Scientific research, September 2014, mission: Archeological park Visoko, BiH

1. Method:

Method applied in this research was “The magnetotelluric” (MT). This is an electromagnetic method that measures variations in the earth's surface electromagnetic fields at different frequencies.

MT method samples the electric and magnetic fields in the audio-frequency range, about 1 Hz to 27 kHz. This method is discussed in detail by Strangway and others [1]. Sources of the AMT signals may be either artificial or natural. Equipment utilized in this investigation is designed for use with natural sources.

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 MT source signals over the ULF/LF frequency spectrum. The multidirectional MT sounding, performed on different locations can clearly indicate a different ratio of the electric to magnetic field and theirs phase shifting caused by the different speeds of propagation, pointing in that way to different subsurface areas conductivity, i.e. its anisotropy and in fact its structure. Different rocks, sediments, ground fluids and geological structures have a wide range of different electrical and magnetic parameters. Measuring of the resultant fields, and analyzing of theirs 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 what can improve knowledge of tectonic processes and geologic structures.

Magnetic fields in the frequency range of 1 Hz to approximately 100 kHz, in which we performed our measurements, include the audio-magnetotelluric (AMT) range. These are parallel to the Earth surface and move towards the Earth's centre. This large frequency band allows for a range of depth penetration from several meters to several kilometers below the Earth's surface.

Processed AMT data is modeled using various techniques to create a subsurface map, with lower frequencies generally corresponding to greater depth below ground. Anomalies such as faults, hydrocarbons, and conductive mineralization appear as areas of higher or lower resistivity from surrounding structures.

2. Theoretical considerations

J.C. Maxwell's equations lead to the prediction of “Hertzian” electromagnetic waves in a vacuum, which are transverse (in that the electric fields and magnetic fields vary perpendicularly to the direction of propagation). However, what is most important from the aspect of our researches, Maxwell's equations do lead to the appearance of longitudinal waves /2/ also, but - under some circumstances: in plasmas, in a Dirac polarized vacuum, in confined spaces (resonant cavities) etc.

According to the latest researches by Haifeng Wang et al. /3/ the longitudinal modes of a resonant cavity are the particular standing wave patterns formed by waves confined in a cavity. The longitudinal modes correspond to those wavelengths of the wave which are reinforced by constructive interference after many reflections from the cavity's reflecting surfaces. Recently, Haifeng Wang et al. proposed a method that can generate a longitudinal electromagnetic wave in free space, and this wave can propagate without divergence for a few wavelengths. In my opinion, exactly this type of energy vibration was used by Nikola Tesla who called them Non-Hertzian waves and which I named Tesla’s waves /4/

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 /5/ - called the electromagnetic tensor. The split of this tensor into electric and magnetic fields depends on the relative velocity of the observer and charge.

Bearing in mind the specified scientific opinions, the fact – that in the measurement methodology that we use measuring probe is stationary, allows us to assume that - in case of detection of incoherent magnetic and electric spectra – we more likely deal with longitudinal electrodynamic vibrations, ie with Tesla waves, than with the classical Hertzian waves.

Briefly - **detection of significant non-correlation in the registered magnetic and electric fields frequency spectrums - indicates the presence of EM phenomena – that is – of energetic flows that can be related to Tesla's Non-Hertzian waves.**

3. Measuring:

Scientific research was performed during the conference “Hidden History” 2014, from 31.08 to 06.09. 2014 in the Archeological park Pyramid of the Sun”, in Visoko. In this mission 38 measurements were carried out on 4 locations: k2 and k5 megalith in the Underground labyrinth Ravne, at the top of the Pyramid

of the Sun, and additionally - on plateau in front of the entrance to the “Ravne” tunnels - as a control reference point and “basic spectral line” for the area of interest in this research.

