

# THE ORIGIN OF MATTER

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ABSTRACT. Here we present a very original and indeed radical theory which departs greatly from the physics of the last half century. The standard model has failed to answer some of the most simplest questions of our state in the universe. Like other theories before it, it is time for a radical re-think of the entire direction of our current physical theories. If we keep going along the same old path it will lead no-where , one can only drive a square peg into a round hole for so long.

What causes particles to have charge? The force that can cause them to attract each other or repel. It seems a simple question but you can look up all the text books in existence and you will not find the answer. I know as I have tried. The fact is that no-one on this planet has an answer for, what you would think is a simple question that any physicist could answer, but you would be wrong. That is one of the fundamental reasons for this paper. I began to realize that in physics we could not answer the simplest of question regarding our existence yet at the same time physicists claim to be near a theory, the Standard Model that will describe the whole of reality and that they were most of the way there. Of course it cannot be true and until we can answer the question "what causes charge" and a host of other simple questions we really cannot back grandiose claims for our level of understanding of our reality. That and other factors inspired me to attempt to write this paper and I hope I can answer the question "what causes charge".

#### 1. SYNOPSIS

The purpose is more than what I described in the previous paragraph and is difficult to describe in a short synopsis. The authors belief is that the reason for the great problems encountered today in physics is that there are fundamental and important misunderstandings and errors that have been compiled upon during the last 50 years. In order to resolve this situation it will be necessary for radical thought and fearless proposal. Its sad, that in todays Physics Industry, such an approach will inevitably be met with derision but even if new radical ideas presented here turn out to be false they can only help shine the light to find the correct path, a path we have strayed from a long time ago. The hunt for the Saviour particle , the Higgs, goes on. We predict it will not be found and then the physics industry will be forced to listen.

## 2. THE GEOMETRY OF THE UNIVERSE

### 3. FROM THE START

This paper shall start from the very beginning - the Big Bang. It shall present an alternative view of our universe which shall be fundamental to the ideas being presented here. After presenting the paper we shall try to determine problems that this theory answers and the current Standard Model does not. After all to challenge the SM is almost like hearsay these days. Those of us out here can now understand, to some extent, what it must have been like for Galileo and his ilk.

### 4. MATHEMATICS AND PHYSICS

No two physicists are alike but when it come down to the intertwining of maths and physics they roughly break down into two types. In order to demonstrate what is meant by this we shall use a short example.

**4.1. Dimensions.** We live in a three spatial dimension universe, we are three dimensional creatures but it is possible that there could be more dimensions that we

are not aware of, 4 , 5 , infinite we just don't have any evidence for extra dimensions. In our universe its easy to represent a point as (x.y.z) -a three dimensional point in a three dimensional universe. If you extend this and say that 4 dimensional universes exist this can also be represented (x.y.z.w) and the maths can show and manipulate this four dimensional universe, but does it reflect reality. Many physicists think that maths gives us insights into concepts that we can never hope to grasp conceptually but others disagree , saying that maths without physical evidence of some sort is more likely to be gibberish. It seems the maths proponents are on the winning side at the moment and if they can get theories to fit solely on maths they take this as proof. We beg to differ and believe that this is just another fatal error that will take us from the true path. Maths is certainly not enough it must be corroborated or it cannot be trusted. Its not necessary to be able to conceptualize it in ones mind but maths alone will never do. We think there has been too much effort put into mathematical physics and not enough into plain old thinking physics.

## 5. THE BIG BANG

This paper will keep with the theory of the big bang as there are many good reasons for doing so but unfortunately the same theory exposes many contradictions as well . If we start with one OF the main problems with this theory , how can it be altered to try and solve these problems and ambiguities.

5.1. **Anti-Matter.** One of the most intransigent problems of the big bang theory is that of anti-matter, According to the theory most physicists would agree that the phenomenal explosion (the Big Bang) should have produced equal amounts of matter and anti-matter , electrons - anti-electrons, protons - anti-protons and so on. The problem with this is that these particles and their anti -particles should then have gone on to annihilate each other leaving behind an empty universe full of the residue of radiation after the matter was destroyed. This clearly did not happen and the big bang has been at a loss as how to explain this. Therefore right from the start there have been problems that have just been more or less left to be solved another day but the problem with this approach is that maybe theses problems are pointing to more serious problems that will manifest themselves in other more profound ways as physics progresses on its merry way. it is the authors belief that now it is maybe the time to look more deeply at these and other problems before proceeding any more and self proclaiming our advanced knowledge of the universe.

## 6. THE BIG BANG - ALTERED TO SOLVE THE MATTER - ANTI-MATTER PROBLEM.

Staying with this problem for the time being , how could the big bang model be successfully altered to solve the matter annihilate problem

6.1. **The Big Bang- a different progression than has been proposed.** How could the big bang theory at the heart of the Standard Model be changed in order to solve the anti-matter problem. How indeed and not just from a physicists imagination and thought but from logic and observation as well. The main clue which does point in a direction that could propose a solution to the anti-matter problem is the mathematics that were discovered when experiments were carried out on the level of quantum particle/wave interaction. Its well known that to describe what is found by experimentation it is necessary to introduce the concept of "complex

probabilities”” These are probabilistic outcomes that are described by the complex number system and not the integer system. This is at the core of our knowledge and it is from this clue that this paper shall attempt to alter the big bang theory to try and come to terms with the problem of the anti-matter problem.

**6.2. The Big Bang A mirror Image Universe.** It is most important to get the shape of the universe correct as if it is wrong it will eventually fall on its own sword. What is the existence of a complex number view at the heart - the very small, if you like of theory of Quantum indicating. The most obvious and literal interpretation would be that the Universe is not just made up of the three spatial dimensions but that there is another spatial dimension, that the complex math description is indicating. Taking it literary this would mean that the Universe is actually composed of a Mirror Image Spatial dimension which exist together but separate. One dimension is the dimension that we inhabit and the other is the mirror image dimension that is being described by the complexity found in the mathematical description. In the other mirror part universe everything should be as if a reflection of our own and, for example, the square root of one will actually exist, a universe of negative integers These two dimensions cannot annihilate each other as they are part of the same universe but separate at the same time and thus we have a matter dimension and an anti-matter dimension existing, for a more or less better description on top of each other separated by an inter-dimensional barrier force.

