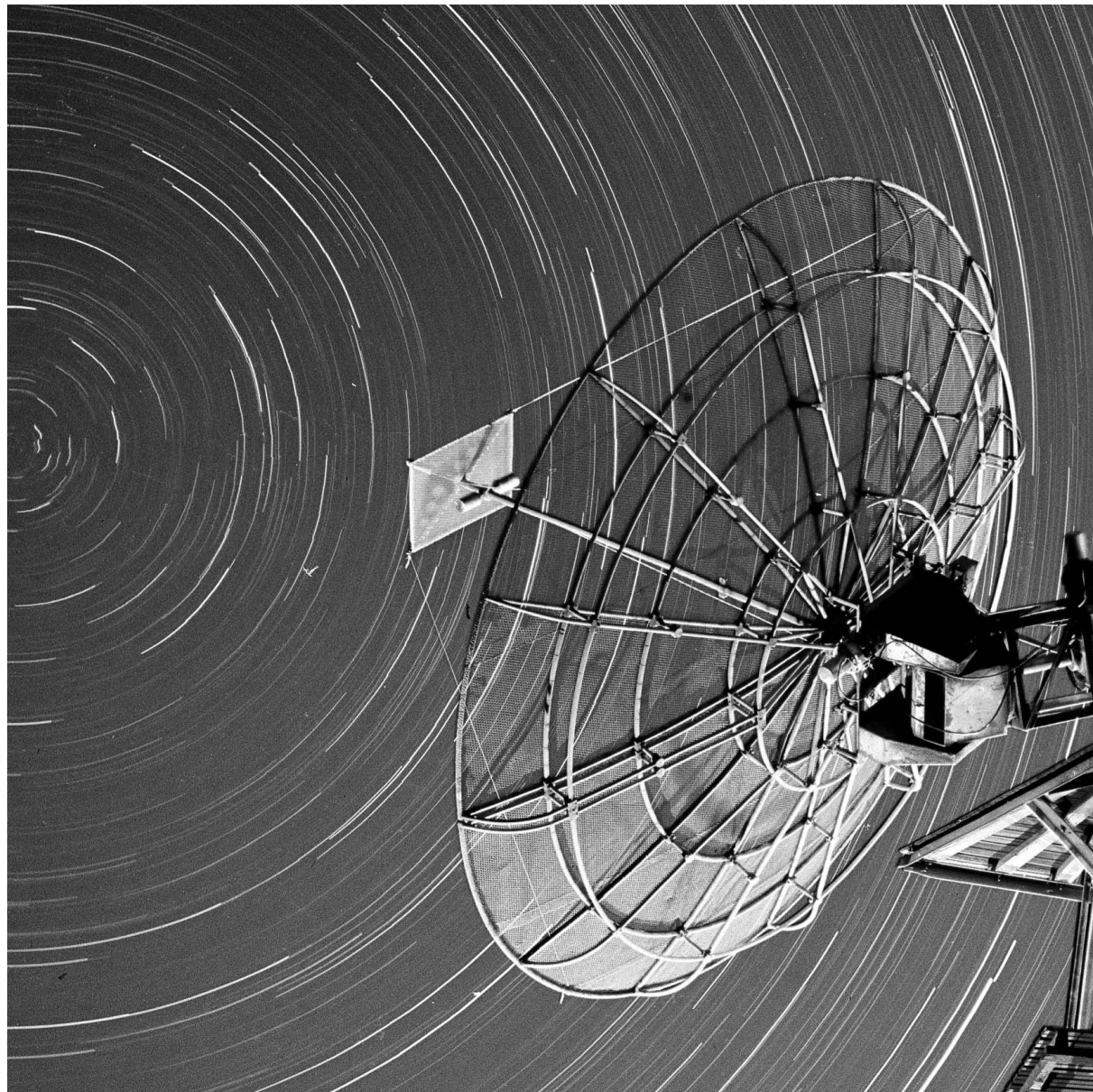


SPECIAL ISSUE 42 MAY 16 JIM SCHOFIELD

SHAPEJOURNAL

THE NATURAL MEDIUM

SUBSTRATE PROPERTIES / THE CREATION OF THE SUBSTRATE / APPLES & ORIGINS
THE SPEED OF CAUSALITY / THE NATURE OF ORBITS



The Natural Medium

Substrate Properties

Special Issue 42 / May 2016

- 4. Introduction
- 7. The Creation of the Neutrion Universal Substrate
- 11. Substrate Properties I
- 14. Substrate Properties II
- 20. Apples & Oranges
- 29. The Speed of Causality
- 30. The Nature of Orbits

Substrate Properties

introduction



Welcome to the 42nd Special Issue of the SHAPE Journal entitled *The Natural Medium*. This edition attempts to define some of the properties of our posited substrate, a sea of particles we believe must fill the observable universe.

If we are to consider some sort of Universal (yet undetectable) Substrate, we must do a great deal more than explain the propagation of electromagnetic radiation, via such a deliverer. We must also investigate ALL of its properties, and consider whether we can build upon our initial objectives, or, perhaps, be forced to abandon the whole hypothesis.

We do, however, have an informed starting point.

In order to achieve undetectability, in our initial definition of a unit, from which to construct such a Substrate, we realised that any suggested unit, would have to involve a sub-structure, the sub-units of which might deliver undetectability, by providing cancelling of all properties occurring in the sub-particles comprising our unit). But, of course, though such an objective would be essential, our unit wouldn't be any use if it did nothing else!

Clearly, the delivered substrate, via these units, would also have to give us a whole range of results consistent with unexplained evidence that we already have. These units of Substrate would have to be able to absorb and release quanta of energy, both to and from internal structures within the substrate units.

The model for such a unit is everywhere: it is, of course, the atom. But the substrate units, though of a similar design to the atom, would also have major differences. It would have to be not only neutral in every respect, but also very small indeed.

The model that was finally settled upon was of a mutually orbiting pair of sub-particles - consisting of one electron and one positron. Clearly, the orbiting would not only keep these "antagonistic" units apart, but would also cause the joint unit to be neutral in charge, neutral magnetically and neutral in matter type too.

