

Time Perception and Parallel Cognitive States: A Neurocognitive Interpretation Inspired by the Dual-Slit Paradigm

Dr. L. E. Navarro¹

Medical Device Engineer, Division of Biomedical Engineering, University of California, San Diego, La Jolla, California, USA

Abstract—Review the discussion of previous paper theory [9] “Wenner, L (2018)” by expanded hypothesis reasoning with minimal mathematics and test hardware options.

Both Einstein [1] and Planck [3] remain valid in this paper while explaining additional properties of the photon, the Young, T [8] dual slit experiments and some Schrödinger [10] quantum effects.

This paper violates no empirically proven formulas of physics but instead, uses and compliments most, including string theory.

It does disprove light bending and photon slowing theories, also known as refraction and without power level changing light speed respectfully, both herein shown as false hypothesis.

Universe expansion solutions also discussed along with Quantum Entanglement shown actually as Time Entanglement.

Index Terms—Time Travel, Einstein / Wenner Formula, Einstein Time Dilation Formula, Frequency Time Length Dispersion, Lorentz Length Contraction Formula, Planck Constant, Practical Time Travel, Prism Time Delay, Rectangular Waveguide Time Dilation, Signal Time Length, Slotted Rectangular Waveguide Antennas, Cosmic Background Noise.

Photons travel in the 2nd dimension as a two dimensional wave at a particular frequency. The Lorentz [2] contraction formula demonstrates that at the speed of light an observed particle contracts to the 2nd dimension. This equation confirms only a 2D particle wave can reach light speed not 3D.

$$L' = L \sqrt{1 - \left(\frac{v}{c}\right)^2} \quad \text{If, } v = c \text{ (speed of light) then } L', \text{ the 3}^{\text{rd}} \text{ dimension is zero.}$$

In fact, one can only reach the speed of light, with particle waves that travel in the 2nd dimension, because mass is now zero, thus requiring zero energy to travel. The Aether for the photon is the 2nd dimension. An antenna radiation pattern travels in depth and height, since not having a width dimension the signal travels in all directions of width, plus has two polarities, horizontal or vertical.

Even a one atom width wire, if vertically stacked in single atoms, to the calculated wavelength height, transmits via depth in all 90 degree side directions, at the same time. In a rectangular radar waveguide, dimensions only matter in width and height, whereas depth has zero effect, on any signal sent through it, as another example of two dimensional travel photon effect reasoning.

Photons are pure 2nd dimensional wave energy that is not affected by 4th dimension “Time”. Einstein’s [1] time dilation formula indicates for anything at light speed, time stops (non-existent).

$$t_o = \frac{t_n}{\sqrt{1 - \left(\frac{v}{c}\right)^2}}$$

t_o = Time observed

t_n = Time normal

v = Velocity

c = Same unit as velocity

We can detect photons from almost 15 billion years ago, the distance of our current best telescopes. Thus time has no known effect on photons. Photons have no 4th or 3rd dimensions.

Photons are captured by the outside shell electron(s) of atoms. Forcing the electron to a higher shell and higher oscillating frequency since, additional energy has been obtained, from that photon. The Planck [3] equation confirms this, energy increase at higher the frequency, effect. The captured photon must, orbit the electrons center, of

its own mass giving, Higgs boson [11] Higgs, P. subatomic nucleus particles and therefore still remain at light speed. If observed, a cloud of photon constant light speed energy will be seen orbiting the electron core, subatomic particles.

Photon light speed remains constant even while electrons or other 3D particles, energy capture it, by orbiting the particles center, at light speed. Thus, instantly ready to reradiate distance in 2D since, always at light speed (requires zero acceleration time to radiate).

The electron stores, transfers to another electron or, releases the energy back into the form of a photon, traveling in the 2nd dimension, at the shell frequency, of the electron, that emitted it. This is why super heating a material, releases light at these frequencies, depending on the electron-photon shell frequencies, of those material atoms.

An electron must travel slightly less than photon light speed because it has a tiny bit of mass 9.11×10^{-31} kg and by $E=MC^2$.

Dual Slit Experiment Defined Results

Individual photons, electrons and other low mass particles etc. when released all have a frequency of oscillation Louis de Broglie [5]. Thus, not only electrons but, other low mass particles etc. must also obtain photon energy and produce a 2nd dimensional wave. Since traveling to hit the slit(s) Fig (1) they must have energy stored in them, from somewhere and also to produce this 2nd dimensional frequency wave. This is why electrons have the same test results as photons on the dual slit test.

Near zero mass particles, like neutrinos' or electrons, at nearly the speed of light, have 2nd dimensional wave frequency patterns as well, particle duality, thus providing similar results on the testing experiment target Davisson, Germer [6].

The electrons etc. tiny mass nucleus, carries the orbiting captured oscillating photon energy, in a waveform thus producing particle duality.

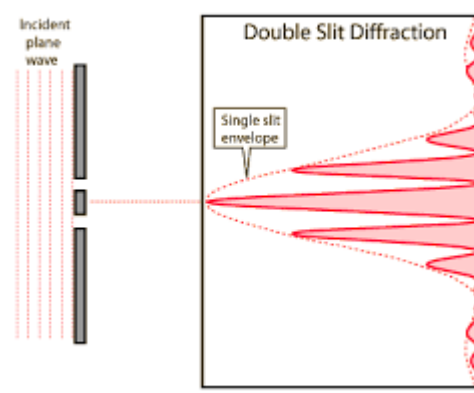


Fig (1)

In Fig (2) the Young, T [8] test these produce an interference pattern, via the two slits, if tiny slits are near each other and have the same light (or particle) source. Any method to detect these inside (passing thru a slit) is to use some of this particles photon energy (absorbing to detect). According to the Planck [3] equation, $E = (6.63 \times 10^{-34}) \times$ (frequency), by this loss of energy for detection, always changes the particle-wave to a lower oscillating frequency.

The two slits, now have different oscillating frequency wave particles, hence do not form a wave interference pattern. It is a known fact that only waves of the same frequency interfere with each other. If not on the exact same frequency, zero wave interference is always detected.

When you turn off the one slit detector, wave particles arrive through both slits, at again the same frequency, (thus stopped using some of its photon Planck energy to detect it) show a wave interference pattern again. This solves the problem of detectors, located in the slit holes, by turning on and off, appears to also, like magic, turn off and on, the wave interference pattern, to a none interference pattern.

By not applying, correct wave interference proven facts, some claim it was just observing that creates this on-off effect Schrödinger [10].

Therefore, observing the experiment does not alter the experiment once you understand what really happens in the experiment.



Fig (2)

**Live Dual Slit Pattern of Young, T [8]
Also Demonstrates Slits Are Light
Frequency Spilt (Color) Time
Reducing Rectangular Waveguides**

Fig (2), (Live Dual Slit Pattern) confirms it is not refraction, creating these colors since, having nothing to refract thru, just open slits.

No glass, crystal, water or ice etc. just vacuum or low humidity air and they do not refract, refractive index n of 1.0 vacuum and 1.00026 for air thus, photon speed changes and light bending proven again, both as incorrect hypothesis.

Not diffraction since, why would different colors output at different angles, passing thru air?

Fig (2) is an excellent example of the rectangular waveguide effect discussed in my previous paper Wenner, L [9]. The waveguide slits alter different frequencies, to different travel times, thus colors are separated and appear. Refraction (bending of light) cannot exist rather, time propagation varying occurs, by waveguides slits.

