

Aether, the Mother of All Forces in Nature (IV of IV)

—Certainty and Possibility—

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Abstract Although superluminal phenomenon does exist, as revealed by the particle jet streams of some quasars, no manmade object could stay intact if it is ever set to travel at speed of light. Traveling near or at such speed, this manmade object must encounter tremendous Aether drag and subsequently the heat so generated. This object's ultimate disposition then can only be a collection of very fundamental particles, such as nucleons, neutrinos, electrons... In our previous paper (III-IV) of this *Aether* series, we mentioned how Aether drag has caused our misconception of mass defect, or mass-energy conversion in the study of particle physics. The high intrinsic pressure and high density of Aether not only has brought up the illusion leading us to those misconceptions, they also render us the null effect in the Michelson-Morley Experiment. It is the null effect that illusively helps Hendrik Lorentz to “confirm” his idea that the dimension of an object shrinks on the direction that this object travels toward, laying a “solid” base for the self-refuted special relativity to set foot.

To overcome Aether drag, any particle that could travel near the speed of light or above must be equipped with tremendous amount of kinetic energy. Kinetic energy must be recognized with change of momentum P , but momentum, defined as $P = \text{mass} \times \text{speed}$, must be sustained by matters of non-zero mass. There are at least two kinds of particles that are considered as massless by the modern theories on particle physics: photons and neutrinos. Considering they are massless, the same modern physics also insists that they both carry tremendous momentum. In other words, to breathe life into these two kinds of particle, otherwise a big part of modern physics must be stonewalled, the modern physics study is willing to sacrifice the most fundamental definition and principle in both physics and mathematics: $P \neq 0$ with non-zero speed out of ($P = \text{mass} \times \text{speed}$) if the zero mass is a moving mass.

As to photon, its being of non-zero mass is the “feat” contributed by special relativity. On the one hand, this theory cannot give photon any finite description as a physical entity at zero moving state. On the other hand, the same theory declines to give it infinite mass at speed of light. The most ancient mathematical principle $\infty \cdot 0 = 0$ must be contorted into $\infty \cdot 0 = \text{finite value}$ in the so called modern physics—because, according to it, zero mass at moving state has non-zero mass but for reason inexplicable. Setting aside the mathematical contradiction, the existence of photons is also physically self-refuted. This self-refutation is presented in details in the Photoelectric Effect analysis in **Aether, the Mother of All Forces in Nature (II of IV)**—Electromagnetism.

As to neutrinos, while giving it tremendous momentum with zero mass, the modern physics also gives it a ghost like property: they pass through normal matter unimpeded and undetected. To deny the existence of this kind of particles is not what this author aims at, because experimental facts confirming their existence appear overwhelming. However, must we trash so many principles that work well in the

macroscopic world in order to accept some fact happening in the microscopic world? Or even accepting some mysterious “principle” that is unthinkable in the macroscopic world, such as the ghost like property mentioned above? With the help of Aether fluid, this author feels that the mysteries surrounding the neutrinos can be satisfactorily unlocked without the need of trashing any well-established physical rule or law. So, the neutrinos are not of zero mass, carrying no tremendous momentum, “passing” no normal matter with any furtiveness or stealthy action, but they do have capability of triggering the experiment apparatus on Earth with some very timely message that they were just created in the Sun some very short instant ago.

1. On the Null Effect of Michelson-Morley Experiment

In the modern academic world, it has been quite commonly accepted by many people that mass must increase itself with the increase of its traveling speed. They include both relativity believers and disbelievers. The problem is, while they so accept, they must also condition the acceptance as a consequence that happens only in movements measured in relation to an observer. In other words, to these people, both of the following cases two must be true: (1) two observers having non-zero speed between each other must conclude different values of mass regarding the same mass body found in space; (2) the same observer must conclude that the same object must have different mass values at different speed.

Since movement between an observer and any object is always relatively judged, a case like this may come into our consideration: with respect to a coordinate system defined by the overall stellar background in the universe, only the observer is moving, but the object measured by him is still. If he moves at different speeds then concludes a different mass value for the same object, we must wonder where this object at rest has gained its mass from when the observer moves faster or where this object has disposed of part of its mass when he moves at lower speed. Let's not forget that, in advocating mass increase with speed, the theory of special relativity is a self-refuted theory ^[1]. However, relativity's failure does not give us legitimacy to be ignorant of the fact that mass increase with speed is accepted by both relativity believers and disbelievers. Such increase must have its factual base to gain its support from both sides. What if now the movement status between the observer and the object under measurement is reversed? This is to say that the observer is found not moving with respect to the stellar background but the object under his measurement is found moving.

It is commonly known in fluid dynamics that any object moving in a fluid must experience fluid drag. To overcome fluid drag it needs the consumption of energy. So, for an object of 1 kg mass that is predicted to move at 10 m/s in free space after being compelled by a finite amount of energy E , it is now found to move at speed only 8.5 m/second . If we know it is moving in a known fluid, it may become so natural for us to owe the reason of speed loss to fluid drag. But what if we are not aware of the fluid, and subsequently its drag? History did show that human beings were once ignorant about the drag of air as the reason to cause shooting stars to glow.