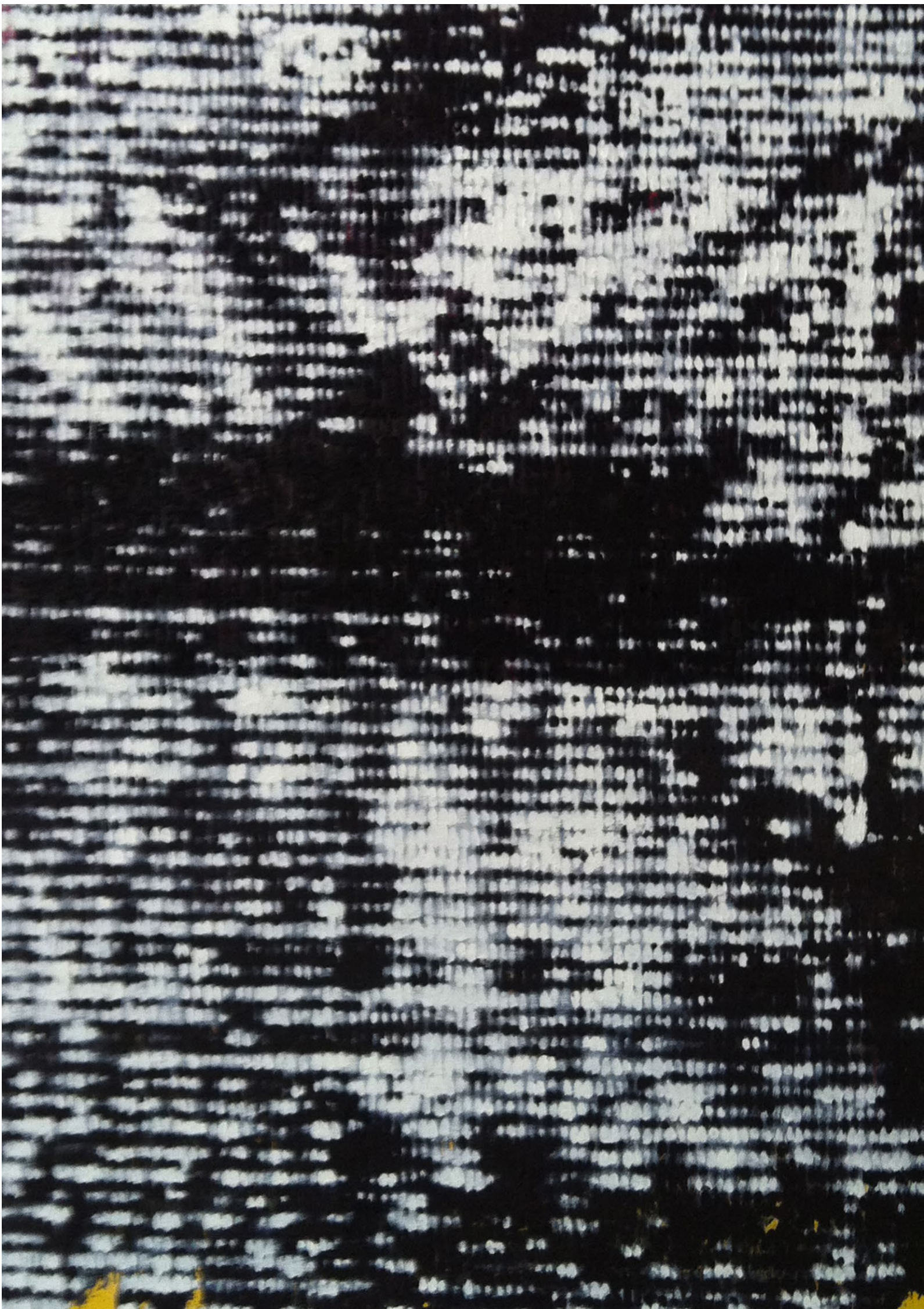
Yet, such a mutually orbiting pair could absorb energy by the promotion of the joint orbit, and release it by its demotion.

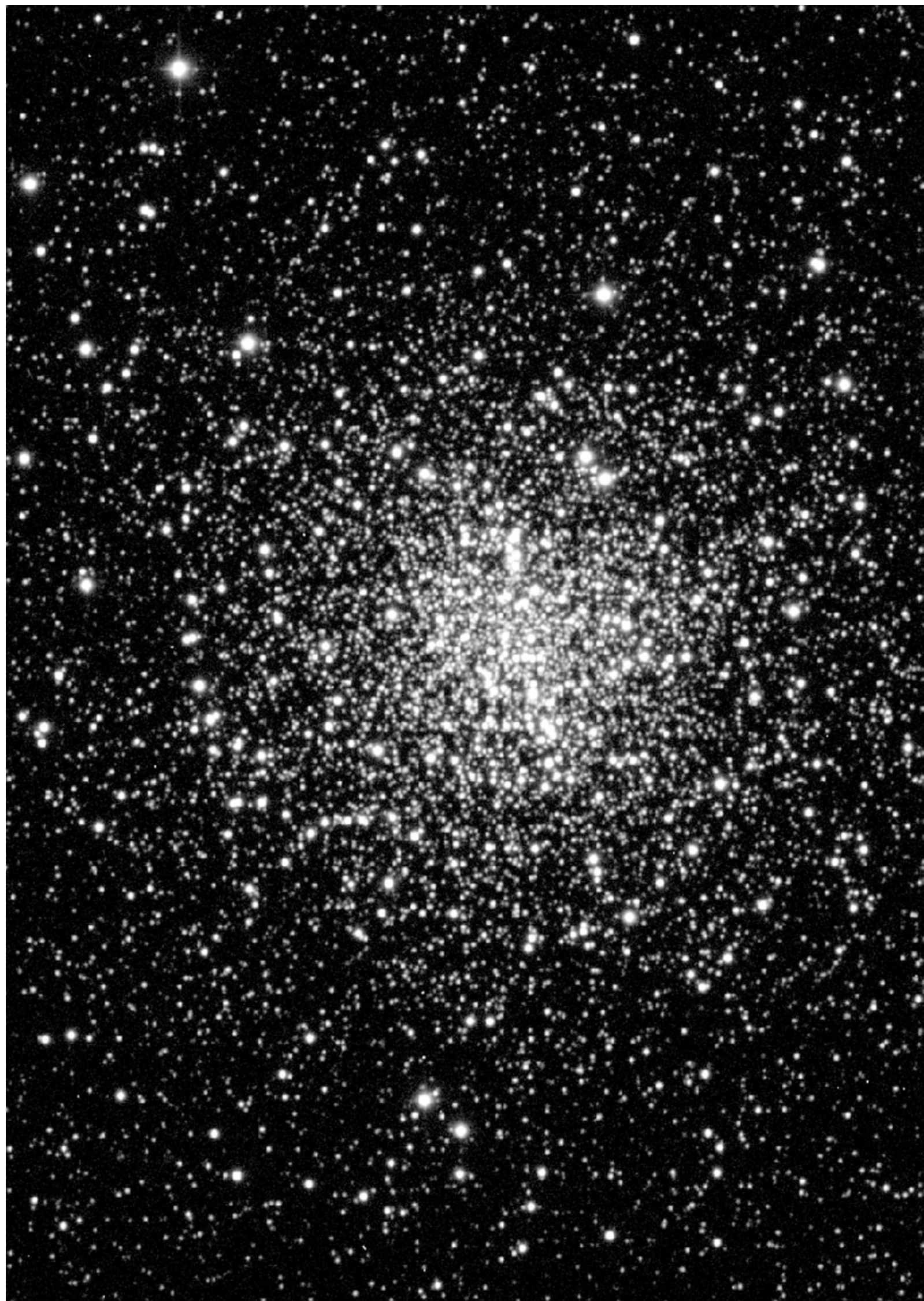
This definition also explained both Pair Productions and Pair Annihilations, and was justified as being possible by the discovery of this precise arrangement, albeit fleetingly, in the Tevatron at Fermilab.

Clearly, it could be a very productive first step.

Jim Schofield
May 2016

Kon Trubkovich - No Signal (2011) >>





The Creation of the Neutritron Universal Substrate

Let us try to tell the story of how a Universal Substrate of common neutral particles came to be formed across the whole of Empty Space, within the Universe.

We will start with a high energy situation – so high, in fact, that the proposed neutritron units would be far too unstable to even exist in that form, and we could have only an energetically moving “gas?” made up of two stable, mirror-image kinds of particles - most likely consisting of equal numbers of electrons and positrons.

These are considered to be a very early stable embodiment of matter, and for reasons as yet unknown, we consider them to have been exact opposites of one another. The electron and the positron are, indeed, the same size, but the electron is of negative charge and ordinary matter, while the positron carries a positive charge and is composed of antimatter.

They are dashing about at high speeds and if they were to collide, the current received wisdom is that they would mutually annihilate one another, turning ALL the matter involved into energy.

Now, thus far, this consensus position has always terminated any possible consideration of how such particles could lead to anything, never mind any sort of substrate.

However, at the Tevatron Accelerator at Fermilab, something very different was discovered to have occurred there, The two particles had NOT collided, but instead narrowly missed one another, but were, nevertheless, immediately linked into a joint particle, by mutually orbiting one another.

The resulting (and observed) neutral joint particle was termed the positronium, and, in those high-energy conditions, did not exist for long. It almost immediately dissociated back into an electron and a positron.

Nevertheless, those high-energy conditions were, of course, not exactly conducive to the continuing existence

of that joint particle. So, it was ghdn considered what might be the chances of it surviving in a low energy region of Empty Space. For there, it might there, not only be stable, but extremely so, and they could indeed exist in very large numbers, as long as they sere outside of any high-energy centre in an early proto Universe.

