Solution to Our Energy Problem

I am writing to you about what I think is an overwhelming, technical solution to our energy problem (politics aside).

I have chosen to write to you for the following reasons:

- You are an independent thinker, able to critically analyze an issue.
- You do not have a vested, professional stake in the energy business.
- Your education and career are not in the nuclear physics realm. Therefore, you do not have a dogma to defend.
- You are an apparent advocate of free market economics and opposed to massive government intervention.
- You perhaps have more confidence in ordinary people being able to come up with solutions to problems than the government.

My background is two degrees in chemical engineering, 36 years of professional experience and I am 62 years of age. My experience has been in coal-fired power plants, oil fields, oil refineries and much practice in recovering high purity water from the wastewaters of these above industries.

The energy source I will be explaining has been in front of us for more than half a century but mainstream science has a completely mistaken concept about its nature. My explanation will be an interweaving of science history and fundamental physics. This prose is tedious but each step is necessary.

The atomic bomb was developed under the technical leadership of Robert Oppenheimer. Obviously this undertaking was successful and I am in agreement with its described technical details. When the bombs were actually used, a large number of the scientists were not overjoyed by this. I think the dropping of the bombs was absolutely necessary, so I don't agree with their opposition. However, I do understand their sense of horror with incinerating hundreds of thousands of people.

After the war, there was a political realization of the threat of Soviet Communism, and this awareness prevailed for several years. In the military race with Russia, the next major step was development of the hydrogen bomb. Oppenheimer expressed opposition to this effort on a rational basis: "You already have thousands of atomic bombs; why do you need a hydrogen bomb?" I think his position was reasonable. But the military – government response to his criticism was to believe that he was a Soviet agent and he was stripped of all access to strategic information and participation. This even included denying him access to articles that he wrote!

I think the government over-reacted and treated Oppenheimer in a terrible manner. The government institutionally does not understand that creative, independent thinking cannot be combined with mindless obedience.

Anyway, a very small number of scientists developed and tested the hydrogen bomb. I believe they put out a complete misrepresentation of how it works for national security reasons. This

misinformation was so complete and so tightly wrapped that it became accepted dogma throughout mainstream science. The explanation was that deuterium nuclei would fuse together to form helium and this would release a great deal of energy.

The truth is that the bomb contains no hydrogen and there is no nuclear fusion reaction. A conventional explosive implodes a plutonium mass, which, in turn, undergoes nuclear fission. This nuclear explosion raises the temperature of a small mass of tritium. A rise in temperature accelerates the tritium nuclei to become very high speed "bullets". They impact a large amount of deuterium, which is the target. These collisions, between tritium and deuterium, cause fission of the deuterium into high speed neutrons which continue the splitting of deuterium until it is exhausted. Once the neutrons slow down, they are simply protons – or hydrogen nuclei. **Almost all of the released energy comes from the splitting of deuterium.** A very small amount comes from the fissioning of plutonium and tritium. The tritium actually degrades to helium-3.

The consequence of this misinformation is that the mainstream, scientific community has pursued nuclear fusion as the new source of "unlimited" energy for the past sixty years. This scientific effort has been a spectacular failure – because they have the wrong theory.

Now we have to go back to the beginning of modern physics: Isaac Newton. In 1687, he published his Universal Law of Gravitation, with the basic idea that it was an attractive force between two bodies which have mass. Shortly after this law was published, the greatest scientific mind in the world criticized it and said it was wrong. This was Isaac Newton himself! In short, he said that he knew it was wrong but did not know how to fix it. I now quote him: ***"That one body may act upon another at a distance through a vacuum, without mediation of any thing else, by and through which their action and force may be conveyed from one to the other, is to me so great an absurdity, that I believe no man who has in philosophical matters a competent faculty of thinking, can ever fall into it."***

In simpler words, for you and me: no action at a distance; therefore the concept of an attractive force is completely invalid. An answer to his problem is as follows:

A kinetic theory of gravity was originally proposed by Nicolas Fatio de Duillier in 1690 and developed later by Georges-Louis Le Sage in 1748. The theory proposed a mechanical explanation for Newton's gravitational force in terms of streams of tiny unseen particles (which Le Sage called ultra-mundane corpuscles) impacting on all material objects from all directions. According to this model, any two material bodies partially shield each other from the impinging corpuscles, resulting in a net imbalance in the pressure exerted by the impacting corpuscles on the bodies, tending to drive the bodies together. This mechanical explanation for gravity never gained widespread acceptance, although it continued to be studied occasionally by physicists until the beginning of the twentieth century, by which time it was generally considered to be conclusively discredited.

This theory has regained acceptance, largely through the efforts of Astronomer Tom Van Flandern. Over the past two decades, through diligent observation, he has established the following:

- The size and mass of a "graviton" (the ultra-mundane corpuscle designated by Le Sage) is about 10 to 20 orders of magnitude smaller than that of a proton.
- Its average velocity is about 20 billion times faster than the speed of light.
- Its average distance of free travel, until it collides with another graviton, is about 5,000 to 7,000 light years.

