parts of this paper, taking the hint from a forgotten passage in Orosius, we developed a scenario that identifies the last of the three great catastrophes quoted by Plato, namely the Deucalion event, with the events associated with the fall and explosion of Phaethon, an asteroidal body of presumably a few km diameter. Such events allow an explanation of the Ten Plagues of Egypt (but not discussed here), of the passage of the Red Sea by Moses, of the demise of the Minoan civilization and of many migrations that took place at that time. We have only considered events on the European and Western Asia area, but further research can certainly show that events in eastern Asia and even in the Americas (e.g. the demise of the great civilization in the eastern Mississippi basin and in particular the abandonment of the mines producing pure copper in the Isle Royal of Lake Superior) can be explained in this context. A consequence of our scenario is that the unusual information contained in the considered ancient texts is compatible with the expected consequences of a super Tunguska type explosion, an event which can certainly happen again (on a lower scale it might be produced even by the asteroid Apophis, discovered in June 2004, whose orbit has a small but not negligible probability of having it impact on Earth in 2029!). Therefore we claim, in contrast with many modern scholars, that such texts are a valuable source of hard information, even if they contain, due to their antiquity and transmission-translation problems, some passages that are not correct. Such errors are sometimes recognizable and correctable, other times leave us in a deep puzzle. However in order to fully retrieve the informational content of the Bible, it is necessary to take into account two facts, which are not considered by mainstream researchers, partly for political reasons, partly because their truth means that academic teaching in the last couple of centuries has been wrong:

A - that the chronology of Egyptian history, essentially established about two hundred years ago by Lepsius and Champollion by dating a certain Sothic year referred to in Censorinus *De die natali*, is wrong, by several centuries, as claimed initially by Velikovsky [1], and confirmed later by the astronomers Clube and Napier [2], and other scholars, e.g. Bimson [3,4]. Perhaps everyone should read the *opus magnum*, in his own judgment, of Isaac Newton, which is not the *Principia*, but the *Chronology of ancient people amended*, where dates are close to those of Velikovsky. It says much that according to Westfall, the greatest biographer of Newton, reading this work is *the worst penance that can be inflicted to a man*. This work of Newton has been published in English only quite recently

B - that some points in the interpreted geography of the ancient world are not correct. One is which river was initially called Euphrates, in Genesis PRT in the consonantic form. We claim this was the original name for the Indus, probably in the form *Bharat*; hence the name *Bharata* for ancient India. The name changed after the invasion by the Sindhi, to the present form which is *Sindh*, *Sundh*, already documented in the *Peryplus Maris Erythraei* (quite incredibly scholars do not know how the Indus was named in Sumerian or Akkadian, as this author has learned from the sumerologist Pettinato). This is a fundamental point for the analysis of the story of Eden, see Spedicato [5,6], and for the determination of the borders of the kingdom of Solomon, again a non-existing person according to many present historians and biblists. The second point is the location of the *land of honey and milk*, where Abraham settled and where Moses wanted to take back his people. We think that the identification given by Salibi [7,8] is correct, even if we do not agree with several of his reconstructions of the events of certain biblical figures. Perhaps scholars, who have forgotten Orosius, should also reread the extraordinary book *History of the*



*Armenians of Moses Koronesis*. This historian visited the immense archives of the royal palace of Edessa, where a room kept the list of genealogies of many families in the Middle East. He commented that before the time of Cyrus (about one thousand years before his time) important families preserved their ancient genealogies, but the fashion disappeared at the time of Cyrus. This suggests that when Ezra wrote the Bible (24 canonical books of the *Tanakh* and 70 secret books, see Manher [9]), genealogies were still known by many Judaic families, so that the overlapping of persons would have been a violation of an important tradition. Nowadays very few families know their genealogies (among them: the Ethiopian and Japanese imperial families, the Confucius family, the Mandel family, represented by the great scholar and artist Jibril Khan Mandel, a Sufi leader, who died in 2010: his family list originates with a chief of Bactriana who fought against Alexander the Great).