As far as the equation $E = mv^2/2$ is concerned, while E must be kept constant but E and

v can be so readily confirmed, in order to make up the speed loss, mass increase would be easily brought up as a scapegoat to cover what has failed this equation. At least, to the believers of the theory of relativity, keeping E constant is impeccable because mass increase is supported by $m = m_o/\sqrt{1 - (v/c)^2}$. Of course, then, if relativity is proven invalid (indeed it is self-refuted), we are forced to take another approach, an approach relying more on physical possibility other than some biased mathematical operation. Naturally, the very first physical approach is: What is there in the seemingly free space to have consumed the finite amount of kinetic energy so that the object must move at reduced speed? Fluid drag is our first choice in the approach; a thought enticing this choice is the drag of air exerted on a bullet. Air is so transparent, giving us a feeling of being so weightless. How would an ant ever feel any resistance, or drag, from the air when it crawls? But a flying bullet or a missile would certainly honestly betray such drag during its movement in our observation.

If drag is the reason to cause speed reduction for objects moving in free space, Aether, with its omnipresent quality, is naturally the first culprit to be pinpointed at to have caused such drag. But hasn't Aether wind been conclusively proven not existing by the Michelson-Morley experiment (MMX)?

First let's have some simple comparison between the speed of light in Aether and the speed of sound in air. MMX is done relying on the Earth's orbital speed, which is 30 km/sec, as well as on the speed of light, which is 300,000 km/sec. The proportion between these two values is 1:10,000. The speed of sound with respect to the bulk of air in which the sound travels is 340 m/sec. If we are to devise a traveling frame moving in the air to measure its own speed in relation to the bulk of air but keeping the 1:10,000 proportional relationship, the speed of this frame should be 3.4 cm/sec. How much air wind can this frame find with this speed? Practically none!

Of course, someone may say 3.4cm is 1/10 of the wavelength of a sound wave of frequency 3,400 hertz. It is enough for some interferometer of high sensitivity to detect some wind. The problem is that the Aether bulk surrounding the MMX apparatus has zero speed in relation to the apparatus.

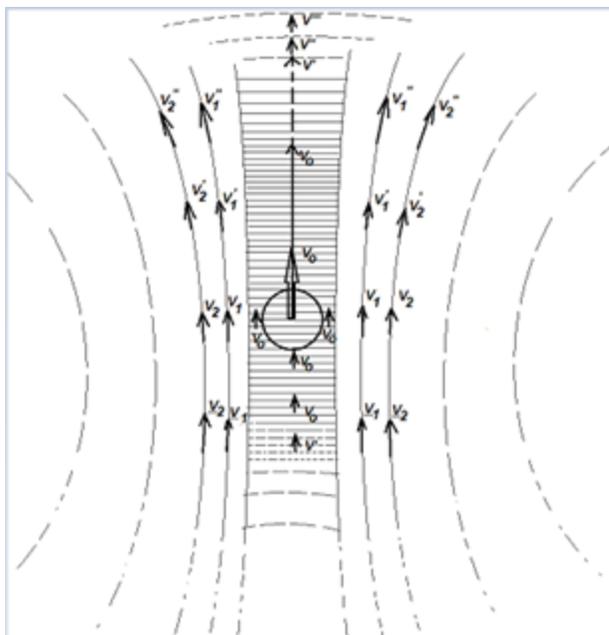
We mentioned before that, due to the high pressure of the Aether fluid, to each small particle like a nucleon, there is always a swarm of Aether fluid enveloping this nucleon like an unbreakable armor. The only method to shake off the following of this armor is to make the nucleon travel at extremely high speed, such as, possibly and speculatively, something like 0.01c or more. We also mentioned that the Aether fluid shows its normal intrinsic pressure at a distance in the order of $\times 10^{-8}$ m from a nucleus. At this distance its density is assumed to be as normal as that is found in a space infinitely remote from a nucleus, whose linear dimension is $\times 10^{-14}$ m. In other words, from the place where abnormally high density near a nucleus to where the more normal density shows up, it takes a distance of 1 million times of the dimension

of the nucleus. Applying this proportion to the Earth, whose diameter is 12,800 km, the above distance proportion should give us a figure of $1.28 \times 10^{10} km$; it is equivalent to taking a distance of 5 light-days for the Aether fluid to show its normal density starting from the surface of the Earth.

One may argue that from one end to another end of the Earth diameter, the space is not completely filled with nucleons, but innumerable empty intervals (if permeation of Aether fluid is not taken into account) between all these nucleons. It is true, and this author cannot reject this argument. But the armor enveloping effect must accumulate as the nucleus stays together. Lacking reliable knowledge to make a counter argument, possibly people would still allow this author to retain a distance of 5 light-seconds to make my argument in place of the above mentioned 5 light-days thickness as a static armor of Aether fluid to envelop the Earth. Frankly, even a thickness of 0.01 light-second of thickness of Aether that must be stationary with respect to the Earth would ruin what the MMX attempts to pursue.