This theorist therefore decided to investigate such a possibility and called his version of the joint particle a neutritron!

Now, the considered scenario was that these pairs formed, and were moving about constantly. They were, of course both electrically and magnetically neutral, and their matter was of opposite types, so any possibility of them forming some kind of substrate still seemed highly unlikely.

But, though at most distances apart, these entities would not affect one another, their total neutrality in all respects, meant that they could approach extremely close to one another. And, it was in such extremely close proximity that their neutrality was NOT maintained.

Being composed of separate sub particles of opposite properties, a very close approach of two of these neutritrons, would cause a sub particle in one to be close enough to affect a sub particle in the other neutritron. In a unique and temporary way, they would both be affected, as the sub particles – one from each pair got close enough to dominate the situation overall.

For example, if the electron sub particle in one neutritron got very close to the positron sub particle in the other neutritron, they would be attracted to one another. But, both joint particles were composed of mutually orbiting active sub particles, so any momentary attraction a repulsion. Indeed, as long as the neutritrons kept close, they would suffer and alternating attraction and repulsion, in a sinusoidal way. There would, however, be an outer limit, outside of which NO effects would occur. But, within a narrow penumbra, around each joint particle, there would be an active shell, and the forces

would cause an alternating attraction and repulsion, causing close particles to oscillate, BUT stay where they were!

An unusual kind of linkage would keep close approaching neutritrons together in a loose oscillating matrix, which it was decided to be termed a Paving.

Clearly, if such joint particles, with low relative translational energy, got into close proximity to one another, they would stay there oscillating about mean positions, and neither colliding nor escaping. This could, indeed, be our undetectable, but both affectable and affecting, active substrate!

Indeed, the process would be that pairs would come together in this loose form of linkage, and gradually these could increasingly occur, as translational movements decreased, and so ultimately form a relatively stable Universal Substrate, to deliver all the properties that we had previously, and dubiously attributed to totally Empty Space.

Now, because, this substrate is totally undetectable, due to its absence of the usual means of identifying the presences of things, it can, however, be shown to deliver the propagation of electromagnetic radiation, Pair Productions, and other known, indirect features. They must be delivered by something, and, frankly, mere Empty Space doesn't do it at all!

As a final confirmation, let us consider the effect upon such an established substrate of a substantial increase in available ordinary, non-quantized energy.

Clearly, it would first be absorbed into the whole-entity oscillations of the individual neutritron components of the Paving, until they were large enough for the penumbra region around each neutritron to be exceeded, and the loose substrate links would be broken.

Theoretically, though, such a dissociation would transform natural propagation, as the usual, bucket-brigade process would be disabled, and presumably, any successful transfers would have to involve the movement of a carrying neutritron until it got close enough to another, un-promoted unit to make the transfer possible. The effect upon the speed of propagation would be enormous!

Let us try to get some sort of handle upon such a situation, which will certainly occur in the close vicinity of stars, for example.

Clearly, instead of the usual mix of whole unit oscillation, in situ, in the substrate, plus a quantum held internally, and passed on in appropriate circumstances, we will, instead, have a very different set up.

No driven oscillation will now be possible, and increased energy will be seen in translational movements – the original “neutritron-gas-phase” will be re-established.

So, depending on how things might build up via encounters with other neutritrons not being resolved by Paving-substrate-type capture, the likelihood is that real collisions may actually also cause dissociation of the neutritrons, themselves, into a gas of electrons and positrons.

While, the free movement of these could result in mutual annihilations thereafter (the known process of Pair Annihilation and the consequent release of even more energy exaggerating the situation still further).

Now, just how far and frequent these phases will possibly be in the obvious places near shining stars, and also, without any doubt, in the vicinity of Supernovae, we will have to develop a whole scenario of simultaneous processes not so far considered!

For example, stars definitely are emitting both radiative energy, along with very high-energy cosmic particles, the neutritron Paving will certainly be initially affected by these, long before we get at all close to a star.

It seems likely that in such circumstances, but not yet at actual neutritron-dissociation, the free neutritrons, with a quantum load, internally, will, also, have a considerably larger whole entity Kinetic Energy, and be dashing about! Collisions will certainly occur, and these may cause dissociations of the neutritrons, but the so-called solar wind might drive the energy-carrying neutritrons, as free, individual particles, outwards along with that radial solar wind!

Such considerations imply that in the immediate proximity of a major source, like a star, there will be NO Paving substrate. It will primarily be dynamic particles carrying energy (effectively through Empty Space)

If so, there will be a threshold, when these moving entities reach a still-existing Neutritron Paving, and, thereafter, transfer to normal bucket brigade propagation, along with the damaging cosmic particle solar wind.

It will be something of a mess, with literally everything possible acting simultaneously!

Now, it may well be too early to do what I am about to do, as the problems associated with Gravitation in the suggested Neutritron or any other form of Paving, which have not been fully investigated, and certainly not yet defined as yet.

But, in these last couple of pages considering the environment in the vicinity of stars, should, I believe, make such sources of energy very different from planets (even giants such as Jupiter).

Now, currently, in Einstein's Relativity Theory, every massive object, whether “shining” like a star or not (as with planets) will, nevertheless, make a depression in the Space-Time Continuum, which is then used to “explain” Gravitation.

Now, that Theory is certainly NOT a physical explanation - it has NO physical substrate, nor indeed any other physical factors involved: it is a purely abstract, mathematical model and nothing else.

So, things mentioned earlier, should also affect these theoretical considerations too.

Clearly, there is much here that is speculation, but, sufficient to bring to bear upon experimental results (especially in the vicinity of the Sun) and the ideas could be tested for validity.



Substrate Properties I

We need to get a fruitful and informing handle on the suggested, undetectable, but definitely real, universal substrate. So, clearly, we must, initially, get a handle upon the currently widely-favoured alternative also, which is presumed to be merely “Totally Empty Space”.

There are many alternative conceptions of this supposed “vacuum”, but, as they allow allsorts of phenomena to exist there, such as the propagation of Electromagnetic Radiation and the extensive reach of fields (particularly Gravity) over quite colossal distances, we can only reject such unsubstantiated ideas.

For, our primary reason for considering a Universal Substrate is that it is only this medium, and no other, that allows ALL those varied phenomena to actually be physically explicable. Consequently, we define “Space” as being totally Empty, indeed, but is merely the ground for nothing else but our suggested Universal Substrate - devised expressly to deliver all the known properties and consequent phenomena.

So, to begin to grasp exactly what we get, let us consider just two standard units of what we suggest makes up the Universal Substrate, namely two neutritrons.

Though, it is an artificial assumption, we are starting small, and hope to be able to, in the end, define the whole required substrate.

We start by taking the two particles very close together, and considering their interactions with each other. Certainly, if they were much further apart, they would simply never interact, for they have been devised as composed of sub particles, which make them entirely neutral in every respect, and hence undetectable!

Now, in order to tackle this question, we will have to be aware of the actual detailed composition of a neutritron.

The Neutritron is composed of one electron and one positron. These are oppositely charged, so that like in an atom, they can only exist together by mutually orbiting one another. Yet, this form does more than merely cancel out the electric charges.

It also means that the magnetic effects of those charges moving in an orbit will also totally cancel out. Finally as, the electron is ordinary matter, and the positron of made of antimatter, these too may also “mask” one another.

Returning to addressing our two neutritrons in close proximity, we find that they can get extremely close to one another – so close, in fact, they will begin to experience transitory electrical effects.

For example, this researcher decided to investigate a point close enough to the electron in a neutritron to momentarily experience its negative effect, but because of the mutual orbiting, this would change to being a positive effect as the positron came around to the same position.

Indeed, it is possible with this set up to actually describe fully the nature of Electromagnetic effects, for, as the two particles orbited they would not only cause the point in question to suffer a sinusoidal electrical effect, but also a sinusoidal magnetic effect at right angles to the electrical field.

These considerations effectively demonstrate James Clerk Maxwell’s Electromagnetic Equations physically!