The diagram below (Figure 1) shows, first a grid representation of the complex number system and, secondly, a representation of a mirror imaged universe. The complex number system shows that the our system of integers is in fact only a subsystem of the complex number system - here represented by the X-axis and the other sub-system of the complex number system, sometimes referred to the imaginary numbers, is represented by the y-axis.

The problem that complex numbers have been giving mathematicians headaches for many years is the question of the ”square Root Of Negative One. As in our integer subset there is no such thing as 2 negatives or 2 positive integers multiplied give a positive answer and not a negative one.

Again the model of the mirror imaged universe provides the answer. In a mirror imaged universe the laws of Mathematics would also be a reflection and in such a universe 2 positive integers or 2 negative integers multiplied together would indeed give a NEGATIVE answer. This model of the Universe causes all the numbers in the mirrored dimension side of the universe to be a mirrored reflection of our own integer system.

More compelling evidence that we have indeed misunderstood the basic Geometry of the universe that we inhabit.

The diagram also shows the border between the 2 mirror imaged universes. This is equivalent to the origin in the complex number diagram. To try and grasp the full significance of this it means that there is a point zero or a barrier, whatever label is given, that is attached to every point in the Universe and spans the Entire size of the universe, **i.e. this one point is located at every point in the Universe.** This is indeed a difficult idea to grasp and as such I will revisit it later in the paper.

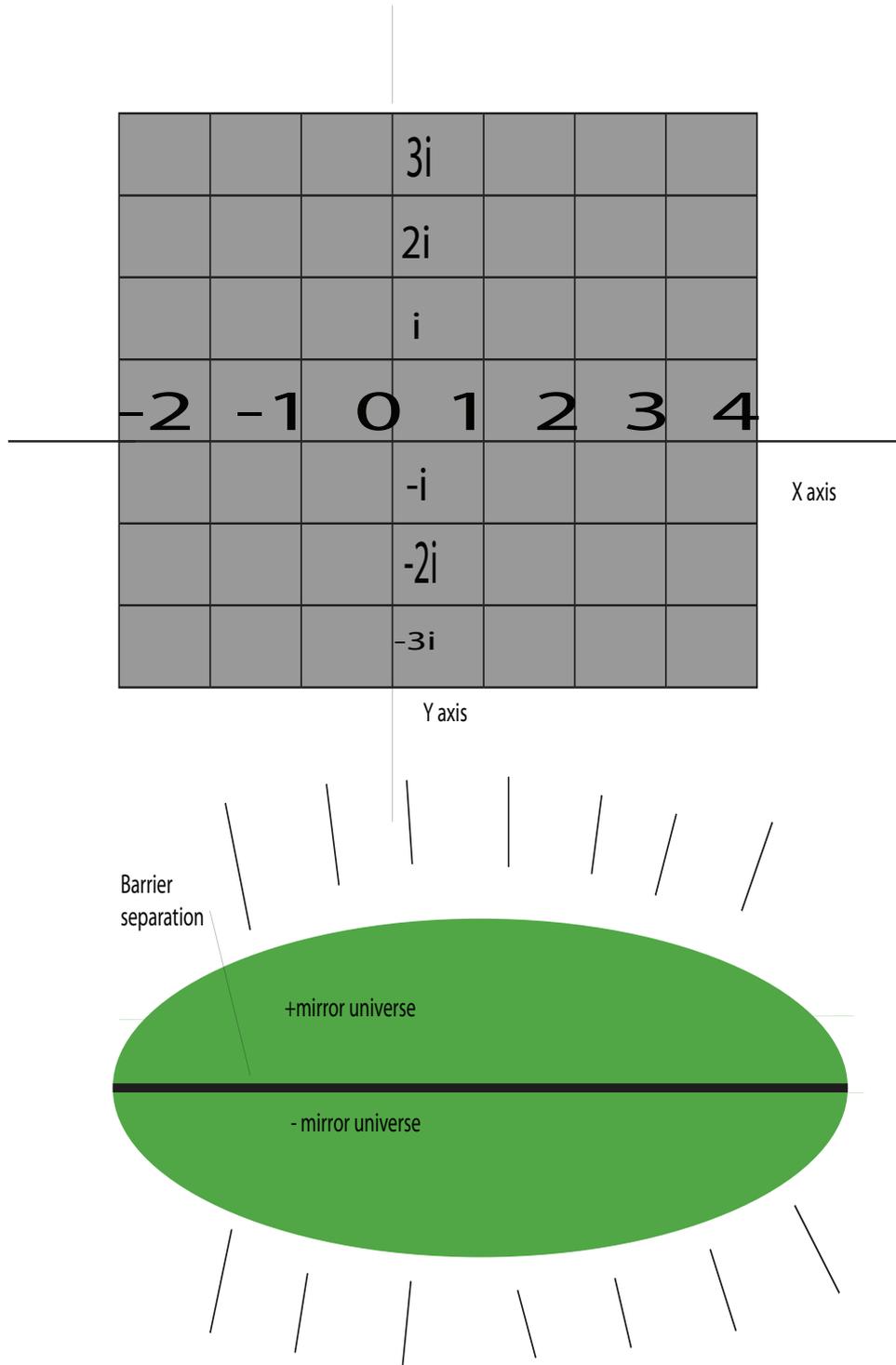


FIGURE 1. Early Expanding Mirror Image Universe In a mirror image the laws of mathematics would also be a reflection of our own and  $i$  representing the square root of  $-1$  would not be necessary as  $-1 * -1$  would equal  $-1$  and so on.

This then would propose an answer to the anti-matter problem - the anti-matter is indeed there but it is separated by the inter-dimensional barrier IDB which allows no transfer of matter between the two dimensions.

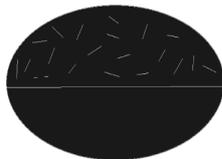


FIGURE 2. The early universe expanding and at the point where EMR crosses over from the inter dimensional boundary to free space

#### 7. QUANTUM THEORY MATHEMATICS, $\psi$ AND A MIRROR UNIVERSE

Probably nothing else in physics has aroused as much controversy as the interpretation of psi  $\psi$ , the Wave function that describes, among other attributes, the position of a sub atomic particle in space.

