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## Space and Time

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# Space with Time

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**Abstract:** If the energy was not always there as time, then nothing would exist to ask how everything came into existence. With this in mind, timeless energy and cause of action is explained outside the realm of time where the speed of light is constant relative to matter but is infinite (standing) relative to time. Electromagnetic waves are infinite from open-ended standing waves moving toward the static equilibrium. Magnetic waves are gravity forces in the electric field and are curved from mass in general relativity.

## 1. Introduction

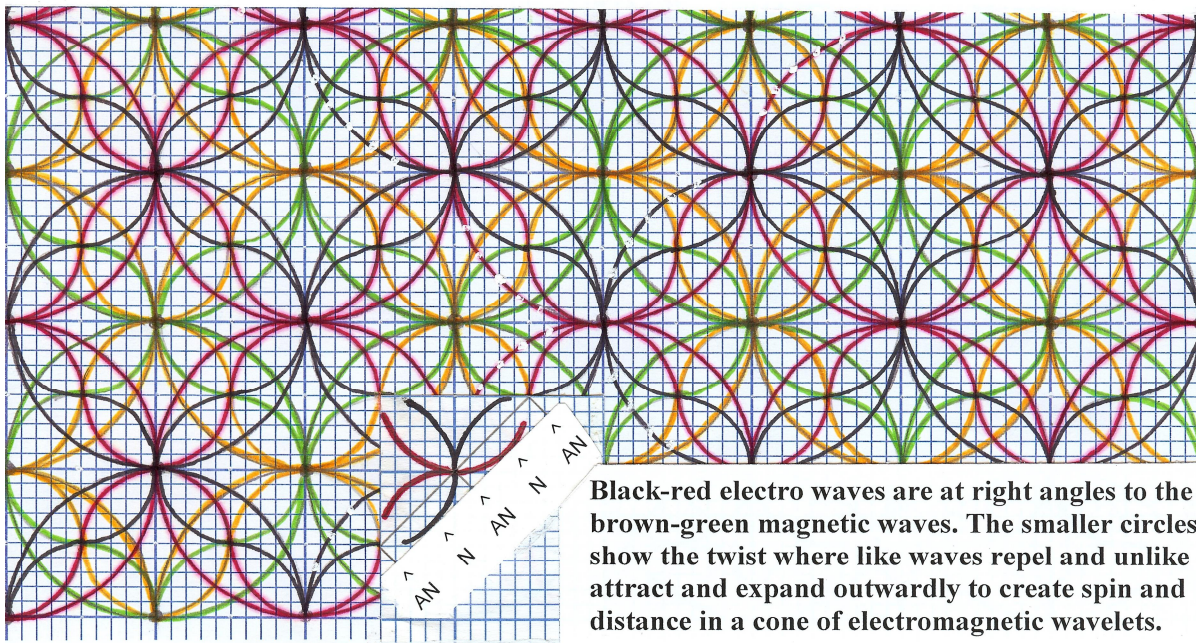
The electromagnetic field is comprised of open-ended standing wavelets in the opposite direction relative to mass. Open-ended wavelets are curved quadrant waves having electric and magnetic fields and the magnetic field provides the gravitational forces on the electric field. Gravity forces are very weak compared to the other forces of nature because gravity forces are at the nodes in the magnetic field while the other forces are at the antinodes in the electric field. Gravity forces at the nodes in the magnetic field effect mass in the electric field at the constant speed of light. Photons at the antinodes in the magnetic field pack a punch as particles with energy equal to frequency of the photons based on Planck's constant,  $E = hf$ .

## 2. Report and Figures

From Figure 1A below, energy is formed into half wavelengths at ultra high frequency standing waves. The black-red (dark) electric waves become transverse waves in the expansion process forming perpendicular to the brown-green (light) magnetic waves. As the half waves multiply from energy displacement at the antinodes, the expansion of the transverse wavelets becomes three dimensional as space in a sphere resulting in an endless unit without a boundary. The half waves are open-ended where the antinodes are at the ends and nodes in the middle such that each half wave keeps multiplying indefinitely to complete whole wavelengths in the electromagnetic field. Each half wave shell in a spiral is equivalent to two smaller half waves within completing whole wavelengths where light speed is constant relative to mass,  $C = f \lambda$ .

