

Cosmology and Time

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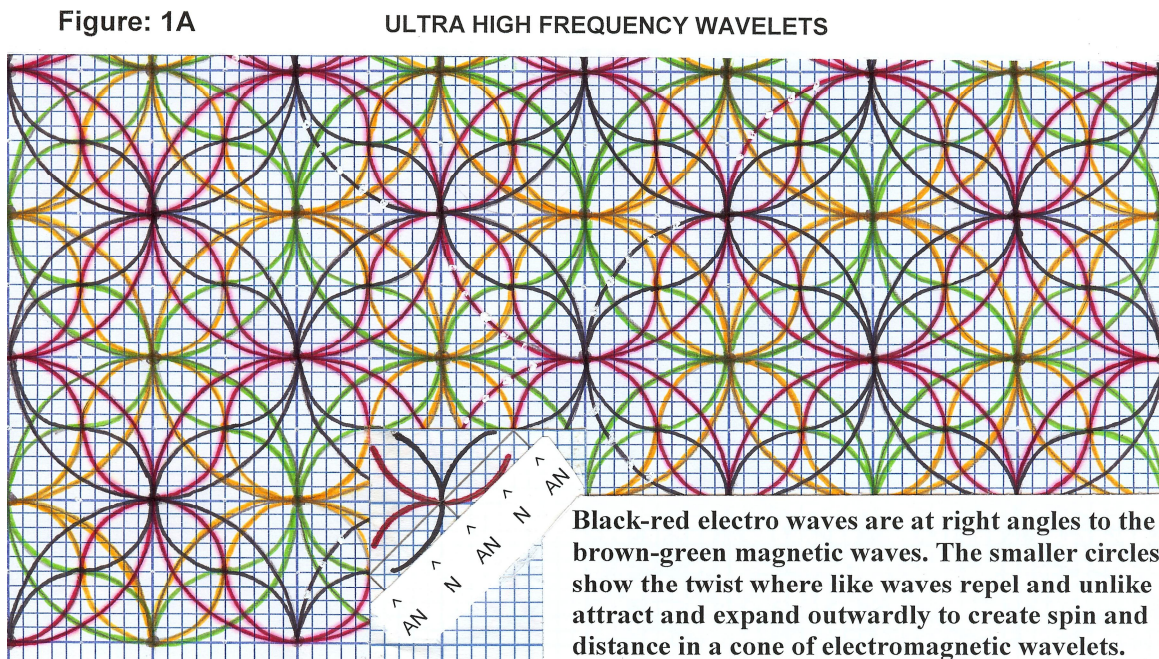
Abstract: How did the universe come into existence? This very question cannot be asked because everything came from energy without time. If the energy was not always there as time, then nothing would exist to ask. With this in mind, infinite energy is explained outside the realm of time. Magnetic wavelets in a vacuum at the constant speed of light are shown as gravity force in the electromagnetic field. Gravity forces of the magnetic field interact with mass wavelets of the electro field. The magnetic field is curved from mass of the electro field in finite energy.

