A UNIFYING FIELD MODEL

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ABSTRACT

This field model suggests that the universe is structured from a single magnetic dipole with a velocity of twice the speed of light. It is proposed that the particle, its composites and its field amalgams, permeate space to create a ten dimensional binary system. Its varying properties are deduced through a necessary but atypical methodology, using symmetries and an applied principle of correspondence. Manifestations of this tachyon vary, depending on its velocity and mass which are inversely proportional. Its composite structures are shown to correspond, both with known manifest particles and with magnetic flux. And it is suggested that its movement in a field generates constants that are evident in our tangibly measurable dimensions. By a logical extension of the use of symmetry and correspondence principles, it predicts certain innate potentials. One such is the reconciliation of the mass/size ratio of the proton to the electron, as justification for its proposed composite particulate state. Another relates to its energy potential, the transfer of which results from an apparent break in magnetic field symmetries. The electromagnetic application has been experimentally proven in a test, described in an appendix to this document. This suggests that this model may be consistent with the fact. There is reference to a broader general reach that may point to resolutions that include, but are not limited to, outstanding questions relating to gravitational fields and to dark energy and dark matter. It enables a resolution of paradoxes especially as these relate to questions of locality. It presumes to describe particles and particle interactions in defiance of the prescriptive use of mathematics and suggests that fractal geometry may be a preferred means to describe both particle interactions and the fields' varying manifestations.

INTRODUCTION

As an amateur, the prospect of attempting a meaningful comment on physics is, at best, inappropriate. I am aware of this. My defence is that I am curious. Then without putting too a fine a point on it, science seems to have lost direction. Its best endeavours have somehow been snaffled by the constraints imposed on it by faster than light speeds.

Quantum theorists always worked with paradox the most fundamental of which is possibly Heisenberg's Uncertainty Principle. But relativity theorists look for a total reconciliation of all things, so to speak, most famously indicated in Einstein's comment that 'God does not play dice with the universe.' As I understand it, the problem for classicists centres on the fact that paired particles, although spatially separated, are seen to synchronise their spins at precisely the same moment. This begs the question as to how the one can know what the other is doing at a coincident moment? And the proof of this synchronous adjustment, this want of locality, may also prove that relativity cannot reconcile all things, so to speak. The restraint that harnesses it, is somehow, teasingly and ironically, hidden away in precisely these questions of non-locality. Particles indeed appear to communicate at superluminal speeds through space, the outside limit of which has yet to be established. But this has apparently been proven at separation distances as great as eleven kilometres.

Latterly too is a clamorous search for dark matter, something that can account for the fact that the stars within galaxies orbit at a constant speed. This flies in the face of logic. Like questions of non-locality, it is counter intuitive. It seems that new and paradoxical insights into the movement of gross and subtle matter threaten to dismantle classical theories. What is known is crumbling in the face of small and large evidence that all is not as it seems.

The conclusions of this model may reconcile both a classical requirement for locality and quantum theorists' denial of this. The locality paradox suggests that something else is there, some principle that lurks behind the manifest, some order behind the chaos.   And this something enables instantaneous communication or, action at a distance. Like those great Gothic churches, perhaps classical theory only needs buttressing. But to allow this may require the identification of a fault line in the foundations. The proposal is that one force, fundamental to all the forces, has been entirely overlooked. At the risk of over working a metaphor, it was somehow buried under the corner stones of physics. It then faded from sight in the face of the extraordinary and brilliant achievements of quantum electrodynamics.

Here's the thing. On simple electric circuitry, changing electric fields invariably induce magnetic fields and changing magnetic fields invariably induce electric fields. But magnets can and do interact with other magnets without inducing a measurable electric field. It may indeed be there, hidden in the body of the material itself. But it's neither evident nor measurable. My own take is that a magnetic field is a primary force compared to which the electromagnetic forces are secondary phenomena. This was my starting line, the 'kick off' for this proposal.

THE METHODOLOGY

As a means to determine the properties of a magnetic field a principle of correspondence was applied.   What is meant by this is that, on a fundamental level, everything seen, all gross amalgams of matter such as an electric kettle or a rock, simply comprise collections of molecules and atoms. In effect the whole is the sum of its parts. If things could be ground down to their finest structure, and given that we had instruments to detect this matter in a powdered form, so to speak, then we would simply find a collection of atoms that were manufactured by forces into their earlier state as an identifiable, gross amalgam. It's fatuously

self evident but nonetheless, correct. The correspondence principle proved a surprisingly incisive tool. And here's how it works. Just as a kettle is simply the sum of its parts so too, a magnetic field may be the sum of its parts. This being given, then to determine the parts of the field, all that is needed is to first determine the nature of the field as a whole and apply those same properties to its individual parts. For ease of reference the following only refers to permanent bar magnets but the principles apply to all magnetic fields.

THE FIELD MODEL

Flux seems to extrude and then intrude the crystalline structure of a magnet at one of two poles, commonly defined as a north and south respectively. That it exists at all is evident in its influence on magnetisable matter and other permanent magnets. This influence is manifest. A north pole from one magnet repels other magnetic norths and a south pole repels other magnetic souths. Conversely, a north and a south pole attract. This suggests that a magnet only has precisely two poles and that neither manifest independently.

These fields appear to exit and then enter the body of the magnet. And extrusion and intrusion are probably equal as there is neither a gain, nor a loss of weight to the magnet itself. If replacement is consistent with displacement, then it may be that the fields somehow belong to the body of the magnet and simply orbit through and around it. An orbit describes a single direction on a circular path. Put simply, an orbit chases its tail.

If this describes some properties of a magnet and if the whole of the field is simply the sum of its parts, then the inference is that flux may comprise smaller parts or particles. And in the same way, these particles would both extrude and intrude the body of the magnet. They would each comprise a north and a south pole. Each north of one would repel the north of another and each south would repel another south. Equally, a north and a south pole from different particles

would attract. All these movements exactly reflect the laws of charge. So, by implication, the polar attribute of a magnet may, in fact, be a charge attribute in each magnetic particle. Correspondence to the field would then suggest that each particle is in fact, a magnetic dipole with a neutral charge. And, as there is no gain, nor loss of weight to the body of the magnet, if replacement is consistent with displacement, then it is reasonable to infer that the quantity of these particles would be constant within the body of the magnet.

The question then is this. If flux comprises magnetic dipoles why is it that we cannot find them? They remain elusive even to the most sophisticated equipment available to modern day science. The answer to this goes to the heart of questions of locality. Light is the ultimate gauge of speed. If light is required as a comparative measure of speed and if magnetic particles are both smaller and faster than light, then light would never detect that particle. On a macrocosmic scale it would be like wind that we cannot see blowing a balloon that we can see. And, if we lived in some medium that was somehow separated from that wind so that we knew nothing of its force, then we might mistakenly, assume that the balloon has its own energy to move it through space. This is the fundamental question that this model attempts to address. Is energy the property of the particle or does it, in fact, belong to a field that moves the particle? Or indeed, is it perhaps a combination of the two? I am now rushing in where angels proverbially, fear to tread. But as light speed is a critical value to this field model, it is possibly required that I digress to enlarge on this point more fully.

I do not buy into the logic that precludes superluminal speeds for the reasons given above. The puzzle is to find some property that relates to the mass of a photon without offending classicists who describe a photon as having no mass. For instance, while a rock may weigh, for example, 10 tons, if that rock were positioned outside earth's gravity it would weigh precisely nothing. So, weight only has relevance within a gravitational field. Therefore, the weight of an object would somehow relate to the size of an amalgam and its atomic density.

But in the context of this model, I am proposing that mass may be applied to anything that has an inferred or defined boundary. In terms of this, mass relates to volume and not weight. And given that the particle is the ground reference point and that the photon may be the smallest evident particle, so to speak, then I am proposing that a photon has a mass, or an inferred boundary of 1. But I will get back to this point.

