

**About Hell's geography in Dante and Galileo,
and the Lucifer's dimensions.**

Some considerations.

Emilio Spedicato, formerly at University of Bergamo

*Dedicated to Salvatore Furia, charismatic astronomer
and founder of the Observatory in Campo dei Fiori.
There for first time I observed twin stars, Saturn's
rings, lights of Loreto's square in Milano using
Mussolini's binoculars, and wrote my thesis about
homogeneous turbulence, supervisor Carlo
Cercignani.*

1 INTRODUCTION

In two lessons in 1587, *About the figure, the site and
the dimension of Dante's Hell*, the young Galileo,
being 23 years old, studied the geography of Dante's
Hell, providing information on the height of Lucifer.

In Dante, Hell is an overturned cone, whose volume
equals a twelfth of the Earth's. The cone's vertex
coincides with Earth's center, where Lucifer stands,
confined in an "icebox". The height of Lucifer is
estimated by Galileo at 1935 Florentine arms, say
about 1200 meters.

Galileo's study has been commented in two conferences held in Milan in 2018, at the SATOR' center founded by the physicist Cesare Oliva, a former colleague in university studies of this author. We had many discussions about astronomical themes. I also recall a night at the Observatory of Campo dei Fiori, above Varese. We arrived there with my small Diane 6 car, driving from Milano in a sea of fog. At 800 meters of highness, the fog disappeared and we could contemplate to the south a rolling sea of clouds lighted by the Moon and to the north the Alps dominated by Finsteraahron's pyramid, at 4276 meters.

In the SATOR conferences, Cesare Oliva and the pianist Alberto Aldrighi further developed Galileo's analysis of Dante's Hell, emphasizing the complexity and the richness of the geographic and astronomical scenario of Dante.

In this work at first we give several considerations about Hell's geography of Dante, related to an interesting problem in physics. Then we consider the question of Lucifer's height. We give to the value calculated by Galileo another meaning, hence obtaining for Lucifer's height a value that may be acceptable, being related to other similar heights. The obtained result leads to considerations about the possible arrive on Earth of intelligent beings from

other parts of the solar system, without a need to consider arrival from planetary systems of other stars. A research area outside the scope of the present paper.

2 SOME NOTES ABOUT DANTE'S HELL GEOGRAPHY

Dante presents the Hell as an overturned cone, whose vertex is located at the Earth's center. At the vertex he places Lucifer; the nine "gironi " were the sinners of different sins are located are circular terraces protruding from the walls of the cone; the cone is covered by a part of the terrestrial's crust. Dante enters in the Hell with Virgil through an opening near Cuma, in Campania. About this scenario the following notes are interesting.

The Cuma's region is located in the volcanic Campania's area of Campi Flegrei, near Pozzuoli, about 20 km west of Naples' center. It is a region of special geologic interest, still associated to a huge danger of volcanic explosion. In this zone there is the underground complex of the Cumaean Sybil. Sibyls were priestesses, to be found in several parts of Italy, including the Monti Sibillini between Norcia and Ascoli Piceno. Little is known about their rituals and beliefs. They had nine sacred books, that were offered in sale

three at a time to the Roman king Tarquinius the Proud, around 520 BC. Two times he rejected the offer, the offered books being burned at his refusal. At the third offer he bought the last three books at the price of the nine. So is the story as told by Aulus Gellius in the *Attic Nights*.

The Sibylline books were kept in a room under Jupiter Palatinus's temple, to be read in special occasions, especially when there were dangers to Rome. One such occasion occurred at the time of emperor Aurelianus, when Italy was invaded by Marcomans, who devastated the area around Milan, see Flavius Vopiscus, in d'Aguen et al (1847). Burned in a fire in 83 BC, they were in part reconstructed from other sources, and kept, according to Suetonius, in two golden boxes to Augusto's order in the Apollo Palatinus's temple.

As an example of books reconstruction by memory, recall Ezra, the Hebrew scholar active when the Jews were allowed by Cyrus to leave the areas in Mesopotamia where they had been taken as slaves by Nebuchadnezzar, many of them going to Palestine. In 40 days without sleep, Ezra, with a perfect memory, possibly enhanced by drinking a certain substance (from a plant containing amphetamines?), dictated to five scribes the Hebrew's sacred books (or, better, those preserved by the tribe of Jude). Such books

were 94, of which 24 form the Hebrew's Bible, that can be read by ordinary people, while the other 70, the most important ones (only those books tell of immortality of soul and of judgment after death), were reserved to the priests (hence they were probably read by Zacharias, Elisabeth's husband and father of John the Baptist). The 70 books were kept in a special iron container in the Temple. Those still existing at the fall of Jerusalem in 70 AD were donated by Titus to Joseph Flavius.