Taken literary psi  $\psi$  describes the probability of finding a certain particle in the total space of a complex universe. The complex part seems to be the part that physicists have the most problems with as it describes a COMPLEX PROBABILITY DISTRIBUTION which is not supportive of the view that the Universe is a three dimensional spatial Universe. In order to get round this, psi  $\psi$ , if multiplied by its squared modulus or "Complex Conjugate" gives the PROBABILITY DISTRIBUTION in a three dimensional space such as ours. The obvious observation, in the context of this paper, is that psi  $\psi$  is perfectly logical and correct when it describes the COMPLEX PROBABILITY DISTRIBUTION as it is describing the probability of a particle being found in our three dimensional universe AND the probability of being found in the mirror image universe being proposed here.

Or looking at it another way a particle can be found as an anti-particle in an anti-universe or a particle in our universe. This is just some of the mathematical evidence in quantum theory that gives weight to the fact that we may have misunderstood the basic Geometry of our Universe. I will not go any deeper into the wave function, but in my opinion the more one studies it the more it leads naturally to the geometry of a mirror-imaged, ant-particle-particle universe.

#### 8. NORMALIZATION AND OTHER MATHEMATICAL TRICKS

The mathematical operation described in the paragraph above that is used to remove the complex part of the probability distribution is called normalization. This

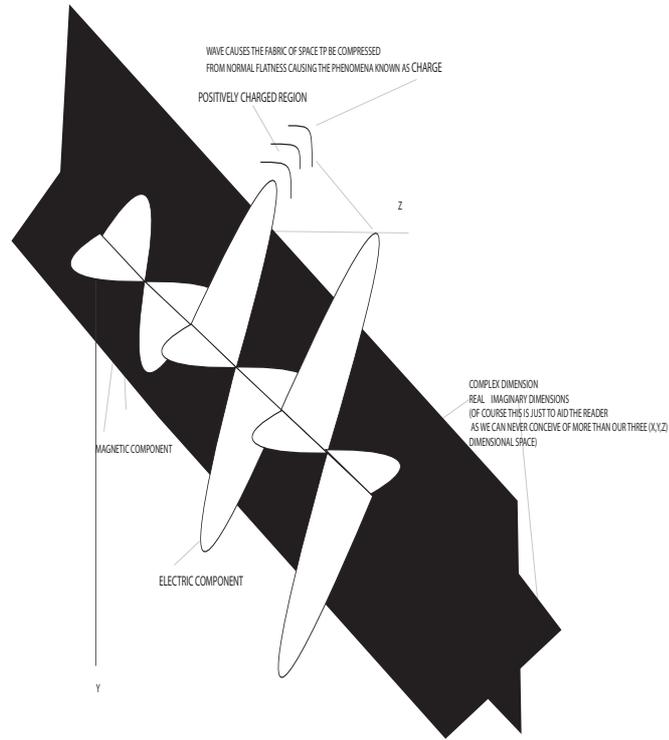


FIGURE 3. Diagram showing the EMR as an in phase plane wave linear polarized transverse self propagating wave.

process and others are being used throughout physics in similar situations. If the mathematics does not fit the Standard Theory then it does seem that, mathematically, it is quite acceptable to use mathematical tricks to make it fit.

Quantum Field Theory (QFT) is full of re-normalization operations and without them it would fall apart. This is the 21st century physics and it does not instill confidence in one when one understands just to what lengths some physicists are going to make their theories fit but to admit that there might be something fundamentally wrong at the heart of our greatest theories is the physics industries biggest nightmare but eventually the truth shall cometh.

QFT has predicted a model of the Electron that I touched upon in another paper. In this paper I shall present an alternative model as the one advanced by QFT, in my opinion, does not appear feasible and does not agree with experimental evidence, so far.

### 9. SPIN, SYMMETRY AND A MIRRORED UNIVERSE

This paragraph is about the parameter of spin that all particles possess. We shall set out our conclusion first and then lay out our evidence for it.

We believe that Quantum Spin only makes sense if the correct Geometry of the

universe is used to analyze it. Of course by the correct Geometry we mean the geometry presented here, that the universe exists in two mirrored halves.

#### 10. SYMMETRY AND QUANTUM INTEGER SPIN, $\psi$ AND A MIRROR UNIVERSE

Here is a part of an analysis of Symmetry taken from the famous book "SUB-ATOMIC PHYSICS" by Frauenfelder and Henley.

"As we shall see soon particles with integer and half-integer spin exist. Examples for the integer class are Photons and the Pion whereas electrons, neutrinos muons and nucleons have spin 1/2. Does the difference between integer and the half integer values express itself in some profound way? It indeed does and the two classes of particles behave very differently. The difference becomes apparent when the properties of wave functions are studied. Taking two particles, if the two particles are interchanged the wave functions become  $\psi(2,1)$ . It is a remarkable fact of nature that all wave functions for identical particles are either symmetric or antisymmetric under the influence  $1 \leftrightarrow 2$

$$\begin{aligned}\psi(1,2) &= +\psi(2,1) \\ \psi(1,2) &= -\psi(2,1)\end{aligned}$$

There exists a profound connection between spin and symmetry that was first noted by Pauli and proved by him using relativistic quantum field theory.

The wave functions of a system of n particles with half integer spin called fermions changes sign if any two particles are inter-changed. The wave functions of a system of n particles with integer spin, called bosons remain unchanged under the interchange of any two particles. The spin symmetry relationship is summarized in the following table.

The connection between spin and symmetry leads to the Pauli Exclusion Principle. Assume that two particles have exactly the same quantum numbers. The two particles are then said to be in the same state. An inter-change  $1 \leftrightarrow 2$  will leave the wave function unchanged. However, if the two particles are fermions the wave function changes sign and it consequently must vanish. The exclusion principle states that one quantum mechanical state can be occupied by only one fermion "

Though the same state can be occupied by any number of bosons. This is very important in physics, it has been accepted as the truth and proven experimentally but the reason for it has remained a mystery, the next section shall explain why this is the situation and the state of our Universe.

#### 11. SYMMETRY - THE EVIDENCE AND ARGUMENT

Quantum Spin is a direct result of the Geometry of the universe presented here. It gives further weight and evidence that the geometry of the universe has been mis-understood

Following on from the arguments presented here, at the centre of every particle is the border between the two mirror halves of the universe. What Quantum Spin is telling us is that any particle can spin round this central point in and out of the two mirrored halves of the universe.

Logically it then makes perfect sense. Any particle that performs a half spin or

multiple of, shall spin into the reflective location in the other mirror half of the universe.

