



OF SPACE & TIME
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1. Editorial
Of Space & Time
2. Dimensional and Real Time
3. What is Electromagnetic Energy?
4. The Neutriron as Source or Carrier
5. A Non-Formal Distortion of Space
6. Reconsidering Forms
with respect to E-M Radiation
7. Building from the Bottom Up (The Atom)
8. Further Thoughts on Empty Photons
9. Empty Photons En Masse

Editorial Of Space & Time

Welcome to issue 24 of the **SHAPE Journal**.

This issue of SHAPE is unusual in that it gathers together a series of recent papers precipitated by a long and concerted attack upon the so-called Copenhagen Interpretation of Quantum Theory. It started with the ubiquitous Double Slit Experiments, but quickly forced a more general reassessment which could not but include Cosmology and Einstein's formal contributions upon the assumed framework of everything - Space & Time.

It is not the coherent and comprehensive work that was originally planned for a Special Issue on the subject - this will follow in the relatively near future - but it does lay down a few precursors of an entirely new approach, which arose out of other Sciences - particularly Biology and primarily Darwin and the following Evolutionists.

But this collection does indeed tackle the philosophic ground of giants such as Einstein, Bohr and Heisenberg and shows in a fragmentary way where their transformation of Physics has unfortunately led.



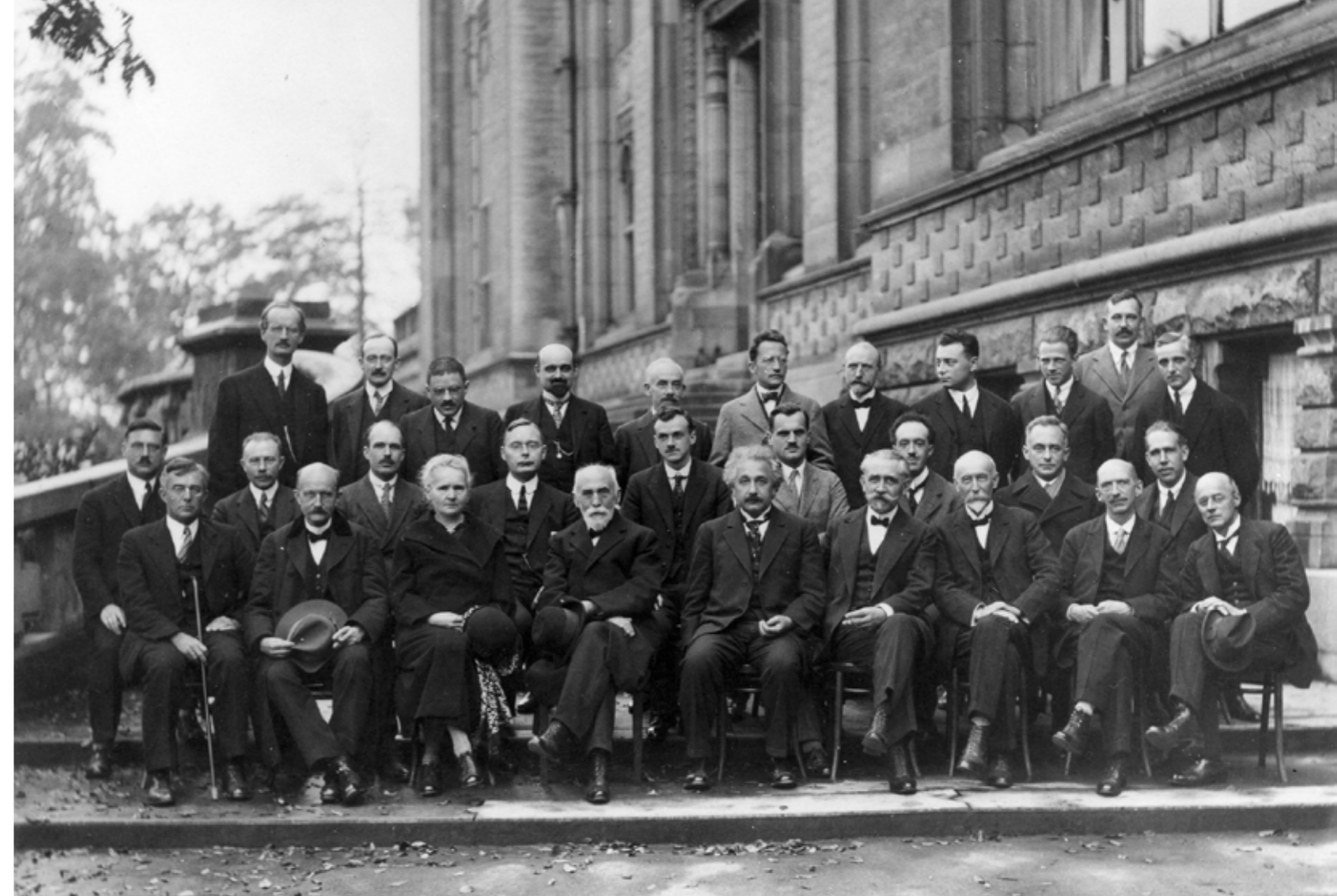
The Blog, meanwhile continues with its series on Socialism. These are as usual available on our Blog at :-

<http://theelectronicjournal.blogspot.com>

The policy of producing Reviews on our Blog is continuing, so this will indeed continue to happen at regular intervals from now on.

Read and enjoy, and if moved to do so, react! Send us your views for publication in the Journal. We look forward to such reactions as they inform us of what our readers require. Left to ourselves we will not necessarily produce from our prodigious store of work in the best possible order

Jim Schofield April 2012



Dimensional & Real Time:

The Parting of Ways, when Form went off on it's own, or how Einstein dug his own grave

The puzzling thing about the battle at the Solvay Conference in 1927 (between the "traditionalists" – led by Einstein, and the so-called Copenhagenists – led by Bohr and Heisenberg), was that they all stood on very similar theoretical and methodological ground. They sought the formal essences of Reality!

Both sides were indissolubly wedded to Form and Equations, and yet this battle ended a long-lasting phase in the consensus Philosophy of Science, which has ever since led the entire Physics Community astray. The battle seemed to be about the wrong things, and yet it has turned out to be not only crucial, but also seemingly irreversible. Why?

The full answer has always eluded me, for the real problems with Physics at that time, and still to this day, were not addressed in that battle. How could what they were involved in have made such a difference?

Let us therefore look at the positions of the opponents in a somewhat different way, and start with Einstein and Relativity.

The apportionment of a dimension to Time by Einstein, certainly redefined it in a special way. Quite apart from his dimensional distortion to "explain" Gravity as a feature of space-time, the very reduction of Time to become part of a purely formal framework, also delivered the same sort of limitations that had been imposed upon the similar

definition of Space. For, while seeming to merely extend prior conceptions to include Time, it primarily cut down Time to be of a similar propertyless nature as Dimensional Space: it too, for the most part, faded into being part of an eternal Stage for everything to occur upon.

Now, I'm sure that the reader at this point will be demanding to know what I am talking about, and with some justice. We have to reveal both Form and Content as they really exist in Reality, and crucially define the consequent sub-world of Pure Form alone, which I have called Ideality. It does indeed exist!

But, are its contents reflections of things in Reality, or their most profound essences?

The answer to that question used to position you on one side or the other of the boundary between Physics and Mathematics. And, which side you stood made important differences in a crucial area.

And that area involves the real nature of Change!

On the "Stage" of three dimensional, formal Space, nothing could change apart from its position within that framework. It was always an absolute and eternal backdrop to allow a precise and measureable position, but it couldn't cope even with ordinary translational movement at all well.

Zeno's Paradoxes (particularly that of The Arrow) considered against such a framework, seemed to

make movement impossible. Both possible alternative assumptions of Continuity and Discreteness were shown, very directly by his Paradoxes, to be contradictory in dealing with movement. And it was clear that to bring movement coherently within the system meant that Time would have to be involved in a NEW and revealing way.

So, it seemed doubly progressive of Einstein to use the graphing metaphor behind 3D Space, and extend it "in the same way" to include Time also.

For many of the crucial equations developed very early on in the thinking of the first "scientists" addressed movement, and the famous Equations of Motion were developed and, of necessity, had to include Time as well as Space.

$$v = u + at$$
$$v^2 = u^2 + 2as$$
$$s = ut + \frac{1}{2}at^2$$

But they worked only with quantitative changes in the parameters involved. The weakness was when these changed continuously as with both speed and acceleration, for example. And Zeno's other famous Paradox that of Achilles and the Tortoise, just had to be tackled to deal with this aspect. And, though it took around 2,000 years to do it, it was formally solved by both Newton and Leibnitz (independently) with their Fluxions or Calculus. For these methods used literally infinite Continuity to deliver the finite, and extended the methods upon that unaltered co-ordinate Stage to a great and useful degree.

But, nevertheless, the most basic problems were still not addressed, because the changes in variables that had been conquered were still purely quantitative! And as soon as changes over Time were supposed to be being addressed, the problem of Qualitative Changes could not be avoided. Things changed not only in amount, but in nature too: they became something else!

Now, everyone was aware of such changes, and they could not be ignored. But, between "events of qualitative transformations", the norm was for quite long periods of purely quantitative changes.

So, the framework of three-dimensional Space did often suffice for inanimate things that didn't transform into something else (hardly at all!!!)

The old Stage accommodated most "Acts" of the "Play" So what, in such a context, did Einstein's extension of the basic dimensions to the four that included Time actually do?

It forced Time into the same formal straight jacket of purely quantitative things!

