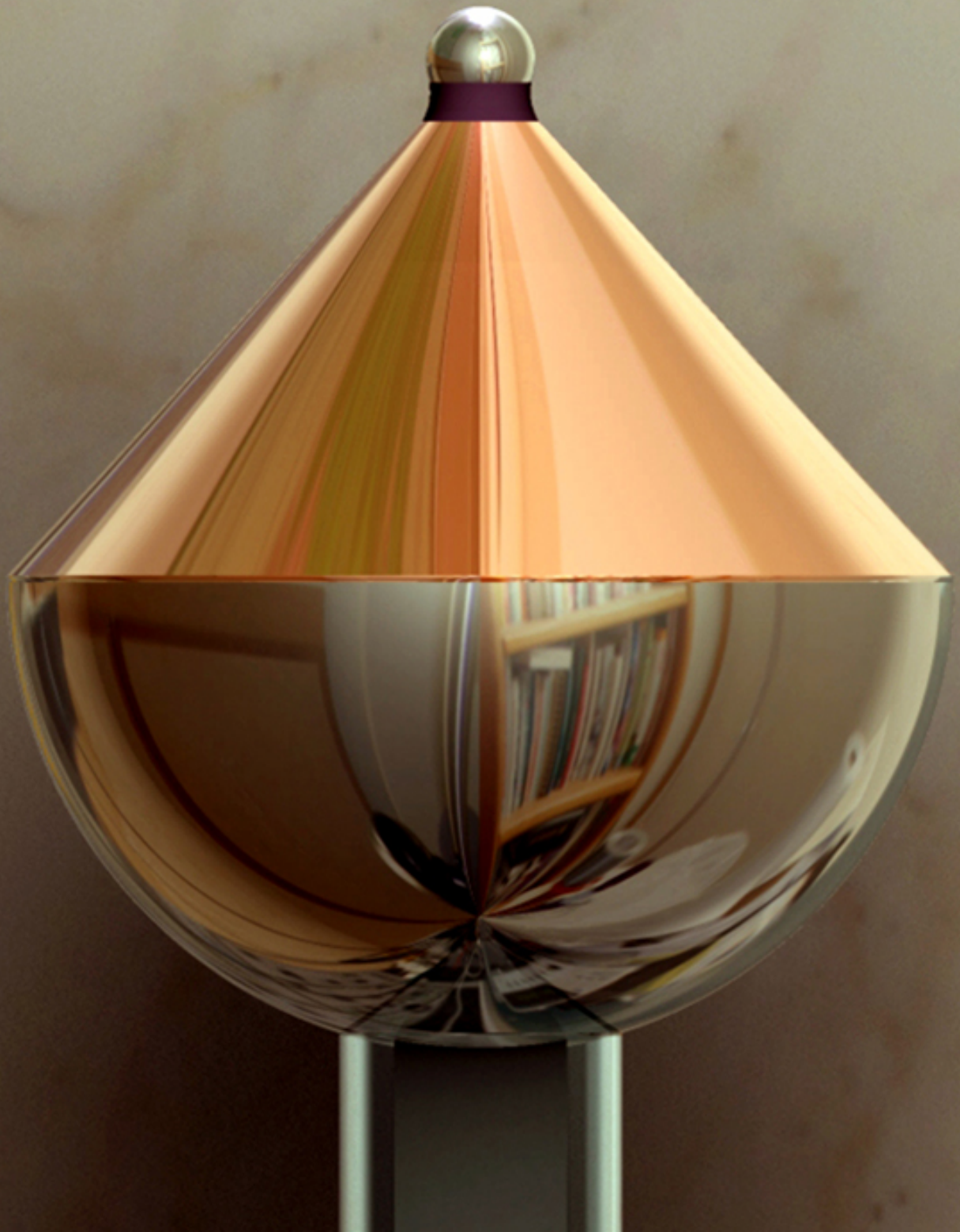
The G.E.M.Stone Papers

Part One



The G.E.M.Stone Papers - Part 1:

The Inertial Nature of Electrical Phenomena in Aether Space

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Revival of the "Luminiferous Aether"

In 1687 Sir Isaac Newton's published his treatise, *"Philosophiae Naturalis Principia Mathematica"* in which he described universal gravitation and the three laws of motion, laying the groundwork for classical mechanics.

Also in 1687, Christiaan Huygens began writing a book entitled, *Traité de la Lumière* in which he discussed the physics of light. In 1690, he published his book in which he offered a theory to explain the wave-like nature of light. He was unconvinced by the particle theory of light advanced by Newton - primarily because he thought the rapid speed of light would only be possible if light were composed of waves. He suggested that light waves traveled on an invisible "aether" that filled the void throughout air and space. In his paper, *"Huygens' Principle",* he suggested that each point in a light wave could be explained by miniature wavelets that combined to form a wavefront. Huygens' theories neatly explained the laws of refraction, diffraction, interference, and reflection and he went on to make major advances in the theories concerning the phenomena of double refraction (birefringence) and polarization of light.

Newton maintained steadfastly that light was a corpuscular or particulate phenomenon. However, at various points in his life he had to view light as both a particle and a wave phenomenon. This apparent duality was to give birth to the term "wavicle".

Both Newton and Huygens could only envision light to be a longitudinal wave, like sound and other mechanical waves in gases and fluids. However, longitudinal waves by necessity have only one form for a given propagation direction, rather than two polarizations as in a transverse wave.

So, both Newton and Huygens were unable to explain the phenomenon of birefringence (double refraction or the decomposition of a light ray into two rays – sometimes called the ordinary ray and the extraordinary ray - when light passed through certain types of material). Instead, Newton preferred to imagine non-spherical particles (or "corpuscles") of light with different "sides" that give rise to birefringence. A further reason why Newton rejected light as waves in a medium, however, was because such a medium would have to extend everywhere in space, and would thereby *"disturb and retard the motions of those great bodies"* (the planets and comets) and thus *"as it* [aether or the medium] *is of no use, and hinders the operation of nature, and makes her languish, so there is no evidence for its existence, and therefore it ought to be rejected."*

In 1704 Newton wrote, *"I do not know what this aether is", but that if it consists of particles then they must be "exceedingly smaller than those of air, or even than those of light: The exceeding smallness of its particles may contribute to the greatness of the force by which those particles may recede from one another, and thereby make that medium exceedingly more rare and elastick than air, and by consequence exceedingly less able to resist the motions of projectiles, and exceedingly more able to press upon gross bodies, by endeavoring to expand itself."*

In 1720 James Bradley carried out a series of experiments attempting to measure stellar parallax. Although he failed to detect any parallax (thereby placing a lower limit on the distance to stars), he discovered another effect, stellar aberration, an effect which depends not on position (as in parallax), but on speed. He noticed that the apparent position of the star changed as the Earth moved around its orbit. Bradley explained this effect in the context of Newton's

corpuscular theory of light, by showing that the aberration angle was given by simple vector addition of the Earth's orbital velocity and the velocity of the corpuscles of light (just as vertically falling raindrops strike a moving object at an angle). Knowing the Earth's velocity and the aberration angle, this enabled him to estimate the speed of light. To explain stellar aberration in the context of an ether-based theory of light was regarded as more problematic, because it ***requires that the ether be stationary even as the Earth moves through it*** *– precisely the problem that led Newton to reject a wave model in the first place*.[1]

The next significant step in mankind's search for the "theory of everything" was taken in 1873 when James Clerk Maxwell published his*, 'Treatise on Electricity and Magnetism'*. In this paper he discussed electricity, magnetism, and electromagnetism as functions of waves in a fluid space (aether). His theory held popular support until 1887 when the two U.S. physicists, Albert A. Michelson and Edward W. Morley performed their historic experiment with light. Their experiment (dubbed the 'Michelson-Morley Experiment') was designed to use light as a means to determine if space were a 'fluid' as Maxwell's equations had assumed.

The results the 'Michelson-Morley Experiment' (see Appendix B for a detailed explanation of this experiment), however, appeared to deny the existence of a fluid (or aether) space. When their test produced a "null result"… the popular conclusion was that space was NOT some sort of an inertial fluid.

Between 1887 and 1905 several physicists were attempting to find mathematical transformations that would make Maxwell's equations invariant when 'transformed' from the aether to a moving frame. Three of these physicists (Joseph Larmor, Hendrik Lorentz and George Fitzgerald) believed in the popular 'luminiferous aether' hypothesis of that time.

Lorentz published a first order version of the transform equations in 1895. Then, in 1897, Larmor published his basic set of transformation equations which highlighted time dilation as an inherent property of his transforms. Lorentz re-worked his transforms and published his final version of the transforms in 1899 and 1904.

In 1889 just two years after the Michelson-Morley Experiment was conducted, Fitzgerald explained the null result of the M-M Experiment using the transforms that Henri Poincare in 1905 would name, the "Lorentz-Fitzgerald Transforms" in honor of the two men who had both contributed most to the equations.

Lorentz, Fitzgerald and Larmor believed strongly there had to be an aether; so they developed those transforms - which was, in essence, a way of saying, *there has to be an aether. . . we'll adjust the observed* ***null*** *results of the M-M Experiment by a factor which will bring our hypothetical expectations and our test results into accord...* Their whole transform was based on the existence of **aether space!**

By 1904, the "Lorentz Fitzgerald Transformations," essentially explaining relativity, were published in their final form by Lorentz. They describe the increase of mass, the shortening of length, and the time dilation of a body moving at speeds close to the velocity of light. Their transform said that length shortened, mass flattened, and time dilated as a body moved through the aether - hence it should be possible to detect the aether.

In short, by 1904, everything in Einstein's "Special Theory of Relativity" (started in 1895 and published in 1905) **had already been published by Lorentz.**

Einstein seized upon the Lorentz-Fitzgerald transforms and the M-M test results as evidence of a universal axiom: *"the velocity of light is (to the observer) the limit measurable velocity in the universe"* - (this does not mean it is the limit velocity in the universe, however.)

In a biography written just before his death, Professor Einstein is quoted as admitting he had a **fundamental error in Relativity.** It was, he said, one which - when corrected - will explain how light - an obvious waveform - can be propagated across an **apparently** non-inertial space. He was interested in the aether drift theory and acknowledged that a positive result for the existence of aether would invalidate his theory of Special Relativity. Einstein also stated that the discovery of the solution to this error would probably be the result of some *serendipitous* discovery in the sixties.

In 1957, the well-known Dr. John Wheeler proposed the majority of research into the role of gravitation in physics be aimed at modeling a hydrodynamic or 'fluid' model of space.[2]

In 2006 Glenn Starkman, a cosmologist at Case Western Reserve University in Cleveland, Ohio, published his theorum equating the "missing mass or energy" of the Universe commonly called "dark matter" or "dark energy" to aether space [See Appendix A]. However, there are many more physicists seeing the revival of the aether as a means to correcting some of the flaws in General Relativity and identifying the true nature of "dark matter".

Now, in 2007, I publish this, the first of my own three treatises, which describe the mysterious forces of gravity, electricity and magnetism as derivatives of both classical Newtonian equations and Maxwellian aether equations. It is my hope that once my theorum is understood it will open a portal to a concise and tangible Universe for the plethora of modern physicists attempting to derive that elusive "Theory of Everything (the T.O.E.)".

Before you throw your head back, roll your eyes and give that familiar gasp of incredulity at the very mention of an aether medium, open your mind to what I am about to share with you. After many years of study and experimentation I can now add my own theory of a Universe filled with aether to the other theorems now surfacing. The best place to start my discourse is by correcting the flawed interpretation of the Michelson-Morley Experiment.

The Flaw in the Michelson-Morley Experiment

The *flaw* of the M-M experiment is a simple one. It is a matter of relativity in its most basic form. When the test results showed no relative motion through an aether medium, everyone assumed that the aether wasn't there. But their test result would have also been null if the **aether did exist and was traveling at the same speed as the Earth around the Sun**. (some call this the aether drift theory).

A '*tea cup'* analogy can be used to explain the flaw. If one stirs a cup of tea (preferably one with milk for contrast) which has some small, dark tea leaves floating on its surface, one notices some of these tealeaves orbiting the vortex in the center of the cup. The leaves closer to the center orbit faster than those farther from the center.

Now, one must imagine himself greatly reduced in size and sitting upon one of these orbiting leaves. If one were to put his hands over the edge of his tea leaf on any side, would he feel any tea moving past his hands?... The firm answer is, "No!"

The reason is that the force of the tea is the force that has caused the velocity of the leaf. One could not detect any motion if he, his tea-leaf and the tea were traveling in the same direction and at the same speed. However, if one had arms long enough to stick a hand in the tea closer to either the center or the rim of the cup where the velocities were different from his own, then he would feel tea moving faster or slower than himself (respectively).

Also, if one were to spin his tealeaf around the tealeaf's own axis at the same time as it orbits about the central vortex, placing his hands into the tea immediately surrounding his leaf would show relative motion of his hands to the tea close to the leaf. To some this might be considered just a local phenomenon not unlike the "aether drift" theory.

In the preceding analogy, the center of the spinning tea (or vortex center) represented the Sun, the leaf: the Earth; the tea: the aether; and the rider's hands: the light *beams* of the M-M test. In essence, what Michelson, Morley, Einstein, and many other scientists have said is that the M-M test showed the velocity of light was not *affected* by the Earth's orbital motion – just its spin around its own axis. *"Therefore",* they have said, *"we have one of two conclusions to from which to choose":*

*1) The Earth **is orbiting the Sun** and there is no aether, except for the local aether drift that accompanies the Earth in orbit or,*

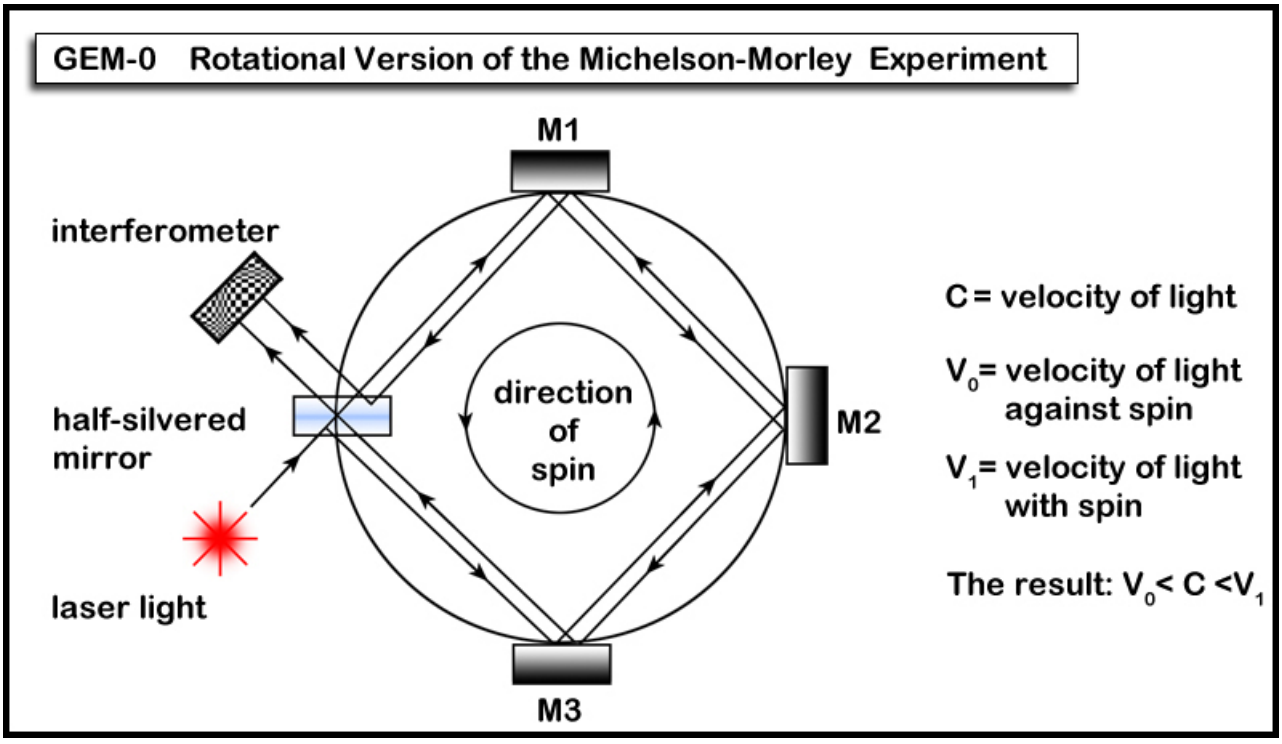
*2) The Earth is not orbiting the Sun and there is an aether but since the earth is not orbiting **through** the aether, the aether 'wind' cannot be detected.* Obviously, this conclusion is negated by Earth's observed heliocentric orbit.

However, their reasoning should also have incorporated a **third option**:

3) **The Earth is orbiting the Sun at the same speed as the aether;** therefore, no aether 'wind' could be detected in the orbital vector of Earth. In other words, the test results cannot prove or disprove the existence of the aether - only whether or not the Earth is orbiting the Sun with **relative motion** in that aether – which has been observed locally in various 'aether drift' experiments. So, it is probable **Earth is accelerated and carried along by the aether.**

Aether Existence Verified and "C" not a Constant

In 1913, the *rotational* version of the *linear* M-M experiment was successfully performed by George Sagnac[3]. In 1925, Michelson and Gale used a spinning platform as their rotational analog to the linear M-M experiment. It also showed successfully that the velocity of light sent *in* the direction of spin around the perimeter of a spinning disc varied from the velocity of the light sent *against* the spin (Figure GEM-0). This showed relative motion between a mass and the aether could be detected WHEN there was relative motion. So, if the Earth were being moved by the aether there would be no relative motion and the linear version of the M-M Experiment would give a misleading result.



Relativists Discard Evidence

By the time the ***aether wind*** **was proven to exist,** Einstein's theories were already winning strong support on the merits of celestial observations, which closely agreed with Einstein's predicted values. As a result, the *scientific* community decided to explain the *aether wind* phenomenon as a result of Earth's spinning in its own *aether blanket, which* Earth was apparently dragging through space. No explanation was ever agreed upon as to the origin or extent of this *aether blanket.* It was simply a way to sweep a discrepancy under the carpet.

Light Divergence May Support an Aether

A perfectly collimated beam of laser light cannot be created, due to diffraction in the system. The beam will eventually diverge at an angle, which varies inversely with the beam diameter. So, a beam generated by a typical laboratory laser such as a helium-neon laser would spread to about 1.6 km in diameter if projected from, say, the Earth to the Moon. The divergence of the beam suggests light moves through a medium – one with inertia that causes the light beam to spread out rapidly. I will address my theory on the root cause of this phenomenon later in Part 2 concerning gravitational phenomena as inertial energy exchanges.

The Armstrong Experiment of 1842

Let us begin with the inertial nature of basic electrical phenomena derived from information, which has lain dormant for over 164 years in the form of a paper written by Lord W. G. Armstrong during 1842 concerning his findings in a unique, high-voltage phenomenon.

After several years of research, Lord Armstrong had perfected a piece of test equipment, which could produce a continuous supply of high-voltage, direct current electricity. It consisted of an old steam "boiler" from a locomotive and several specially designed "horns" or steam "nozzles". These nozzles would yield an ample supply of "electrons" when steam was forced through them. He was able to achieve voltages in the 50Kv range at currents, which would consume or incinerate dry, silk threads when passing through them.