At each location following values were measured:

- Alternating electric field [V/m]
- Alternating magnetic field – 50 Hz filtered [nT]
- Noise level [dBrel]
- Humidity [%]
- Ambient temperature [^{o}C]
- Electric field spectrum [Sensor: rod antenna, 12.5 kHz/div, sampling 500 Sa/sec; 5 kHz/div, 200 Sa/sec, 1.25 kHz/div, 50 Sa/sec; 500 Hz, 20 Sa/sec.]
- Magnetic field spectrum [Sensor: open coil antenna; same resolution as for “E”]

4. Measuring points:

1. Underground labyrinth “Ravne”;
2. Top of the Pyramid of the Sun.

5. Measurements:

1. - position 1, Megalith K2 in the Underground labyrinth “Ravne”, 03.09.2014, 11.20 h, number of samples: 8;
2. - position 2, Plateau in front of the entrance to the “Ravne” tunnels**,** 03.09.2014, 11.45 h, number of samples: 8;
3. - position 3, Pyramid of the Sun, top, beam-center, 29.08.2014, 13.30 h, number of samples: 8;
4. - position 4, Megalith K5 in the Underground labyrinth “Ravne, 04.09.2014, 11.30 h, number of samples: 15.

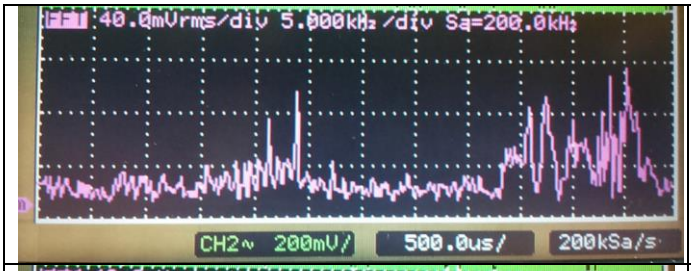
6. Equipment:

1. Teslameter TM 40 [H_{50Hz}, nT]
2. Trifield meter, 100XE [H, mG; E, V/m]
3. Digital multimeter Mastech MS8229 [T, ^{o}C; Hum, %; Noi, dBrel]
4. VF-Broadband amplifier
5. Digital storage oscilloscope with FFT, 3202A, 200 MHz, 1GSa/sec

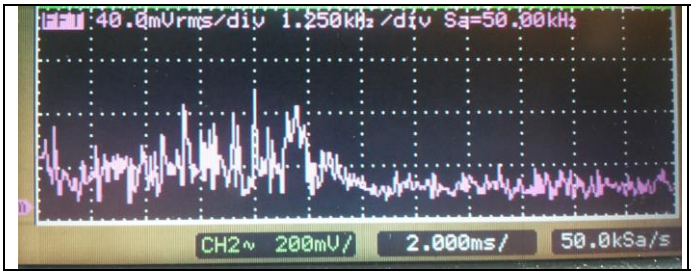
7. Data Analysis

Research results of electromagnetic phenomena investigations in the “Archaeological park Pyramid of the Sun” in Visoko, done in April 2011 are exposed in /6/. The mean value of measured frequencies on different locations was about 28 – 30 kHz. By methodology applied on that occasion, it was possible to measure only the frequency of the strongest harmonic. MT method, used in this research, allows the measurement of a wider frequency range of registered signals and analysis of their electric and magnetic components, as well as theirs comparison and mutual correlation.

1. Analysis of the measurements performed at the position 2, Plateau in front of the entrance to the “Ravne” tunnels, showed a strong correlation between magnetic and electric spectrums, what is normal event, and can be illustrated with samples 11 and 14 from measurements data /7/.

	11	Plateu Ravne Sensor: rod antenna, l = 30 cm, 5 kHz/div; 200 mV/d 21, 24, 46 - **55** [kHz]
	14	Plateau Ravne Sensor: open coil antenna, 5 kHz/div, 200 mV/d 19, 21, 24, 44 – 57 [kHz]

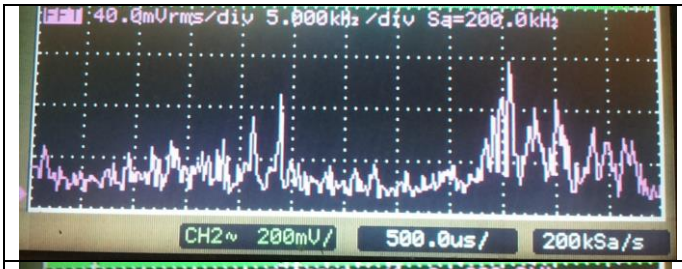
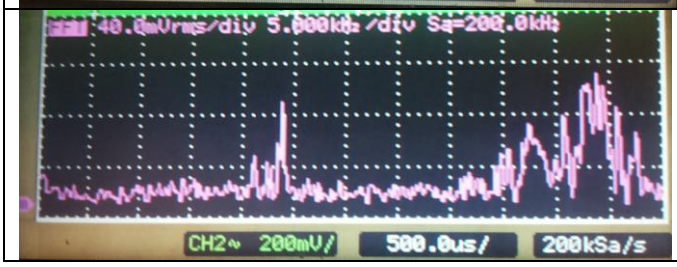
Signal with frequency of 47 kHz originates from measuring equipment and signals in a range 44 – 57 kHz are of origin unknown to me. Rainy weather and high humidity caused that the EM spectrum from 1.2 to 6.8 kHz was slightly emphasized as it can be seen on sample 10.