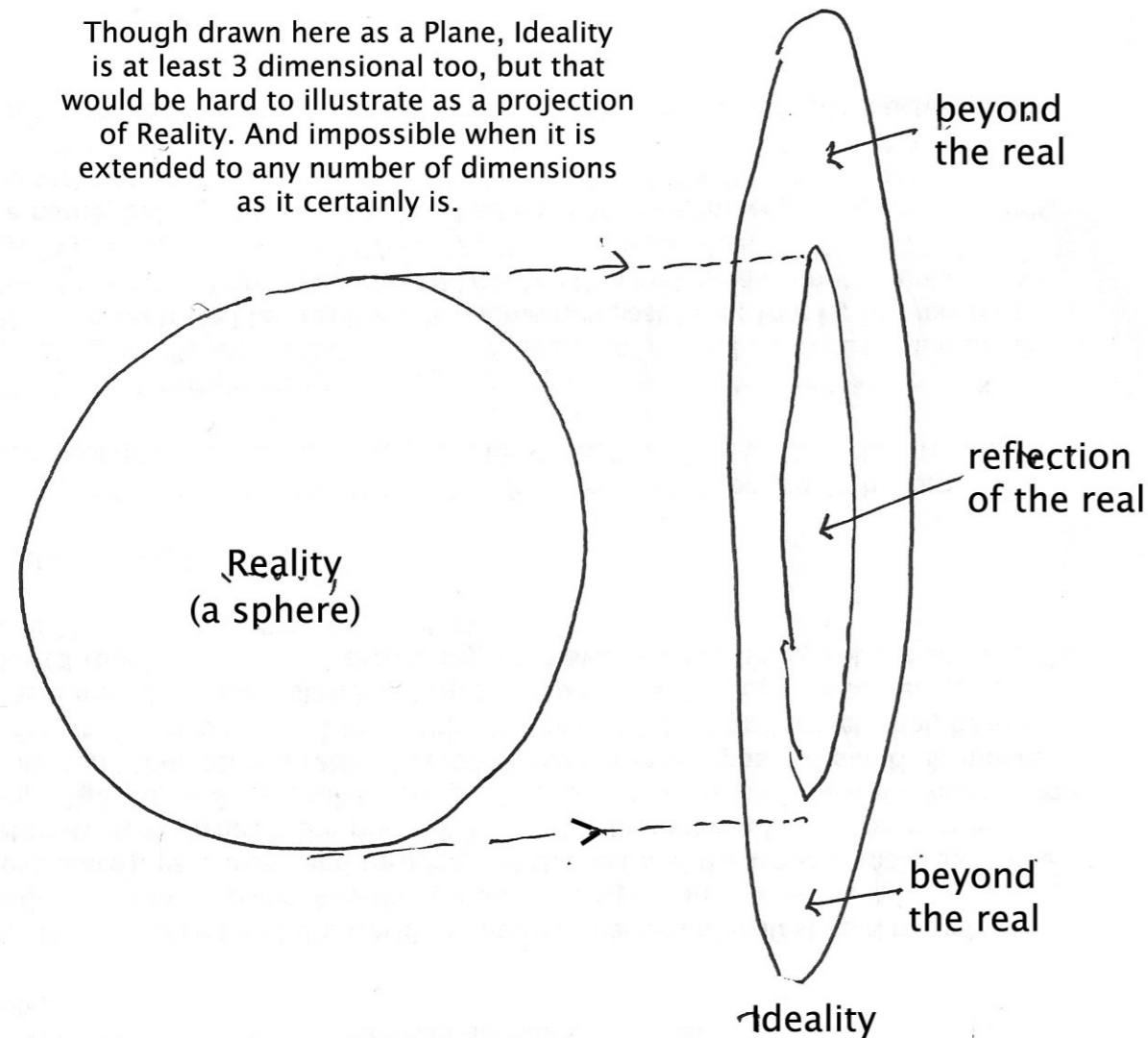
NOTE: We must never forget that our abstractions do two opposite things. First, they simplify and hence reduce things to less than they actually are. And secondly, they extend things beyond what they are concretely, by taking formal relations as universally applicable. Dimensions and Graphs are a perfect example.

Clearly, to assume the dimensions of Space and Time itself were eternal features that could not turn into anything else was both "clearly evident" and yet imposed the same restrictions upon what was contained within that invented, formal framework.

The Form determined the Content!


$$v = u + at$$

Though drawn here as a Plane, Ideality is at least 3 dimensional too, but that would be hard to illustrate as a projection of Reality. And impossible when it is extended to any number of dimensions as it certainly is.



realideal.jpg

Thus, in no way could the prized equations “deliver” the actually occurring creative, qualitative changes, EVER! In this aspect alone, space-time was a retrogressive step! Without any doubt it was another restriction that enclosed Reality in a simplified and selective System that put everything into the same eternal quantitative context. When quantity was paramount it sufficed, but it was NOT equipped to deal with any kind of qualitative development. And remember, that does not only mean Life: the mammoth qualitative changes prior to Life were also excluded.

Now, as all this will certainly be disputed, I must explain further. Even in the most elementary of quantitative relationships, the formal methods, which extracted and then abstracted them into equations, they alone could never be enough! Along with these formulae there was always a qualitative narrative that put the meagre relation into a real concrete and meaningful context. The union of these two rather contradictory bedfellows was what we termed as Science. So, when confronted with a non-member of the investigative community (or any questioning youth) all scientists had to resort almost exclusively to this accompanying narrative: it was The Explanation for what they had discovered!

Now, not immediately, but very soon after Einstein’s bombshell, a series of contradictions that had commenced with the Ultra Violet Catastrophe of the last century (that was concerned with Black Body Radiation), had then precipitated a whole new Discrete interpretation of the Continuous idea of light waves. These were in certain circumstances only possible to explain if light came in discrete gobbets – quanta.

But, contradictions began to proliferate, and even before his Special Theory of Relativity (wherein space-time was born), Einstein himself had contributed to this major change with his work on the Photo Electric Effect, which also only made sense if light came in quanta.

But, these most profound and proliferating difficulties, along with space-time actually opened a backdoor retreat.

The unhappy marriage of quantitative relations and qualitative explanations was becoming profoundly undermined: theories were tumbling on all sides, and space-time gave an easy way out. The scientists could dispense with all explanation (qualitative theories), and rely solely upon description (quantitative relations and equations).

For the latter entirely alone delivered prediction and hence production!

“What real use was Explanation?”, was the cry, and “It was never completely right anyway – requiring almost constant revision and even total redefinition. Let us dispense with that and embrace only what could perform on Einstein’s 4D Stage of Space-time?”

So, how does this dimensional Time alter, and indeed, deal with Change in other things?

It limits its applicable aegis to stable situations, in which as Time passes various measureables change quantitatively – “can be measured” (along with Time), and thus, in the usual way, present the possibility of a relation, where targeted variable changes were seen in step with Time according to some sort of equation.

BUT, whenever the time scale is vastly extended, such trivial changes fall away as of little consequence, and major qualitative transformations occur within extremely short episodes separated by vastly longer periods of Stability. But, what of the relations/equations extracted from, and used within, the stable period, how did they cope with the intensive periods of qualitative change? They didn’t!

They were merely cast aside, and by the usual methods (once a new stability has established itself) a new relation could be extracted. There will be NO integral and coherent transition between the relations in these different stabilities by formal means alone. Each such relation is always limited to its own Domain of Applicability, and range of variable values, and their stable context.

The absolutely crucial transition is never covered by an equation involving the whole process: the actual transition is always an unknowable black-box formally, though in the past it was usually explicable via qualitative, explanatory means.

The best that a formal approach can deliver is usually achieved by the signalling of an imminent change by the passing of a threshold in a particular variable. But, clearly such an event does not explain the *causes* for the transition. It is just from experience alone that these things happen when that limit is transgressed!

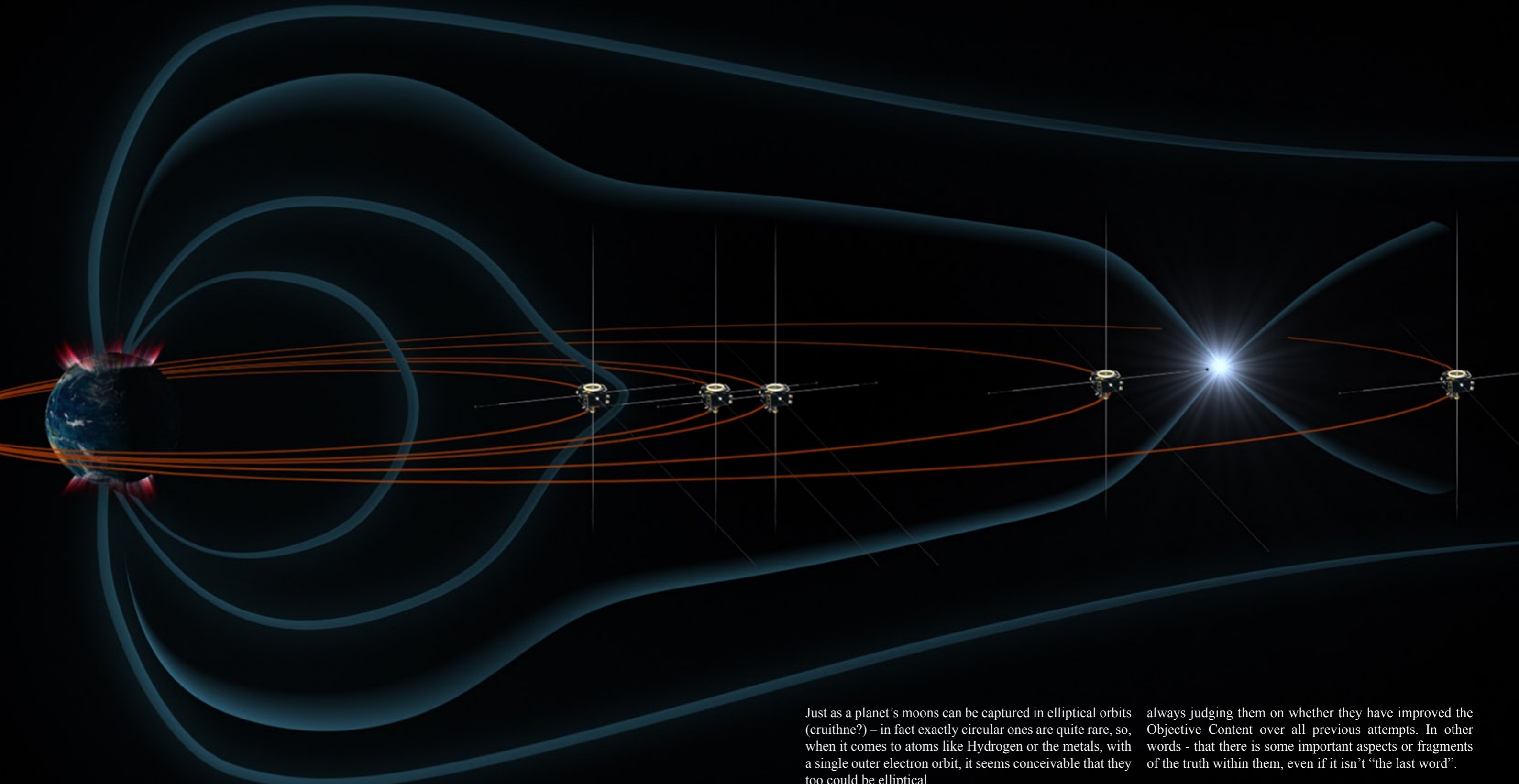
And amazingly, a version of this process including the equations from both sides of the transition, delivers a single overall equation, but artificially set up with NO causal reasons whatsoever, so that when the threshold is passed the old equation part becomes negligible, and the new equation part (previously made negligible) becomes the only active portion left.