He had performed many experiments, some of which were electro-chemical and others, which were electrodynamic. It was during one of his later experiments that a most unusual set of events presented itself to him. He found them so impressive that he immediately wrote a letter to his friend, Michael Faraday[4], detailing his findings. Faraday, in turn, was so impressed that he published Armstrong's letter in *"The London, Edinburgh and Dublin Philosophical Magazine and Journal of Science,"*[5] the prestigious scientific magazine of the day. An extract from that paper follows in which the original spellings have also been preserved:

"Two wine glasses 'N' and 'P' filled nearly to the edge with distilled water and placed about .4 inches [~10mm] *from each other were connected together by a wet silk thread of sufficient length to allow a portion of it to be coiled up in each glass as represented in* (Figure GEM-1)*. The negative wire, or that which communicated with the boiler, was inserted in the glass 'N' (which I shall call the negative glass) and the positive wire or that wire which communicated with the ground, was placed in the glass 'P' (which I shall call the positive glass). The machine then being put in action the following singular effects presented themselves.*

"*1st. A slender column of water, enclosing the silk thread in its centre, was instantly formed between the two glasses, and the silk thread began to move from the negative towards the positive pole, and was quickly all drawn over and deposited in the positive glass.*

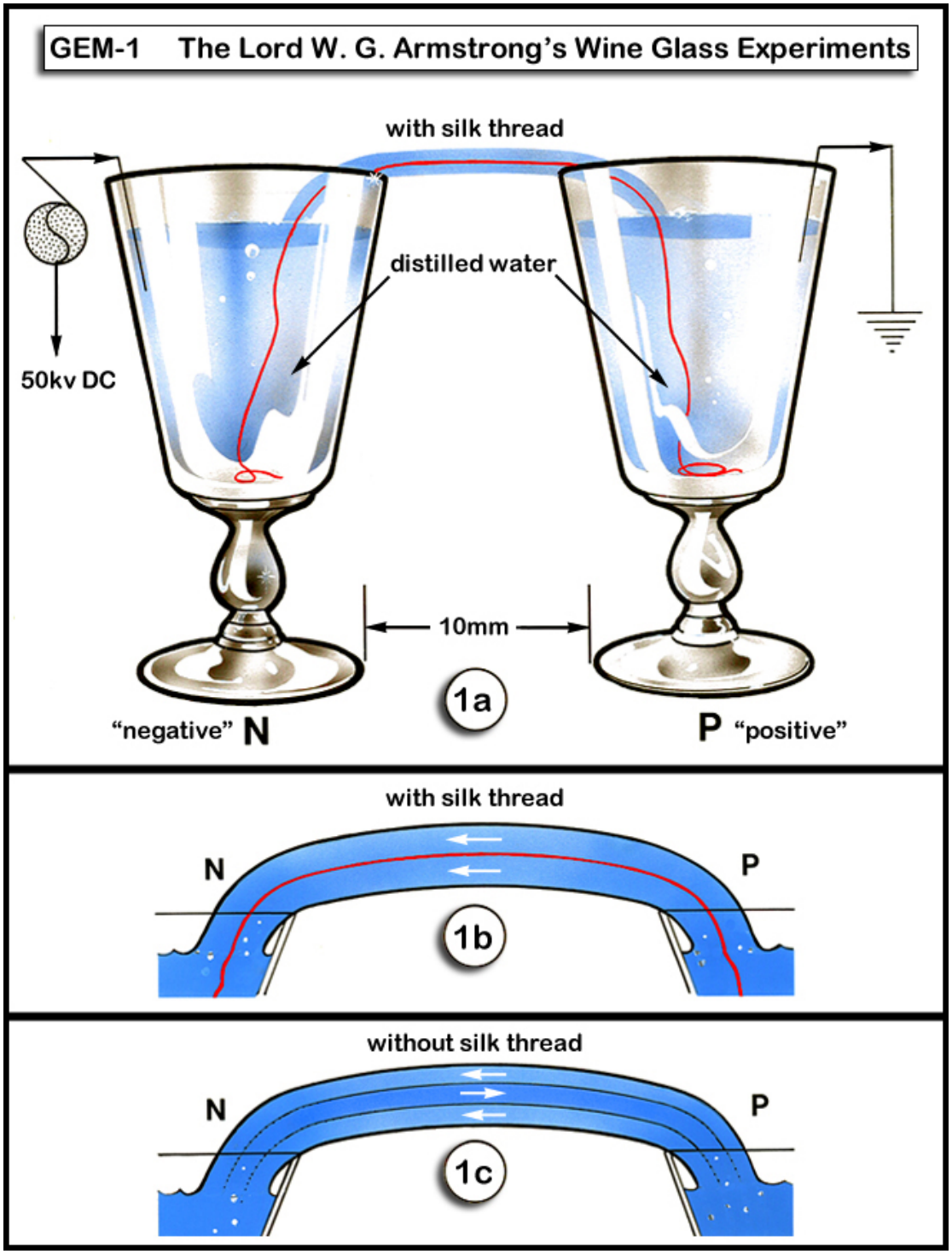
2nd. The column of water after this continued for a few seconds suspended between the glasses as before, but without the support of the thread, and when it broke the electricity passed in sparks.

3rd. When one end of the silk thread was made fast in the negative glass, the water diminished in the positive glass and increased in the negative one; showing apparently that the motion of the thread when free to move was in the reverse direction of the current of water.

4th. By scattering some particles of dust upon the surface of the water, I soon perceived by their motions that there were two opposite currents passing between the glasses, which, judging from the action upon the silk thread in the center of the column, as well as from other less striking indications, I have concluded to be concentric, the inner one flowing from negative to positive, and the outer one from positive to negative.

5th. After many unsuccessful attempts, I succeeded in causing the water to pass between the glasses, without the intervention of the thread, for a period of several minutes; at the end of which time I could not perceive that any material variation had taken place in the quantity of water contained in either glass. It appeared therefore that the two currents were nearly, if not exactly, equal when the inner one was not retarded by the friction of the thread.

From a purely inertial perspective, several conclusions might be drawn from the experiment. When "energized," the "negative" glass had an energy density greater than the "positive" glass as the motion illustrated. When this high energy density was led to the positive glass, a stream of water flowed across transferring high energy density into the lower energy density field of the positive glass.

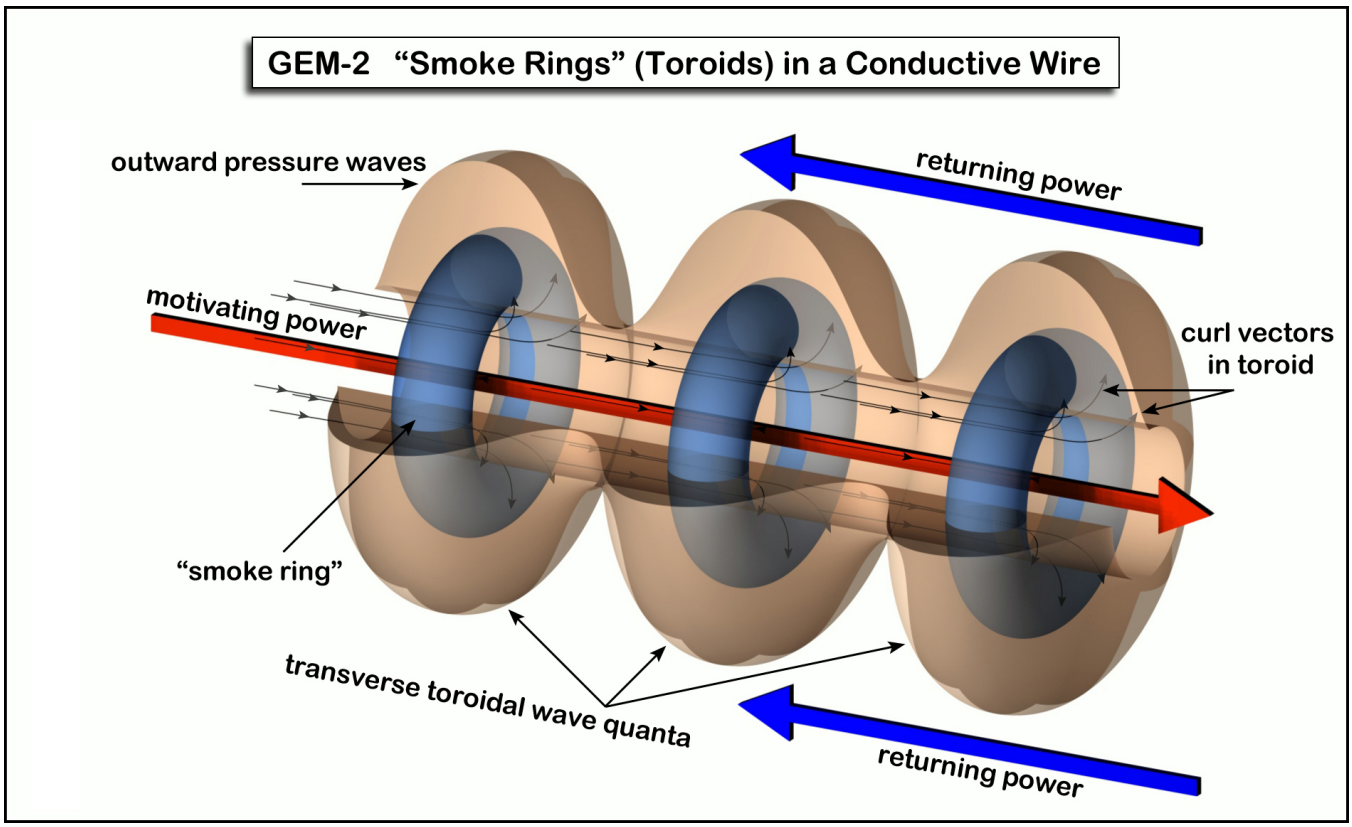


Immediately, a return "tube of water" concentric to the former flowed back across the gap from the positive glass to the negative one. During the transfers the water levels remained constant when only the water formed the link between the glasses. Yet, the water was seen to leave both glasses and move continuously into the opposite polarity glass. The energy was exchanged by moving the molecules of the highly distilled water from one glass to the other. The electrons on the "negative" side accelerated the water molecules by collision. The molecules then transmitted this higher kinetic energy by motion to the other side; and, hence, to the molecules of lower kinetic energy.

This type of electrical exchange also occurs in waterspouts and tornadoes where naturally occurring pure water is found; however, the far more common type of electrical exchange used by industry is that occurring in solid, metallic conductors. In the latter instance,

the conductor's molecules are bound in a loosely defined lattice. Because they are bound, they have a very short, mean-free-path of movement within the lattice. The entering electrons hit the metallic lattice and transfer their inertia throughout the entire lattice to the other end of the conductor in a variant of a transverse wave.

In its **linear** form, this type of wave is somewhat like a series of "smoke rings" or toroids where each one's center has vectors toward the lower energy density side of the conductor and where each one's outermost surfaces have vectors back toward the high energy density side (Figure GEM-2). Such toroidal packets also give the illusion of a **transverse** waveform because each toroid has vectors pointing at right angles directed toward and away from its travel path and at right angles to the direction of travel. So, to a stationary observer the passing tori would generate pressure waves outward from the wire while generating forward pulses along the wire.



However, for the moment, let us analyze the type of conduction found in Lord Armstrong's experiment; as the conclusions to be drawn from this analysis will yield a more practical picture of both types of energy exchange exhibited by this phenomenon which the textbooks call, "electricity".

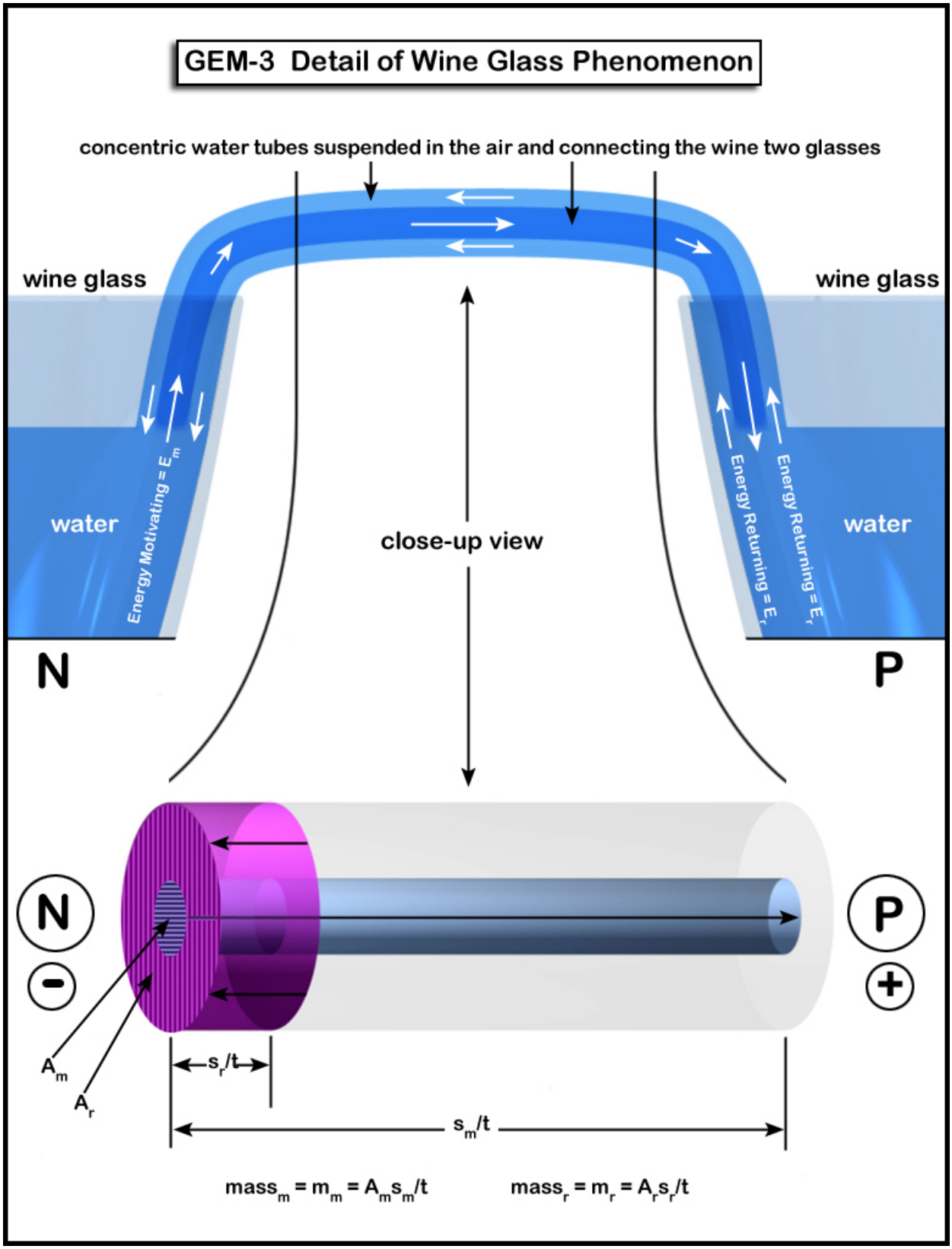
It may be deduced from the experiments the highest energy density and, hence, the motivating energy between the two glasses was in the "negative" glass. Therefore, let the motivating energy in the "negative" glass be called (E_m) as illustrated in Figure GEM-3.

Since water returned to the "negative" glass, it may also be deduced the energy density returned from the "positive" glass was less than the motivating energy density because some of the motivating energy had to be shared with the mass in the positive glass. So, let E_r represent the energy returning from the "positive" glass then:

$E_m > E_r$	**Eq. 1**

As the test showed identical amounts of water (or unit mass) exchanged between the glasses, the unit mass motivating (m_m) equaled the unit mass returning (m_r) such that:

$m_m = m_r$	**Eq. 2**



The water Armstrong used was distilled and was, thus, a poor electrical conductor so its resistance to the flow of electricity would have been high. So, the distilled water would have been a load in the circuit and would have consumed some power (perhaps as heat). Yet the masses exchanged were equal. Let (v_m) be the speed of the motivating water from the negative glass and (v_r) be the speed of the water returning from the positive glass, then:

$E_m = .5m_m v_m^2$ Eq. 3

$E_r = .5m_r v_r^2$ Eq. 4

Substituting from Eq. 2 into Eq. 4:

$E_r = .5m_m v_r^2$ Eq. 5

Then Eq. 1 becomes:

$.5m_m v_m^2 > .5m_m v_r^2$ Eq. 6

which, by reduction, is:

$v_m^2 > v_r^2$ Eq. 7

so,

$v_m > v_r$ Eq. 8

Now, where (κ) is the ratio between the two velocities Eq. 8 becomes:

$\mathbf{v_m = \kappa v_r}$ **[κ>1]** **Eq. 9**

Moving the masses (m_m and m_r) at their respective speeds in Eq. 9 we obtain:

$\mathbf{m_m v_m = \kappa m_r v_r}$ **[κ>1]** **Eq. 10**

So the value of the **momentum** ($m_m v_m$) from the motivating side of the exchange is greater than the value of the returning tube's momentum ($m_r v_r$).

In a like manner, the **kinetic energy exchanged** (E_k) between the two glasses could be expressed as:

$\mathbf{.5m_m v_m^2 = .5\kappa^2 m_r v_r^2}$ **Eq. 11**

The mass (m) of water **exchanged** in either the **motivating tube** or the **returning tube** is determined by the product of the respective cross-sectional, area (A) of each tube and the corresponding, water velocity (v) in that tube so we can say:

$A_m v_m = A_r v_r$ Eq. 12

Substituting Eq. 9 into Eq. 12 and reducing, we obtain:

$\mathbf{\kappa A_m = A_r}$ **Eq. 13**

The **motivating power** (P_m) in the circuit is represented in terms of the motivating unit mass (m_m) and velocity (v_m^2) per unit time; while the **returning power** (P_r) is represented in terms of the returning unit mass (m_r) and velocity (v_r^2) such that:

$P_m = m_m v_m^2/t$ Eq. 14

And,

$P_r = m_r v_r^2/t$ Eq. 15

Substituting from Eq. 2 into Eq. 15:

$P_r = m_m v_r^2/t$ Eq. 16

Substituting from Eq. 9 into Eq. 14:

$P_m = m_m \kappa^2 v_r^2/t$ Eq. 17

By dividing Eq. 17 into Eq. 16 we determine the ratio of the returning power to the motivating power to be:

$\mathbf{P_m = \kappa^2 P_r}$ **Eq. 18**

So, it follows that the difference in motivating power (P_m) and returning power (P_r) is the power consumed (P_c) by the load during the exchange of energy or:

$\mathbf{P_c = P_m - P_r}$ **Eq. 19**

….which by substitution of Eq. 18 into Eq. 19 gives:

$\mathbf{P_c = P_r(\kappa^2-1)}$ or $\mathbf{P_c = P_m(1-1/\kappa^2)}$ **Eq. 20**

Under currently accepted electrical theory, let the power ($\mathbf{P_c}$) (watts) consumed by the load in an electric circuit be represented as:

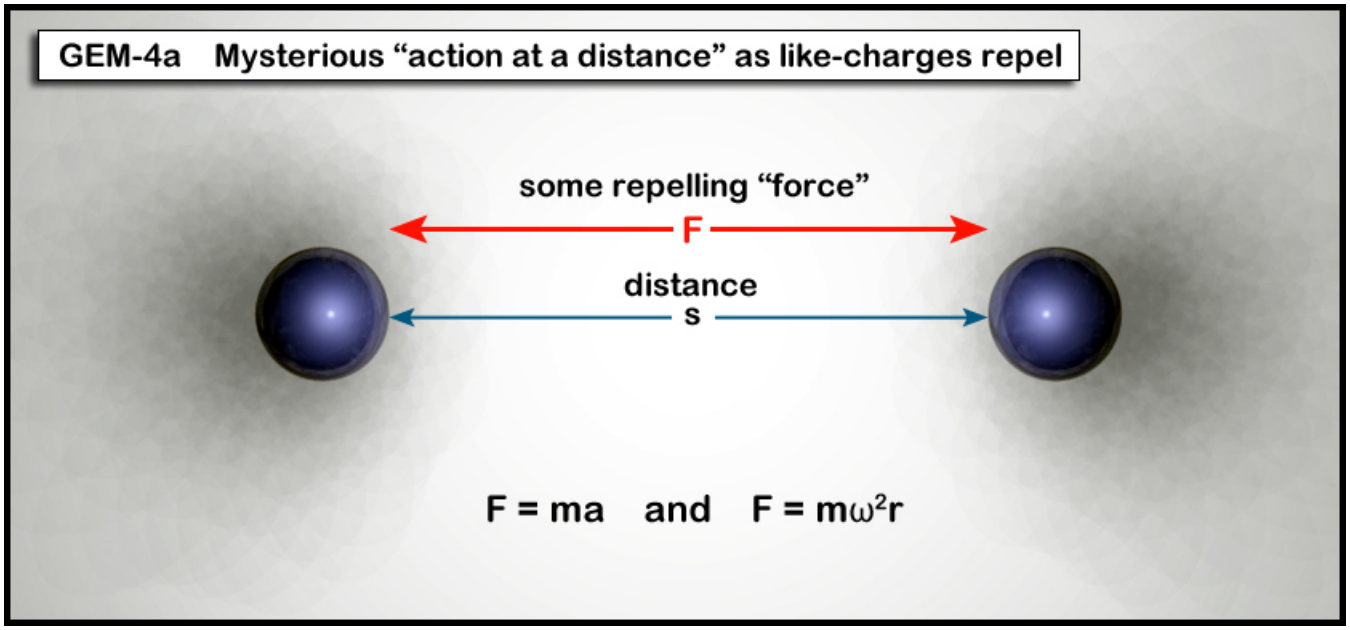
$$\mathbf{P_c} = I^2R \qquad \text{Eq. 21}$$

Where, (I) (amps) is the "current" flowing in the conductor; and, where (R) (in ohms) is the "resistance" of the conductor to the applied power. Classically, a coulomb is that quantity of 'charge' which when placed one meter from an equal and similar 'charge' in a vacuum, repels it with a force of $9x10^9$ newtons. Modern physics textbooks state, *"....an ampere is a coulomb per second."*

Let (q) be the quantity of "charge" measured in coulombs; then:

$$I = q/t \qquad \text{Eq. 22}$$

For a *"charge"* to repel a *"like charge"* ('repel' indicating a continuing force at a distance per unit time) requires that power be exerted by "something" to define that force. The equations of Maxwell, Coulomb, Ampere and Lorentz would have us believe this is the result of some "mystical" action at a distance, which results when two, like "charges" are brought into proximity with one another.



