

Archaeoacoustic analysis of the ancient site of Kanda (Macedonia)

Preliminary results

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¹Abstract — Research was carried out on a geoglyph located in Kanda (Macedonia) by an international team using interdisciplinary methods (astronomy, philosophy, mythology, mathematics and physics). The research conducted on two occasions in 2014 was undertaken to establish all potential anomalies in the IS, US and EM spectrum with special attention to anomalies common to sacred sites, but as yet unexplained by standard physics.

We conclude the Geoglyph looks to be built on an artificial hill. This hill or mound also appears to be artificial from the aeroplane. The Geoglyph is visible only from the sky and is located in an oval ditch.

Some measurements suggest that there is chamber located below the surface. Research by different methods (infra-/ultrasound research, AMT measurements, binary algorithm synthesis from audio waves, data sonification and dowsing) also found that at the sacred enclosure primary water is located at the centre or at some point along its major axis. Furthermore, since the soil does not match the surrounding area, it would certainly appear that this mound has been carefully constructed with a specific purpose in mind. What exactly that purpose is remains to be investigated in future.

Keywords - *archaeoacoustics, geoglyph, Kanda, Sveti Nikole, Macedonia, brain activity*

I. INTRODUCTION

Archaeoacoustics is an emerging archaeological method of analysis that involves the interdisciplinary study of ancient sites. This method does not investigate only acoustic fields, but also all natural phenomena existing in on an archaeological site which could affect the state of mind of a man. In previous

studies researchers of SB Research Group have established that various ancient sites considered "sacred" have specific natural properties affecting people. These properties make the location "sacred"^[3,4,5,6].

"Sacred sites" are locations which particular groups deem worthy of veneration. They are typically places of worship and are used for spiritual or religious rituals. As they can be desecrated or defiled, they are often protected in some way. The ancient Greeks used the term '*topos*' to refer to the physical, observable features of a locale, and the word '*chora*' to refer to those qualities that could trigger imagination evoking a mythical presence^[7]. It is very common that a number of structures had been built on a sacred site through history. In many cases those sanctuaries originate from different cultures, often from prehistoric times, probably because prehistoric people were more sensitive to the vibrational phenomena. SBRG group also found this to be true in several research projects in Europe.^[2,3,4,5,6]

Many other researchers have reached similar conclusions, however without a common protocol it has not been possible to compare characteristics of different sites.^[5]

For this reason SBRG group developed a new standard that can be applied to the analysis of ancient sites worldwide. We called it SB Research Group Standard for archaeoacoustics or SBSA for short.^[5]

II. CHARACTERISTICS, HISTORIC ASPECTS OF THE SITE AND THEORIES

In the vicinity of Sveti Nikole town, Macedonia there is an egg-shaped ritual mound made of soil usually called Geoglyph with dimensions of approximately 85 x 45 meters. The mound is perfectly oriented North-South. It bears two oval frames containing a giant symbol - geoglyph which looks precisely like one of undeciphered letters of the Mycenaean script known as Linear B. The whole structure, with its shape and symbolism, resembles a cosmic egg – the source of primordial creation.^[8]

¹ (*) **Note.** SB Research Group (SBRG) is an international and interdisciplinary team of researchers (from Italy, Croatia, Serbia, Finland and United Kingdom) researching archaeo-acoustics of ancient sites and temples in Europe (www.sbresearchgroup.eu).

Domagoj Nikolic, a researcher of ancient civilizations, hypothesized in 2013 that this may be the burial place of a very important person from Macedonian history, possibly even Alexander the Great or someone from his dynasty.^[9] The following indications are the basis of the hypothesis:

Symbol in question is aligned to the constellation of Cassiopeia which in mythology is known as the Queen of Heaven, the Great Mother and the mother of Andromeda who becomes the wife of the savior Perseus. The importance of Perseus in Macedonian mythology cannot be overestimated. This name appears in the royal dynasty: the last Macedonian king was Perseus. There are numerous coins from the Macedonian royal mint with the depictions of mythical Perseus who seems to have been the “higher self” of Macedonian kings.

In the Macedonian transcription of the demotic script the Geoglyph symbol represents the god Se, the all seeing and all sustaining deity of Macedonia. Se was the firstborn son of the Great Mother and the Supreme God of ancient Macedonians who created the whole Universe. Thus Se was also called The First. The Supreme Creator and the Great Mother have also created Macedonia and they incarnate in the personages of the king and queen of Macedonia.^[10] This theology is completely in line with the Dionysian mystery schools to which belonged Olympia, the mother of Alexander the Great, which is mentioned by Plutarch in his text “Life of Alexander”.

Cassiopeia at sunrise on the 21/22 July (the birthday of Alexander the Great) lies directly to the north and stands vertically above the geoglyph in the skies zenith, forming a perfect picture of the sky on the Earth. (Fig. 13)

According to the folk tradition from the neighboring town of Kratovo, Alexander the Great was buried in the Ovče Pole plato, on the left bank on the Vardar river, in accordance with his specific desire.^[11]



Figure 1. Mysterious symbol of the Linear B script, assigned the numerological value of 22, number of eternity and the circling of incarnations.

The research conducted on two occasions March and July 2014 was undertaken to establish all potential anomalies in the infrasound, ultrasound and electromagnetic spectrum with special attention to those anomalies that are common to sacred sites, but remain unexplained by standard physics.^[12] The research team also used discrete mathematics to analyze radiation from the mound in order to establish whether it holds

a cavity. This multidisciplinary approach, combined astronomy, philosophy, mythology, mathematics and physics.

A. Sacred craft of the Dionysian architects

In this section we shall briefly present the sacred symbolism, etymological links, folk traditions and original theology that reflect the knowledge of the great philosophers and engineers who built these extraordinary buildings. It seems that they were in the possession of knowledge that could be equally applied to geometry, astronomy, religion, teaching, healing, governance, metaphysics and poetry.^[13] They created the most revered ancient fraternities of artisans known as the Dionysian Architects, a network of guardians of secret knowledge that kept it so hidden that only sketchy records of their esoteric craft exist today. For our story it is very important to note that they had means of internal communication all over the world.^[14] which could have included knowledge and application of scalar waves technology.^[12] These philosophers, also known as old poets or story tellers or, as the Stoics called them, *palaiotheologoi* (meaning original theologians) propagated their stories in a complex fashion with multiple meanings revealed in multiple levels and fields of application. Their secret teachings conceal under the veil of myth a treasure of philosophical truth.^[15] Thus mythological stories of the gods are providing the narrative of the functioning of the cosmological principles. The initiates know how to apply them to practical purposes. This is the essence of theurgy, an ancient science based on the original cosmology or, in the words of the old poets: the work of god. The word *theurgy* means precisely ‘work of god’: these ancient architects aimed to construct a building in perfect harmony with the structure of the cosmos, i.e. with the structure of the original mathematic *sui generis* that subtly creates the matrix which in turn is forming the world as we know it. For them, this invisible structure was identical to God.

Sacred buildings constructed in accordance with these cosmic principles were believed to be able to withstand the challenges of time.^[14] A logical deduction, therefore, is that such a building could act as an oracle holding a message that can be revealed at some point in the future. In defining the societies of these builders, a Brazilian scholar Hippolyto Joseph Da Costa declares these theurgian design principles as being founded on astronomical ones^[16], which almost certainly connects them to the Pythagorean Brethren. Saint Augustine also uses the term astrologers and mathematicians (*matematici*) interchangeably in his work *De Civitas Dei*. This all points to the fact that the ancient architects designed buildings based on geometrical patterns derived from the constellations.^[14] In the case of the great Geoglyph mound, the astronomical and mathematical pattern is derived from the constellation of Cassiopeia.