Again, logically, a particle that performs an integer spin or multiple thereof shall find its location unchanged.

The key to the understanding of the symmetry - antisymmetry of particles with half and integer spin, leading to the PEP is all in the Geometry that has been assumed by physicists. In order to make the reason behind the PEP as clear as possible we shall attempt to show what is happening in a diagrammatic form (though this involves more than three dimensions and is really impossible to show, the diagram is just to aid in understanding). Below is a diagram that shows the geometry of the universe that we have proposed.

**FERMIONS:** If a fermion with a half integer spin exists next to another fermion in the same wave function state and if that fermion particle now undergoes a half integer spin ( $\hbar = \hbar/2\pi$ ), it will be re-positioned to the negative or mirror imaged part of the universe. This, of course will have the effect that the particle is now a mirror image of its former self with all its signs, etc changed and it cannot exist side by side with the other particle and shall vanish - The Pauli Exclusion Principle.

**BOSONS:** Taking the situation where there are two bosons in identical wave function state located next to each other, this time one of the particles performs a full integer spin. This takes it back to the original half of the universe and none of its properties, sign etc will have changed. Therefore the two bosons can exist side by side. The Pauli Exclusion Principle explained by simple geometry

Even more evidence that we have not understood the basic Geometry of the Universe

## THE PAULI EXCLUSION PRINCIPLE EXPLAINED !!

Two Fermions in the same wave state. When one performs a half integer or multiple thereof spin in the "M" dimension it moves to the mirror reflective half, it becomes a mirror image of its formal self and it vanishes. This is the reason behind the PAULI EXCLUSION PRINCIPLE..

Of course if it could be seen the spin round the M dimension would not be seen as we can only see movement in the (x,y,z) dimension but this is another, fourth dimension.

And remember the barrier exists at every point in space as well as the very center of every particle.

The "M" dimension is of course the Mirror Image Dimension

Bosons perform integer multiple spins and therefore spin back to their original space and nothing changes.

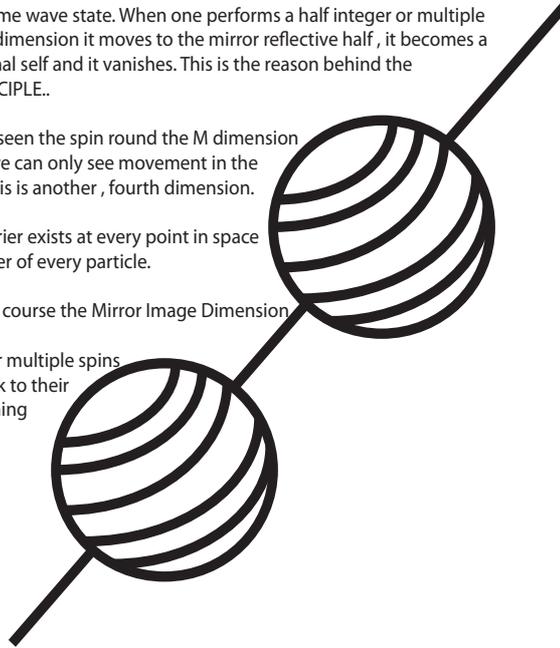


FIGURE 4. PAULI EXCLUSION PRINCIPLE SYMETRY AND A MIRRORED UNIVERSE

## 12. PART 2 THE ORIGIN OF MATTER

There is only one available material for the production of Matter and that is the very fabric of space itself. One must stop thinking of space as full of nothingness and realize that the fabric of space is in its own right a material, for want of a better word, that can be molded and shaped just like any other material.

The question that begs however is how, and what forces and processes are involved in the production of sub atomic particles from the very fabric of space.

In this next part of our paper shall be proposed a tentative theoretical process that produces Matter from the fabric of space.

Whilst realizing that what we shall propose is tentative in nature and at this moment in time there is not the scientific experimental evidence or capability to prove or disprove such theories, we find it necessary to put forward these alternative ideas as a possible way out of the mountain of problems that exist presently in physics, especially when trying to unite The General Theory of Relativity with Quantum Theory.

## 13. THE PROBLEMS UNITING RELATIVITY AND THE QUANTUM

At the moment one of the main problems in uniting these theories is the shape of the universe that Quantum theory gives us. The problems are not in evidence until one starts to analyze very small dimensions, in the region of Planks length.

Current Quantum theory along with our current Geometrical theory of the universe start to fall apart at these levels - the level where we are proposing exists a barrier between the mirror imaged dimension, explained above. Relativity, relies , to work on the smooth flatness of space. The problem is that Quantum theory shows that at such small dimensions space is not flat at all. In fact it gives nonsensical results, full of infinities and other impossible answers. This has been termed THE QUANTUM FOAM by physicists working in the field and currently there seems no possibility to unite our two greatest theories.

We believe that the main problems exist in two places, The treatment of time in Relativity ( see paper Relativity the Theory of Information) and a basic misunderstanding of the Geometry of our Universe.

In a mirror imaged universe the problem of Quantum Foam will not arise as the border between the dimensions shall be met before this situation and that the border would not only be smooth space (not perfectly) but also the central space for the production of Matter.

#### 14. ELECTROMAGNETIC RADIATION RADIATION

ElectrMagneticRadiation is a complex wave having both a real and an imaginary part. We propose that the reason for this is that EMR travels along the origin or the barrier between the two spatial mirrored dimensions.

The electric field is the real part and it in turn generates the magnetic field which is the imaginary part. These properties are well known and described by the Maxwell series of equations. Indeed both the real and imaginary part are used in modern digital communications in order to modulate them (add information) with Ones and Zeros.

I read an article recently that emphasized the fundamental differences between the EMR wave functions and  $\psi$  psi the quantum wave functions. In the article , it stated, quite correctly that EMR wave functions are real and can be seen whilst psi is not and is a mathematical wave function that can never be seen. In the article it went on to say that EMR waves can be seen on an oscilloscope or frequency analyzer. This last part is not exactly true. What is seen on a scope is the energy that has been transferred from the EMR, to excite the free electrons in the antenna. Its an important point and quite central to the arguments here.

This though, of course is not the full story. An impingement of a strong enough energy source say wave energy may penetrate the barrier and generate ELECTRO MAGNETIC RADIATION OR EMR. between the anti-matter and matter - in the actual barrier itself, thought of mathematically it would represent the origin or zero in the complex number system. EMR exists as a superposition of wave states and indeed the wave solutions for this particular wave can be different , say Circular polarized or Elliptically polarized.