Remember the Newtonian axiom states a linear force (F_λ) is equal to a mass (m) under acceleration (a) (GEM-4a preceding). In the linear, Newtonian form this would be:

$$F_\lambda = ma \qquad \text{Eq. 23}$$

And, furthermore, that a tangential force (F_t) in a rotating mass (or mass shell in aether theory) is equal to that mass (m) under tangential acceleration (α_t) at a radius (r) (GEM-4b following). In the rotational, Newtonian form this is:

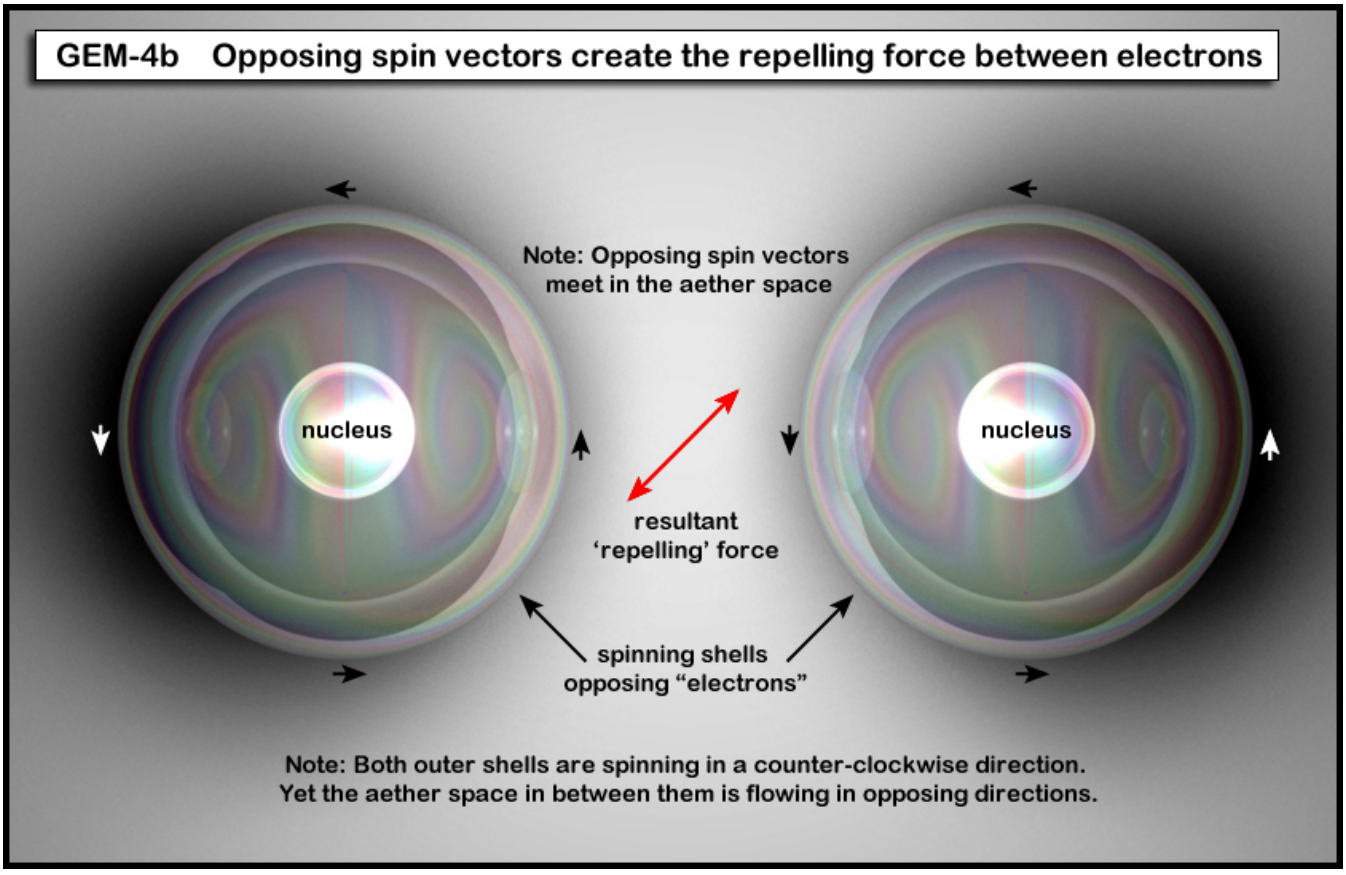
$$F_t = m\alpha_t/r \qquad \text{Eq. 24}$$

The collision of tangential forces between two spinning electrons in an "aether space" yields a resultant, linear force which is more commonly known as the Coulomb force (F_c) acting between two spinning "charges" (q_1 and q_2) at a distance (r) as defined by Coulomb's Law:

$$F_c = q_1q_2/4\pi\varepsilon_0r^2 \qquad \text{Eq. 25}$$

If (q_1 and q_2) are described as electrons with mass and spin vectors instead of possessing that rather mystical characteristic, "charge", then we could equate the Coulomb force (F_c) between two such masses as the resultant of the spin waves of those electrons continuously colliding with each other in the aether space at a distance (s) between them. In

aether space theory, the collision of these two spinning fields would be an elastic one such that neither field would lose or radiate energy under normal conditions.



Visualize a number of electrons or "charges" in a straight, horizontal chain extending from left to right. Under Coulomb's law there would be a repelling force between each of pair of them. Now, visualize each of these electrons as shells of energy (mass) around an atom's nucleus. In metallic conductors of electricity, these atoms would arrange in a lattice under STP conditions. Atoms being bound together by outer shell electrons orbiting two or more atoms in the chain would form that lattice.

In the certain conductors as the STP conditions are altered toward absolute zero, the stability of the lattice increases until every atom in the chain is coupled and stable. Depending upon which conductive substance is used, the temperature at which the lattice becomes stable can be from 150°K to absolute zero. At that temperature the chain of atoms becomes a superconductor with no resistance to the flow of "charges" via the electrons.

It has been shown by repeatable laboratory experiments that such a superconductor will float above a magnetic field indefinitely once a current flow has been induced into the superconductor. The magnetic field could be a permanent magnet, an electromagnet or yet another superconductor with a current flowing in it. The superconductor would repel the other magnetic field indefinitely as long as the initial temperature condition was maintained.

This phenomenon helps one to understand how two "charges" or electrons can produce a repelling force between themselves without losing energy. Each charge is in a "resistance free" orbit around its atom at STP. However, as the temperature rises the resistance of the chain of atoms and electrons to the flow of "charges" increases.

Electricity in Terms of Mass, Length and Time (MLT)

Although it is unnecessary to the proof of my analysis of the Armstrong Experiment I have equated the basic, classical terms of electric theory in terms of MLT in an effort to explain my deductions in more familiar terms. To that end, let me begin with the following:

The power consumed ($\mathbf{P_c}$) when an electric current (I) flows through a resistive load (R) is normally represented by:

$\mathbf{P_c} = I^2R$ from Eq. 21

In the Armstrong Experiment I observed the power consumed ($\mathbf{P_c}$) in a direct current flow through a conductor was, in reality, the vector sum of the motivating power ($\mathbf{P_m}$) and the returning power ($\mathbf{P_r}$):

$\mathbf{P_c = P_m - P_r}$ from Eq. 19

In classical terms the current (I) flowing through a circuit is the same in all parts of the circuit. This meant that the amount of charges flowing through every resistive load in the circuit was the same. The Armstrong Experiment showed us the volume of water (or the mass) flowing in the circuit was equal in all parts of it. The difference occurred in the speed and cross-sectional area at which that mass moved in the circuit. In Newtonian terms, the flowing water could be represented by a power equation. The difficulty lay in trying to figure which power flow was the one flowing equally in all parts of the circuit.

Measuring current flow in the Armstrong Experiment might have been accomplished by inserting a water flow meter as the counterpart to an ammeter in classical circuit analysis. However, in the classical measurement, we are told the ammeter is measuring the amount of current consumed by the load or resistance in the circuit. In contrast, the Armstrong Experiment showed us the power of the water flow returning from the Positive Glass (or the load) was the remnant of the motivating power because the load had consumed the rest.

How could a classical load 'draw' or 'consume' power from amps but allow those amps to pass through them anyway so the ammeter could detect them? This was illogical.

In the Armstrong Experiment the load consumes its amps ($\mathbf{P}_c$) from the motivating power ($\mathbf{P}_m$) and passes the remainder back to the power supply as the remnant ($\mathbf{P}_r$). It was this returning or remnant power ($\mathbf{P}_r$) which was the same in all parts of the circuit. So, what classical current measurements record is not the true current consumed by the load. It is the remnant current:

$I = \mathbf{P_r}$	**Eq. 26**

And in classical terms the power consumed ($\mathbf{P}_c$) was determined by:

$P_c = I^2R$ Eq. 27

Substituting from Eq. 26 into Eq. 27:

$\mathbf{P_c} = \mathbf{P_r}^2R$ rearranged as $R = \mathbf{P_c}/\mathbf{P_r}^2$ Eq. 28

And since

$\mathbf{P_c} = \mathbf{P_r}(\kappa^2-1)$ from Eq. 20

Then,

$R = \mathbf{P_r}(\kappa^2-1)/\mathbf{P_r}^2$ Eq. 29

Which reduces to:

$\mathbf{R = (\kappa^2-1)/P_r}$	**Eq. 30**

Classical electric potential (E_v) or voltage is:

$E_v = IR$ Eq. 31

By substituting from Eq. 26 and 30 we discover:

$E_v = \mathbf{P_r(\kappa^2-1)/P_r}$ Eq. 32

Which reduces to:

$\mathbf{E_v = \kappa^2-1}$ $\mathbf{[\kappa>1]}$	**Eq. 33**

This states the electric potential (E_v)or voltage is a ratio. Remembering from Eq. 9 [κ>1] that ratio is derived from the ratio of the Motivating Power ($\mathbf{P_m}$) over the Returning power ($\mathbf{P_r}$) as derived in Eq. 18 such that:

$\mathbf{E_v = P_m/P_r-1}$	**Eq. 34**

Thus, all the classical electrical variables have been expressed in the Newtonian MLT system… and in a more easily visualized form. By using these basic concepts and equations many other electrical equations and relationships can now be converted to Newtonian physics. In essence, these equations are a "portal" to better understanding of the Universe around us. In the following two parts of this paper that "portal" will become even larger.

Summarized Observations And Deductions From The Armstrong Experiment

1st The energy density in the motivating or 'negative' glass was greater than the returning energy from the 'positive glass'.

$E_m > E_r$	Eq. 1

2nd Identical amounts of water (mass) were exchanged between the glasses:

$m_m = m_r$	Eq. 2

3rd The speed of the returning mass flow was related to the speed of the motivating mass flow by:

$v_m = \kappa v_r$ [$\kappa>1$]	Eq. 9

4th The momentum ($m_m v_m$) from the motivating side of the exchange is greater than the momentum ($m_r v_r$) in the returning tube by:

$m_m v_m = \kappa m_r v_r$	Eq. 10

5th The kinetic energy in the motivating tube is greater than the energy in the returning tube by the following:

$.5 m_m v_m^2 = .5 \kappa^2 m_r v_r^2$	Eq. 11

6th The cross-sectional areas of the two tubes are related by:

$\kappa A_m = A_r$	Eq. 13

7th The power of the motivating tube of flow is greater than that of the returning flow by:

$P_m = \kappa^2 P_r$	Eq. 18

8th The power consumed (P_c) in an electrical exchange is the vector sum of the motivating power (P_m) and the returning power (P_r):

$P_c = P_m - P_r$	Eq. 19

9th The power consumed (P_c) as shown in Eq. 14 can also be expressed in terms of either the returning power (P_r) or motivating power by P_m:

$P_c = P_r (\kappa^2-1)$ or $P_c = P_m(1-1/\kappa^2)$	Eq. 20

10th Classical current (I) is equivalent to the returning power (P_r) in Newtonian terms:

$I = P_r$	Eq. 26

11th Classical resistance (R) in a circuit is a function of the inverse of the power returned or the remnant power (P_r):

$R = (\kappa^2-1)/P_r$	Eq. 30

12th Classical voltage (E_v) becomes a dimensionless ratio in Newtonian terms:

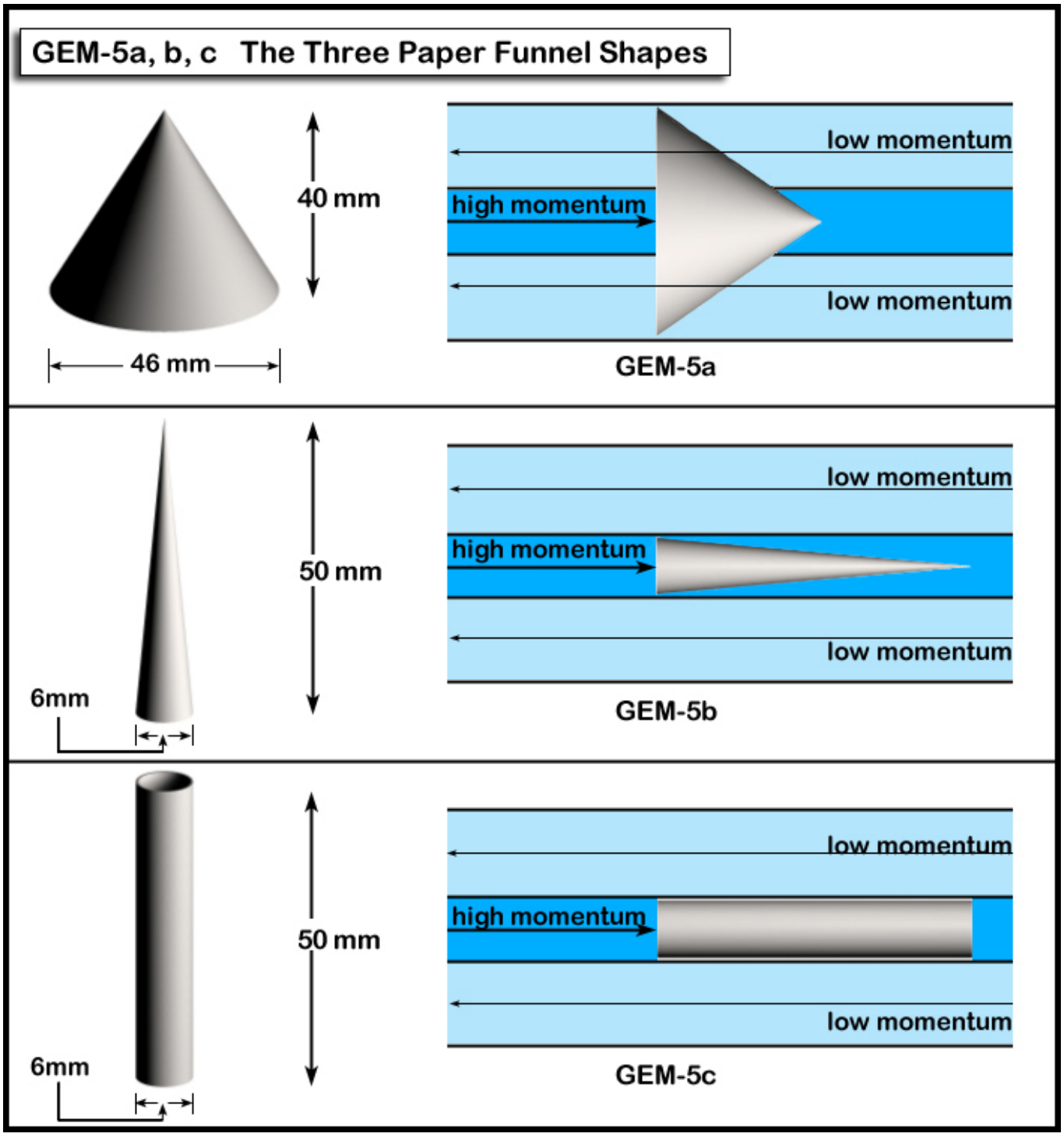
$E_v = \kappa^2-1$ [$\kappa>1$]	Eq. 33

But voltage (E_v) can also be expressed as a function of the ratio of the motivating power (P_m) and the remnant or returning power (P_r):

$E_v = P_m/P_r - 1$ Eq. 34

Tests Using the Armstrong Phenomena and Air Ions

In 1972, my good friend and associate in this research, Mr. Harry E. Godfrey[6] and I devised a series of tests to further explore the "two-tube theory" of electricity derived from Armstrong's "Wine Glass Experiment".



We reasoned if there were two opposing and concentric currents in any electrical transfer through a medium, then an object could be shaped into a projectile which, when placed in such a transfer of electricity, would illustrate the effects of thrusts from each of the two tubes. We figured that by varying that portion of the surface area of a projectile, which lay in the "outer tube" as opposed to that portion of its surface area, which lay in the "inner tube" of a continuous, high-voltage, direct current discharge, we should be able to show three interesting events.

The first two would be the movement of the same projectile in either direction along the conductive medium toward the "negative" or the "positive" electrode. The third event would be to make the projectile balance in equilibrium somewhere between the electrodes.

The first projectile was made of typing paper rolled into a cone. It had a focus angle of 60 spherical degrees (Figure GEM-5a) and a height of about 40 mm. We used a standard, classroom-style Van de Graaf generator to produce the high-voltage, direct current electricity necessary to our test. By a variety of rather primitive tests with discharges between small spheres and needlepoints, we were able to estimate the voltage appearing on the top sphere of the generator at 250,000 volts. The estimated capacitance of the sphere was 15 picofarads; hence, the potential energy of the system was about .47 joules.

We inserted our cone into the corona discharge in the air space between the top of the Van de Graaf generator and the smaller sphere which was connected to an induction brush at the bottom of the rubber belt in the vertical column. The point of the cone was towards the lower potential ball (i.e. the smaller ball).

Classical physics would require this paper cone to affix itself to one or the other of the two balls depending on their "polarity" with respect to the cone. The cone moved over to the smaller ball and affixed itself sideways on the surface closest to the larger sphere's surface. We tried again; but this time we inserted the cone with its point towards the larger or higher potential ball. The cone moved over to the larger ball and affixed itself sideways to it instead of the other! We were elated. We had reversed the object's motion vectors by its geometry and its orientation only.