Indeed, the same could be said of any such position, as long as it was close enough. For, beyond, a very short distance, these effects would totally cancel out!

Also, such close positions would mean that any gravitational effects would also oscillate between those caused by each of the two sub particles (whether they are the same or not).

All in all we have identified an annular penumbra around each and every neutritron, which isn’t neutral at all, but the producer of complex effects – quite validly considered, as such particles will be able to get so very close, due to the overall neutrality of such joint particles.

Let’s think about this! When, such particles are some distance apart, they will not affect one another at all, but, once very close, they are likely to be kept there –





actually oscillating rapidly as they pass through the cyclic succession of phases, produced by the mutually orbiting pair of sub particles!

Of course, it will depend upon where each joint particle is, in its cycle. But, if the situation was that the two came into effective interaction with the same type of sub particle, it would be repelled - but not for long! After a tiny distance it could be back in neutral territory, or begin to be attracted by the other kind of sub particle.

Overall, though this can be investigated further, I believe that there is already enough for us to conceive of the formation of a substrate – or more accurately, an actual Paving of Neutrinos, with the distance apart of its elements, being always within the limited penumbra of electrical influence.

Now, when I originally considered only the electrical and magnetic effects, I ended up with a cycling effect of alternate attraction and repulsion, which may not allow the two joint particles to collide, but ensured an intervening average gap, so that they would be allowed to be alternately be drawn towards and then repulsed away from each other, (see Part II for further details),

Clearly the suggestion of a Paving was looking more and more likely: the definition of a universal undetectable substrate was coming into view!

But, of course, it would not be like a solid, a liquid or a gas for the links between substrate units would be very different. Though a Paving could be conceived of, it could very easily be locally dissociated (if only temporarily); so it would allow very easy passages through it, and would just as easily reform the Paving thereafter.

And, it could be the medium for the propagation of electromagnetic radiation, and also more physical disturbances too.

The looseness of the “connections” in such a substrate allowed the Paving to have some of the properties of a liquid, with others more like a gas, and finally settle into something like a weakly-related solid matrix.

Perhaps, they would be significantly different, but liquid-like bow-waves, and wakes would be possible, but incredibly short lived. Yet, propagation would still be clearly possible via internally-carried quanta of energy

passed bucket-brigade fashion, through the weak but basically static matrix of particles.

It seems likely that at least two very different types of propagated disturbance would occur.

Quite apart from e.m. propagation through a settled substrate, we could also get physical, whole units disturbances with a much shorter and easily terminated range. Unlike the e.m. propagations which could be effectively infinite, the more mechanical disturbances would soon disappear and leave no trace, as the substrate settled back into its quiescent, normal state.

The local oscillation energy would propagate, but would tend to be shared across the units of the paving, ultimately settling into the same oscillations over an area, and hence becoming undetectable.

Substrate Properties II

Now, considering the situation between very closely situated neutritons. It is clear that their interactions will vary depending upon their internal states.

For example, the ideal interactions described in Part I, would only be exactly true, if the two neutritrons were in synch – that is their internal orbits not only at the same energy level, but, with the component sub particles in each, they were in the appropriate positions to have the effects described in Part I.

Clearly, that will not always be the case, with both internal orbiting pairs coming into mutual electrical affects as previously described.

With the pairs in adjacent sub particles in other relative positions, the effects will be somewhat different.

So, to get this absolutely clear, let us go beyond the simple cases so far addressed, which would be repulsion – if the same sub particles in each came together, and attraction – if opposite sub particles came together. But, in both cases the two neutritron orbiting pairs will move around until they present the exact opposite effect. Clearly, these two cases will have the same overall effect: the two neutritrons will be alternately repulsed and attracted. As long as they stay within this close penumbra of effects, they will oscillate about a mean position. Obviously, there will be intervening short phases when the two electrical forces cancel out. But, the possibility of a loose but firm Paving, sounds more likely the more we think about it!

Notice that these forces always run out of steam, because of the way the combined effects are formed.

BUT, significantly, they will (under these circumstances) be kept in close proximity, yet never allowed to collide. The links that hold them together, also keep them apart. This new kind of loose formation I called a Paving for obvious reasons.

Now, there are, of course, other possibilities. For example the adjacent neutritrons could be at different internal energy levels: just one of them could be carrying a

quantum of electromagnetic energy (in propagation)! Now, such a promoted state will have to pass on its carried load to another neutritron, so a different process must take precedence over that which maintains the Paving.

Now, according to the last iteration in this theory, it was considered that the internal orbits could be promoted by other inputs apart from those employed in propagation, but here that consideration has been dropped. Only quanta-in-propagation, and only one-at-a-time are now allowed to be held internally in the mutual orbits.

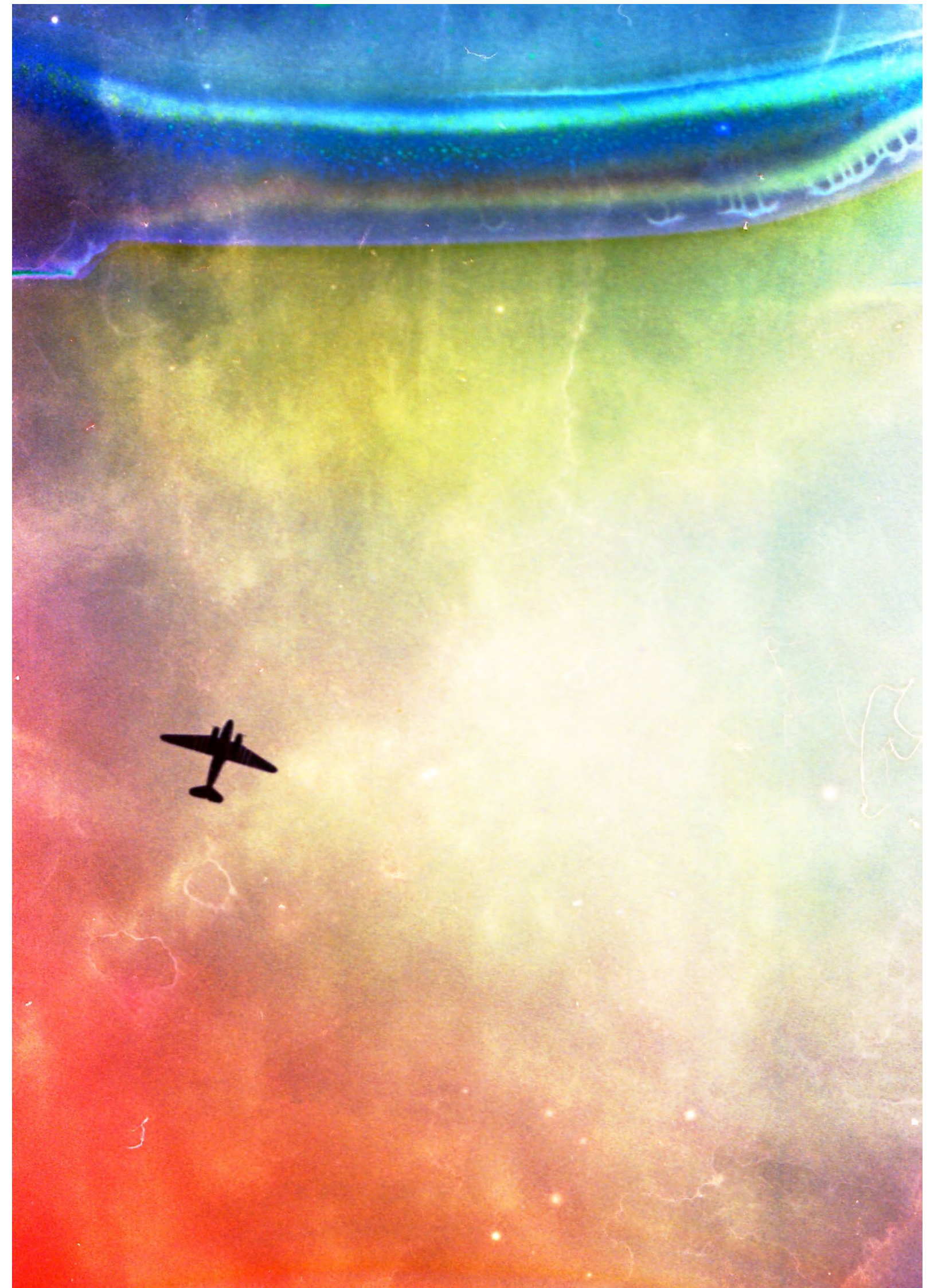
So, this will happen next: the quantum will be transferred to an available adjacent neutritron (at present empty). Though, the conditions would have to be right, and the parallel process of keeping the neutritrons in close proximity to one another performs this function too. Thereafter, as soon as the inter neutritron arrangements become ideal, the quantum will be transferred!

