PROPULSION BY ZERO POINT QUANTUM PRESSURE

by

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Abstract

Experimental observations indicate the availability of a new form of propulsion based on zero point quantum pressure. The Exotic Vacuum Objects, EVOs, being observed are mesoscopic, self-organized electron clusters having over 100 billion electrons, and although partially directed by electromagnetic fields, primary thrust and control is likely derived from warping of space-time by controlled, zero point quantum field distribution over the spatially extended entity.

Prologue

Earlier papers on experimental methods by Shoulders [2,3,4,5,6,7,8,9,10] and theories by Sarfatti [9,10,11] show the possibility of engineering new structures for energy production and propulsion by manipulation of physical parameters in the new field of quantum, exotic vacuum engineering. These papers are a prerequisite for understanding the work being discussed here, as this basic information is not repeated.

Foremost among the considerations for successful new designs in this innovative field is the necessity of accepting the notion that electromagnetic methods, of the sort usually used in engineering, will be attenuated in favor of new concepts of control by motional and structural aspects within the EVO itself. This enforces the need for constructional aspects of design within the EVO and minimizes external considerations. Having done this properly, fields external to the EVO will become moot and such charged structures can be launched and operated outside their place of origin while maintaining propulsion and control within. By not heeding this invitation, much work will be done in vain, resulting only in lightning bolts between electrodes. Proceeding in small steps and expanding on the basic observations introduced here can avoid this undesirable condition. Still, it should be expected that there would be many false starts that are typical of the learning regiment in a new field where the rules are undetermined.

Synopsis of Presentation

- Behavioral attributes of EVOs and electrons will be compared by using electric field deflection techniques monitored by a particle sensitive, pinhole camera. Two different methods of generating the deflection field will be used. The first of these methods will use a single electrode being struck by multiple EVOs while the second method uses two electrodes with one of them acting as a deflector, energized by EVOs, and the other as an anode for catching the deflected EVO. By making this comparison between electrons and EVOs, a baseline for assessment of any aberrant or anomalous propulsion behavior in the EVO is generated.
- The motion of EVOs in a field-free region of vacuum flight will then be observed and studied using the same particle sensitive, pinhole camera. The erratic motions found will be analyzed in terms of internal thrust producing mechanisms not related to or available in simple particles. The motions found will be attributed to a thrust producing effect associated with the internal reorganization of the EVO, setting it apart from other simpler particles, and associating it with deflection forces related to controllable, zero point quantum field distribution over the spatially extended entity.
- Finally, a study of the collectively known properties of EVOs is presented with the intention of showing their limitations and possible application to propulsion.

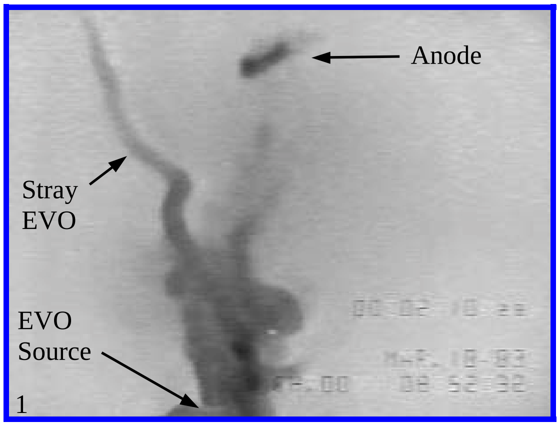
Data Presentation

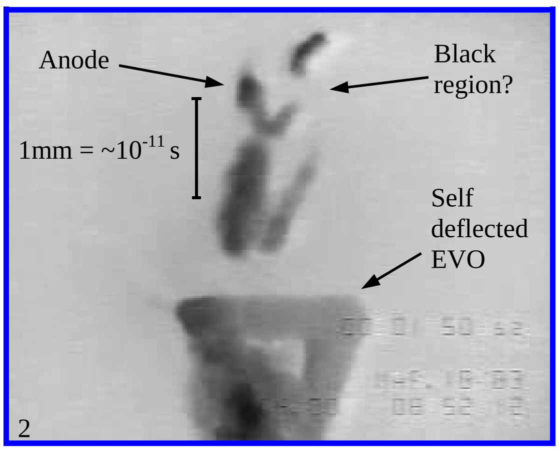
The primary instruments to be used in this presentation are a pulse generator for EVO formation, the vacuum pinhole particle camera for dynamic viewing and a video camera to record the optical output from the pinhole camera. The pinhole camera and its operation are described in reference 2. Individual frames of video data presented here were inverted so as to present a black on white image for better printing.