August ordered to gather, and then burned, all the prophecy books that his envoys found in the empire (similarly Paul of Tarsus burned the books of the magicians of Anatolia, after winning them in a competition). The Sibylline books disappeared in the 5-th century, possibly burnt by Stilicon in 405, possibly because they contained a prophecy stating that Roman power would last only 12 centuries.

Another case of books burned for ideological reasons relates to Ata Malik Al Juvaini , the governor of Persia named by Mongols. He burnt in 1257 the books of the famous library in the Ishmaelite fortress of Alamut, taken by the Mongols after a siege of many years, on the reason that everything important can be found in the Koran. He kept however some of the books, according to a statement in his *History of the*

Mongol conquest of Persia, without telling which books were saved.

From the Sibylline prophecies, we quote the one that was read in 271 when Tacitus, an aged man, was crowned as imperator, see Ramella (2003): *a thousand years after Tacitus the greatest imperator will be crowned*. Everybody thought at that time that the prophecy meant the Roman Empire would last one thousand more years, a fact that didn't occur. Ramella does not notice that one thousand years later, in 1271, a man was crowned who indeed can be considered the greatest imperator, say Kubilai Khan. He ruled over almost all of Asia and a part of Europe; his time was a time of peace and civility, as described by Marco Polo and others.

The sacred area associated to the Sybil of Cuma develops underground, a complex of rooms and walkways still widely unexplored, whose exploration is dangerous for poisonous gases presence and easy collapses. The first important exploration, of only the first of the three known levels of the complex, is the merit of archaeologist, philologist and polymath Robert Temple, see Temple (2003). Temple was a long time collaborator of Joseph Needham, the medical doctor and scholar who has produced over 20 books on the history of Chinese civilization and science. A synthesis of such work, written by Temple,

is a book whose reading is mandatory in Chinese secondary schools, certainly contributing to the great Chinese interest for science and technology. With this book Temple is the writer whose book is the most sold one in the world among modern books.

A second theme arising from Dante's Hell's geography concerns the stability of the structure. The Hell cone corresponds to a twelfth of the Earth's volume, covered from a part of the crust. Letting aside the phantasy in the proposal that Hell lies inside our planet, an interesting problem, and one, as much this author knows, not entirely solved, concerns a sphere completely or partially hollow, isolated in space and subject only to its own gravity. From the everyday experience it is clear that enough small spheres of this type exist and are stable. The question concerns spheres of much bigger size, even of astronomic dimensions. We quote two such cases considered in literature:

- Astrophysicist John Ackermann has proposed that Mercury, the planet with highest density, close to that of iron, was originally the core of Mars. It was lost after a series of catastrophic interactions involving Earth and Venus, during a time span of several thousand years, terminating in the 8-th century BC. The loss of the core explains the low density of Mars, the lowest among solar planets,

associated to an interior of Mars that may be partly empty.

- Iosif Shklovsky, Fred Singer and Carl Sagan have proposed that the two satellites Phobos and Deimos of Mars could be empty, and possibly of artificial origin. A very unconventional proposal by astronomer Sagan, who was among the astronomers mostly opposed to the theories of Immanuel Velikovsky.

If an empty planet can exist, and which are the conditions of stability for such a planet given a crust of thickness D , a homogeneous density d and a radius R , are non trivial question open to research. This author attempted a first approach, preliminary calculations indicating that the parameters d , D , R and the constant G of gravity play a complex role.

Such problem has attracted the Galileo's attention too. He considered several aspects, not in a theoretical but in an experimental way, as he often did, using experiments to solve theoretical problems. Famous is the case of the area under the cycloid curve, that he evaluated experimentally to three times the area of the circle generating the cycloid, a result theoretically proved later by his student Torricelli.

3 ABOUT LUCIFER'S HEIGHT AND ASSOCIATED QUESTIONS

Lucifer appears in the ancient traditions in at least two frameworks. The first is astronomic, associating him to the morning star that appears before the sunrise; Venus, also named as Vesperus, the evening star that appears after sunset, was discovered only after quite a long time to be the same body as the morning star.

The second notation sees Lucifer as the chief of the angels who rebelled to God, to be defeated and thrown into the Hell, with their chief.

Lucifer is placed by Dante at the bottom of the inverted cone that defines Hell, half his body immersed in iced water. From analysis of Dante's text, Galileo estimates Lucifer height; his obtained value in Florence arms corresponds to about to 1200 meters, a huge number for a human-like being.