EMR is created at the barrier by any energy source , say high frequency waves crashing into the barrier(AS THERE there would have existed in abundance in the early stages of the universe).In todays situation any Wave ,Particle, regardless of charge etc, as long as it has enough energy which is mainly is forward kinetic energy  $mc^2$  can penetrate the barrier and take the form of EMR. From the equations of Maxwell it is shown that the EMR travels as a superposition (in the classical sense) of waves. They are transverse waves with the magnetic field being generated by the electric field in phase and orthogonally. The superposition can be polarized

either Linear, circular or Elliptic. See diagram to get some idea of how the wave is formed.

See FIGURE 3 for a detailed diagram of Electro Magnetic Radiation - EMR

**14.1.** As stated there are many solutions to the EMR wave - Taking the circular polarized wave which forms as a 3 dimensional screw sine wave, the wave could travel as a straight-forward electric sinusoidal wave but it does not. Why? Again it comes down to following the path of least energy. As the electric wave is on it's upward sinusoidal path , the energy required follows an exponential growth rate so in order to use less energy the wave uses some energy to start a wave into the mirror image universe fabric of space. Thus this particular solution to the EMR makes more sense when applying basic rules of physics:

Waves always tend to follow the path of least resistance.

**14.1.1.** *What is CHARGE.* It also answers another question that I posed at the beginning of this document and I said that I hoped to be in a position to answer this question later on in the document. That question was

WHAT EXACTLY IS CHARGE AND WHY DO SIMILIAR CHARGES REPEL AND DIFFERENT CHARGES ATTRACT..

The answer is really quite simple if once , again, one applies the basic logic of physics and requires, at least at the moment not to resort to Quantum Theory. In fact the Maxwell solutions are similar to a quantum superposition solution to a wave but they are not and must not be confused with them. EMR is real and can be detected - Quantum Waves only exist as mathematical solutions and can never be detected - this is not their function - their function is completely different and there is still some differences of opinion in the Physics world on just what Quantum Waves are describing. That question, though, is for another time and another paper.

As the EMR wave travels forward,it pushes both on the electric and the magnetic side the very fabric of space in order to travel. This causes the wave to create parts where the space fabric of space is more dense than normal - and this is CHARGE.

Normal space always tends to flatness. If it is crushed into a higher density as in this traveling wave it becomes positively charged on our dimension and negatively on the mirror dimension. This charge will then have a natural attractiveness to any wave or particle with a negative charge as the mixing of the two entities tends to flatten out space again.

CHARGE IS WHEN SPACE DENSITY IS EITHER HIGHER OR LOWER THAN NORMAL SPACE DENSITY.

(you may now be thinking, does that not sound like a description of Gravity as Gravity is also due to the different space densities in the universe and therefore forces thus created are always attracting high dense or lower regions such as surround matter to lower or higher dense regions)



Virtually Created Photons that are now taken as part of physics but the explanations given use vague words such as "borrowing energy from the void" or some other such , really meaningless explanations. The energy just comes from space in their narratives. Its these kind of explanations that really are common place now that makes me convinced we have taken the wrong turning at some very important roads.

**15.1. The EMR Separation Barrier Cauldron.** In the beginning , as the universe continued to expand this barrier between the two dimensions must have existed as a churning cauldron of complex EMR that interacted and repelled each other at the same time occupying the space between the different dimensions and it is this that kept the universe stable and saved if from collapse and annihilate by ant- and non ant- entities , even the very fabric of the space that is the Universe is anti- and non anti- and would lead to complete annihilate if they ever where to meet.

**15.2. THE IDB-EMR BARRIER IS THE SOURCE OF ALL MATTER.** Here we propose our most polemic statement so far the IDB filled with EMR is the source of all matter in the Universe. This is quite a claim so our arguments for it had better be solid or ,as I can understand , most readers would think it just another crazy claim. Due to the forces acting on the EMR energy , photons are continually being ejected and absorbed from the barrier to the three dimensional our positive mirror half space dimension and indeed the same processes occur to the anti-universe. It is photons that are the BUILDING BLOCKS of all the matter in our known universe. The same process is being carried out on the other mirror imaged half of the universe, but of course we have no way as of yet of even being aware of this let alone detecting it.

## 16. THE INITIAL STATE OF THE UNIVERSE

When the big bang occurred in its very early stages there was only SPACE, the fabric of space itself which some refer to now as the Vacuum or simply SPACE. All the energy that would be needed to form the universe as it now exists was stored in the very fabric of space itself. The Fabric of space though, in the initial fractions of a second as the big bang started to expand would have been full of energy causing it to have been a boiling sea of space. Everything that would be needed to create the universe that we now inhabit was stored in space - the question is how did it get from that to what exists now.

## 17. FROM SPACE TO MATTER

Space is not the Flat Continuum that Einstein envisaged when he was devising his theories of Relativity, Even now in the most inactive regions of the universe space is "lumpy" and misshapen or to put it more scientifically,there are regions where the very fabric of space is less dense or more dense than the perfect flatness that it is thought to be. There are still regions were it is the boiling sea that existed

at the very start and it is in these regions that matter is born. The question remains - HOW.

### 18. THE CREATIONAL PROCESS

The greatest mistake in physics has been to regard space as bit player character, not very interesting, with nothing much to say when in fact he, space, is actually the Star of the whole show!

A physics teacher of mine once said that waves in space travel through nothingness - i.e. space. That could not be further from the truth. Waves in space are made of the very fabric of space itself which is a material that can be bent and shaped just like any other material though it is quite unique. Yes the waves made from the fabric of space are not traveling through "nothingness" but also the fabric of space. The creational process to create the basic building blocks, sub-atomic particles, from the very fabric of space itself is described below. We shall use EMR as it is the waveform that has an intimate relationship with THE most basic and important of the sub-atomic particles - The PHOTON. The fabric of Space, Waveforms (not psi) and particles are the same manifestation of energy/information and these manifestations are able to transfer back and forth between their respective manifestations. We have already put forward our case that there has been a basic mis-understanding of the Geometry of our universe and this has led us to believe that EMR travels in waveform manifestation, from point A to point B along the divide between the two dimensions. Thus we shall start here in proposing the theory of the creation of matter, but this theory could be applied to any waveform, anywhere in space.