Whenever needed, data pertinent to the physical layout or observations of the experiment being conducted will be placed either in the relevant and numbered photo frame or close beside it.

Single Electrode Electromagnetic Control

In this class of electromagnetic control, a preliminary or leading EVO excites an electrode and then the following EVO responds to the field induced by the first landing. The difficulty in interpreting this kind of action using multiple EVOs is that it is not known with certainty the exact number, size or sequence of the exciting EVOs. Photo 1 is an example of this showing a large tangle of EVOs entering from the lower side at what is called the EVO source. One clearly defined EVO is shown as a stray flying toward the upper left of the photo. The anode is designated by it having been lighted by a small or black EVO strike.

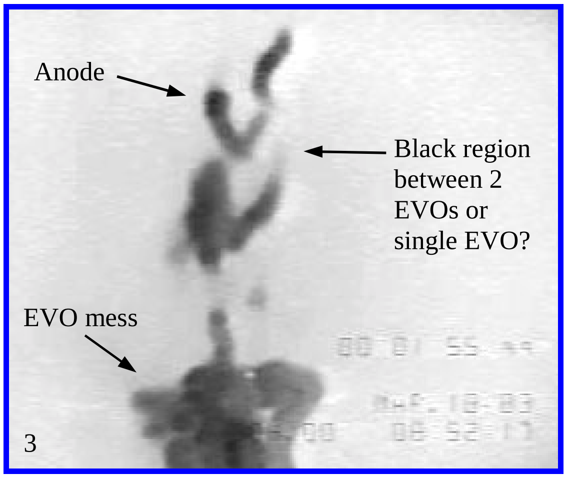




The EVOs are launched into a vacuum region designed to be as field-free as possible, except for the inevitable cavity coupling, which should have a high "Q", constant ringing frequency effect on the EVO, whenever excited, and be easily distinguished. Except for a slight modulation of the weak background emission, no such excitation is evident as the small motion on the stray EVO is highly damped.

The anode target is a piece of copper wire having a diameter of about 0.015 inches and a length of 0.06 inches above the ground plane and spaced 0.04" away from the EVO launcher. The camera is pointed toward the end of the wire thus showing a lateral run for the EVO. Bias is applied to this target in various other experiments but not intentionally in the series shown here. Due to the need for a bypass capacitor on the bias lead, one is placed as close as possible to the wire base using the lowest possible inductance. Unfortunately, some of the intense charge placed on the electrode by the EVO causes a potential variation on the electrode shortly after its arrival. This can often be seen as a dc or low frequency displacement of the following EVO and could be an explanation for the stray EVO flight away from the normally attractive anode after receiving a negative charge.

Photo 2 is more characteristic of this experiment than Photo 1. In Photo 2, the anode is shown as having been clearly struck by an EVO. In addition, the EVO entry at the lower side is dominated by a self-deflected EVO seemingly having little to do with the anode potentials. The main feature of many photos in this series is the way a *black* EVO or two seems to have blinked on and off again before disappearing off the screen, largely avoiding the anode. One of these is attached to the anode as a white EVO before leaving. There is a characteristic ringing frequency for both EVO tracks that are easily construed to be that of the excited electrode struck by an early EVO arrival. This modulating field both deflected the EVO and caused it to blink between the white and black state. It is known from other experiments that excitation of a black EVO awakens it to the white state so this action is expected here. The time and size scale shown give some indication of the frequencies involved. As shown in these low-resolution photos, the on-off blinking rate is in the few picosecond range. Later measurements made at high resolution show much faster action but these are not reported here.