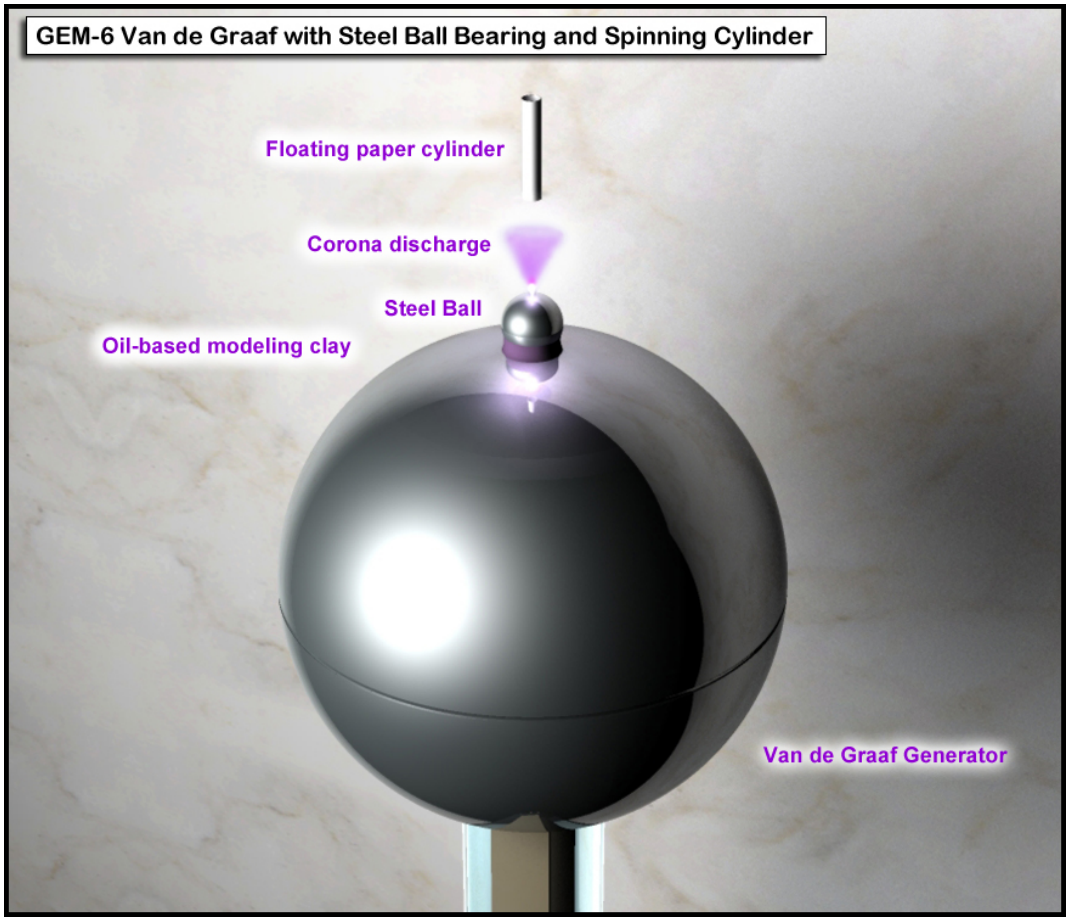
A new cone was fashioned to be more acute and about 5cm long (Figure GEM-5b). We inserted this again into the discharge flow with its point toward the low potential ball. It "zoomed" away; struck the low potential ball and glanced off onto the floor. Elation reigned; for we had predicted the more acute cone would experience greater acceleration since most of its surface area was in the inner tube. The evidence seemed to bear witness to this. Later, by increasing the distance between the balls, we were able to insert the acute cone into the stream and balance it in mid-air between the spheres. It vibrated and hissed; but it still hung there locked by the resultant forces upon its surface.

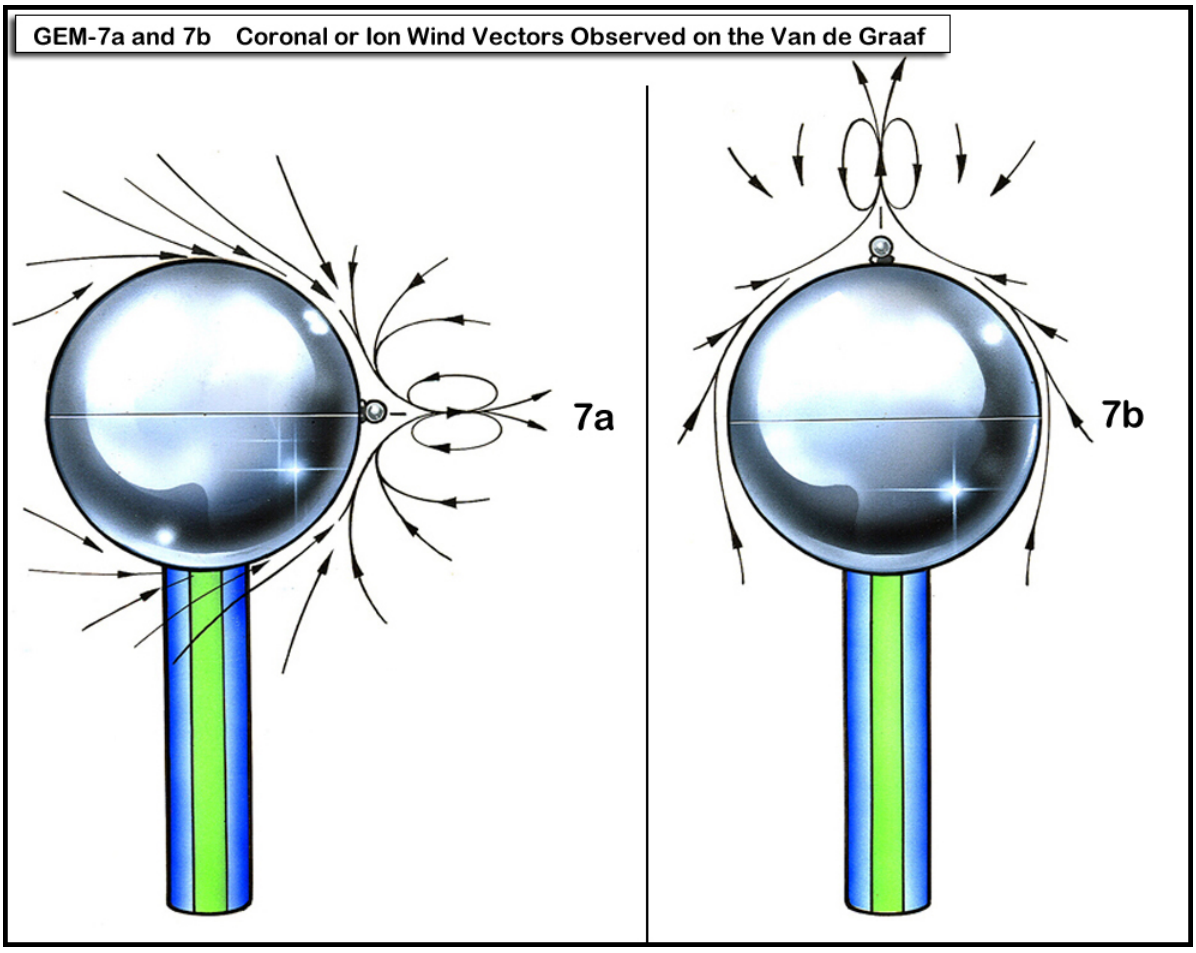
Seeing the latter result prompted us to make another cylinder about 5cm high and 6mm in diameter (Figure GEM-5c). We anticipated this cylinder would be more stable in the stream as both the inner and outer surfaces of the cylinder would be at right angles to the flows in the two tubes.

Additionally, since we had been able to estimate the diameter of the inner stream of air at about 6mm, we anticipated the cylinder would position itself virtually on the interface between the two tubes of "flow." As the cylinder was inserted into the stream, we were again vindicated. The cylinder just hung quietly suspended in the air between the two balls which were at about 30cm spacing.

We then modified the high-tension terminal by affixing a 20mm steel ball to the surface with plasticine (or modeling clay) (Figure GEM-6). We placed the ball on top of the high-tension sphere and energized the generator. To our surprise, a continuous "hissing" sound came from just above the small ball. Inter-spaced at fairly regular intervals, a sharp "snapping" sound was emitted from the same area as the air and momentarily hosted a vertical arc discharge of about 4mm length from atop the small ball.

We turned out the room lights and observed a beautiful, lavender funnel of ionized air above the small ball. The funnel's point originated at the surface of the small ball; and a very definite coronal discharge "wind" blew away from the small ball. A small ball placed on the side of the high-tension sphere (Figure GEM-7a), led us to discover the coronal discharge "wind" emitted a stream of electrons that traveled to my body some 2.5 meters away.

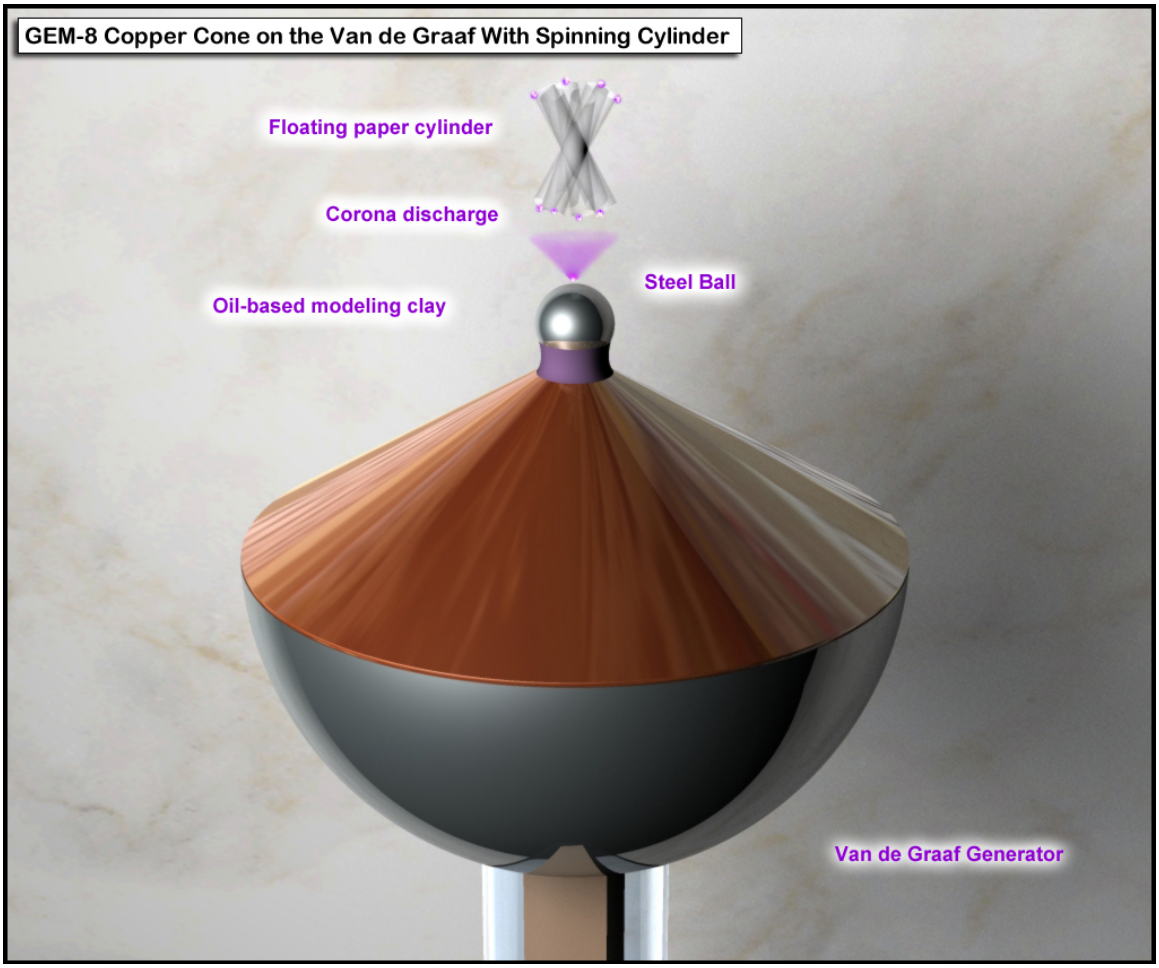

GEM-6 Van de Graaf with Steel Ball Bearing and Spinning Cylinder
Floating paper cylinder
Corona discharge
Steel Ball
Oil-based modeling clay
Van de Graaf Generator


GEM-7a and 7b Coronal or Ion Wind Vectors Observed on the Van de Graaf
7a
7b

The electrons only traveled in a straight line extended from the line of centers between the large sphere and the small ball. The “charge” transmitted in this manner was sufficient to “charge” my body to capacity so that I could discharge to ground through an arc of about 5mm in length every five seconds.

Further testing with small pieces of paper and expanded polystyrene (styrofoam) beads confirmed the two currents in the vicinity of the small ball as shown in Figures GEM-7a and GEM-7b. The velocity of the objects used to determine the field shape showed conclusively that the speed of the air emitting from the field focus point (the small ball) was considerably greater than that of the air returning to the high-tension terminal.

Next, we increased the speed of this coronal wind through geometric changes to the system. Observing that any point or raised area on the surface of the high tension sphere caused some degree of "two-tube," inertial, air exchange to form, we hypothesized the maximum speed of the "wind" for a given generator was to be obtained by altering the surface geometry to maximize the “charge” crowding at some point relative to the rest of the surface. This was assumed to vary directly with the acuteness of the angle made between the tangent connecting the spherical surface to the raised or sharpened point on its surface.



A few days later a copper cone had been constructed to replace the top half of the high-tension terminal (Figure GEM-8). The base angle of the cone was 30°; so, the oblique angle at the focal point of the cone was 120°. The circular, bottom edge of the cone had been wrapped with insulation tape to reduce coronal leakage at that "sharpened" point relative to the lower hemispherical surface. The surface of the copper cone had been coated in acrylic spray to reduce any premature coronal discharging before the “charges” crowded to the focal point where we had again placed the small ball. The small ball had been sealed into place with plasticine (oil-based modeling clay).

When power was applied, the result was not disappointing. Above the field focus ball was a coronal discharge composed of a thin, blue, "flame" about 2.5 centimeters in height with an inverted funnel of lavender haze above the "flame" (Figure GEM-8). A vigorous "buzzing" sound emanated from the coronal discharge. Seeing the coronal wind was not extending more than about one meter above the focus ball, I followed an impulse and grabbed the small paper cylinder, which we had previously supported between the high-tension sphere and the ground sphere and released it above the cone.

For a split second, it just floated above the cone (Figure GEM-8); and then it accelerated into a spin of about 400 rpm about its vertical axis! After it had reached its top speed, it began a secondary oscillation about its center of mass. The loci of the gyrating cylinder formed a surface similar to an hourglass. In the darkened room, the ends of the cylinder gave off a lavender glow that sprayed behind the issuing edge.

We had developed a very simple technique for controlling the field voltage from a distance by holding a sharp, metallic point like an all-metal screwdriver in our hand. Making certain we were electrically connected to it, we would then aim it at the high-tension ball. The field collapsed by degrees as we turned the pointed end of the screwdriver from a position parallel to the tangent plane of the closest point of the system to a position perpendicular to and pointing directly to that same plane. When this technique was applied to the spinning cylinder experiment, the buzzing stopped and the cylinder fell to the ground.

We then performed numerous tests with smoke to observe the charged air motions within the various geometries we constructed. Oddly enough, we frequently found the air currents in the tubes spiraled slowly about their vertical axes. This was attributed to a conservation of momentum when the various linear vectors of the emitting electrons met with the air molecules of lower velocity and larger masses. Since both the electrons and the molecules contained spin components in their momentum, we reasoned the spirals were a function of these interactions. However, we could not confirm the presence of contra-rotational spirals within the field as we would have liked to observe. We did consider the possibilities of devising a method of dealing with such a phenomenon occurring naturally as tornadoes and waterspouts. Our research sources had suggested tornadoes were quite frequently a result of indirect, electrical exchanges between the host cloud and the Earth. Thus, it was thought the tornado might be shorted to Earth causing the motive power of the exchange to disappear and, hence, terminate the tornado.

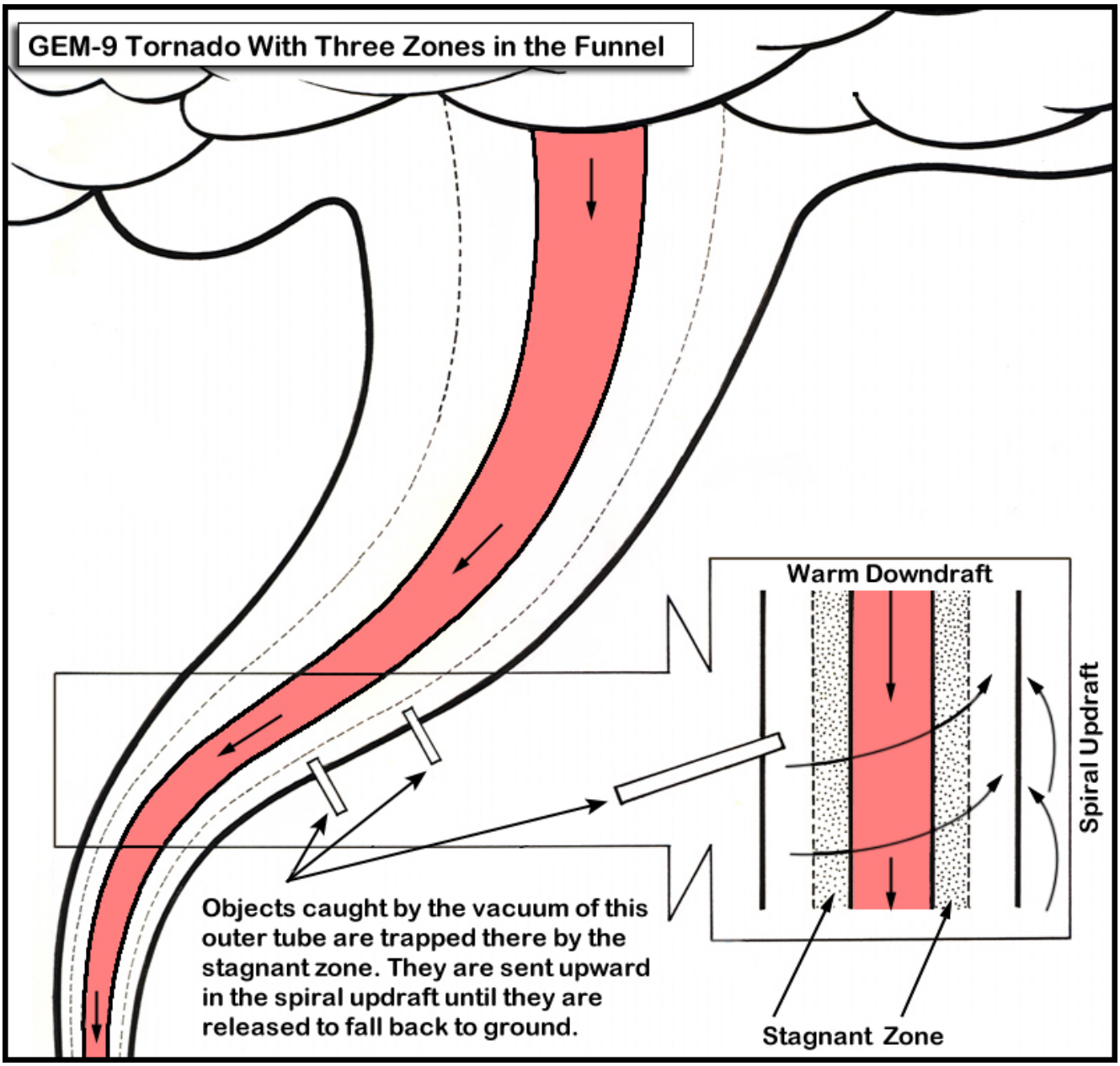
Although I cannot find the exact reference paper we had read concerning NASA's testing in this area, I do remember reading an account of their having suggested or tested a process of sending a conductive wire aloft by balloon or by rocket to short-out tornadic activity which might occur within the vicinity of their launching pads. From recollection, this was reported sometime in 1972.