1. Introduction

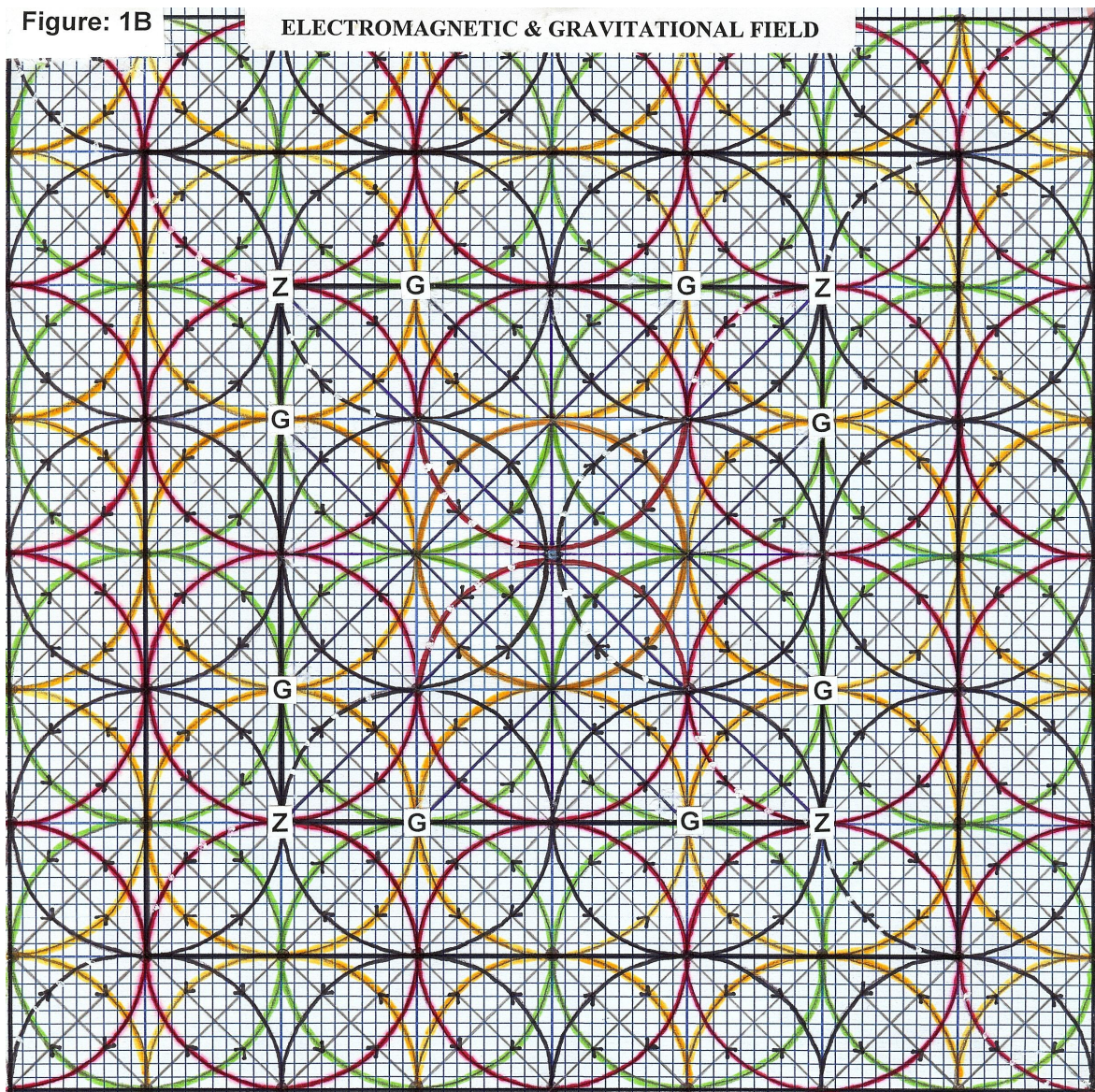
The electromagnetic field is comprised of standing wavelets in the opposite direction where direction is relative to the source of energy. Standing wavelets have electro and magnetic fields and the magnetic field provides the gravitational forces on the electro field. Gravity forces are very weak compared to the other forces of nature because the other forces are at the antinodes in the electro field while gravity forces are at the nodes in the magnetic field. Gravity forces in the magnetic field effect mass in the electro field at the constant speed of light. Photons are standing wavelets packing a punch as a particle at the antinodes. Energy is equal to frequency of the photon wavelets based on Planck's constant, $E = hv$.

2. Report and Figures

From the illustration Figure 1A below, energy is formed into half wavelengths at ultra high frequency standing waves. The black-red (dark) electro half waves become transverse waves because of the expansion process forming perpendicular to the brown-green (light) magnetic half waves. As the half waves multiply from energy displacement at the antinodes, the expansion of the transverse wavelets becomes three dimensional 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 are in the middle such that each half wave keep multiplying indefinitely to complete whole wavelengths in the electromagnetic field. Each half wavelet is equivalent to two smaller half wavelets as a spiral within the wavelet to complete a whole wavelength where $C = f \lambda$.