### 19. PART 1 - THE CREATIONAL PROCESS

An event occurs that allows the EMR to break into our three dimensional universe itself, The event itself is not important it could either be a particle or another waveform crashing into the barrier where the EMR is traveling. The important fact is that this event transfers enough energy to the EMR to allow it to break into our universe and fly off in any direction at the speed of light.

### 20. PART 2 - THE CREATIONAL PROCESS

We shall take EMR in its circular polarized version as its easier to envisage. The wave shoots off at forward velocity "c" and with an angular velocity "c" also at the outermost edge. It travels as a three dimensional sine wave, sometimes referred to as a corkscrew wave. The wave can more easily be understood as a rotating vector with a constant spin velocity (CLASSICAL SPIN) and constant forward velocity, (see diagram figure 5).

Meanwhile the in phase magnetic component wave is also traveling in a similar manner inside the electric component wave as it starts with a much lower amplitude.

The Electric Wave Component—

### Stage One

As the wave travels forwards there are many factors affecting it

As it is traveling upwards in this scenario it will tend to expand or the Amplitude will tend to expand though the main factor affecting it is as stated before, is the un-evenness of the fabric of space that it is traveling through. Since the forward velocity is always "c", when the parts of the wave are traveling through less dense regions it will travel more distance, the parts of the wave that are traveling through more dense regions will tend to travel less distance.

The overall effect on the wave is that it will start to come together and bunch up just as in a traffic jam on a motorway.

The final result is that the wave is transformed into a cylinder traveling through space with no space between the respective waveforms. This is the first stage in the formation of matter and is only an intermediate stage but it is a form of matter and as a result the forward velocity now drops below "c".

### The Magnetic Wave Component

#### Stage Two

During the electric waveforms transformation the spinning magnetic component is doing much the same thing. Traveling forward at the speed of light it likewise bunches up into a cylinder but the spin of the wave causes the centripetal forces thus created to expand the wave until it meets with the spinning electric component and the final cylinder of pre-matter is formed and a solid cylinder of matter is traveling through space at just below "c". The cylinder is stable when the centripetal forces from inside the cylinder balance with the forces created by the fabric of space. These forces arise as space always wants to flatten out the fabric of space and thus will resist anything with opposite properties as in the cylinder of pre-matter.(see figure 5)

#### Stage Three - Final Stage

##### The production of Matter

There are some fundamental properties of our space and one very important rule is that entities tend to take the path of least resistance and least expenditure of energy. This will effect the traveling hollowed out cylinder that we shall refer to as pre-matter in this form. The most efficient geometrical shape that exists is the sphere. In order to travel more efficiently, the open end shall collapse inwards to form a perfect half of a sphere. At the same time from the highest circumference point of the leading cylinder it shall collapse to form the other half of a perfect geometrical Sphere. This sphere shall then be separate from the cylinder and shall exist as a sub-atomic particle in its own rights.

The process thus described is the formation of a PHOTON in its particular form. The same process shall continue along the pre-matter cylinder until the entire cylinder has been converted to Photons. Photons carved from the very fabric of space itself whose walls consist of compressed space fabric and whose insides consist of the absence of space fabric spinning, in this case perpendicular to its direction of motion.

These Photons are now ready to interact with any other sub-atomic particles that they may encounter or indeed they can react with each other, in each case forming more complex manifestations of sub-atomic wave/particles. These process of interaction shall be visited in a later chapter in this paper, (see Chapter X).

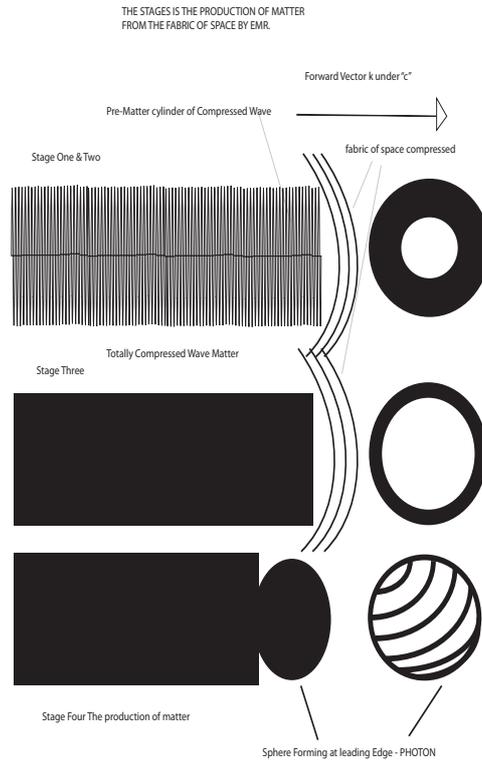


FIGURE 6. Diagram showing photon being created from EMR

## 21. THE ENIGMA OF THE PHOTON

Physicists have been having an on-going discussion or argument about the nature of the PHOTON. is it a particle? a wave? are they singular or multiple? and many more facets.

This model of the Photon put forward shows that they are all these things. An EMR wave is, if thought about, a series of chained together photons which can separate and become particle photons which in turn can change again into single photon waves. The process is also reversible and the end result being that a single Photon can join again to be part of a long chain of EM radiation. If a photon reverts back to EM radiation it will revert back to what it started as. If it started as gamma rays towards the high energy spectrum it will revert back to EMR in the gamma wavelength and so on. We believe that this model and way of looking at the Photon will lead to a clearer understanding of this enigmatic little particle and help to push physics in the correct direction.

22. PAIR PRODUCTION

We also believe that more complex matter is composed of PHOTONS joining together to form complex sub atomic particles. FIGURE 6 shows the very basic process of how 2 photons come to gether to form a dual pair.