Further information on this "spiraling" effect in the charged air system came to light in an article written by Dr. Joseph Golden[7] in 1973. The article discussed the waterspout research of N.O.A.A.'s, Dr. Golden. According to the article, *"A towed probe [inside a waterspout] showed the funnel has a shell of condensed vapor five to ten feet thick in which no motions are detectable; immediately outside the shell, however, is a highly turbulent layer of eddying cloud with an upward spiral movement. The air inside the core travels downwards."*

If the Armstrong phenomenon is the same as that which creates the tornado, then the two concentric tubes of inertia are separated by a third, stagnant tube or "null zone" (Figure GEM-9). This concept could fuel discussion on another observation: a rectangular cross-section conducts more current than an equivalent, circular conductor at a given temperature.

We contacted Dr. Golden who then sent us a stack of reference articles he had collected on the electrical nature of tornadoes and waterspouts (tornadic manifestations over water). He sent us one paper written by Vernon J. Rossow[8] on waterspout and tornado theory which

concluded, *"The foregoing results indicate that atmospheric vortices over water can exist without an electric field or current of appreciable magnitude. This does not rule out, however, the possibility that electricity could have a contributory role in the structure of tornadoes or more intense waterspouts. The results also do not explain observations such as those reported by B. Vonnegut and M. Brook wherein electrical displays or strong electric currents accompanied or were in close proximity of tornadoes."*



One other interesting reference surfaced while we were on this line of thought. It was from an earlier paper presented by Vonnegut[9]. It discussed the electrical nature of the events accompanying tornadic vortices. According to Vonnegut, *"The visual evidence of the close association between lightning and tornadoes is confirmed by the radio 'static' measurements made by* [Jones 1951]*. He concluded from sferics measurements that in tornado-producing storms lightning discharges occur at the rate of 10 or 20 per second, which is about ten times the rate in ordinary storms. Further evidence of the close association between electricity and tornadoes is contained in reports of those who have looked up into the interior of a funnel and lived to tell about it. These observers report a variety of electrical phenomena, such as incessant lightning* [Justice, 1930], *a brilliant luminous cloud* [Hall, 1951], *a ball of fire* [Bowker, 1953] *or a display "like a Fourth of July pinwheel"* [Montgomery, 1955], *in the tornado tube."*

...."There are phenomena suggestive of electrical effects. Intense St. Elmo's fire is frequently observed in the funnel, and odours, probably of ozone and nitrogen oxides, have been described. Buzzing and hissing noises suggestive of electrical discharges have been reported near the funnel. After its passage, dehydration of vegetation in the surface soil has been noted along the path. In addition to the fairly well understood primary and secondary electrical effects discussed above, accounts of tornadoes rather frequently include mention of 'beaded lightning' and glowing or exploding fireballs [Flammarion, 1873]. These phenomena are apparently the same or are closely related to the controversial, 'ball lightning' [Goodlet, 1937; Kapitza, 1955] whose existence and nature are still debated. In view of our almost complete ignorance, we shall make no attempt to discuss this class of observations. It is worth remarking, however, that an understanding of ball lightning will be necessary if the tornado puzzle is to be solved."

From the preceding findings and from our own researches, we were able to determine a few surprising 'facts' about tornadoes:

First, they did not have a vacuum up the center. Quite contrarily, they actually blow warm, moist air down their funnel centers.

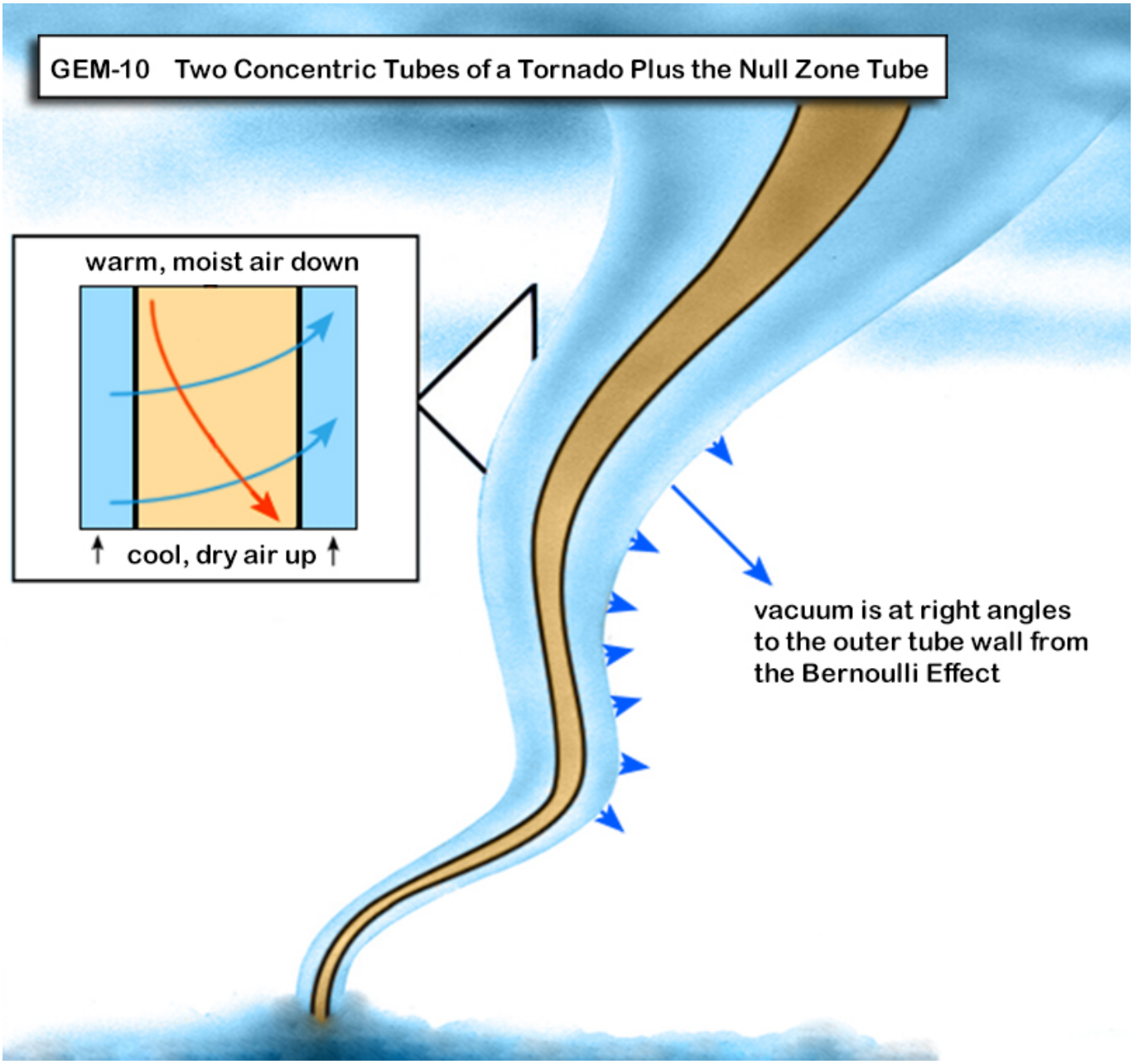
Second, the vacuum was formed at right angles to the spinning funnel's vertical axis. The vacuum effect was created by the Bernoulli effect at right angles to the upwardly spiraling air on the outside of the funnel.

Third, they are composed of two "tubes" of “charged”, moving air and one stagnant tube of air as evidenced by electrical discharges in the very high-voltage, direct-current category.

Fourth, the tornado exhibits similar characteristics to our crude analogy in the laboratory with the Van de Graaf generator. It produced a spiraling vortex, two "tubes" of “charged”, moving air, hissing sounds, a vacuum effect strong enough to support the paper cylinder in the air and a "luminous cloud".

Tornadic Evidence of the Armstrong Phenomenon

In a 1972 issue of the U.S. *National Geographic Magazine*, a series was written discussing various weather phenomena. In the section concerning tornadoes, a rare, backlit photograph of a tornado showed a funnel made up of not one - but two concentric tubes extending from the cloud base to the ground (Figure GEM-10). For reasons which will become increasingly obvious, I perceived this to be a large-scale version of Lord Armstrong's wine glass phenomenon.



In 1837, the American scientist, Hare, stated, "After maturely considering all the facts, I am led to suggest that a tornado is the effect of an electrified current of air superseding the more usual means of discharge between the Earth and clouds in those vivid sparks which we call lightning."

In 1840, the French scientist, Peltier, wrote, "Everything proves that the tornado is nothing else than a conductor formed of the clouds which serves as a passage for the continual discharge of electricity."

Time passed, and the electrical theory of tornadoes was shoved aside by the modern meteorological college. Over twelve decades after the time of Peltier and Hare, the work of Bernard Vonnegut finally began to shed new light on "funnel" phenomenon. According to Vonnegut[10], *"Modern theory and observations appear to support the very old and almost forgotten idea that tornadoes are a manifestation of thunderstorm electricity It is suggested that there is sufficient electrical energy in an intense thunderstorm to power a tornado, and that the electrification could cause extraordinarily intense winds by electrically heating air or by accelerating charged air in an electric field."*

In 1960, Vonnegut teamed up with C.K. Harris to publish a paper entitled, "Stabilization of a High-voltage Discharge by a Vortex."[11] They used an **alternating** current power source for their test. Their system was comprised of a small cylindrical, plexiglass chamber with one electrode protruding from the top and the other from the bottom (like stalagmites and stalactites). This chamber was so constructed that a spiraling vortex of air could be created between the electrodes.

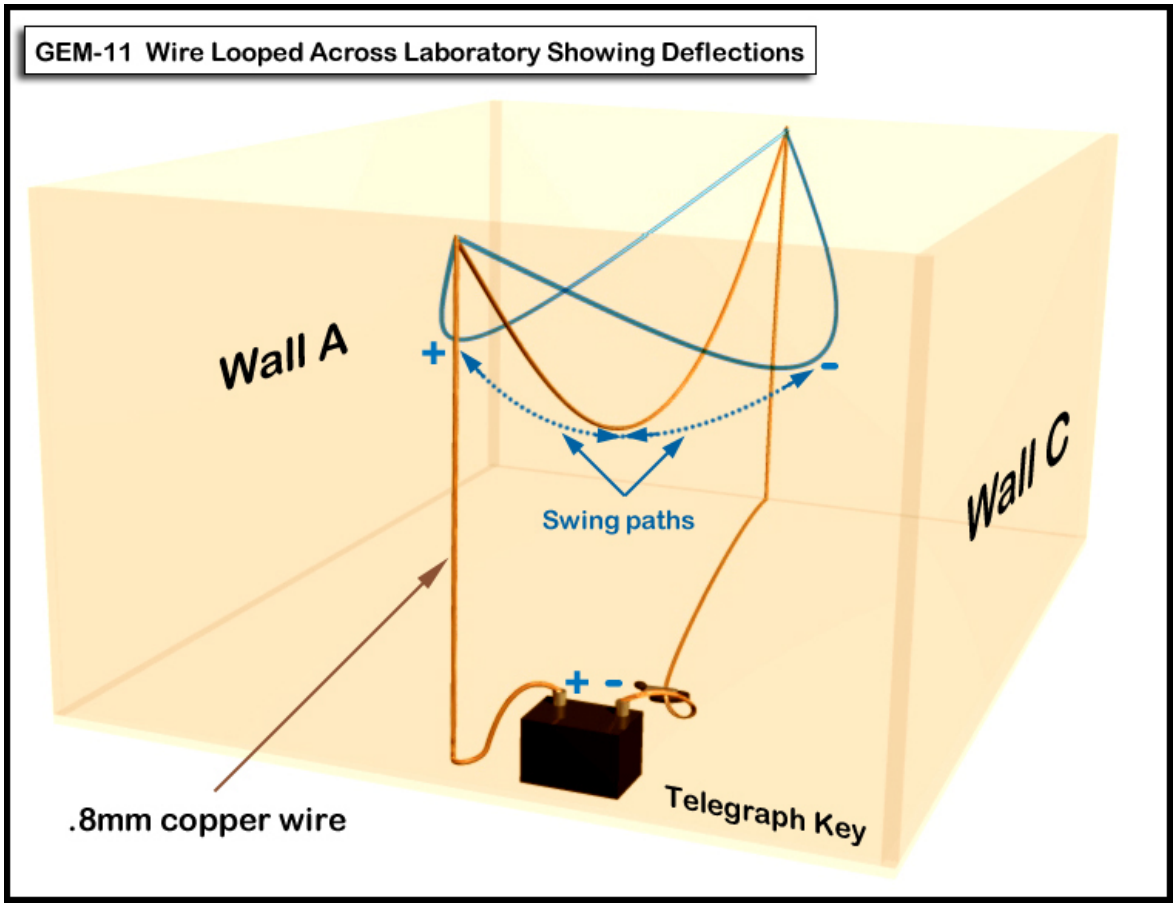
According to their paper, *"Without a vortex, a stable spark could not be maintained if the electrodes were more than 37mm apart*." [However]… *"When the blower was turned on and a vortex was created, we observed that the discharge between the electrodes became more steady, that its diameter increased, and that it appeared to assume the characteristics of a glow rather than a spark discharge."*

"When the vortex was turned on we found that the potential difference across the discharge dropped from 6.0 Kv to 4.3 Kv and that the current increased from 17.5 ma to 19 milliamps. [my note: the power transferred in these two tests was 105 watts and 81.7 watts respectively.] *"It was further observed that with the vortex it was possible to obtain a stable discharge even when the electrodes were as much as 68 mm apart....The potential difference in the preceding case was 7.3 Kv and the current was 14.5 ma."* [note: the power transferred here was 105.85 watts].

In 1968, Mr. A. D. Moore, a lecturer on electrostatic phenomena, wrote a book[12] about his researches and observations. Although his entire book was a fascinating exploration, one particular comment was more important than all the rest of his observations. While he was experimenting with some high-voltage, direct current electricity and its effect upon candlelight, he witnessed an unusual phenomenon. On page 93 he stated, *"Hold the flame close to the positive electrode end, and it does just what you would expect: it is vigorously blown away. But, held at the negative electrode, the flame divides! When this works at its best, about half of the flame blows away, and the other half is attracted to the electrode."*

The Welder's Clue to DC Torque in a Wire

The beginning of my formulation for an aether space Universe started with observing some simple, everyday phenomena. One day I was in a friend's boat building factory watching the welders tack aluminum plates onto a boat frame when I noticed a curious phenomenon. Aluminum boats are welded together with welding machines typically using 20-100 amps of direct-current electricity at 20-60 volts.



I heard a slap on the floor behind the welder and dust rose up from the factory floor every time the welder would strike an arc on the stock. After a few minutes I determined the cable from the transformer to the hand-piece jerked or twisted in such a manner as to strike the floor with force.

Close observation of this event would have revealed the wire underwent a sudden, twisting torque around its length. Furthermore, should that power wire have been lying in a loop on the floor, as it frequently does, a loud "slap" would have been heard as the loop momentarily thumped into the workshop floor.

Later, intrigued by the phenomenon, I set about duplicating it under experimental conditions in my laboratory. Initially, I reasoned the twisting effect to be a magnetic one directly related to the high-power currents of the welding machine.

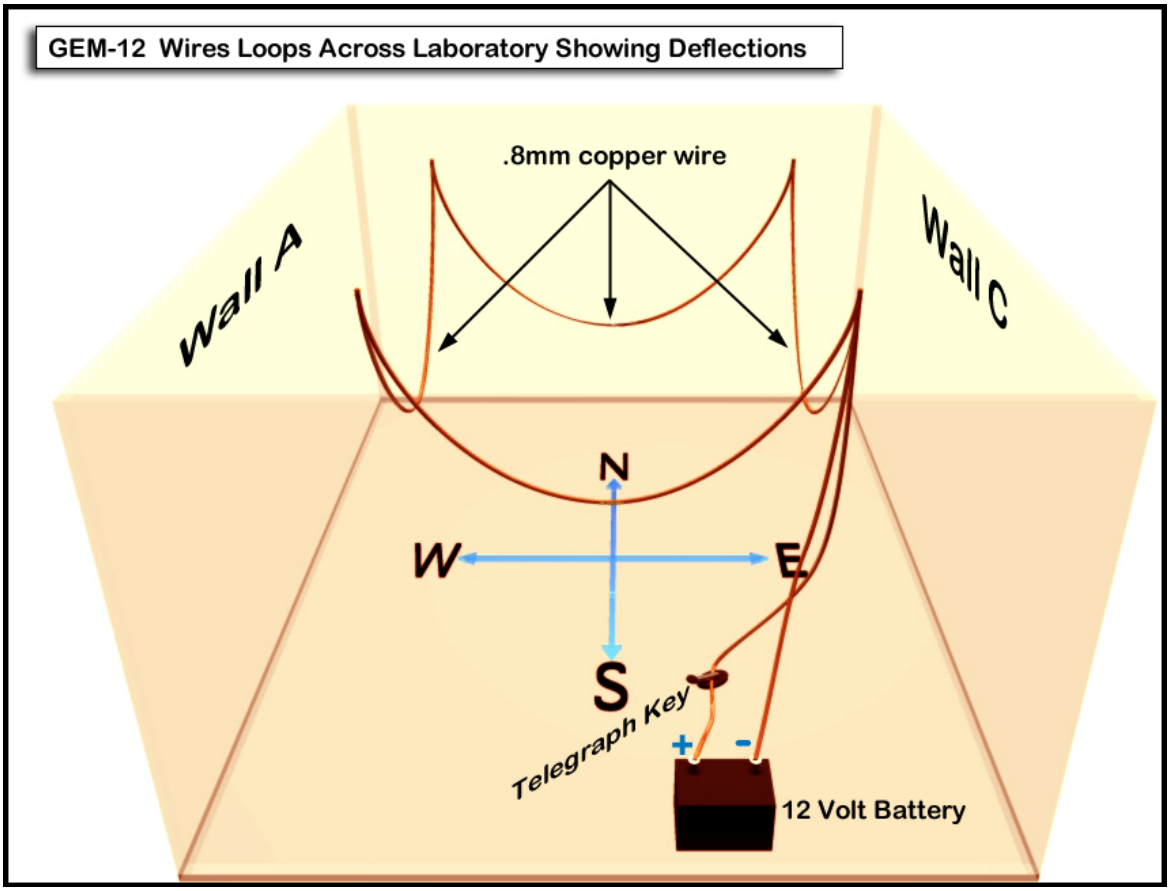
My experiment began by hanging a length of .8mm diameter wire across the lab. One end of the wire was wrapped around a plastic anchor peg on the far wall (Figure GEM-11) while the other end was similarly wrapped around a plastic anchor post on the wall nearest to the 12-volt, car battery, which would be used to supply the high-current power to the test wire.