Let us, therefore, consider the overall scenario.

ONE: At all times the above Paving forming effects will tend to produce an overall substrate with adjacent neutritrons kept within optimum distances from each other. This will be happening everywhere, and all the time! Notice that the constant oscillations of all the neutritrons will involve a separate and appreciable amount of energy from that which can be present internally, as part of a propagation.

TWO: If a carrying neutritron is adjacent to an empty neutritron, it can transfer its load to the empty one as part of an ongoing Propagation.

These considerations DO NOT address all the realised problems, but a basis for doing that is probably now in place to tackle it.





Apples and Oranges?

handling quanta in atoms and neutritrons

In considering both the origination and the propagation of quanta of electromagnetic energy, we must go a little deeper in comparing the atom and the neutritron.

For, though atoms have their own set of quantized energy levels for their orbiting electrons, they are determined by the nature of the substance of which the atom is the smallest unit, that cannot be said of the neutritron, for it is supposed to propagate ALL possible quanta from ALL possible atoms.

So, it cannot have such a predetermined set of allowable levels: it must accommodate absolutely all possible quanta from all possible sources, within quite wide limits.

Now, though the neutritron handles all possible quanta from atoms, it will not be able to handle any beyond a certain maximum threshold value. For, above that, the neutritron itself would dissociate into its components – one electron and one positron (as in the well-documented Pair Production event).

The atom is very different.

For, instead of a completely flexible capacity, it can only deal in a fixed range of discrete energy levels, and consequently discrete values for the quanta that it can absorb and emit.

It is this very feature that allows the type of atom from which energy had originated to be precisely defined and recognised.

While, the necessary intermediary, allowing the propagation of such energy, though similar in many ways, MUST be capable of transferring almost any size quanta.

It is even possible to state, categorically, what is the type of atom involved, which determines that precise nature, both in frequency and energy amount, which can be propagated throughout the Universe.

The original source would always be what determined that, while the neutritrons of the substrate, have no such limitations, and can handles all sizes of quantum (up to its upper dissociation limit).

Let us probe a little further.

The only stable state of an electron orbiting within a particular type of atom has to be in what is termed its Base State.

This state is determined by the actual construction of the atom: it is intrinsic to the atom continuing to exist.

All possible levels, above this base level, are transitory, unless the context, in which the atom exists, is such as to prevent it unloading that elevated quantum of energy. And, this could only be the case if there was no recipient close enough for the quantum to be released to.

Now, such a condition is a profound consequence, which is only likely, if all other nearby atoms are already promoted in the very same way. For then, the general state of the substance involved can prevent demotion and release; otherwise, the promoted situation would always immediately demote to release its quantum. The only condition is that there is an un-promoted atom nearby to receive that quantum.

But, if all the interstices of Space within that atom's vicinity were occupied with already filled neutritrons, with no built-in quantized levels, then, the only option that the quantum would have, would be to stay where it was, within its current atom.

Such situations in those circumstances would be normal, as with the ease of propagation, energy would move into a locality until all units of the substrate were at the same level, and, from there, any atoms would be promoted generally to equal levels too.

You can't naturally move uphill, so the quantum will stay where it was.

Clearly, we cannot deal with the issues addressed here, by treating an atom and its elevated internal state in isolation. It will behave differently, depending upon its Context!

Indeed, within a given context, when everywhere is elevated to the same level, the quanta within atoms will stay where they are.

But, an atom elevated within a context that has not been so elevated, will immediately unload its quantum to the nearest available recipient.

It could be another atom, but, in the most general context, it will be to a unit of the substrate - a neutritron, which, itself, being then elevated, will immediately decant to the next available unit - usually another neutritron.

Now, because we are assuming a common means of propagation, via a universal substrate of such neutritrons, whatever the original transmitting atom, and whatever the size and nature of the quantum involved, we are clearly dealing with different entities when talking about atoms and neutritrons.

NOTE: In Couder's Walker experiments, he was able to produce his Walkers merely by the interactions (both resonant and recursive) of vibrations within a single, unaccompanied substrate, AND a remarkable and contributing sub-mode of the same substrate as a bouncing drop.

But, when he added an overall rotation to the whole set up, he was able to produce quantized orbits to his Walkers.

Now, the analogy is obvious, and may turn out to be crucially important!

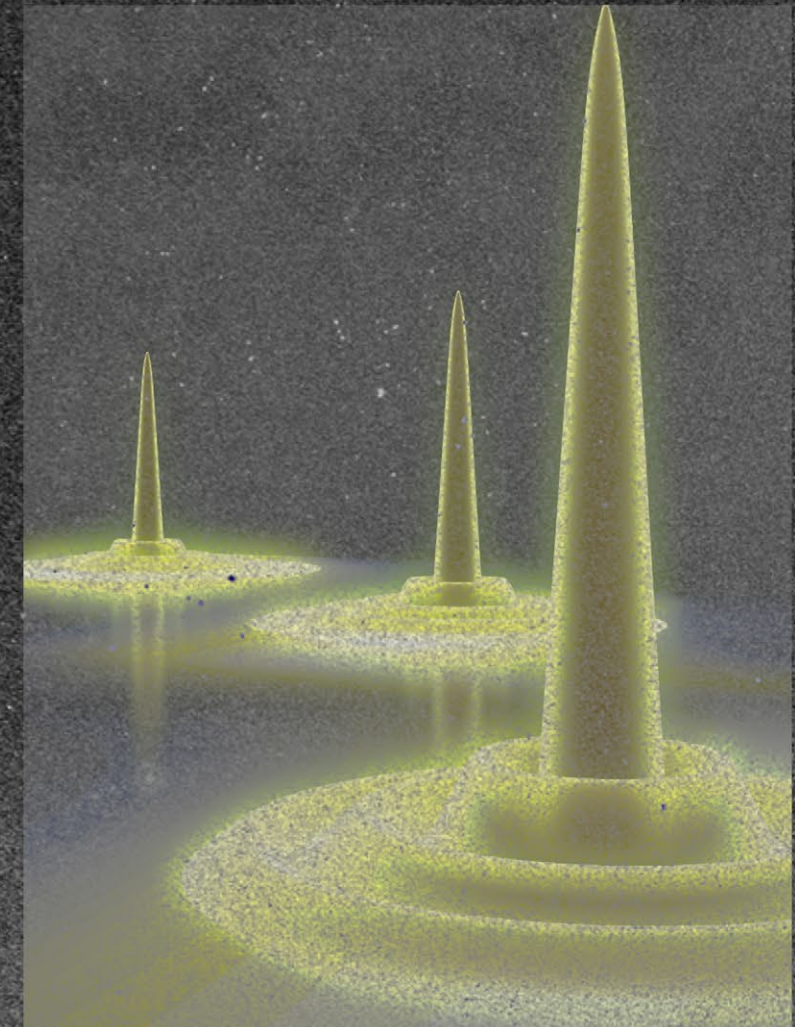
The atom with quantization is like the Walker with an overall rotation, while the neutritron is more like the Walker before the quantizations were produced by the added rotation.