This revived theory is working extremely well. Keep in mind that this gravitational flux of gravitons fills the entire Universe, and in the absence of any other entity, is entirely random and does not favor any particular direction. This is the first of three mediums for making the Universe.

I have not made any contribution to this new theory of gravity.

The next medium in the Universe is the light carrying medium. The Michelson–Morley experiment, one of the most important and famous experiments in the history of physics, was performed in 1887 by Albert Michelson and Edward Morley at what is now Case Western Reserve University. It is generally considered to be the first strong evidence against the theory of a luminiferous aether. The experiment has also been referred to as "the kicking-off point for the theoretical aspects of the Second Scientific Revolution. Primarily for this work, Albert Michelson was awarded the Nobel Prize in 1907.

Up to the time of this experiment, it was assumed that there was an aether because of electromagnetic waves (light, heat, etc). This experiment was testing at what rate the Earth was traveling through the aether. The result of the experiment was that there was no difference in the velocity of light in the x, y, or z direction. It was concluded that an aether did not exist. This conclusion then led to treating a photon – “a piece of light” as being a singular particle. This led to the contradiction that light was both a particle and a wave. But contradictions do not exist in Reality.

The problem with this experiment, and its result, was the unstated assumption that the Earth would simply pass freely through a light carrying medium with no effects of friction or condensation/evaporation in the light carrying medium. However, the Earth acts as an obstacle to the light carrying medium, which is being pressured by the graviton flux. The light carrying medium actually piles up and sticks to the Earth.

Many experiments have been conducted to determine what light is. If it is actually a wave, then that fact accounts for **all** experimental results. If it is a particle, then that fails to match results in several of these experiments. The proper conclusion is that light (and radiative heat, radio, etc) is a wave.

One cannot have a wave in a non-existent medium. A wave is a geometric form of momentum that is passing through a medium of particles, each of which possesses the property of mass. There is a flowing sequence of individual particles colliding with particles in front of them, which pick up the momentum and pass it on to the next particles, etc. One can proclaim this as “pure” energy but the “pure” energy consists of particles which have mass and velocity. It is really the same as the gravitational flux, except these light carrying medium particles are at rest rather than all of them speeding along at 20 billion times the speed of light. It is thought that an elyson, the particle that makes up the light carrying medium, is perhaps 4 to10 orders of magnitude smaller than a proton in terms of size and mass.

The lone architect of this new theory of a light carrying medium is Astronomer Tom Van Flandern. He has labeled these particles as elysons. I have made no contribution to this new theory; I am simply relating it.

We now have two mediums in our Universe. The gravitons will be colliding with these elysons constantly. Each elyson will be moved in a “drunkards walk”. An utterly random movement. With only these two mediums present, we have no accumulations of elysons or dissipations of them, i.e. no condensation nor vaporization. There is not even any mechanism to cause waves in the light carrying medium. Any wave would constitute an orderly movement of many elysons but each and every one of them is moving randomly.

We now come to the third and final medium required to make up our Universe. Solid matter, or more precisely, the proton. We know that protons can be assembled to make nuclei, molecules, crystals, rocks, asteroids and so on. The question is: How?

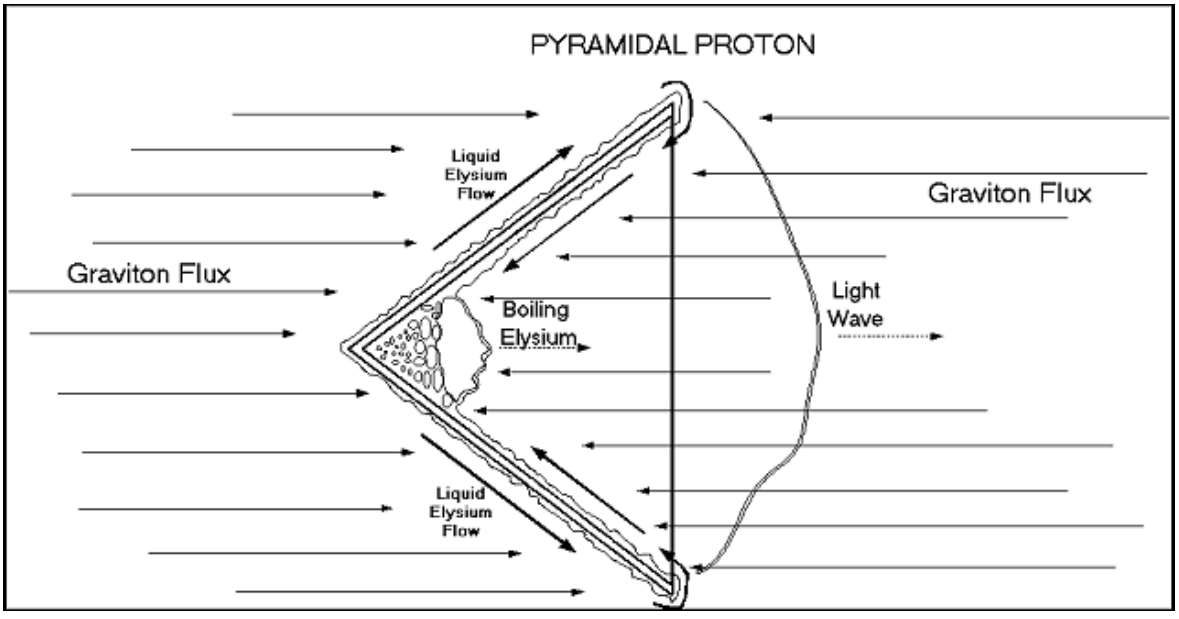
Here is where I propose a theory and absolutely no one agrees with me. From here on, it is my speculation. It doesn’t matter who I am. Examine the speculation and let it stand or fall on its own merits.