Figure 2. Cassiopeian Geoglyph (photo: Google Earth)

By exploring the theurgical concept of the magnificent construction at Ovče Pole, we shall try to trace the line to the truth, hereto defined (Or should we say divined?) as the unity of all aspects of the being held together by the common essence, also defined as the being or vibration. The reconciliation of the seeming division of the manifested aspects of the Universe by achieving unity is called *henosis* and, according to the Neoplatonist philosopher Iamblichus, can be achieved by utilizing theurgy. The Greek word '*henosis*' probably originates from the Macedonian/Slavic word '*enota*' (or *ednota*), meaning unity. The process of achieving *henosis* or unity utilizing theurgian design principles can best be explained by the ancient metaphysical motto: *As above so below, as within, so without!*

From the writings of Plotinus and Iamblichus we can reconstruct the ancient architects' line of thought. By mimicking the divine mind also called the *demiurge*, the individual is returned to the cosmos to implement the will of the *demiurge*. The rituals of the mystery religions were used to enable individuals to unite their outer and inner person. Thus one without conflict of internal and external forces becomes united (*henosis*) and achieves unity with the cosmos, effectively becoming 'The One' (Greek *hen* or in Macedonian *en-eden*). This goes beyond the mere achievement of practical knowledge or awakening of the consciences, because according to the belief system of the Neoplatonists, one, through the process of deification, literally becomes a god by unifying the concept of an external creator within oneself as a creator, builder and craftsman. Understanding the interdependence and balance between the macrocosmic and microcosmic principles becomes the source of one's activities. In such a consecrated being the whole existence becomes sacred and every activity ritual which mimics the ordering of the chaos of the Universe into the material world or Cosmos. The high initiate mimics the actions of the *demiurge* as the creator of the material world and thus truly becomes one with God, in some aspects the God

himself. This is the essence of the mysteries of the God Ptah, the demiurge creator and technician.



Figure 3. Aerial photo of the Geoglyph (photo: survey SBRG)

B. The Myth of Cassiopeia

In mythology Cassiopeia was the Ethiopian queen married to king Cepheus. In some versions of the myth she was the Eritrean or Macedonian queen. As Cassiopeia was beautiful, but very vain, she boasted about her beauty and the beauty of her daughter Andromeda. The great sea god Poseidon took offence when he learned that Cassiopeia said that she and her daughter were more beautiful than all the Nereids, the sea-nymphs and daughters of the Old Man of the Sea, god Nereus who lived in the Aegean Sea. Enraged, Poseidon sent flood, personified by the snake monster Cethus, on the kingdom of Cepheus and Cassiopeia.



Figure 4. Cassiopeia, Andromeda, Cepheus and Perseus. Note Cassiopeia weaving her hair.

Terrified by the looming disaster, King Cepheus went to the oracle of Ammon in Lybia who prophesized that the only way to save the kingdom was to sacrifice Andromeda to Cethus. Andromeda was then chained to the cliff at the edge of the kingdom and left to be eaten alive by the snake monster Cethus. As she was helplessly waiting in terror, the hero Perseus heard her cries. He was on the way home after having slaughtered another snake monster Gorgona Medusa. Perseus slew Cethus, released the beautiful virgin who then became his wife. Thus Perseus became the savior not only of the princess

but also of the land, because by killing Cethus he saved the land from the disastrous flood. Perseus had many other qualities. He was the benefactor of Gods; he gave his magic cap, mirror and flying sandals to Hermes, while the war trophy – the head of Medusa he gave to Athena. The descendants of Perseus ruled Mycenae, the home of an illustrious civilization in Peloponnese. Heracles descended from his line, while Perses, his son with Andromeda, is said to have moved to Asia to become the founder of the great new nation – the Persians.^[17]

C. A New Reading of the Historic Narrative

The importance of this myth in ancient Macedonia cannot be overestimated. One of the Macedonian kings was named Perseus. Unfortunately he was to be the last one who died in Roman captivity.^[17] The ancient history of Macedonians, Illyrians, Hellenes and Romans is completely intertwined with the history of Persia: one only needs to recall the European campaigns of Darius and Xerxes in the 6th and 5th century BC, or the 3rd and 4th century AD Persian campaigns of Aurelian, Probus, Carus, Diocletian and Galerius, and many other incidents of war and peace that fall in between.

The ancient chronicles are philosophical, allegorical and polysemic texts filled with tautological metaphors that do not have only one valid interpretation. To the uninitiated they may seem like bizarre fabrications. Thus Herodotus conferred by Cicero *"the father of history"* came to be known in modern times as *'the father of lies'*.^[18]

Athenian historian, political philosopher and general Thucydides (460 – 395 B.C.) also dismisses him as a 'logos-writer' or story-teller.^[19] Truth is that ancient historians write in the form of parables; their texts are thus more akin to folk traditions and fairy tales.

Truth is also that Persia, sometimes under the name of Babylon, dominated the whole of the Balkans, while it also, overtly or covertly, ruled Phoenicia and Egypt. On many occasions, the means of control were subtle and hidden; Babylon ruled through the application of sacred science to all aspects of practical life: religion, economy, technology and governance including the exchange of royal blood. It is known that the greatest of philosophers of the antiquity such as Pythagoras and Solon studied in the Chaldean schools of Egypt and Babylon.^[17] One also may conclude that these illustrious men were not only philosophers, the magi, but also the members of the Athenian royal bloodline that was somehow intertwined with the Babylonian – Persian dynasties. As factual evidence remain buried in the hermetic writings, these matters are extremely difficult to corroborate, but some fractions still survive. For example, one of the sons of Peisistratus named Hippias studied in the mathematical schools of Egypt, and was advisor to Darius the Great when he landed in the Balkans in 490 B.C near the field of Marathon. We also know that Solon and Peisistratus were closely related at least though Solon's mother side and Diogenes Laertius writes that Solon had a brother who was Plato's ancestor six generations before. This shows that there were close blood relations between the rulers of Athens and Persia as well as between rulers and philosophers.

From the political point of view, we make note of the fact that the state of Alexander the Great roughly encompassed the same territories as the empire of Darius and Xerxes. Alexander

also inherited the astronomer-priest ruling class of Chaldeans who effectively administered the empire. Was this merely a coincidence or a matter of practicality? It seems that all indications are pointing to the contrary. Behind the veil of local government which presented itself as an independent city or kingdom, there existed a hidden, metaphysical empire, Babylon, which operated from a higher level of existence incomprehensible to the common population. By pulling the subtle levers of financial, economic and religious power, it ruled the local statelets which had very little practical sovereignty. This hidden empire, being metaphysical and beyond the reach of the plain mortals, was in the fullest philosophical sense ideal. Since its functioning was completely governed by astrologers or Chaldean magi who ensured its synchronicity with the movement of planets through the firmament of constellations, such an ideal state truly deserved the metaphor of the Kingdom of Heaven.

Since the craft of government included such an advanced wisdom, one should not decide this was merely a political theatre and a clever method to conceal a tyranny. In fact, this ruling system seems to have been more oriented toward nurture rather than torture. The idea was that, by using metaphysics, the magi nurtured the world and human souls by keeping harmony with the natural law that revealed itself in the movement of celestial bodies. Peace on Earth was the logical consequence of this harmony.