Fig (2) also indicates lower frequency infrared exit at a wider angle from the guide than the higher ultra violet frequencies as in prisms and guide equation Fig (13) approaching cutoff.

Note: Fig (2) sunlight in center is white, with no color and brightest, since all wave frequencies arrive at this angle, at very near the same time.

The color bands are being red shifted. The lower frequencies are time shortened (future) more, than the higher frequencies, passing thru $E_r = 1$ rectangular waveguide. This is why wide angle red is separated most and still bright on the outside bands, while blue has less future time projection, even considering our eyes frequency vs. levels detected, being skewed somewhat toward red.

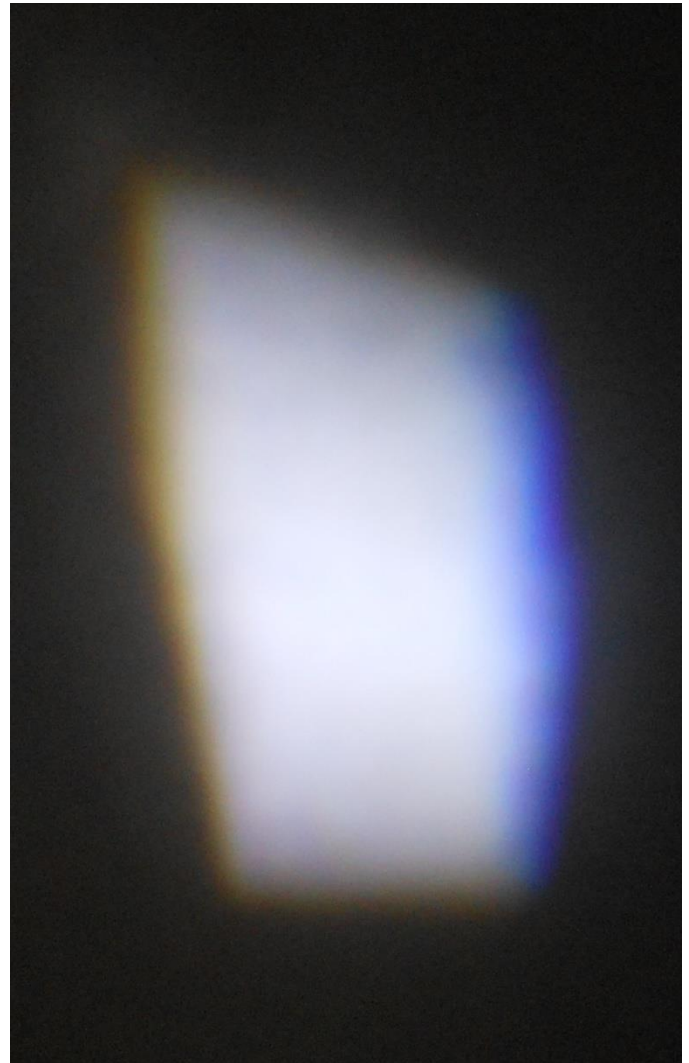


Fig (3)

Large Single Slit

With only one slit Fig (3) using white source light, some colors can be detected, without any interference pattern. This an extremely large, single rectangular waveguide, vertical slit opening, very much larger than ¼ nm wavelengths of infrared light frequencies. A slight, waveguide signal frequency dependent (color separation) time velocity effect is still produced and observed on the rim of Fig (3).

Demonstrating the rectangular waveguide effect is time altering of different light frequencies.

Time propagation also depends on the angle of source light at waveguide opening. Fig (10) Light approaching on angle varies. Wave encounters smaller, rectangular waveguide opening heights, as in prisms etc. at a sharper angle.

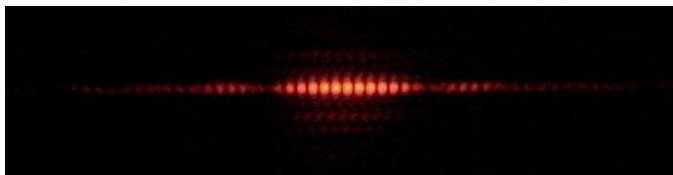


Fig (4)

Single Red Laser Dual Slit Experiment

White light was used for this dual slit pattern image Fig (2), if using only a single frequency, like red laser image Fig (4), with no color rainbow since, only same frequency waveguide time delay, and of course, an interference pattern, being on same red oscillating nm frequency. Waves only on the same frequency interfere with each other.

A typical conservation of energy is how electricity always takes the shortest path hence, using less of its stored energy, to transfer the most possible. If a two vs. one slit experiment used water pressure one sees similar effects. More water flows out two slits, than with only one, of same size.

Note: detected wave pattern is more intense (more energy arrives) with two slits in the Young, T [8] experiment than one, though white source energy remains the same. Depending on wave timing a doubling and zero wave interference pattern level is observed on rear (past the test slits)

panel or similar type of rear detector (target) method used.

Thus dual slit pattern is seen as a brighter, than the single slit pattern, since now containing twice the photon energy, to reflect off and observe.

If a photon is sent thru one slit it has no interference hence, it hits target seen Fig (1) & (3) as a 2nd dimensional energy wave band reflection.

If two adjacent slits, it is seen as a 2 dimensional Fig (2) interference energy wave, vertical band reflections with light frequency (color) separation.

In the 2nd dimension, waves move by width in all directions, at the same time, hence ½ of thru slit captured photon energy goes thru each slit. Since now separate waves, by waveguide angle time dilation then, also time advances different frequencies (colors), as seen on the above target spot reflections image, not just white bands of interference but, some of the white sun lights original colors Fig (2) demonstrates waveguide time separation.

De Broglie

A particle like the helium atom of low mass *m*, when in motion with a certain velocity *v* is endowed with the de Broglie [5] wave of λ wavelength $\lambda = h / mv$, where *h* is the Planck [3] constant.

One notes that this λ depends only on the mass *m* of the particle, whatever its internal structure and its *v* = velocity. See the de Broglie [5] computation method of this fact.

De Broglie thus, via math, confirms all known matter oscillates, including 2D light.

Also, if the matter has *m* mass 3D, slowing the *v* velocity, lowers the wavelength thus, oscillating frequency.

Cold, slows velocity of any mass but, not 2D zero mass, photons.

in a closed environment like a Rubidium crystal, coax, waveguide, water, glass etc.

Quantum Entanglement
"2D Time Entanglement"

Second Dimension
An Energy Vault

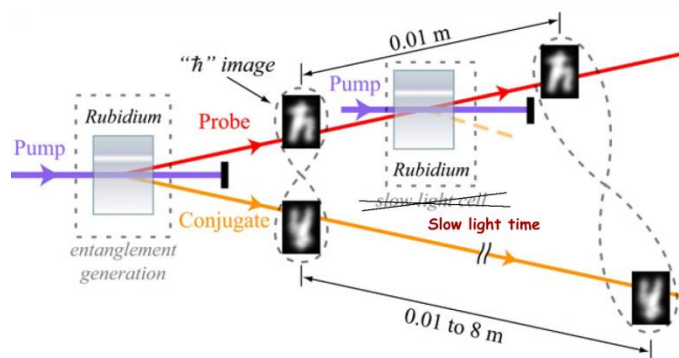


Fig (5)

Since first crystal Pump Fig (5), with 1/2 power difference, power level same time delay split together (Rubidium crystal used as a crystal nm wave rectangular waveguide 180 degree, 1/4 wave cycle in phase, power splitter), now two photon waves, go to 1/2 the original frequency each since, energy split in two via the Planck [3] equation. This also makes start time between photons as zero. One now instantly affects the other, hence Time Entangled.