It has been assumed that a proton is a sphere, a predictable first guess. Let's drop a single proton into our two mediums of graviton flux and elyson "sea". What does it do**? It is in the way.** The proton is an obstacle, nothing more.

The gravitons would push the elysons up against the proton where the elysons would condense. The gravitons would then push the condensed elysons downhill if there is a downhill. But with a sphere, every point is at the same elevation. The elysons cannot flow in order to get away from the gravitons. However, continued collisions with gravitons would raise the velocity of the condensed elysons. They would vaporize.

One cannot have elysons both condensing and evaporating at the same position at the same time. That is a contradiction. Yet we know that hydrogen atoms emit light. The answer to our seeming contradiction is that a proton is not a sphere. It must have a highest elevation and a lowest elevation. Without going into a long examination of how one can arrive at a particular geometry, various experimental facts dictate that a proton must be a hollow half sphere or a hollow cone or a hollow pyramid. Let's use the hollow cone as an example geometry. This shape gets us out of the above problem of simultaneous condensation and evaporation at the same location.

Remember that the graviton flux is entirely random. So the shape of the proton determines the local graviton "wind" at all positions on the proton. With our hollow cone, the highest elevation point is the outside tip of the hollow cone. The lowest elevation is the inside tip of the hollow cone. Some elysons, which condense on the outside tip of the cone, will flow downhill to the outside base of the cone. They will then be pushed over the lip to the inside surface of the cone. They will then flow downhill to the bottom of the inside of the cone. At this position, they can retreat no further but they continue to be pounded by the gravitational flux. This action by gravitons transfers momentum to the liquid elysons. With no other option, they vaporize and go outward as electromagnetic waves. Examine the following figure:



Conventional atomic physics identifies the electron as being a repulsive barrier which does not allow further approach to the atom's nucleus. It is claimed that electrons are singular particles which travel in orbits about the nucleus. It is also claimed that electrons can emit photons – supposedly singular particles also. In this new speculation, the electron is the continuous vaporizing of liquid elysium in the proton "well". The vapor goes out as waves, which account for the phenomena of photons. Recall that previous section in this paper explained that photons are not particles but momentum waves in the light carrying medium – the Elysium.

The presence of this single proton – with its shape – interacts directly with elysons and indirectly with gravitons. This is thus an atom of hydrogen. The repulsive electron is the vaporizing Elysium.

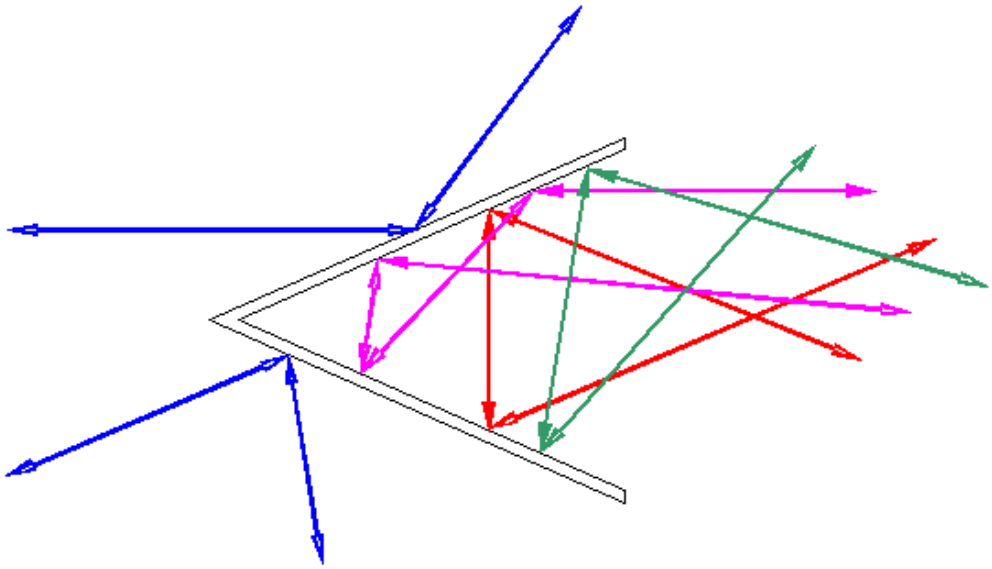
In the three mediums described, there is only one kind of particle needed to make up each medium. No additional particles are needed. This is a classic example of Occam's Razor. All of the particles in all three mediums act in a passive manner; they do not attempt to do anything. They do not need to have a consciousness, a mind. They are not alive. All interaction between particles occurs by collision. There is no "secret" pure energy. Any apparent pure energy can be found to be simply particles which have mass and velocity. All transfers or transformations of energy and force simply arise from collisions of these various particles with one another.