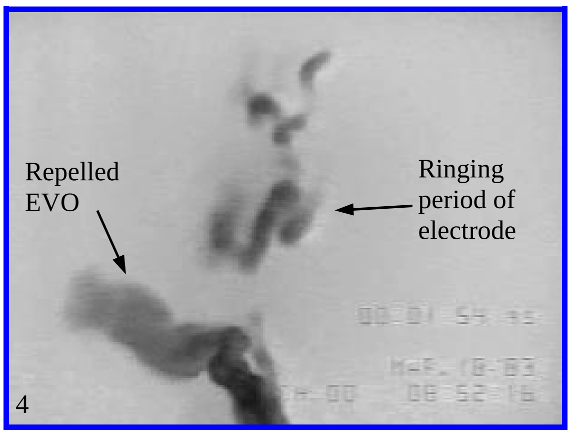
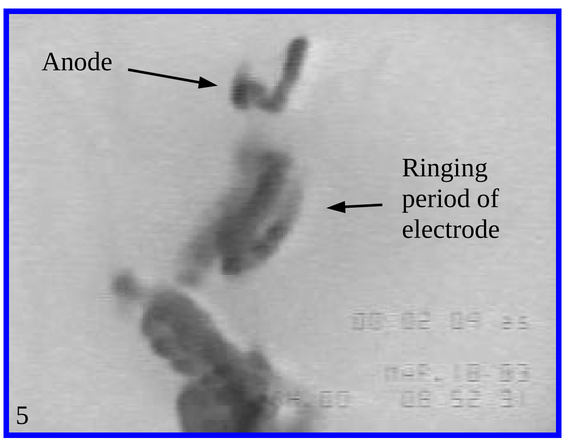


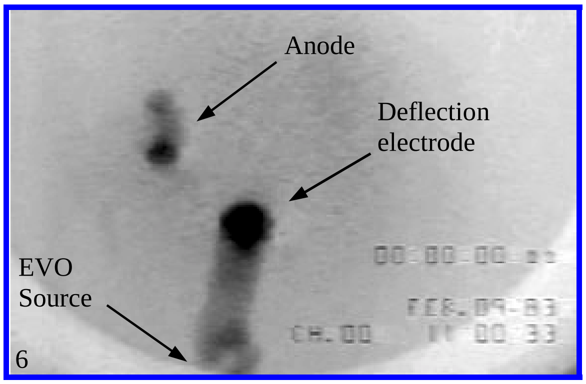
Photo 3, 4 and 5 are very similar to Photo 2 and are shown primarily in an attempt to shed some light on whether there are 2 EVOs or only 1. It cannot be said with certainty, but there seems to be 2 appearing in sequence and that coincides with the knowledge that the EVO source produces a comb of EVOs with a short spacing between them. More evidence of this is shown in the following segment.

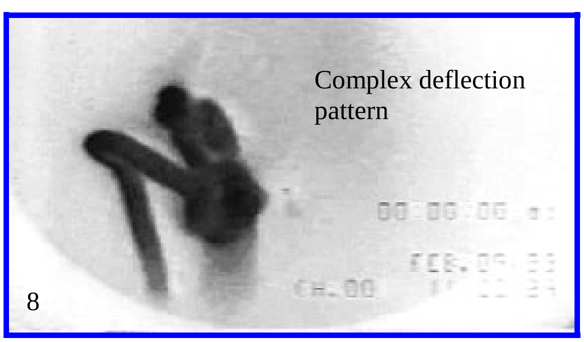
What is learned from this example of EVO interaction with electrically active electrodes is that the coupling coefficient is very high and that EVO excitation is easily seen, indicating a form of potential measurement error that must be avoided in any determination of thrust or propulsion associated with EVOs.