NOTE: The lame “philosophical” excuse for such a frig, is that ALL these relations are indeed eternal (always present) but differ in dominance. Indeed, nothing really changes qualitatively, but only quantitatively. If something reduces sufficiently in quantity, it is as if it ceases to be. While when a new relation appears, that is only an illusion: it was always there but undetectable.

What a crass philosophical position that is! Does it not mean that Life was always present but undetectable? What utter Rubbish!

Now, the points made in this paper may seem very academic and of no really substantial value to scientists doing Science, but that would be a profoundly mistaken position to take.

If, as this writer has already demonstrated, there exists a World limited to Pure Form alone – without the many constraints and relationships that exist in Reality, and hence not only a simplified World, but alone one that takes formal properties originally extracted from Reality, and extends them with out such concrete constraints in any direction desired – into the creation of the World termed Ideality, then the points made here are indeed crucial! It means that the extension of the available dimensions in which to situate phenomena to four, including Time, removed the consequent formal considerations of Einstein from Reality into Ideality. He had extended formal methods to fit the phenomenon of Gravity in the Real World to deliver an analogue, but only in Ideality. Not irrelevant is it?



What is E-M Energy?

Can we explain Electro-Magnetic Energy in terms of the Empty Photon?

Just as a planet's moons can be captured in elliptical orbits (cruithne?) – in fact exactly circular ones are quite rare, so, when it comes to atoms like Hydrogen or the metals, with a single outer electron orbit, it seems conceivable that they too could be elliptical.

The modern approach to dismiss talk of orbits in these contexts seems to me to be inadequate, but “excused” by Copenhagenist Kantianism of unknowable Things-in-Themselves and wave/particle duality. What that usually means is a “halt to conceptions – we have sufficient with equations!” But Kantianism is surely a cowardly reaction to profound difficulty!

Scientists have, in the past, had a much better and more fruitful approach, in which they develop theories from their experiments and extracted relations, but always knowing from the outset that they will inevitably incur shortcomings, if not significant errors within them, but

always judging them on whether they have improved the Objective Content over all previous attempts. In other words - that there is some important aspects or fragments of the truth within them, even if it isn't “the last word”.

The “throw the baby out with the bathwater” attitude is the unforgivable error of Kantian scepticism, for it inevitably drives investigators not only to Formalism and equations as Essences (or eternal truths), but also, and most importantly, to only those contrived and maintained situations, which will deliver their “absolutes”!

Instead of investigating Reality-as-is (as the ultimate crucial objective), or even effectively using contrived Domains as a pragmatic methodology, though always knowing that though these may well help considerably in comprehensive attempts at explanation, they will always be flawed by their isolated retrievals, and never deliver the true essentials of Reality.

For let is not kid ourselves, by nailing more and more elements in a real situation to the floor to reduce the variabilities involved to an absolute minimum, that does not mean that we are revealing separable Parts of an additive Whole. We are always reducing things to what they might be if nothing else was involved. And I do mean “Nothing Else”. Indeed, “ideally” the situation is actually taken so far from Reality that what results is pure Form alone – scarcely the essential stuff of a causal, concrete World!

And the proof is in how they talk about Reality in terms of these Laws! They assume that these extracted abstract “essences” simply add up to make Reality what it is. The full set of Laws determines what we see! They are certainly committed pluralists!

Now, the above (necessary) diversion is because I need to think further on neutral atoms and their “enclosed” set of neutralised, and opposite contents.

If an atom did have a stable elliptical orbit for its outermost electron, it would deliver properties associated with charge, even though, as a whole, it is neutral.

If I remember my professor’s lecture on Magnetism correctly (He was E.C. Stoner and it was some 50 years ago) he suggested that in a solid bar of iron, the outermost orbits in all the atoms were in random orientations, and the bar was therefore magnetically neutral too.

But, if you stroked it with a permanent magnet of some form, it would gradually become a magnet itself. The

individual outer orbits in the atoms had been aligned by such actions, and the resident magnetic property of those atoms was revealed.

The whole bar had become a magnet merely by aligning its quite natural components to reveal their evident hidden property.

Now this would not have been deduced from any normal bar of iron. Even though composed of electrically neutral atoms, they were not magnetically neutral. The individual atoms were indeed magnets themselves, but cancelled out when all were orientated into a random set of directions. Yet the orientation of their orbits could be very easily adjusted with a simple technique.

But, *NOTE: As with a gyroscope a spin will maintain its orientation, and will only be changed by the application of sufficient energy. And once re-orientated into an aligned state with all the others, it will stay as such. Indeed, it takes an inordinate amount of hammering and mistreatment to mix these all up again, and lose the overall magnetisation.*

It also meant that the search for the Magnetic Monopole is stupid! Magnetism is a feature of charge in a particular higher form involving motion. Without such a form there is no Magnetism. Now, if this is true, how must we interpret Electromagnetic waves?

For when analysed, they show two components of identical frequency and amplitude, but orientated at right angles to one another and the direction of propagation.

Surely that is our abstraction from something based upon charge?

The question is, “What?”

Clearly, it requires a higher order context than the mere presence of a charged particle?

Could it be something like the positronium, which has been detected in High Energy Accelerators, wherein a positron and an electron mutually orbit one another? And, if we consider the analogy with the atom, wherein a sequence of potentially occupy-able Energy Levels exist, and which can be filled to promote, and emptied to deliver, E-M radiation.

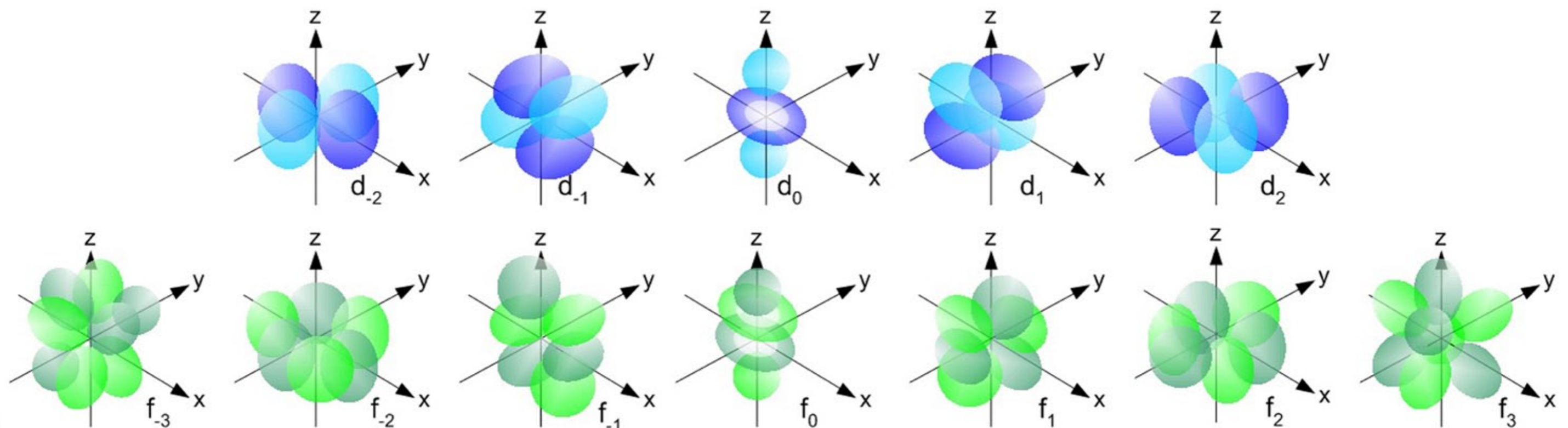
It poses interesting questions, does it not?

Now, though I am quite open to being proved mistaken, I have suggested a stable version of the positronium – the neutritron, identical in form, but entirely stable and generally existing at a minimal base level, with only enough involved orbital energy to maintain the entity mutually orbiting integrity. Now, I have also called this particle an Empty Photon for obvious reasons. For once having had its dual orbits promoted to a higher level, it then becomes the universally accepted Photon, and it has two possible modes:-

1. It can move, and

2. It can be stationary, relative to some overall higher universal paving of these entities in very large numbers. Indeed, this paving is something like a solid composed of atoms, but here it becomes an invisible “medium” of non-moving neutritrons.

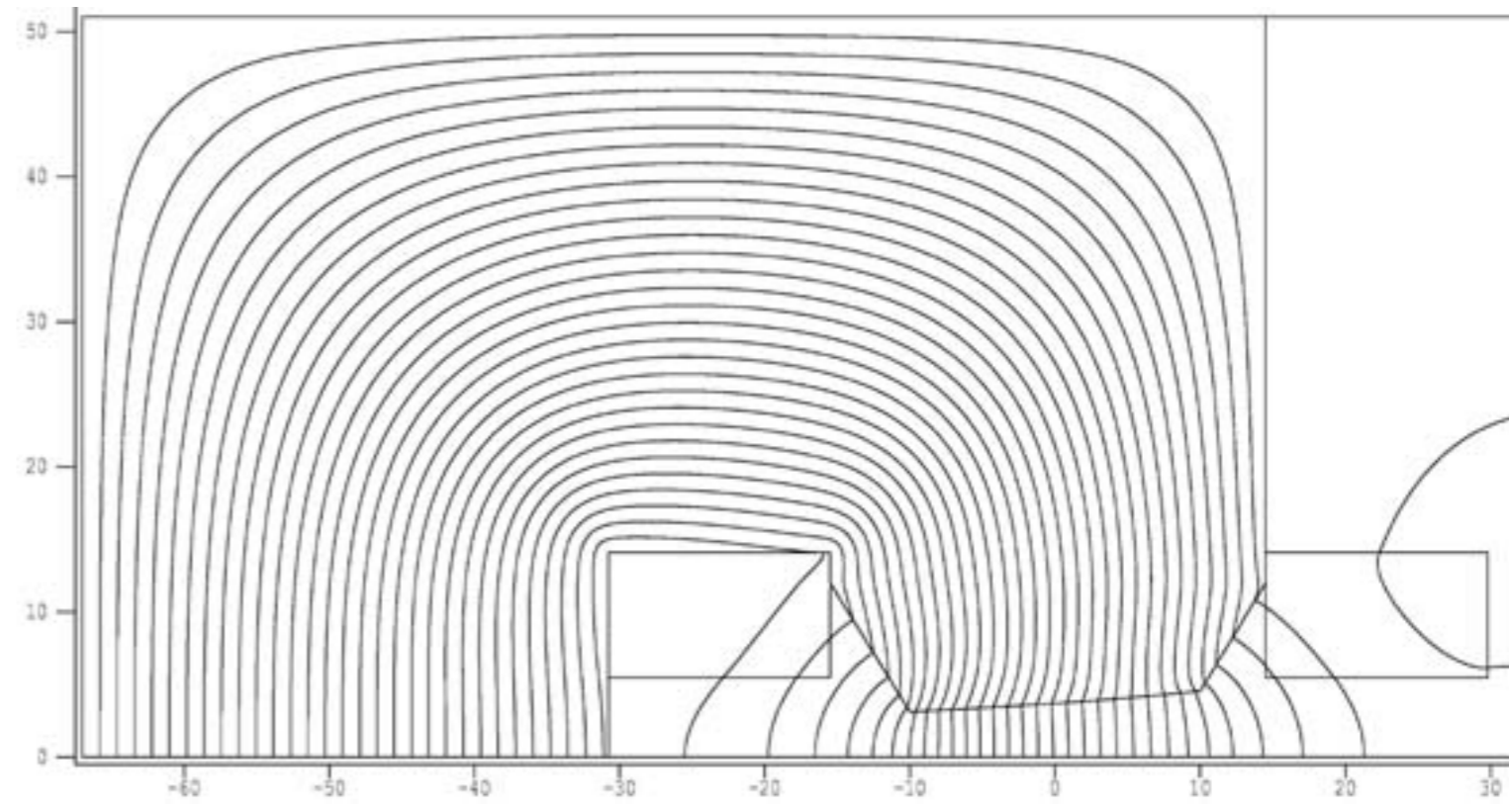
Now, all this is to present the problem – “Can we explain E-M energy in terms of this particle and its properties?”