Given the asymmetric geometry of the proton, one can derive from simple analysis the following facts:

- Any collision between a graviton and a proton on its **outer** surface will impart momentum from the graviton to the proton. This would presumably give a push and therefore a velocity to the proton. But, any such path of a graviton, including a change in its direction because of collision, can be negated by a graviton following this exact path in the opposite direction. Therefore, the net effect of push on the proton is zero.

- Any collision between a graviton and a proton on its **inner** surface will impart momentum from the graviton to the proton. This momentum transfer will cause the proton to have a velocity in the direction of its conical tip. Another graviton, following the exact same path – but in the reverse direction – does **not** cancel out the momentum transfer of the first graviton. Instead, it adds the same amount of momentum transfer and increase in velocity to the proton as did the first graviton. The net result is that the proton travels in the direction of its tip (of the cone). Refer to the figure below:

GRAVITONS IMPACTING HOLLOW PROTON



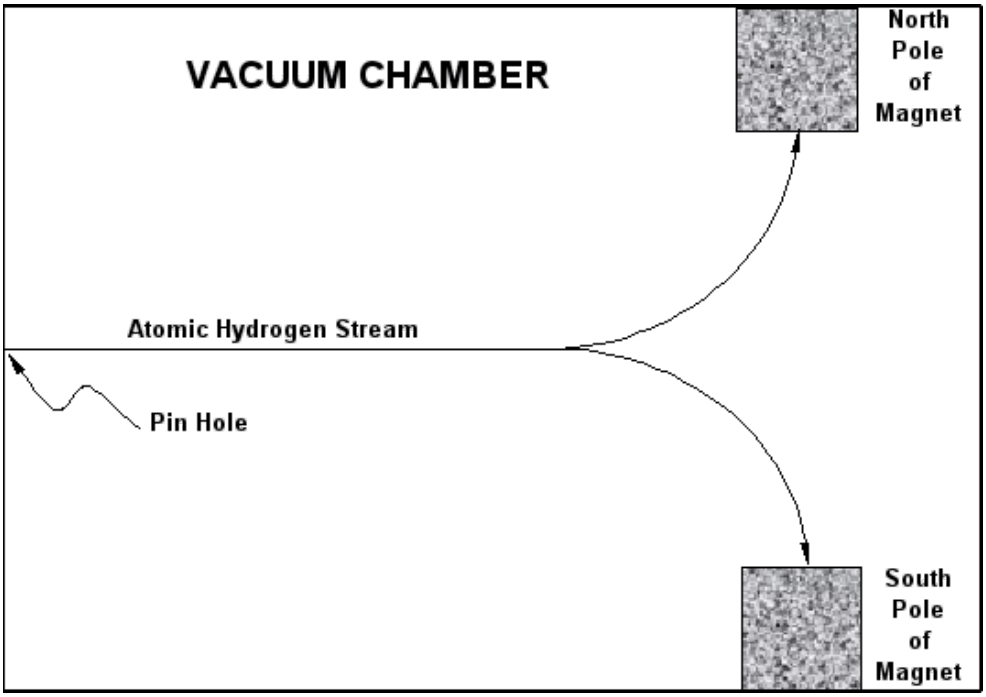
- The condensing and vaporization of elysons on the proton will also add to the forward velocity. However, much more importantly, the outside tip of the proton will not have an outward, expanding, repulsive force. It will interact with another proton only through hard contact. The base of the hollow cone proton will have a constant, outward, expanding, repulsive force of vaporizing elysons. Any other proton, which is approaching the first proton on its hollow side,

would be pushed away by the vaporizing elysons. The net result is that an approach of two protons, cone tip to cone tip, is favored.