Metaphorically speaking, the Chaldean magi pulled the invisible strings of government attached to the sky; they possessed the knowledge to use planets as pulleys to their strings of power. A Hungarian philosopher Béla Hamvas says that their goal was nurturing and education of the mankind, rather than enslavement and exploitation at least until the 6th century BC, when the true hierarchy, consistent with the order of the Universe, was broken and mankind started to fall into the abyss of chaos.^[13]

As the chaos started to ensue, the means of control became more overt: during the rule of Darius I the Persian military got as far as north as the Danube, but the unruliness of the locals forced them to withdraw and to keep their stronghold in Thrace. All other parts of the Balkans kept some kind of autonomy. As these kingdoms were small and divided, they did not represent any challenge to the Persians. However, in the times of Phillip and Alexander, Macedonia and Greece were united, and Alexander started his strange journey to the east during which he would become the ruler of Phoenicia, Egypt and – Persia, a vast empire he briefly ruled until his untimely death when it all collapsed.

D. Bylazora and Pella

The Geoglyph mound is located near Sveti Nikole, a town in eastern Macedonia, close to an archeological site known as Bylazora or Bela Zora (English *'white dawn'*). The Macedonian word bela (white) is linguistically very similar to *'Pella'*. Recent archeological excavations are starting to challenge the commonly held view of the role of this location in ancient history. It was believed this site was merely a citadel of the obscure nation of Paeonians which historians connect to Illyrians, Thracians, Greeks, Macedonians or even Pelasgians.^[20]

Scholars as Radivoje Pešić make a connection between the Pelasgians and Slavs through etymology (Pelasgi = Belasti,

meaning *whitish*) which, if true, would be an evidence of the common Slavic root of all ancient Balkan nations including the Greeks and Romanians.^[21] According to the last archeological findings, Bylazora was the last palace of the Macedonian kings^[22], which makes a lot of sense, if we understand the political and security theater of that time. The site includes elaborate temples and buildings and is, by what we can observe, a former royal town.

Officially, the history of the Paionians is uncertain. The artifacts such as the Macedonian coins found in archeological explorations of Bylazora point to the possibility that Paeonians were at least the vassals of the Macedonian kings. The Paeonian troops were likely the elite forces, the holy warriors, the personal guard of the Macedonian kings that kept the Macedonian kingdom secure from a possible revolt or putsch. In the chronicles of Alexander the Great we read that he uses the Paeonian cavalry as one of the elite troops to defeat the Persians.^[22]

When the Macedonians finally included Paeonia under their formal rule, they did not exterminate the Paeonians, which at least points to their ethnic similarity.^[20]

That Paeonia may have been the original home of the Macedonian elite as well as the military kingdom with a special status would also make sense from the point of view of Plato's ideal state. According to Plato's "The Republic", Bylazora is geographically well-situated for an ideal state which cannot be on the sea, because the sea brings corruption. In any case, as both Plato and Aristotle remarked, Greek city states fell short of the ideal political system, but Paeonia could have been much closer. It could have well been a military aristocratic state ruled by the philosopher king and the aristocratic military class able to fully contribute to the political community. Bylazora or Belazora in Macedonian language means white dawn, which is a symbolic reference to resurrection, significant as the rebirth or resurrection of the Sun King and a symbolic reference to the return of the Golden Age brought about by the Savior King. Symbolically it is not removed from Kallipolis, the "beautiful town", the seat of Plato's ideal state. Topographically it also resembles Pella from ancient texts.

However, Pella in Aegean Macedonia does not quite fit every description of the ancient Pella. This could mean that we in fact have two towns referred to as Pella and thus the matter becomes intentionally confused in accordance to the hermeneutic rules as described by Philo of Alexandria and other hermeneutic writers. Apart from Pella in Aegean Macedonia, the other Pella could be Bylazora or Bela – Pella.

Only by applying this possibility can the description of Pella as written by the Roman chronicler Livy make sense.

"(Pella) stands on a hill which faces the south-west, and is surrounded by morasses, formed by stagnant waters from the adjacent lakes, so deep as to be impassable either in winter or summer. In the part of the morass nearest to the city the citadel rises up like an island, being built on a mound of earth formed with immense labor, so as to be capable of supporting the wall, and secure against any injury from the water of the surrounding marsh. At a distance it seems to join the city rampart, but is divided from it by a river, and united by a bridge; so that if externally invaded it has no access from any part, and if the king chooses to confine any person within it,

there is no way for an escape except by that bridge, which can be guarded with great ease."
History of Rome, Titus Livius 46:4-6

Those who understand that these chronicles were written in the cryptic hermetic form will not be utterly surprised by this possibility. Others may state that this allegorical bent is either farfetched or completely senseless and open to anyone's interpretation. However, we will side with those who believe that the truth in ancient cryptic texts goes beyond the contradicting factual interpretations or, in other words: *"It is madness, but there's a method in it."*^[23]

Many scholars who try to extract meaning from the ancient texts find themselves in this conundrum. This is precisely why linear and literal method of interpretation of the ancient texts will not suffice. Scholars should accept that the interpretation of historic events must reach into discerning the deeper 'spiritual sense' of the writings or, from the point of view of the magi, the deeper significance of the celestial reality which manifests in human fate. The application of hermeneutical principles to the process of discovery of the hidden meaning puts the 'literal sense' on the secondary place of importance.^[24]

How can we then connect Bylazora or Pella with the writing of Livy? First, we can safely assume that there was a good reason why the town was shrouded in mystery by having two locations with the same name referred in the chronicles. There are valid spiritual and practical reasons for this intended confusion. As for the spiritual reasons, the birthplace of the savior king is always placed in a mythical Arcadia, among the shepherds. Shepherds are literally the keepers of sheep, and sheep is often a cryptic and symbolic name for people or subjects. "Shepherds" is by the same token cryptic name for soldiers and priests. We find this also in the Church tradition. In this symbolism there can hardly be a more fitting location for the birth place of the Shepherd King than Ovče Pole (Sheep Field). Wasn't Alexander also presented as a ram, leader of the sheep? Are not the bishops referred to as Shepherds even today?

As for the practical reasons for this confusion, the most sacred place must be the most secret place, because complete secrecy is the best protection for sacredness. The most sacred location must be deep in the most loyal territory where acceptance of the locals is complete. This place must be a home of the uncorrupted, a rural area, where men are enduring, honorable and virile, and women are hard working, submissive and willing to self sacrifice. It goes without saying that such an area must not have any large urban center, because urban life brings idleness and leisure which both have a corrupting effect on the human soul.



Figure 5. Aerial photograph of Bylazora line of trees on the left marking the former riverbed. Depression on the right marking the former marshland (photo: survey SBRG)

That we may well be on to something, we see in the landscape around Gradište (meaning city) near Knežje (meaning principality) where Bylazora is situated, which roughly corresponds to the Livy's descriptions of Pella even today, particularly in its South-West orientation. In the past there were lakes and rivers in the area that had somehow disappeared underground.^[20] From the aerial photographs of Bylazora we can see an empty bed of a river that had disappeared in the not so distant past: in the empty bed there are still active sources of water.

E. Hermeneutical connections

In this section we will present the 'spiritual meanings' and symbolisms that go beyond the 'literal meanings' of the traditions, which will hopefully show linkages with our thesis.