Of course, such analogies are always both simplified and idealised models, but they can, nevertheless, have more Objective Content – more aspects or parts of the truth,

and, therefore, deliver legitimate steps forward: they can certainly replace what so evidently delivers much less!

One major implied rule seems necessary to be overtly expressed here. Once formed, a quantum of electromagnetic energy will reside in an appropriate vehicle – be it an atom or a neutritron, and will not be able to be eroded or divided in any way. It will retain its characteristics in all subsequent transfers between such vehicles.

The problem of the atom seems to be that its structure will only allow certain fixed (quantized) internal levels, whereas the neutritron has no such limitations (apart, that is, from its dissociation, due to a too large a gobbet of energy transfer), it will take, retain and maintain what is given to it, until the conditions for an unloading occur, when it will immediately deliver that quantum.







The Speed of Causality

are there natural constants as properties of reality?

There has recently emerged a remarkable tale concerning the Speed of Light!

BUT - we have, of course, to put such a concept into its producing context, to really grasp what was being both addressed and delivered. So, let us, therefore, establish the circumstances and ground for this seemingly basic “constant”!

The Speed of Light is universally considered to be a supposedly Natural Constant, and such things are consonant with a view that has Natural Laws determine literally all that there is in Reality. And, all of these being invariably encapsulate-able into Pure Mathematical Forms.

For, such Forms are always and can only be generalities, and, therefore, have to be fitted up to data from Reality to arrive at the particular Law involved. And, this involves the determining of all the as yet unknown constants of the Generalised Form to deliver as, one version of it, a particular Natural Law. To do this is certainly NOT a universally accepted position, but it is, nevertheless, the most-used approach. Now, these Laws are used, thereafter, for prediction, and as they are considered the unchanging properties of Reality, their constants are given special status - they are termed Constants of Nature.

And, in Albert Einstein’s Special Theory of Relativity a key Constant of Nature was the Speed of Light.

Now, the equally-lauded alternative approach in Science to that of equations, has always been to explain why, things act the way that they do, and why such things as the Speed of Light have the values that they do.

These two alternatives have been used in tandem for literally millennia: one for description and calculations, while the other is mostly used for explanation. And, usually, something like a “Speed” is always to some extent a variable, depending upon the conditions through

which something has to move. To make the *Speed* of Light a Natural Constant is surprising, for it seems to imply a particular medium through which it is passing. Now, it “does” pass through a “single situation”, for it is assumed to traverse totally Empty Space. But, perhaps surprisingly, the originally assumed value for this Constant was actually Infinity - effects were felt immediately, no matter how far apart they were from the supposed cause.

The trouble is, if it is passing through absolutely nothing, what possibly determines this fixed and finite speed?

Now, these are interesting areas of discussion, especially as the two fore-mentioned approaches are totally incompatible with one another. The Formal approach is certainly idealistic, whereas the explanatory approach is just as clearly materialistic. To even use them both literally all the time is, to say the least, very odd.

But, that doesn’t exhaust all the approaches used, for there is a third - namely Pragmatism or, in a phrase “If it works, it is right!”

And, as you may guess, it is this final addition that allows contradictory approaches to be used “when they fit our current purposes”.

Now, having established the involved rather uneven, philosophical Ground, we can return to our “Constant of Interest” and decide what it really is!

It seems that, some time ago, a position was developed by the physicist Lorentz, based upon the fact that the Laws of Science were clearly independent of the Frame of Reference, in which they were observed, measured and then extracted. Whether the experimenter was working on the surface of the spinning Earth, or in Space, he would derive the exact same laws.

Now, this was prior to Einstein’s work in this area. But, Lorentz’s conclusion was somewhat different. He

decided that it was the Speed of Causality was what was constant!” Einstein took Lorentz’s ideas, and from them developed his Special Theory of Relativity.

But, wait a minute!

What on Earth (or in the Universe) is the Speed of Causality? It can only be the speed of communication of a given far-reaching effect - like Gravity, for example.

Now, this, as it stands, is meaningless, if you are expecting some sort of explanation. It is as opaque as Einstein’s Speed of Light. For, what actually delivers the effects, from source to recipient, whatever it is? Remember, the current wisdom is that Space is entirely *Empty*. [They say “empty of Matter” but somehow allows totally disembodied Energy] . They insist, “There is no substrate!”, so they can give no physical answers to the questions posed about the determination of the speed involved.

Now, on the *Space and Time* video on YouTube, delivering this tale, the presenter actually uses James Clerk Maxwell’s Equations of Electromagnetism as a confirming example, “for they too work in confirmation with a constant Speed of Causality!” But, to use Maxwell without revealing his premises is significantly misleading. Maxwell not only believed in a Universal Substrate, but actually devised his own version of it using vortices and “electrical particles”. And, it was on the basis of this detailed model that he developed his Electromagnetic Equations.

His basis was a Substrate! And, that makes a significant difference to the ideas under discussion here.

So, we must interpret the Speed of Causality along with Maxwell’s premises. And, they can only mean that the Speed in question can ONLY be a property of that Universal Substrate. How else could it be determined?

Now, Jim Schofield, the writer of this paper, and a theoretical physicist himself, has derived his own version of this Universal Substrate, which he has devised as totally undetectable, because, though composed of components that are already universally accepted, he has them jointly forming the individual units of the Substrate, and in them delivering entirely neutral bodies. He also has these units forming a new kind of association, which he terms a Paving, wherein the Speed of light is, actually, the speed of transfer of a single quantum of light energy from on

unit to the next, in a bucket-brigade form of propagation. Clearly, this is both the Speed of Causality and the Speed of Light, for all communication in so-called Empty Space must really be via this Universal Substrate.

Now, I am well aware, that all this could be seen as yet another speculative foray in Sub Atomic Physics, but it is certainly a great deal more than that, and is supported by many sound criticisms of the Copenhagen stance, which is “sans substrate”, along with other undeniable proofs that the Substrate has to exist.

The units of the substrate, as devised by Schofield, can internally hold individual quanta of electromagnetic energy in internal promoted orbits, just like the atom does, and hence all transfers, in a propagation, will be one quantum at a time. And, crucially, ALL the anomalies of the ill-famed Double Slit Experiments as interpreted by the Copenhagen stance, have been completely explained, merely by the presence of this particular conception of a Universal Substrate.

And, in addition, phenomena such as Pair Productions and Pair Annihilations come out of the dissociating or associating of Substrate units “sweet as a nut”.

Finally, this very unit has actually been observed in the Tevatron at Fermilab, where it was both named as the positronium, and then ignored because of its evident instability. But, let’s face it, all that evidence was within a High-Speed Accelerator.

Schofield wondered how it would perform in Empty Space, and decided it would not only be stable, but very stable, not least because of its tiny size and total neutrality, in every respect! Further researches in many relevant areas, including how such a neutral particle could actually form a functioning substrate, convinced him that his assumptions concerning this particle were true, and he therefore renamed it the Neutritron.

A great deal of research has been produced, and is proceeding apace! Clearly, there are physical reasons for both the “Speed of Causality” and the “Speed of Light”: they can be explained via the nature of the Neutritron and its “Paving” Substrate.

Think about it! Such an explanation does not take account of either the initially producing or finally receiving bodies: it depends only upon a substrate, in

which the Light is propagated, in quanta, and in a bucket-brigade fashion from substrate unit to substrate unit, and the transfer speed IS the speed of transfer from one substrate unit to the next, and the fact that these will exist within fixed form of Paving, will make this figure in most circumstances a Constant!

The so-called Natural Constant of the Speed of Light, is no such thing. It is a completely explicable speed of transfer between stably arranged substrate units. This speed depends upon the Substrate alone, and will be independent of any Frame of Reference determined by the movements of contained larger bodies.

The Nature of Orbits

the effects of a universal substrate upon orbits within atoms

Why are simple two-body orbits always 2 dimensional?

It not only happens to the Hydrogen atom's single electron orbit, but a multitude of other examples all the way to moons, planets and even stars.