The second Rubidium crystal Pump, time slows photon (Probe) only, not the Conjugate.

They still have exactly the same start time thus, always in 2D time phase lock. Photons always remain at light speed, regardless of our surrounding observed time dilation.

The only 4D time effect on photons is the difference in start / capture times in our 3D observations.

Moving in the second dimension, photons have zero time effects, see previous, thus in the second dimension, time to any distance does not exist, if both on, the exact zero time, start clock.

The words "Quantum Entanglement" indicates a quantity is entangled, rather than being named as "2D Time Entanglement."

Time entanglement is another example of how photon 2D time dilation can be accomplished easily

Photon energy cannot be created or destroyed. Then where is it stored? The 2nd dimension answers this question nicely. Of course, captured photon 2D energy is also stored by 3D mass particles, as well.

This indicates that photons are likely the only 3rd dimension particle energy source since, both mass and photon energy are easy to transform into same quantity designation (Joules, Electron Volts, Watts etc.) as is, to all known forms of mechanical energy.

Hence all known energy is a form of photon energy, even nuclear infrared heating waves.

At night, if you could add 10 billion background noise frequencies (near infinite number of frequencies available), of only 1 microwatt each, at the same time, you would have 5,000 watts of power available, assuming a 50% efficient signal energy collection method.

If others exist, all sub atomic mass-less particles, traveling at light photon velocity, are also likely travelers in the 2nd dimension.

This paper answers where mass-less energy particles actually reside and the two dimensional "Aether" they travel in, even when detected thus, some photon energy must be captured, by a 3D particle to detect (collect) same.

Considerations

1. The photon travels in the 2nd dimension. In our 3rd dimension, atoms use some of this captured photon energy via electrons to perform 3D work over 4th dimensional time.
2. Photon is a pure quantum amount of energy and travels as a wave in the 2nd dimension. The photon is pure energy of a set (minimum quantity-quantum) amount by Planck [3] with zero mass.

3. A photon when released (example light frequencies produced by heating a material) it returns to distance traveling in the 2nd dimension (collects source photon energy) then 2D Aether emits, at infrared or higher, becoming light frequencies, depending on the materials electron outer or other shell frequency, the captured photon, of the electron released. By continuing to heat many materials (adding more energy) they can go from low energy radio to ultraviolet or higher, which by [3] Planck, M. takes more energy the higher the frequency, so this energy must come from somewhere, which is the heat source, released into the heated material, again photon energy. A Space capsule produces RF noise, from heating, that blocks radio communication, to ground, during reentry, for example.
4. The release of the captured photon to travel distance in the 2nd dimension requires added energy from other photons, like infrared heating photons, these provide the captured photon enough energy, to escape.
This becomes the path of least resistance and energy use, now for a photon since, once achieving that energy level, it has zero resistance traveling in the 2D Aether. 14 billion years confirms this.
5. Time has no effect on the photon, traveling at light speed via Einstein [1], time is eternal hence, has stopped for it. We see them almost our 14 billion years old. This is not true of combined particles such as atoms that over time (4th Dimension effect) transform into other atomic forms. Photons remain forever.
6. Perhaps other 2nd dimensional particles traveling at light speed are possible and contain energy sources, as the photon, but we are unable to detect them? Nuclear binding forces etc. or more likely, source of

all energy in the 3rd and 4th dimensions is from captured 2nd dimensional photons, by all particles including subatomic, that make up a nucleus for example and bind it together. It is the subatomic quark particles, deciding use of their captured orbiting photon wave energy.

7. In electricity the electron is stable as DC direct current (acts like a particle) but oscillates in AC (acts like a wave) thus providing another example of particle duality and shows how both states do exist together and change to deliver the most energy in a given time. The AC wave has a proven average DC energy (63.7 % of peak).
8. 3rd Dimensional matter under conditions captures 2nd Dimensional photon energy and under other conditions also releases it.
9. Photon energy is likely the same energy captured and used by all particles including low mass and subatomic.
Subatomic particle fields, such as the Higgs field Gravity time well, are also likely generated by captured photon energy use. (Gravity must obtain energy from somewhere to exist).
10. In all proven equations light speed is constant. Velocity cannot be made faster or slower. Some believe a light photon can be slowed down by freezing to near absolute zero (In a magnetic bubble). It is the velocity of sodium atoms, as photon carriers, that are slowed down, not photon velocity.
11. According to Lorentz-Einstein [2][1], if planet x was moving at near the speed of light its time would greatly slow down. For example their value for 2 seconds takes only 1 second for us on Earth. They see light at the same speed as us, only their time value is twice as long as ours

12. Demonstrated in a previous paper Wenner, L. [9] time dilation requires zero power to change, unlike mass velocity. 3D mass particles are slowed not 2D photon light velocity.

A time machine would have zero G force since not moving, just another time, at same location. Earth is always moving to a different location at any time. Considering our universe as a closed environment, knowing your exact location and present time direction of Earth is a must, prior to any near or on Earth time dilation.

Even a small dilation would seem vehicle as near instantly jumping to another location in our 3D observations.

13. A paradox cannot really happen because the Earth travels through space randomly so, even though you know the time, you wish to arrive at, unknown is Earths location, at that time, past or future. One must receive a probe signal or some way to give universal (Planck level) coordinates, of exact spot, on Earth, at desired time, in space. No hope indicating, the concept of a grandfather or any time paradox is currently non-existent.

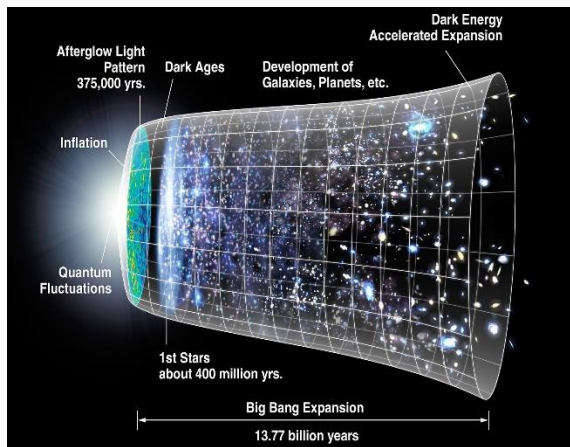


Fig (6) Incorrect Big Bang

Above is Fig (6) an incorrect cone image, not the universe as it truly is, a Web of

Galaxy Clusters seen in Fig (7).

The 2nd dimension is an energy containing timeless storage vault Aether of 2D waves.

This includes all radio, light, magnetic, nuclear weak, nuclear strong and gravitational waves. Demonstrating the 2D universe has enormous amounts of photon energy.

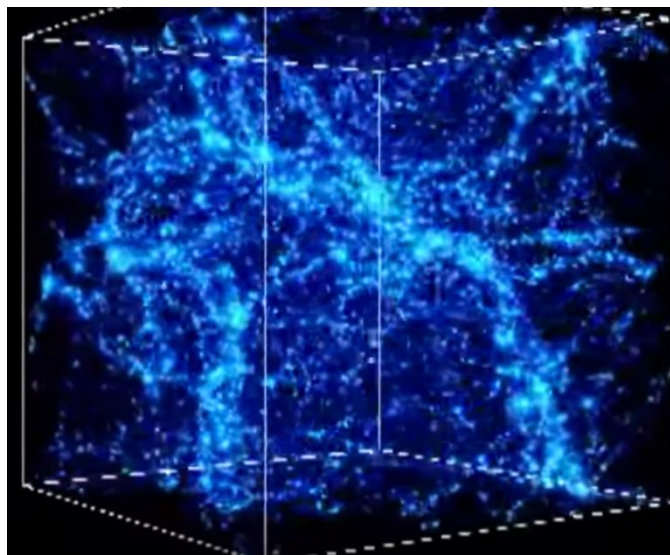


Fig (7)

Real Universe A Cosmic Web

Fig (7) appears the same, in the form of many locked star galaxies clusters. Showing the universe is a web, with our milky way one, in a single, bright, cluster of galaxies.