The name of the neighboring village is Crnilište. Crno in Macedonian means black. Black color is in turn closely connected with burial rites: we find the same symbolism on other locations. For example, the road leading to the Skopje cemetery is called Crni pat meaning black way. The black-white dualism of Bylazora and Crnilište fits the pattern of ancient Persian dualistic temples. In this concept there are two important buildings: the so-called Mazdoran (Persian: throne of the philosopher king, which could be Bylazora) and Kara-Dagh (Persian: black hill, which could be the mound in Crnilište) i.e. the throne of the prince of darkness, the great snake, dragon. This prince of darkness is also called Deva or Diva and, according to the old traditions, is an anti-God to the God of light, an independent creator of the visible world.^[25] There is a magical song called "Tumba, tumba divina" (in Macedonian: "Tomb, tomb of God") frequently sang in Ovče Pole, which coincides with this tradition.

The greater area is called Kanda, a name that is often connected to Alexander who is also called Iskandar (Is-Kandar). In today's Afghanistan Alexander founded a city named after him: Kandahar.

The root of the name Macedonia is unknown, but it could be magical and likely sharing the same root: mag kanda meaning great light. The word mag in Sanskrit means great or giant; it appears in magi, which is the word we use for the

ancient Chaldean magicians. In the Greek language we have makednos meaning long or tall. Khanduh is a bowl from which a scented smoke, incense is uplifted. Therefore mag kanduh could be an allegory of the uterus filled with holy spirit. Thus this is the allegory of the holy grail or sveti gral or kral meaning in Macedonian holy king.

Kanda is also root of the English word candle. Sanskrit verb kand means to glow or to shine, while the word kandra means glowing, shining or moon. Kantah means favorite, nurtured, while kanah is the smallest particle, the smallest connection with being, atom, seed. Khan is king: it literally means holy, exalted, master, spirit, essence. The word khanduhor kanda accordingly has the symbolic meaning of illuminated spirit, holy spirit or holy light. Kandaon is the old Macedonian name for Orion literally meaning illuminated, enlightened.

Is-kandar through this symbolic etymology could mean the light of Isis, or light/spirit from Is(is), incarnated God, which is completely in line with the above language symbolism and the belief system of the ancient snake cult to which belonged the Pythian priestess and princess Myrta who would become Olympia, the crowned queen and the mother of Alexander. Why snake cult? Pythians were personified snakes, pythons, and personifications of goddess Cybele who spoke in a hissy snaky manner. Hence the term assibilation which describes a sound change resembling the sound of a snake. She was the incarnation of Persephone – Isis, the High Priestess, as depicted in the Second Major Arcana of the Tarot. Isis is the mother of Horus, which was Christianized in the motif of Mary nurturing her son Jesus. Isus Krist – Jesus Christ has the same symbolic meaning light of Isis.

This symbolic etymology seems to be omnipresent. Old Norse kynda means to set a fire or to fire a light. In Middle English we have the verb kindle meaning to give birth and noun kindel meaning offspring of an animal, young one, also related to kin, king and child (kind – kinder in German).

Kanda in old Macedonian language means main gate or portal, which is probably a reference to star gate, Sun gate or God's gate. Incidentally, Babylon has them same meaning from bab meaning gate and ilani meaning gods. Latin word candidatus meaning candidate originally meant white robed. Light is candle, kandilo in the Slavic languages, also a bowl for incense. It is again the holy lamp, holy light or Holy Ghost. Therefore name Kanda symbolically marks the star gate, eternal light and the demiurge magician which descended and then again ascended to the sky. It is the symbolic house of light, Bet-el, which never goes out. The eternal light we can connect to Cassiopeia and Pole Star, since they never disappear from the sky by going "underground".

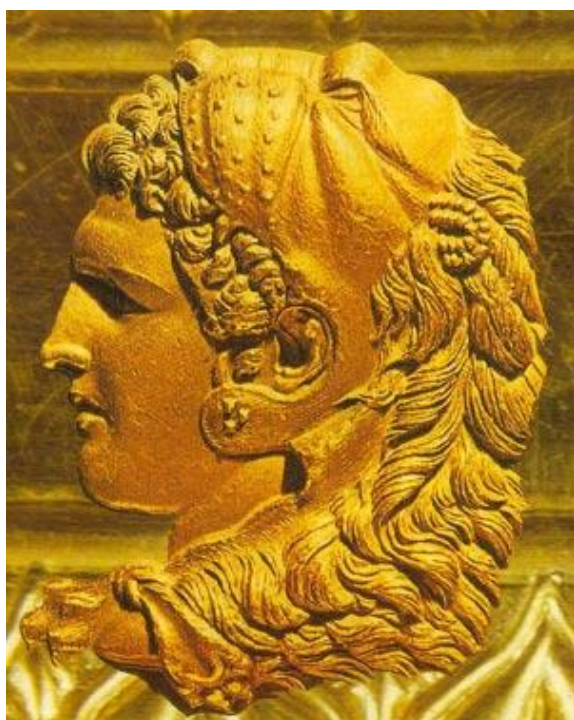


Figure 6. Alexander's face emerging from lion's head: allegory of the birth of Sun King at the cusp (mouth, head) of Leo

In the sky above Kanda precisely on 21/22 of July at sunrise the great luminous giant or magus Orion/Kandaon has already ascended to the sky. This symbolizes the birth of the king, the birth of the sun, the light. The symbolic story contains the following message: the Sun King has come back from the realm of the dead in the underworld and ascended to daylight.

"Lift up your heads, O ye gates; and be ye lift up, ye everlasting doors; and the King of Glory shall come in."
(Psalm 24 (The Lord' Ceremonial Entrance to the Sanctuary))

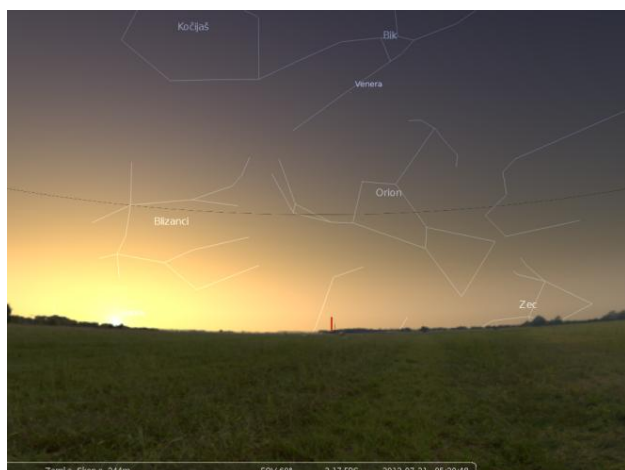


Figure 7. Orion – Kandaon as it ascends to the sky minutes before sunrise on the birthday of Alexander the Great

We hereby have the perfect mirror of sky on Earth, and the perfect mirroring of the essence in symbolism. In the traditions we also have magical bird obsessed with mirrors: it is magpie, the bearer of news, often bad ones. But traditions also tell us

that magpies create a bridge on the Milky Way when the Celestial Weaver (Cassiopeia – often presented as woman weaving hairs) marries the cow-herder, which is symbolic reference to Orion, because he follows the constellation of Taurus.^[8]

We herewith in these particular days have a mirror, celestial weaver, cow-herder, the way of the soul and the rebirth of the Sun: all elements of the perfect astrotheological allegory are here.