Returning to the argument that a magnetic field comprises particles, for ease of reference it would be as well to name this. My first choice was a luminon as this hearkens to an earlier concept of luminiferous aether that was assumed to fill all space. But I have since become aware of the search for zero point energy or the God Particle and, as I am proposing that the magnetic field in fact holds this particle, it would perhaps, be more appropriate to call it a zipon. This is loosely based on an acronym of Zero Point Energy compounded with concepts of infinity, which makes it more of an acronymic oxymoron. In any event it is easier to say zipon than luminon. But I am not married to any of these names and hope that someone will come up with something more appropriate. For now and for purposes of this exercise I shall simply refer to it as a zipon.

What has been deduced is that the zipon may be the smallest part of magnetic flux. If it exists at all then it may be a magnetic dipole that moves at superluminal speeds orbiting in fields of such particles, around a fixed position in space. It may have the mass of something less than a photon which, combined with superluminal velocity, makes it a tachyon. In as much as they move in fields structured by these orbits, then clearly they would defy Pauli's exclusion principle. And they would congregate in some equally structured amalgam that is self-sustaining, so to speak. The object then is to find the pattern that could sustain a closed system.

It has already been said that magnets move together with their poles aligned north to south. But to reach this alignment the entire structure of the

magnet is propelled through space. It suggests that the requirement to fuse with other magnets overrides the requirement to move apart or even to remain in a rest position, this latter option resulting in no movement at all. If so, then a logical progression of this would be that many zipons would attach, head to toe or, north to south. And if that string were open then the first and last zipon in that string would not be conjoined. For both stability and enhanced symmetry that string would need to attach their open ends which would then change the shape of the string into a circle.

However, when two magnets do conjoin they come to rest, so to speak. So also, conjoined zipons would also reach some kind of rest state. This would conflict with the proposal that they are invisible or immeasurable precisely because they move at such extreme velocities. What principle then would apply that could account for the velocity of a conjoined string of zipons?

The answer is again evident in correspondence. Given a critical proximity, magnets will always move towards or away from other magnets. So, within that proximity, one string would adjust its position against another. And, if each string is a closed circle, as suggested, then one movement of one zipon would result in a sympathetic and corresponding movement of all the zipons comprising that closed string. This ripple effect would result in an orbit. On a fundamental level the proposal is that this first orbit ultimately occurs on many levels and in many dimensions. And the velocity of the orbit is determined by the rate at which each zipon moves to displace its position against neighbouring zipons and neighbouring strings in a field of zipons.

The movement of flux is orbital but the orbit itself has a fixed justification. This is evident in the directional flow of current that only varies in relation to an applied voltage or in a permanent magnet that moves its entire structure to adjust to other magnetic fields. Therefore its direction or justification can be described as being coherent. Equally therefore, correspondence principles suggest that the

field would reflect the coherent positioning of each zipon within the field. And all those zipons would move with a shared justification.

To describe such groupings of these circular strings and their relationship to the field as a whole, is possibly, enabled by drawing an analogy. Imagine a string of beads, each bead coloured, one half black, the other half, white. Each bead would represent a zipon and the two colours would represent the two magnetic poles. The entire length of those beads would form a one dimensional string.

Now, inside that first string is a second identical string and inside that is a third string, and so on, until one has filled a saucer full of such strings. Due to the proximity of neighbouring strings, all those strings continually move away from each other resulting in an orbit. Or, perhaps this would be better described as a merry-go-round where the strings orbit on a shared and spinning axis.

The merry-go-round, or beads, would be a two dimensional magnetic field. Now, pile many merry-go-rounds, one of top of another until one has a cylinder of merry-go-rounds moving together. That would be a three dimensional magnetic field. In fact, that cylinder would have exposed charges at the top and the bottom, which could also be unstable, so, under perfect conditions these would also conjoin and one would then have a toroid.

In effect I am proposing that the background structure of the universe could comprise this highly structured field of zipons, evenly and smoothly distributed throughout a really big toroid. If this is right then these zipons would comprise an invisible force located throughout space with a velocity less than a photon and fixed justification or orbit. And most critically, as a force it may also reconcile questions of non-locality and the requirement for dark matter. But thus far the proposal has been purely speculative depending as it does on the tenuous possibility that there is some merit in the principles of correspondence.

My object now is to try and extend that correspondence which, in turn, may prove the proposal that these zipons do indeed exist as a first principle.
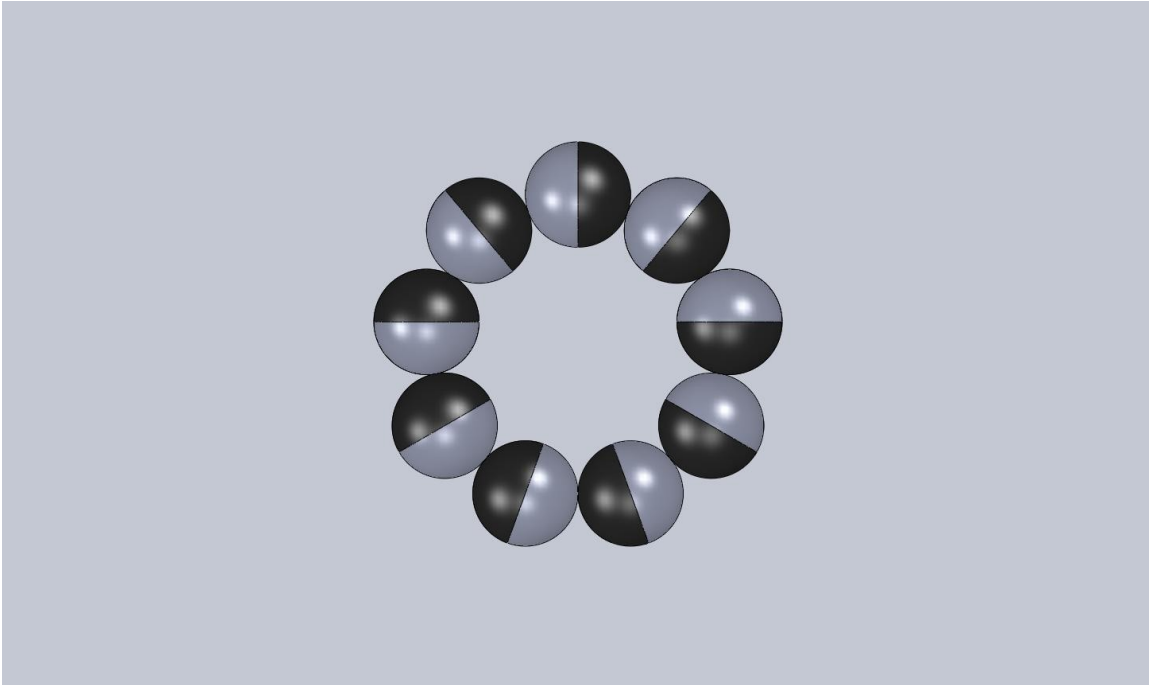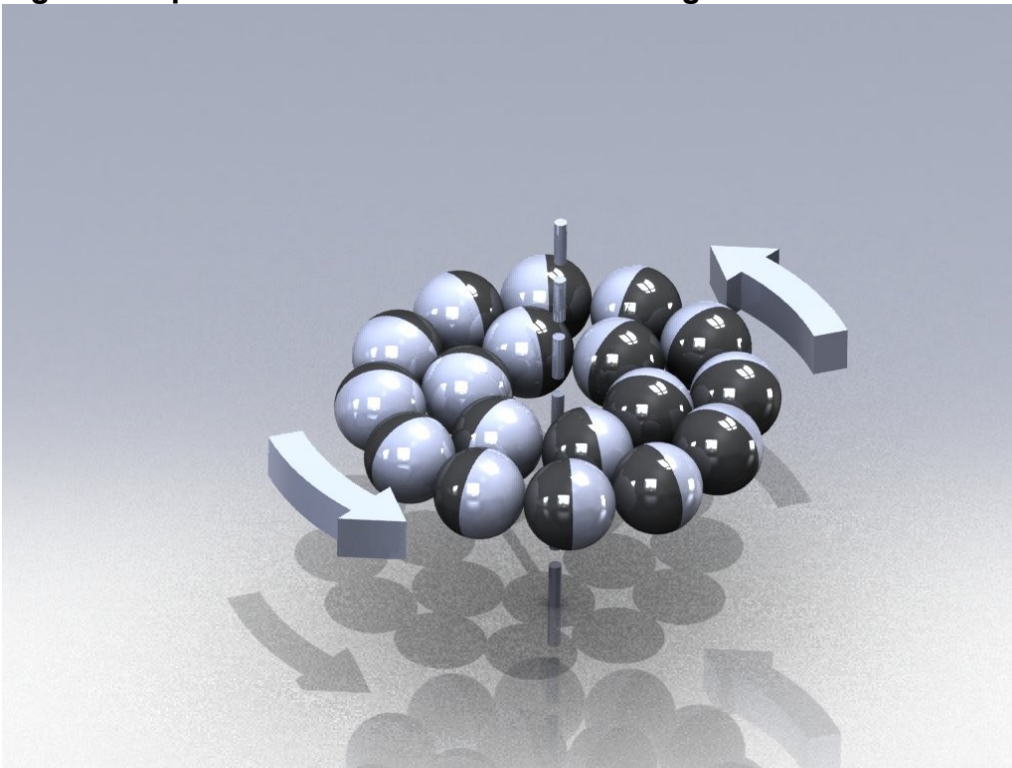

