Bio-Well Sputnik Assessment of Changes in the Energy Field During the August 21, 2017 Solar Eclipse

Research Report

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Introduction

There have been anecdotes from dowsers that the dowsing response changes during solar eclipses. Scientists have also explored this and reported on novel interactions between earth and cosmos by examining temporal changes in the environmental field as assessed by changes in the dowsing response during astronomical events such as solar eclipses and comets traversing our Solar System (Lugovenko, 1999).

In order to test for possible changes in the environmental energy field during this solar eclipse, we used the Bio-Well instrument with Sputnik accessory along with its software for computer data acquisition. This was one of three experiments that we conducted to look for novel phenomena associated with the solar eclipse that traversed the US on August 21, 2017.

Experimental Venue

The experiment was performed in the basement of a farmhouse in Monmouth, Oregon, US, a region of solar eclipse totality on August 21, 2017. On that morning the sky was clear, and there was no noticeable wind. The curtains and shutters were drawn and windows closed in the experimental room, illuminated by low level incandescent light. No sunlight entered the room. The two researchers were the only persons present in the room during the experiment. Thus, the room was relatively isolated and approximately constant in temperature for the duration of the experiment.

Materials and Methods

Bio-Well is an instrument invented by Dr. Konstantin Korotkov of St. Petersburg, Russia, which is commercially available (www.Bio-Well.com). Utilizing a high-intensity pulsed electric field, this device performs digital electrophotography of test objects by registering changes in the charge-induced corona discharge (visible light emitted) from the object, in this case, a titanium cylinder, placed on a charged glass lens, as modulated by a special antenna. This method is known as electro-photonic imaging (EPI) of induced light emission based on the gas discharge visualization (GDV) technique. It is similar to Kirlian photography, but requires no photographic film and produces more stable, reproducible data with quantitative software analysis. Details on the instrument's schematic and electronics have been previously described (Korotkov, 2004; 2011).

Attached to the Bio-Well is the Sputnik, a Bio-Well accessory that is a specialized antenna. It is a small metal sphere with sharp metal spikes around it, regularly spaced, “designed to create an inhomogeneous electromagnetic field in space” (Korotkov, et al., 2008, p. 113). This antenna has been shown in previous studies conducted either at sacred sites on earth or on groups of people at various events to register changes in parameters of the corona discharge.

The area, intensity, and energy of the corona discharge is measured by a charge-coupled detector (CCD), a standard type of detector that registers low level visible light. The Bio-Well was powered by the USB port of an Acer notebook computer (Windows 7) that ran the Bio-Well software program of environmental monitoring. The equipment was calibrated and run overnight for about 8 hours to warm up and collect baseline data, and run again on the day of the eclipse, from 8:36 to 13:06 (4.5 hours). Data was recorded approximately every 2.5 s for the duration of the experiment. Figure 1 shows a photograph of the experimental setup at the experimental site.

Figure 1. Photograph of experimental setup, showing the Bio-Well instrument (center) positioned on its stand, with the metal cylinder (calibration unit, not visible here) inserted into the front (black circular region), to which Sputnik sensor (right) is connected by a wire lead.

Results

Figure 2 shows a table of percentages of solar obscuration over time throughout the duration of the solar eclipse.

% Solar Obscuration	**Time**
0%-start	9:05
25%	9:31
50%	9:44
75%	10:06
100%-begin	10:17
100%-end	10:19
75%	10:30
50%	10:47
25%	11:06
0%-end	11:32