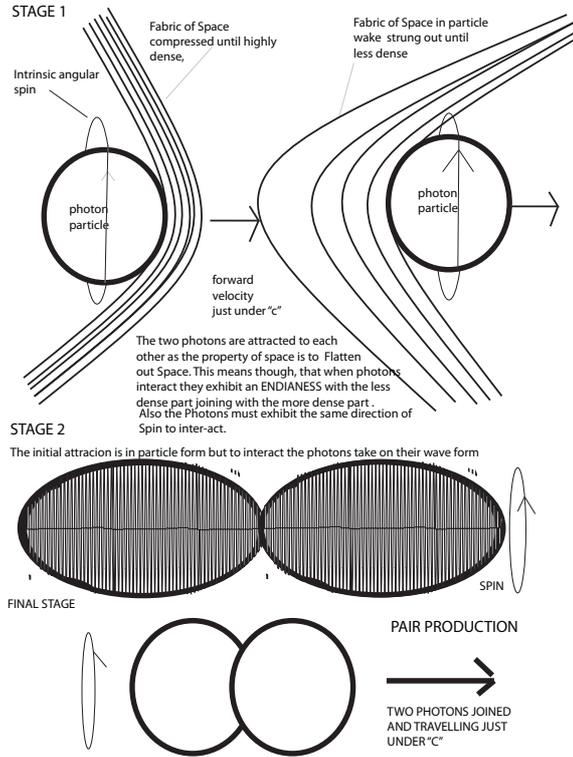


FIGURE 7. Diagrams showing the stages of photons joining to form a linked pair.

**23. PROBLEMS/PHENOMENA THAT THE PRESENTED MODEL OF THE UNIVERSE HAVE GIVEN SOLUTIONS THAT THE STANDARD MODEL HAS NOT**

1. The first and most obvious was the problem of the anti-matter/matter imbalance.
2. QUANTUM SPIN. The model shows that a spin about the M (mirror) axis would account for all detected experimental evidence.
3. Following on from that it was obvious that Quantum Spin accounts for the Pauli Exclusion Principle - fermions undergoing a half integer spin , spin into the mirror half of the universe and consequently all their parameters are a mirrored reflection - and account for the fact that only one Fermion can exist in the same near space. Also it accounted for the reverse situation for Bosons with their integer spin.
4. Charge - it put forward the theory that Charge is when the fabric of space is either more or less dense than the perfect idealized flatness of space. Since Charge is Quantized (multiples of "e") then space itself must also be Quantized.
5. It also put forward a reason for the dual particle/wave properties of sub-atomic particles. The reason being that in order to interact with other particles they must first change into their wave manifestation, and also, not to forget they are primarily constructed from waves and can changed back to them.
6. **AND LAST BUT NOT LEAST - WHY AND HOW PARTICLES ACQUIRE MASS.**
7. THIS ONE IS FOR FREE! IF THIS THEORY IS TRUE THE MISSING MASS THAT PHYSICISTS HAVE BEEN LOOKING FOR HAS BEEN STARING THEM IN THEIR FACES - ITS THE FABRIC OF SPACE ITSELF - IT HAS MASS - NOT A LOT BUT THERE IS AN AWFUL LOT OF IT - ENOUGH TO ACCOUNT FOR ALL THAT MISSING MASS.

I am sure there are more as this list took me about 10 minutes to think up.

**24. THE ANTI-MATTER -MATTER PERCENTAGE NUMBER BALANCE PROBLEM**

Already the problem with the Anti - normal matter is better answered using this model. At the separation barrier total collapse of the universe and the anti-matter imbalance are seen to be contained here and indeed are also the ultimate source of all matter. At the barrier there are no particles just an ocean of complex EMR radiation churning and moving with the various speeds and with various energy levels. Due to the natural process of the expanding universe , photons ,singular or entwined in an infinites series of forms are ejected into our (x,y,z) spatial dimension.

**25. THE ELECTRON**

Earlier on I promised that I would present the current model/theory of the electron and the model/theory of the electron that this paper would lead to. So I present it here.

**25.1. Current Model of the Electron.**

**26. THE ELECTRON AND THE PROPOSED UNIVERSAL MODEL**

The Electron is probably the most studied of the members of the Sub-atomic particles known as the Zoo. Even after decades of study it remains enigmatic , even its mass is a subject for dispute. This section shall give a brief explanation of how

the Standard Model using Quantum field Theory (QFT) understands the electron today. After this, using the ideas proposed in this paper an alternative view of the electron, and all sub-atomic wave/particles shall be presented.

**26.1. Current understanding of the Electron.** The electron, like all other particles exhibits dual wave/particle properties. The latest picture of a free electron represents it mathematically as a two component wave function composed of

$$(26.1) \quad \Psi_0, \Psi_1$$

. These can be represented as a pair of two spinors :

$$(26.2) \quad \psi = (\alpha A, \beta B)$$

the Dirac equation than then be re-written to show that these two spinors are held together by a coupling force and act as "each as a kind of source for the other".

The strength of the interaction between them is given by the coupling constant  $2^{1/2} M$  which describes the strength of the interaction between the two.

$$(26.3) \quad \Delta \frac{a}{b} \alpha A = 2^{1/2} M \beta B, \Delta \frac{b}{a} \beta B = 2^{1/2} M \alpha A$$

From this description of the electron many physicists take the image of the electron composed of

$$(26.4) \quad \alpha A, \beta B$$

. These two parts of the electron exhibit the phenomena, which has, until now, NOT been observed, "zitterbewegung" which means that they are continually changing direction back and forth but the direction of spin remains in the same direction as seen in the diagram. The theory also states that at any instant the velocity of the electron is the speed of light but that the average motional velocity is less than the speed of light.

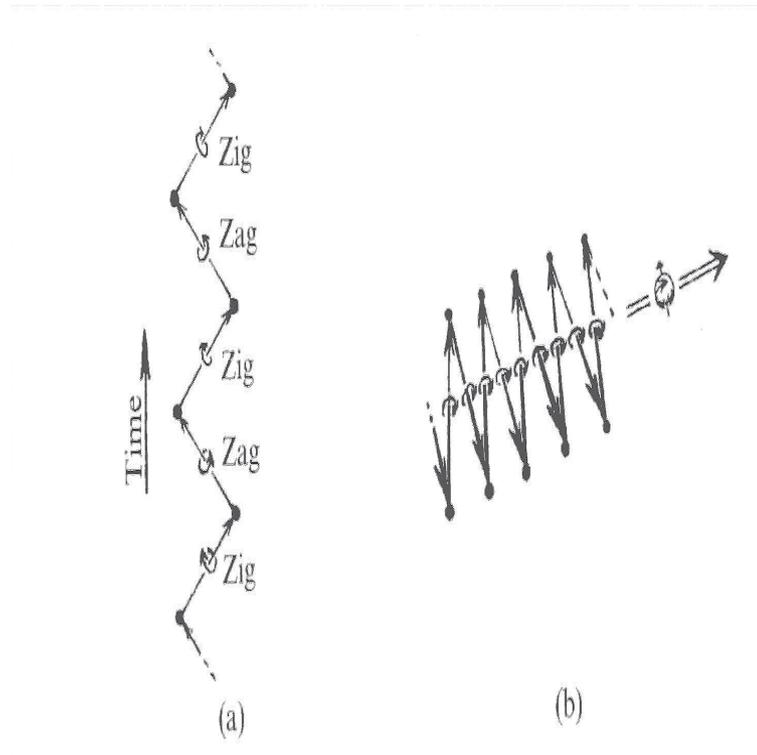


FIGURE 8. Electron Motion: The current view of the electron as a kind of dual particle moving in a zig-zag ("zitterbewegung") motion