Finally a comment of theological interest. We have treated the Bible and other ancient documents as texts with an authentic historical content, albeit the correct interpretation requires accepting rare events of extraterrestrial origin. Therefore events like the withdrawal of the waters, their return after Moses lifted his baton, and other stories not considered here (as the water pouring out of the rock again after he lifted his baton), we see as natural events, consequence of the special interaction of Earth with an external object. But Moses saved himself and his people because he was at the right place at the right moment, an event of very small probability. The waters returned and the water spilled out after he lifted his baton, again an event whose probability is extremely small. This suggests that either he could forecast the future, which is scarcely credible, or that a superior power acted on him, on his decisional processes, so that his actions appeared endowed of supernatural powers. **This approach can be rejected only under the postulate, similar equivalent in our opinion to the postulate that the Earth is at the center of the Universe, that over man no superior powers exist or that they cannot or do not want to influence man. Superior powers do not necessarily mean the Most Superior Power, God.**

## 2. On the chronology of the Phaethon explosion and related events

Dating ancient events is a difficult problem, since not all people wrote history with a chronology as we intend now. About the events considered here we cite the following chronological information, from ancient texts and from analysis of geological material:

Exodus can be dated from Biblical data on the Solomon temple in Jerusalem, whose construction is stated to have begun 480 years after Exodus. That year, from the biblical chronology of the kings up to the deportation first of the Ten Tribes by Sargon II the Assyrian in 722 BC and then of the Judah and Benjamin tribes by Nebuchadnezzar in 587 BC, can be determined to be year 967 BC. A difficulty for some time was the apparent incompatibility of dates relating to the kingdoms of Israel and of Judah. However Thiele [10] has been able to remove such problems, stemming to a large extent from the fact that the two kingdoms followed different calendars, one the Assyrian one, the other the Egyptian one (the beginning of the year being different, either in autumn or in spring). Therefore we get the date 1447 BC for Exodus, accepted by Velikovsky and a number of other scholars.

Dating the Deucalion Flood is not obvious from the classical sources, since Plato states that Solon was going to date it by generation counting, whose number is not given. In Herodotus it is stated that 25 generations separate Deucalion Flood from the first Olympics. This provides an estimate for Deucalion flood at circa 1500 BC. This date was commonly accepted about two hundred years ago, when classical literature was more studied than now, see for instance the



*Classical Dictionary* of Lempriere [11]. About dating the end of the great Minoan civilization, and the several eruptions of Santorini, there has been much debate, see [12,13]; a date around the mid 15<sup>th</sup> century seems to be acceptable, albeit the great Santorini eruption as stated in Part II is now to be dated at the period between 1630 and 1600 BC, which is no problem for our scenario but puts traditional Egyptian chronology in further disarray.

There is also discussion about the date of the invasion of India by the powerful Hindi or Sindhi, who imposed their dominion in the northern part of India, where, in the valley of the Indus river, the great civilization of Vallindia had developed in the third millennium BC and part of the second, see Mandel [14]. A date around the mid 15<sup>th</sup> century seems acceptable. It is quite possible that there were invasions before, on a smaller scale, by way of the passes leading into the Hunza valley (Mintaka and Khunjerab). It is also possible that the "invasion" was on a small numerical scale, taking advantage of the destructions brought by the catastrophic events of that time and of the war of Dyonisus that was particularly bloody according to Orosius. Modern Indian scholars, as professor Subhash Kak, reject the notion of a large scale Aryan invasion. However there would be no problem with a smaller invasion after the Dionysus war, about which Nonnus of Panopolis wrote the complex poem *Dionisiaca*. In such a poem there is the extremely interesting statement that at some time during the war the waters of the Idaspes, one of the five rivers forming the Indus and the main location of the fighting, took the color of wine, i.e. a reddish color. This fact in our context can be interpreted as due to the red dust from the Dankalian volcanoes reaching the Himalayas, albeit in amounts much less than on the Ethiopian plateau. Entering the low Indus valley by the considered ways is a hard task but not an impossible one. The most fertile part of the Indus valley lies at the foot of the mountains. It is called Punjab/Penjab, and we believe that this land is the mysterious biblical *land of Punt*, i.e. *of the five rivers*. This is also the land called in Sumerian documents *Meluhha*, probably meaning the *land of the Meru*, the mount Meru being the sacred great mountain Kailash in Tibet. The fact that the waters from the Kailash go partly to the Indus (and partly to the Brahmaputra) is probably the reason why in the 1449 map of Fra Mauro, now at the Marciana library in Venice, the Indus is called *Ameru*, i.e. *the water (river) from the Meru*.... The use of passes leading to Punjab in very ancient times was shown by the discovery of over ten thousand rock inscriptions between Gilgit and Khunjerab during the construction of the Karakorum Highway, completed around 1980. The inscriptions are as old as the 4<sup>th</sup> millennium BC; a few dated at the second millennium BC were found by Aurel Stein [15] at the end of his adventurous career. Remnants of Indo-Europeans who came by this way were possibly the Kafirs living in the Chitral area visited by Maraini [16] in 1959, whose anthropometric features, cultural and living habits are clearly of north-Eurasian origin.