The end of the wire at the far wall was fed back to the negative battery terminal while the near end of the wire was connected to a telegraph key, which was in turn connected to the positive end of the battery. When power was applied to this arrangement by depressing the key,

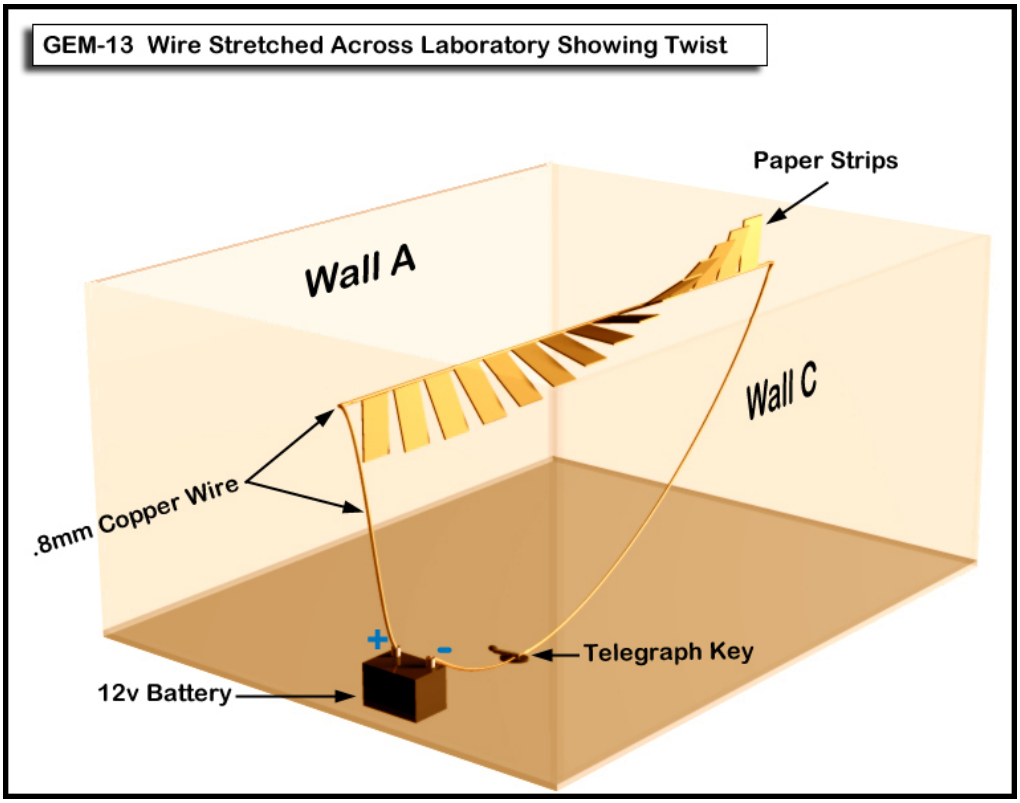
the portion of the wire which drooped between the two anchor posts deflected toward the wall labeled, "A". If I reversed the polarity of the current flow, the loop deflected toward the wall labeled, "C". In either case, as the circuit was closed, the wire deflection was momentarily exaggerated before coming to rest slightly off its un-energized position.

Again, in both cases, after the circuit was opened, the wire returned to its rest position indicating there was momentarily a higher torque, which reduced to a steady torque imbalance, or twisting moment as the current established itself. Even though the wire became a bit warm, the torque remained until the power was switched off. If I depressed the key with a frequency matching the deflection time, the wire could be made to swing from wall "A" toward wall "C" through arcs of up to ninety degrees. This I attributed to simple harmonic motion governed by the periodic supply of current to the system.

In an effort to see if this twisting moment were somehow a result of the interaction of the Earth's magnetic field with the magnetic field of the wire, I hung four loops from the ceiling (Figure GEM-12). Each loop faced a direction of the compass. Whenever I applied power to the system, the loops would all deflect and twist around their vertical axes equally either toward the center of the loop arrangement or away from same. This indicated the torquing motion was not appreciably affected by the Earth's magnetic field. So, it appeared the torque was a local or atomic level event within the wire.



Next, I changed the position of the wire, which I had first used to a position tightly stretched between the anchor posts (Figure GEM-13). Along the length of this wire were glued small strips of white paper. All of them were in an upright position along the wire. When the power was applied to this configuration, the pieces of paper twisted about the length of the wire and then returned to their upright, rest position after power was removed. I concluded that I was witnessing a low-voltage, high-current version of the same effect demonstrated in Lord Armstrong's "wine glass experiments".



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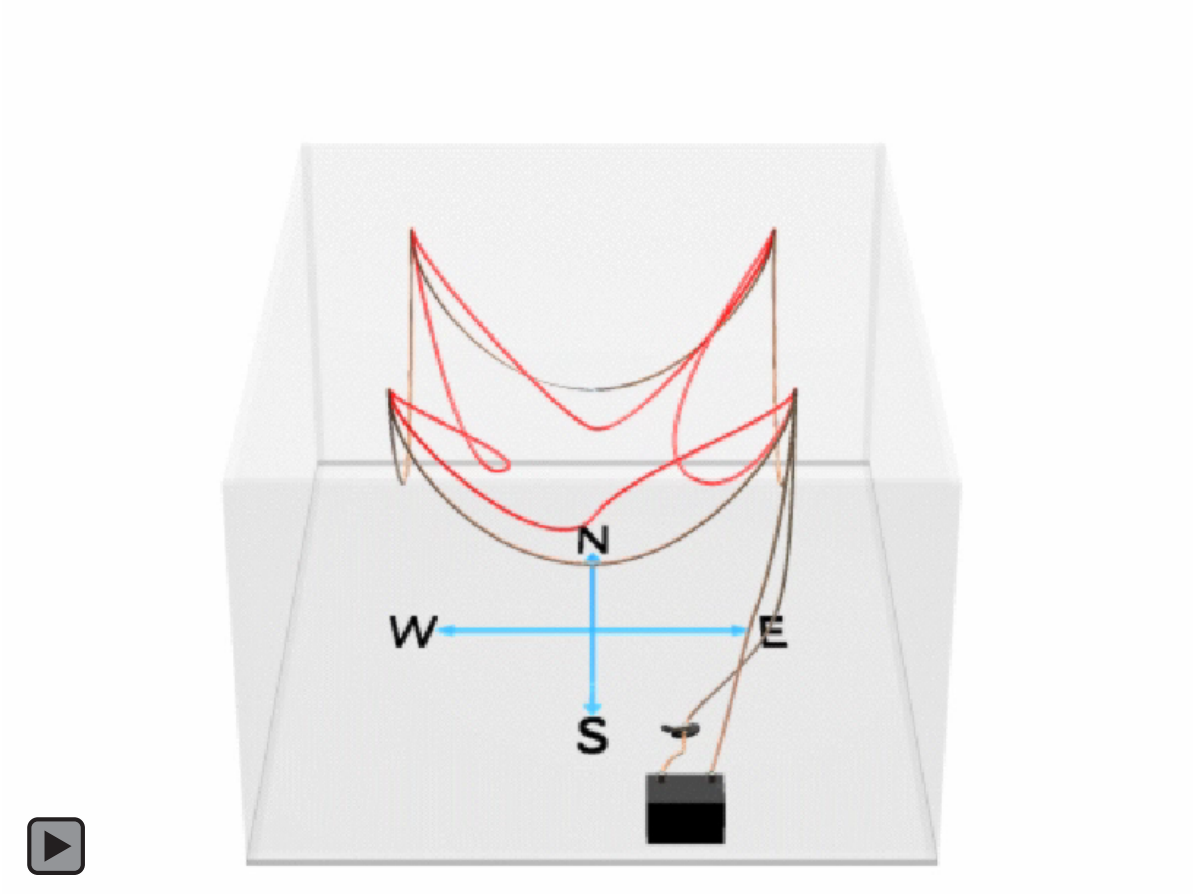

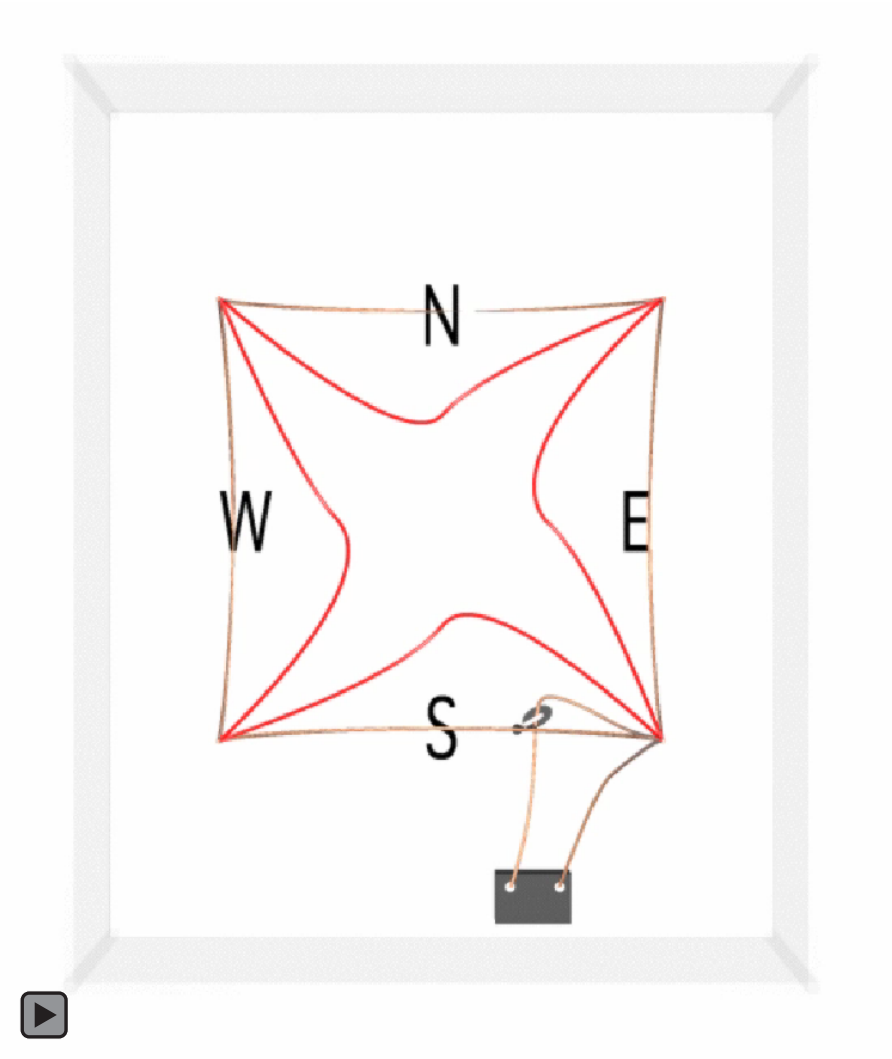
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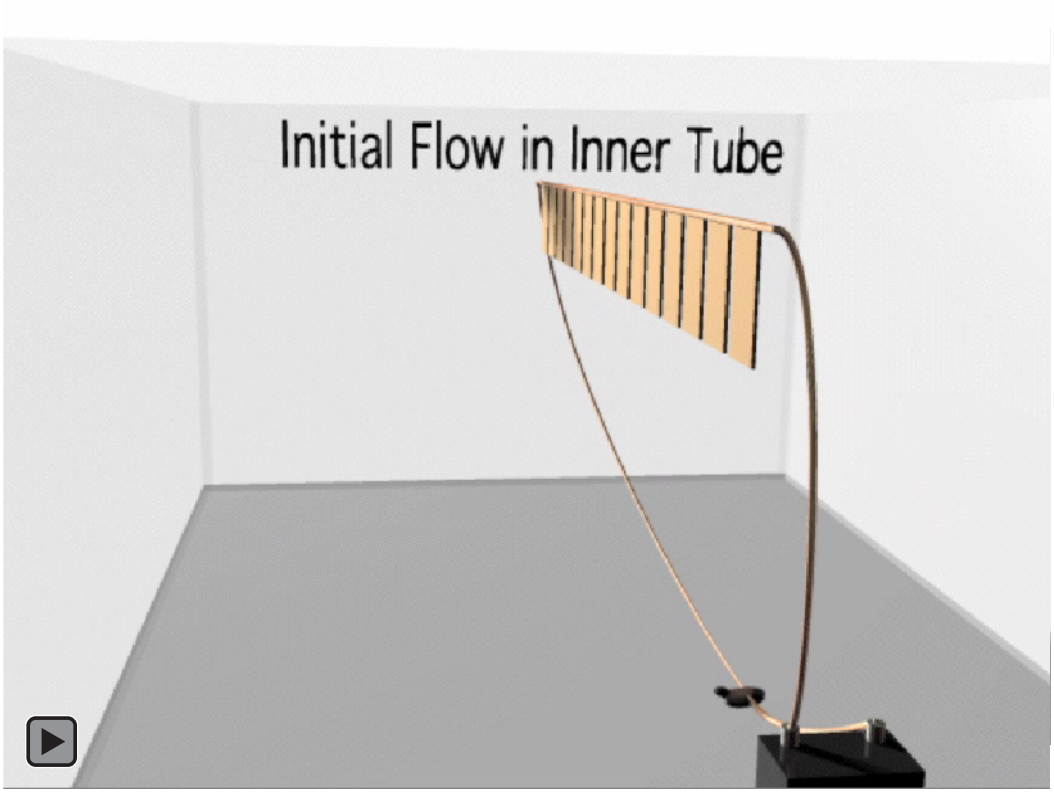
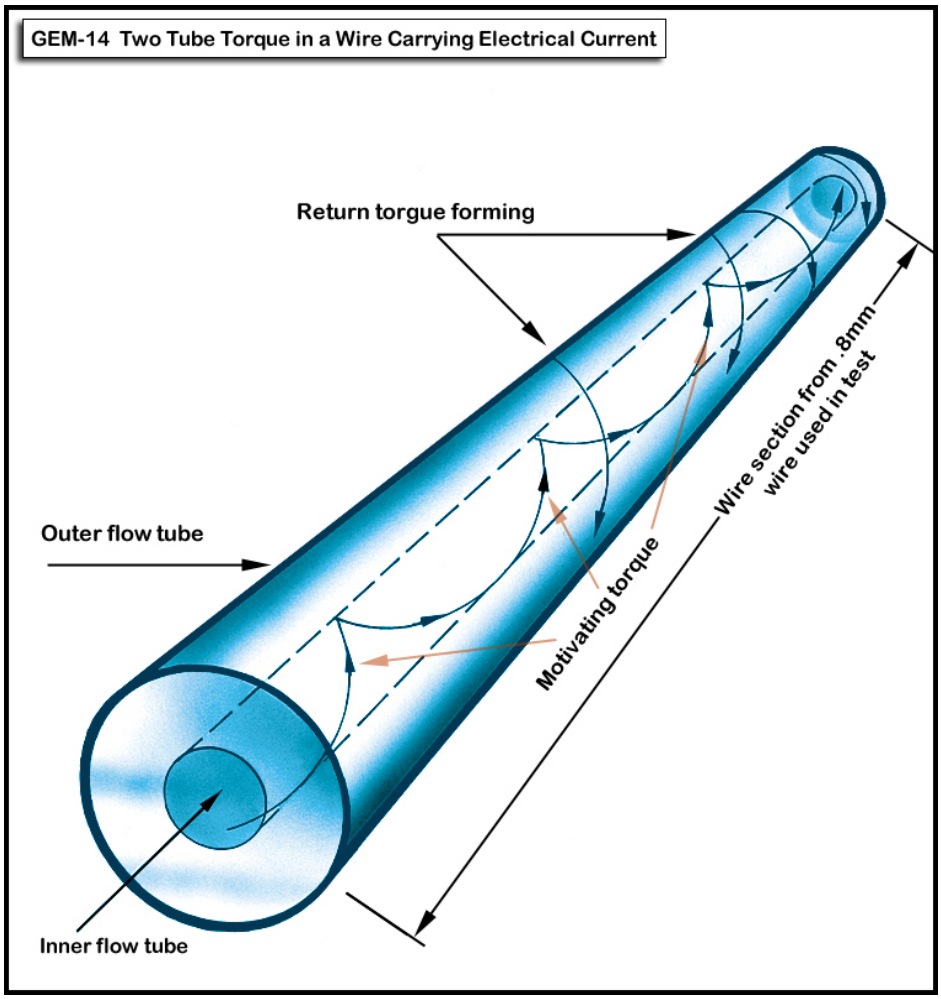

Initial Flow in Inner Tube

The wire contained two tubes of inertia separated by a tubular zone of stagnancy. The initial inertial exchange formed in the center "tube" of the wire. Until the return "tube" was established along the outside of the wire, the twisting torque caused by the moving electrons of the center tube (Figure GEM-14) caused a momentarily higher imbalance of twisting momentum between the inner tube and the outer tube. This, in essence, caused the wire to suffer an exaggerated twist around its long axis until the current transfer normalized, whereupon the twist reduced **almost** to its steady displacement state.

Welders would be familiar with a phenomenon which gives yet another clue. When a weld is laid down along the surface of the stock to be welded, a circular or swirled pattern forms in the molten electrode as it is laid down. This effect was described in an article appearing in the "New Scientist" magazine: *"..... At high currents, however, the end of the wire melts and begins to rotate at almost 200 rev/sec. The plasma stream picks up the liquid metal and rains it in a spiral onto the weld surface."* [13] This effect fits quite neatly into the "two-tube" hypothesis of "direct," electric, current transfers, as discussed previously. The center of the weld's "swirl" pattern would exhibit signs of the contra-spin tube, which would partially offset the torque of the outer tube carrying the metal. The swirl pattern left in the weld closely resembles the cut tracks a tornado leaves on the ground as it moves.



The "Genesis Vector"

The most puzzling phenomenon I observed in my experiments with the wire was this torque effect. It always twisted the wire in the same direction when the same charge polarity was applied to the same end of the wire. The existence of this twisting moment was, itself, a mystery.

After analyzing the Armstrong Experiment in great detail I thought the exchanges of energy were in tubes of water flowing in straight lines between the glasses; so you can understand my curiosity when I observed the twisting wire phenomenon. At first, I considered the momentary torque on the wire was due to a magnetic moment created along the conductor as some unknown byproduct of Lenz's Law. However, I remembered the torque effect only lasted for a fraction of a second before coming back to an almost zero deflection. If it were a function of Lenz's Law then the deflection from the torque should be a constant as long as the power is applied to the circuit – not for a fraction of a second.

Even if I could somehow attribute the momentary twisting to the magnetic field of the current or even the thermal effects, I would have to explain why the phenomenon has a "right-handedness" (or more correctly a 'same-handedness') as the polarity dictates. A growing college of researchers is investigating the twisting moment found in nanotubes. Researchers like C. L. Kane (et al)[14] attribute the twisting of a conductor to "twistons". Yet they do not explain the cause of the right- or left-handedness of the electrons involved in the effect. The same-handedness effect is accepted as axiomatic without further explanation.

My tests showed the twist occurred to the same side for a given current's polarity - no matter what orientation the wire had in 3D space. This suggested the causal phenomenon was not the Earth's magnetic field. The effect had to be from events in the wire itself. The answer had to lie in the atomic lattice of the conductor. It has been fairly well proven that "joule heating" in a wire is due to the amount of unaligned (or non-lattice) atoms within the wire. An electric impulse wave travels rapidly and almost without loss along a perfect lattice, but when it encounters atoms that are not bound in the lattice, it is slowed and heat is released as a result of traversing the region of chaotic or unaligned atoms. Cooling a conductor lowers its resistance to current flow. When the temperature nears absolute zero many conductors even become "super-conductive" and, as such, offer no resistance at all to the passage of an electric impulse wave or to the traversing electrons.

In an aether-filled Universe (as I postulate in this paper) where vectored energy exchanges create the effects of gravity, electricity and magnetism one has to examine the same-handed twist as the resultant of two or possibly more vectors at an atomic level. In Part 2 of this paper I will discuss the vector interactions that create 'gravity' but for now I must ask the reader to accept the statements that I am about to make on.

From the motions of galactic clusters to that of atoms, spin about an axis is evident. It is my contention the spinning masses of any system spin in concert with the spin vector of the parent (or 'Genesis') system. Remember, I will explain this in the following sections of this paper.

By analyzing the reaction of the wire to any current put into it at any bearing of the compass and vertically as well, I was able to map what range of vectors in the atomic lattice could produce such resultants. The twist has to be produced from something spinning in such a vector as to always torque to the same side under the same polarity.

The solution to this enigma seems to be a group of atoms who always spin in the same direction about their axes which are perpendicular to the surface of the Earth. This means no matter which way the wire is turned its atoms are spinning in such a direction as to create the polarized torque effect. This would be possible if the nuclei were always stable and spinning at right angles to the Earth's surface but the outer 'shells of electrons were oriented to the shape of the wire and did not change their spin axes when the wire moved. For this to be the circumstance, ALL atoms on Earth would be have their nuclei aligned relative to the local 'Genesis Vector' or the spin of the Earth. This would explain the same-handedness of the twist in the conductor for a given 'polarity'.