Figure 1. Zipon two Dimensional closed string

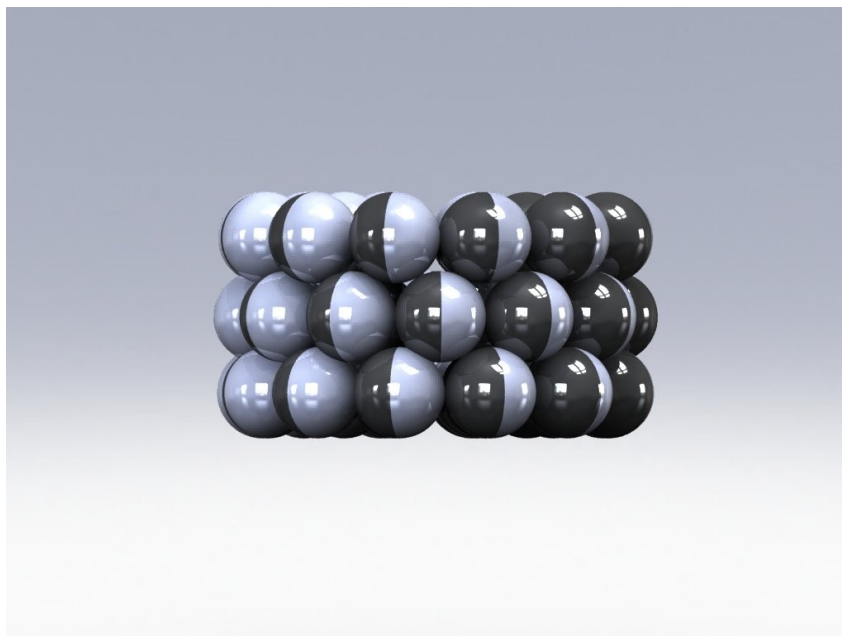**Figure 2 Spin indication about central axis**
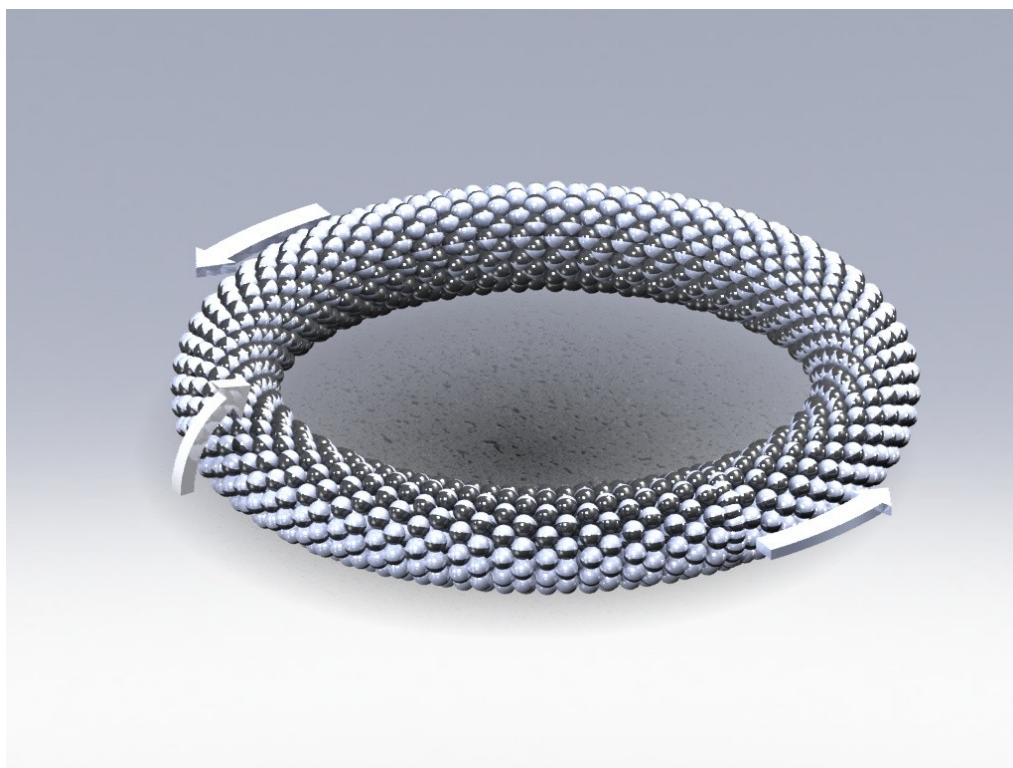
Figure 3 Zipon's packed in a tight cylinder

Figure 4 Zipon Toroidal Field formation

THE PARTICLE MODEL

So far the arguments, largely based on a rule of correspondence, suggest that the most perfectly balanced magnetic field may be toroidal in shape. And, because of the complex positioning of the poles or charges of each zipon within those strings, the entire structure and each part of each structure would be orbiting sympathetically with the next. If, prior to the singularity, such a coherent structure existed, forming a universal and skeletal backdrop, then it would only need a minute disturbance to spoil those symmetries. This may be as small as a single misplaced magnetic monopole. Or perhaps God stirred that structure with a great spoon.

VIRTUAL PARTICLES

Then some of those zipons within that structure would break away from the field. The question is, if they did break away, what would happen? Zipons that have disassociated from the field are referred to as Truants. The assumption is made that the zipon is removed from its position in the field by some event and it then manifests as matter. Essentially each truant would still be a magnetic dipole. It would retain the properties of the zipon but, in relation to the field, the truant's direction and orbit would be asynchronous. Whatever its charge, it would oppose the justification of the field.

It is proposed that zipons interact with each other and with expelled zipons or truants. To describe these interactive associations it is, perhaps, first necessary to establish the physical properties that enable any interaction at all. All interaction is limited to a boundary constraint. This may be explained through the use of the following analogy. Imagine that a machine is designed to propel stones inside a vacuum. Therefore no extraneous forces are brought to bear on

that interaction. Then it is reasonable to infer that the heavier the stone the shorter the distance thrown, and the lighter the stone then the proportionately greater would be the distance thrown. But if the stone were either too big or too small, too heavy or too light, then the machine could neither lift it nor detect it. Such extremes in weight or mass would represent a boundary constraint. At either extreme, the machine would not be able to throw the stone. Equally, if one truant were too small or too big, then the field would not be able to influence that truant.

The proposal is that as the truant is manifest, it may have a velocity equal to or less than the speed of light. Correspondingly, its velocity would be less than that of a zipon in the field.   In fact, what I am proposing is that the truant gains mass in an inverse proportion to its loss in velocity. In effect, it slows down to the speed of light, which then makes it measurable. At that point, the truant would be outside the boundary constraints of the field.

A truant, by definition, presents a conflicting charge to the field. Theoretically, it could manifest in an almost infinite variety of directions and sizes, or charges and masses, depending on the force at which it was first expelled. But without having another truant to anchor it out of the field, some partnering truant with which it could orbit then, when that initial separation force is expended, it would lose its mass and regain velocity. Then, just as magnets move towards other magnets, so too would the one truant gradually and inevitably accelerate until it was again the same mass/size as the zipon in the field. Then it would simply slip back into the field as a zipon. Presumably these are nuances or virtual particles.