To get an understanding of this the Hydrogen atom is, as usual, a good place to start. And, this is clearly so, if we consider its creation via the capture, of a passing electron, by a single unattached proton.

Clearly, the line-of-action relating these two entities - i.e. the straight line connecting the two bodies, must be significant. So, as usual, looking at the interaction, in the relative motions way, with the proton regarded as stationary, this will, along with the relative direction of the "free-moving electron", thereafter determine everything that can subsequently occur.

This is because, before there are any other effects, the electron will be moving in a straight line, with respect to the proton. So, its path, plus the position of the proton immediately defines a single unique plane! (This is, of course, effectively the extension of the electron's linear path, sideways, to include the position of the proton.

Now, as with all first steps in Science, this is a simplification, but it does not yet also include the usual idealisation that is normally necessary too. [See the effects of the Principle of Plurality upon the standard scientific method for a fuller account]

For, the idealisation will only come in, if and only if, a pure mathematical form is both assumed go be appropriate, and also fitted-up to the data of the resultant path, by the usual method of a general form, measured data and solving the resultant simultaneous equations.

Normally, of course, we do BOTH of these adjustments. We actually believe that both of these are valid, and will lead to useful definitions of any subsequent movement of the now captured electron.

But, such determinations do not have to be the full, or even the only, story.

The proton itself could be being affected by something else, and even be performing its own orbit, and there is no reason why that orbit should be in the same plane as that determined for the electron. As any mathematician will explain, as soon as you go beyond a simple two-body situation, things get complicated very quickly (for, as any holist would put it, "Everything affects everything else!")

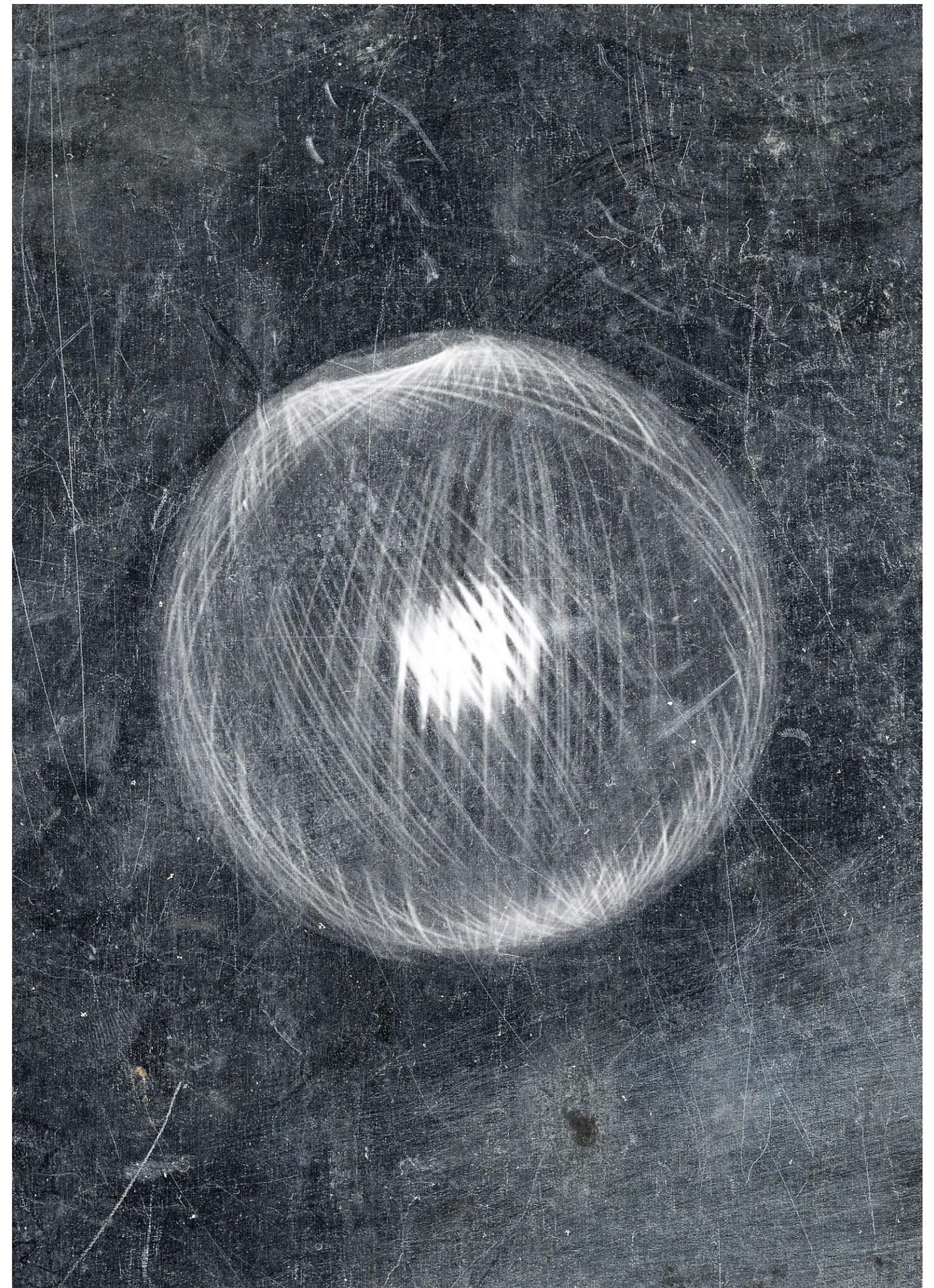
In attempts to solve multiple-body problems, which are in close proximity, to one another, it soon becomes well nigh impossible

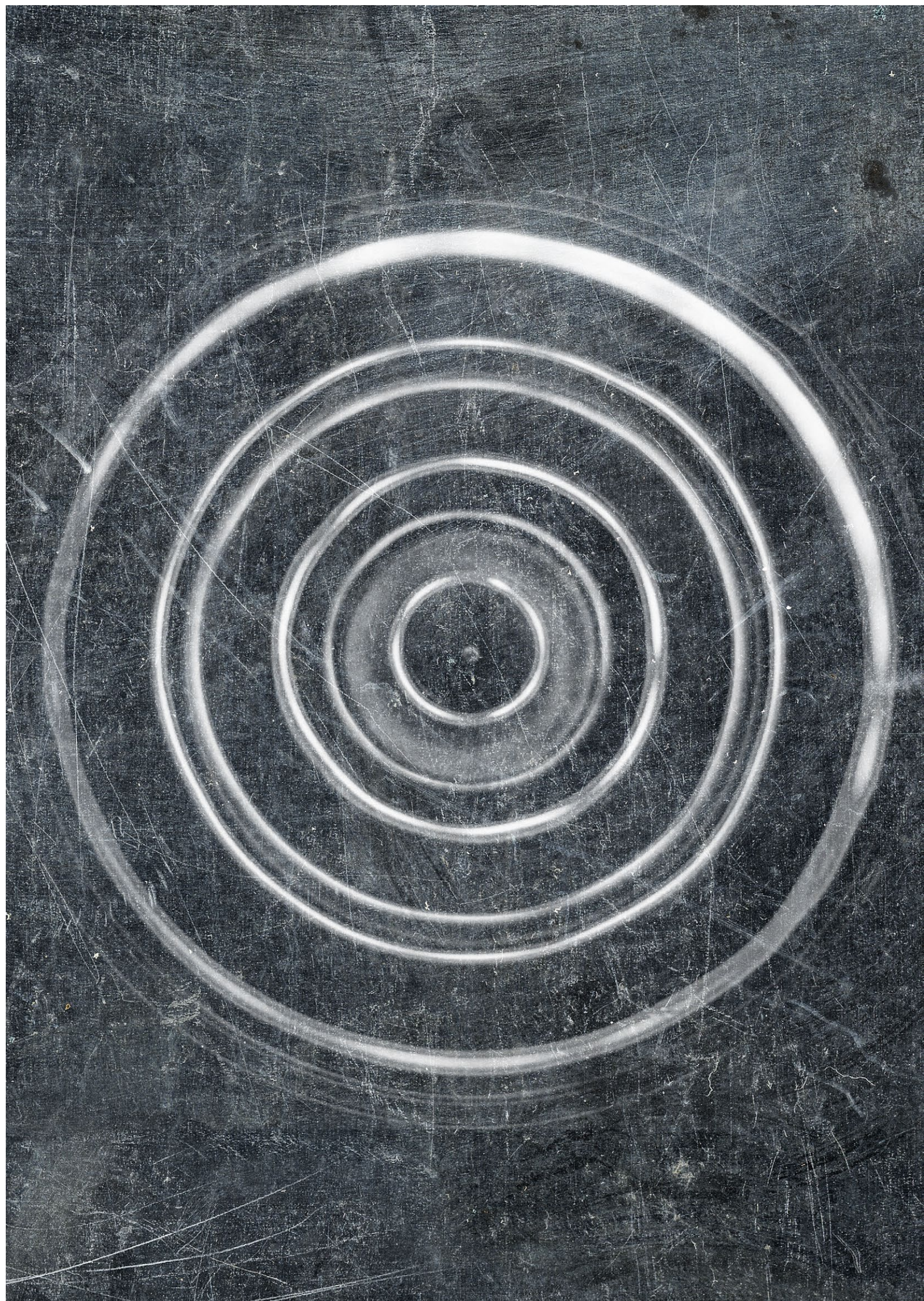
The question is, "Why?"