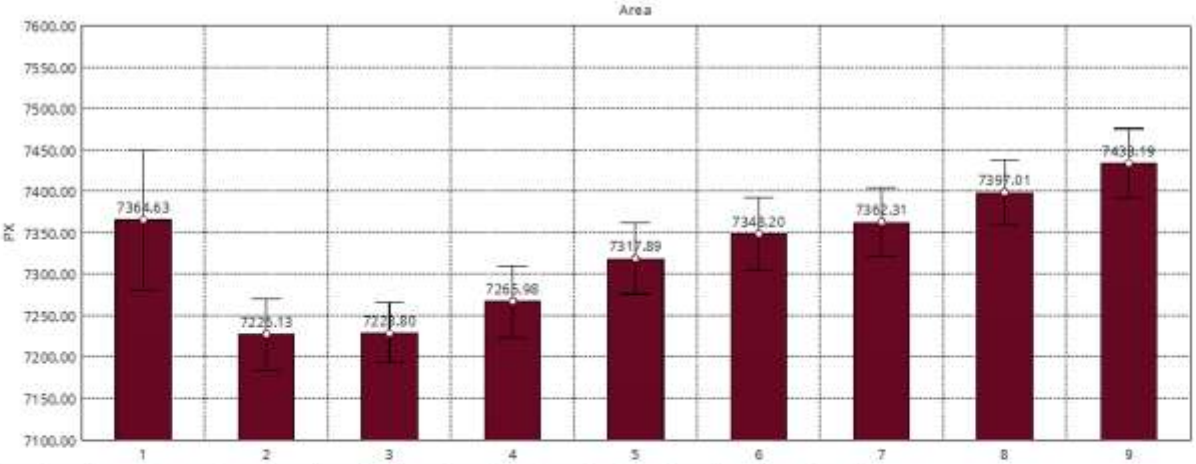
Figure 2. Percentages of solar obscuration throughout the morning of the solar eclipse. Values of 25%, 50%, and 75% were calculated from geometrical considerations, using the fact the moon disc was 1% larger in apparent area than the sun disc for this particular eclipse and location. The obscuration was calculated from the portion of the sun's disc covered by the moon disc. The variation of luminosity across the sun's disc was not part of the calculation. Values for eclipse start and end times (0%) and totality (100%) were reported for this location by professional astronomers.

Figure 3 delineates nine temporal intervals according to the range of percentages of solar obscuration. These intervals were demarcated for analysis by inserting labels in the Bio-Well software.

Section	**Time Interval**	**Time Duration**	**Range of Solar Obscuration**
1	8:36 – 9:05	29m 14s	Pre-eclipse
2	9:05 – 9:31	25m 42s	0 – 25%
3	9:31 – 9:44	13m 6s	25 – 50%
4	9:44 – 10:06	22m 11s	50 – 75%
5	10:06 – 10:30	23m 41s	75 – 100 – 75%
6	10:30 – 10:47	17m 8s	75 – 50%
7	10:47 – 11:06	19m 10s	50 – 25%
8	11:06 – 11:32	25m 42s	25 – 0%
9	11:32 – 13:06	1hr 34m 45s	Post-eclipse

Figure 3. Nine time intervals of the experimental run from pre- to post-eclipse used for data analysis. hr=hours; m=minutes; and s=seconds. Various parameters of the corona discharge for these same time intervals are analyzed in Figures 4 – 7.

Figure 4 shows the average area of light emitted for the nine sequential time intervals. A significant drop (1.88%) in the area is seen at the start of the eclipse in interval 2, which shows the minimum area, where the eclipse began and ranged from 0 – 25%. In subsequent intervals the area rose and continued to rise throughout the duration of the experiment to a value greater than the pre-eclipse value (0.9%, not significant). The area of light emitted for sequential time intervals differed significantly as shown in Figure 4 by student's t-tests and Mann-Whitney U-tests (p<0.05).

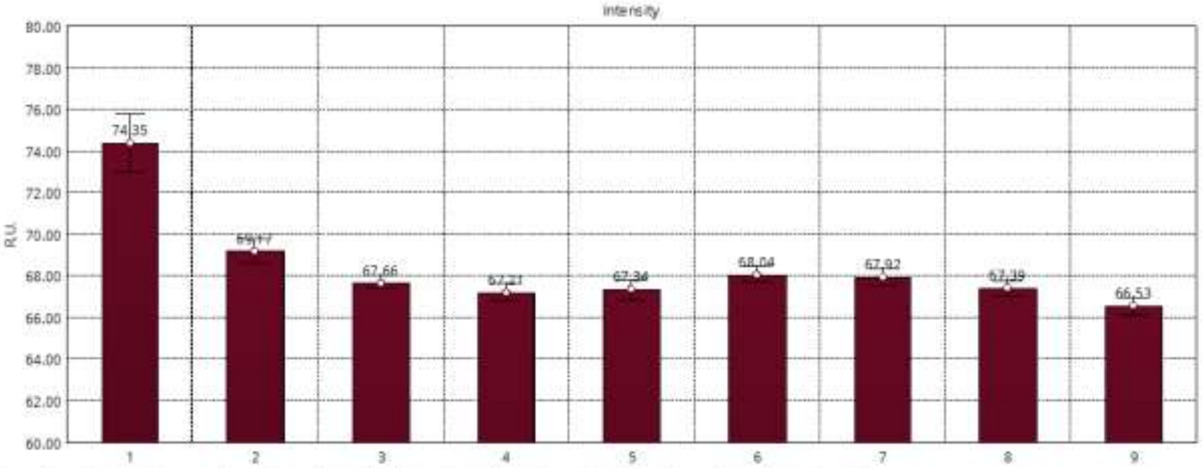


1	2	3	4	5	6	7	8	9
start (29:14)	eclipse start (25:42)	25% (13:06)	50% (22:11)	75% (23:41)	75% (17:08)	50% (19:10)	25% (25:42)	0% (01:34:45)

