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Interpretation of Dark Matter, Dark Energy and Hubble's Law Based on Wu's Pairs and Yangton and Yington Theory

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[Abstract]
Based on Yangton and Yington Theory, it is proposed that Dark Matter is composed of Wu's Pairs with a tetrahedral structure. There is nearly no attractive force between two Dark Matters, neither between Dark Matter and any other substance. Only limited gravitational force can be generated by Dark Matter. Therefore, Dark Matter cannot be used as the building blocks for any substance. Also, because Dark Matter has a very stable structure and no particle can escape from it, therefore Dark Matter is totally invisible. That is why it is named "Dark Matter". On the other hand, Dark Energy is proposed in explanation of Hubble's Law. Although acceleration Doppler Effect can be used to derive Hubble's Law in interpretation of universe expansion and acceleration based on a superfast acceleration speed and an imaginary Dark Energy, there is no such kind of energy can be found in the space. That is why it is named "Dark Energy". Furthermore, Wu's Spacetime Shrinkage Theory based on the shrinkage of the diameter l_{yy} (Wu's Unit Length) and circulation period t_{yy} (Wu's Unit Time) of Wu's Pairs due to aging of the universe can also be used successfully in derivation of Hubble's Law. Without acceleration and Dark Energy, Wu's Spacetime Reverse Expansion Theory gives a more reasonable explanation to Cosmological Redshift and Hubble's Law.

[Keywords]
Yangton and Yington, Wu's Pairs, Force of Creation, String Force, String Theory, Five Principles of the Universe, Subatomic Particles, Standard Model, Photon, Dark Matter, Photon Inertia Transformation, Vision of Light, Equation of Light Speed, Hubble's Law, Dark Energy, Doppler Effect, Acceleration Doppler Effect, Cosmological Redshift, Universe Expansion, Wu's Spacetime, Wu's Spacetime Theory, Wu's Spacetime Shrinkage Theory, Wu's Spacetime Reverse Expansion Theory.

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I. Introduction

1. Yangton and Yington Theory

Yangton and Yington Theory [1] is a hypothetical theory of Yangton and Yington circulating particle pairs (Wu's Pairs) [1] with a build-in inter attractive force (Force of Creation) [1] that is proposed as the fundamental building blocks of all matter in the universe. All elementary subatomic particles [2] having string structures as proposed by the String Theory [4], are made of Wu's pairs by string force [3], the Yangton and Yington attractive force between two adjacent Wu's Pairs. Subject to the structures, the composite subatomic particles [2] are made of elementary subatomic particles by four basic forces including gravitational force, electromagnetic force, weak force and strong force. Yangton and Yington Theory can explain the formation of subatomic particles [3] in accordance to String Theory and Unified Field Theory [5], and also interpret the correlations between space, time, energy and matter [6].

2. Wu's Pair – The Building Block of the Universe

According to the 4th Principle, with the external energy generated from Big Bang explosion, a Yangton and Yington circulating pair with an inter-attractive Force of Creation named "Wu's Pair" (Fig. 1) can be formed so that Something can become a permanent matter. These Wu's Pairs are the fundamental building blocks (God's Particles) of all matter such as photons, quarks, electrons, positrons, neutrons, protons, etc.
From Something to a permanent Wu's Pair, the reaction process can be represented by the following formulas:

$$\text{Yangton } \Theta \text{ Yington} \rightarrow \text{Yangton } \Phi \text{ Yington} \quad \Delta E = E_{Circulation}$$

$$E_{Creation} + E_{Circulation} \leftrightarrow \text{Yangton } \Phi \text{ Yington}$$

Where "Yangton Θ Yington" represents Something – a temporary Yangton and Yington pair. "Yangton Φ Yington" represents Wu's Pair – a permanent Yangton and Yington circulating pair. $E_{Creation}$ is Energy of Creation which is used to generate Force of Creation. $E_{Circulation}$ is the circulation energy which includes both potential and kinetic energies of the circulation. The summation of $E_{Creation}$ and $E_{Circulation}$ is called "Wu's Pair Formation Energy" which can be generated either from Big Bang explosion [7].