The Hindi/Sindhi soon mixed with the culturally more advanced local population, leading to the present form of Hinduism, where pre-Indo-Aryan elements are present (Shivaism, Tantrism, Yoga...). They brought Vedism, albeit the Rig Veda may be not only a religious text, but a description of even more dramatic events that affected Earth long before the Indo-Aryan migration to the south (even predating the Biblical Flood, i.e. the second catastrophe in Plato, datable at 3161 BC, on the basis of arguments to be developed elsewhere).

An event of larger than continental effects as Phaethon explosion after weeks of destructions due to fragmentation episodes, must have left geological evidence, even if it was certainly many orders weaker than the impact with a meteorite of about 10 km diameter that probably terminated the era of the dinosaurs circa 65 million years ago. We thank geomorphologist Stuart Harris, who is preparing a monograph on such a critical period, for the following information:

*A – analysis of the California Bristlecone Pine tree database shows a pronounced minimum at 1445 BC. This year is part of a sequence of dust layers and minimum tree rings every 10, 12 or*

18 years. But the dust layer of 1445 BC is quite different from the rest. From an archaeological viewpoint, then, 1445 BC is the date of the Plague of Darkness. This is derived by counting actual years – there is no recourse to radiocarbon estimates, see [19]. Here we notice that not only darkness but also strong cooling would have produced a minimum growth, and that while dendrochronologists are very confident of the accuracy of their counting, errors can never be discounted (e.g. an axis reversal might result in *two* layers, or a strong cooling episode might result in no layer; also any local disturbance affecting the roots of the tree, that will survive but be impaired for a number of years, may affect the number of layers); anyway Harris noticed a glitch in the database that moved the year to 1446 BC, see [20]

B - I revisited the GRIP2 ice core data and found that it does contain a record of the dust associated with the plague of darkness...A group of scientists measured insoluble particle size from the present to 1800 BC. Their data shows that the largest particles ever recorded, by a factor of 3, occurred in a single sample covering the years 1444-1443 BC.... see [21]. Again taking into account that dating of the layers may not be so precise as scientists claim, and that possibly more than one year might be needed for the dust to reach Greenland (it took about four years for the Tunguska dust to reach Antarctica), the above information is a remarkable evidence that dust, whose origin might have been partly volcanic, partly from the disintegration of initial Phaethon, partly from fragments of Phaethon impacting on other parts of the world, affected the atmosphere, leading to darkness. This reduced vegetation growth, and led to colder weather, hence causing large migrations from the middle and high latitudes to south.

C – the earthquake following the considered super Tunguska event, and possibly earlier smaller direct impacts, can produce other geological effects in addition to the awakening of volcanoes (we considered Santorini and the many volcanoes in the Dankalian depression; it is likely that also Iceland experienced strong volcanic activity). One special effect, to be discussed in the forthcoming monograph by Harris, is the sudden delivery of methane contained in sediments in the form of hydrate, an unstable compound of water and methane. Huge amounts of such clathrates are found in the Caribbean sea, especially in front of Texas and Louisiana (and also in the Sea of China). The sudden delivery of sizable quantities of methane from these structures may take place occasionally even now, and would be the natural explanation of the “mysterious” events described for the Bermudas triangles (disappearance of ships and airplanes). A very large emission of methane would result in a great tsunami. Harris claims to have established, from analysis of satellite photographs, that such tsunamis affected the Mississippi basin and the US Atlantic coast around 1450 BC. According to his latest estimate, see [22], there is evidence of tsunami in year 1445 BC. He has another evidence for year 1404 BC. Notice that 40 years after exit of Egypt, the military campaign against Canaan began, the Hebrew being led by Joshua. Among the events of such campaign the phenomena of the falling down of the walls of Jericho and the claim that the sun stand in the sky suggest another catastrophic event, related most probably to an axis reversal.

Another possible effect of the methane explosion in the Caribbeans should be considered, namely that it carried in the upper atmosphere also amounts of oil. So hydrocarbons from the Caribbean might have contributed additional material in the stratosphere to produce the mysterious substance called in Exodus as *manna*. If the oil from the Caribbean was the main source for manna, then we have an explanation why it took several days for manna to appear.