Because of the high intrinsic pressure of Aether, with the Earth's orbital speed, which is very low compared to the speed of light, no whirling of Aether fluid is created along the movement of the Earth. The Aether fluid would most likely act this way surrounding the Earth: The Aether masses of certain thickness ahead of the Earth's movement is moving as fast as the Earth, beyond this thickness, the Aether fluid gradually shows some easiness to be pushed away as the Earth advances. The easiness gradually increases as the distance ahead of the Earth's movement increases. As to the space supposed to be left behind by the Earth's location advancing, it is immediately filled up by the Aether fluid with literally a zero time gap. The reason for this to be possible is that the ocean of Aether soaking every particles that the Earth ever contains, and that the ocean of Aether outside of the Earth, in its front or in its back, are fully continuous. We can have a clearer imagination about this continuous ocean with a metaphor illustrated below.

The average size of a nuclei is in the order of $\times 10^{-14} m$ ^[2], and the edge of a cube in which a nucleus occupies is in the order of $\times 10^{-10} m$. If we apply this proportion to make a fishing-net using the twines of 2mm in diameter, the holes of the net would be 20 meters in diameter. Then, no matter how many layers of net are put together and sunk in the ocean, the part of the ocean circumscribing all the nets and that of outside all the nets are forever continuous. In comparison, the "net" formed by the Earth mass does not even have physical twines connecting from one nucleus to another nucleus like the twines of a fishing-net. All we can say is that (1) the Aether fluid inside the "Earth net" has higher density than the fluid outside the Earth net, (2) the Aether fluid density near the immediate surface of the Earth should be compatible to that of inside, and (3) such density gradually defuses and decreases to the same as what should be at infinite distance from the Earth. However, no matter how the density is different from one part to another part, it does not affect the equal pressure between any parts of the Aether fluid in macroscopic scale, so long as the Aether ocean is continuous. Nothing can ever divide this ocean into separate and discontinuous parts.



All V's represent speed; V_0 is the Earth's orbital speed.

Vertically, $V_0 > V' > V'' > V'''$, $V_1 > V_1' > V_1''$, $V_2 > V_2' > V_2''$,

Horizontally, $V_0 >> V_1 >> V_2$, $V_1' >> V_2'$, $V_1'' >> V_2''$

Broken lines mean areas where zero speed more and more dominates

Solid horizontal lines closely placed together mean area where Aether fluid moves at the same speed as the Earth

Fig 1 Speed distribution of the Aether fluid attached to the Moving Earth

The void in the Aether ocean that is supposed to be left behind by the Earth's movement is filled by two sources in no time: (1) the denser fluid accompanying with the Earth and enclosed by the "Earth net" bleeds into it, (2) from neighboring space outside of the Earth. Both sources are motivated by the seeking action of pressure balancing between different parts of the same fluid body. Fig 1 is a picture qualitatively shows how the Aether fluid may move at different speed at different distance from the earth.

There is another factor contributes to the null effect of the Michelson-Morley experiment. It is the bulk of air that must exist in the vicinity of the lab. As an entire bulk, the air is motionless with respect to the experiment apparatus, but the bulk of air is essentially more a medium for light than the Aether in this experiment, because every molecule in the path of the light beam is a transceiver as well as a filter of the light.

Here we have come to a good stage to also briefly review another experiment, the Fizeau experiment. The result of this experiment seems to support the then partial Aether-drag hypothesis, but special relativity's calculation with what is found with the MMX rejects the idea of Aether. Then, unfortunately, the Fizeau experiment is contorted as an experiment laying base for relativity to gain ground.

Since we already reject the concept of photon in this series of articles^[3], we can straightforwardly claim that no particle of light riding on the water flow in this experiment to have its propagating speed change ever happens. The light propagating in the moving water in the Fizeau experiment is some continuous electromagnetic waves, which must rely on the existence of Aether to be some real physical entity. Each of those nuclei comprising the moving water molecules must always be accompanied with a package of Aether surrounding it. Between each of these packages there is no boundary. In place of the boundary is a continuous ocean of lower density of the same Aether medium; the so called "lower density" is compared to the

ocean at distance closer to each nucleus. Grasping all the water molecules in the tube, the part of the Aether ocean here is a continuous body with the part of Aether outside the tube in the experiment.