The 2D background signal noise levels are nearly the same decibel vs. frequency amount, in all directions arriving at Earth.

These measurements indicate, our near galaxies cluster, as one of the bright signal source glowing galaxy Spheres Fig (7), these surrounding Earth are the reason, for a nearly even level of microwave cosmic background noise (energy). Our Milky Way therefore must be somewhat centered in a galaxy sphere cluster.

Fig (7) also demonstrates the universe extends forever in only depth and in all

directions, therefore it is the 1D, First Dimension (depth).

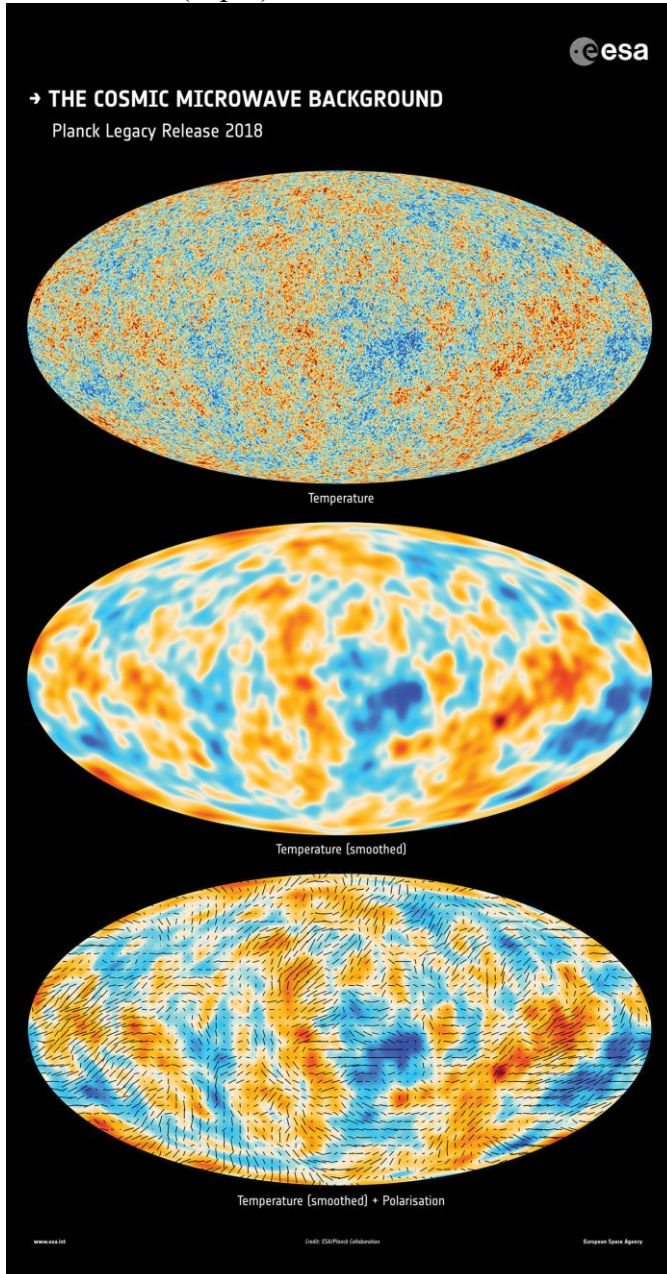


Fig (8)

A View of the 2D Universe
The Microwave Cosmic Background Energy

What Big Bang?

One major problem with the Big Bang Theory is that energy cannot be created or destroyed. So where was the Big Bang

energy created? It must always have existed, if not in our 3D universe, then in the 2D universe. Photons live forever.

The second dimension is real. Particles in the second dimension could combine and actually slow 2D particles, to below light speed, thus somehow become 3D particles, in our 3D dimension. The new 3D particles would slowly evolve into stars, now also under time, 4D effects, thus produce heat, in our dimension sending some photons back into timeless 2D distance travel and storage to become future 3D particles again. A conversion of our 3D universe back into the 2D energy vault. Photon energy quantifies.

Multi Tiny Bang Universe

Where could any supposed Nuclear Bang hydrogen protons or electrons come from, 2D universe particle collections or 2D time slow attractions (same or near start times) and or other unknown methods of past 2D matter / antimatter combinations etc.?

Our universe background noise is 2D signals therefore containing same photon wave type energy. 2D is (Fig 8), plasma of many frequency photon energy with different start times. This noise was not only created by very ancient stars but, currently also from our sphere outer galaxies and other unknown 2D heating or transmitting sources.

So, if second dimension is the energy vault of zero mass particles, they could have combined, all over the universe and require no giant Big Bang but many smaller Bangs.

This makes the universe appear, more as it really does, web like, not resembling the result of a Single Big Bang, with no visible center or single start spot, yet found by any telescope etc.

No single explosion creates such cluster webs shown in Fig (7). It demonstrates

much more likely multi explosions-combinations produced this Universe Web Galaxy Clusters effect.

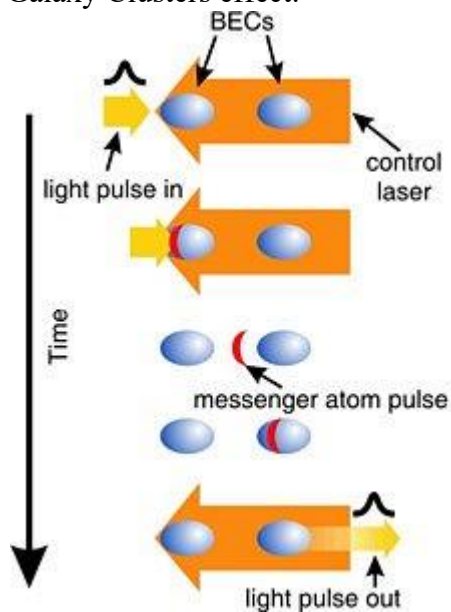


Fig (9)

Carrier Pigeon Travel Near Absolute Zero

Lene Vestergaard Hau (7) has now found (2018) that the light pulse can be revived, and its information transferred between two clouds of sodium atoms, by converting the original optical pulse into a 3D traveling matter wave Fig. (9) which is an exact matter copy of the original pulse, traveling at a molasses-like per hour. The matter pulse is readily converted back into 2D light when it enters the second of the super-cooled clouds and is illuminated with a control laser Fig (9).

"The Bose-Einstein [1.1] condensates are very important to this work because within these clouds atoms become phase-locked, losing individuality and independence," Dr. Hau [7] said. "The lock-step nature of atoms in a Bose-Einstein [1.1] condensate makes it possible for the information in the initial light pulse to be replicated exactly within

the second cloud of sodium atoms, where the atoms collaborate to revive the light pulse.

Per Lene Vestergaard Hau (7), a frozen sodium atom, was turned into a carrier type messenger atom, to the same frequency then, produce that frequency light (Plank energy) out, after also traveling a distance between clouds.