	10	Plateau Ravne Sensor: rod antenna, l = 30 cm, 1.25 kHz/div; 200 mV/d 1.25- 6.7 [kHz]

2. According to all previous investigations by numerous research teams of different specialties, energy field at the location of the megalith K2 can be considered as a phenomenon. Our measurements have confirmed that also.

Samples 3 and 7 of measurements performed at that location, clearly shows a complete correlation between Electric and Magnetic spectrums in the frequency range of 51 - 56 kHz and only partially coherence of around 65% for the part of the “Electric” and “Magnetic” spectrums from 7.5 to 19 kHz.

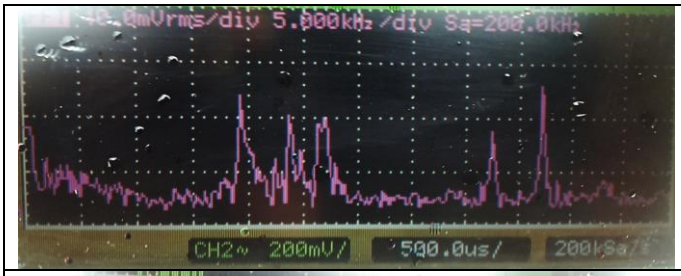
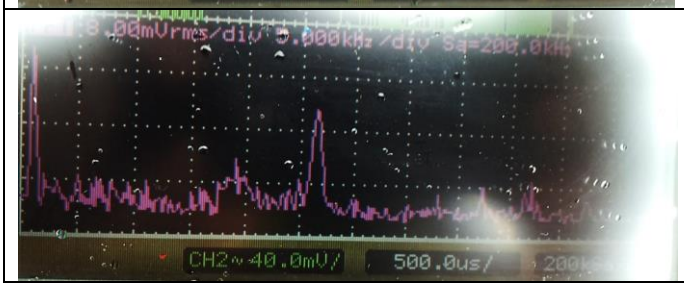
These facts tell us that the signals registered in the range from 51 to 56 kHz belong to the domain of the so-called classical, Hertzian electromagnetic waves, that probably are result of special state service activities. As we have already mentioned, signal 47 kHz comes from our equipment.

	3	Megalith K2 Sensor: rod antenna, l = 30 cm, 5 kHz/div; 200 mV/d 7.5 - 19, 21, 24, 45, 47, 50 kHz
	7	Megalith K2 Sensor: open coil antenna, 5 kHz/div, 200 mV/d 24, 47,5; 51-56 kHz

Small but noticeable difference in the frequency spectrum structure of 7.5 to 19 kHz indicates the presence of longitudinal electrodynamic vibration that could be some kind of EM "shadow" of real subtle-energy flows that are bioenergetic or similar type - by what megalith K2 is alreaady known.

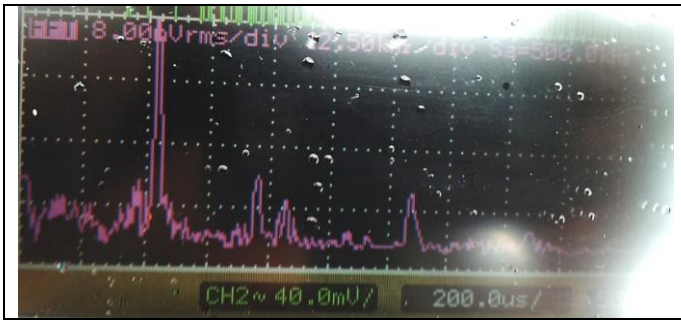
3. Pyramid of the Sun certainly is the most controversial object of Archaeological park in the Visoko. To the specificity of its structure and wave-resonant properties that arise from them, we pointed out in a separate paper /6/ and last measurements mostly support assumptions given in that tekst.