The above considerations support the date 1447 BC as the year for Exodus and the other considered events. According to the standard Egyptian chronology, see e.g. Baines and Malek [23], this year would pertain to the New Kingdom 18<sup>th</sup> dynasty, dated at 1550 to 1307 BC. The Hyksos, terminating the Middle Kingdom, would have arrived circa 1783 BC, to initiate the 13<sup>th</sup>

dynasty. Particularly troublesome is the fact that no Egyptian references exist dealing with the departure of the Hebrew, the destruction of the Pharaoh army or even the Ten Plagues (unless, as suggested by Velikovsky [1], the Hermitage and the Ipuwer papyrus, describing catastrophic event, refer to this time; notice also the existence of a stele found near Gaza referring to a Pharaoh who died in a *whirlpool*). This problem has led scholars, who accept at least a core of truth in the book of Exodus, to propose several Pharaohs and theories about who left, all explicitly or implicitly meaning that the biblical tale is basically untrue. The chronological change proposed by Velikovsky completely removes this problem. The Hebrew leave just before the Amu/Amalekites come, who are the Hyksos of the Manetho story. Incidentally we have argued, see [24], that the name *Hyksos* means *people of the horses*, the name also given by the Chinese to the invading Mongolians. The Turanians certainly had horses, the best horses in antiquity actually coming from the Ferghana valley... Part of the Egyptian army (not necessarily also the Pharaoh) perished in the Aqaba gulf when the waters returned; another part was probably drowned, with most of the civilians, when the Mediterranean waters pushed inside the Delta. Remaining troops either survived in the south or were destroyed by the advancing Amu people, who most probably were not significantly affected in their march by the catastrophes described. They were probably still many km away from the Mediterranean when the Deucalion Flood or tsunami occurred. For the next 400 years Egypt was under control of the Hyksos. They destroyed most of what had been left by the natural disasters, and so they were the real villains, their invasion being immensely a more serious problem in the eyes of the later Egyptian writers than the escape of some thousand of slaves.

Here we can give, with Velikovsky, the name of the Pharaoh who dealt with Moses, namely Dudimose, or, in Josephus *Contra Apionem* quoting Manetho, Tutimaios. About him almost nothing is known from Egyptian sources. The badly damaged Turin papyrus has the name of a woman Pharaoh as the last king of the 12<sup>th</sup> dynasty, possibly the wife of Dudimose whose name was cancelled in view of his shameful fate. We should also remark that Al Qazwini [41] stated that the Pharaoh died in a vortex of waters taking place in the Aqaba gulf, not far from Aqaba: the only ancient information we have found on the location of the king of Egypt death.

We have not discussed the question of radiocarbon dating, for two reasons:

A - radiocarbon dates that fall out of the range established by archaeological arguments are usually discarded, with the justification that the specimen has been contaminated

B - it is known, see [25], that radioactive carbon C14 can be created in the atmosphere by an impacting body, thereby modifying the supposed fixed ratio of C12 and C14. Moreover the events considered by Harris to have taken place in the Caribbeans would lead to a huge increase of carbon in the atmosphere (not only methane but also CO<sub>2</sub> would be liberated from the sediments), further complicating the ratio problem. Therefore radiocarbon dates are certainly less accurate than those provided by dendrochronology, ice cores, palinology (we are not aware presently if pollen counts indicate a crisis around 1447 BC) or, best of all, precise year counting as is done in the Bible.

Finally we should discuss the numbers 805 and 810 given in Orosius with reference to the foundation of Rome. If Rome was founded in 753 BC, the traditional date, then the events would have happened about 1550 BC, i.e. about a century before our date. It is likely that Orosius, or his sources Tacitus and Trogus, are not accurate, even letting apart the doubts about the true date of the foundation of Rome. Unfortunately most of Tacitus and almost all Trogus are lost, so we cannot check how they obtained such numbers. Of course it is also possible that an error was made in copying the Orosius manuscript, or the number was changed by a copier who thought he

knew better. This type of problem does not affect biblical codes, since absolute correctness in the new copy was a fundamental requirement, even so that errors could not be corrected but the whole scroll had to be written anew. The perfect concordance of the text of Isaiah found in Qumram with the Leningrad code, the oldest extant code but about 1000 years later, is a confirmation of such accuracy over the centuries. No copier may have considered a grave sin to change the text of Orosius....

### 3. The route of Moses to the point of the passage

It is not here the place of a full discussion of the route taken by Moses out of Egypt, up to the point of the passage of the Red Sea, then to the Mounts Horeb and Sinai where he received the Laws, finally to Canaan, whose conquest was reserved to Joshua, 40 years after the exit from Egypt. Here we shall deal briefly only with the route from Egypt to the point of passage. According to the Bible, the Hebrew entered in Egypt at the time of Joseph, 210 years before Exodus, increased in number faster than the Egyptian population, so that an unnamed Pharaoh, afraid that they would become too powerful, decided that all Hebrew males had to be eliminated. This law probably took place around the time Moses was born, i.e. about the year 1527 BC in our chronology. It is of course unlikely that the law was strictly enforced, but it was certainly applied to a significant degree, as indicated by the following items of evidence, see Rohl [26]:

- analysis of the bones in a cemetery used by slaves indicates a number of infant bones higher than the usual
- names of slaves were found in the ruins of a private palace near Thebes; they are mainly Semitic names, typical of Hebrew people. Almost only females names appear.