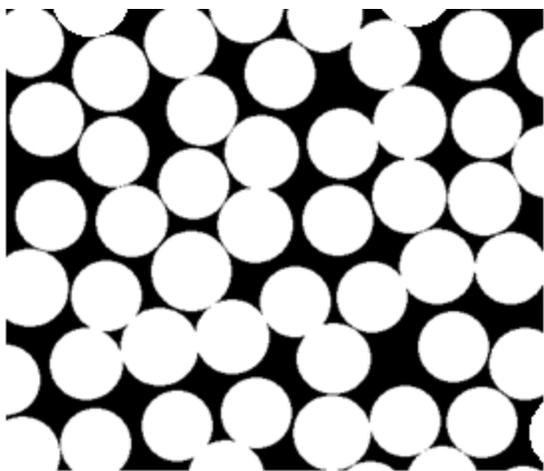
The ocean of Aether permeating the water body has its unique density that is different from that of the Aether in free space. Propagating in the water, actually in the Aether ocean permeating the water body, the electromagnetic wave must suffer in speed. As the electromagnetic wave enters the water body, it must excite the electrons of every water molecule to move accordingly. The electrons responding to the waves is like playing the role of the filter action of a transceiver in the radio technology. If the output of the electrons is in high fidelity in duplicating the input wave, the medium in which the light propagates is transparent, such as water or most of the glass. If the output loses certain fidelity, the medium is semi-transparent. If no output at all, it is opaque. However, between input receiving and output sending, the procedure must spend time. When the light gets into the moving water in the experiment, the corresponding electromagnetic waves are all intercepted by those electron filters of the water body. The ultimate speed of the light propagation in the water in the Fizeau experiment would be the sum of all the following factors: (1) the natural speed of light c in Aether in free space, (2) the moving speed w of the water and subsequently the moving speed of all those electron “transceivers”, (3) the time Δt consumed by each electron transceiver between signal receiving and signal outputting. All three factors make it natural that the final speed v of the light in the moving water of the experiment falls in the range $\frac{c}{n} < v < c$, where n is the refraction index of water. The refraction index of water is actually an interpretation of the aforementioned filtering role of the transceivers presented by the electrons of all water molecules.

2. Certainty and Possibility

So far, the discussion portrayed by this Aether series of papers, the existence of Aether and all the following can mutually support each other with high satisfaction:

- (1) Gravitational phenomenon,
- (2) Light and electromagnetic waves,
- (3) Atomic and nuclear structures,
- (4) The true nature of magnetism,
- (5) The true nature of force of “attraction”,
- (6) Unifying the nature of gravitational force, electromagnetic force, nuclear strong force and weak force. Indeed, there is one more,
- (7) The true nature of stellar aberration. For this, a reader is invited to refer to the article Relativity Is Self-defeated (3 of 3) in the *General Science Journal* or the same article at the website www.huntune.net.

At this point, we do not know the size of each Aether particle while it must have some finite size. Assuming each white ball in Fig 2 is an Aether particle, if we cannot find any object



If all the white balls of equal size are the smallest object in the universe, then, and only then, the black space is indisputably a space of vacuum, because nothing else is able to fill in.

Fig 2 Genuine vacuum

smaller than they to fill the black space between the white balls, the black space is truly a vacuum space.

Human beings with all their activities in science have never truly obtained a vacuum space, which means absolute absence of any material, and they will never be able to. The walls of any container holding such vacuum space and able to block any infiltration of Aether particles must withstand a pressure of 10^{17} kg/m², a value derived according to gravitational interaction between heavenly objects^[4], or even 10^{21} kg/m², a value derived according to nuclear reactions^[5]. It is really beyond our imagination how and where such material can be found to construct such walls. Therefore, possibly from now on, we need to propose two distinctive definitions of vacuum to avoid confusion. One is the absolute vacuum in which even no Aether particle can ever be found, and another one is a space where no tangible

material that human can ever handle at will can exist.

In the recent decades, we have heard more and more about some terms called dark matter and dark energy. In this author's believing, dark matter is something that can exist only in someone's imagination, and most likely is just the outcome of mishandling of Newton's law of universal gravitation^[6]. However, dark energy should be a real deal. The source of such unlimited dark energy is the insanely high intrinsic pressure of Aether, with which the entire universe is glutted. The only possibility to have such a high pressure material present everywhere is to have an infinite universe, because, as we said above, we cannot find any solid substance strong enough to form a wall and have the high pressure Aether fluid embraced within. All this ideas, of course, is very offensive to the idea of the Big Bang theory about the "birth" and evolvement of the universe.

An acceptance of a high pressure Aether fluid greatly simplifies our explanation on the nature of gravity. As suggested and inferred by the experiment with the Styrofoam boards in water and introduced in the very beginning of this series of papers **Aether, the Mother of All Forces in Nature**, the absolute essence of the establishment of a gravitational field is a static environment. As such, we would find no reason to believe that gravity should behave differently at temperature near 0°K or 10¹⁰K. Walking away from the static consideration, the explanation of gravity must rely on dynamic consideration, such as what all those theories supporting a concept called graviton has ever displayed. However, experience has told us too often that dynamic consideration must sooner or later lead the work being stonewalled by the conservation

laws of energy and matter. Endlessly adding stipulation for some old laws or new laws to stop working in the dynamic consideration can only add more questions other than answer to the problem.