On the samples 18 and 22 we can see a significant non-correlation for the recorded spectrums, and aspecially for the signals in the spectrum of 18 to 28 kHz. Signals of 42.5 and 47 kHz are generated from our equipment. Great „E“ and „H“ frequency spectrum content difference, which is obvious, clearly indicates the presence of a subtle-energy flows on that location, that are correlative with Tesla waves as we explained in the section 2. of this paper.

	18	Pyramid of the Sun Sensor: rod antenna, l = 30 cm, 5 kHz/div; 200 mV/d 19.5, 24, 27, 42.5; **47** kHz
	22	Pyramid of the Sun Sensor: open coil antenna, 5 kHz/div, 40 mV/d 19, 26.5 kHz

On the sample 18 it can be noticed the presence of 19 and 24 kHz signals which were registered on the megalith k2 in Ravne tunnels /sample 3 in previous section/, indicating a some structural „relationship“ and/or energetic „link“ between these objects.

Very interesting result of ours latest measurements is presented on the sample 23:

	23	Pyramid of the Sun Sensor: open coil antenna, 12.5 kHz/div, 40 mV/d **27,5;** 47,5 52 79 kHz

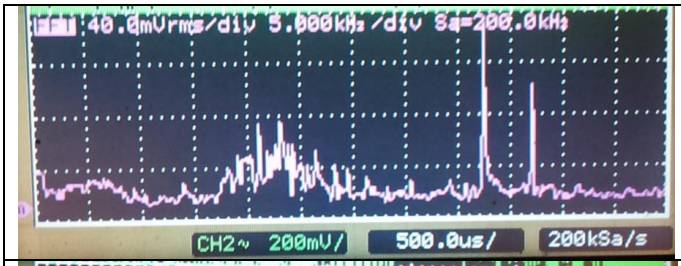
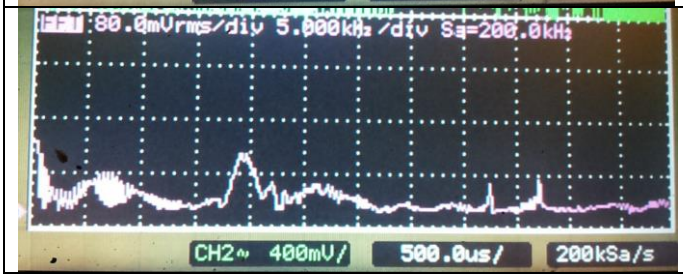
The presence of a 27.5 kHz signal at the top of the Pyramid of the Sun is evident. Its amplitude is not strong but is clearly visible though it is very variable and with unstable amplitude.

The fact that the magnetic component of the signal is much more intense and not strongly coherent with its electrical component - clearly indicates the longitudinal nature of these electrodynamic vibration. In other words, this sample confirms the presence of Tesla waves on the top of the Pyramid of the Sun in Visoko.

4. On measuring position 4, Megalith K5 in the Underground labyrinth “Ravne, we have done a number of measurements and have recorded 15 samples. First set of measurements was done while power supply was switched on and second during the time when electric supply was switched off.

Measurement recordings presented below shows something really interesting what we illustrated with pictures at which the spectrum content difference is maximal. In the sample 25, which show (predominantly) Electric field spectrum we can see that components from area of 2 – 9 kHz are low but slightly emphasized, and frequency domain from 18 to 30 kHz which is more higher than basic level. Peaks

of 42.5 and 47 kHz are generated by measuring equipment. Great spectrums content diversity, shown at samples 25 and 35, is obvious.

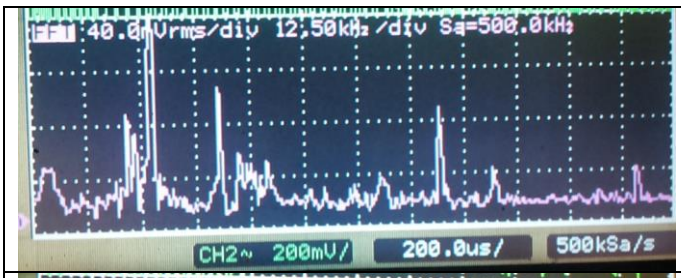
	25	K5, Power on Sensor: rod antenna, l = 30 cm, 5 kHz/div; 200 mV/d 2 – 9, 18 – 30, 42.5, 47 kHz
	35	K5, Power off Sensor: open coil antenna, 5 kHz/div, 400 mV/d 1 – 9, 19.5 42.5, 47 kHz

The measuring sample 25 shows the “Electric” frequency spectrum registered during the time when power supply was switched on, and measuring sample 35 show “Magnetic” frequency spectrum after the power supply is turned off.