Figure: 1A

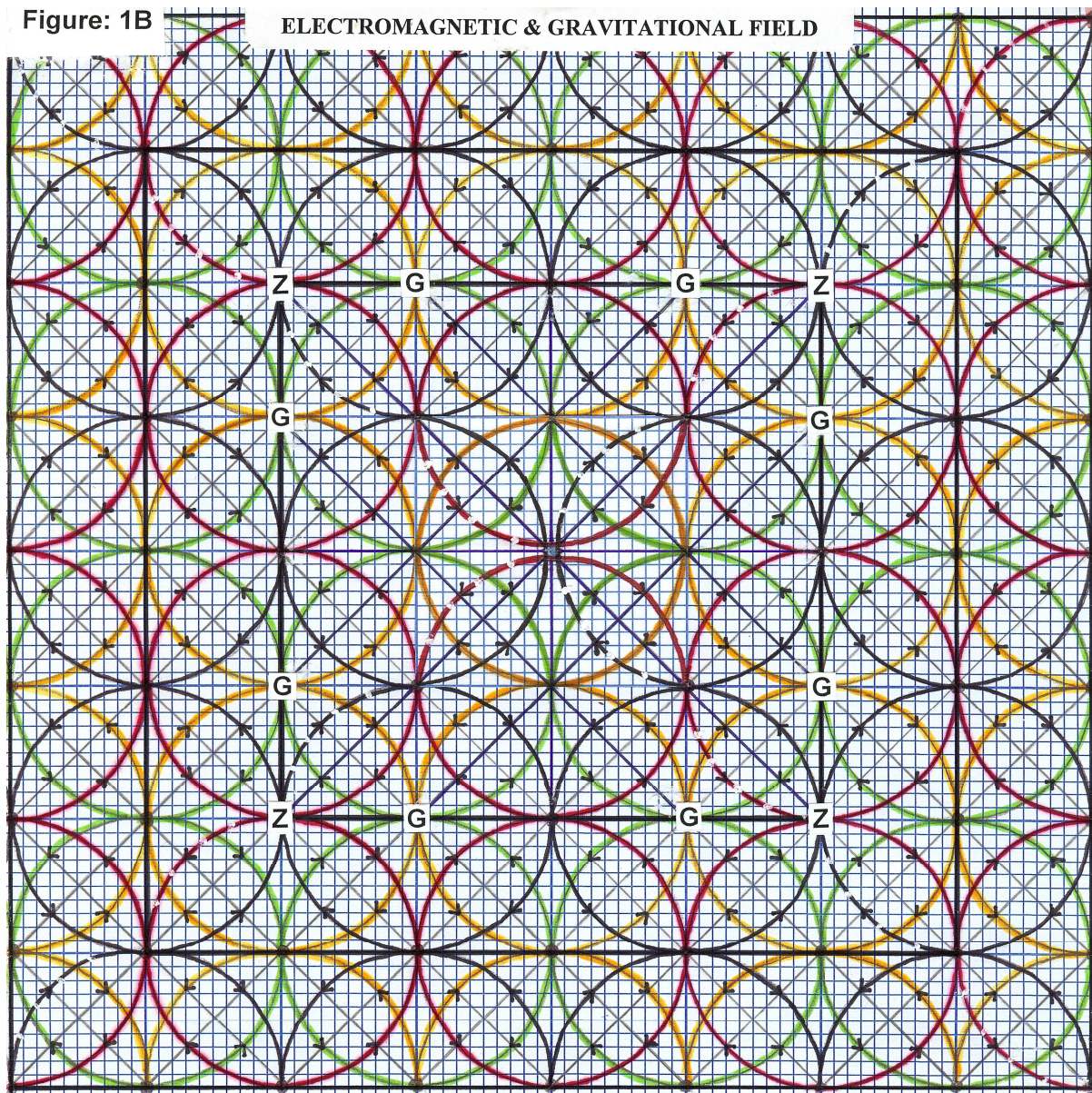
ULTRA HIGH FREQUENCY WAVELETS



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From illustration Figure 1B below, moving two steps in any direction from mass (center) and squaring, there are four complete green (light) circles in the square. On three steps from center and squaring, there are nine complete brown (light) circles in the outer square and so on in the square of the distance from mass in the magnetic field. Light and gravity waves propagate in the magnetic field at the square of the distance to mass (center). The black-red electric waves and brown-green magnetic waves oscillate perpendicular to each other as circular and sinusoidal waves with electric charges propagating in the direction Z and magnetic current propagating in the direction G. This is likened to placing the palm of the right hand edgewise on the table with the thumb sticking up; then place the left palm facing down between the fingers of the right hand with the thumb extended out. The thumb on the right hand is the E vector oscillation for the electric field and thumb on left hand is the B vector oscillation for the magnetic field with propagation of electric energy in the direction of fingers on the right hand and propagation of magnetic energy in the direction of fingers on the left hand. Magnetic current is circular shown as brown and green circles around mass (center) where a change in one field will have a change in the other. On the next increase in electric wave amplitude moving in direction Z, the magnetic wave amplitude will be center at the nodes relative to direction Z. The motion of open ended point-particles in direction Z as mass in conjunction with the motion of open ended photons in direction G as light and gravity provides Pythagorean Theorem and square distance. Holding the illustration up diagonally at eye level show how the electric wave antinodes are in a straight line when the magnetic waves are at the nodes. The mass experience is from all four corners of the field in direction Z going into infinity without time.