F. Astrotheological archetype

At this point we need to reconcile our geoglyph with the astrotheological archetype created by on the sky on the cusp of Leo, the birthday of Alexander the Great, 21/22 of July. It is at this very sunrise that we have a picture that exactly responds to our Geoglyph by which a perfect harmony of Sky and Earth is being formed. Thus we obtain the pictogram which appears as the unknown symbol in the Linear B that is being revealed as the god SE, the firstborn son of the Great Mother in Macedonian transcription.(Tentov and Boševski 2005) The similarity is breathtaking and we would probably dismiss it as coincidence if we had not known what we already know. Cassiopeia makes a full circle around the Pole Star every day. However, its vertical alignment with the Pole Star coincides with the sunrise precisely on the day believed to be the birthday of Alexander the Great, which happens to be at the cusp of Leo. According to the Dionysian mysteries, virgin with loose hair that she weaves in a tail, the hair weaver, Kosopleja (hair weaver in Serbo-Croatian and Macedonian), The Queen of Heaven, gives birth to the mother of the great King, Andromeda (meaning ruler of men) who in turn gives birth to Perses, the King of Persians and the King of Kings, who is also the Babylonian Emperor and the grand master of the magi. Let us note again that we have the same story in embedded in the life of Alexander who becomes the Babylonian Emperor and the King of Kings.

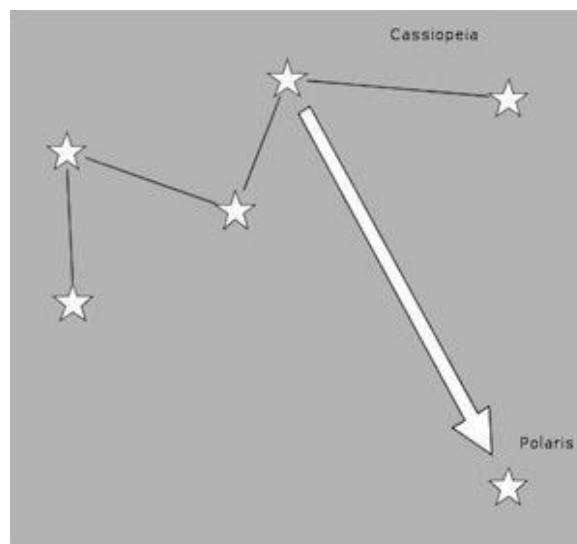


Figure 8. Cassiopeia and Pole Star

Let us now see the diagram of the apparent changes in the position of Cassiopeia which in different seasons of the year has a different position in relation with the Pole Star



Figure 9. Seasonal change of the position of Cassiopeia at sunset

According to the magical chronologies that we call histories, Alexander the Great died on 11 June 323 BC, while he was born on 21/22 July 356. The forty calendar days between his death and birth are significant because Dionysus also spend 40 days in this father thigh after the death of his mother Semele (Semla or Zemlja in Slavic, meaning Earth). The day chosen to be presented as the birthday of Alexander is on the cusp of the astrological rule of Leo and represents the Main Gate also known as the Lion Gate, often present in magical buildings, but also are the gates, the mouth of vagina, vaginal lips, Labia Majora (labia being similar to Slavic word Lavja meaning of lion), when Cassiopeia stands vertically above the Geoglyph at the right angle. As the right angle is the regular, ruling, royal, angle and this symbol could represent not only the date but also the place of birth. In the Gregorian calendar's feast of St. Eliah falls on the 20th of July. The Macedonian Orthodox Church uses the Julian calendar, but the feast of Saint Eliah – Helios, Ilios – Ilija, remains the main Macedonian feast. Sun in the full strength, symbolism of Leo, is also represented on the Macedonian standard. 21st of July is the feast of prophet Daniel in whose cryptic prophecy Alexander the Great is said to appear as a ram. (Book of Daniel, Chapter 8) The Ram King or Aries King, is also represented on the 4th Major Arcana of Tarot called The Emperor, in Macedonian carot, pronounced as tsarot, which could well be the root word for Tarot.

The sacred symbolism may best be expressed in the following allegory. God is revealed in the living logos – the law in the form of the perfect man. Therefore, God himself incarnated in the man brings the light of the logos – the law on Earth and by this he is the living God's law and the authentic lawgiver.



Figure 10. Unofficial (and most popular) Macedonian emblem with the crowned golden lion on the red blooded background: the incarnated God (light)

And here is celestial situation on Alexander's birthday mirroring the Geoglyph on the ritual mound, for which we for these precise reasons believe it could be a tomb either of his or someone from his dynasty. We can observe the mathematical, astronomical, geometrical application to the building of the sacred mound called the Geoglyph. This is the essence of the Dionysian Architecture and in which original theology – astrotheology is applied to the construction of metaphysical cosmic structures.

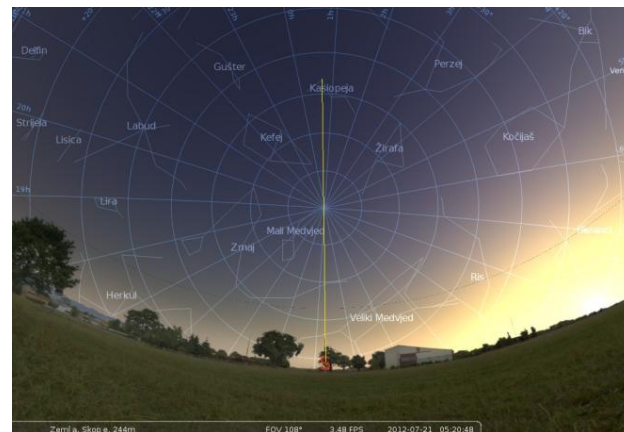


Figure 11. Cassiopeia positioned vertically above Kanda at sunrise July 21st

The vertical axis leading from Kanda to the Center of sky and its Zenith reminds us of Jacob's ladder. If we read those verses from the Book of Genesis as an allegory of the life of the great patriarch Alexander, we can find symbolic pointers to his life and his burial place:

„And he dreamed, and behold a ladder set up on the earth, and the top of it reached to heaven: and behold the angels of God ascending and descending on it. And Behold the LORD stood above it, and said, I am the LORD God of Abraham thy father, and the God of Isaac: the land whereon thou liest, to thee I will give it, and to thy seed. And thy seed shall be as the

dust on earth, and thou shalt spread abroad to the west and to the east, and to the north, and to the south: and in thee and in they seed shall all the families of the earth be blessed. And, behold, I am with thee, and will keep thee in all place whither thou goest and will bring thee again into this land; for which I will not leave thee, until I have done that which I have spoken thee of.

And Jacob awakened out of his sleep, and he said, Surely the LORD is in this place; and I knew it not. And he was afraid, and said, How dreadful is this place! This is none other but the house of God, and this is the gate of heaven. And Jacob rose up early in the morning, and took the stone that he had put for his pillows, and set it up for a pillar, and poured oil upon the top of it. And he called the name of that place Beth-el; but the name of that city was called Luz at the first. And Jacob vowed a vow, saying: „If God will be with me, and will keep me in this way that I go, and will give bread to eat, and raiment to put on, so that I come again to my father's house in peace; then shall the LORD be my God: and this stone which I have set for a pillar, shall be God's house; and all that thou shalt give me I will surely give tenth unto thee.