We may provide a reason why the Hebrew increased faster than the Egyptians. There is no reason that their birthrate should have been higher than that of the Egyptians, both people having a very high birthrate (of the order 7%, like in medieval Florence...). However we know from Diodorus, who describes conditions of his time that were probably also true at older times, that the Egyptian peasants took care of their children only until they stopped sucking. Then the children had to find the food by themselves. This resulted of course in a high death rate of them, only the fittest children surviving. Hebrew parents had the greatest care for their children, hence they likely had a lower death rate, implying a growth of the percentage of Hebrew in the population.

We may consider another consequence of the law calling for the elimination of the male infants. Only women would survive, not for a life of chastity, but to father children to Egyptians or other non Hebrew people. In order to avoid the disappearance of their people, the seniors must have decided that being Hebrew depended only on the mother being herself Hebrew. A decision that is still valid.

The Hebrew in Egypt were apparently concentrated in the eastern part of the Delta, in a settlement called Goshen, where several centuries later in our chronology Ramses II build his famous summer palace Pi-Ramses. Goshen has been excavated by the Austrian archaeologist Bietak, who has uncovered evidence of a settlement by Semitic people, and even an intriguing room under the soil with a defaced statue of a man covered by a special mantel. According to Rohl [26] this might have been the room containing the bones of Joseph, which were taken away by Moses, and the statue a representation of Joseph, with the multi-colors mantel he was wearing when his brothers sold him to Madianite traders. In Goshen the Hebrew were involved in slave work, mainly to build bricks for construction of public structures (possibly also for the wall

against an Amu invasion). Here Moses killed an Egyptian officer who mistreated the Hebrew and had to flee from Egypt.

It is unlikely that all Hebrew were in Goshen, many of them were distributed around Egypt; so it is virtually impossible that all of them left the country with Moses. The time to collect them would have been long and Moses had special urgency to leave, if we are correct in our hypothesis that he knew and was afraid of the arrival of the Amu.

The usual translations of the Bible, including the Septuaginta, state the Moses left with 600.000 men (not including children). This number would imply a total number of his followers of several millions, taking into account that women had to be the majority and that many slaves (probably non Hebrew husbands of most women...) were with them. This number is impossibly high, would generate tremendous management problems, not to say of the food and water problems in the desert. The number is certainly a wrong translation, possibly due to a desire to show the greatness of the Hebrew tribe, of the word *Eleph*, *Aleph* that, as suggested by several scholars including Ricciotti [27], means not only *thousands* but also *groups*, *clans*, *families*. Six hundred families, led by senior Hebrew who either were born before the law establishing the killing of the male babies or somewhat escaped death as was the case with Moses, represent a reasonable number. Each leader would have been accompanied by a group of persons, mainly women, numbering perhaps between 10 and 100. Assuming for default that such number was 50, this would give a total of 30.000 persons, a very reasonable number for the route that Moses had in mind. Not too many problems however even if the number were around 100.000. Notice that caravans to Meccah could number 40.000 people in the past. Notice also that the Pashtun of Afghanistan, who claim to be descendant of the Ten Tribes deported by Sargon II, are divided in about 400 clans all having clearly Hebrew names, see Kersten [28], names that may preserve those of a large part of the 600 clans that left Egypt.

We propose a route that, as far as we are aware, has never been considered before. Many investigators of the problem, e.g. Goedicke [20 and Anati [30], have considered a route along the Mediterranean, where the main road to Palestine, Phoenicia and Syria was found, called the *Royal Road* or the *way of Horus*, the road that was usually followed by the Amu in their past incursions against Egypt, and that would be later followed by Cambises, Alexander, the Arabs, the Turks.... Under such a scenario the crossing of the Red Sea would correspond to the crossing of the shallow lakes that border the northern Sinai (now and probably also at Moses time), rich in reeds, and noting that the biblical name for the Red Sea, *Yam Suf*, may also mean *Sea of reeds*. We reject this scenario because from Josephus we know that the road was long, difficult and not the usual one, hence it could not be the Royal Road; moreover along this road there are no impassable mountains. Additionally this road would put Moses at risk of meeting the Amu, too strong for him. Finally the Hebrew would have been drowned in the tsunami that, following the Phaethon explosion, flooded all northern Sinai peninsula up to many km in the interior. A second road proposed by several scholars, e.g. Barbiero [31], Phillips [32] and Manher [9], has the Hebrew passing near present Suez, location in ancient times of another shallow lake, Lacus Serbonis, and then moving towards Palestine by Central Sinai, a higher region with easy passes below 1000 meters. While the tsunami problem here would not arise, still this road would not be safe for Moses against the Amu danger and would not be unusual or particularly difficult and longer than the standard road.