COMPOSITE TRUANTS

While unstable truants may manifest in an infinite range of mass and charge, stable composites need to comprise some combination of, two, three or

nine truants else they would eventually decay and accelerate back into the field. This numerate limitation is difficult to explain. Broadly, the argument goes like this.

Given that the field is greater than the truant, by virtue of the sheer number of zipons in the field, then the truant will be positioned within the field and would, therefore, only experience the field's single justification or charge. For ease of reference I shall simply refer to charge. So, with single truants, one charge for the truant and one for the field, then the truant would eventually decay into the field. They cancel out.

A composite of two truants would give two charges and one charge for the field. Then the charge of the field and one truant cancel out leaving one charge for the truant. This would result in a single direction. And, as the photon is the only particle that moves in a single direction, which in effect, is a straight line, I am proposing that a photon comprises two truants. It's interesting to note that two truants would have a neutral charge. The only neutral charge in the field is in the radial arms between the zipons, which also precisely describes the path that photons follow when they radiate outwards in straight lines from a source.

A composite of three charges for three truants and one for the field, then one would cancel out with the field, leaving two charges for the truant. This would result in a bidirectional path or a spiral within the field. As the electron is seen to spiral in a bubble chamber then I am proposing that the electron may be a composite of three truants.

A composite of four, five, six, seven and eight truants would all variously subdivide into one, two and three composites, as the field only has one justification. But a composite of nine truants would in essence, be the same as three electrons. And, as it is proposed that an electron is a stable particle then too, a composite of three electrons, or nine truants, should be stable. If

therefore, I can reconcile the mass of the electron to the proton then it may indeed, indicate that a proton is a composite of three electrons which, by default, may then also prove the composite of the photon. But before I do this, I need to describe the interactive association between stable composite truants.

THE PHOTON

I have proposed that a photon is a composite of two truants. As required by the laws of charge, each truant would present opposite charges and move towards each other to attach, in the same way that magnets attach. But if these truants are positioned in a field with a single justification, as proposed, then in whichever way they are positioned 'out of true' with the field's justification, the one truant would present an opposite charge to the other in relation to the field, as illustrated.
(photon)

This means that if the one truant were substantially attracted to the field's zipon in the juxtaposed string then the other would be substantially repelled. They would respond differently. The one would gain mass and lose velocity. The other would lose mass and gain velocity. In fact, the mass of both truants would exceed the boundary constraints of the zipons in the field. But the one would become larger and more measurable and the second, moving at a velocity that exceeds the velocity of the field, would become smaller and less measurable.

Again, with reference to that machine, the distance covered by each throw is dependant on the force of the throw and the size of the stone. In effect, the strength of the throw is a constant. But we know that it is the speed of a photon through space, that is constant. It is not, in any way, dependant on the size nor frequency of the photon which can in fact, be infinitely variable. And just as the constant in the machine determines the strength of the throw, so it would require

some constant in the field to determine the required energy or force of throw. This is also based on the assumption that the magnetic field moves the particle, as proposed by this field model. In effect, if the magnetic fields in space move the photon through space, then they can achieve something that the machine cannot. They are able to compute the size and frequency of each photon and then adjust the strength of their throw, so to speak, to ensure that each photon moves at precisely the same speed regardless of its frequency. The following concepts are subtle, and determine a velocity, mass and time constant that may underpin our manifest universe.

If one photon were bigger or smaller than another then it would take each manifest truant correspondingly more or less time to move to the zeniths of their orbits, that point when the one truant is as great as it will ever get and the other as small as it will ever get. This time must be relative to something which is constant else there would be no such thing as a predictable passage of time, which there is. The proof of a time constant is ultimately, vested in the velocity of a photon that invariably moves through space over a certain distance within a precise quota of time. It is proposed that this time constant is provided by the orbiting zipons within the magnetic field.

If zipons orbit in space, and if the zipon's velocity is dependant on its size and, if these structured fields are as coherent as has been proposed, then they will, invariably, orbit at a constant speed. This is based on the proposal that mass and velocity are proportionate and that the zipon's mass is constant. This time frame is referred to as a standard zipon moment, that time required for one zipon to displace the position of another in its orbit within a string.

It is proposed that speed and size are relative – velocity replaced by mass and mass by velocity. Then, assume for now that a photon is four zipon moments big. Being neutral, it passes through the radial arms of the orbiting zipons across its strings. It would therefore take two zipon moments for the one

manifest truant to complete the zenith of its orbit, that time which takes it away from the influence of the field. Therefore, it would have crossed two strings. And during those same two zipon moments, the vanishing truant would complete the zenith of its orbit away from the influence of the field following the path of the first truant across two strings, while precisely two zipons within the field would be displaced exactly twice.

Having reached that orbital zenith, then the manifest truant would accelerate during another two zipon moments which means that it would lose mass and gain velocity, which effectively holds it in the same position. And the non-manifest truant would decelerate during those same two zipon moments as it increased in mass at the expense of its velocity, until both truants would again, be the same size as the zipons in the field. The truants would then swap lattices with each other, at that interactive moment, four standard zipon moments later, when they are, again, the same size and speed as the zipons in the field. At this point in the orbit the photon would not be visible. It would momentarily flicker out of our measurable dimensions. Then the orbit would be repeated, like a dance, two steps forward, two steps hold, to every four beats of the music.

Then, regardless of the frequency of the photons and regardless of their size, being half of one, or one or even one thousand zipon moments big, each photon would be propelled through space only at that interactive moment, when they are brought into the range of influence, or the boundary constraint of the zipons in the field. This would then account for the consistency of their velocities through space regardless of the frequencies of each photon. In effect, the rate at which the photons complete a crossing, or an orbit through the three dimensional strings of the field, would be precisely half the rate at which the zipons displace the position of other zipons in the field.

THE QUARK

The point that needs to be stressed is this. In terms of this model, each stable composite particle must comprise a vanishing charge. This is that truant that moves towards a point in space at a velocity that exceeds the speed of the zipons in the field. It is known that the quark comprises the vanishing charge of a proton. In the same way, this model requires that photons and electrons also comprise a vanishing charge or quark, else the particle will not be stable.

THE ELECTRON

It has been proposed that an electron is the composite of three truants. It is possible to deduce their interaction simply by relating this to the known properties of an electron. For instance, the electron always has a fixed justification or charge. Depending on the alignment within a bubble chamber, they will always spiral from right to left or left to right. It proposed that magnetic fields orbit in strings. A spiral is a partial orbit. Therefore at least one truant may be continually interacting with the strings of zipons in the field, to follow this path.

As they are continually interacting with the field, then perhaps one truant may also be of a like mass and velocity to the zipons in the field. Else they would not be within the field's boundary constraints to enable an interaction. Because an electron is a stable particle then that same truant must oppose the charge of the zipon or they would decay into the string, as do nuances.

It is possible to photograph an electron, and it is seen to appear then disappear from view. Because a mass/velocity coincidence with the zipons in the field is required, then at that moment, the particle would simply disappear from view at the coincident phase of their orbit. This is at the point when all three truants would be the same size as the zipons in the field. At that moment it would be out of reach of our measurable dimensions

 (electron)

Therefore its composite may be as follows. That first truant would be manifest, the second would be aligned with the field but move in anti phase to the field and the third truant would be the vanishing charge.

THE PROTON

Because the proton spirals in a bubble chamber, in a similar but opposite way to an electron's spiral, it too may be interacting with the strings of zipons in the field. The question is, at what point do the three electrons attach? Simply because the proton is bigger than an electron it is possible that their attachment is at the third smallest truant which would then be the same mass/velocity of the zipons in the field. This would then give the remaining truants more comparative mass as is required by the fact.

The proposal is that the proton comprises three electrons but, at its formation it immediately formulates into a hydrogen atom. To maintain a requirement for symmetry it is proposed that this is how the fusion unfolds.