Cold allows sodium atom to be modulated, by a laser light, at light frequency (definition of a carrier) then release same modulation back into same frequency photon light in another distant cloud?

Bose-Condensate [1.1] cold actually reduces the frequency of sodium 3D particle oscillations Fig (9) BEC's., to the lasers frequency, per Lene Vestergaard Hau [7].

This current hypothesis is very possible suggesting therefore oscillate (modulate) and reemit later as correct. A sodium atom is 3D so it can be slowed.

The photon light wave is captured, carried as an oscillating sodium atom, at the laser light frequency then, released later during another control laser collision. A Carrier Pigeon method creates a time delay.

There is no slowing of light speed. The control laser speed also is not slowed.

The de Broglie [5] oscillation wavelength $\lambda = h / mv$, where h, the Planck [3] constant, is used to find the v velocity required, to oscillate a sodium atom at a frequency **Red laser** wavelength of $\lambda = 660 \text{ nm}$.

$v = h / m \lambda$
 $6.62606 \times 10^{-34} / 3.818 \text{ E } 10^{-23} \times 660 \text{ E } 10^{-9} = 26.295 \times 10^{-6}$
 micrometers per second. 60 seconds x 60 minutes = 3600 = .094572 meters per hour or about **95 mm per hour**. Cooled to

that speed now oscillates at 660 nm.

A Green laser 532 nm λ speed required is about **98.8 mm per hr.**

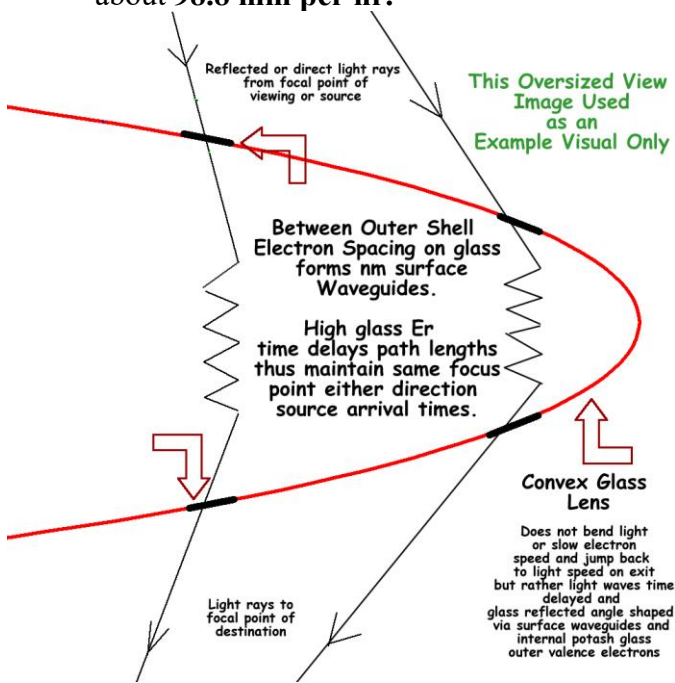


Fig (10)

Lens Effect Time Delay

Far field, to near field focus points are obtained, by a closed environment, time delay vs. depth, of spaced by atom outer shell distance valence electrons, become waveguides. Fig (10) is an exaggerated view. See [9] “Wenner, L

$$\lambda_g = \frac{\lambda}{(\sqrt{\epsilon_r}) \left(\sqrt{1 - \left(\frac{\lambda}{2a} \right)^2} \right)}$$

The guide equation of Fig (13) now has to consider, like coax cable Fig (11), the effect of high glass ϵ_r (dielectric constant) material not air (see added equation below). It becomes a multiplication factor. This creates an overall time delay, after only a very slight time advance, at near the lowest infrared cutoff frequency wavelength (about 800 nm) by valence electrons 200 nm surface guides.

$$T_p = \frac{1}{\sqrt{\epsilon_r}}$$

The typical lens glass has an ϵ_r of 3.7 to 10 an added equation above with ϵ_r time delay included, overcomes the slight time advance, of the surface

waveguides at near cutoff frequencies Fig (10).

Typical glass therefore time delays light increasingly by thickness. Time propagation T_p .

Fixed escape velocity does not depend on rocket mass. What then is altered with velocity to escape Earths’ gravity time well?

Earth space time length is actually overcome with SR Einstein [1]. By reaching a 17,500 mph over Earths velocity, rocket time length is altered (slowed) enough, from Earth time length, to escape Earths space time well. Time change is small but, so is the Earth space time gravity well, Higgs, P. [11] field small.

Time length, of any object in space, depends on its speed and mass, compared to that of another object in space. de Broglie [5], Einstein [1].

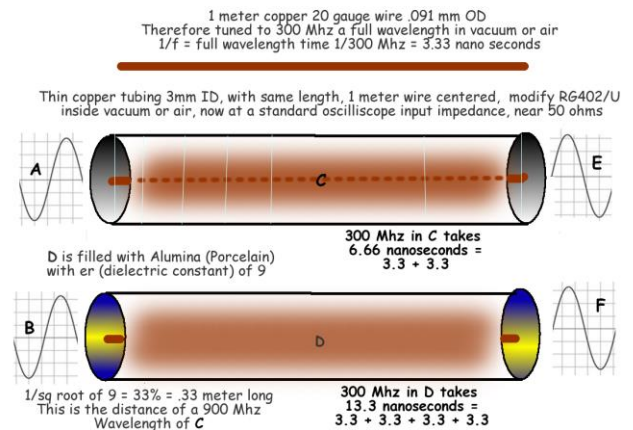


Fig (11)

A 300 Mhz Coax Future Time Travel Example

Note: Due to physical cutting exact coax lengths etc. a small +/- error factor after construction on exact timing into the future is assumed.

Considering **A** the reference observation point, it takes the 300 Mhz signal, about 3.33 ns to travel 1 meter then, another 3.33 ns for any oscilloscope (we always have a detection delay) to produce a full wavelength. Thus it is delayed into our detectable

future 6.66 ns. Considering **B** the reference observation point, with an Er of 9, it delays 300Mhz signal 13.33 ns into our fully detectable future.

Considering **E** or **F** as the future received reference observation point, one then will be observing the past of the same 6.66 ns and 13.3 ns signals respectfully.

It takes twice the time to travel thru **D** and deliver a **full wavelength** on oscilloscope as **C**. Yet, the time through **D** is three times longer than **C**.

A time dilation, not electrons slowing, to 1/3 light speed then, instantly jumping back, to very near light speed at the scopes input. Zero frequency change, with minute coax loss, is always observed.

How can supposed Vp (velocity of propagation) slow to 1/3, then back, with zero energy use or source? Time change does not require energy.

$$\text{Time Delay} = \frac{\lambda \sqrt{\epsilon_r}}{300 \times 10^6}$$

**Coaxial TEM mode
Time of Propagation Tp
Coaxial Cable Only**

The

Second dimension, as the Aether for photons, should include additional empirical observations, of a 2nd dimensional universe existence.