As we can see on this recordings of the same frequency bands, taken before and after the disconnection of electricity, registered frequency spectrums of energetic fields are significantly different. On the measurement recording 35, created with “magnetic probe” and after power was switch off – it can be more clearly seen the presence of signals with shape and frequencies that are mainly characteristic for the presence of water flows what is not registered on the sample 25.

This fact points to the subtlety of very feeble signals generated by Nature, which can be significantly attenuated by the presence of very low electromagnetic radiation and can be registered only by specially endowed people or with extremely specific equipment applied under specific circumstances.

What is also clearly shown on the samples 25 and 35 is a great incoherence of electric and magnetic components of certain signals as well as corresponding parts of the frequency spectrums from 1-9 kHz and 18-30 kHz. No-correlativity between "Electric" and "Magnetic" frequency spectrums is even more visible in the samples 26 and 29 – what is - as we have already said, main scientifically measureable characteristic which indicates the presence of non-conventional energy forms.

	26	K5, Power on Sensor: rod antenna, l = 30 cm, 12.5 kHz/div; 200 mV/d 3.75, 22.5, **27.5**; **42.5**; 47, 92 kHz
	29	K5, Power on Sensor: open coil antenna, 12.5 kHz/div, 400 mV/d 20 kHz

On the energetic spectra showed above it can be seen the presence of a signals of about 20 and 24 kHz which were registered on megalith K2 and on the top of the Pyramid of the Sun, which permits an idea about structural similarities and some „energy connections“ between all these objects.

8. Summing up

As it is known, transfer of arranged mathematical structures in a special geometric shape and construction of an object's interior, results in a very specific wave properties of such objects and properties characteristic for coherent systems. Facilities of certain forms with specific dimensions and their especially arranged internal structure represent some kind of energetic concentrators and – actually – are amplifiers and harmonizers of appropriate energy forms.

Such objects are a kind of multi-dimensional "dipole" and/or "resonators" of subtle energies, that are bioenergetics or similar type from the domain of hyperspace, which we ascribed to the spiritual aspect of our reality.

By all accounts, ancient civilizations knew for energy-resonance effects and, moreover, seems that their technologies were exceeded our skills and knowledge significantly.

Any connection between, Tesla's Technologies and sacral objects, pyramidal structures and alike, sounds very unusual, strange and quite unbelievable. However, this measurements speaks in favor of such idea.

Fact that Nikola Tesla immensely love the nature and always respected its basic principles, allows the possibility that he was one of the first and rare human who, studying the basic natural processes, seriously approached to the technologies of ancients.

Whether Tesla waves really exist and is there any connection between pyramidal structures and Tesla Technologies or not, the intention of this investigations is to point that facilities in the Archaeological Park Visoko and related objects, most likely were not arise as a result of stochastic, natural processes, but these are artificial objects created with careful planning of their shape and location, probably built by ancients with unknown technology - whose purpose we may, however, foresee: stimulation, harmonizing and preservation of basically cosmic and Earth vibrations favorable for all local densities and especially for biological structures.

Goran Marjanovic, BEE in telecommunications.

Belgrade, September 16, 2014.

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[1] GEOLOGICAL SURVEY.., Herbert A. Pierce and Donald B. Hoover, *pubs.usgs.gov/of/1988/0668/report.pdf*
[2] Longitudinal wave, http://en.wikipedia.org/wiki/Longitudinal_wave
[3] Haifeng Wang, Luping Shi, Boris Luk'yanchuk, Colin Sheppard and Chong Tow Chong, "Creation of a needle of longitudinally polarized light in vacuum using binary optics," Nature Photonics, Vol.2, pp 501-505, 2008
[4] Tesla waves, http://users.beotel.net/~gmarjanovic/Tesla_waves.pdf
[5] Magnetic field, http://en.wikipedia.org/wiki/Magnetic_field
[6] Pyramids-Guardians-of-primary-cosmic-vibration-of-the-local-densities, http://piramidasunca.ba/eng/latest-news/item/7853-pyramids-guardians-of-primary-cosmic-vibration-of-the-local-densities.html
[7] Scientific research, Archeological park Visoko, September 2014, - measurements data.