Three electrons are randomly brought together through the interaction of chaotic strings in the primary field. The zipons in those strings are the same mass/velocity of the second truant that binds the electron to the field. These three second truants meet, then disassociate from their electron structure to form a second, entirely independent electron. This is expelled from the structure leaving the three remaining quarks and the three third truants, detached from one another. None of these truants can interact with the primary field as their mass/velocities are outside the zipons' boundary constraints. However the net charges of these third truants and their quarks, align to attract. They move towards each other gaining mass and losing velocity until they attach. They retain the difference in their size ratios being four times bigger or smaller then each other, as they were when they were attached to the second truant that

became the electron. In other words the third truant remains four times bigger than the second truant which second truant was formerly the quark of the electron. Then, three more truants detach from the primary field to form the new anchor or vanishing charge of the proton. This, in turn remains the size of the zipons in the field. Reconciliation of the mass/size ratio between the proton and the electron is then calculated as follows.

If the photon comprises two zipons then the zipon would be half the size of the photon. Velocity and mass have an inverse proportionate relationship. So, if the photon moves at the speed of light (C) then the velocity of the zipon would be 2C. Velocity and mass are inversely proportionate so, if the mass of the photon were given as 1, then the zipon would be 0.5. If the electron comprises 3 truants then its mass would be 0.5 x 3 = 1.5. And, if the proton comprises three electrons then, each electron would comprise 0.5 for the quark. 3 quarks having no volume is 0.5 x 3 = 1.5. Four times bigger for the orbital zenith of the second truant is 1.5 x 4 = 6. And four times bigger for the orbital zenith of the third truant is 6 x 4 = 24. The second and third truant only have two dimensions of volume as they manifest within a prescribed space, that merry-go-round referred to in the field description. Therefore, 3 second truants, having length and breadth is 6 x 6 x 3 = 108. 3 third truants having length and breadth is 24 x 24 x 3 = 1728. This gives a mass of 1837.5, minus 1.5 for the quarks that have neither volume or mass, giving a total of 1836. Some variation of this number is, no doubt, required to accommodate the spherical shape of the truants, but it's complex – a 2 dimensional sphere.

THE PROTON
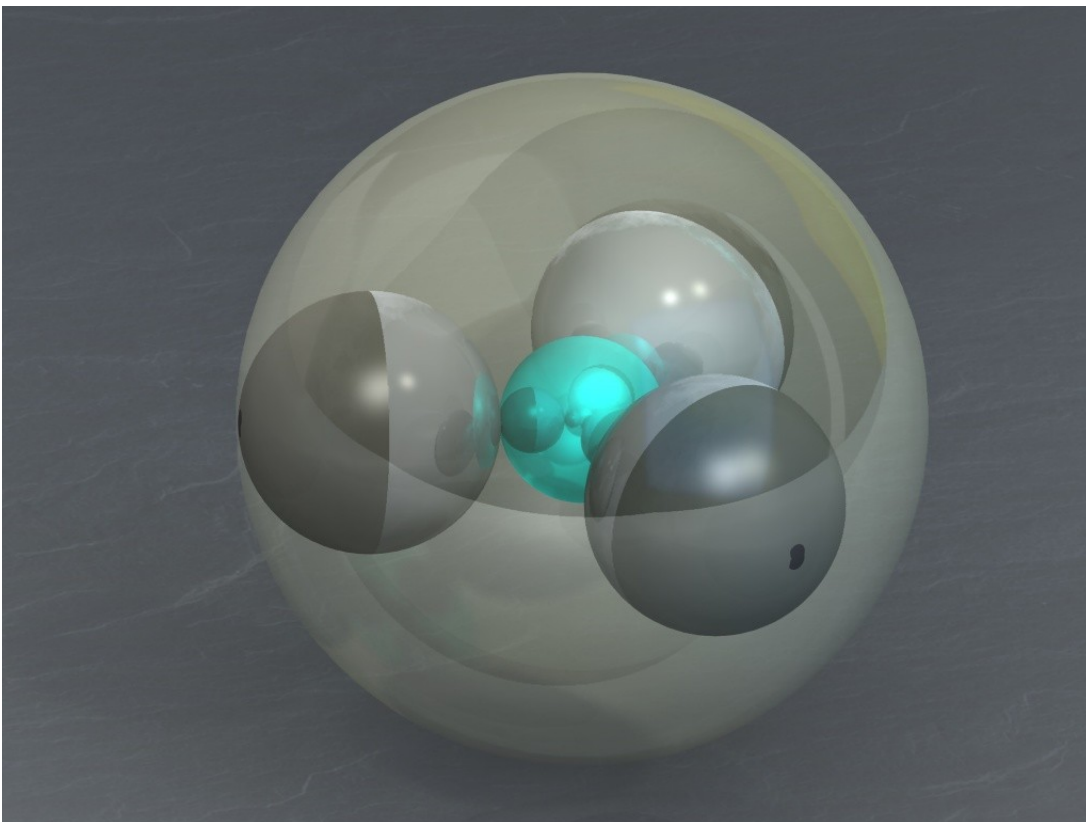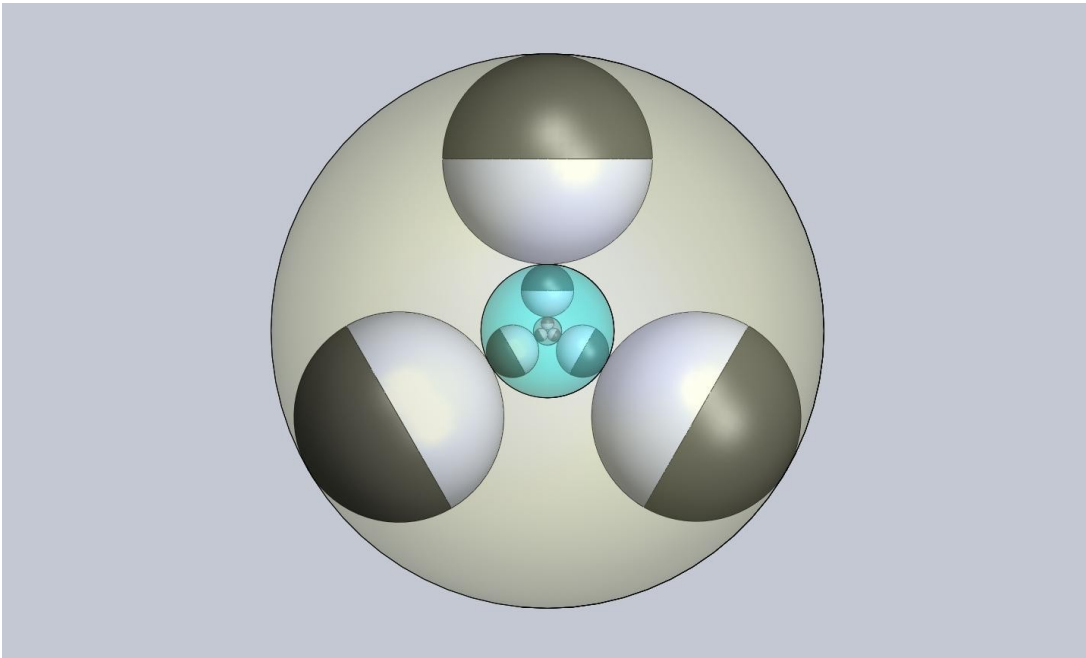
THE NEUTRON MODEL

I am reluctant to deal with the neutron at all, firstly because it's an unstable particle, and secondly, because I have only resolved its mass. According to this model, instability is due to properties in a truant, or many truants, that prevent a bonding with a contained magnetic field. Being unstable, therefore, means that the neutron does not have an anchor to bind it to the magnetic field, either in the atomic structure or in the primary magnetic field of space. It floats free and, because of this essential instability to bond, it must, inevitably decay back into the field. But because the neutron is evident in all complex atoms it possibly needs to be incorporated in this analysis.