Besides the imagined graviton, the magnetic monopole should also not be in the list that nature would have ever provided. The no beginning or ending of the magnetic flux lines should give us good reason to rule out the need of monopole in explaining the existence of a magnetic field.

The study of particle science has had a history of more than one century, during which the science world accumulates a nearly endless list of sub-particles, such as muon, pion, tauon, neutrino, gluon, positron, quark... This author am not in a position to verify or reject all of their validity, but do feel unable to walk away from the following facts that could easily raise suspicions regarding the existence of most of them in the endless list:

- (1) If they do physically appear, too many of them are usually short live, with a life span in the order of nanosecond or micro second.
- (2) Their appearance is usually as a result of high speed collision of some other particles else.
- (3) There are far more of such particles in the list that cannot be verified, but only “exist” as a result of deduction or inference led by something else that are otherwise make the math unable to make up.

So because of the above facts, could it be possible that their existence is not a norm that nature would present? Then they may be just some temporary combination of certain materials else that nature truly allows to exist independently. The high pressure of Aether may allow something to stay together. However, no matter how high the pressure is, there is a limit that governs how strong the bonding of such holding can be. We do have some chemical elements whose nucleus only exists as temporary combination of some nucleons, such as Einsteinium, Copernicium, Moscovium, Oganesson. These elements appear as a result of artificial synthetics, i.e., high energy collision. They all share a common trend that the heavier they are the shorter life they have.

So, in comparison to the synthetic elements of high atomic number, those sub-particles like muon, taon, gluon...also manifest themselves as some short life product that the Aether puts them together under certain condition, which is majorly high energy collision. But what materials are there serving as the “midwife” delivering the mysterious short-life combination of the particle in interest? This seems leading to a conjecture that Aether may have some other constituent besides the negoffs and posoffs.

An electron may not have been an electron as what we recognize all the time. It may have been just some neutral particle before an electron was given birth. With some particular geometrical shape, this particle conjectured as being neutral allows certain finite number of

negoffs to be stuffed in it because of the high pressure of the Aether fluid. Accordingly, a ball resulted by such stuffing plays as an agent showing a characteristic of negative charge, and an electron is born. The same particular geometrical shape also allows such neutral particle to “absorb” the same quantity of posoffs, consequently becoming a positron. Because there is some slight difference in geometrical shape between the negoffs and posoffs, this neutral particle has far higher chance to absorb negoffs than posoffs. In other words, the birth of an electron through such a procedure is more spontaneous, but the birth of a positron is more of the need of balance in responding the otherwise extra posoff in the Aether fluid. This can be interpreted from the fact that electrons are abundantly more available in nature, but positrons are usually needed to be “created”, either through natural events or artificial process.

When an electron and a positron meet, the negoffs and posoffs that these two particles respectively stuffed with launch an avalanche reaction of returning everything back to their primitive and neutral state: a negoff and a posoff recombine and form a neutral Aether particles. The high pressure of Aether makes this avalanche so spontaneous. When this happens, we observe the so called annihilation. An amount of energy, of course, is also released. After the negoffs and posoff so shake themselves off from the electron and positron, the two neutral particles that had served as their cores are nakedly exposed to each other. Highly compressed against each other by the Aether intrinsic pressure, they join each other as one stable combination, which is yet undetectable with the method we can master nowadays. When this pair of neutral particles is shone by gamma ray or collided by high energy particle, they can be separated again. While in the process of separation, one of them immediately absorbs negoffs, and the other is made to absorb the posoffs that are otherwise left behind disturbing the 1:1 balance between negoff and posoff in the vicinity. A process of pair production is now completed.

Given that both electrons and positrons are so profusely available in nature, we dare say that the neutral particle pairs serving as the neutral core of the electron and positron are also abundantly comingled with the negoffs and posoffs. The mixture exists regardless of whether the balance between the negoff and posoff has been disturbed or not in a certain vicinity. Would the neutral pair of particles have anything to do with the neutrinos? This author would like to say that there are potential chance for them to be such candidates, but the honor of the verification work must be waited to be done by someone else. However, if the neutral pairs are, they should not be capable of traveling at speed as high as what the science world claims today, nor able to have the ghost like property penetrating normal matter unimpeded and undetected.

The neutrinos are said to be detected on Earth soon after they have escaped from the Sun. It is highly more likely that the neutrinos detected on Earth are not directly those that just escape from the Sun, but instead, they are the “gang members” of the same materials but have always been flooding in the vicinity of Earth—indeed, the entire universe. When an abundant batch of neutrinos is released from the Sun, their excessive appearance around the Sun immediately spreads in space. However, their spreading is not realized through any formidable distance coverage completed in short time, but just a continuous relaying action of the same materials that already permeate everywhere in space. The relaying action is resulted due to the seeking of pressure balance between all local volumes within a fluid, the Aether fluid. The excessive density at one location (the Sun) then quickly pushes the same material in a remote location (the Earth) to shift accordingly from where they have been dwelling all the time. The shifting then triggers the detecting action of certain instrument on Earth. Unable to see how neutrinos have run, we then illusively take the quick “message” of the pressure change as the arrival of some neutrinos from the Sun at speed of light.