Electric and magnetic wavelets expand into larger wavelets from the antinodes (displacement) energy of standing waves at twice the amplitude of the smaller wavelet giving distance to the field. The waves need to be visualized as a spectrum of different size wavelengths increasing in size moving outwardly, not one size wavelength as shown. The multi source pattern of the wavelets is energy left in the field as the electromagnetic spectrum after mass and gravity are condensed into finite energy. Mass in the electromagnetic field is comprised of open-ended standing wave energy where light speed is constant. Gravity forces come from the brown-green magnetic waves inside the black-red electric waves Figure 1B (center) and an inward attraction force at the nodes that conserve energy. Gravity magnetic forces are at the nodes when the mass electric forces are firing at the antinodes and visa versa. In Figure 1B, the black electric and brown magnetic are outward/inward circular waves respectively while the red electric and green magnetic are expanding/contracting sine waves respectively. Quarks deep in the cone apex include the black electric circular waves, the black electric sine waves and green magnetic sine waves as the proton while the brown magnetic circular waves, the brown magnetic sine waves and red electric sine waves are the neutron. Gluons are the amplitude of the wavelets like the  $e$  coupling constant but are much stronger in the cone apex holding protons and neutrons together. Beta decay come from the interaction of the black-red sine waves between the neutrons and protons. Beta decay is the aging process in nuclei couplings of finite energy attracted to and in motion to each other. Electrons at the base of the quantum cone are the red-brown coupling waves and positrons are the black-green coupling waves. Electron(s) as a mass particle continue outwardly to interact with photon waves at the base of the quantum cone which is amplitude of the  $e$  coupling constant. The  $e$  coupling constant, about 137.03597 is the amplitude for a real electron to emit or absorb a real photon [1]. Each photon is a complete wavelength within a half wave particle shell and is expanding outwardly into infinity. Mass is finite energy at the antinodes while there is no mass at the nodes. All finite energy is subject to the frequency and wavelength of the antinodes and nodes where past, present and future are like motion pictures on screen. In essence, mass and time do not exist at light speed because each energy shell is a complete wavelength having two smaller shells within each shell where  $C = f \lambda$ . Finite energy equal  $MC^2$  because light speed is constant relative to mass from point A to B; otherwise, light speed is infinite without existing mass. Pi is due to the circles never closing in the mass composition from open-ended standing waves.

### 3. Conclusion

Left Side	Right Side
Extended Equation: $E = C = \infty = ZG^2$	Where $ZG^2$ is infinite wave energy including space and time.

Open-ended standing wave energy is on both sides of the equation where light speed is infinite on the left side and finite relative to mass on the right side. The wave propagation moving in direction Z is similar to classical electromagnetic wave propagation and account for the inverse square distance of light and gravity relative to mass. Mass in the electric field already includes part of the magnetic field as subatomic forces; the remaining magnetic field spectrum is light and gravity on mass. The remaining electric field energy not subject to the magnetic effect on mass is dark energy. A star is formed when a large amount of gas (mostly hydrogen) starts to collapse in on itself due to its gravitational attraction [2]. Mass as finite energy is receding as a result of the different gravity levels in the field evidenced by the redshift and distance. Finite energy is space and movement in direction Z is the arrow of time; hence, space-time. Thus, light speed is standing having velocity only when mass is relative to it which is finite energy in the form of curved space-time. Space-time in general relativity is not flat but curved by the distribution of mass and energy in it [3]. Time dilates when it approaches light speed and is non-existing in standing wave energy. Religion and science agrees because religion is a belief in an infinite creator while science having finite energy as time is coming from infinite light radiation. Infinite open-ended standing wave energy is the background aether and cosmological constant where everything from finite energy propagates in time. The universe is static from standing energy in the equation but the energy is also infinite without time, without beginning or end.

### References

- [1] Feynman, R.P. (1988). *QED The Strange Theory of Light and Matter*, Princeton University Press, p129.
- [2] Hawking, S. (1996). *The Illustrated A Brief History of Time*, Bantam Books, p105.
- [3] Ibid, pp 40-42. Note: Background field General Relativity Fig.2.16 p41 is similar to the Quantum Field in Fig.1B above.