The Neutrion as Source or Carrier?

What defines electromagnetic radiations and how is it transformed as it is emitted or absorbed?



In this work I find that I must be clear about the basic Magnetic Dipole.

Now, as described elsewhere “metallic” atoms with a single outer electron have been shown to deliver a kind of dipole with the orbit of the electron presenting a magnetic North Pole in one perpendicular to the orbital plane, and a South Pole in the exact opposite direction.

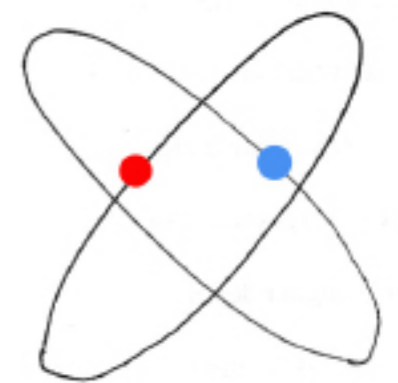
But such properties, extending over whole pieces of substances, occur only in this particular fraction of the existing elements, and only then doing so under very specially arranged circumstances.

Let us however consider the hypothetical neutrion – a binary mutually orbiting union of an electron and a positron. Now, these are the same size, and as can be seen from binary stars - two equal-sized, attracting entities can indeed form stable unions.

NOTE: But we must employ caution. Binary stars occur within a much bigger system, which has gradually come together and seem to possess angular momentum, more or less approaching a particular plane. This would be very unlikely indeed with neutrions and other such particles in the conditions in which they were formed, so their mutual orbits may well be much more 3D.

And, if by how they were initially mutually captured, their relative angular momenta was such that mutual orbits might, initially at least, be elliptical, as well as far from co-planar.

Not only that, but also all points in the orbits the two components could only be exactly in the same relationship to one another throughout, and hence would at least have to be exactly opposite, balancing out on either side of their common centre.



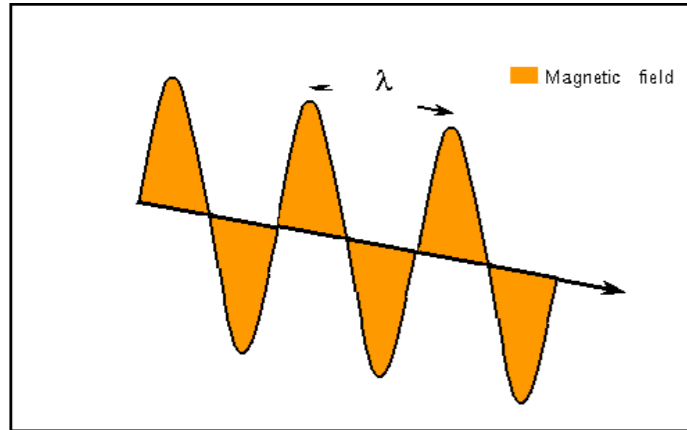
Now, as when we were talking about atoms delivering a magnetic dipole, surely the same sorts of magnetic dipoles would be produced here also?

But, as the magnetisation of Iron proves, the orientation of the outermost electron orbit in a solid would generally be fixed for each individual atom, but unless some uniformly present external field changed that, the individual orientations would be in random directions.

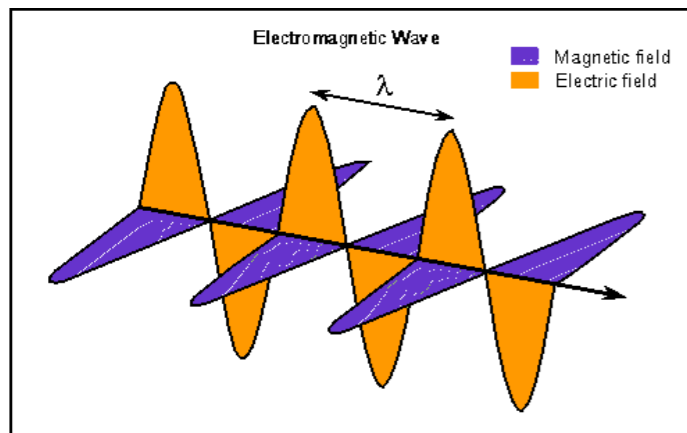
But, when considering the neutrion, things would certainly be somewhat different. For there would be no attractive force holding the particles rigidly together in some form of tight structure as in a solid.

In addition, there would be no dominant partner in this union. The two components would mutually orbit one another in two ellipses (perhaps?) The enclosed diagram of a binary star gives some idea of what might occur, but clearly some features would make the result somewhat different.

So, what might be the magnetic effects as our related particles orbit around one another? Clearly, they would always create a magnetic dipole, but it might vary in separation and orientation. Indeed, if you were to plot it for some chosen point it might produce something like the following trace:-



But, wait a minute! Isn't that part of the normally defined electromagnetic wave? The usual figure is shown below:-



Now, this begins to get interesting! Very interesting! For these are orbits, and we know that a charge moving in a circle produces a magnetic field at right angles to the plane of the orbit.

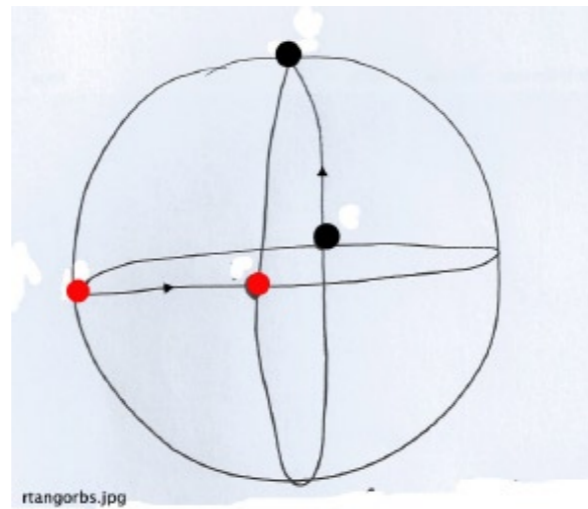
This is precisely what we must get from this joint particle!

And as the positron and the electron are oppositely charged in their separate orbits, it seems likely that these fields might well be compatible.

Now, as this is surely breathtaking, let us spell it all out! Instead of some magic propagation of such a complex waveform across totally empty space, we now have a paving of these special particles, which, so far, seem to be able to handle this, but also can be said (at least in one way) to actually DEFINE it!

But clearly, it isn't quite "in the bag" just yet! There are many things yet to be sorted out.

It looks promising, but it requires ideas of the forms in 3D space of the mutual orbiting and their effects, both as an individual entity, AND in relations with and transfers to and from other entities.



If the positron and the electron form orbits as shown here (at right angles) then the magnetic dipoles, so caused, would also be at right angles.

Now, we know that E-M radiation has two vectors, also right angles to one another, but there one is magnetic and the other is electrical. Now, the only way such an orbit shown above could deliver a sinusoidal variation was if the orbit itself was in rotation about a diameter (precession). Then presumably, the effects would, over time be sinusoidal.

But also, we have here two orbits – one of an electron, and the other of a positron. So, two questions are as yet unanswered:-

1. What will the positron orbit produce?
2. How do we get an electrical sinusoidal effect also?

Question 1 is the most important! What does the positron produce? Clearly it is also a positive "current" in a circle, so maybe it produces the opposite of an electron orbit?

[But note, that would usually be by an ordinary electron moving in the opposite direction, and not a positively charged positron.]

Or may be it produces something else, and if so, "What?" If I was purely a mathematician, I might be seduced (by Symmetry) in assuming an electrical/magnetic symmetry between the two orbits, but I am a physicist and need a great deal more than that.

You can see how persuasive such formal reasoning can be. For then we would have two vectors – one electrical and the other magnetic, and if precession were to be included, we would have sinusoidal variations available from both.

Now, that is, of course, complete speculation, and it mixes up what happened in orbits with what happens when promoted orbits decline to a lower level, giving out "radiation". But, in these considerations is also always contained in the orbits within a neutritron.

So, somewhere here might be a coherent explanation.



A Non-Formal Distortion of Space?

Why distorting Space-Time to deliver gravity is purely abstract and what to do about it

Now, if it is true that Einstein's Space-Time, and his distortion of it to deliver Gravity is a purely abstract construct, why does it fit?

And, if the efforts to tackle many of the ambiguous areas in Modern Physics via a physical paving of Empty Space DO indeed reflect something real, then could there be an alternative based upon that supposedly ubiquitous presence?

What kind of distortion of such a paving might explain Gravity? Let us investigate the possibilities, more generally at first! The neutrutron (the supposed multiply-present unit of that paving) is composed of a mutually orbiting union of an electron and a positron. Thus, it contains within it matter, antimatter, and both positive and negative charges. But, in addition to that composition, these are not merely like currants in a cake: They are in a pair of mutually affecting orbits, and we can either consider these to be constant

features, OR we can, as with everything else, consider that there are limits and possible transgressions of their basic stable state.