An analogy regarding how the neutrinos relay the message of their speedy arrival is like this: Let’s have a red ribbon at point B (Fig 3), and the ribbon can be broken as soon as it is touched by a human. Now, at point A that is one kilometer away from point B, a man who can dash 100 meters in ten seconds is sent to break the red ribbon. For this purpose, this man needs 100 seconds of time. However, there is another arrangement available for the same purpose. We can just simply have a team of men fully lining up arm in arm from point A to point B. As soon as the man at point A starts leaning toward point B, the next man in line must repeat what this man does. If every man duplicates this being-leaned-on-and-lean-away action, do we still need 100 seconds of time for the red ribbon to be broken? Of course not, but far less!

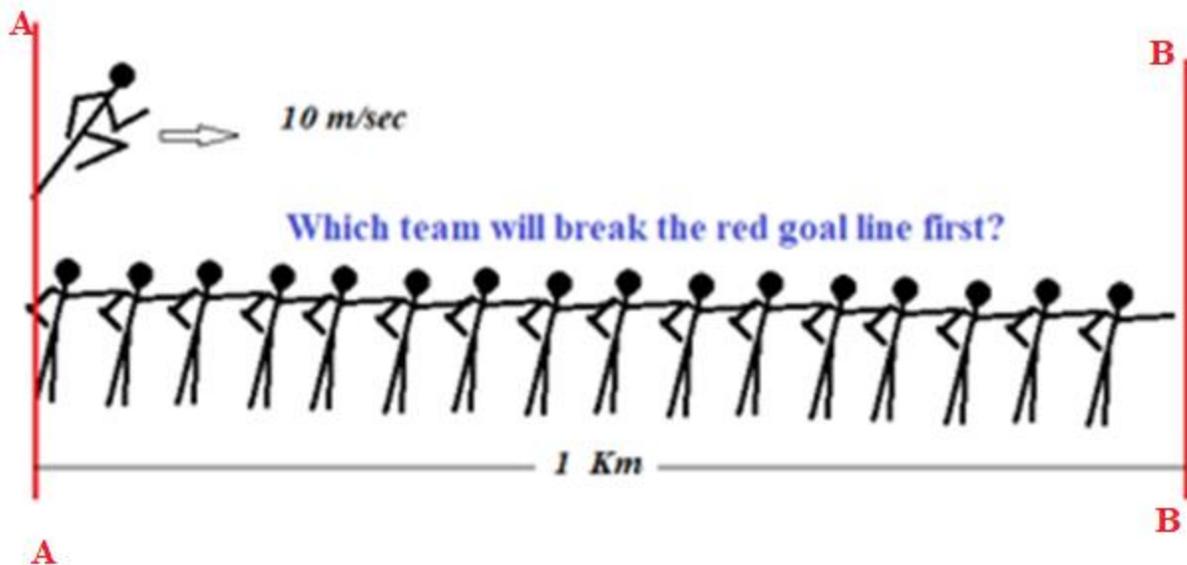


Fig 3 Two ways to race to touch the ribbon at point B

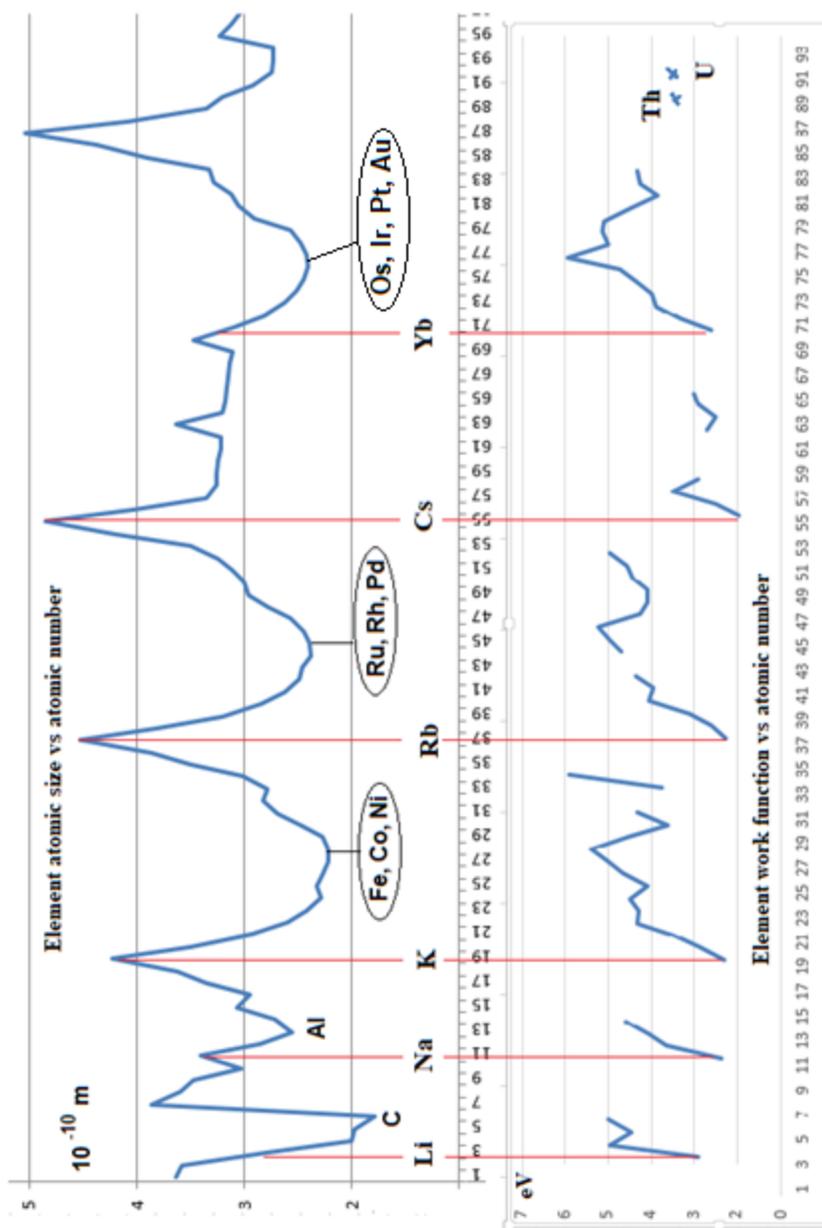
With the manner how neutrinos deliver their message of “arrival”, their ghost-like behavior is easily explained. Because they never run with high speed from the Sun to Earth, they would then never ever let us know their presence relying on the pass of any normal matter. They just so notify us via some local pressure variation. The space between all nuclei in any normal matter is too formidable for their size. When they act, we just don't have instrument precise enough to detect how they cruise in any part of the ocean of Aether fluid between the nuclei when each of them shifts between neighboring volumes.

Possibly, one important element persistently jeopardizing our acceptance of the existence of Aether is a claim from many people that we are unable to see or feel it. But, of course, we can well “see” it. As far as what this author can suggest, the best place to see the pure Aether is in an absolute dark room. Otherwise, we must see it in all colors after we get out of the dark room. As to feeling it, we can never feel it with our sensing organ, but the existence of the entirety of our flesh body offers us the best way of feeling it. Without Aether, none of us would have existed, but just some meaningless particles that cannot even come together forming a pile! Indeed, dear reader, were you ever surprised as a kid when someone told you that you received 1 kg of pressure on every cm^2 of your skin or your guts would have all turned inside out? Sure your skin never feels this pressure without instrument assistance even after you are told!