Double Electrode, Electromagnetic Control

In order to establish a basis for charge sensitivity on a dynamic scale, the EVO is deflected by a time-varying potential applied to an electrode it passes near. This creates a distinction between an EVO controlled by an external electromagnetic deflection field and one caused by the EVO itself exciting a single electrode, acting as a deflector, which subsequently also acts as its own anode or target. In the first case, two electrodes are used while only one is used in the second case. One configuration used to provide double electrode, high frequency excitation and deflection is shown in Photo 6. As in the previous series, there is an EVO source or entry point and an anode. The added feature here is the deflection electrode placed near the center of the photo. Both the anode and deflector are lighted by a small EVO strike with no prominent trail going to the anode.

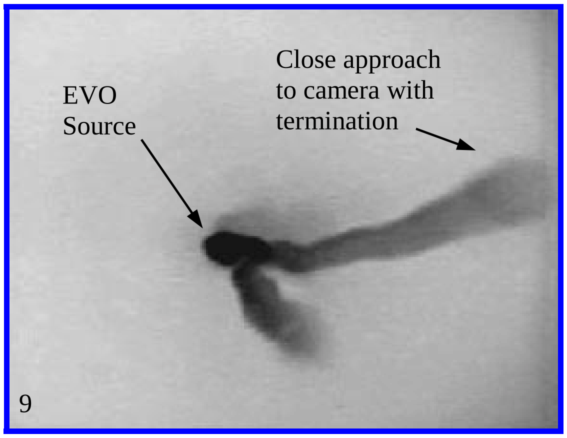


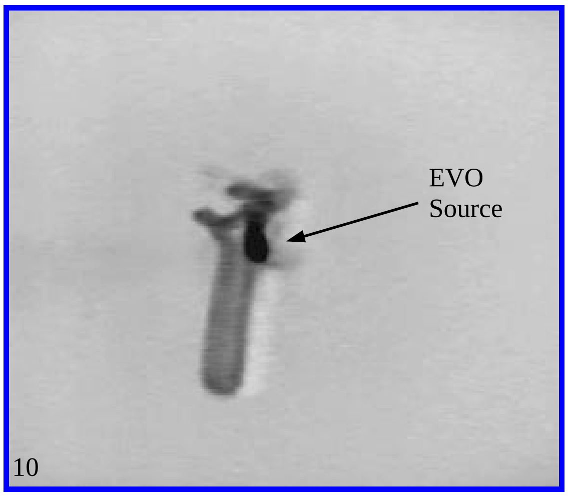


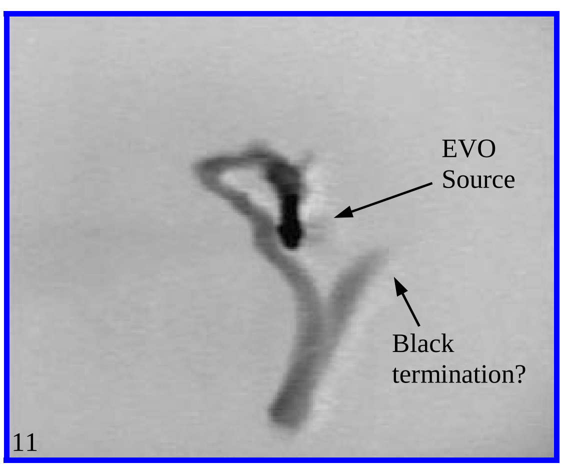
The intent of the experiment is to excite the deflector electrode that will then cause deflection of an EVO following shortly after initial excitation. The deflector electrode excitation is provided by catching the first EVO launched in a comb of three with a time delay between them of several picoseconds. The ring-down waveform thus provided will deflect the next EVOs in the group. As shown in Photo 7, a trace or two is seen coming into the deflector from the lower side. Another trace shows to the left and is likely the second or third EVO passing the deflector electrode and strongly deflected by it. It is worth noting that this trace seems to enter as a nearly black or gray EVO, converting to a white EVO after excitation by sudden deflection. Also, this EVO has the appearance of trying to avoid the deflector electrode due to accumulated negative charge on the bias bypass capacitor previously noted.