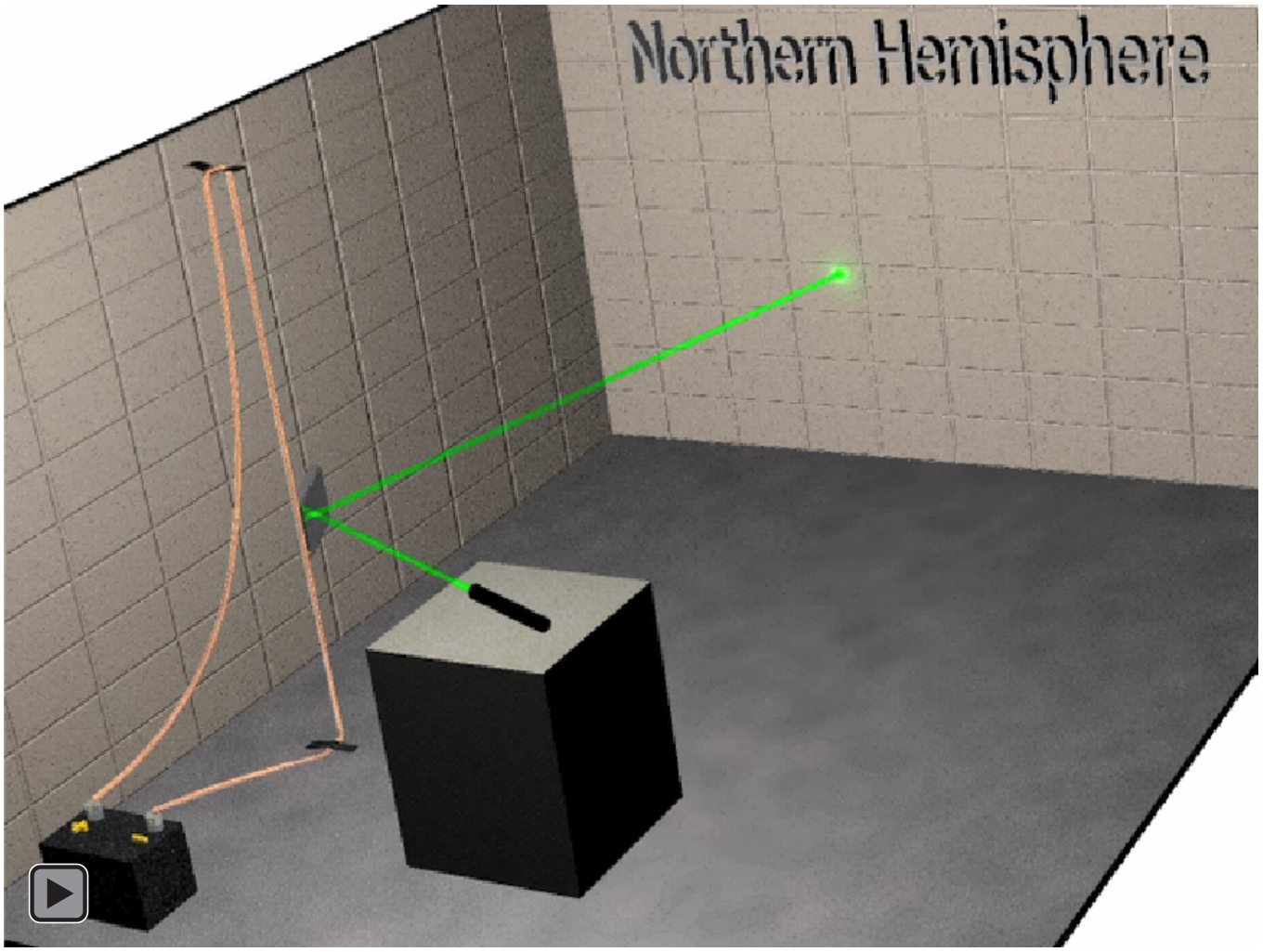
Addition: 5 October 2015

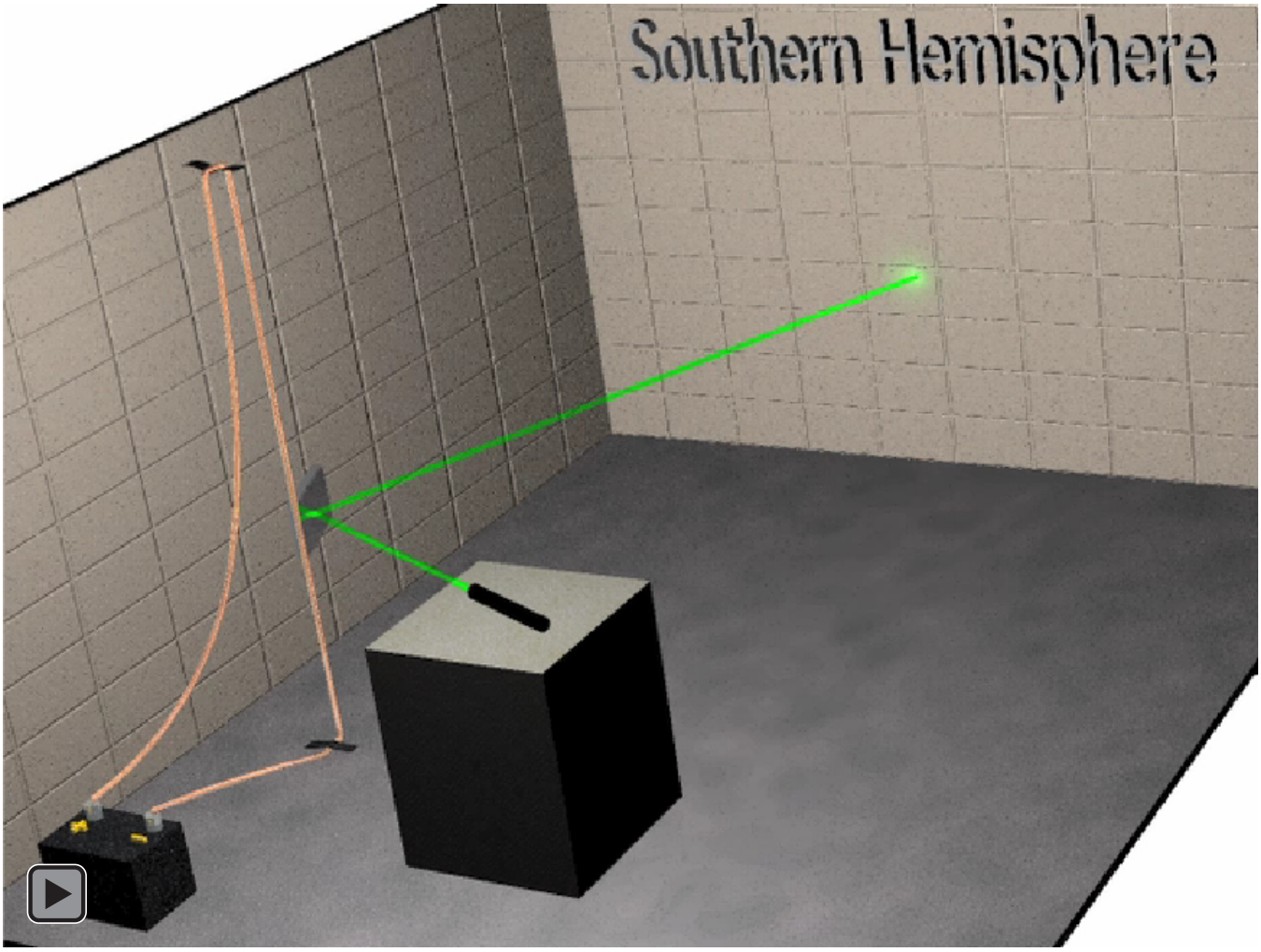
In 2011, I organized a group of eighty researchers across the planet to assist me in performing these twisting wire tests to see if geographic location had any bearing on the actions of the wires. Tests were performed in America (lower 48), Alaska, Argentina, Australia, Canada, Columbia, Ecuador, El Salvador, England, Fiji, Hawaii, Holland, Madagascar, New Zealand, Panama, Patagonia, Spain and South Africa.

I was surprised at the results of those tests. I found the horizontal wire tests performed the same in both hemispheres of the planet. However the vertical test results were different in two ways.

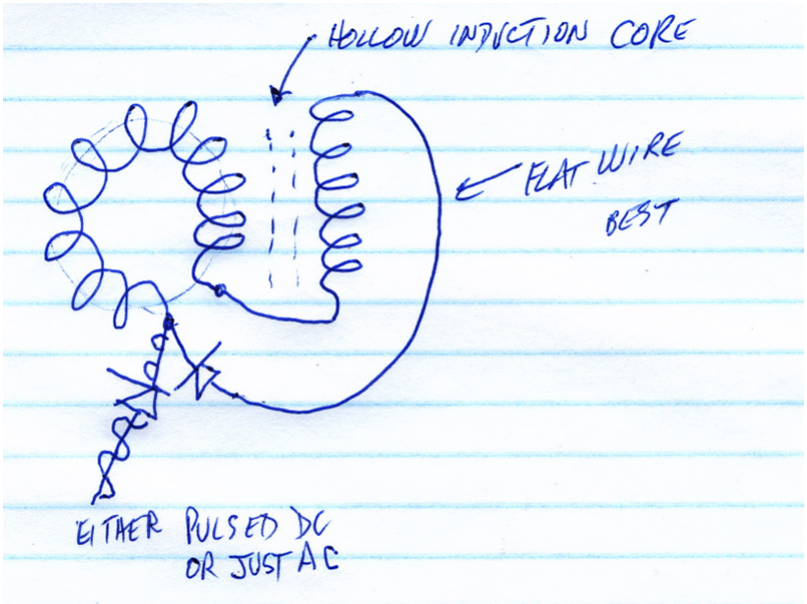
First, no matter what polarity was sent through the vertical wire it twisted in the same direction. This implies that the flow of current in a vertical wire reacts to the atoms of the wire as though polarized by Earth's gravitational field. From this result it appears that electric current can interact with Earth's gravitational field under certain conditions. I will cover this in more detail in my next paper on the inertial nature of gravity.

Second, the twist was opposite from one hemisphere to the other. However in these tests it was found that placing the mirror in the upper part of the vertical wire, then the middle part and then the lower part produced dramatic differences in the observed motions according to our New Zealand tester. I am not sure what he meant by this though.

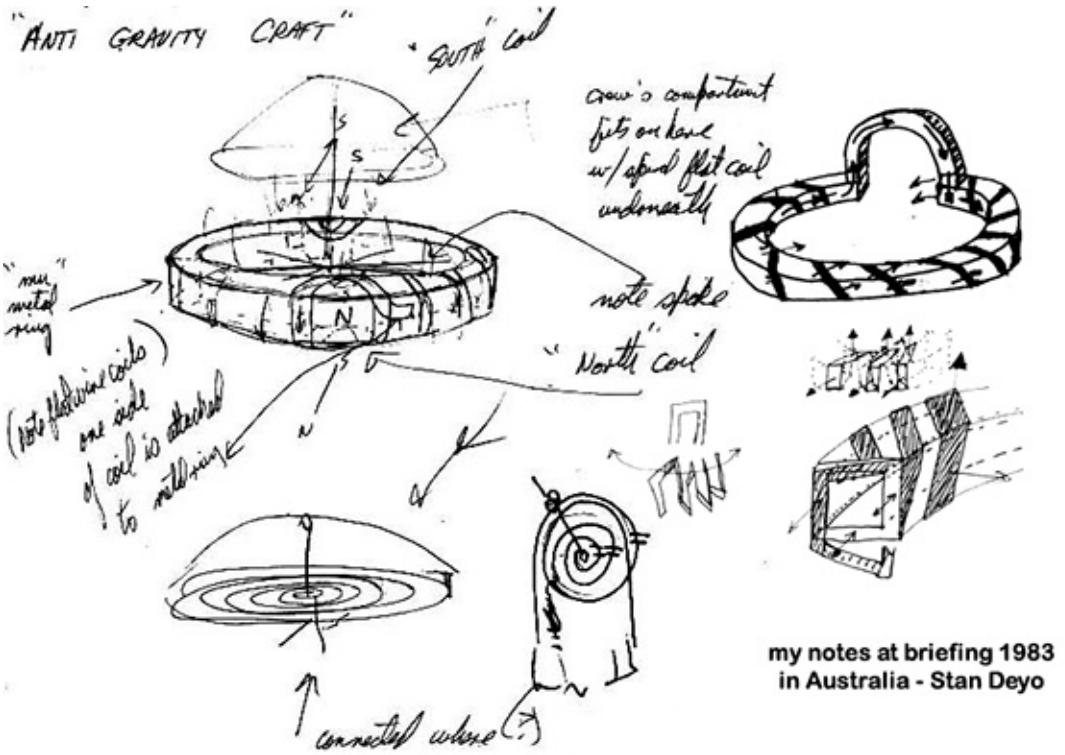


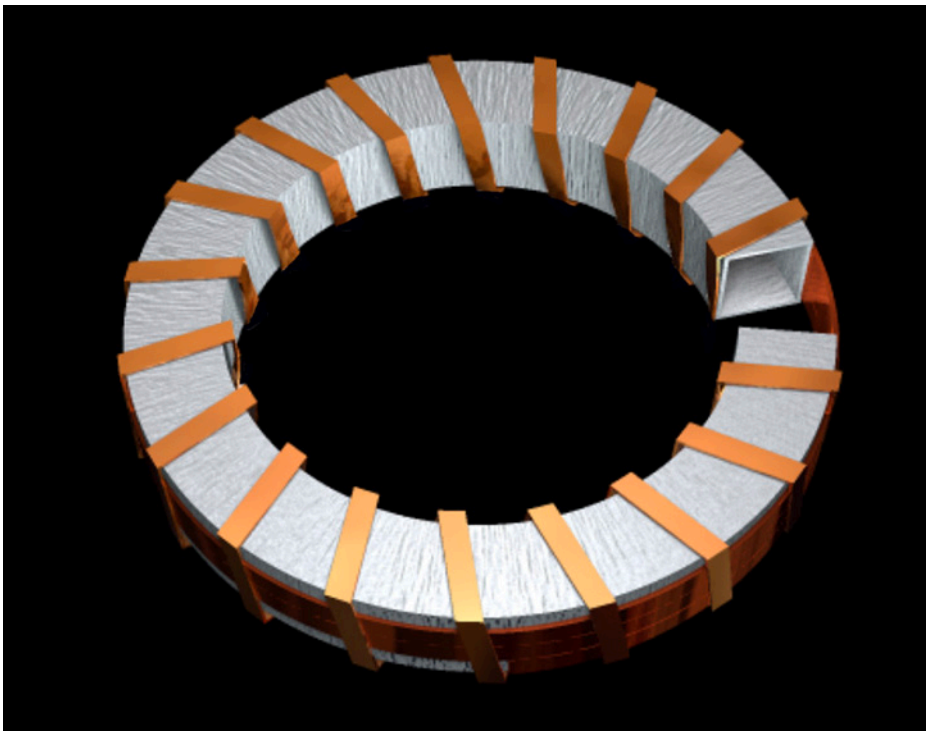


Thus we move one small step closer to being able to achieve antigravity - electrically. This may require some out of the box approach to traditional circuit theory…. one where the action of the inductive core in a two coil field stores up the back EMF from pulsed DC input without the normal ground leg. A flux capacitor (like Dr Michael Faraday postulated) is a structure/circuit that stores charges in motion. See my hand sketch below and think about it:



You might find these items of passing interest as well:





APPENDIX A

Dark Matter's Rival: Ether Theory Challenges "Invisible Mass"

Elizabeth Svoboda for National Geographic News

September 8, 2006

http://news.nationalgeographic.com/news/2006/09/060908-dark-matter.html

Late last month scientists working at NASA's Chandra X-ray Observatory announced that they had found proof of dark matter, the theoretical substance believed to make up more than a quarter of the universe.

But Glenn Starkman, a cosmologist at Case Western Reserve University in Cleveland, Ohio, is hitting back with a blast from the past.

He argues that dark matter might not exist and that the long-discredited substance known as ether is actually what influences gravity in the cosmos.

Dark matter is the prevailing scientific explanation for a puzzling phenomenon: Galaxies behave as if they contain much more mass than is visible to astronomers (see a computer simulation of dark matter).

According to theory, dark matter is the invisible mass that accounts for this behavior, and the undetectable substance makes up five times more of the universe than the matter we can see.

Starkman's controversial counterproposal is that the presence of ether in the universe better explains the galaxies' behavior.

His theories were recently reported in the August 26 issue of *New Scientist* magazine.

"Galaxies spin faster than they should, given the amount of matter we see in them. The possibility we've gone with for a long time is that there's some unaccounted-for mass generating that extra gravity," Starkman said.

"But the other possibility is that the amount of mass we see generates more gravity than we thought. That's where ether comes in."

Ether Wind

The term "ether" is derived from Aether, the ancient Greek god of the upper sky and the personification of space and heaven.

The scientific concept of ether—a background medium that pervades the universe—has been around for hundreds of years.

Earth's motion through the ether, some physicists thought, would create a type of wind that bends light waves the same way that wind in the atmosphere bends sound waves.

But the theory was largely abandoned after an 1887 experiment by physicists Albert Michelson and Edward Morley.

Dubbed "the most famous failed experiment," the test was meant to gather data on the effects of this so-called ether wind. But the experiment showed that light propagation was not affected, suggesting ether wind did not exist.

Later, Einstein based his theory of special relativity on the idea that light can move through an ether-free vacuum.

Starkman's conception of ether, however, is very different from the outmoded 19th-century one—he thinks that ether affects the pull of gravity, not the movement of light waves.

"With traditional gravitational models, you have a rubber sheet that curves wherever there's a large mass on it," he said.

In Starkman's theory of how ether works, "when ether is around, the rubber sheet gets softer. So when you put a large mass on the sheet, the effect of the mass goes out further."

Starkman's initial calculations show that ether's localized effects on gravity would account for the high velocities of galactic stars.

The next phase in his research will be to perform more detailed calculations to make sure his ether theory matches up with empirical evidence, such as the motion of planets within the solar system.

"It's important to do these experiments, because either we'll be able to rule dark matter out or we'll increase our confidence in it.

"At this point I don't think we can rule out either of the two [competing] theories," he said.

Challenging Einstein

Several high-profile theoretical physicists have lined up to support Starkman's theory, including Jacob Bekenstein, theoretical physics professor at Hebrew University in Jerusalem, Israel, and Andreas Albrecht, cosmologist and physics professor at the University of California, Davis.

Still, Starkman acknowledges that his theory is in its infancy and may not stand up to rigorous testing.

"We're offering an alternative to the dark matter theory—we're not saying it's wrong. If I had to bet today on which of these theories was correct, I might bet on dark matter."

Meanwhile, many other experts are sitting on the fence.

Michael Turner, an astrophysicist at the University of Chicago in Illinois, is intrigued by Starkman's theory, but he hesitates to accept it wholesale due to its troubling implications.

For example, the presence of ether would create holes in Einstein's theories of relativity, the widely accepted explanations for how light moves and gravity works (read an excerpt and see images from "Einstein and Beyond" in National Geographic magazine).

"It's early to tell whether this [ether] theory will really pass through the gate," Turner said. "When you change the theory of gravity, you could cause lots of problems elsewhere.

"It's an interesting Plan B, but we already have a pretty good Plan A."

See formal paper at: http://arxiv.org/abs/astro-ph/0607411

Modifying Gravity with the Aether: an Alternative to Dark Matter

Authors: T. G. Zlosnik, P. G. Ferreira and Glenn D. Starkman

(Submitted on 18 Jul 2006 (v1), last revised 3 Mar 2007 (this version, v4))

Case Physicist and Oxford Colleagues Revive Aether Theory

September 22, 2006

http://blog.case.edu/case-news/2006/09/22/case_physicist_and_oxford_colleagues_revive_aether_theory

Physicists are Fond of Simple and to-the-Point Theories.

Case Western Reserve University Physicist Glenn Starkman, with his colleagues Tom Zlosnik and Pedro Ferreira from the University of Oxford, put their minds together during Starkman's John Simon Guggenheim Fellowship this past year to distil the essence of a ground-breaking but complex modification of Einstein's theory of gravity proposed by Jacob Bekenstein from Hebrew University.

While Starkman and his collaborators' four-page results, which have been submitted to Physical Review Letters for consideration, were not as straightforward as $E=mc^2$, they are helping to revive the centuries-old idea that the world and universe are permeated by an "aether" field. This new aether would pervade the entire universe, like a sea of arrows all pointing in nearly the same direction—forward in time.

According to Starkman, the effects of this aether could explain why galaxies don't fly apart even though they rotate too fast for the gravity of their observable stars and gas to keep them together.