Then Jacob went on his journeys, and came into the land of the people of the east. And he looked, and behold a well in the fields, and loo there were three flocks of sheep lying by it... “Book of Genesis 29

All the above listed indications point to the possibility that this ritual mound is a sacred site, the fulcrum of the Axis Mundi which arises from the light on earth (kanda) to the chest of Cassiopeia, symbolized in the star Schedir (Shador, Šator), from the Arabic *Al Sadr* meaning breast, and Hebrew *Schedir* meaning *freed*, Slavic *šator* meaning tent. Sacred tent, called Tabernacle, contains the Ark of Covenant. ^[8]

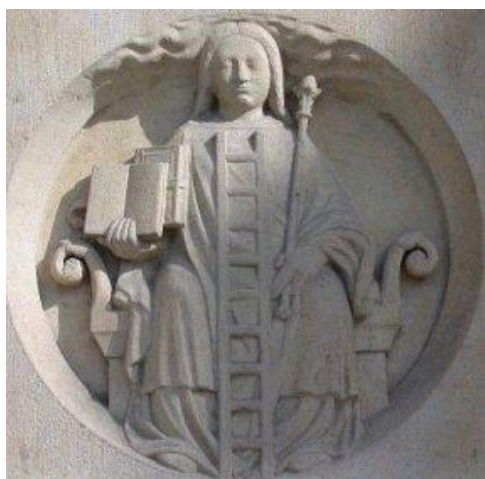


Figure 12. Symbolic picture of Cassiopeia, Queen of Heaven, with ladder leading to the star Schedir (Shador, Šator). Allegory from Notre Dame, Paris.

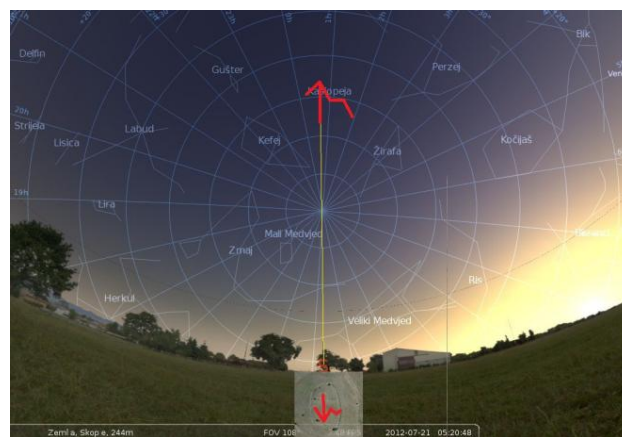


Figure 13. Celestial-earthly mirror: As above so below. Geoglyph shaped like cosmic egg reflecting the celestial picture and the sunrise of White Dawn of Leo. The moment and symbolism coincides with the birthday of Alexander the Great.

Truly, when one observes Kanda, a place where earth mirrors heaven at the cusp of Leo when the Sun shines in its full power, he can recall the verses of the Epistle of St. Paul to the Colossians:

„Who hath delivered us from the power of darkness., and hath translated us into the kingdom of his dear Son: (...) who is the image of the invisible God, the firstborn of every creature. “

Collosians 1

III. MATERIALS, METHODS AND RESULTS OF THE RESEARCH IN THE SITE

This ancient site was analyzed in a number of ways during our research. This included an aerial survey using different cameras as well as an archaeoacoustic analysis using various devices on the ground following the SBSA standard archaeoacoustics protocol^[3,5]. Parts of the research are still being analyzed and will be published in a sequel to this article.

A. Aerial survey

The aerial analysis was made principally using an infrared camera (modified Canon) using well known archaeological methods. One of the attributes of infrared photography is the penetration of atmospheric haze, caused by reduced *Rayleigh scattering* (elastic scattering of light or other electromagnetic radiation from particles smaller than the wavelength of light) and *Mie scattering* (where the size of the scattered particles is comparable to the wavelength of visible light). Another propriety is the “*Wood Effect*” resulting from the transparency of chlorophyll at wavelengths over 500nm allowing light to be reflected within the plant cells. Normally the effect is invisible because so much green light is reflected by the foliage but it is possible to see the effect, albeit dimly, with the naked eye by looking through a 720nm filter (or similar) on a sunny day and allowing the eyes to adjust to the low light.

We used an infrared-passing filter of 900nm which had the effect of deleting the color of the foliage and vegetation from the photographs thereby highlighting the different characteristics of the soil in black-and-white images. We also used a program (present on the Olympus E-5 professional camera) to increase the contrast of the image to make evident the aspect of Geoglyph.



Figure 14. Aerial survey using an infrared camera: the vegetation is deleted by the photograph making more evident the different aspects of soil (photo: survey SBRG)



Figure 16. It is particularly evident the different transparency of the soil of the hill. It is possible to assume taken from another site (photo: survey SBRG)



Figure 15. The resident program on Olympus E-5 professional camera make more evident the shape of geoglyph

We came up with the following results. The infrared camera shows the different composition of the Geoglyph soil compared to the surrounding soil. This difference is particularly evident when comparing the uncultivated field to the left on South side of the Geoglyph. In this area, the same vegetation covers the soil, yet two different colours are visible due to the different composition of the soil refracted by the sun light in different ways.

This supports the hypothesis that the Geoglyph was built as a ritual mound, either by reshaping an existing hill or from a flat field.

B. Audio-magneto-telluric analysis

One of the methods used in this research was “audio-magnetotelluric” (AMT), an electromagnetic sounding method that measures variations in the earth's surface electromagnetic fields at different frequencies. Sources of AMT signals may be either artificial or natural. The AMT method samples the electric and magnetic fields in the audio-frequency range, from 1 Hz to 27 kHz and has been successfully tested in practice [26].

Solar energy and lightning cause natural variations in the earth's magnetic field, inducing electric currents (known as telluric currents) under the Earth's surface. Earth currents arise from both natural and man-made sources, including the magma in the earth's core and the normal distribution and use of electricity. Combined, these phenomena create strong AMT source signals over the ULF/LF frequency spectrum. The multidirectional AMT sounding, performed on different locations can clearly indicate a different ratio of the electric to magnetic field along with the phase shifting caused by the different speeds of propagation, that indicate different levels of conductivity in subsurface areas. Different rocks, sediments, ground fluids and geological structures have a wide range of electrical and magnetic properties. Measuring the resultant fields, along with analysis of their ratio allows different materials and structures to be distinguished from one another. In addition, electric and magnetic component phase shifting data allows us to assume a geometry of the detected phenomenon that can improve knowledge of tectonic processes and geologic structures.

The equipment utilized in this investigation is designed for use with natural sources, capturing the frequency range of electric and magnetic fields produced by the action of telluric currents. The following equipment was used: Teslameter TM 40 [H_{50Hz} , nT], a Trifield meter, 100XE [H, mG; E, V/m], a Digital multimeter Mastech MS8229 [T, °C; Hum, %; Noi, dBrel], a VF-Broadband amplifier, a Digital storage oscilloscope with FFT, 3202A, 200 MHz, 1GSa/sec.

At Kanda 42 measurements were carried out at 6 different locations; at the top and bottom of the Geoglyph, additionally 8 measurements were taken on the parking lot of Hotel “Izgrej”, Štip –as a control reference point and “basic spectral line” for this area of research.