The size of a neutron can be resolved, as illustrated. In effect it is an upside down neutron with three exposed charges on the outer boundaries. But it is not certain that this combination results in a neutral charge. It is possible, however to have an apparent neutral charge if the composite remains detached from the field. If, however, the second and third truant interact with the proton's second and third truant, it may then, perhaps, be indirectly and partially anchored. Essentially therefore, it would simply comprise two manifest truants in each of the three radial arms and a third smaller 'almost vanishing' truant that interacts laterally along the length of the arm. This third vanishing truant would not interact with the field or the proton's quark. As mentioned, the lateral interaction with the proton's second and third truant may enable the relative stability of the neutron within the nucleus of the atom.

It must be stressed that, for symmetry, the manifest and non-manifest truants inside all composites, be they particulate or atomic, must have a continuing interaction. The proposal is that truants form an helical orbit on a shared and spinning axis. In other words they interchange their velocities and masses and charges the one transmuting into the other in a perpetual series of dance steps so to speak. The challenge would be to represent this,

diagrammatically, with fractal geometry. In any event, these interactions would enable variations to the mass and charge of each truant giving rise to the apparent variation of manifest particles. Therefore too, while the mass of a proton can be determined, it is only representative of the quantum of potential variations and not to the moment by moment measurement of each of its truant masses.

Neutron over the proton structure

ATOMIC MODEL

I have proposed that the quarks of a proton can interact directly with the zipons in a magnetic field. But in an atomic structure, the atom is disassociated from the field and operates as a closed system. In effect, the quarks only interact with each other and with the second and third truant. The mass of the second and third truant is too large to be influenced by the boundary constraints of zipons. But protons and neutrons can interact laterally, one with another, as illustrated in the proton model. This, combined with lateral interactions with the neutron's truants, would give rise to the apparent variations in the number and charge of truants that form a proton.

The most fundamental atom in the periodic table, is the hydrogen atom. This model suggests that it forms a nucleus of one proton comprising three electrons, as referenced. Orbiting the proton is at least one disassociated energy level that binds the expelled electron to its orbit. Around the nucleus of this structure are other orbiting strings of zipons that have disassociated from the field. These form the atom's energy levels, the number of which, precisely corresponds to the force that generated the proton and its expelled electron in the first instance. Each hydrogen atom, thereby is contained by its own magnetic flux field.

What is now proposed is that, as the atom increases in complexity, as more energy is introduced to the system, so the zipons, from those atomic energy levels, those fields that have been disassociated from the primary magnetic field, are then transmuted into truants, electrons, neutrons and protons. And at the formation of each new quark that forms the basis of each new proton in that changing atom, a new electron would also be formed which would then collect in the energy levels of the atom. Correspondingly, each new electron would then belong to a specific energy level and its orbit would be determined by the justification of that energy level.

As more zipons become transmuted into protons, neutrons and electrons, so the density of the atomic structure is increased, always at the expense of the number and size of the energy levels and a corresponding increase to the electron cloud. And it is proposed that the electron is not able to nosedive into the oppositely charged proton precisely because it is forced to interact with and orbit, the zipons that form the electron cloud.

DEMARCATION OF SPATIAL BOUNDARIES

When one considers the extraordinary volume of empty space between the proton and the electron in atoms, it begs the question as to how matter resists the encroachment of extraneous material into that atomic space. Given that emptiness, so to speak, it should be possible for some permeability between atomic structures. This, in fact, is never evident and is widely attributed to the interplay of the strong and weak nuclear forces that bind the atom. While in no way contradicting this conclusion, this model proposes that these atomic spatial demarcations are defined, not only by the electron cloud around a nucleus, but to the zipons that comprise the atomic energy levels which, in turn forms the electron cloud. In other words, while it may be possible to separate an electron from, say a hydrogen atom, it may not necessarily result in the removal of the

proton's energy levels. They can remain. Separation of an electron from its atom, would then result in an intrinsic imbalance to the ratio of truants forming the proton in an atom, and the number of zipons that circle the nucleus. This imbalance predisposes the atom to a readiness to bond with compensatory atoms, which resulting molecules can partially compensate for this imbalance. In other words, the spatial demarcations on an atomic level are determined by those energy levels which, in turn, comprise a structured field of zipons that belong to that atom or bonded atoms forming a molecule.

THE DARK IN THE NIGHT SKY

Photons from stars are so plentiful that they should, in fact, light up the night sky. If the path through space is constructed by a smooth distribution of orbiting zipons, then the radial path of photons, through the neutral arms of the field, would allow an easy passage, so to speak. The only thing that can block a magnetic field is another magnetic field. The earth's magnetic fields shield it from the sun's energy levels. It is proposed that photons can only move through magnetic fields. As they encounter the complex structures of the earth's magnetic fields and its atmosphere, which structures comprise vast amalgams of disassociated atoms and molecules, then its path would become more varied and in some instances, blocked. Loosely bonded amalgams such as the atmosphere and water, would enable a continued easy passage through their amalgams by virtue of an abundance of extraneous energy levels or magnetic fields. But these magnetic fields within and around those atoms, would slow the photon's frequency to an extent to make it momentarily visible during each interaction.

But as the photon passes through solid amalgams of denser atomic structures, the photon's velocity is more critically varied. This interaction also slows down the frequency of the photon and being slower means that the second

manifest truant becomes ever more visible. As it reaches more critical levels of penetration in that amalgam, it would eventually reach the atom's own tight energy levels around the electron cloud. Depending on the frequency of the photon it may then be deflected at some angle relative to the angle of impact, and its frequency or velocity at the time of the impact. Smaller faster photons would find the bound state of more solid amalgams to be relatively transparent. And, conversely the bigger slower photons would not be so penetrative. In effect, the photon's frequency is altered by its passage through, and interaction with, magnetic fields. The resulting frequency then depends on the force of interaction with primary magnetic fields in space, secondary magnetic fields around atomic structures, and tertiary magnetic fields that bind the nucleus of atoms. The density of each of these fields may vary which would then account for the visible spectrum of colour at the point of interaction, and for the absence of colour in space.

COINCIDENCE WITH STRING THEORIES

Briefly, therefore, this magnetic field model proposes that all of reality is contained within ten dimensions described as follows. The first reality comprises our measurable dimensions of length, breadth, depth and its movement in time. All such measurements are constrained to the speed of light. The magnetic fields comprise length breadth and depth that share our own spatial dimensions, but they determine the movement of all matter through space and in time. Their time, velocity and size is constant and, because their velocity is invariably twice as fast as the speed of light, their time constant precedes our own time frame. This is the second reality. The third reality is the movement of the vanishing particles that move at velocities that exceed the magnetic fields' constants. Technically, however, they do not occupy any spatial dimensions as their mass has been entirely forfeit to velocity. They, therefore, exist in a different albeit simultaneous time frame to the first reality in an entirely different area of space that, in fact, is best described as non-spatial.

So, four dimensions to the first reality, four to the second and only two to the third makes a total of ten dimensions which would then contain all universal manifest and non-manifest matter. So, it is that this model proposes that the entire universe comprises innumerable zipons that interact and move to create a ten dimensional binary system being our universe. Matter and matter particles may have a limited interactive property. But it is the magnetic fields comprising zipons that move such matter through its fields.

GROSS AMALGAMS OF MATTER

I have tried to justify the model in terms of correspondence principles and the requirement for symmetry at the most basic level of particles and atoms. I can continue using that symmetry to illustrate the 'growth' of matter into identifiable amalgams but cannot do so without introducing concepts that are properly related to gravity.

But, before I get there I would again refer to the evident ability of matter to amalgamate into structures that are spatially separate. It is proposed that all amalgams of matter accrete within magnetic fields. In other words, when matter is divorced from the primary field it first collects as flux from nebulae, made up of photons and electrons. This flux is gradually structured into accretions as it responds to the primary magnetic fields surrounding the flux. These primary fields then release a number of its zipons in a quantity that relates to the force of the singularity that separated the flux from the primary field. These detached zipons then form secondary and tertiary magnetic fields firstly around each manifest particle and then around each atom and so on, finally resulting in the formation of stars. And the manifest star structures are also bound by energy levels – zipons that have disassociated from the primary field, in a number that precisely relates to the mass of the star. Therefore, what is visible and measurable is the star. What is invisible are the energy levels that, firstly, hold

the star and then whole galaxies, in a closed or nearly closed system. In other words, just as electrons are trapped within the energy levels of atoms, so are planets trapped within the energy levels of stars and stars trapped within energy levels of galaxies. And those energy levels comprise orbiting zipons that move with a fixed justification around the earth, the sun and the galaxies in exactly the same way as orbiting fields of zipons move around atomic structures.