The question is, "What kind of changes might be possible, and where might we find models to suggest what these might be?" Clearly, there are several places to look – from stable (and somewhat similar) entities such as atoms with their contained orbiting electrons, all the way to stars and their planets or even Binary Stars.

All of these present both possible phases and even dissolutions. Can we, therefore, make useful comparisons? Let us muse on the more obvious variabilities first! For example, the orbits with our neutrutrons could be anything from circular to elliptical, and as they are orbiting charges we would expect consequent local magnetic effects.

How would these mutually interact? And with two entities of equal size, we would assume that the orbits would also be of identical proportions too. They might well be different from cosmological orbits, in that they could diverge from a given plane, and be distinctly 3D. And, as with evidence from all other levels, they could even precess – the orbits themselves could rotate, with consequent properties. And as well as such self-contained possibilities, there could even be external effects caused by the close proximity of something else. For the physical World abounds with induced effects and even consequent causative feedbacks.

Indeed, it would be a very unusual phenomenon if it were not effectible in a whole series of ways, and consequently changes in its effects on other things too.

So finally, we see that the possibility inferred from the start of this muse – that this paving might well be affected by the presence of other vastly more massive bodies moving within it.

Let us, for a moment, consider this author's proposed explanation for the Double Slit phenomenon with Electrons.

For there, this paving became the means by which this could be explained physically. The basis for the alternative explanation was that the paving of so-called Empty Photons (Neutrinos) could be continuously disturbed by the passage of one or more electrons. And this E-M disturbance would then run ahead of the electron(s), pass through both Slits and thereafter interfere on the other side. It would be continually maintained by multiple disturbances until the electron encountered the interference pattern, having passed through one of the slits, and was deflected *or not depending on its passage through) to produce the final pattern on the detection screen at the far side.

Now, this is quoted because it not only involves the proposed paving, but it rests on the sequence of causations and reciprocal affects, which finally produced the "inexplicable" results.

In addition, of course, if true, this explanation would scupper the Copenhagenists so-called explanation using Probability Waves, and expose them for what they really are – NOT reflections of a magical Reality, but formal patterns that FIT and can be used to predict – very different things indeed.

For what happened with Bohr and Heisenberg, and faithfully followed by the host of mediocrities, who in their hearts are really idealist mathematicians, was that when confronted with major crises in their subject, they naturally retreated as far as they could into their safe and certain World of Pure Form alone – Ideality, where Mathematics dwells and reigns supreme. They covered their evident retreat with what both mathematicians and

physicists are notably terrible at – Philosophy. They didn't have to be very good: just better than the sheep who constitute a substantial majority in Science. And, it didn't help that the Copenhagenists major opponents, led by Einstein, were also deeply wedded to Form as "determining Essence". Indeed, Einstein was the agreed King of Mathematical Physics.

But, if all this is true, then the downfall of this now worldwide consensus will have to be by the discipline they misused to cover their running away – Philosophy. And it is beginning to look as though the situation is nearing its next inevitable crisis, which our Copenhagenists will simply not be up to opposing effectively. For though this crucial task cannot, and could never, be left to academic philosophers, there is a strand within that discipline which certainly could.

It was even started at the very birth of the discipline in Ancient Greece, with people like Zeno, but raised to a remarkable Level, first by the idealist Hegel 2,000 years later, then by historians such as Michelet, and the biologist Darwin, and then finally, all within a single generation, inverted by Marx and Engels into Dialectical Materialism: it was clearly becoming the richest and most universal approach to Reality.

Yet the political slant upon this New Philosophy caused it to be consciously sidelined, and the responses to the crises at the end of the 19th century in Physics forced not the necessary next step, but an almighty retreat – by the usual means Kantian Agnosticism!

But this ground (as is clearly evident) is still wholly unfulfilled! In spite of exciting new gains, made in a wide variety of areas, these are soon forgotten, and NO really coherent and comprehensive advances in this standpoint have been achieved. And the gains have been insufficient to precipitate the major revolution required.

As ever with Real Science (and Philosophy too) we do NOT deal in Absolute Truths, but the ever better construction of a path towards that objective, with ever better Objective Content.

So, though a current attempt to substitute a concrete alternative to Einstein's abstract distortion of Space-time, is surely more scientific, it is NOT being pursued!

So, searching the references does not deliver what is required. We must at least attempt to do it ourselves!

If something really occupies Empty Space, and is the basis for all phenomena from E-M propagation to Pair Productions, Dark Matter and the rest, why shouldn't it be affected by the close proximity of truly colossal concentrations of matter?



While they are building their ever more energetic Accelerators, where are the researchers into the effects of (relatively) static proximity upon whatever constitutes Empty Space?

In a recent issue of New Scientist a science reporter has gathered together various small attempts in this direction (most of which were concerned with the Casimir Effect). The “explanations” for their various findings were frankly abysmal, but they involved the “squeezing” of Nothing! If, on the other hand, there was indeed a paving between the plates in such experiments, the question would be transformed into, “What effect on the elements of that paving could be happening?”

Notice, once again, the usual ubiquitous “stable conditions and behaviours” must be inappropriate. We would be approaching and maybe passing the limits of such stability, and changing what becomes possible.

To give another example, I spent some time working with Jagan Gomatam chasing Mathematical Chaos as the “explanations” for some very interesting researches into the breakdown of stability (in chemically reacting liquids and in living hearts approaching a breakdown in their systems (but, of course, such “solutions” were of the same ilk as Einstein’s distortion of Space-time). They were still well within stability, even if at its very edges, and displaying incipient formal dissolution.

The patchwork quilt of relations “hovers” unstitched over Reality. When surveyed overall, it looks as if it is a connected and integrated Whole. But, every single gap is un-bridged by any of our formalisms: they are restricted to within their own patches only!

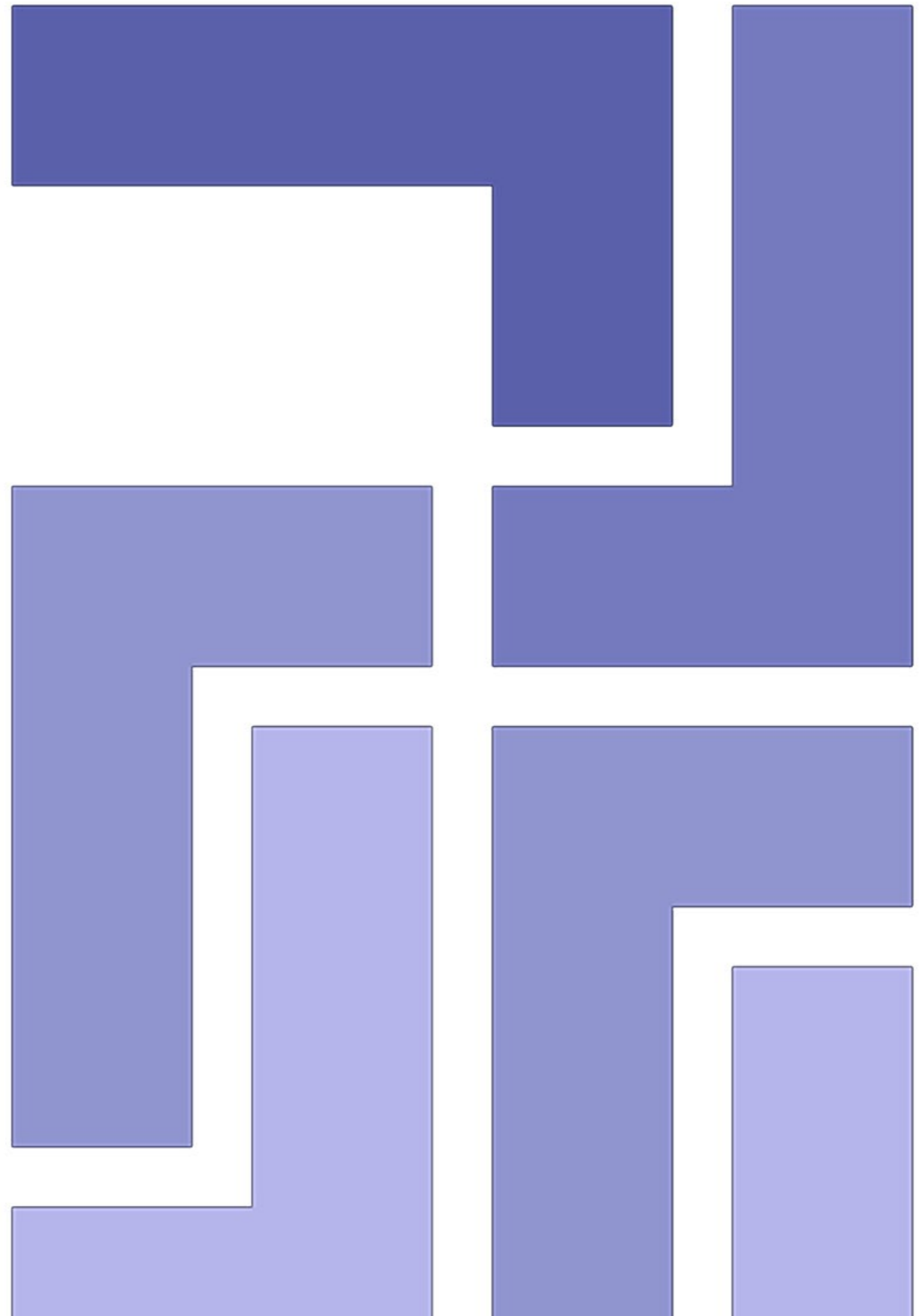
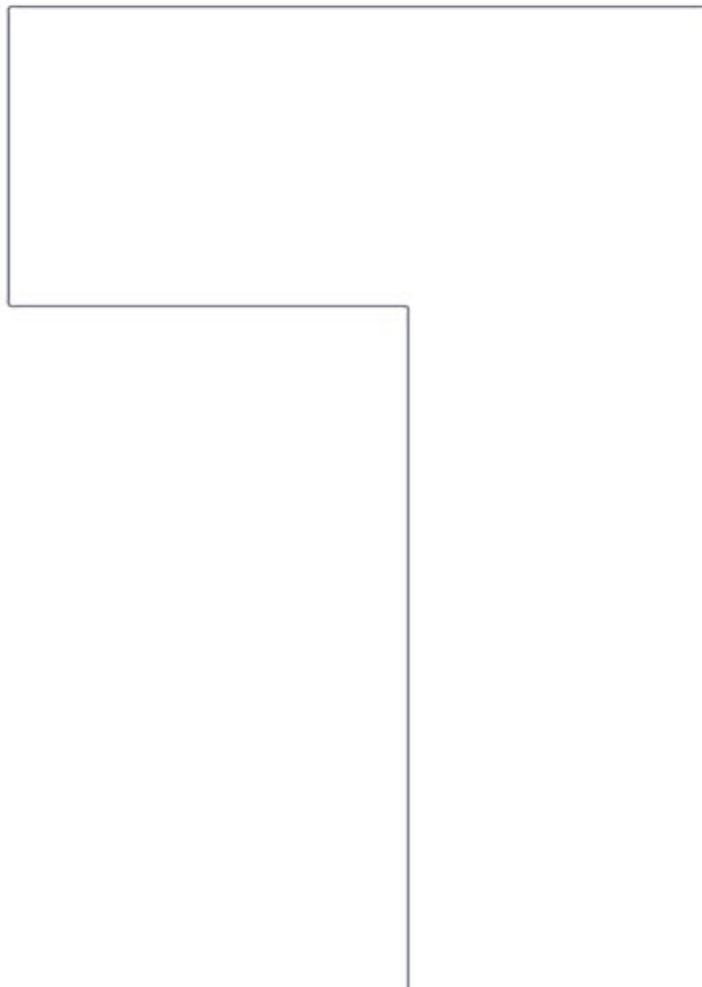
Postscript:

In a recent issue of the magazine New Scientist (2852), various researchers were investigating “Something from Nothing”, the most interesting being that when two plates in a Casimir Effect experiment were brought together in a vacuum, at a certain vey close, but not touching approach, and merely this proximity was sufficient to cause a flash of light – indeed a photon had been produced, and the problem was to explain how this could possible occur.

Now, an alternative suggestion by this author assumed his usual position of assuming that the vacuum is never empty, but actually paved with invisible, but definitely real and concrete particles termed neutrित्रons (Empty Photons). Now, though that paving (in its simplest model) is comprised of a close-packed, but non-touching set of stationary particles, that is very likely to be an oversimplification, especially as, when filled with a quantum of E-M energy, such particles have been known to (and shown to) move, then it is probable that many small and usually ignorable translational or even bodily oscillatory-type may also be common, if very tiny.

Now, when compressed between the plates, it could be that many of these small movements could be concentrated, and became even sufficient to be absorbed into one of the Empty Photons and raise it to a recognisable Photon of light, and the consequent propagation from Empty Photon-to-Empty Photon would then be observable as a “flash of light”

Now, the assumption of such an external effect upon these “empty vessels” could also be relevant in other circumstances, maybe even the proximity of very large massive objects.



Reconsidering Forms

with respect to
E-M Radiation

Here is a fascinating Problem!

What is a Wave Packet when considering E-M radiation?

I have to admit to struggling for years attempting to mathematically construct one. Of course, I knew how to make a Wave Packet, using ideas like the Fourier addition of many waveforms of different frequencies and amplitudes, but that couldn't be the gobbet of E-M radiation requiring a given frequency. It seemed unsolvable, and my stack of notes on the subject still lies there unresolved. There was still a problem of the form of a quantum of energy to be solved.

Clearly, something was very wrong with my assumptions and objectives!

Only much later, with the problem of the Double Slit Experiment with Electrons to solve, did I

consider a very different alternative: the gobbet of oscillation energy with full E-M characteristics could be contained within some form of a receptacle, and these could exist "empty" as well as full. There just might be Empty Photons!

Of course, individual "particles" of light going in all sorts of directions could never fit the bill. They had to form some sort of extended "medium", but not continuous like a liquid, but more like a 3D pack of billiard balls.

Now clearly the old Ether Theory had long been scuppered, but this would indeed be very different.

First, it would be a paving of these discrete entities, and they would have to be undetectable when "empty"!

So, without actually defining these entities, apart from the odd title of "Empty Photons", I managed

to get somewhere with my task on the Double Slit. I didn't think for a minute that this was correct!

But, it was at least Science, and not the Kantian Idealism of the Copenhagen School, so it was certainly worth pursuing.

Needless to say, in spite of a measure of success, the theory generated a host of further problems. So, leaving this entity as crudely defined as it was, just would not do!

I had to find a particle that fitted the bill: an invisible particle without evident charge or mass, which nevertheless could hold a given quantum of oscillating E-M energy. What could that be?

I decided that it would have to contain both +ve and -ve charges, AND both matter and antimatter, and for these to co-exist they must be sub-particles involved that were orbiting (like in the atom).

The particle almost defined itself via its required features. It had to be tiny, composed of particles of opposite charge and matter: it had to be a mutually orbiting pair, composed of an electron and a positron.

Clearly such an entity would have a minimum base level for its mutual orbiting, but surely that could also be precisely how it could contain E-M energy. The orbits could be promoted to a higher energy level! Now, though all this sounded O.K. it wasn't, of course!

The two essential elements of the definition – the internal structure and the paving didn't sit well together. A purely backwards definition such as this would always imply consequent contradictions.

I was forced into a long and essential period of research to attempt to transcend all the problems and hopefully break through to a new Level. This paper begins to consider just one of these difficulties: it is concerned with the relationship of electron orbits and E-M radiation. How do they relate?

Whatever is the latest version of electron orbits in atoms, somehow a form of cycling around a relatively stable nucleus has to be restricted to a series of energy levels, and the promoting to higher levels, and the demoting to lower levels, has to conform to these rigidly fixed values (for each kind of atom).

Now, either the internal structure of the atom governs these discrete levels, and if so, "Why?", or the only way that such internalised energy can be "removed" from the atom may itself be the determinator of these level transfers. Or, let's face it; BOTH may be involved in different ways!

NOTE: remember the Empty Photon cannot vary as atoms do from element to element: they must be the same for all, so that they can carry the whole range of frequencies. So, if we first consider the former case, then the known form of energy transfer from the atom must be explained in terms of its internal structure, and that is not at all obvious.

NOTE: Perhaps De Broglie's ideas may need to be reconsidered here. But we also have to be careful whenever we are considering energy transfers, because it is clear that surprising embodiments of contained energy can result from transfers originating in something very different in its internal structures.

As you can see, it is a classic example of the "chicken and the egg" syndrome. Too much unidirectional causality can mislead us profoundly, and if, as I now insist, I treat Reality holistically, and reject the usual reductionist/pluralist causal view, then you have to frequently, and regularly, "turn it on its head, or rather on its feet" to see things clearly.

Now so far, I have only dealt briefly with the initial option, that which made the atom source determine the precise nature and form of the emitted energy, but the alternative has to be the nature of any direct recipient or "medium" of such energy as also involved in its determination.

Now classically, (and even quantumly) there is no such recipient – no ether and no intermediary of any kind. But, I am aghast at the problem if there is no such entity involved.

In very different circumstances – the Double Slit Experiment with Electrons, I could find no proper scientific explanation without an extra participant, and this appeared to be some sort of universal paving of all space within the Universe by innumerable, invisible and literally undetectable entities. Now the Ether Theory suggested something similar, but

that was involving an invisible, massless, propertyless, yet elastic, and continuous medium. And that was finally rejected as being totally without any evidence for its existence.

Yet today (in 2012) various phenomena observed within totally Empty Space require explanation, which cannot be achieved when the vacuum is considered to be totally devoid of anything.

I therefore attempted to devise a particle, which would fit the bill. It was, as already mentioned, a mutually orbiting union of an electron and a positron.

Now this would bring together in a single entity equal amounts of positive and negative charge, and equal amounts of matter and antimatter. And, I considered that such a particle would be undetectable EXCEPT if it was the recipient for energy delivered by an electron orbit within an atom, giving up a quantum of energy. Clearly, the dual orbits could be promoted to a higher level to contain energy.

Now, I must emphasize that I am here talking only about what I conceived was necessary to cope with the Double Slit phenomenon, in the given case using electrons as the moving components.

I called it initially an Empty Photon and had no idea of its internal composition, only its necessary role there. It was, of course, entirely hypothetical, And I was forced to consider exactly what its composition might be, and

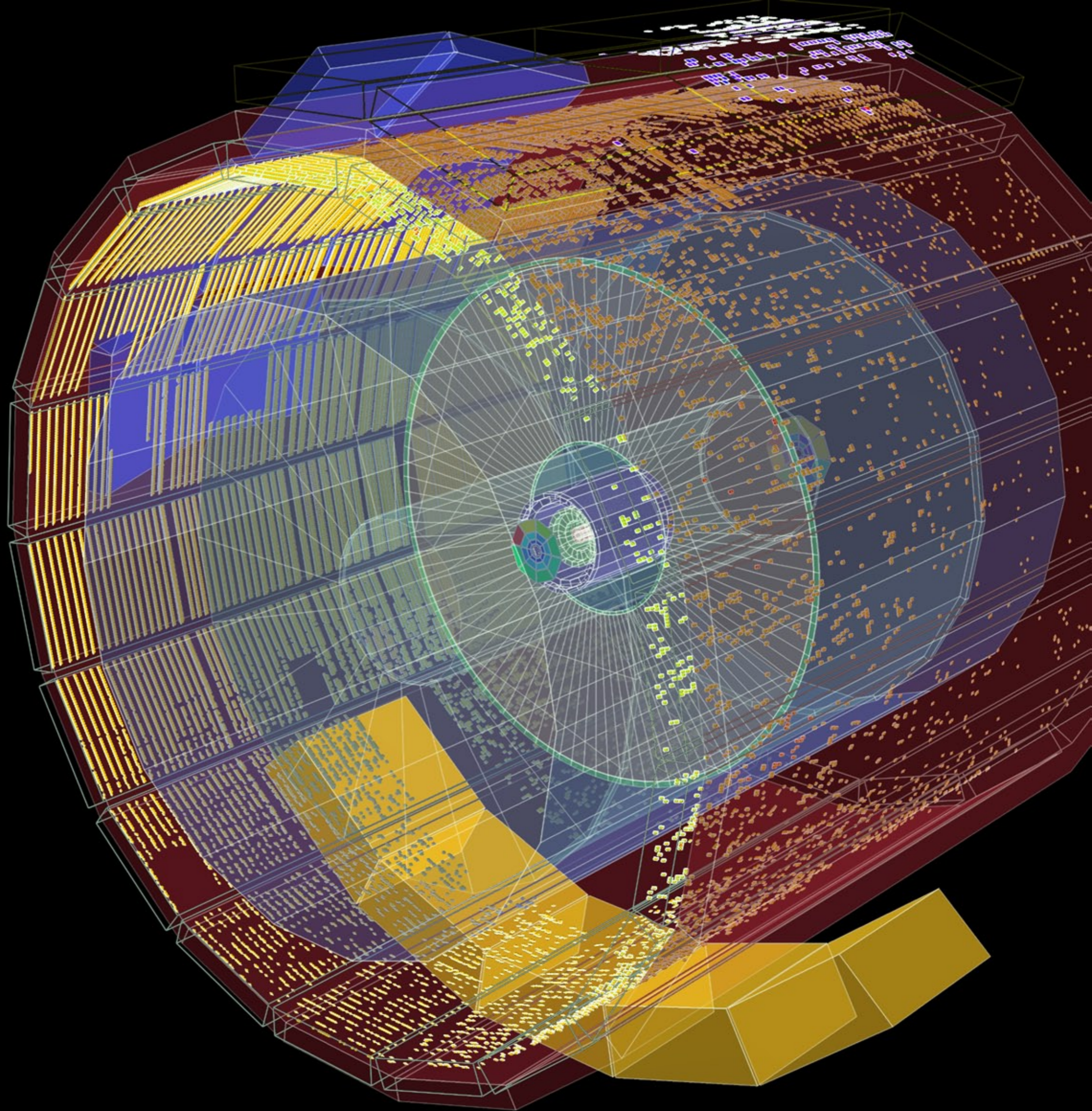
I extended my description to the mutually orbiting pair idea. But, on mentioning it to a friend and colleague, who is also a physicist, he was able to draw my attention to the positronium, which was identical to my dual orbiting hypothetical particle, but was very high energy and an extremely short-lived lifetime before it dissociated again into its component parts.