Our proposal has the following features:

- it provides a longer road, by a factor at least two, than the Royal Road, but well provided with water; moreover, it agrees with a forgotten statement in Cosmas Indicopleustes [35], V, 14:....*they had the sea on their right, the desert on their left...*

- it would make Moses safe from the Amu, except possibly when he had to cross the *desert of Shur* before reaching the safe mountains where he got the Tablets of the Law (as proposed by Phillips [32] and other authors, these mountains are in present Jordan, in the region of Petra. They are called *Jebel Haroon (mountain of Haroon)*, and there is a *Wadi Musa* and an *Ain Musa (source of Moses)*. There lived the Edomites, descendants of Esau, who probably had been contacted by Moses when he was in Madian. Esau being the first born of Isaac, it is virtually certain that he got from Isaac since a child knowledge on the past of the family that was not given to Jacob; here may lay the source of material given in *Genesis...*)
- it provides an explanation of what was the mysterious Baal Sefon
- it strongly suggests the exact point of the passage
- it provides a motivation why the Monastery of St Catherine was built in the southern part of Sinai, albeit we agree with most commentators that this was not the place where the Tables were given
- it provides a new identification of *Elim* and *Migdol* and gives relevance to an apparently before unnoticed place named *Furtagha*.

We start by observing that Exodus does not present the stages of Moses day per day. Only the important places are listed, either because the Hebrew spent there a longer time or because they were well known places. The time from departure to the day of the passage was probably a few weeks, Moses reaching the Mountain of God in the third month after the exit from Goshen. The distance from Goshen to our point of passage is about 600 km, implying stages of possibly 20 km/day, an acceptable value. Note that Laurence of Arabia crossed from Aqaba to Suez, about 300 km, non stop in one day and a half, albeit using a camel. The standard time to reach Palestine from Egypt is given by Philon of Alexandria as only 3 days, see [36], section 163. The first stopping place after leaving Goshen is named *Succot*, meaning *place of reeds*, that can be safely identified somewhere near present Suez, where brackish water in lagoons (now called the Great and the Little Bitter Lakes) allowed growth of reeds. A wall, *shur* in Egyptian as noticed by Manher [9], had been built by Sesostri II, and may have given the name to the desert east of it. We disagree with Manher [9] that crossing the wall was difficult. The earthquakes taking place during the Ten Plagues had certainly badly damaged it and the thousands of men with Moses would have no problem to pass (the Mongols never had problems in passing the Great Wall when they wanted to do it).

Then Moses led his people SE, in the direction of the *Glory of God*, i.e. of Phaethon that was moving from the Indian Ocean towards northern Germany. He followed the rather flat and drab coast of the Sinai peninsula, then very sparsely populated by the Ichthyophagoi (living along most of the coasts of the Indian Ocean of seafood, speaking a very strange language (probably with *clicks*), as described e.g. in the *Peryplus Maris Erythraei*, see [39]). Ample water was probably available in places that even now bear names as *Springs of Moses*, *Hammam Pharaun*, *Hammam Mussa*, *Hammam* meaning *communal bath*, a term suggesting big pools of clean water. Many rivers descend as wadi from the Sinai massif, which reaches over 2500 meters; they might have had some water at the time of Exodus; even if dry, water could probably be obtained by inserting

a reed in the sandy soil, to reach the water below the surface, as Bushmen have done for centuries in the Kalahari desert.

The next important stop was Baal Sefon, where the Hebrew took away gold, one third of the riches that Joseph had amassed during the great shortage, and where a statue existed, not destroyed by them, that had survived the events of the Ten Plagues, contrary to what had happened to statues in Egypt, see the *Legends of the Jews* quoted in Part I. This information shows that the place was a kind of temple-fortress, Baal meaning Lord. The problem is Sefon.

For Sefon in the literature, see e.g. any Biblical Encyclopedia, we find the following "meanings":