The oscillating period of the EVO on the left is in the range of a few picoseconds and is likely the characteristic frequency of the deflector. Photo 8 is a more complicated excursion of the EVO destined for the anode in that it seems to have passed over the deflector in a third dimension not easily visualized in the 2 D photo. What is worth noting is that there is little interference with the landing of the deflected EVOs on their designated anodes. In most ways, this behavior is much as one would expect from single electron action on extremely small electrodes where the coupling would be high. In the present instance, the large charge on the EVO adapts well to large electrodes and behaves as an electron. The one exception to this is the black mode of operation, which will be discussed in a later section of this paper.

Using an EVO traveling at about 0.1c, this simple test illustrates that it is possible to deflect an EVO from an external electrode as well as excite an electrode in the terahertz frequency range. An additional bit of information obtained on the EVO is that its length in time is shorter than about a picosecond; otherwise it would not describe a clean path as a point. A long column of charge would deflect as a smear.





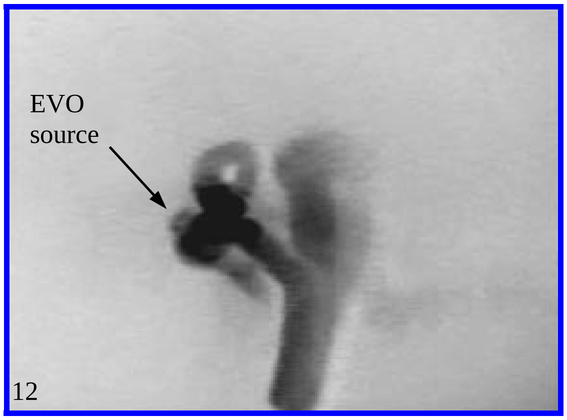


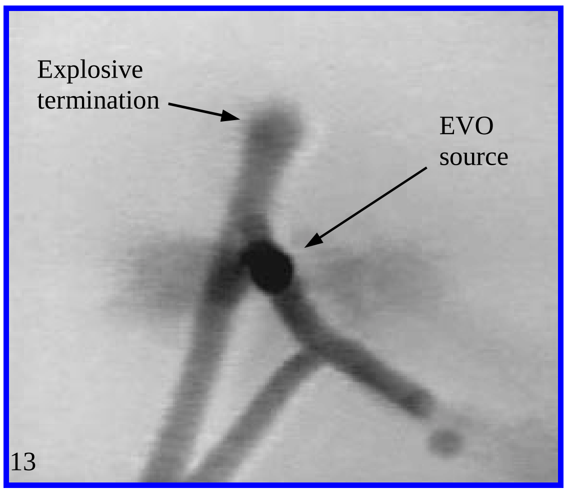
Operation In Field-Free Regions

By changing the experiment to have the camera look directly into the EVO source, and doing so in a shielded region as free as possible of both external and induced fields, much can be learned about the self- deflection, hence propulsion, modes of EVO behavior. Photos 9 through 14 show examples of this class of propulsion.

In Photo 9, the EVO is seen coming from the source near the center of the photo. It then travels toward the camera in a fairly straight line reasonably free of disturbance, thus indicating the possibility of a potentially quiet electromagnetic zone in the flight region. The close approach of the EVO to the camera increases the magnification and this is indicated by the increased diameter of the image. It is essential that the EVO not strike the camera nose or the disturbance nullifies the low noise environment. This EVO likely terminated in the vacuum just as indicated. Had a black EVO been created, there would have been a violent termination and noise produced.

Photo 10 shows an EVO path that is essentially confined to a plane near its source, as indicated by its more or less constant diameter. Photo 11 is similar to Photo 10 but having more extended excursions and a clear but unknown termination.





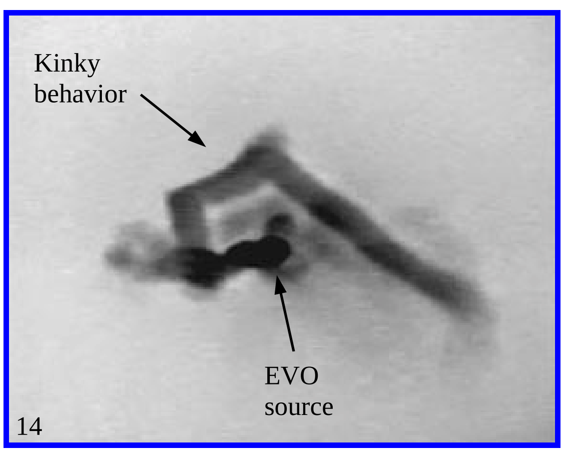


Photo 12 shows motion confined primarily to the vertical plane after having performed a small loop near the source.