Moving two steps from center in Figure 1B 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 inverse square distance of the magnetic field. Moving diagonally from center, the waves alternate between the electro and magnetic field where a change in one field will cause a change in the other. The (black-red) electro field and (brown-green) magnetic field oscillate perpendicular to each other as circular and sinusoidal waves with mass energy in the direction of propagation Z. 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 electro field and thumb of the left hand is the B vector oscillation for the magnetic field with propagation of mass energy in the direction of the fingers on the right hand Z. Propagation of magnetic energy is the direction of the fingers on the left hand G having a gravitational effect on mass at the nodes. In essence, the magnetic field is the square of the distance to the electro field that appears circular to the direction of the electro field only that the magnetic field is moving in the direction of G to the direction of electro field Z. In other words, the speed of light in one field is always moving ahead of the other field at the square of the distance in the direction of propagation Z. Holding the illustration up diagonally at eye level show how the transverse wavelets oscillate in the electromagnetic field.



Electro 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. Gravity forces come from the brown-green magnetic waves inside the black-red electro waves Figure 1B (center) which are an inward attraction force at the nodes that conserve the energy. Gravity magnetic forces are at the nodes when the mass electro forces are firing at the antinodes. The electro is an outward expanding force from the source of energy while the magnetic is an inward contracting force to conserve energy. In Figure 1B, the black electro waves and brown magnetic are outward/inward circular waves respectively while the red electro waves and green magnetic waves are expanding/contracting sine waves respectively. Quarks deep in the cone apex include the black electro circular waves, the black electro sine waves and green magnetic sine waves as the proton while the brown magnetic circular waves, the brown magnetic sine waves and red electro 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. Electrons at the base of the quantum cone are the red-brown sine coupling waves and positrons are the black-green sine coupling waves. Electron(s) as a mass particle continue outwardly to interact with photon wavelets at the base of the quantum cone which is the 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]. Mass as ultra high frequency standing waves have energy where $E = MC^2$. A star is formed when a large amount of gas (mostly hydrogen) starts to collapse in on itself due to its gravitational attraction [2]. Space-time in general relativity is not flat but curved by the distribution of mass and energy in it [3].

3. Conclusion

Left Side *Right Side*

Expanded Equation: $\mathbf{E} = \mathbf{C} = \infty = \mathbf{ZG}^2$ Where \mathbf{ZG}^2 is total wave energy.

The standing waves are on both sides of the equation where the speed of light is static on the left side and is relative to mass as a constant on the right side. Energy in the direction of propagation Z of the electro field times energy of the magnetic field in the direction of propagation G is total wave energy. The difference from the classical electromagnetic wave is important to account for the inverse square distance of light and gravity in relation to the electro field in the direction of propagation Z. It also accounts for the gravitational effect on mass when the magnetic quadrants are at the nodes in relation to the mass electro quadrants at the antinodes. Vectors E and B with mass energy in the direction of propagation Z are three spatial dimensions in space with light and gravity from the magnetic field in the direction of propagation G as the square of the distance to mass energy. Mass energy in the electro field already includes part of the magnetic field energy at the subatomic level; the remaining magnetic energy squared is light and gravity moving in the direction of propagation G. The remaining electro field energy not subject to the magnetic effect on mass is dark energy becoming static from open-ended standing waves. Electromagnetic field waves have time frames from the intermittent effect at the nodes resulting in past, present and future like a movie. Nodes of the electro and magnetic field waves give intermittent time frames of mass moving toward the static equilibrium. The electromagnetic field is infinite from open-ended standing waves and mass as finite energy is receding as a result of the different gravity levels in the field evidenced by the redshift and distance. Consequently, the energy from one universe applies to both sides of the equation with finite energy in the form of mass on the right side and infinite energy in the form of open-ended standing waves on the other side at absolute rest without distance and time.

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.

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