- *Lord of the North*
- *Lord of the flies (!)*
- *Lord of the navigators*

We now propose some admissible phonetic changes in Sefon

$$SEFON = SEFO = SIFO = SIFA = SIVA = SHIVA$$

Therefore we propose that Bal Sefon was a temple dedicated to the Indian divinity Shiva or Siva, of extreme antiquity. The name *Baal Sefon* thus would mean *Lord Shiva*. Notice that according to a work written in Kabul in the XVth century, the *Sifat Nama...* [33], Shiva was one of the three main gods of the Kafirs of Kabulistan in the 15<sup>th</sup> century, with the name *Sharvia*, another divinity being *Lambam*, identified with Lamech, the father of Noah, whose tomb was considered to exist in that region. Our identification is based upon the fact that contacts between Egypt and India were active during the Middle Kingdom. They were managed by the great Indian navigators called *Pani*, see Sahai [37] (who, being himself a Brahmin disregards the existence of such contacts before the Indo-Aryan invasion...), who were able to exploit the monsoons for long distance travel to Middle East, SW Asia, and possibly even around Africa to Europe and Americas. They had important bases on the western coast of India including certainly the now submerged town named Dwaraka, see Gaur [38], located on a big island not far from the mouth of the Indus (now joined to main India as Peninsula of Kutch, a name probably indicating contacts with Kush...), probably the island referred to by Iulius Honorius [40] as being in front of the mouth of the river Euphrates/Indus. Another likely port was in the small island of Elephantina, in front of the present peninsula of Bombay/Mumbai, famous for containing an extremely ancient temple of Shiva, represented by a statue with three heads, see Maraini [15]. The *Pani* would export to Egypt precious material as lapis lazuli from Badakshan, avoiding the overland passage prone to attacks by bandits, gold from the great Tibetan mines near the sources of the Indus on the north slope of the Kailash (location of the Ophir mine, see Spedicato [42]), ivory, emeralds, possibly asbestos from Bactriana (asbestos may have been the mysterious *bdellium* quoted in Genesis as a product of the land of Havilah), grey amber... We may even conjecture that Moses, during his years in Madian, was in touch with the *Pani*, imported precious items from an India he knew well, and was possibly even in contact by letters with his family in Kush. Maybe by this way he was informed of the planned move of the Amu towards Egypt. And by this way he returned to Kashmir. It is also to be noted that the main family of the *Panis* was named *Tiranians*, a name that we see in the name of the straights that separate Sinai from Arabia at the height of present Sharm el Sheik: *Straits of Tiran*.

We can retrieve the literature meanings of Sefon given above as follows:



A – Shiva had his throne on Mount Kailash, in present Tibet, hence north of India, and precisely north of the first ridge of the Himalayas; there he sat with his wife Parvati....

B – Indians believed in metempsychosis certainly before the arrival of the Indo-Aryans, hence they would never kill insects like flies, who might have been reincarnations of their ancestors. In India even now there are temples dedicated to snakes or rats. Indians would not care if there were plenty of flies around, attracted by the butter offered to the statues of the gods and melting for the heat; flies were actually needed to clean the temples! The association of Shiva with flies would have been noted by Egyptian or Middle East mariners voyaging to India and reported back home as something very peculiar

C - the Pani were the best navigators in the second millennium BC, maybe even in earlier times, and very probably the Puni/Phonicians originated from them. Therefore the association of their god Shiva/Sefon with navigators was quite immediate..

Another possible association of Baal Sefon is with *Baal Zebub*, a Cananean and Phoenician divinity that has been considered in devilish terms, and considered in later Hebrew thought to be a devil, second only to Satan. By similar acceptable phonetic changes as above we can transform Sefon into Zebub. The association with a devil is possibly due to the fact that many Indian gods were represented with statues having features easily considered in the west as monster-like or devilish, as the three heads quoted for Shiva's statue in Elephantine, or the statues of Shakti, the mystical wife of Shiva that reincarnated 10 times as Kali and other goddesses, all shown in frightening form, with colliers of skulls, or keeping their head in one hand....As we noticed before, while Phoenicians are probably related to the Pani, Cananaeans, in Salibi's scenario were living in Asir 2000 km closer to India than Egypt, with good ports available in the southern part of the Red Sea (they would export especially incense, myrrha, and their extraordinary honey, even now sold at 100 dollars a litre...), hence they had probably adopted some gods of Indian origin, or even they were to some extent tributaries to the Indians.

Our interpretation of Baal Sefon as Shiva suggests now its location. The Pani, on their way to the northern side of the Red Sea, would meet before reaching the ports near Suez or Aqaba, the Sinai peninsula, jutting out in the sea as a triangle having on one side the Gulf of Suez, on the other the Gulf of Aqaba. The vertex of the triangle may be considered is the small peninsula named *Ras Muhammad*. Now *ras* means *head* in Arabic, geographically hence "promontory". *Muhammad* probably refers to the Prophet of Islam, indicating that a place before named according to a divinity of a non monotheistic religion, was renamed after the prophet of strict monotheism. Now a common procedure for ancient navigators was to build on well visible promontories temples with statues of gods, to protect them from the perils of navigation. Examples in the Mediterranean are the Temple of Poseidon at Cape Sounion in Attica and the Temple of Hera Lacyna in Calabria; several temples on the coasts of the Atlantic and the Channel were quoted by Pytheas, see [34]. So, it is likely that the Pani built such religious buildings. It is unlikely that Baal Sefon as a location had an important role for trade, unless the Ichtyophagoi were interested in some trade, being probably able to provide pearls and grey amber. They were anyway in small number, would not constitute a danger, hence the temple could be used as storage of precious objects (as was the case for many temples in antiquity; it is well known that the temple of Delphi was stolen of its immense reaches by invading Celts). Thus the fact that Moses took away a large amount of gold is a possibility to be considered. Very likely he knew of the gold since his time at the court of the Pharaoh, not to say of his possible contacts with the Pani when he was in Madian. He may have been in good relations with the people in charge of the temple, who did not oppose his action. So taking the long detour along the whole coast of the Sinai peninsula added the bonus of the gold in Baal Sefon to the security