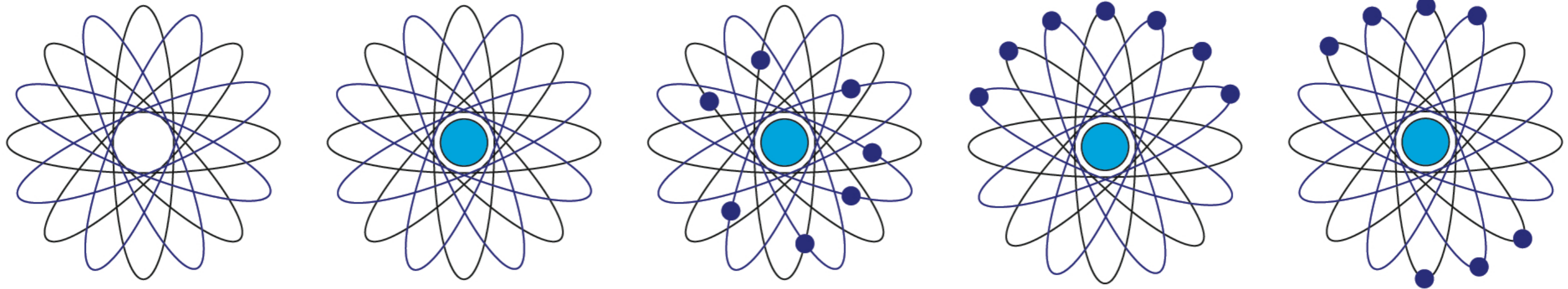
This initially seemed to scupper my idea, until I recalled just how critical I had always been of Accelerator research in supposedly revealing fundamental particles of Reality. I have always said that such research was just as likely to produce new forms that could momentarily come into existence in those exotic conditions. And, of course, the positronium had to be seen with similar scepticism.

I took confidence and stuck with my neutrutron, as I now renamed my Empty Photon, and indeed suggested that it was not only possible and extremely stable, but also ubiquitous, paving the whole of our Universe as a regular end product of many of the processes of the Universe's creation.

Now this rather long introduction to Option Two was absolutely necessary, as it too would have to match the nature of E-M radiation as we currently conceive of it.

But now, it would (perhaps) be to some extent at least the partial determinant of that conceived of disembodied form of E-M radiation.





Building from the Bottom Up:

The Atom

We have a fixed $-ve$ charge cycling around producing a fixed magnetic effect perpendicular to the plane of the orbit. Now, if this “directly” gives out a quantum of E-M radiation, it must somehow produce the accompanying form alongside. How does it do it? For many, many reasons it is a conundrum.

First, why does it vary $+ve$ to $-ve$ in the electrical? (You can monitor the charge field at a particular point over time produced by such an amount, and it will certainly vary between $-ve$ and $+ve$ depending on the current position of the electron. But, surely that isn’t what we are talking about here?)

Second, why does it vary its magnetic polarity in the same way from one extreme to the other? (Again, with a fixed orientation orbit, this couldn’t even happen at a given point.)

Third, What is actually varying?

So let us decide that only two things are given out directly by the electron orbit as it drops from a high level orbit to a lower one:-

1. Frequency, and
2. Energy

Also, let us see what kind of receptacle could receive this goblet of energy (with, remember, an intrinsically appended frequency) and impose upon it what we diagnose as disembodied E-M radiation.

Our suggestion is that this may be done by the receiving entity – the neutrino, which has both an orbiting electron and an orbiting positron. The question is, “How?”

Well, we have both $+ve$ and $-ve$ there in the receptacle, but what might make them “deliver” the precise forms we observe as E-M radiation? Two possibilities seem to present themselves.

- I. The receiving orbits are not planar and fixed, but complex
- II. The natural mode of existence involves precession.

In other words, the full properties of existence of the E-M radiation are NOT the product solely of the orbiting electron in the atom, but also the consequent product of the receiving neutrino, and exactly what it receives from the atom (which we have limited to Frequency and Energy alone.

Now, I have been trying to work out what the form of the neutrino’s double orbiting actually is, so that it does depart from the single plane, but I haven’t sussed it as yet.

And the trouble with strict precession poses the question, “Would a simple rotation of the whole system suffice to deliver the trace we are aiming for?”

If the energy from the orbiting electron in the atom

delivered directly to a neutrino, then the above would be fairly easy (I think!). The energy would be merely to disturb (inflate) the pre-existing, natural electron and positron orbits, as an integrally linked system, into a higher level, and energy directly governs frequency in a quantum, so presumably the transfer would promote both the orbits to such a level as to be containing somehow the same frequency as was determining the transferring quantum. But though it might intrinsically keep that determined frequency, the energy would have to be shared 50:50 by the integrated orbits (and, of course, the intrinsic frequency would only be significant when the goblet was released to DO something).

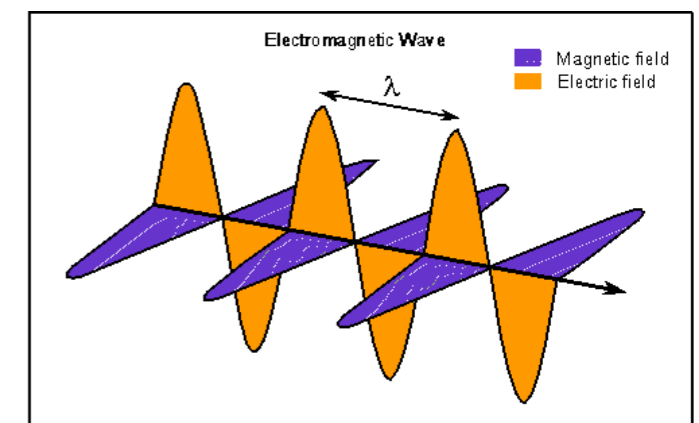
Clearly, the determining goblet is given by $h\nu$ (energy), but it would be modified to agitate both the receiving orbits. Similarly any transfers from the neutrino would be by the same $h\nu$ again, but exactly what it would affect might be very different.

NOTE: Elsewhere, I have shown that in adding two sinusoidal components together, both of a given single frequency, you get either:

1. An circular or elliptical orbit if they were at right angles to one another
2. A single resultant sinusoidal form if in the same direction

The question that still resonates as vital, is the actual nature of the positron. Does it get attracted or repelled by ordinary matter? For if it is attracted then gravity affects both kinds of matter in the same way.

Also is there a magnetic effect given by an orbiting positron? And if so, is it the inverse of that supplied by the orbiting electron?



The attraction, if that were the case, would be that the neutrino could supply both $+ve$ and $-ve$ charge and N-S and S-N magnetism. All the elements required for E-M radiation would be present. It would then (I hope) be easy to produce a sinusoidal variation as in both vectors of E-M radiation.

The difficulty is, as I think I have inferred throughout the above, that there are three things we are considering:-

1. The Physical system within the atom
2. The physical system within the neutrino.
3. The effects on other things

Clearly, if our conception of case 3 is what gives us our idea of disembodied E-M radiation, then we must not get it confused with 1 or 2, which have only to deliver what might subsequently take this form when it acts on something else. [Also the seeming similarity between the single relevant orbit of the atom and the dual orbits of the neutrino, may not be as significant as we initially see them to be. The common coin of quantum carrying Energy (with an intrinsic frequency) may be sufficient to agitate all sorts of conducive systems, and deliver what resonates exactly with them.

Further Thoughts on Empty Photons

Now, let us take a brief step back for a moment, and reassess our hypothesis of a Universe-wide paving of **neutrtrons** (Empty Photons). For it has already been dismissed as yet another version of the discarded Ether Theory, but that is quite clearly a mistaken assumption.

In the Ether Theory, absolutely no idea of what that medium was composed of could be included: it was what it did – propagate E-M radiation across the whole Universe. Yet in the Empty Photon hypothesis there is certainly a very complete description of its components particles, AND, crucially, this is a particle, which is known to exist and has been observed many times in accelerator experiments.

In that context, however, it was termed the **positronium**, and consisted of the mutually orbiting union of one electron and one positron. But, the form proposed for the Empty Photon is significantly different in one very important aspect. It is very stable indeed, compared with the form in accelerators, which only ever exist for a very tiny period before dissociating back into the two particles

of which it is composed. Indeed, it is the ability to reliably recognise both the positron and the electron (so produced) that identified it.

Now, for most of my life I have been amazed at the narrowness of sub atomic research. It is always based upon some vague idea of the clearly totally unobservable Early Universe, wherein stupendous Energy was thought to be present, so that the only way to investigate that no-longer-available scenario was clearly to make faster and faster accelerators to recreate that situation. But, then to cap it all, the only thing they could think of doing was to smash elementary particles into one another at ever-higher speeds and study the debris formed.

Now, my initial reaction to these experiments was not that they would reveal early origins and development, but, on the contrary, they would be making wholly new entities and studying them. And, though my alternative has certainly developed since that time, it has NOT departed from that crucial criticism.