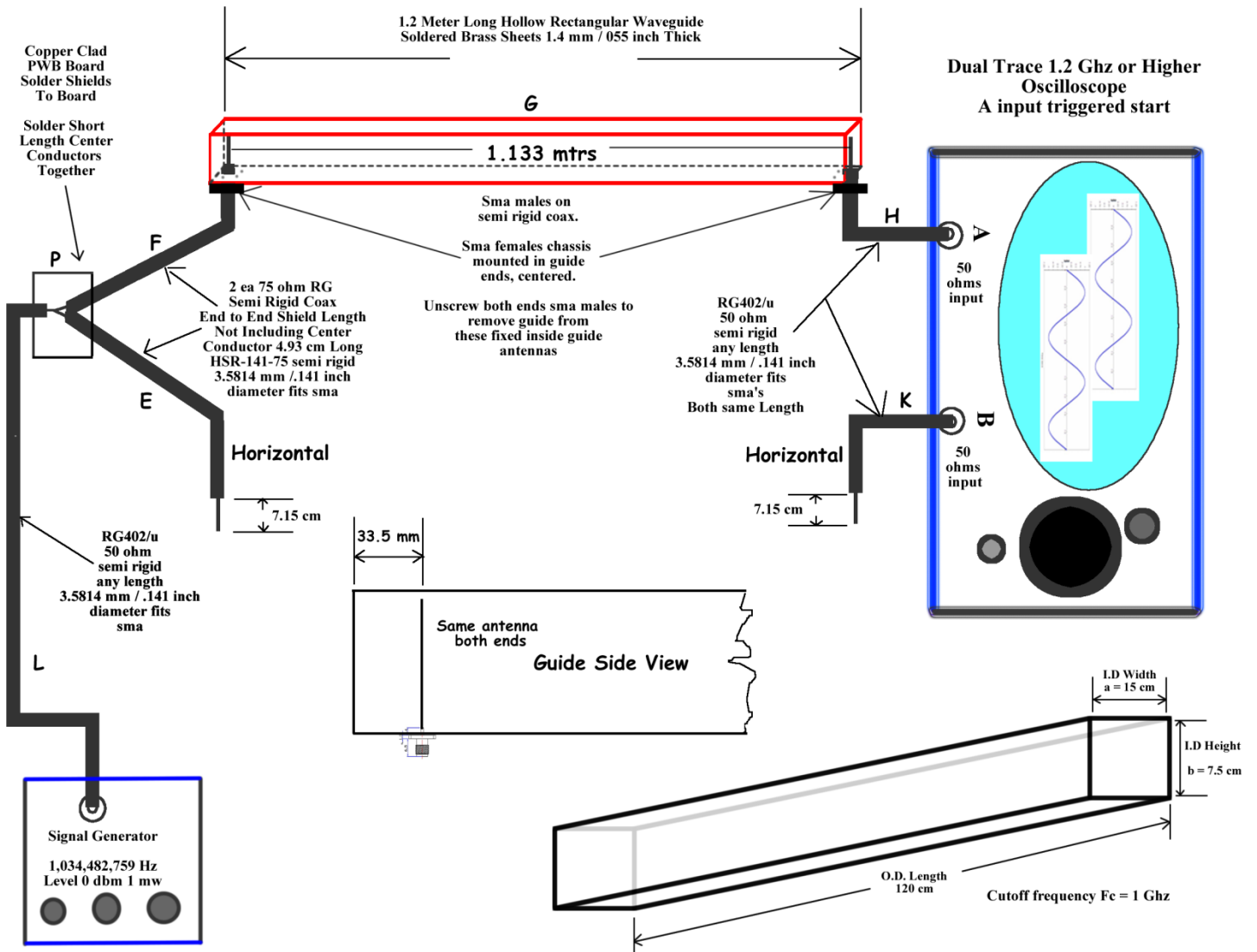
1. An antenna is polarized vertical or horizontal thus, radio photon electric waves are 2D.
Separation of 99% to 1% from vertical to horizontal also applies to light nm waves.

6. The only known way to reach light speed is to be of zero mass (not 3D), via Einstein [1].

7. The weight (mass) of an electron does not change with additional photon capture hence by adding photons, does not increase mass of an electron, only its energy level. (adding photons) Charging a battery or capacitor does not alter its weight.

2. If light is 3D then, it would not require 2 eyes to see depth since, it would have 3D information. Only one eye would be required to see 3D, (easier for our brain to decode light by not requiring the DNA creation of 2 eyes to see depth). Two would not be required to see 3D. Therefore light is 2D and has zero 3D information available for our brain to decode.
3. Light is 2D as shown thru the polarized lens effect.
4. Light has zero weight hence, 2D since all known mass is 3D. 2D light produces zero gravity. Dark matter is unproven and unlikely. Dark gravity is a better term since, unknown if gravity can be produced, in other dimensions that, do not contain our 3D mass which, we know produces gravity.
5. A light signal does not change shape, except in frequency and total amplitude, over time. Anything 3D changes shape over 4D time effects. We see star light 14 billion light years away. Has anything remained in same 3D shape for 14 billion light years? A modulated with information light wave, keeps its carrier modulated information the same, eternally. Identical to a radio signal regardless of amplitude or carrier frequency, the modulated information remains the same. Photons live forever.

8. The 2D magnetic MW photon wave radiating off an antenna is 90 degrees from the electric EW photon wave with, the magnetic wave dropping off at very short distance, meaning light is an EW type 2D photon wave, without magnetism, as are radio waves etc. The opposite magnetic pole pulls the magnetic wave next $\frac{1}{2}$ sine waves back, thus limiting the magnetic waves to a short distance. The electric EW photon wave has no such restrictions and 2D radiates distance always at light speed.
9. If you shine two lights against, directly toward each other, on even the same frequency, they do not strike each other, as in a laser creation. If photons were 3D they would hit each other, at least somewhat and scatter the light. 2D has no such restrictions. Laser light if 3D could therefore not exist.
10. An electron, neutron or proton etc. require additional energy to travel in a straight time line, under even low gravity, unlike the eternal 2nd dimensional pure energy photon, ignoring other than very large space time dilation, extreme time well warping gravity, to only bend its path.



Pulse signal on / off in bursts to identify A input trigger point on Oscilloscope. Cutoff is 1Ghz

Above 1 Ghz time dilation to the future is sharply reduced the higher the frequency.

As seen on all time dilation formula plots

E & F cables are a Wilkinson power splitter. A 100 ohm dump resistor is not required.

F & H cables sma's to guide are keep vertical in the guide.

A Guide side **A** is flat on non-metallic surface. Inside guide antennas are then vertical compared to E & K horizontal.

Cables E & K are laid horizontal on a non metallic surface.

This gives -20 dbc signal separation A & B inputs on Oscilloscope 1% interfere with each other.

90 Degree Antenna Polarization

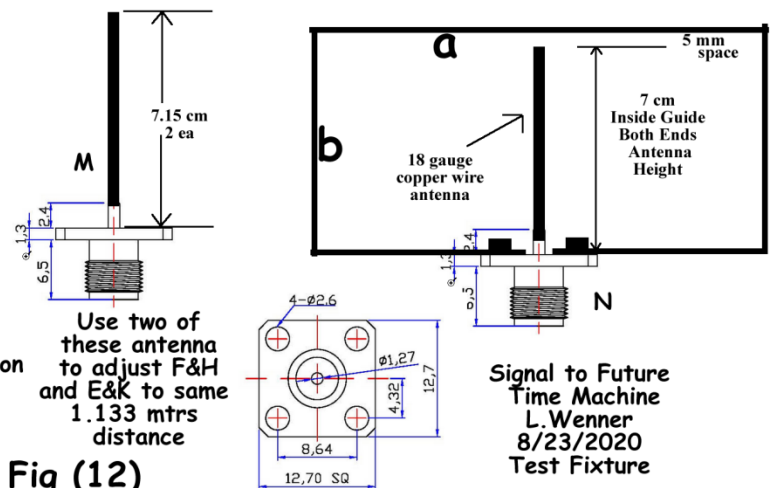


Fig (12)

Signal to Future Time Machine
L.Wenner
8/23/2020
Test Fixture

$$\begin{aligned}
 Fc &= 2a \\
 a &= 2b \\
 a &= \frac{\lambda}{2} \\
 b &= \frac{\lambda}{4} \\
 b &= \frac{a}{2} \\
 \lambda g &= \frac{\lambda}{\sqrt{\left(1 - \left(\frac{\lambda}{2a}\right)^2\right)}}
 \end{aligned}$$

Fig (13)

Using 300×10^6 as light speed, 1 Ghz wavelength is .3 meters long thus, used as cutoff frequency (a) inside guide (G) dimension is $\frac{1}{2}$ wavelength 15 cm and (b) inside guide (G) dimension is $\frac{1}{4}$ wavelength 7.5 cm per Fig (12).