	eclipse start/start (696)	25% /eclipse start (612)	50%/25% (312)	75% /50% (528)	75% /75% (564)	50% /75% (408)	25% /50% (456)	0%/25% (612)	end/0% (2256)
Student's t-test	0.0000	0.0000	0.0007	0.0000	0.0000	0.0000	0.0321	0.0000	0.0000
Mann-Whitney U-test	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0223	0.0001	0.0001

Figure 4. Average areas of corona discharge in pixels along with standard deviations (error bars) for the nine time intervals and statistic tests comparing adjacent intervals.

Figure 5 shows the average intensity of light emitted for the nine sequential time intervals. The corona discharge intensity decreased significantly (6.97%) when the eclipse began and did not recover in the time frame shown. The minimum intensity was found in the 4th time interval, with 50 – 75% solar obscuration as the eclipse developed. All comparative values of adjacent intervals are significant (p<0.05) except for interval 7 relative to interval 6, which is insignificant (p>0.05).

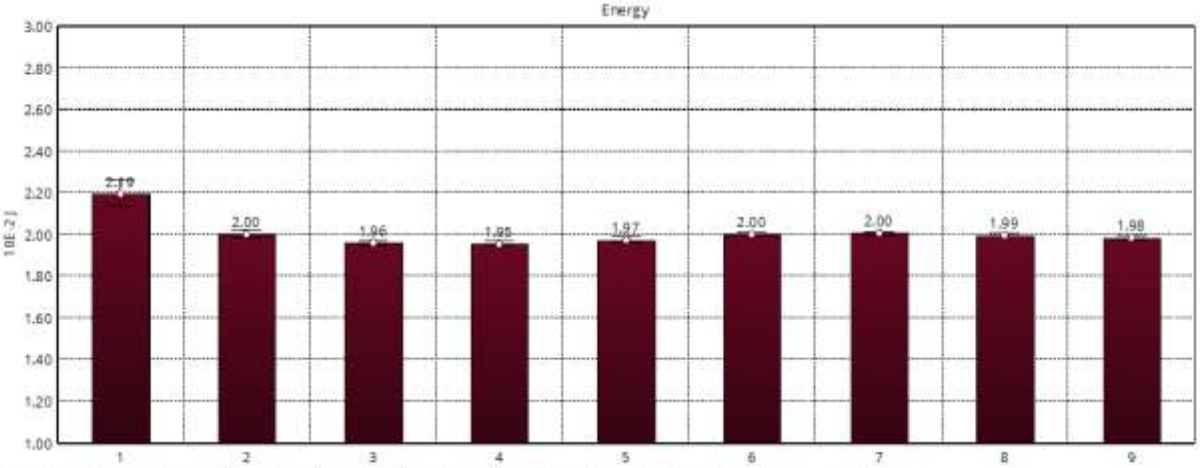


1	2	3	4	5	6	7	8	9
start (29:14)	eclipse start (25:42)	25% (13:06)	50% (22:11)	75% (23:41)	75% (17:08)	50% (19:10)	25% (25:42)	0% (01:34:45)

	eclipse start/start (696)	25% /eclipse start (612)	50%/25% (312)	75% /50% (528)	75% /75% (564)	50% /75% (408)	25% /50% (456)	0%/25% (612)
Student's t-test	0.0000	0.0000	0.0000	0.0000	0.0049	0.0000	0.1855	0.0000
Mann-Whitney U-test	0.0001	0.0001	0.0001	0.0001	0.0157	0.0001	0.2277	0.0001

end/0% (2256)
0.0000
0.0001

Figure 5. Average intensity (in relative units) of the corona discharge and standard deviations (error bars) shown for the nine time intervals and statistic tests comparing adjacent intervals.