Indeed, though the evidence of the positronium was supposed to scupper my alternative, it didn't, and the reasons were sound.

I had to consider the positronium as one of these high-energy exotics produced by the accelerators, and I stuck to my suggestion that a much commoner version of this particle – the neutrtrion, would be completely stable, and would be tremendously common, and existed throughout the Universe at it lowest possible level.

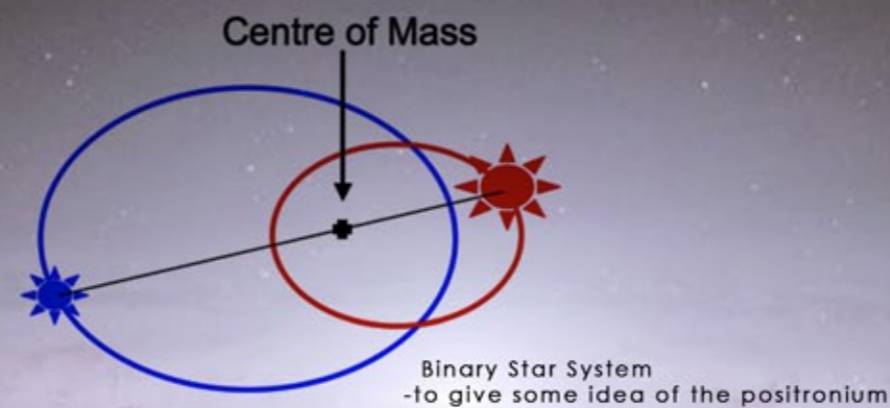
Its initial name said it all: I called it the **Empty Photon**. And this version was suggested to “pave” the entire Universe, and deliver the propagation of E-M radiation, by induction – a quantum-at-a-time. This, quite clearly, was not a version of the Ether Theory.

It took account of quanta, and delivered a fully defined “paving” of already known particles, though if a different mode and extremely stable.

So, let us briefly look what it is supposed to do – propagate E-M radiation.

With identical features of propagation to what is readily demonstrated in experimental investigations, it turns out to do it by quite a significant and indeed radical change. Instead of a moving Photon carrying its quantum of energy from source to target, it collects the quantum from that source into the nearest neutrtrion of the paving, and without any movement of the particles, passes it on photon-to-photon by induction giving the identical appearance to a single moving photon. Just as we initially suppose that water is moving laterally in a wave when it is propagated over a body of water, yet it is only the disturbance that is passed on.

So, once we have avoided immediate rejection of this proposed entity and its association into a universal paving, we are forced to see what else might be covered by this supposed “invention”.



Empty Photons *En Masse*

Forming an Entirely Stationary Paving in Space

The latest “News on Nothing” in a recent issue of *New Scientist* (2852) seems to have it producing photons of light in some way from it and nothing else!

These are usually in investigations of the so-called Casimir Effect. So, perhaps we should take our current model of what we consider to be the main component of Nothing (Empty Space), and see how it relates to these reported phenomena.

First it does not move: it is a part of a paving constituting that Empty Space and is a real and observed particle, consisting of a mutually orbiting pair, made up of one negatively charged electron and one positively charged positron, with their orbits at the lowest possible level consistent with the continuing survival of the combined entity.

Now before we go on to how this copes with propagation, we should explain why it is never seen and hence not considered to exist.

Its pair of opposite charges cancels out, making it neutral. While its matter/anti-matter union also hides the presence of any matter too. It is undetectable because it is invisible and unreactive.

Now adding extra energy to such an entity (a quantum of E-M energy for example) would simply promote the mutual orbits to a higher level, and if it could be given, in addition, some translational momentum too, it would

then be similar to the usually conceived of Photon. But that would have to be a single particle moving through totally empty space.

With the new conception of that space, which consists of a stationary paving of these “photons”, which are normally totally empty of any such a load. The paving is of empty Photons neutrinos.

When considering such particles at their lowest possible energy level, we would then have totally inert, non-interacting receptacles, with normally NO energy of translational movement at all.

Now, it has to be said that these particles are considered to exist across a wide range of states – from very high energy content, moving at speed and existing only for the tiniest fraction of a second, before total dissociation into its component parts, all the way down to a minimum energy state, without any translational movement (practically), and totally stable, and in this latter base state forming a Universe-wide paving, and being the non-moving medium for all E-M radiation.

The question arises, “How might these entities interact with one another when in very close proximity, and at minimal energy from every other respect (i.e. internally)?”

Now, in very large numbers, and very close together, you can imagine that over long periods of time, any

remaining traces of translational energy would be shared out due to multiple impacts, until all of them were “almost totally stationary”, indeed forming a natural “paving”.

Now that is not a normal condition for most other particles, but these are unique “propertyless”, very small and underactive, so it certainly could indeed occur. Still, we must again ask, “Once in that close packing, how might they then interact?”

Well, perhaps the most telling reason for their definition as such was that they could indeed form a kind of “medium” for the propagation of all E-M radiation, and the internal orbits of every given particle would make this entirely possible.

Propagation would be by the absorbing a quantum of E-M energy into one of these entities, wherein it would inflate the internal orbits to a higher level, producing a Filled Photon (similar to the usually assumed form). But, as with the similar promotion of electron orbits in atoms, that would be stable and, if a recipient was close at hand, it wouldn’t stay that way for long, it would immediately be passed on by induction to another adjacent “empty” entity.

The speed of this induction would naturally be a constant, which we would call the Speed of Light, and clearly it would be a property of the paving, and independent of the speed of its original source. Such

inductions would require no actual contact between the entities of the paving. It is conceivable also that there may be minimal losses of energy involved in these transfers, but tiny movements of the individual particles may well be sufficient to supply any such required extra energy.

Indeed, in such a state and very close together it is conceivable that some slight attractive force may be active, but in total surroundings of similar particles, could not in any way accumulate. So, though it would keep that paving together, it could not further concentrate it down to any very tight packing, nor would there be any translational moves, either overall, or even by individual particles.

Now, with this idea of what “Nothing” is, we have to ask if it is consistent with the production of a classic photon of light (a filled Empty Photon) in the special Casimir Effects currently being studied? And, could sufficient energy be concentrated into a single Empty Photon, so that it would be detected as a quantum of light?

The most obvious way that the production of light could occur would be for any residual translational energy to be somehow “forced” to add-up, converting from many translational energies into a single promoted internal orbital energy, and thus promote a single Empty Photon to a filled version. Thereafter the induction of this energy from this photon to the next, would be seen as a single moving photon of light.

Now, of course, the conception of such Empty Photons (neutrinos) is a hypothesis, as is their mode of existence as a universal paving within the Big Bang Universe.

While the short life high energy version is established (as a positronium) in High Energy Accelerators, so the basic concept of a union of an electron and a positron is no longer merely a hypothesis, but has been observed many times. But because, as with many other particles created in Accelerators, they have minute lifespan, it is assumed that such are the only possible modes of existence.

Now, this is extremely unlikely, because we are multiply reminded at every level of Reality from Stars to Life that energy in multifarious forms can indeed actually transform (“modify”) the context mode of given entities. It seems very shortsighted to allow High Energy Physics to determine all possible states including that of Empty Space itself, far from major concentrations of matter.

Indeed, this theorist has tackled a number of supposedly unsolvable problems in Physics from the Double Slit Experiment to Pair Production and Pair Annihilation, all the way to E-M propagation through a vacuum using the concept of this version of these known particles.

Now, we have had to extend our original conception of a paving of these entities at a minimal orbital state to see it as acting as a “medium” for E-M radiation by induction, PLUS the promotion to high transitional speeds in special circumstances, and finally to the dissociation into its individual component parts, if the orbital energies are promoted too high.

What may be the effect of an enormously large planet in the midst of such a relatively eternal paving – especially as that planet will be entirely of ordinary matter alone? Could it, indeed, distort the individual neutrinos in some way, and produce that planet’s gravity field? One is pressed into thinking then of the paving being like some ocean, held together, but subject to such distortions from far and near.

NOTE: Also, without the stability of a vastly larger centre (as in the atom) the individual orbits (of equal-sized particles) might not only be elliptical as shown in the diagrams below.

But it might also precess about their common centre. The question then arises that there might be phases through which they pass depending on context, and in a paving, there could be both random mixes of these phases, or in very special circumstances such as in the vicinity of a truly massive object, they could be influenced to “line up” as in magnetism with atoms.

And there is yet another possible avenue of research! How did electromagnetic radiation get its peculiar

features? For it “comprises” two waves – one electrical and the other magnetic, and their identical amplitudes are at right angles to one another.

Now, this doesn’t look to me like the most general pattern of all “disembodied energy” Indeed, it looks decidedly embodied! Does it to you?

It looks very constrained indeed – as if it is that way due to its context, perhaps its receptacle!

In considerations elsewhere on Magnetism (see the recent companion paper by this author), it became clear that the search for a magnetic monopole was as impossible as that for the mythical Higgs’ Boson – magnetism being clearly a mode ascribed to moving charges – an aspect of electricity, and not a separate property at all.

But it therefore means that our billiard ball concepts of particles will, once again, not suffice.

Just as the concept of the atom had to be completely revised into a complex system, so might the ubiquitous Photon.

NOTE: It is worth stressing here that such entities as the atom could never have been deduced from its separate components: it is not only not obvious – it is inconceivable from the sole study of its components and their properties. Indeed, that transition to the first atom was indeed a significant Emergence, and any such reappraisal of the Photon would if necessary be because of a similar event happening there too.

After all, how is it currently conceived of and what is the suggested alternative?



It is a particle of light, somehow carrying a gobbet (a quantum) of such energy with a complete dual oscillation of two vectors, one electrical and the other magnetic, with a rigid, mutual interrelationship, that also manages to deliver wave-like propagation and wave determined effects such as interference.

Now, I don't know about you but that seems incredible to me! The Copenhageners' frig will simply NOT suffice. To deliver a purely formulaic description of such properties is not, repeat NOT, an explanation! These retreaters have lost their conception of Science as being attempted explanations of Reality, and have replaced that ever-improvable approach, by a collection of useable formal descriptions.

If they can predict, that is considered enough! And that is certainly a retreat!

They find that they are unable to explain, and only describe forms involved, which can be then used.

So, what must be our fully scientific task in defining a photon: there must be an alternative!

We must attempt to place our hypothetical neutrutron at the heart of a group of clearly closely related phenomena – just as was done with the atom.

And, again, as with the atom, many investigations and discoveries will not be the end, but it will be a beginning!

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