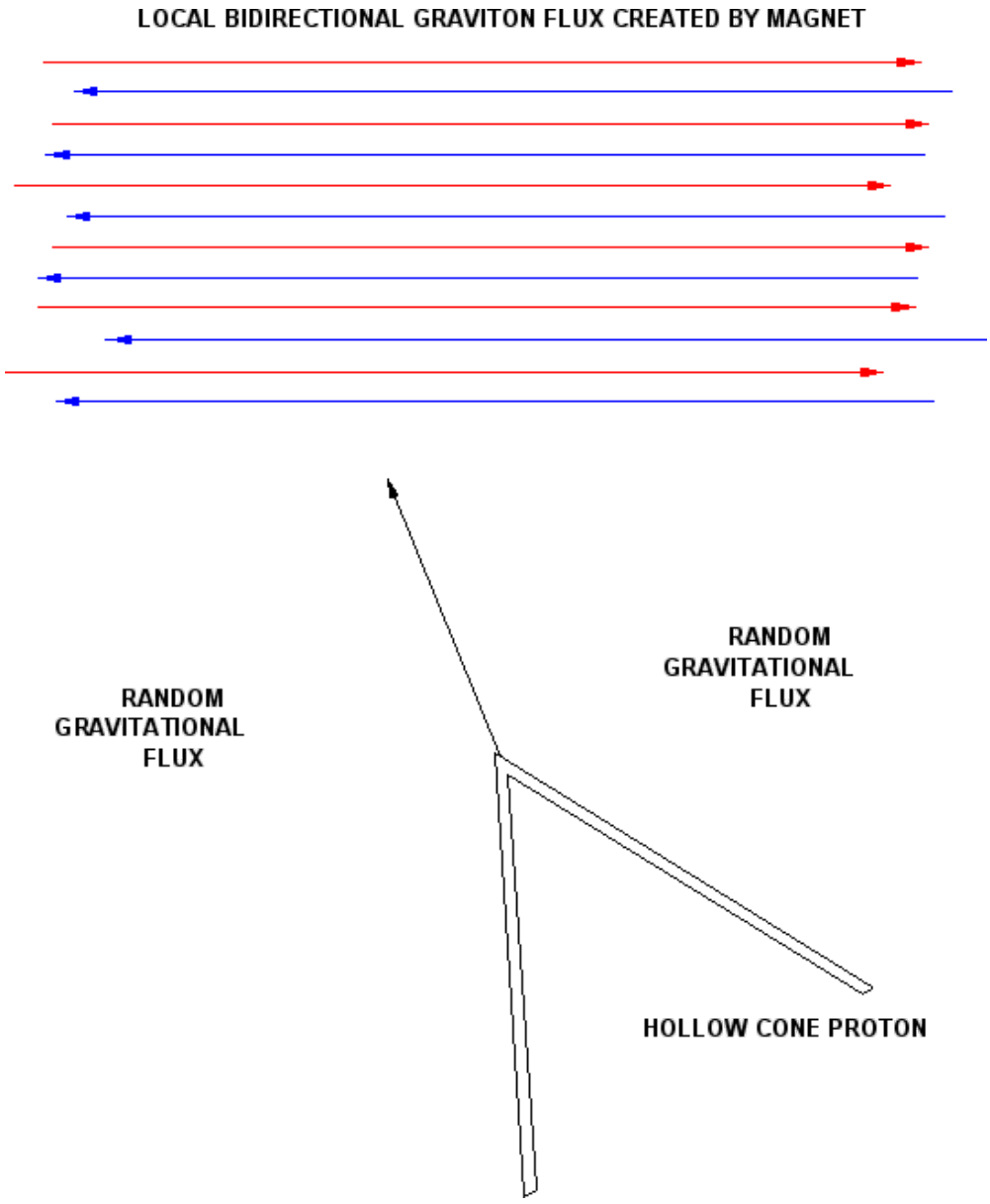
- The movement of elysons on the proton surface is always downhill, until they are vaporized. This progression is not reversible. This gives the first, fundamental explanation of why time moves “forward” and not in reverse. Classical thermodynamics claims that interactions at the atomic level are completely reversible but this is not correct. The phenomena of hysteresis, and in a more general sense, entropy, show that this is so.

Let’s see if there is an experiment, which backs up the speculation of an asymmetrically shaped proton:

A magnet is encapsulated within a vacuum chamber. The magnet is shaped such that the two poles point to one another, but there is a significant gap between them. At the left side of the vacuum chamber, a stream of atomic hydrogen is shot through a pin hole. As the hydrogen approaches and enters the gap between the two poles of the magnet, the gas stream splits into two equal streams. One stream goes to the North Pole and the other to the South Pole. This behavior is an actual experimental result. Refer to the figure below:

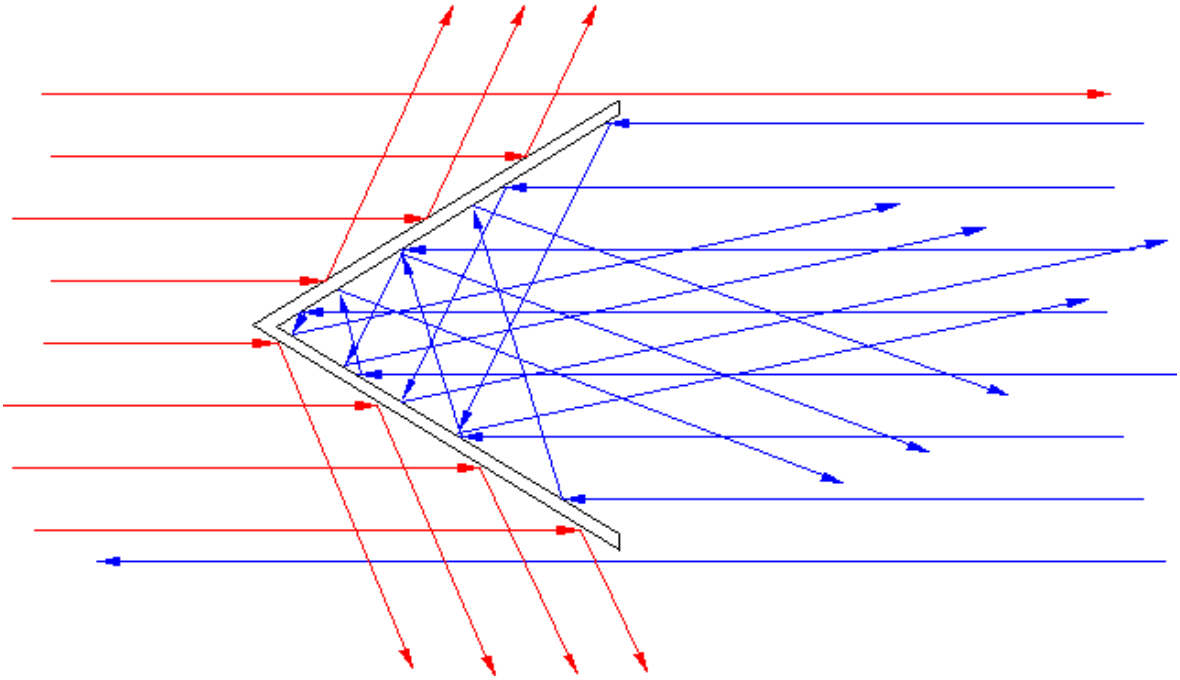


It is proposed that magnetism is simply the random gravitational flux being refocused into a bidirectional stream by the atomic geometry of the magnet. It is noteworthy that the force of magnetism is constant and never ending. It does not require any apparent energy input and it does not give off heat. It has been found to be “instantaneous” just like gravity. Let’s see what would happen to a hollow cone proton entering the magnetic “field”. The figure below shows a proton, still in a random gravitational flux, approaching the magnet field.



Having entered the magnetic field:

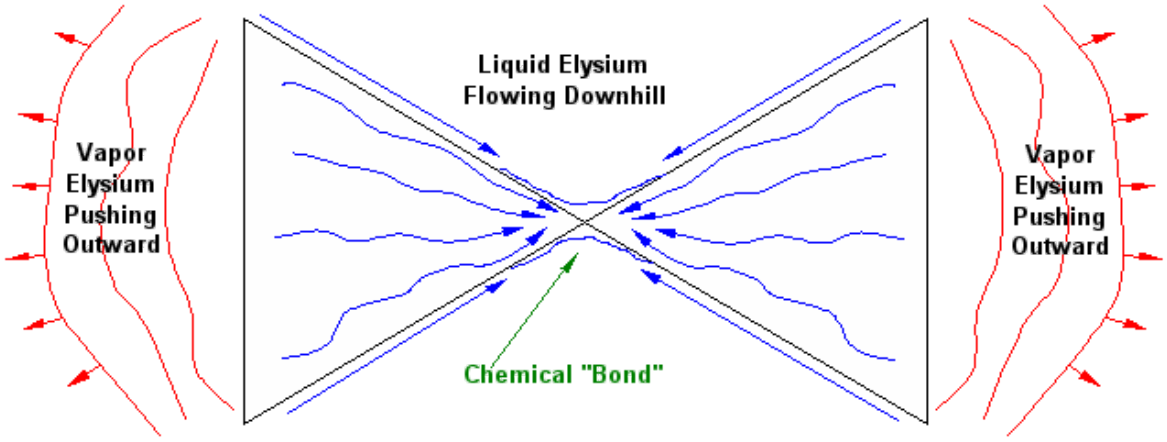
LOCAL BIDIRECTIONAL GRAVITON FLUX CREATED BY MAGNET



The slightest orientation of the proton tip to either magnetic pole will push the proton to that pole. As can be seen above, the gravitons impacting the outer surface will lose some momentum but continue to the right. Gravitons impacting the inner surface will have their direction basically reversed, thus granting more momentum to the proton. Since the orientation of atomic hydrogen protons is entirely random in the oncoming stream of hydrogen, sheer randomness will split the entire atomic hydrogen stream into two **equal** streams, each one heading to a magnetic pole. Please note that no attractive force is involved. It is all push.