Of interest is the possibility that at the time of the singularity, the flux that was separated from the field of zipons needed some time to form the stars. This may account for the difference in the rate at which such stars and subsequent star systems moved apart. This, in turn, may account for the difference in the apparent rate of expansion that is evident between the young and the old universe. And the evidence of colliding galaxies may be the single fact that contradicts claims of a universal spatial expansion. Also of interest is that this would account for the consistency in the velocity of stars within galaxies. If the orbits of stars are not determined by its own energy but by the force applied by these binding energy levels then the rate of the orbital velocity would remain constant with that binding field.

GRAVITY

While the proposal is that magnetic fields may account for the demarcation of spatial boundaries, it does not answer questions concerning gravity. If the rule is that magnetic fields keep matter within certain orbits what then accounts for the movement of some of that material in a straight line towards gross objects in space? And why is it that matter particles are entirely exempt from the influence of a gravitational field if their composites are, in fact, influenced? And, in short, what then makes a gravitational field?

Our earth has a magnetic field. We do not know if it is induced or permanent but we do know that the polarisation of Earth's fields has changed

during the course of its long history. We have evidence in rare earth magnets that indicate that this polarisation has shifted, often. We also know that it is impossible for a permanent magnet to change its polarisation unless artificially acted upon to do so. Therefore, because of the switching poles, it's likely that the earth's magnetism is the result of an induced rather than a permanent magnetic field.

If the magnetic field is induced then there must be some ferrite material in the Earth's crust to conduct that magnetism. In fact there are vast quantities of this material. And there must be an electric field within that core to bring about the induced magnetic field.   This electric field may very well result from movement of the core, hot and molten, against the more solid crust. This would, at its least produce friction and possibly, a consequent electric field. An electric field, in turn, would produce an induced magnetic field in the crust of the earth which field would then extrude and intrude at its north and south poles respectively. It does. So this may be the explanation of our earth's magnetic field. As a point of interest – this interaction may very well be a closed or nearly closed system. It may also be the explanation for the axial spin of the earth – contained, as it would be, within energy levels or magnetic fields around the sun.

The question then is this. Is the magnetic field and the gravitational field one and the same thing? To explore this question one must analyse the nature of a magnetic field and the moment that particles within the magnetic field are moved.

If one assumes that all magnetic fields orbit, a movement both from and then towards a certain point in space, then the entire orbit expresses two alternate moments being forward and then backward, or, off and then on. And the result would be that the entire field would be neutral. But each zipon within the field would in fact, be moving in a single direction inside their strings of zipons.   This justification or charge of the zipon in the field, introduces an

anomalous association. It means that the zipon is charged, having a fixed direction, but the entire field is neutral, having no fixed direction. The part is charged but the whole is entirely void of charge.

However, stable particles, those truants that are 'out of true' with the field, are too small to experience the neutral charge of an entire magnetic field. They interact with a very limited number of zipons that all move in the same direction, unless, as in the case of an electron, it can be moved to the centre of a magnetic field as in a bubble chamber. At this point it would merely express a spin as is evident. At all other times it would move in a path that would be coincident with the charged property of a limited number of zipons in the field. So, the influence of these zipons acts like an applied vector. Therefore, in terms of this model, potential difference is simply the sum of the zipons in a field of zipons that move with a single justification or charge. This may be better explained by the concept of neutral symmetrical orbit, expressing a single broken symmetry at each of its parts.

This single charge, or broken symmetry is macrocosmically evident in our Earth's magnetic fields. All matter that is contained within the Earth's magnetic field, has only ever experienced a single direction of that magnetic field that encompasses the Earth and its atmosphere. The second half of that orbit is hidden within the material of the Earth itself. In effect the symmetry of the orbit has been apparently broken but is, in fact, merely shielded. So, whether this magnetic field is vast, as is evident in our Earth's magnetic fields, or whether it is small, as is evident in the energy levels of atoms, it invariably applies a vector to contained matter. And the sum of this vector is, in fact, potential difference.

Gross and identifiable matter is in a bound state. Referring back to the kettle and the rock – the molecules and atoms in both objects have been bound into a certain identifiable amalgam. This model proposes that in the process of manufacture – energy, in the form of heat or of some force, was applied to

amalgamate those smaller atoms into that form.

According to this model it may be that the 'things' that were transferred through space and 'borrowed' from the environment around that energy force were magnetic fields induced from the body of the earth – as mentioned. In the process of cooling, these secondary fields are trapped inside that hot or molten structure and remain inside the cooling structure, thereby binding the structure into atomic abodes and resulting in the identifiable amalgam. Re-heating of these abodes, as a result of interactions with the applied magnetic vectors can alter that structure.   Under extreme conditions the trapped magnetic fields can then 'peel away' as photons. This results in the fatigue of that structure which is evident over time.

In other words gross amalgams of matter may be bound by magnetic fields that have disassociated from the Earth's primary field. They separate atomic abodes and neutralise the amalgam. Their quantity, size and justification are precisely proportionate to the quantity, size and charge of atoms within that amalgam. And because magnetic fields move towards a state of zero net charge they would enable an arrangement of those atoms into their most balanced formation. This is proposed because gross amalgams of solid state ionised atoms cannot find a rest state unless their atoms are somehow separated so that the one will not experience the charge of another. Symmetry in this analysis is everything.   Therefore, if ionised atoms are separated by these extraneous magnetic fields into some form of atomic abode then, equally, all structures of solid and liquid amalgams may have been manufactured by these fields that arrange amalgams into crystalline structures.

At the risk of repetition – but for better clarification. In terms of this model, therefore, magnetic particles, or zipons, are mono directional but the whole field is neutral – moving first forward and then back to itself. Our Earth's magnetic field, conversely, is only mono directional.   The second half of the orbit is

contained within the Earth's material structure which effectively breaks the symmetry of that orbit. This 'single direction' is experienced as 'potential difference' to particles, atoms and molecules. All amalgams are bound by these disassociated fields, either or both, from their own energy levels or from the primary magnetic field of the Earth that have been trapped in that amalgam. They orbit. And that orbit has a justification. This means that one half of all the zipons trapped inside amalgams of matter conflicts with the single justification of the earth's magnetic field. This conflict of direction and charge, results in an interaction of these bi-directional magnetic fields and the Earth's mono-directional magnetic field, to move the smaller of the two fields in some direction.

The resulting interaction is complex. Magnetic vectors or gravity, will move solids towards the centre of the magnetic field – being the surface of the Earth. If that solid amalgam comprised anti-matter then it would be moved to the outer boundaries of the magnetic field. This would put anti-matter, not at the surface of the Earth's magnetic fields but at the outer boundaries of the final magnetic field in the universe. This magnetic field model proposes that our universe would be toroidal in shape and its outer boundaries would comprise vast collections of anti-matter.

Before concluding this exercise it is important to stress that this magnetic field model has determined that atoms – in a solid state comprise a predominance of matter particles to magnetic particles. Liquids have equal quantities. Gases have a predominance of zipons. Each of these states interacts with the Earth's magnetic vectors differently. For example, it is proposed that 'like' gases have a consistent charge evident in the outer boundaries of their atomic structure. Their energy levels are externalised, so to speak. If many atoms from a single gas were, therefore, contained within an artificial environment, then all those fields – having a like charge or justification – would repel each other. This would account for the equal dispersion of these particles in space. Atoms in a liquid state would have equal quantities of zipons to their

matter particles. Therefore, their interaction with each other would be neutral but the whole would still respond to a downward movement within a gravitational field. Atoms in a solid state would have a greater quantity of matter particles to zipons.

I must also give some brief reference to the fact that magnetic particles, or zipons, are plastic, being able to rearrange their strings to increase or decrease in number and in range of influence through space. Matter is contained by them but is largely invisible to them. In effect, it is the cloth behind the tapestry of our universe. And because of the elegance of the orbit, these fields remain neutral and therefore, undetectable except when artificially exposed through voltage imbalances.