Photo 13 shows some wild excursions that could not possibly have been produced by fields generated within the apparatus as they have a large direct current component uncommon in any resonant system that was inadvertently excited. The increased magnification toward the end of the run shows the EVO was moving toward the camera. In addition to the primary path of interest, there is some fogging in the background due to a long camera decay time and high EVO firing rate.

Photo 14 shows very kinky movement that is essentially confined to a single plane. Again, the external deflection waveforms required to produce this kind of movement are not available due to the extremely wide bandwidth and high voltage involved, being in the picosecond and kilovolt range. This kind of motivation must come from within the EVO itself.

Review of Observations

- EVOs excite strong, high frequency, damped oscillations in resonators.
- Induced oscillations in electrodes deflect EVOs according to the mode excited.
- The black EVO is produced by quiescence.
- Rapid modulation of the deflection field causes fast switching between black and white EVO modes of existence.
- Direct current or slow deflection of an EVO is evident without causing mode switching.
- Disturbance-free regions of operation are possible.
- Strong self-deflections of the EVOs in disturbance-free regions are caused by something other than externally applied fields.
- The high charge density of an EVO causes tight coupling to nearby electrodes and modifies their potential from large distances.
- Known rules of particle optics only partially apply to EVOs.
- EVOs can be terminated without undue excitation of working space.

Propulsion Aspects of EVOs

The real data presentation part of this paper is concluded. We now turn to a more speculative phase that is best couched in a question and answer mode, avoiding serious intonations, because there is very little certainty from this point on.

What Is Propulsion?

Propulsion is not anti-gravity but it accomplishes the same end task and does so with high directivity. In considering EVOs in the role of a source of propulsion, one must consider their source of control as a valid form of propulsion in that the control seen is not directly attributable to externally applied fields. Lack of tractable control by application of fields only implies something else is at work. Simple logic implies that if control is not coming from the outside, it is inside. Propulsion and control thus become interchangeable and control of this sort ***is*** propulsion.

What Is Propelled?

As shown above, electrons are certainly propelled. The small clusters, or swarms of tightly coupled electrons shown, contain about 10^{12} electrons capable of executing 90 degree turns with a radius of less than 0.001 inches, or mere picoseconds in time, while moving at 0.1 the velocity of light. This is an equivalent magnitude of transporting 10^{9} hydrogen atoms over the same path. Simple EVOs are known to transport large quantities of material at high velocity [(3)], albeit completely fluidized and therefore not desirable for personal transportation.

How Do You Hold On?

An EVO has not yet been seen standing still unless ball lightning is an equivalent object. Nails, glue and screws are not likely attachment methods so the question might become, how do we enshroud ourselves in this magic carpet without getting burned.

The subject now turns to trapping and the use of the trap as our magic carpet, perhaps using one of the all metal, circulation traps resembling a giant superconductor as described in earlier EV patents by Shoulders [(5)] or an electric quadrupole trap of the Paul type. The Paul traps are conveniently used for holding electrons with low densities before space charge limits set in and the all metal, EV circulating trap is likely good for EVOs but let's first consider other consequences and limitations on trapping as set by EVO peculiarities. Assume we can trap a white EVO just as we can an electron. If, in the normal course of its existence, the EVO turns black, and the black state is really moving as fast as predicted [(10)], the trap no longer has a chance of containing the superluminal particles by electromagnetic fields of any genus we can presently generate. Turning them within the limited confines of the container space cannot happen and they go splat on the walls.