1	2	3	4	5	6	7	8	9
start (29:14)	eclipse start (25:42)	25% (13:06)	50% (22:11)	75% (23:41)	75% (17:08)	50% (19:10)	25% (25:42)	0% (01:34:45)

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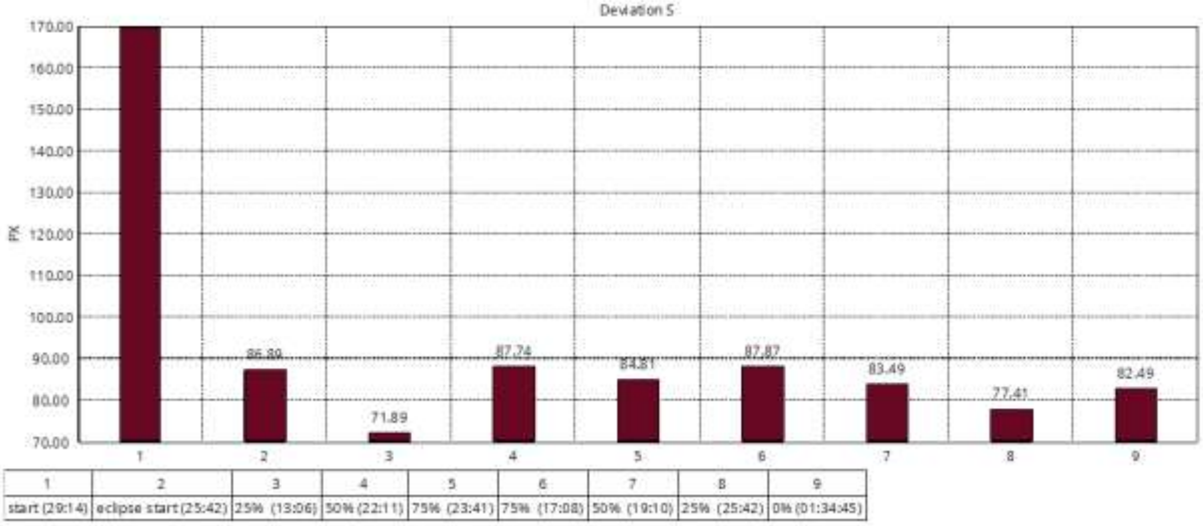
Student's t-test	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3681	0.0000
Mann-Whitney U-test	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.1224	0.0001

end/0% (2256)
0.0000
0.0001

Figure 6. Average energy values (in 10^{-2}Joules) of the corona discharge and standard deviations (error bars) shown for the nine time intervals and statistical tests comparing adjacent intervals.

Figure 6 shows the average energy (in Joules) of the light emitted for the nine sequential time intervals. The corona discharge intensity decreased significantly (8.7%) when the eclipse began and did not recover in the time frame of the experiment, up to 1.5 hours post-eclipse. The minimum energy was found in the 4th time sector, from 50 – 75% solar obscuration as the eclipse developed.

Figure 7 shows the standard deviation of the area of the corona discharge for the nine sequential time intervals. This parameter, which is called "Deviation S" in the Bio-Well software, indicates the level of non-uniformity in the energy over time (see Figure 4). Deviation S dropped 48.9% when the eclipse commenced (compare intervals 1 and 2). A minimum in Deviation S is seen in the 3rd interval, when the percentage of solar obscuration ranged from 25 – 50% as the eclipse developed. This parameter did not show a recovery to pre-eclipse values for 1.5 hours post-eclipse.



1	2	3	4	5	6	7	8	9
start (29:14)	eclipse start (25:42)	25% (13:06)	50% (22:11)	75% (23:41)	75% (17:08)	50% (19:10)	25% (25:42)	0% (01:34:45)

Figure 7. Deviation S, the standard deviation of the area of the corona discharge (see Figure 4), showing differences between the nine intervals.