To calibrate the fixture construct 2 ea. Fig (12) (M) antennas. Unscrew sma cables (F) & (H) from the guide bottom ends. Insert (M) antennas into (F) & (H) cables. Now adjust distance between them to match Oscilloscope trigger time of cables (E) & (K) which is close to 113.3 cm.

Then remove antennas and reconnect to guide bottom. Now retest and observe time dilation to the future indicated on trace A vs. trace B. With trace A, using the guide, at the same distance, when it traveled in air.

Not an increase in light speed since, everyone agrees, light speed is constant in a vacuum. This waveguide is full of air and functions the same in outer space, a vacuum. At close to cutoff frequencies this waveguide sends present or past signals into the future.

Since, it does not delay to the future, as coax cable or lens etc., this true time machine, transmits a signal to the future.

Fig (12) uses a wavelength of 29cm and a cutoff wavelength of 30 cm in equation Fig (13).

It takes 1,034,482,759 Hz (29 cm) about .967 nanoseconds to go 113.3 cm inside the guide.

$$\begin{aligned}
 \frac{.29}{300 \times 10^6} &= .9667 \times 10^{-9} \\
 1.133 / .29 &= 3.91
 \end{aligned}$$

It takes 3.89 nanoseconds to go 113.3 cm via air outside the guide.

$$\begin{aligned}
 3.91 \times .9667 \text{ nanoseconds} &= \\
 3.89 \text{ nanoseconds} &\text{ to travel 113.3 cm} \\
 \text{Using B input (E) and (K) antennas and air.} &
 \end{aligned}$$

3.89 ns - .967 ns = signal arrives at A scope input 2.923 nanoseconds before B signal triggers arrival via air.

Therefore a present .29 meter signal is sent 2.923 nanoseconds into the future compared to same distance of the signal thru air.

1Ghz signals and lower frequencies will not pass thru the guide of this size. All time to future effects are within about 5% or less just above 1Ghz.

When plotted this fixture follows a typical time dilation waveform curve and curve area of greatest time dilation just above cutoff frequency [9] “Wenner, L (2018).

Application Example?

If able to rapidly detect present carrier and say 4 then 8 wavelengths ahead of same carrier wave or more in time. One possibly could be combined 180 degrees and cancel same signals on both, with additional computer editing. This could lead to a noise separation. Recombine the noise 180 degrees with the present carrier and reduce signal to noise ratio. Likely valid if the modulating frequency is much lower than the carrier frequency.

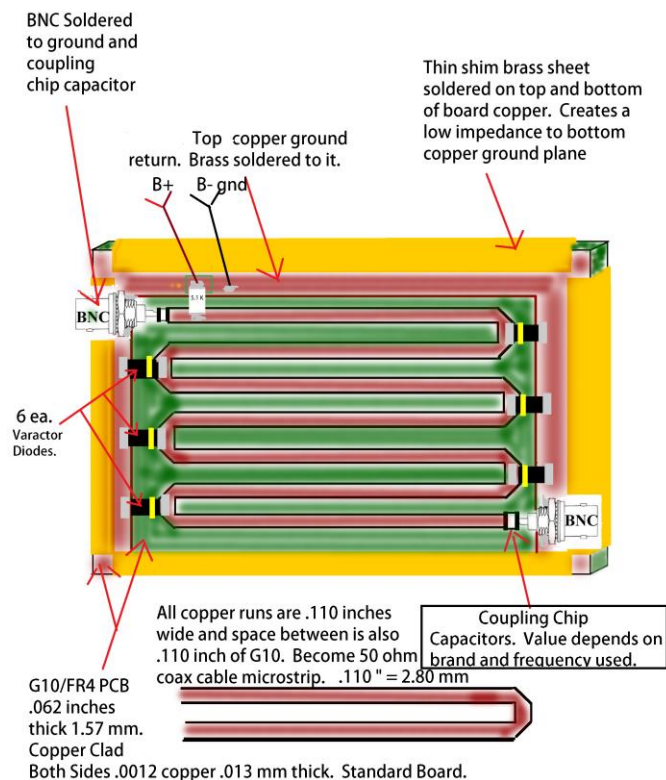
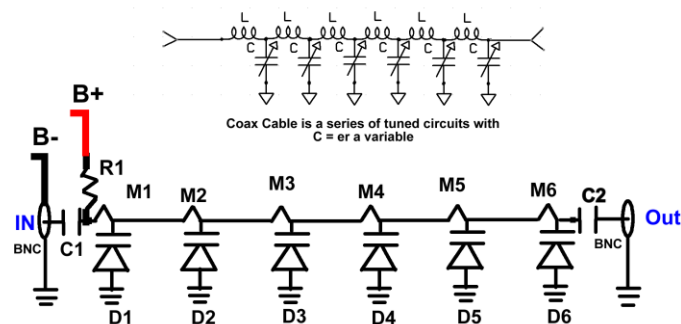


Fig (14)

A Signal Time Machine Delay Modulator



C1, C2 Coupling capacitors size depends on frequency & brand
 D1, D6 Varactor diodes select linear and fast variance
 M1, M6 Microstrip coax inductors and stray capacitance
 R1 non inductive 5.1K ohms
 BNC example as I/O connectors

Fig (15)

Time Phase Shifting
 Signal Time Delay
 Modulator Schematic

G10/FR4 Board is 76 mm Width & Height

If designed at 300 Mhz, a full wavelength in air is 1.0 meter long.
 To provide a wide range of time delay, best reduce to $\lambda / 2 = .5$ meters.

So (λ / \sqrt{er}) with G10/FR4 a typical $er = 4.7$
 $.5 / 2.168 = 231$ mm of total Microstrip line.

The Microstrip line is shared between the 6 ea, hyper abrupt varactor diodes, D1 to D6.

$231 / 6 = 38.50$ mm ea. and subtract the 2.80mm microstrip added line length.

Therefore each line is 38.50 mm - 2.80 mm = 35.70 mm or 1.406 " each long.

7th microstrip line is just a 50 ohm coax line to BNC.

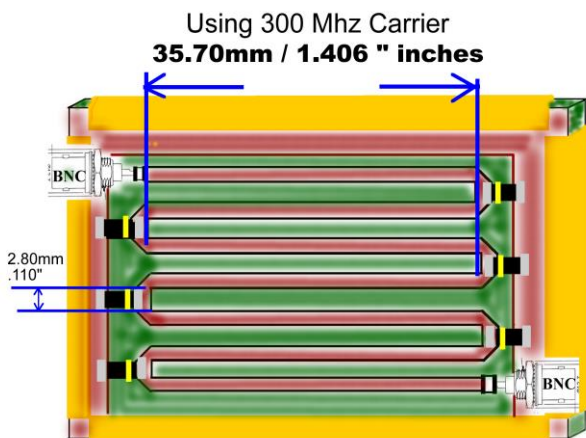


Fig (14A)

Microstrip Lengths

Delay Modulator is BNC input or output Bi-Directional.