The use container problem is equivalent to the birth container problem where it is desirable to remove the field required for formation but to leave the EVO life intact for use. The required initial formation field quickly becomes a bad container resulting in EVO termination on the anode. It is not possible to keep the formation field moving ahead of the EVO if it turns black. This effect is often seen when working with EVOs and many circulation schemes are rendered null when the reflection of a wave launched earlier returns to interfere with forward motion, resulting in another form of death. The EVO launching arena can quickly become its own death trap with limited, present knowledge and a narrow range of environmental conditions are dictated for long life. EVOs do not seem to run out of energy, just real estate. To succeed in the upcoming game of EVO technology, we are going to have to reach into the virtually unknown exotic vacuum quantum design bag for design parameters. Present electromagnetic design rules are not enough and EVOs don't obey fluid flow laws either. In the meanwhile, keep your trapped EVOs white by shaking them severely.

The most likely scheme for containment and attachment to objects to be transported will be a gradual transition, like in any impedance matching problem, between the EVO swarm and a material object. The individual EVO binding energy to its neighbors is certainly adequate and by multiply connecting these many times over will the match be made. This is not an easy thing to do without learning and applying newfound rules for EVO construction but that must be done in any event. Don't expect the job of building a magic carpet to be as easy as making a batch of flying saucer shaped cookies and then jumping on them expecting a ride.

How Controlled?

When considering thrusting or propulsion causing an EVO path change, it is normally the first thought to consider ejection of mass from the particle group in rocket fashion. This effect has been constantly monitored throughout years of work without ever finding any significant evidence of this mode of propulsion or steering. Such monitoring is not easy to do, but considering how many ways have been tried to see the effect, it should have shown itself but did not.

It is stated in the theory developed by Sarfatti [9,10,11], that it is the extended spatial property of an EVO that allows us the warping of space-time by controlled, zero point quantum field distribution over the spatially extended entity. Going along with this means that we have to readjust internal parameters of the EVO to accomplish the thrusting effects seen. This might be as simple as rearranging the various beads or components of the EVO structure. A 2D version of bead placement can be clearly seen on a witness plate when the EVO is captured. What is not known is how the parts seen were arranged before impact with the target. In Photo 14, a series of periodically spaced deflections is noted. These are likely a progressive movement of unstable bead positions in the EVO swarm organization giving rise to deflections.

Again, by learning the rules of EVO organization, we can hope to cause the proper control functions at our dictate or those from within the machine needed for its proper control.

Where Is The Energy Coming From?

Just a casual glance at almost any publication these days shows that free energy is coming from zero point energy or the vacuum. Anyone working in the field knows it takes a lot more detail than this to proceed. The big question has to do with whether or not all we have to do is point our ZPE skateboard in the proper direction and hold on for a free ride or do we have to pay some yet unspecified price for the ride. The author cannot succinctly answer this question just yet, but it does look like we have a chance for a cheap ride by adjusting parameters within the EVO.

What Comes First?

The author has done a substantial amount of work aimed at making large EVOs in order to ameliorate or lessen the need for using nanostructures in the pursuit of various experiments leading to potential products, primarily in the field of energy production. This work did not lead to any useful outcome other than indicating that swarms of smaller EVO could be used in the stead of single, large ones. On rare occasions, large EVOs were indicated, but inevitably, the measurement failed to reveal whether or not smaller internal structures were present. For the time being, the use of swarms of small EVO comes first.

Also, at this time one should not consider attaching an EVO to a normal physical object for transport. That is extra work to do at a time when it is not warranted. The attachment answers will come with time as pure EVO structures are made more complex. The first uses are likely to resemble a controlled ball lightning object doing a simple and specific job.

Summary of Work to Be Done

EVOs are very energetic and potentially useful nanostructures. We must learn the rules of EVO organization permitting us to assemble them into molecular-like structures for performing more intricate and increasingly complex tasks. To do this, instruments like the vacuum pinhole camera with fast shutters should be developed for a more detailed analysis of the EVO lifecycle and social habits. The similar subjects of containment and attachment should be pursued in order to allow removal of the EVO from its birthplace and take up residence in the outside world free of attachments to its origin.

References

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[8] Ken Shoulders, “Permittivity Transitions”. Published on the web during September 2000 at: http://www.svn.net/krscfs/.

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