While the acceptance of an Aether fluid seemingly offers many satisfactory explanations regarding many physical mysteries, the study of Aether cannot be completed until the size, shapes, mass of each Aether particle, and the overall composition of the fluid are found. Currently a popular belief is that quarks are the ultimate substance that determines how the mass and electrical charge of all tangible materials express themselves in the universe. However, will the quark concept lead to a satisfactory explanation on the **attractive** force that is commonly found in all fields involving gravitation, electromagnetism and nuclear forces? If not, this author strongly believe that it is time for Aether to receive more in depth investigation again. Again? Yes, again. Our ancestors proposed this concept thousands of years ago. Although not fully clear what it should be by then, it is still a priceless heritage of insightful idea. Let's not discard it easily. Could human being eventually someday take advantage of the omnipresent Aether fluid for their space traveling just like they take advantage of the water in ocean for the global conquering many centuries ago, or like they take advantage of the air in the atmosphere for their continental connection beginning last century?

Before we close this series of paper, please allow this author to present one more topic. It is about the work function involved in the photoelectric effect phenomenon. Fig 3 shows that all metals that are considered good electrical conductors have higher value of work function^[6], meaning more energy is needed to have an electron removed from the metal in the process. Good conducting metals are conventionally explained as having more liberal amount of electron cloud available to form electric current, but why the electric current from them in the photoelectric effect contradicting such explanation? Overall, Fig 3 shows that work function values strongly depend on atomic volume other than atomic number. Won't this present some

serious questions jeopardizing the electron configuration description for all chemical elements such as those that are expressed as $[\text{Ne}]3s^23p^1$ (for Al), $[\text{Ar}]4s^1$ (for K), $[\text{Ar}] 3d^6 4s^2$ (for Fe), $[\text{Ar}] 3d^{10} 4s^1$ (for Cu)...?



Picture shows clear dependence of work function on atomic volume for most of the elements, but not on atomic number or atomic weight. Generally, low value of work function happens with elements of big atomic volume and high value happens with those with small atomic volume.