FIRE AND COMBUSTION

The one thing that argues in favour of extraneous fields accounting for the binding of amalgams, is the event of combustion. In terms of this model, what is proposed is that some friction or force is applied to those zipons that bind atoms into gross amalgams. In other words, these fields are extraneous to the atom itself and were introduced to the amalgam at the point of manufacture. They then hold matter together, like a universal or cosmic glue. This applied force or friction would then induce a state of chaos to that binding structure by breaking the symmetry of their strings' orbit. Then zipons from these broken strings, or atomically extraneous energy levels, would peel off, to transmute into really slow truants, or flames. Each truant would then be evident in our own measurable dimensions. Slower is bigger and being big it would be outside the boundary constraints of any adjacent surrounding flux fields. As virtual particles or truants, they momentarily lose their anchor, so to speak, from a magnetic field. Their frequency would slow to a point where the truant becomes relatively stationery. It is then joined by many more truants as it is still a fundamental, neutral particle. Being neutral, it can share a path in the same way that they shared a path in the

field as a closed string. As the first string unravels, it imbalances other adjacent strings from juxtaposed atomic energy levels. Then more and more binding magnetic fields can unravel and the size and number of the conflagration would then increase.

But, like all nuances, these flames, or virtual particles would eventually expend the force of that earlier separation from the field, that state of imbalance, only to decay back into the greater primary or secondary magnetic fields, either as zipons, from the cooler body of the flame, or as photons, transmuted from the hot boundary of each flame, or indeed in some ratio of both depending on the nature of the environment juxtaposed to that flame. The unravelling of these fields would result in a degradation of the bound state of the amalgam. But the integrity of the now liberated atom, would remain intact. As this is consistent with the fact, it argues in favour of these binding magnetic fields in amalgams, remaining extraneous to the atomic structure. They would then have emanated from the magnetic fields of the earth or from those fields transmuted into binding fields, from the source of the amalgam's manufacture, in the first instance. If this is correct, it speaks to a remarkably exact level of the conservation of mass and energy. Yet in defiance of these same laws is the simple fact that a single spark can create a really big fire. Very little energy is required to produce that spark which, in turn can produce a disproportionately large conflagration in a chain reaction. Notwithstanding which there is a liberation of the stored energy resulting from the prior manufacture of that amalgam in the first instance.

BLACK HOLES

The significance of this model may be far reaching. Regarding the strong nuclear force, it suggests that the only method to dismantle the proton structure would be to increase the velocity of a field of zipons in order to 'shrink' them to the same mass/velocity of the quarks. The point is that the field of zipons would need to be within the boundary constraints of each truant's quark. This may

enable an interaction, but I have no idea how one can increase the velocity and density of a magnetic field. Nor would I recommend it as it would possibly result in some considerable disruption to that primary binding magnetic fabric.

I suspect that such fast moving magnetic fields may be the source of black holes in space. If so, then black holes can exponentially increase their influence through space, decaying the structures of matter as easily as unravelling a piece of knitting. These, black holes may be those areas in space where there were, initially, no magnetic fields whatsoever. If so then these would also be the only true vacuums in space. And it may then be that structured matter gradually unravels back into highly structured fields of zipons thereby filling the black hole, or that true vacuum, with newly arranged zipons. Again, this speaks to a remarkable level of conservation, not only of energy but of mass itself.

THE ELECTROMAGNETIC FORCE

Regarding the electromagnetic force as this applies to the generation of electric current flow, this application has been described as the movement of potential difference through circuit components in order to change the justification of those zipons that bind and separate imbalanced atoms into abodes. Here there is a radical departure to conventional thinking as this relates to the transfer of energy. The proposal is that these fields return to their amalgam without forfeiture of their initial quantum. By moving from one terminal to another, they simply alter their spin to diminish the voltage imbalance. By removing the initial imbalance, the molecular state of the atoms at the source amalgam, may be varied. But the question remains as to whether these fields separate from atomic energy levels or from extraneous fields that bind atomic abodes.

Whichever way, the result suggests that the conservation of energy in an electromagnetic interaction is total albeit that, in the transfer of its fields through

the circuitry, secondary interactions would enable kinetic or radiant energy to be dissipated from circuit components. As this test experiment was well within my budget it was both tested and proven. This too is useable energy. It also implies that electric energy can potentially, be a nearly closed system thereby becoming a clean energy source.

BROKEN SYMMETRY

All this may obviate the need to search for that elusive magnetic monopole that has been the Holy Grail of research. This is the point. The broken symmetry of a magnetic field may have the same potential as a magnetic monopole as it always has the property of voltage imbalance or potential difference. Unless it is exposed to another 'broken symmetry' or voltage source, it will always find a rest state. Two such opposing, or even complementary charges, should result in an interaction that cannot find that rest state. An example of this may be evident in the relation to the spin of an energy level from the sun and the Earth's axial spin. This interaction would then be a macrocosmic development of the same principle of magnetic fields in the atom's energy levels, moving the electron. The orbiting magnetic fields around an energy level from the sun would have a single justification. If the earth was trapped between two such fields it would allow a continual interaction with the earth's single exposed charge from its own exterior magnetic field, thereby resulting in both a smaller axial spin and a larger orbit. Correspondingly, planets that do not have an axial spin, such as our moon or mars, may have induced magnetic fields from various energy levels, that trap them in an orbit consistent with the macrocosmic energy levels, but without expressing that axial spin.

STEADY STATE SYSTEMS AND BIG BANGS

The broad principles of the magnetic field model and its applications are described in this exercise. The object is to explain that the source of energy, be it strong or weak nuclear forces, electromagnetic or gravitational, may all emanate from a single source being the magnetic field. While it may be possible to tease out their fundamental properties and use them through the manipulation of broken symmetry, as described, it is impossible to create or destroy the zipons that make them. This inclines me to think that the universe is a closed or steady state system as it is conventionally described. But this conclusion in no way conflicts with the Big Bang theory as the initial creation of matter that separated from these fields, may have been related to a singular event. The puzzle is that we can see the creation of stars from nebulae in space, and I wonder if those newly generated stars become star systems formulating their own singularity – which, again, suggests that singularities may manifest within other singularities. This then suggests that the matter in our visible universe was somehow 'first born' and that many such singularities may follow.

CONCLUSION

This exercise presumes to resolve many outstanding questions in science, but has done so with the proposal of the existence of a tachyon that, by definition, remains outside our measurable dimensions and therefore, at best, is merely a theoretical probability. The object of this exercise was to show that by postulating its existence at all, and by equating its manifestations to physically measurable evidence, speaks to a correspondence that justifies the first postulates. In effect this model is merely based a pattern that has grown from the particulate to a multidimensional general field effect, sustaining a consistency that it is hoped, is logically coherent.

Of necessity the development of this field model required the input from an outsider as it is based on contentious proposals . Much of science is resolved by consensus. That consensus is usually indicative of the philosophical bias in the

general mind set relating to the time of each new development in science. So it is, for instance, that early evidence of our earth's orbit around the sun conflicted with the Church's dictates that required man to be the object of all creation. Time and conflicting evidence gradually eroded this assumption. So it was that, when Darwinian proposals of evolution were first introduced they were immediately accepted, although only proven with a subsequent and growing science of genetics. It is hoped that, in some small but similar way, this exercise will appeal to a newly emergent mind set that seeks to preserve our fragile future within a growing movement towards non-pollutant uses of energy. This model concludes that energy can be expended with far greater efficiency. But in so doing, it challenges conventional understandings regarding, not only the transfer of energy but to the very structure of matter, describing, as mentioned, the fabric behind the tapestry, so to speak. Certainly it speaks to an interconnectedness between all that is manifest, that may encourage a renewed sense of accountability. But it is argued that there is a total conservation of all mass which may also indicate that the universe itself operates as a closed system. This could possibly reawaken a sense of the eternal that is largely contradicted by the perceived fragility of matter.

REFERENCES

Dancing Wu Li Masters   Gary Zukov
Conceptual physics   Dyson

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