This author, see Spedicato (2016 a, b), has considered the existence in traditions, especially Asian ones, of very big numbers, related to measures of time or of lengths, that appear too large to be acceptable, or are in conflict with other similar estimates. It is a claim of this author that such numbers are not the original values, that have been subjected to encryption. A reason for encryption may

have been a taboo on the true value, a frequent fact in the ancient world, see eg the names of planets for Celts, the names of mountains for Mongols, even the true name of Rome (Ovid was sent to exile to the shore of Black Sea for having violated the taboo on Rome secret name, see Felice Vinci, private communication). The encryption appears to have been done by a simple process, namely the multiplication by 180. Notice that 180 is an astronomically very significant number, being the number of days between two equinoxes or two solstices, when the Earth's year counted 360 days. For reasons long to be detailed here, see eg Borruso (2020), the length of the year was of 360 days before Noah's Deluge, occurring at 3161.

How Dante was led to give to Lucifer such height is not known, but notice that Dante's sources are only partly known. It is possible that Dante belonged to a secret group in Florence that preserved ancient knowledge even from people involved in the Eleusinian Mysteries, see Bizzi (2017). In such mysteries an important role was played by a war between gods, involving the four sons of Japetus, a god predating Jupiter. In the VAS scenario, being presently developed by Spedicato, see for a synopsis Calzolari (2019), Japetus and Jupiter are actually the same planet. The two names refer one to planet

Jupiter as it is now, Japetus to how it was before the changes occurred when around 7000 BC that planet was impacted by a large body, the Nibiru of Sumerian or the Metis of Greeks, in a point where the present Red Spot is the still active impact crater. The four sons can be interpreted as the four Galilean satellites, that before the impact, when Japetus was closer to Sun and probably emitting more energy than now, were possibly endowed with water and life... even intelligent life.

See the similarity in names between Japetus and Jupiter, and notice that the name Jovis Pluvius given by Romans to Jupiter is well explained in the VAS scenario, being etymologically identical with the name Jupiter itself. The etymology of Jupiter as JU – PITER is well explained by the following hybrid derivation: PITER = FATHER from Sanskrit and related languages, JU = WATER from Chinese JU = RAINING WATER. That hybrid words exist, albeit they are given little attention by philologists, is observed in many instances; their existence is accepted by philologist Luigi Lehnus (private communication), a colleague in high school of this author.

Hybrid names are often seen in a geographic context, in areas separating regions with different languages that have been spoken locally for many centuries. One such case is the name of the highest mountain in our

world, presently called Everest, a name imposed by the British in the second half of the XIX century, see for the story of this change a chapter in the book *Il bel paese*, of Antonio Stoppani. The Everest name was given to honor the chief of the Topography Office in India, a man additionally appreciated for building resorts on the Himalayan slopes used by the British to escape the warmth of the India summer. The mountain was locally known by different names, the most ancient one being Gorishanta, known by every Indian. The etymology is of hybrid type as can be seen from: GORI = white lady, in Sanskrit, SAN = mountain, and TO = big, both in Chinese. So the highest mountain in our planet would have the name, *the white lady of the big mountains*, whose appropriateness is difficult to discuss. Hybrids names of mountains or passes, of Turkish and Chinese origin, appear in the Tien Shan mountain range, naturally separating Turkish and Chinese areas, see Maillart (2002).

It's possible that Dante did not invent Lucifer's height. He may have found its value in documents originating in the Orient, possibly in encrypted form, without being aware of the true value behind.

Zecharia Sitchin, whose books sold over of 100 million of copies, assumed for Nibiru's period the value of 3600 years, while the acceptable one is of 20 years,

as obtained by dividing by the encrypting factor of 180, see Spedicato (2016).

Let us now assume that Lucifer's height as obtained in the Dante and Galileo approach is an encrypted number, obtained by multiplying the real value by 180. Then

by dividing 1200 by 180, we get as Lucifer's real value 6,7 meters. This value is higher than any height known to be reached by man in present times, or in recent historical times, where we see a limit around three meters. The tallest man in modern times was possibly Robert Pershing Wadlow, 2.72 meters, who died in 1940, see Wikipedia. Some Byzantine and Roman emperors are described as tall men of over 2.5 meters, even Carlo Alberto of Savoy, at 2.10 meters, was higher than De Gaulle, usually standing over the heads of other politicians he met. According to Russo (2010), biblical giants could reach a height of 3000 cubits. There are discussions about the value of the cubit, also because there were different types of cubits. If we follow the accurate analysis of Barbiero (2020), who gives for the Moses cubit a value of about 30 cm, the height of the biblical giants would be of about 900 meters encrypted, say 5 meters after division by 180. Thus a value where a higher height for the chief Lucifer of 6.7 meters would appear reasonable.

Below heights of other giants in the ancient tradition.