The simplest molecule is the hydrogen molecule. When two hydrogen atoms come near one another – tip to tip – they shield each other from the graviton "wind" just like the Earth and the Moon shield one another. This causes a relative lack of gravitons moving along the common center line between the two atoms. They are naturally "attracted" to one another and finally line up tip to tip. Refer to the figure below:

HYDROGEN MOLECULE



The geometry of the two atoms, touching one another, determines the local gravitational "wind". In this situation, downhill on the outside of the hollow cone protons is now reversed and is from the base to the tip. Elysons, which have piled up against the proton and liquefied, flow towards the union of the two proton tips. This liquid forms a "glue" or chemical "bond" between the two atoms. The vaporizing elysons, coming out of the inside of the two hollow proton cones, keep pushing the two tips together.

All chemical bonds have this character, with variations in the geometry of various nuclei.

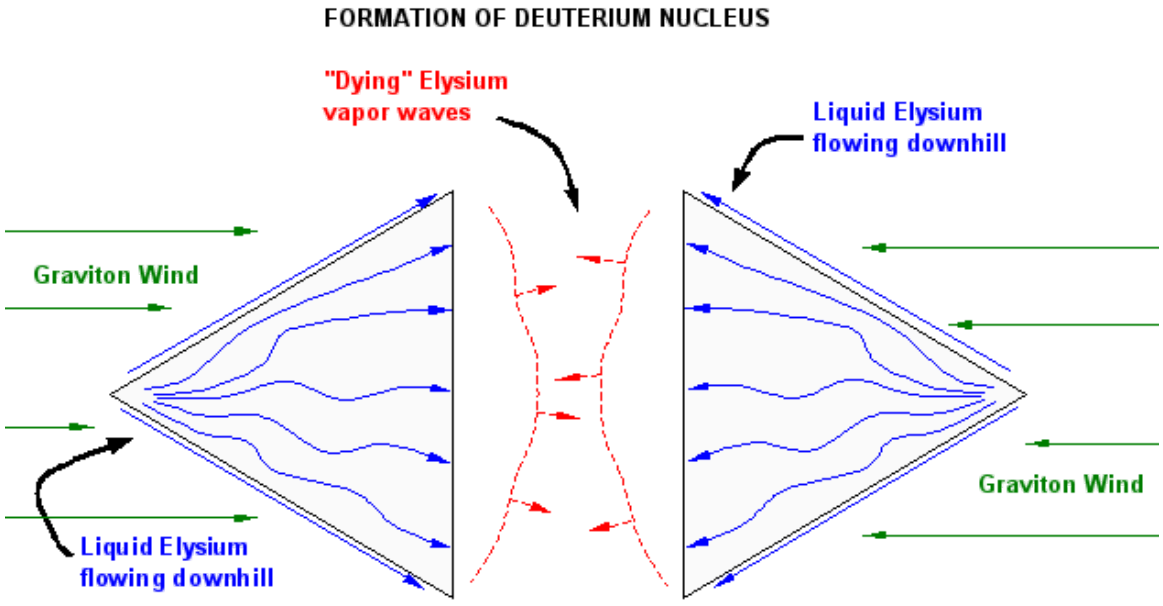
We now come to nuclear fusion. Conventional nuclear physics claims that fusion can only occur at incredibly high temperatures (millions of degrees), i.e. extremely high velocities for the nuclei. It also claims that when the nuclei fuse, there is a vast release of energy. Neither claim stands up to common sense. Various teams at universities or other government institutions have spent countless billions of dollars over the past sixty years, to create nuclear fusion reactors. They have all been spectacular failures. Fusion has not occurred and there has been no net release of energy.

The University of Wisconsin nuclear team presents a perfect example. They predicted, according to mainstream theory, that the ideal reactants for the greatest fusion release of energy would be Helium-3 nuclei. They achieved their goal of millions of degrees temperature, confinement of the Helium-3 nuclei by powerful magnets and enough time duration to get results from the countless millions of collisions. The results were no release of energy and an outward flux of 140 million protons per second. Since Helium-3 nuclei are made of three protons – neutrons, what they achieved was fission. The colliding nuclei broke apart into singular protons.

They ignored the actual results – as did the rest of the mainstream nuclear scientists – and proclaimed that we must make a gigantic effort to go to the Moon and "mine" all of its Helium-3 for use in nuclear fusion reactors here on Earth. When one obeys dogma and stays faithful to Holy Scripture, there is no limit on human insanity.

Observations of newly forming stars show them surrounded by a large belt of black, opaque nebulae. Apparently, nuclear fusion **can** occur at "cold" temperatures!

Let's examine the figure below:



If overall gravitational pressure has compressed the molecular hydrogen nebula enough, the molecules will break apart to atomic hydrogen – due to collisions between the molecules. On rare, random occasions, when two hydrogen protons approach one another – base to base – they will once

again shield one another from the gravitational "wind". In this case, the liquid Elysium flows downhill from the cone tip to the base on each proton. Because the hollow, inner portions of the proton cones are being shielded from the graviton flux, the repulsive outflow of vaporizing Elysium will die down. But the liquid Elysium will still flow into the inside of the hollow cones. When the two cones mate – base to base – there will be a fair amount of Elysium trapped inside the two cones. The graviton flux will then hold the two cones together.