Fixture Fig (14) allows changing diode quantities and spacing to adjust range. (10 diodes for example) accepts drill holes for added close grounding.

High speed data could be modulated onto the B+ and B- lines with 4v (1 to 20 volts) DC with Mhz frequency Data, via a coax feed (not wires), to 5.1K resistor. 5.1K value can be lowered to 1.0K, low inductance, chip, resistor to further increase data speed with a 5% signal loss in resistor.

Data transmission speeds depend on diode maximum capacitance, value change speed and 5.1K resistor value. A dump resistor to ground, across the diodes, will also speed up data speed and cost power but, since at low levels, easily amplified right back.

Test 300Mhz around 0 dbm (1 mw) or always below varactor rectification levels.

2.80 mm microstrip line capacitance with 4.7 er G10/Fr4 is close to 130 pf (pico farad) per meter. $130 \times .0357 = 4.64$ pf each run. Hence short leaded 1N5461 nominal 6.8 pf with Q of 600 are used for D1 thru D6. Ceramic chip coupling capacitors C1 and C2 at 300 Mhz are 910 pf (pico farad).

A Spectrum Analyzer to observe sidebands, provides modulation percentage and bandwidth levels, distortion (varactor linear regions) etc.

Fig (14) time delay modulator could also be used in an op amp, feedback phase correction loop to correct some of the phase (time delay) distortion of a class B (high efficiency) push pull transmitter, used with low level type, audio-data modulation methods (also high efficiency).

Quantum Thoughts

Schrödinger [10] wrote if you put a cat in a box with poison, you do not know exactly when the cat died, until removing the lid. Therefore, indicating it as an estimate, to over justify statistics use, in even current physics. You don't know until observed.

Today, we set limits on everything, to Planck levels, so if we set limits, on unbiased observations, we do not require statistic use, for our current observations either.

Using two or more totally unbiased computers, each with easily 5 or more, outside the box sensors, heart, breathing, movement, x-ray, temperature, of cat in the box, we know within ridiculous limits, at exactly when, the cat died in the box and with the lid still on and zero personal biased observations.

Therefore using statistics in Physics is not required, if there is an abundant, now meaningless unbiased proven observation levels, just as in Planck quantum level limits. Easily accomplished via multi unbiased computers, exact enough to be called absolute, now requires zero or minimal, statistical guess work.

Charging a battery with solar light, placing it in a flashlight, then walking into a dark area, at 5 km per hr and turning it on (back to light), does not mean you have slowed light speed, to 5 km per hour. It means you are now the Carrier Pigeon, not a cold sodium atom, as in the Lene Vestergaard Hau (7) experiments.

References:

[1] Einstein, Albert (1905), "Zur Elektrodynamik bewegter Körper", *Annalen der Physik*, **322** (10): 891–921.

[1] Einstein, A. (1907). "Über die Möglichkeit einer neuen

Prüfung des Relativitätsprinzips". *Annalen der Physik*. **328** (6): 197–198.

[1.1]Einstein, A (10 July 1924). "[Quantentheorie des einatomigen idealen Gases](#)" (PDF). Königliche Preußische Akademie der Wissenschaften. Sitzungsberichte: 261–267.

[2] Lorentz, Hendrik Antoon (1895), [Versuch einer Theorie der electrischen und optischen Erscheinungen in bewegten Körpern](#) [Attempt of a Theory of Electrical and Optical Phenomena in Moving Bodies].

Lorentz, Hendrik Antoon (1899), "[Simplified Theory of Electrical and Optical Phenomena in Moving Systems](#)", Proceedings of the Royal Netherlands Academy of Arts and Sciences, **1**: 427–442

Lorentz, Hendrik Antoon (1895), [Versuch einer Theorie der electrischen und optischen Erscheinungen in bewegten Körpern](#) [Attempt of a Theory of Electrical and Optical Phenomena in Moving Bodies]

[3] Planck, M. (1906). Vorlesungen über die Theorie der Wärmestrahlung. Johann Ambrosius Barth.

Planck, M. (1906). Vorlesungen über die Theorie der Wärmestrahlung. Johann Ambrosius Barth.

Planck, M. (1915). Eight Lectures on Theoretical Physics. Wills, A. P. (transl.). Dover Publications.

[4] Higgs, Peter (1964). "Broken Symmetries and the Masses of Gauge Bosons". *Physical Review Letters*. **13** (16): 508–509.

[5]Louis de Broglie "The Reinterpretation of Wave Mechanics" Foundations of Physics, Vol. 1 No. 1 (1970) de Broglie, L. (1923). "Waves and quanta". Nature. 112: 540.

[6]Davisson, C. J.; Germer, L. H. (1928). "Reflection of Electrons by a Crystal of Nickel" (PDF). Proceedings of the National Academy of Sciences of the United States of America.

[7] Lene Vestergaard Hau; Busch, B. D; Liu, Chien; Burns, Michael M; Golovchenko, J. A (1998). "Cold Atoms and Creation of New States of Matter: Bose-Einstein Condensates, Kapitza States, and '2D Magnetic Hydrogen Atoms'". In F. Aumayr; HP. Winter (eds.). Photonic, Electronic, and Atomic Collisions (Proceedings of the XX.ICPEAC, Vienna, Austria, July). World Scientific, Singapore. [arXiv:cond-mat/9804277](https://arxiv.org/abs/cond-mat/9804277). [Bibcode:1998cond.mat..4277V](https://arxiv.org/abs/cond-mat/9804277).

[8]Young, T. (1802). "Bakerian Lecture: On the Theory of Light and Colours". Phil. Trans. R. Soc. Lond. **92**: 12–48.

"Thomas Young". School of Mathematics and Statistics University of St Andrews, Scotland. Retrieved 30 August 2017.

"Young, Thomas (YN797T)". A Cambridge Alumni Database. University of Cambridge

[9] "Wenner, L (2018)" Signal Time Travel Dilation TEM Mode Time Machine Creation Theory

https://www.academia.edu/37595209/Wenner_Time_Dilation_Ref_10_04_2018_1_.PDF

Cern Open Air Creative Commons Website <https://www.zenodo.org/record/1447218#.XvUHS-d7lhE>

[10] Schrödinger, E. (1928). Wave mechanics, pp. 185–206 of *Électrons et Photons: Rapports et Discussions du Cinquième Conseil de Physique*, tenu à Bruxelles du 24 au 29 Octobre 1927, sous les Auspices de l'Institut International Physique Solvay, Gauthier-Villars, Paris, pp. 185–186; this translation at p. 447 of Bacciagaluppi, G., Valentini, A. (2009),

Quantum Theory at the
Crossroads: Reconsidering the 1927 Solvay
Conference, Cambridge University Press,
Cambridge UK.

[11] Higgs, P. (1964). "Broken Symmetries and the
Masses of Gauge Bosons". [Physical Review Letters](#).
13 (16): 508–509. [Bibcode:1964PhRvL..13..508H](#).
[doi:10.1103/PhysRevLett.13.508](#).

[12] E.J. Wilkinson, "An N-way Power Divider",
IRE Trans. on Microwave Theory and Techniques,
vol. 8, p. 116-118, Jan. 1960, doi:
[10.1109/TMTT.1960.1124668](#)