This means that the current view is that each particle is constantly changing into the other particle, using some as yet unknown process. Using the ideas presented in this paper I shall present a different explanation. One other very important and revealing property is that the average rate at which this occurs relates to the mass coupling parameter  $M$  which is in fact the De Broglie Frequency. One extremely important fact that I have purposely left out is the superposition of "zitterbewegung" which are infinite and together add up to the total wave function of the electron. I will explain this in the next part of the paper. One of the main points to bear in mind with this view of the electron is that the zig and the zag components exhibit mirror reflection, incredibly what this paper is mainly about and change sign under this reflection maintaining a  $1/2$  integer spin.

The situation is more complex than I have presented here but is enough to make a comparison of the two theories. In this picture of the electron the Zag particle is the positron (changes sign etc) - the anti-particle of the electron. This operation that replaces every particle with its anti-particle is called "C" which stands for "charge conjugation" // The operation that is responsible for spatial mirror reflection is called "P" for "parity". There is one final operation that is performed from zig to zag particles and that is "T" which stands for time reversal. All these operations performed are responsible for changing the particle into its anti-particle. The

famous theorem , CPT theorem, states that all particles are invariant if these operation are formed at once on the particle under question. I must state here that this view of the electrons presented above is , at least in part, one of many interpretations but seems to be the most common and widespread.

This was indeed a very brief but more or less accurate picture of how the electron is viewed in the Standard Model. Now lets look at it from a new perspective. The present model of the electron is much more complex, the fact is we have only really scratched the surface of the current view of the electron but enough for our purposes, now I shall present a much simpler view that grows naturally from the ideas presented her.

### 27. THE ELECTRON IN A MIRROR DIMENSIONAL UNIVERSE

If you have read this far I am sure that you already have a very good idea what picture of the electron a mirrored image dimensional universe naturally shows. In fact one of the principle reason that I embarked on writing this paper was when I was trying to get to grips with the current understanding of the electron. On studying it myself and others thought that the model of the electron touched upon above was too bizarre even for nature , that can be bizarre at times , but again one had the feeling of hammering a round peg into a square hole and we thought that a complete review of physics was necessary. Following on from the ideas presented here the electron would be a particle traveling along in a straight line trajectory. It would as in the current theory undergo  $1/2$  integer spin at the de-broglie frequency and change from its particle manifestation to its anti-particle manifestation at this frequency. Each  $1/2$  spin would take it into the mirrored half of the universe thus converting it to its complete reflection or anti-particle and the following  $1/2$  spin would take it back into our half of the universe converting it back into the electron particle. A much simpler model , I am sure you would agree and very little in the way of maths is needed to explain this as its just a particle traveling forward whilst spinning in and out of the two dimensions that have been proposed here.

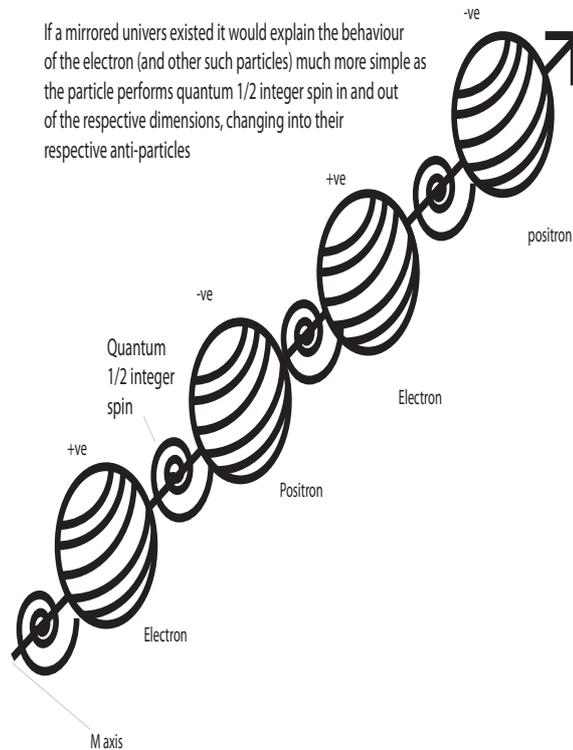


FIGURE 9. Electron Simplified: The view of the electron if a mirrored dimension exists motion

## 28. THE PHOTON AS A BUILDING UNIT OF COMPLEX MATTER

I had intended to go on with this paper but it is already too big. The reason that I intended to go on was to create a PART 3 that would show that photons are the basic building blocks of matter. Now I shall leave this and finish this paper here but look out for my next paper. Just some of the subjects that shall be expanded in the next paper are listed below.

”PHOTONS THE BASIC BUILDING BLOCKS OF MATTER.”

**28.1. Photonic Endianness in open free x,y,z space.** Photons have what I have termed endianness (stolen from software engineering), and this has a major effect on the absorption and emission of photons from an electron.

**28.2. The energy and size of a free electron in particle state.**

**28.3. The Electron Energy.** Using this new understanding of the electron along with its duality it will now be possible to identify all the various factors adding to its energetic make up and calculate the energy for the Electron during different stages in its evolution.

Conclusion. For the conclusion I refer you to section 23 where I have listed the problems (there are probably more) that the model of this universe has a solution for and the Standard Model does not

It surprises me a lot that no-one has ever thought of this as a viable universe model before, and no-one has as I have searched thoroughly and have found nothing.

The reason for the surprise is the mountain of evidence for this model that it could exist, in quantum physics to EMR and many other areas of current physics theory. Please read my next paper "PHOTONS THE BASIC BUILDING BLOCKS OF MATTER."

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