Something else gets trapped inside the two cones when they mate. One or more gravitons. Even though the velocity of the graviton is about 20 billion times the speed of light, one or more of them will be trapped. If one argues that they are fast enough to escape, then they are equally fast enough to get in. The graviton is not alive and it does not have any motivation. Its behavior is absolutely passive.

Let's suppose that the joining of two proton hollow cones captures one graviton for every one thousand elysons. Let's even have the elysons be at room temperature, 70^{o}F. A plausible ratio would be for an elyson to have one millionth the mass of the proton, and a graviton have one millionth the mass of an elyson. Within the cavity, the gravitons will collide with all the elysons until they all have a common temperature, i.e. a common speed. The fundamental principle here is conservation of momentum:

Mass of graviton * velocity of graviton + 1,000 * mass of elyson * velocity of elysons = a constant value.

The initial velocity of the one graviton is 20 billion times the speed of light. The initial velocity of the 1,000 elysons is "zero". Carrying out the mathematics, the final, equilibrium velocity of each elyson is 5,996,000,000 meters per second. Or 3,726,000 miles per second. We can use the kinetic theory of gases to determine the temperature of these 1,000 elysons:

(velocity)^2 $\text{meters}^2 / \text{second}^2 = 3 * R * T / M$

Where:

R = gas constant = 8.314 kg * $\text{meter}^2 / \text{second}^2$ /mole / ^{o}K

T = absolute temperature in degrees Kelvin

M = mass of a graviton in kilograms / mole

Carrying out the computation, we get a temperature of 14.5 million ^{o}K. This temperature is right in the middle of observed temperature range of an atomic bomb detonation being from one million ^{o}K to one hundred million ^{o}K. So, the "incredible, mysterious" nuclear energy inside the nucleus is not incredible or mysterious at all. It comes from gravitons and elysons being trapped within the cavity formed by two protons joining together, base to base.

The fissioning of uranium or plutonium extracts only about 2% of the encapsulated energy in these nuclei, and there is a tremendous burden of radioactive waste, which lasts thousands of years. If one can fission the deuterium nucleus described above (two protons mated base to base), the extraction of encapsulated energy is 100%., and the waste is hydrogen gas – which is not radioactive at all.

An experimental team that working along this route were the chemists Pons and Fleischmann at the University of Utah in 1989. They worked with electrolysis of deuterium oxide by means of palladium electrodes. They theorized that the excess heat generated in the cell came from nuclear fusion of the deuterium. **But what if they were actually achieving fissioning of deuterium?** A viable test, a wrong theory.

As is well known, Pons and Fleischmann were excommunicated from the mainstream scientific world. They had committed high treason by differing with the Holy Scripture of hot nuclear fusion. Experimentation came to a halt.

As previously explained, it is very important to understand that the deuterium fission (supposedly fusion) within the hydrogen bomb requires a plutonium bomb to initiate it. Besides the fact that the hydrogen bomb is utterly useless as a source of peaceful energy, the use of plutonium negates any value to the released energy even if it could be captured. Possibly the experiment by Pons and Fleischmann consisted of holding the deuterium in place on the palladium metal surface and splitting it with electricity. If true, then plutonium is not needed; there is no bomb explosion, and manageable amounts of energy can be extracted. The first attempt at a new process is always crude. But there is always rapid progress if the human experimenters "see the light". We went from the Wright Brothers' first flight to landing on the Moon in only 66 years.

I submit that the fissioning of deuterium is real.

If this idea of deuterium fissioning is viable, then I predict the following:

- Since there is a virtually endless supply of deuterium:
- Natural gas will still be a useful energy source at the small scale.
- Petroleum will be a far distant, second class player in generating large scale energy. It will be used almost entirely for producing products.
- Coal would be reduced to a technical curiosity. However, if liquid fuels are the best economic way to power vehicles, this can be easily accomplished through the use of deuterium fission. The major operating cost in converting coal to gasoline, diesel, etc, is the energy requirement of the process. It is an energy consuming process. The deuterium fissioning would supply an "endless" energy source for converting coal to useful fuels.
- The greenies, like Al Gore, will scream their heads off at "the horror of it all", even though deuterium fissioning would not create any carbon dioxide.
- In power plants, deuterium fissioning would be produced to create steam and electrical power. This would be the same as conventional nuclear fission plants, except there is fifty times the release of energy, pound for pound of fuel – and there is no radioactive waste.

If you have any interest in this process idea, share it with other persons in private industry. There are many well practiced, competent physicist teams working on nuclear fusion, which could be redirected if they viewed deuterium fissioning as a reality. Taking it to university academics or government scientists is pointless for the following two reasons:

- THEY ALREADY KNOW EVERYTHING.
- An idea, which challenged their scientific dogma, would threaten their careers and they would lose their government funding. In the world of government, if you solve a problem, you are out of a job.

A final thought: where would aviation be today if the Wright Brothers had had to submit their design for peer review before they were **permitted** to build and fly their plane?

Further information on my speculation can be found at www.nuclearpyramid.com

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