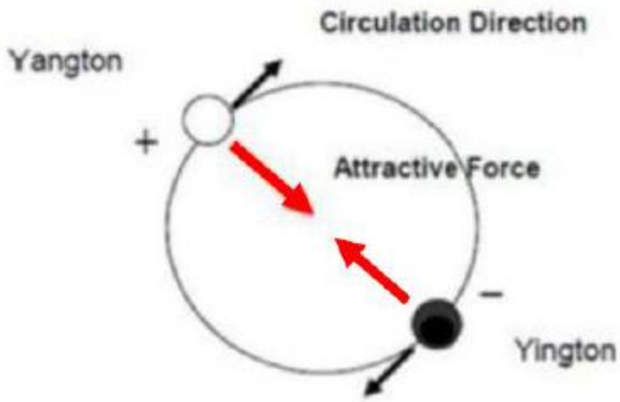

Fig. 1 Wu's Pair - a Yangton and Yington circulating pair.

3. Photon – A Free Wu's Pair

When Wu's Pair is released from a substance, it becomes a free particle known as "Photon". Photon travels in space at a constant Absolute Light Speed $3\text{x}10^8$ m/s [8] while observed at the light source. The reaction process can be represented as follows:

$$\text{Yangton } \Phi \text{ Yington} \rightarrow \text{Photon} \qquad \Delta E = h\nu$$

"Yangton Φ Yington" is Wu's Pair and $h\nu$ is photon's kinetic energy.

4. String Theory

General Relativity [9] and Quantum Field Theory[10] are not compatible, in order to unified four basic forces, physicists suggested that all matter, instead of a point structure, must have a linear structure with 10 dimensions like Calabi-Yau manifold (Fig. 2). This is known as the "String Theory" [4].

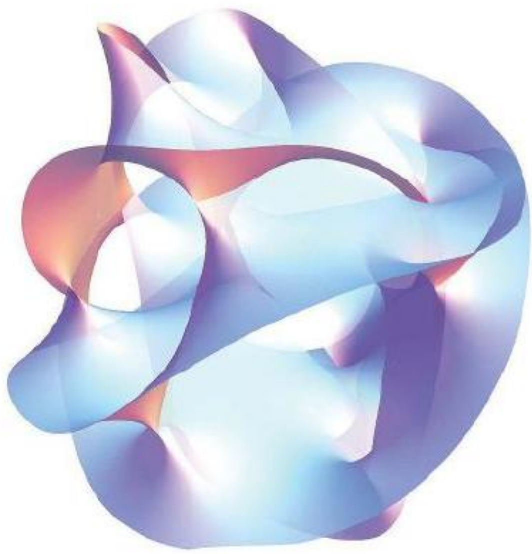

Fig. 2 A cross section of a quintic Calabi-Yau manifold.

Physicists have absolutely no idea what the structures of quarks and photon are, even with their state-of-the-art LHC [11]. However, based on the Yangton and Yington Theory, that all subatomic particles should have a string structure is not only very possible, but also quite obvious.

Wu's Pair is a pair of Yangton and Yington particles circulating in an orbit held by the inter-attractive Force of Creation between the two particles. When two Wu's Pairs come together with the same circulation direction, there is an interaction, which I call "String Force" [3], that one Wu's Pair will stack up on top of the other one at a locked-in position where Yangton of the first Wu's Pair is lined up to the Yington of the second one, such that a string or ring structure of Wu's Pairs can be formed (Fig. 3), which matches very well with the String Theory.

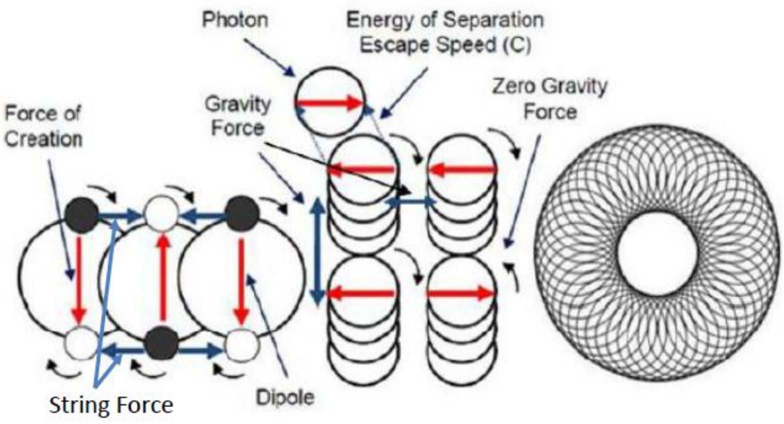

Fig. 3 Wu's Pairs stack up in a preferred direction by string force to form string and ring structures.