against the expected Amu. And because of his relations with India he did not destroy the statue of Shiva...

From Baal Sefon Moses moved north along the Sinai coast facing the Aqaba Gulf, most probably somewhat on the interior where he managed two passes about 1000 m high, a feat that may have taken a couple of weeks. Then he descended, probably by way of Wadi Watir, in the flat place, the delta of several wadis, where the Egyptians were waiting for him. We believe the Egyptians wanted to recover the gold stolen in Bal Sefon. They had been carried there, the only place where they could use easily the iron chariots, by boats, probably manned by Pani and departing from the present port of Safaga or from Marsa Gawasis. This place is called in Exodus *Pi-Hahiroth*, translated with *epaulis* in the Greek Septuaginta, with *Domaine* in our French translation of the Septuaginta. Pi-Hahiroth may be a translation into Hebrew of an Egyptian word meaning *place of marshes*, thereby possibly indicating a flat area near the sea where some wadi could overflow in the rainy season, so a place with availability of water. This place was set between Baal Sefon, in the south, and *Migdol* in the north. From the considerations that we already gave, it was likely close to present Abu Nuweiba, a small plane surrounded by mountains that reach the sea leaving only a narrow passage between the sea and them. After negotiating this passage the trail to north reaches the *desert of Shur* by a low pass. Under this identification Pi-Hahiroth would be about 140 km from Baal Sefon as the crow flies, a distance that in the clear air of the desert allows perfect visibility. North of Pi-Hahiroth was Migdol, a name indicating a tower, or a fortified place. We think that Migdol was located either in the short stretch of coast between present towns of Eilat and Aqaba, or on the *Island of the Pharaoh (Jezirat Pharaun)*, where there was most probably a port used by the Pani to trade with Egyptians, Arabs and other populations. The island is the most likely location, because at Solomon time it was transformed into the important port of *Ezion Geber*, wherefrom ships went to Punt (Punjab, India) to get the gold of Ophir in particular. Within our scenario it is clear that the return sea wave after the wind stopped destroyed everything at the end of the Aqaba Gulf, hence it is extremely unlikely that any archaeological remain may be found of structures dated at Moses time. Distance from Pi-Hahiroth to Migdol in our identification would be less than 100 km as the crow flies, allowing again full visibility.

After the passage of the landslide, Moses moved into the desert away from the coast, a natural choice, since following the coast was probably too difficult, the tsunami having certainly damaged any trail, making a passage probably impossible. We are presently unable to pinpoint the place (possibly *Ain el Furtaga*, apparently meaning *the source of those who escaped*) called *Mara* where bitter water was found, and was changed by Moses into sweet water. After Mara, they stopped at a place with 12 sources and 70 palms called *Elim*. We suggest this place was an area under *Jebel Ghlim*, that is reached by a short deviation to the south from the way to the desert of Shur. Moses needed to stop a number of days in order to ascertain whether the Amu had already arrived and to evaluate the effects of the tsunami on his itinerary. We think that his battle and victory with Amalek in the desert of Shur involved only part of the Amu, about one thousand, from a statement in the *Legends* that the army of Amalek had 400.000 men but only those born on that day battled with Moses.... He may also have wanted to visit again the place where he heard the voice from the Burning Bush, probably located in the area of present St Catherine monastery, some 50 km as the crow flies from Elim. This was built around 330 AD by Flavia Elena, mother of Constantine, where local monks pointed out a believed remain of the Burning Bush.

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#### Remark

Part of this material has appeared in the Proceedings of the Milos 2005 Atlantis conference and in the book *Atlantide e l' Esodo, Platone e Mosè avevano ragione* (Emilio Spedicato, Aracne, 2010). Additional material is provided here, in particular the interaction of Moon with Phaethon as the cause of destabilization of Phaethon as a Cruithne object, and Mauro Biglino information that the masoretic consonantic text in the Leningrad code does not have any reference to Moses walking among two walls of water.