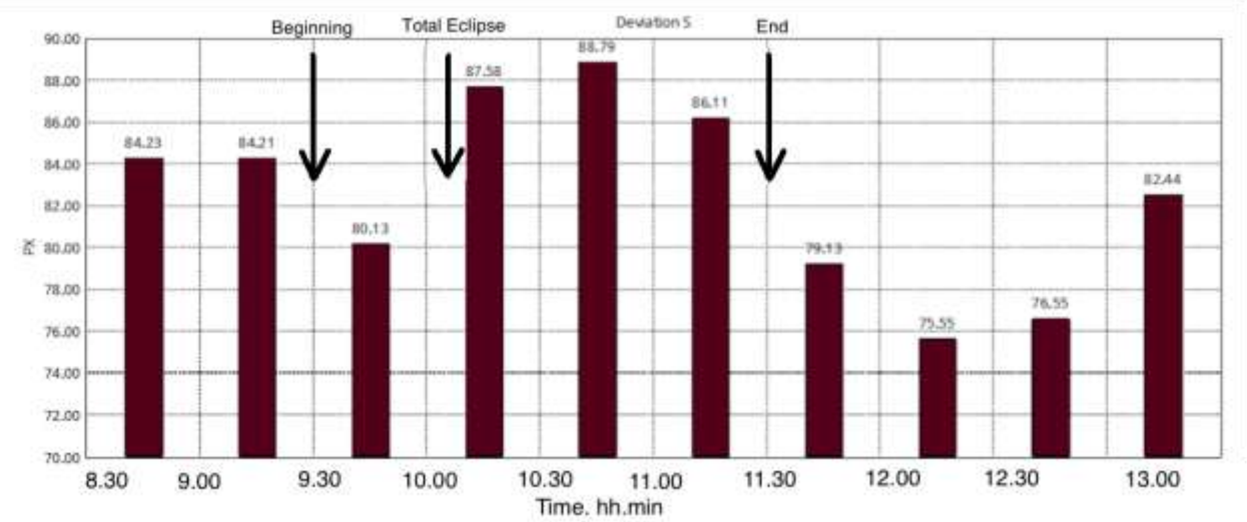


Figure 8. Deviation S calculated for equal intervals of time, 30 minutes each. Eclipse beginning, totality, and end are indicated by the arrows. This analysis of our data was made by Korotkov (2017).

Figure 8 shows the standard deviation of the area (Deviation S) calculated differently by grouping the data into equal intervals of 30 minutes each. Here, the initial decrease in Deviation S is 4.84% at the beginning of the eclipse. Following that, Deviation S increases, and at the end of the eclipse decreases again.

Conclusions

The Bio-Well Sputnik registered a response during the solar eclipse. In particular, the changes that we observed in the environmental parameters correlate temporally with initial phases of the solar eclipse. Results show that area, intensity, energy, and Deviation S decreased at the beginning of the eclipse, 1.88%, 6.97%, 8.7%, and 48.9%, respectively, as shown in Figures 4 – 7. Area was minimal at the beginning of the eclipse, whereas intensity and energy were minimal at 50-75% solar obscuration. Deviation S was minimal at 25-50% solar obscuration. Area only recovered its starting value 90 minutes after the eclipse ended; the other parameters did not recover. The intensity decreased again 90 minutes after the eclipse ended.

These results are consistent with other anomalous phenomena observed during solar eclipses, namely, that the motions of pendulums are especially affected in the initial phase of the eclipse. One of these effects, known as the Allais Effect, originally discovered in the 1950s by Maurice Allais, and later confirmed by others, is that at the beginning of a solar eclipse, the angular velocity of the oscillation plane (that is, the speed of precession) of a Foucault pendulum changes abruptly an average of 13.5 degrees per minute, counterclockwise (Amador, 2008; Olenici and Pugach, 2012).

The parameters in Figures 4 - 7 were calculated based on grouping data into time intervals selected on the basis of the percentage solar obscuration. The measured change in parameters depends on how the data is binned into these time intervals. Using equal-duration intervals of 30 min, Figure 8 shows a decrease of 4.84% in Deviation S at the beginning of the eclipse compared to 48.9% as shown in Figure 7. Nonetheless, a decrease in Deviation S is shown in either case to coincide with the onset of the eclipse. Moreover, similar changes in Deviation S—an initial decrease followed by an increase--were found by several other researchers who were conducting similar experiments in various regions of the US where the eclipse occurred at different times, although most of them were not in regions of eclipse totality (Korotkov, 2017).

We may speculate on the role of the sun's emissions being blocked during these observations. There is the sun's luminosity and the muon flux reaching the earth, both of which decrease during an eclipse. It is possible that there are other energies associated with the sun, which upon being blocked during a solar eclipse, affect the terrestrial environment in its shadow. The percentages of solar obscuration are not equivalent to solar luminosity, because the solar corona, which is not obstructed by the moon, is very bright. Since the experimental room was not exposed to any direct sunlight and dimly lit by incandescent lamps, light level was not a causal factor. Although temperature fluctuations may play a role in these results, it is highly unlikely that they are causal factors. A slight decrease in temperature may have immediately followed the total eclipse. Yet ambient temperature typically rises from morning to afternoon, rendering two compensating effects at work. We estimate that the temperature of the experimental room, which was located in a farmhouse basement mostly underground, did not change more than 2^{o}C during the 4.5 hour duration of the experiment. Weather conditions were constant. Moreover, there were no machines present within at least 30 meters, such as motors or moving objects that might produce ambient electromagnetic fields, and no mechanical vibrations. The experimental room was relatively silent. We conclude that there is a possible physical effect from the onset of the eclipse that affected the local physical environment that we measured, even indoors inside a basement of a two-story house. However, we do not fully understand its nature.