At each location the following values were measured:

- Alternating electric field [V/m]
- Alternating magnetic field – 50 Hz filtered [nT]
- Noise level [dBrel]
- Humidity [%]
- Ambient temperature [°C]
- Electric field spectrum [Sensor: rod antenna, 12.5 kHz/div, sampling 500 Sa/sec – 1.25 kHz/div, sampling 50 Sa/sec]
- Magnetic field spectrum [Sensor: open coil antenna; 12.5 kHz/div, sampling 500 Sa/sec – 1.25 kHz/div, sampling 50 Sa/sec]

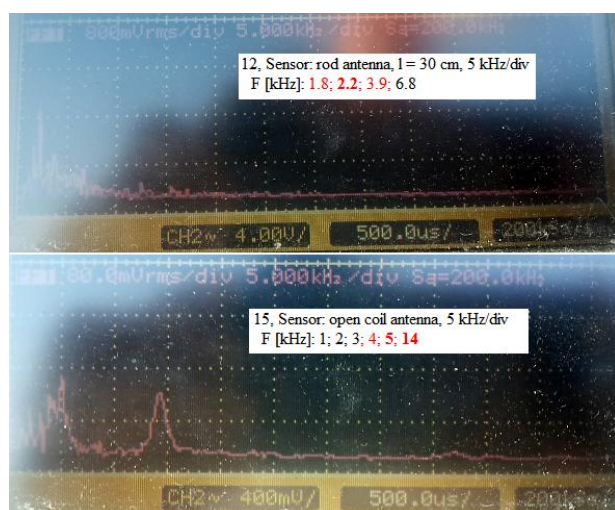


Figure 17. Images of measurements indicating a water flow and a cavity below the geoglyph (photo: survey SBRG)

On Samples 12 and 15 made on position 4, at “N.E. maximum energy out” point on 20 July 2014 at 17:40 hrs (figure 17) we can observe a significant non-correlation in the area of 1 to 14 kHz. The significant „E“ and „H“ frequency spectrum content difference is a sign of the lack of coherence between the Electric and Magnetic components of the field, which clearly indicates the presence of a longitudinal waves, i.e. subtle-energy flows on the site.



Figure 18. Signals in the range from 2 to 16 kHz with shape that are extremely peculiar and are correlated with the presence of water flows (photo: survey SBRG)

On the measurement recording 35, created with “magnetic probe”, at position 5: bottom of the “Geoglyph”, at “US phenomena” point, made on 21 July 2014 at 21.00 hrs, we can

clearly observe the presence of signals in the range from 2 to 16 kHz with a shape that is extremely peculiar and consistent with the presence of underground water flows.

Detection of significant non-correlation in the registered magnetic and electric fields frequency spectrums combined with EM phenomena that are produced by underground waters characterize sacred structures built by the ancients on sacred sites.

Herewith we present a brief description of our measuring efforts:

1. Position 1, near electric post, 20. July 2014 at 08:30 hrs, 4 samples,
2. Position 2 and 3, peaks resembling “Double W”, 20 July 2014 at 09:20 hrs, 6 samples:
3. Position 4, at “N.E. maximum energy out” point, 20 July 2014 at 17:40 hrs, 5 samples,
4. Position 1, 3 and 4, 21 July 2014 at 05:20 hrs, 15 samples: 15,
5. Position 5: bottom of the “Geoglyph”, at “US phenomena” point, 21 July 2014 at 21.00 hrs, 6 samples,
6. Position 6, top of “Geoglyph”, at “Gate” point, 21 July 2014 at 21:30 hrs, 6 samples.
7. Hotel “Izgrev” parking lot in the Štip town, 21 July 2014 at 08:40 hrs, 6 samples.



Figure 19. Measuring locations on the geoglyph: 1) NE side of dismissed electric pillar, 2) the lower peak of “W-arrow”, 3) the upper peak of “W-arrow”, 4) maximum energy out point, 5) ultrasound phenomena point, 6) “Entrance” point according to local hypothesis (photo: survey SBRG)

C. “Low-tech” study

Before setting off on a conventional scientific research of mechanical waves, we also explored the possibility of understanding the presence of natural phenomena without the use of technology, as people might have experienced it thousands of years ago. Our ‘low tech’ method of detection was carried out using copper dowsing rods. We know dowsing was used as early as Neolithic times, for example the Tassili caves in North Africa discovered in 1949 have ancient wall paintings depicting dowsing tools dated to 6,000 BC. Cleopatra is reputed to have employed dowsers to find gold and their images are depicted on ancient Egyptian bas-reliefs.^[30] During

the Roman period a particular kind of priest, the *àruspici*, were trained to find natural features in the landscape that could enhance both their fortifications and religious temples.^[31]

The research of natural phenomena using dowsing rods found underground water in the form of a 'blind spring' (Fig. 22 'W'). A blind spring is created when primary water travels in a vertical direction towards the Earth's surface, but without breaching it. Eleven water veins emanating from the spring were also detected: these take water away from the spring at the top of the geoglyph into the valley below.

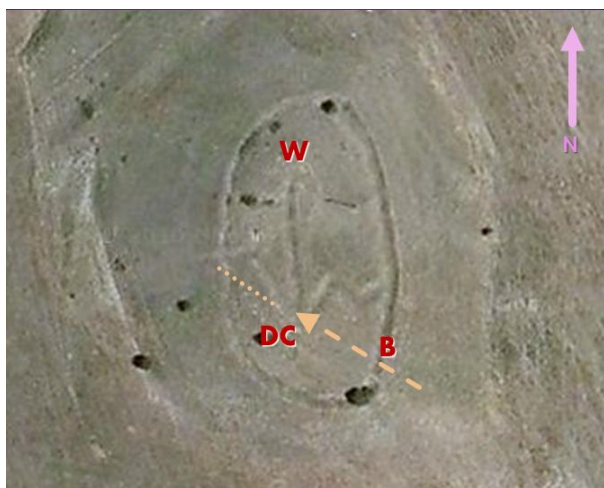


Figure 20. Natural Phenomena discovered using 'low tech' dowsing methods (image of geoglyph from GoogleEarth)

D. Study of mechanical vibrations

Microphones were positioned at 17 places both inside and outside the "Geoglyph". As archaeological sites can be influenced by electro-magnetic pollution, it is important to use sophisticated devices to avoid their effect on the results. The use of gain control in recording devices is delicate: in quiet places, maximum gain for recording is used, while in noisier places gain is set to 0.775V/0dB (AES/EBU standard). We used dynamic high-end recorders extended in the ultrasound field with a maximum sampling rate of 192KHz (Tascam DR-680) or 96KHz (Tascam DR-100 and Zoom H4N equipment). The microphones have a wide dynamic range and a flat response at different frequencies (Sennheiser MKH 3020, frequency response of 10Hz - 50.000Hz) with shielded cables (Mogami Gold Edition XLR) and gold-plated connectors.

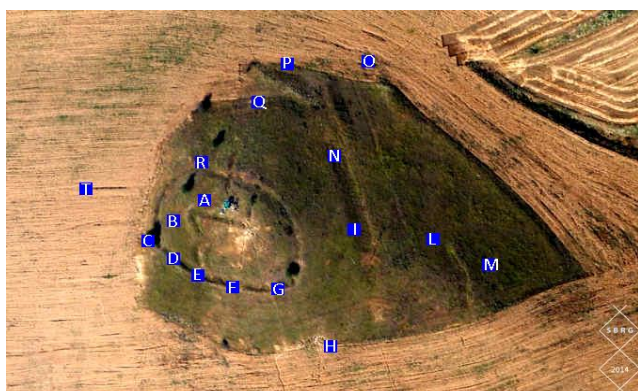


Figure 21. The 17 positions of sensitive microphones placed in and around the geoglyph (photo: survey SBRG)

We also used a Pettersson D1000x ultrasound detector with a 500Hz-305kHz audio recording range. Pro Tools ver. 9.06 software for Mac, Praat program version 4.2.1 from the University of Amsterdam and Audacity open-source program version 2.0.2, both for Windows PC, were used to analyze the recorded tracks.

Before recording, we used a spectrum analyzer (Spectran NF-3010 from the German maker Aaronia AG) to search for any electromagnetic phenomena present in the environment so that we could exclude any external influences on the results.

Our research of mechanical vibrations gave very interesting results. Throughout the circumference of the geoglyph, a strong subsonic vibration of approximately 16Hz is present, with a peak range between 15Hz and 17Hz. The infrasound is constant with some slight variations of volume depending on the time of day and the night, with the later being just a little stronger.