It is, I believe, due to the actual holistic nature of Reality, while, long ago, Mankind had decided upon the much easier-to-handle pluralist approach. [In addition, we also included yet another greatly simplifying alteration to what we actually studied. It was the assumption that all relations would always be covered by one or another of the ideal forms extracted and studied by mathematicians] So, once we had real world data, we could fit-it-up to "the right "pure mathematical form", and reliable prediction would be in our hands.

Indeed, with a holist world, and no maintained controls, things would rapidly spin out of any simple conception, and the investigators would be forced to give up!

But, extended and rigorous control, of investigated situations, could greatly diminish these chaotic features, and bring a situation nearer to conforming closely to the conceptions of Plurality! For, philosophically, Plurality asserts that the affecting Natural Laws of Reality are wholly separable - that is independent of one another, so extensive farming of context would not affect the sought-for and eternal Natural Laws.





So, what could be both revealed and extracted from those appropriately restricted Domains, were, in fact, the actual Natural Laws required.

With this stance, things became a great deal easier, and studies of “Reality” (though always rigorously and appropriately farmed) went ahead at an ever-increasing pace, and an ever-growing catalogue of “Natural Laws” were discovered.

But note, you could use any one of them, only if you ensured that it was in precisely the same conditions that had been required for both its display and its extraction.

Now, both Holism and Plurality are abstract conceptions – actually forming a Hegelian Dichotomous Pair, and prove, conclusively, that the premises leading to both will, most certainly, be flawed.

It is, after all, how Mankind makes any progress at all. Man can never alight directly upon Absolute Truth: he certainly was not selected for such a thing by Evolution. So, he has always had to find ways of just getting ever closer to that unobtainable objective. And, each apparently useful and reliable set of premises would always have their limits, and a series of terminating impasses would inevitably arise – each one signalled by the emergence its own Dichotomous Pair of contradictory concepts.

Yet each arm of any Dichotomous Pair, in certain given and appropriate contexts, can be reliable and give valid outcomes.

So, the next question has to be, “How, can this occasional, but undoubted measure of success be the case?” The answer to that one is complex, because relative weightings of multiple affecting factors mean that something extra, termed Stability can undoubtedly occur, which pulls situations close to one or the other of these conceptual opposites. And, most surprisingly, we don’t ever ask just how does such a Stability occur, and why?

Instead, we assume that it is always the result of one or another, or even several of our previously extracted Natural Laws, simply adding together to give a summed Law.

We, at no point, address how multiple factors can modify one another and form systems that are self maintaining - Stabilities!

We know nothing about Stability!

Now, before we attempt a synthesis in a holistic way, let us first mix things up a bit, to clarify the problems.

Let us consider an artificial situation, with some of the problems involved.

Let us imagine a “free nucleus” with a large positive charge, so that it could capture more than one electron. NOTE; we could jump straight into the now standard theories dominating current Sub Atomic Physics, but I am keen to alight upon a purely physical conception of what is going on, rather than the usual Quantum Theory Formal Rules. So, in this context, capturing the first electron, will be as already described above, but what about the second, initially also free-moving electron? How could that be integrated, considering the newly achieved situation already in place?

It could (as before), along with the nucleus, define a very different plane. And, presumably, it could, due to the different speed of the new electron be not only at an angle to the first electron’s orbit, but of a different radius too!

So, theoretically, using only our most basic ideas, we should get a system with our two electrons in different orbits, in different planes and at different speeds and radii. Carrying on with the same ideas, more electrons could be added, and, at present, we have no known extra forces that could re-organise such a system.

Yet, we are considering a limited region of space: what about the effects of the electrons upon each other, and, crucially, it turns out, could the orbits be also either promoted or demoted by the addition or loss of energy? It turns out that the answers to both of these questions must be, “Yes!”

For, all the electrons involved have the same negative charge, and would, therefore, presumably repel one another.

And, very one have effects upon their orbits, by both changing the speeds of the electrons, and changing the orientations of their orbits.

Such interactions would continue, but not necessarily for ever.

A situation could well be arrived at where further changes would be less stable, so, clearly, such mutual repulsions could indeed be self correcting, so that the achieved “best position would become the final result: Stability would have been established and be thereafter self-maintaining, as the best balance of opposing effects!

Now, exactly what these stable arrangements would be, clearly requires further detailed and difficult considerations.

What could happen if the above changes did occur ,would it surely be that, in the two electron case, they would end up on the opposite sides of the central nucleus, and even, amazingly, sharing the very same orbit. The alternative of constantly varying orbits seems much less likely.

Now, all of the above is down to purely physical factors, and how they could arrive a some sort of Stability, but it is most certainly better than the quantitative Rules of Quantum Theory, which explain nothing! It will, of course, get more complicated as more and more electrons are involved, but the Physics involved will not change: it will always boil down to the orbits settling into some form of self-maintaining Stability.

The numeric results delivered by Quantum Theory are only descriptions, and must also be explained physically. Otherwise, you will not only have abandoned Physics for mere Mathematics, but also and even worse, idealistically put down phenomena to unexplained but formally described relations.

Now. in other research, the presence of a Universal Substrate, infers that such a substrate could also be involved in the above addressed relations, so that vortices and resonances between them and the orbits would FIX radii for other very sound reasons to add to the above ideas.

One consequence of an assumed Universal Substrate within the atom is in relation to two electrons finally occupying the very same orbit, as the resultant maximum stable arrangement. For, in such stability, both will the precise same speed, as well as being on opposite sides of the same orbit, so both would be generating vortices in the substrate, and leaving them where they had originally formed.

But, not only the causing electrons would encounter its own previously caused vortices, but so would its same speed partner on the exact opposite side of the same orbit.

Clearly, only when the rotations of all the caused vortices and the orbits of the electrons had achieved a stable no-net-transfer of energy state, either inside or outside, would that single orbit finally become fixed, and indeed quantized too.

Now, as more electrons are added into the atoms of heavier elements, the situation will naturally get ever more complicated, as they will form concentric shells, building outwards from the initial pair in the closest orbit. And, those shells will, somehow, make the shells inside them, ever more stable.

Indeed, the outer orbit electrons, promotable or denotable, or even entirely removable, will only be in an outer orbit capable of carrying extra energy too.

So, the inter-relations of the inner orbits’ shells, and their multiple vortices, will, without doubt, form a powerfully self maintaining system.

SPECIAL ISSUE 42 MAY 16 JIM SCHOFIELD

SHAPEJOURNAL

WWW.E-JOURNAL.ORG.UK