Previous studies with an earlier version of these instruments using the same EPI-GDV technique showed effects from a solar eclipse on Aug 1, 2008 in Novosibirsk, Russia, which was presumed to be due to changes in environmental geophysical conditions (Korotkov et al., 2008, p. 122). Our results are consistent with these earlier observations.

We cannot rule out the effect of observers (experimenters) on the Bio-Well Sputnik parameters. It must be considered that a solar eclipse is a rare cosmic event that engenders awe, wonder, and excitement in everyone that cannot be controlled or easily replicated by any other event. In this study, there were no eclipse viewers present in the experimental room; it was conducted in a room dimly lit and optically shielded from the sun. From inside this house there was no view of the eclipse. Although other people were present outdoors viewing the eclipse, the experimenters could not see or hear them. Thus, the observer effect should be minimal for this study because we took such precautions. However, it is impossible to discount it completely. There was indeed a level of enthusiasm and excitement about conducting experiments at the eclipse totality, by all the people present, as well as the realization that this was a very rare event to document. We anticipated that we might measure novel phenomena in the 3 experiments we conducted during the solar eclipse. Anticipation of positive results is generally true for most scientists testing novel hypotheses. Yet, so far, the scientific literature on anomalous phenomena seen during eclipses has not addressed the role of consciousness and observer interactions as relevant factors.

An influence due to scientists' consciousness may, in fact, be involved in any and all scientific observations. Although such experimenter effects are always present, they have largely been ignored or dismissed as having any sizable effect on physical reality. It is indeed possible that interactions with consciousness may be contributing factors when we measure small environmental changes, as in this experiment. Moreover, previous experiments using an EPI-GDV system that was a precursor to the present system, which was used to measure groups of people at events show clear responses to their changing emotions (Korotkov et al., 2008). It is not possible at this stage to differentiate any influence of consciousness from that of the physical environment using these instruments.

It is important to replicate this experiment at future solar eclipses, and to run the Bio-Well Sputnik for longer periods of time pre- and post-eclipse to expand the baseline time periods for better comparison to the eclipse. Multiple devices operated by multiple researchers at the same location would add strength to these studies. We recommend that time-recorded measurement of temperature, humidity, and atmospheric pressure using conventional sensors concurrently with the Bio-Well system be added to the research protocol. It would also be interesting to investigate environmental changes using the Bio-Well Sputnik during lunar eclipses, which are, in fact, similar planetary alignments of moon, earth, and sun, in which the moon is eclipsed by the earth.

References

Amador XE. (2008) Review on possible gravitational anomalies. arXiv:gr-qc/0604069v2 3Sept 2008

Korotkov, K (2004) Measuring Energy Fields: State of the Art. Bioelectrography Series, Vol 1. Fairlawn, Ohio: Backbone Publishing Co.

Korotkov, K (2011) Non-local consciousness influence to physical sensors: experimental data. Philosophical Study 1(4), 295-304.

Korotkov, K. (2017) Personal communications in September, 2017 based on his data analysis of 6 independent experiments conducted on the August 21, 2017 eclipse by researchers in California, Missouri, and Colorado.

Korotkov, K; Orlov, D; Madappa, K (2008) New approach for remote detection of human emotions. Subtle Energies and Energy Medicine 19(3), 111-125.

Lugovenko, VN. (1999) The Breathing of Earth: Research of Temporal Variations of the Cosmo-Terrestrial Field, 1991-1999. (English translation by Carol Hiltner)
Retrieved Sept 27, 2017 from:
http://altaibooks.com/spiritofmaat/LUGOVENKOBREATHE.HTM

Olenici, D; Pugach F. (2012) Precise underground observations of the partial solar eclipse of 1 June 2011 using a Foucault pendulum and a very light torsion balance. International Journal of Astronomy and Astrophysics 2012, 2, 204-209.