The aether effectively "softens up" space, allowing masses to more easily bend it, and thus extending the effect of their gravity to greater distances. It could thus replace dark matter, the elusive weakly interactive particles whose presence in great abundance in a halo around each galaxy is the standard explanation for why galaxies hold together.

It would thus be an implementation of Modified Newtonian Dynamics (MOND), the 1983 proposal of physicist Moti Milgrom of the Weizmann Institute for Science, that the observed dynamics of astronomical systems from galaxies on up, was due not to the presence of dark matter but to the modification of Newton's laws of motion at the very low accelerations one finds in the distant reaches of these systems.

The aether could also be responsible for the accelerating expansion of the universe that scientists have measured. In this way it could function as a form of dark energy, driving the expansion of the universe at an ever-increasing rate.

The possible marriage of dark matter and dark energy is one of the more attractive features of the new aether model, said Starkman.

What is particularly ironical for Starkman is that 109 years ago Case Institute's first physics professor—and this country's first Nobel Laureate in Physics - Albert Michelson teamed up with Western Reserve University chemistry professor Edward Morley just a short walk away from Starkman's Rockefeller Hall office. They conducted experiments disproving that light moves through an "aether" medium. Albert Einstein would incorporate those findings that light travels at the same speed in all directions into his special and general theories of relativity.

Starkman said his new work does not contradict Michelson and Morley's observations. The new aether field does not directly affect how light travels, except in so far as it changes the gravitational field in the distant regions around massive objects.

Such fields are often called "Einstein-aethers" because they accommodate Einstein's theory of relativity on the scales where it has been tested.

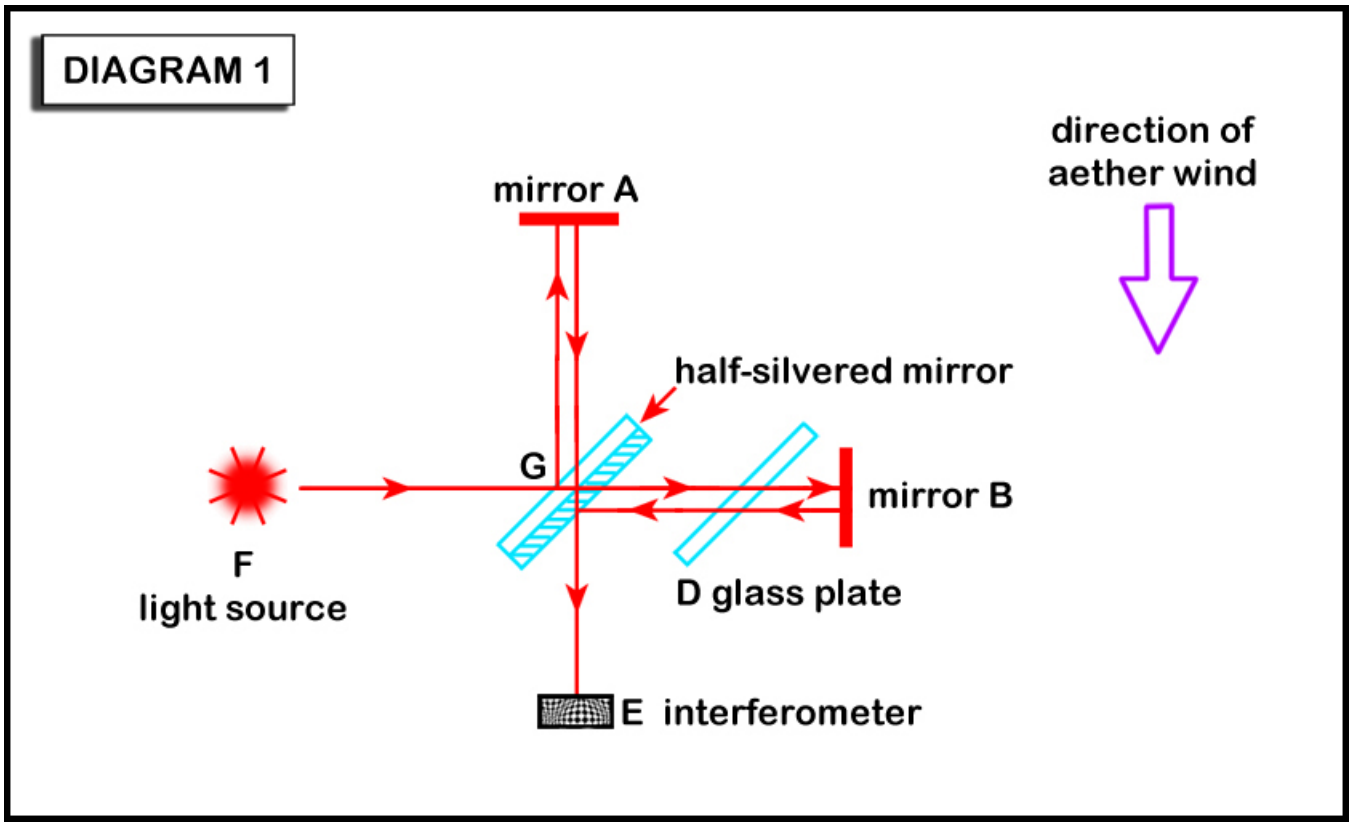
"General relativity is a beautiful, powerful theory that has many successes at the scale of our solar system and below," said Starkman. "But when you get to the scale of galaxies, it could be that its flaws are beginning to show."

Posted by: Heidi Cool, September 22, 2006 03:43 PM | News Topics: Collaborations/Partnerships, College of Arts and Sciences, HeadlinesMain, Research, Science

APPENDIX B

Diagram 1 is a schematic of the M-M test. It was conducted on the basis that if an aether existed, the earth would by moving **through** it. Hence, there would be a relative velocity between earth and the fluid of space.

It was reasoned that by splitting a beam of light (F) into two parts; sending one out and back in-line with the direction of earth's orbital path, to mirror (A) from half-silvered mirror (G); sending the other at right angles to the direction of earth's orbital path to mirror (B) through half-silvered mirror (G) and glass plate (D); and re-combining the two beams in the interferometer (E) one should be able to detect a shift in the phases of the two beams relative to one another.



This shift could be accurately predicted by knowing the velocity of light (c) and the velocity (v_e) of earth through orbital space. Their reasoning was as follows (refer Diagrams 1-3):

Assuming:

v_e = velocity of aether *wind* or *drift*

c = velocity of light = velocity from G_0 to B by fixed extra-terrestrial observer

s = distance $G_0A = G_0B$

t_1 = go-return time in-line (G_0A - AG_0) to both observers

t_2 = go-return time at right angles (G_0B - BG_0) to a moving Earth observer

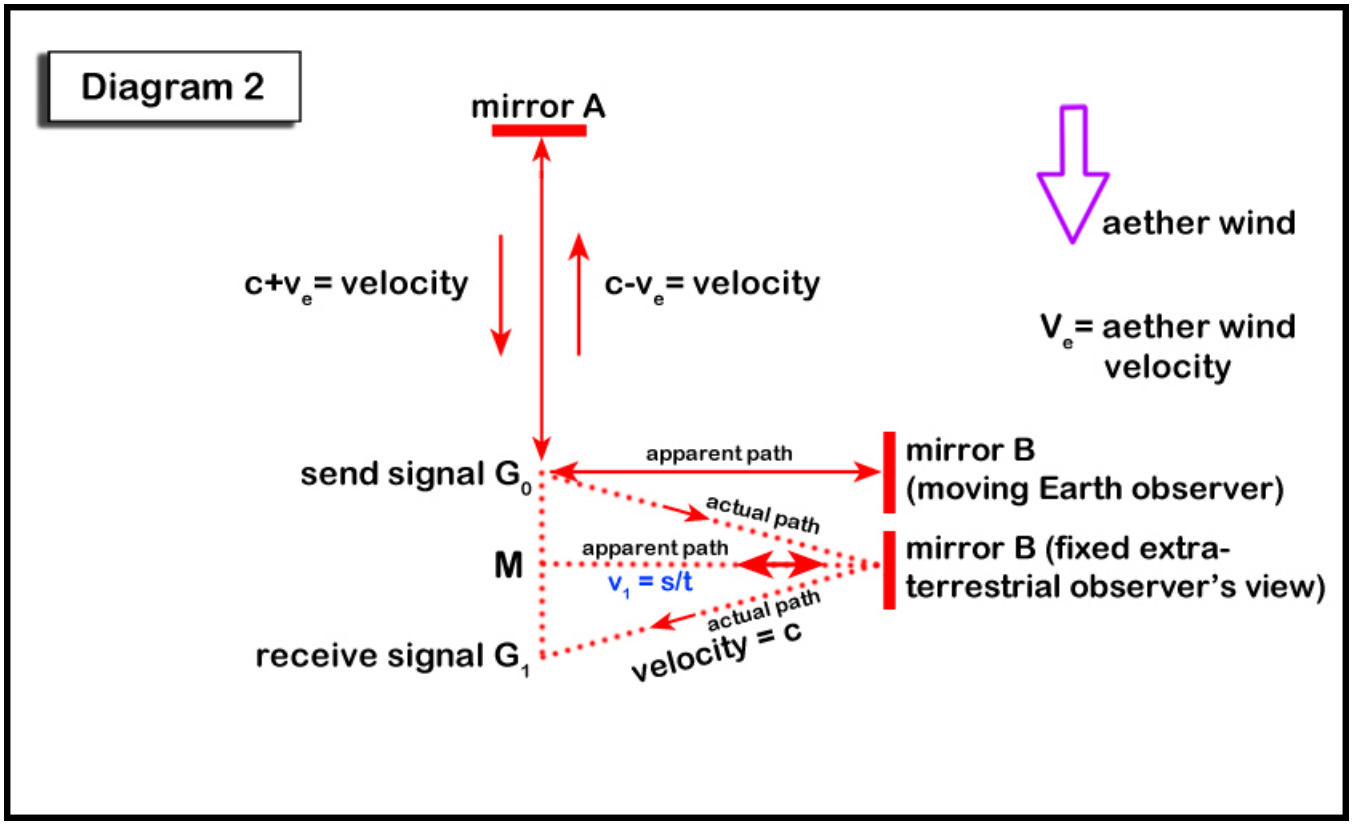
t = $.5t_2$

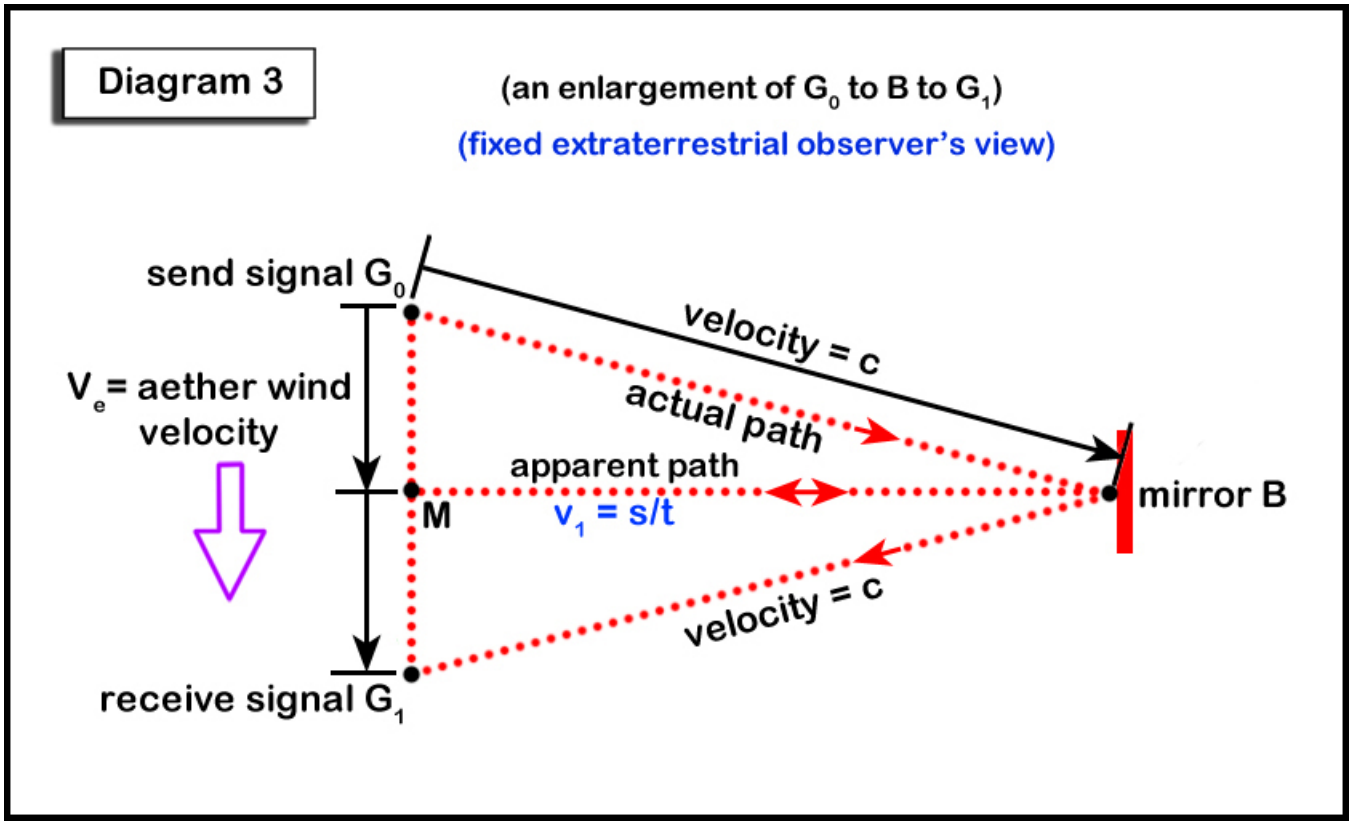
v_1 = apparent velocity from G_0 to B by fixed extra-terrestrial observer

Then the time (t_1) is determined by $[s/(c - v_e)] + [s/(c + v_e)]$ such that:

$2sc/(c^2-v_e^2) = t_1$ Eq. 51

Also, the time (t_2) is determined by first solving for (v_1) in terms of (c) and (v_e) using the Pythagorean Theorum ($c^2 = a^2+b^2$).... or, in this instance: $(G_0 \text{ to } B)^2 = (G_0 \text{ to } M)^2 + (M \text{ to } B)^2$.





By substitution of the three velocities:

$c^2 = v_e^2 + v_1^2$ hence:

$v_1 = (c^2 - v_e^2)^{.5}$ (Eq. 52)

Now, solving for the time (t) (which is the same over G_0M, G_0B, MB) of the GB trip by substituting $s/t = v_1$ in (Eq. 52) , one obtains:

$s/t = (c^2 - v_e^2)^{.5}$ (Eq. 53) and, rearranging:

$t = s/(c^2 - v_e^2)^{.5}$ (Eq. 53)

Then, substituting ($t = .5t_2$) gives:

$.5t_2 = s/(c^2 - v_e^2)^{.5}$ (Eq. 54) and, rearranging:

$t_2 = 2s/(c^2 - v_e^2)^{.5}$ (Eq. 54)

By comparing the ratio of the in-line go-return time (t_1) to the right angle go-return time (t_2) one obtains:

$t_1/t_2 = [2sc/(c^2 - v_e^2)]\ [(c^2 - v_e^2)^{.5}/2s]$ (Eq. 55) and, simplifying:

$t_1/t_2 = (1 - v_e^2/c^2)^{-.5}$ (Eq. 56)

Herein lies the flaw in the M-M Experiment in the linear form shown above. **If the light source is at rest with respect to the aether,** one sees:

$v_e = 0$ (Eq. 57) hence:

$t_1/t_2 = 1/(1- 0)^{.5} = 1/1$ (Eq. 58)

Such a ratio as (Eq. 58) shows is exactly what every successive try of the **linear** M-M test has obtained...(notice: *linear* not *angular*: "The speed of light is constant." **BUT, this is an error as the linear version of the M-M experiment would give the same result whether there was an aether or not.**

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[1] http://en.wikipedia.org/wiki/Luminiferous_ether

[2] *Conference on the Role of Gravitation in Physics at The University of North Carolina, Chapel Hill (held January 18-23, 1957)*, Wright Air Development Center, March 1957, WADC Technical Report 57-216, ASTIA Document No. AD 118150, p. 4,

[3] see p. 65 - 67 of *The Physical Foundations of General Relativity* by D.W. Sciama, Heinemann Educational Books Ltd., 48 Charles St., London WIX8AH

[4] Michael Faraday was England's greatest experimental physicist and chemist; and is thought by many historians to have been the greatest experimental genius in the history of mankind. He was originally trained as a bookseller and a bookbinder; but was eventually apprenticed to Sir Humphry Davy at the Royal Society where he eventually ascended to the highest post he had wished to hold and remained there throughout the rest of his working life. He had an uncanny ability to describe complex ideas in clear and simple language. He was responsible for discovering that magnetism can be converted into electricity and vice versa. He invented the first electric dynamo; discovered that magnetism would rotate the plane of polarization of light when shown through a special type of "heavy glass" which he also invented; and was the first to liquefy chlorine gas. He gave hundreds of public lectures on his discoveries in chemistry and physics; and his concepts of electricity and magnetism - even of gravity **- laid the foundation for the work of James Clerk Maxwell, the pioneer of modern electromagnetic theory**. Michael Faraday was above, all else, a very devout and humble Christian; furthermore, he was an elder in his church and yet he regularly would wash the feet of his brothers as was their custom. One is reminded that he who would be the greatest leader of all would first be the greatest servant of all.

[5] Armstrong, Lord W.G., The London, Edinburgh and Dublin Philosophical Magazine and Journal of Science, January, 1843 edition, third series, article XXV, pages 199 and 200.

[6] Godfrey, Harry E. (of H. E. Godfrey & Co. Linotypers, Melbourne, Australia) was a close friend and mentor of my research during 1971-1975 and a good friend thereafter for many

years. He had a vast library of books, photocopies and articles of various scientific experiments and oddities dating from the eighteenth century from which he often chose things for me to read and ponder. He looked the part of a stereotypical “nutty professor” from England’s 19th century (bald on top with pork chop side burns to his chin); and would often point a long, boney forefinger to the ceiling with that “aha!” look of discovery on his face when he had something important to share with me. Without Harry’s financial assistance, shared knowledge and inspiration I doubt I would ever have found the wealth of obscure scientific discoveries which led me to write this paper. He was a true scientist: not fettered by convention, filled with curiosity about the world around him and an open-minded to new ideas whether his own or those of other scientists.

[7] Golden , Dr. Joseph, New Scientist magazine, 1973, 14 June, "The Life and Death of Waterspouts", page 665. Written while employed at the National Severe Storms Laboratory itself a division of the US National Oceanic and Atmospheric Administration, USA 94035

[8] Vernon J. Rossow, On the Electrical Nature of Waterspouts, NASA Ames Research Center at Moffet Field, California, USA 94035.

[9] Vonnegut, Bernard, Electrical Theory of Tornadoes, Geophysical Research, Vol. 65, No. 1, January, 1960, pages 203-212, at Arthur D. Little, Inc., Cambridge, Massachusetts, USA.

[10] Vonnegut, Bernard, *“Geophysical Research”*, vol. 65,No.1 January 1960.

[11] Vonnegut, Bernard and Harris, C.K., Journal of Meteorology, "Stabilization of a High Voltage Discharge by a Vortex", vol.17, no.4, August 1960.

[12] Moore, A.D., Electrostatics, Doubleday & Co., 1968.

[13] New Scientist, "Arc Welding Takes a New Turn", 11 May 1972, p. 331, Kings Reach Tower, Stamford Street, SEI 9LS.

[14] C. L. Kane, E. J. Mele, R. S. Lee, J. E. Fischer, P. Petit, H. Dai

A. Thess, R. E. Smalley, A. R. M. Verschueren, S. J. Tans and C. Dekker 1998 Europhys. Lett. 41 683-688 doi:10.1209/epl/i1998-00214-6, “Temperature-Dependent Resistivity Of Single-Wall Carbon Nanotubes http://www.iop.org/EJ/abstract/0295-5075/41/6/683/