- In *Enoch's book* it is written that the giants living on Earth before the Deluge (that we estimate occurred in the year 3161 BC) reached a height of 2000 cubits. Since Enoch lived long before Moses, before the Flood, we can assume the use not of the Moses cubit but of the royal cubit, the one used in Pyramids and even much earlier in the megalithic world, see O'Brien (1983). Taking thus the royal cubit value of 52 cm, we get for giants an encrypted height of over 1000 meters, with decrypted value of about 5.5 m, quite close to the one obtained by the different sources in Russo. We wonder if Dante knew Enoch's book, which might have survived in Europe among special families despite not being among the books in the canonical list.
- Giant Goliath, quoted in the *Book of Chronicles*, was 6 cubit and a palm high, say about 3.3 meters using the royal cubit, or about 2 meters by Moses cubit. Giant Og, quoted in the *Book of Numbers*, was 9 cubits high, thus, by using the royal cubit, over 4.5 meters, while by using Moses cubit, a preferable choice since Og lived at the time of the conquest of Canaan, just after Moses time, of about 2.7 meters.

- Herakles was a giant, whose height was calculated by Pythagoras, according to Plutarch, who fails to give the calculated value. Pythagoras used the fact that Herakles measured the length of Pisa's stadium (Pisa a Peloponnesian city, not far from Olympia; the city of Pisa in Tuscany was founded from migrants from that Greek town) in terms of his feet.

Someone walking on our planet could have bodily problems if it has a body of excessive height, or excessive weight. Similarly to the fact that for a given planet there is a maximum elevation for its mountains (about 10 km for Earth, almost 30 for Mars...) there exists a weight or height's limit for someone walking, given by the strength of the leg bones, that can support a weight up to a certain limit. This act was a long considered a main problem in the study of dinosaurs, leading to the proposal that they moved only in water, where the Archimedean thrust reduces the weight's effect. The weight depends on the gravitational constant G , that is still associated to unsolved problems. It cannot be excluded that G might change in space and in time, a fact quite possible eg in the framework of the Euler - Le Sage theory of gravity (wherefrom Olinto de Pretto, about 1903, derived the $E = mc^2$ equation, later given by Einstein without referring to de Pretto, who inter alia

was friend to Einstein's father...). The fact that the body of Lucifer lies for a half in an icebox (water with ice pieces, a preferable interpretation than solid ice) suggests that it had an excessive weight for his legs under the Earth gravity, hence needing to stay in water. Notice the presence of a similar being in a Sumerian tradition, namely the god Oannes, who lived in water, coming to shore sometimes to act as a teacher.

The above considerations, of a preliminary nature of course, are meant to open new scenarios about Lucifer, and the whole world before the Deluge, where worldwide traditions point to the presence on Earth of special beings, who may have acted, positively or negatively, on human mankind. These are intriguing, complex and difficult scenarios, whose retrieval will take very long work by researchers, helped possibly by new archaeological and astronomical findings.

4 ACKNOWLEDGEMENTS

Thanks to Federica Castelli for translating this text from a previous version in Italian.

5 BIBLIOGRAPHY

- Flavio Barbiero, *Mishkan, il tempio-tenda di Mosè*, Pontecorboli Editore, 2020
- Bizzi Nicola, *Da Eleusi a Firenze: la trasmissione di una conoscenza segreta*, Aurora Boreale, 2017
- Calzolari Enrico, *Göbekli Tepé. Tra elettromagnetismo e astronomia*, WriteUp, 2019
- De Pretto Olinto, *Ipotesi dell'etere nella vita dell'universo*, Atti del Reale Istituto Veneto di Scienze, Lettere ed Arti, LXIII, 1903-1904
- Maillart Ella, *Vagabonda nel Turkestan*, EDT, 2002
- O'Brien Christian, *The megalithic Odyssey: a Search for the Master Builders of the Bodmin Moor Astronomical Complex or Stone Circles and Giant Cairns*, Turnstone Press, 1983
- Ramella Ilaria, *Cultura e religione etrusca nel mondo romano*, Edizioni dell'Orso, 2003
- Russo Biagio, *Schiavi degli dei*, Drakon Edizioni, 2010
- Spedicato Emilio, *Grandi numeri nelle cronologie asiatiche: una chiave di lettura*, Quaderni Asiatici 93, 2011
- Temple Robert, *Netherworld*, Random House, 2003
- Vopiscus Flavius, *Vie d'Aurélien*, in Laas d'Aguen, E. Taillefert, Jules Chenu, *Écrivains de l'Histoire Auguste*, Imprimerie Panckoucke, 1847
-

Correspondence address:

Prof. Emilio Spedicato
emiliospedicato@gmail.com