Fig 3 Work function vs atomic volume of chemical elements

Glossary, Abbreviation, Acronym

Aether drag It is a fluid resistance presented by Aether against the movement of any particle.

Aether particle A physical combination of one negoff and one posoff, electrically neutral. It is the most fundamental component of the Aether fluid

Aether sub-particle Either the negoff or posoff . For convenience of illustration, this particle only present these two sub-particles as the major components of the Aether fluid. However, nothing in this article would suggest that these two are the only material components of the Aether fluid. As least, in the section **Certainty and Possibility**, this article leaves a big room for neutrino to stand out as another major component of the Aether fluid.

Armor layer A layer of Aether fluid enveloping a nucleon or a nucleus. In such a layer, a dominant portion of the Aether particles coexist with neighboring particles by forming unit after unit that looks like a pyramid in spatial structure. If each Aether particle has a shape like a perfectly spherical marble, the pyramid can be regarded as a tetrahedron, with its vertex at the center of each marble. No other spatial structure consisted of round balls can be constructed to produce higher density arrangement than a tetrahedron. If a force is evenly applied to squeeze over the tetrahedron, regardless of what magnitude of the squeezing force is, the tetrahedron will not yield in shape and its density will not increase. If such a layer is to be laid on an absolutely flat surface, any marble can be found to form a tetrahedron with three neighboring marbles, and also have totally 12 point of contacts with all its immediate neighbors. Unyielding in shape, once formed, such a layer is indestructible withstanding any outside crushing effort. Besides calling this layer as an armor layer, this article sometimes also calls it a 12 point contact layer. The layer can be in any thickness, depending on actual situation.

Condensive force The collective term of gravitational force and nuclear force. Both forces are raised due to the same nature of the Aether's intrinsic pressure.

Horizontal movement (or sliding movement, or gliding movement) The movement of an electron in an atom tangential to the nucleus.

Irreversible thread When a screw rod is aligned end to end with another screw rod and if the screw threads on both rods look different, the screw threads carried by both rods are irreversible threads. Reversing the direction of one of the rods will not make the screw threads between the two rods look the same.

Negoff one of the two components forming an Aether particle. It is particularly sensitive to any negative charge in the way of showing repellece to each other. The word is put together as an abbreviation of neg(ative charge)-off

Posoff one of the two components forming an Aether particle. It is particularly sensitive to any positive charge in the way of showing repulsion to each other. The word is put together as an abbreviation of pos(itive charge)-off

Reversible thread When a screw rod is aligned end to end with another screw rod and if the screw threads on both rods look the same, the screw threads carried by both rods are reversible threads. Reversing the direction of one of the rods will not make the screw threads between the two rods look different.

Vertical movement (or penetrating movement) The movement of an electron in an atom toward the nucleus.

Quantized pit In elaborating the **Armor layer** above, an impeccable and consistent formation of continuous layer formed by some uniform tetrahedrons is said to be laid on an absolutely flat plane. If the plane is not flat but curving, the formation can no longer maintain its uniformity all over, but some spots where the tetrahedron formation is interrupted must show up somewhere. At where such interruption shows up, some empty space larger than what a compact tetrahedron allows would appear. We hereby call the interrupting space the pit. The pits resulted by such an interruption is an inevitable result of geometry: No smaller balls can perfectly cover the surface of a larger ball with absolute evenness. Placing another layer of the smaller balls over the first layer would not change the outcome. The distance between various pits and their inconsistent sizes between each other should follow some mathematical rule that this author is unable to tackle. Adding to this geometrical rule, if the covering is done with the Aether particles covering the nucleons, the pits would be further determined to appear by the influence of Aether's intrinsic pressure, electrical charge magnitude, magnetic moment, atomic number, layer distribution of nucleons in a nucleus ... When an electron moves in the vicinity of the nuclei, these pits would prevent it from completing each trip with smooth and continuous acceleration or deceleration. Instead, their trip distance and their traveling momentum must manifest themselves with discrete quantities. For this reason, the pits are further called quantized pits in this particle.

Reference

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<http://resources.schoolscience.co.uk/PPARC/16plus/partich1pg3.html>

[3] Section C, Photoelectric Effect, **Aether, the Mother of All Forces in Nature (II of IV)** — Electromagnetism, by *Cameron Rebigol*, *General Science Journal*, or <http://huntune.net>

[4] Eq-18, **Aether, the Mother of All Forces in Nature (I of IV)**—Gravitation—, by *Cameron Rebigso*, *General Science Journal*, or <http://huntune.net>

[5] Eq-7, **Aether, the Mother of All Forces in Nature (III of IV)**— Nuclear Forces and Energy—, by *Cameron Rebigso*, *General Science Journal*, or <http://huntune.net>

[6] **Work Function**, https://en.wikipedia.org/wiki/Work_function. All data enabling the drawing of Fig 3 in this article is quoted from that Wiki article.