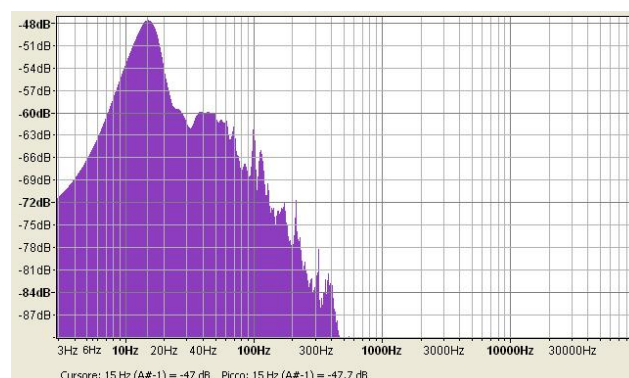


Figure 22. The aspect of infrasound recorded during the night (positions A and B in Fig. 16) on the hill inside the geoglyph (the other peaks at higher frequencies are normal environment noise).

The most plausible explanation for this sound is that it emanates from the movement of underground water, as we have established at other sites in Europe^[3]. This hypothesis is supported by the findings of recognizable superficial water noise at a number of other points inside the "Geoglyph", as well as outside to the west and north sides of the hill.

This infrasound is also present around the hill but at a lower volume and with a different character. At the North of the hill we found a similar infrasound around 12 - 14Hz (positions I, L, M in Fig. 16) and at the West of the hill we found an infrasound at 14 -16Hz (positions O, P, Q in Fig. 16). The difference between frequency and volume is most likely a result of the different direction of the underground stream.

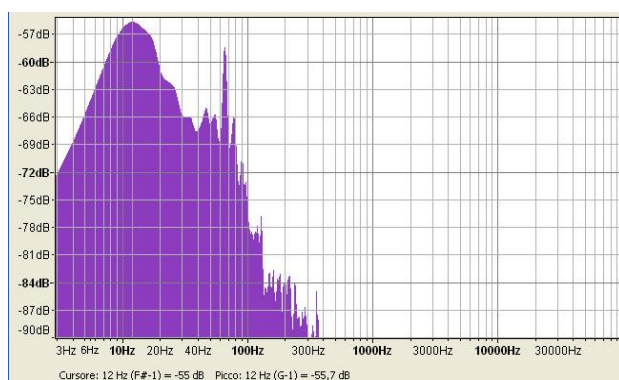


Figure 23. Graph of infrasound frequencies north of the hill. The infrasound peaks on 12Hz

We transposed the infrasound to an audible scale using computer software. The result is a “pulsing” sound. We did not identify any particular frequencies in the ultrasound or audible bands of the same volume. All in all, this means that the Geoglyph in Kanda exhibits archaeoacoustic anomalies comparable to other important ancient sacred sites. It is worth noting, this type of infrasound is capable of affecting human brain activity in a non harmful way. The infrasound present is a multiple of 8Hz which is the normal (or natural) frequency of vibration of this planet.^[34]



Figure 24. The portable digital recorder Tascam DR-680 during investigation placed on the ground, with the microphones inserted into the ground (photo: survey SBRG)

IV. DISCUSSION

What exactly is the Geoglyph? According to the analysis of local archeologist Goran Dinev, the Geoglyph is an artificial structure. Its soil is geologically different from the neighboring farmland, while it appears to be consistent with soil from Bylazora.^[32] The aerial photographs (Fig 14 & 16) appear to show this distinction. If this is an artificial mound, would it not therefore be more appropriate to call it a barrow mound, ritual mound or tumulus? In England, barrows are mounds of earth that are characteristic monuments of the prehistoric periods from about 5,800 until 3,400 years ago (3800- 1400BC), there construction however also occurred up until about 1,200 years ago (800AD). Human burials have been found at some barrow mounds and consequently they were often considered to be the burial places of prominent people.^[33] In the Balkans there have been consistent burial rites associated with mounds dating from prehistoric times to well into the 20th century.^[25] With the soil

on top of the mound being the same soil from Bylazora, a place in which the sun king was born, one possible explanation is that this could be connected to a burial rite.

Electromagnetic spectrum values obtained at the site of the Geoglyph indicate a high probability of there being an underground water stream. This is supported by infrasound and audio-magnetotelluric (AMT) recordings as well as dowsing. Magnetic fields in the frequency range of 1Hz to approximately 100 kHz which we measured include the audio-magnetotelluric (AMT) range. This large frequency band allows for a range of depths to be penetrated from several meters to several kilometers below the Earth's surface.

J.C. Maxwell's equations can interpret classical, so-called “Hertzian” electromagnetic waves in a vacuum which are transverse. However, in some cases Maxwell's equations can also describe the appearance of longitudinal waves.^[28] According to the latest researches, the longitudinal modes of a resonant cavity are the particular standing wave patterns formed by waves confined in a cavity.^[28]

As J.C. Maxwell showed in his equations, electric and magnetic fields are the cause and effect of each other and, in special relativity, are two interrelated aspects of a single object – moving electric charges- called the electromagnetic tensor.^[29] The split of this tensor into electric and magnetic fields depends on the relative velocity of the observer and charge.

Our measuring methods are stationary, which allows for incoherent magnetic and electric frequency spectra to be detected – which makes it more likely longitudinal electrodynamic vibrations are found as opposed to classical Hertzian waves. This means that any significant non-correlation in the registered magnetic and electric fields frequency spectrums indicates the presence of other EM phenomena, such as energetic flows characteristic of sacred structures built by the ancients.

The latest research theories that such structures were built with a special purpose to serve as “resonators” or subtle-energy concentrators that modulate and harmonize energy flows created by the action of telluric currents, usually combined with phenomena produced by underground water flows.^[28] Further electromagnetic spectrum values obtained through AMT indicate the possibility of an underground cavity (or several smaller cavities). Our measurements do not allow high-precision results, but further and detailed analysis of the measured values could provide a better indication of the shape of that object

The roughly oval shape ditch has two bridges that lead onto the top of the mound, these ditches are also known as causeways. Archaeologists consider these causeways to be simple bridges, however researches^[35] have shown they have another function; if ditches are dug deep enough, they can stop the flow of telluric currents that travel just below the surface of the earth. In an attempt to find the flow of least resistance, the only way the current can pass is over the causeway, which has the effect of concentrating it. Our hypothesis is that both the causeways and ditches were constructed with the aim of concentrating this telluric current to reach a specific place on top of the mound (Fig. 20 ‘DC’). This hypothesis can be tested using ground electrodes and a multimeter in the future. In a sequel to this article we intend to publish a 3D interpretation of

the electromagnetic radiation from the Geoglyph as well as further analysis of our recordings.

V. CONCLUSIONS

At the end of this research on the Geoglyph in Kanda we can suggest some important conclusions.

First the Geoglyph is almost certainly an artificial hill. Second, the hypothesis of an underground chamber seems to be confirmed by several measurements of different methods.

Third, researches using different methods show that at every sacred site, primary water is found at its centre or at some point along its central axis. Water was detected on the Geoglyph by infrasound research, AMT measurements and dowsing. AMT measurements appear to confirm the hypothesis that the point 'DC' (see Fig. 20) is the principal receptor for telluric current. We expect the purpose of this sacred structure to be revealed in further investigations.



Figure 25. The team of research in Kanda in July 2014 (photo: survey SBRG)

ACKNOWLEDGMENT

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