5. Subatomic Particles

Standard Model [2] is a group of subatomic particles which is derived from a mathematical model based on Quantum Field Theory and Yang Mills Theory. In contrast, Wu's Pairs, a physical model are proposed as the building blocks of all subatomic particles based on the Yangton and Yington Theory.

Subatomic particles are very much smaller than atoms. There are two types of subatomic particles: elementary particles, which according to current theories are not made of other particles, and composite particles which are made of elementary particles. Particle physics and nuclear physics study these particles and how they interact.

The elementary particles of the Standard Model (Fig. 4) include:

- Six flavors of quarks: up, down, bottom, top, strange, and charm
- Six types of leptons: electron, electron neutrino, muon, muon neutrino, tau, tau neutrino
- Twelve Gauge Bosons (force carriers): the photon of electromagnetism, the three W and Z Bosons of the weak force, and the eight gluons of the strong force
- The Higgs Boson

Various extensions of the Standard Model predict the existence of an elementary graviton particle and many other elementary particles.

Composite subatomic particles such as protons or atomic nuclei are bound states of two or more elementary particles. For example, a proton is made of two up quarks and one down quark, a neutron is made of two down quarks and one up quark, while the atomic nucleus of Helium-4 is composed of two protons and two neutrons.

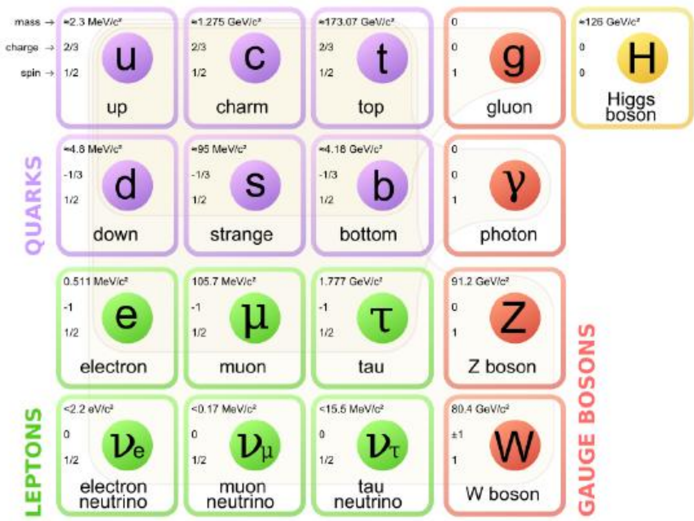

Fig. 4 The elementary particles of the Standard Model.

According to Yangton and Yington Theory, all elementary subatomic particles including quarks, leptons, Gauge Bosons, gluons and photon are made of Wu's Pairs. They have string, ring and other structures (Fig. 3) that are glued together by the string force between two adjacent Wu's Pairs. Composite subatomic particles are made of elementary subatomic particles (Fig. 5), which are glued together by four basic forces including gravitational force, electromagnetic force, weak force and strong force that are induced from Force of Creation subject to the subatomic structures and their interactions.

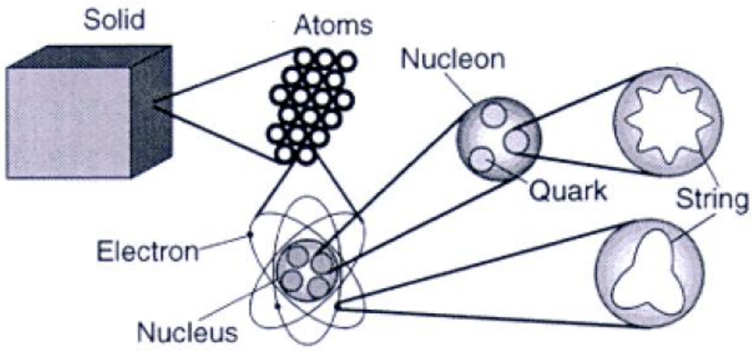

Fig. 5 Subatomic particles made of string structures.

6. Graviton and Gravitational Force

Wu's Pairs can be used to form elementary subatomic particles of string structures in a variety of shapes. When two string structures come together in the same circulation direction, they can attract each other at the ends of the strings by locking in the Yangton of one string to the Yington of the other string. Otherwise, there is no interaction if they are in the opposite circulation directions. However, when two string structures come together side by side, no matter the circulation directions, they can adjust themselves to attract each other as the Yangtons of one string contact the Yingtons of the other string during each cycle of the circulations. These attractive only forces are known as "Gravitational Force" (Fig. 6) and the string structures that produce the gravitational force are called "Gravitons".

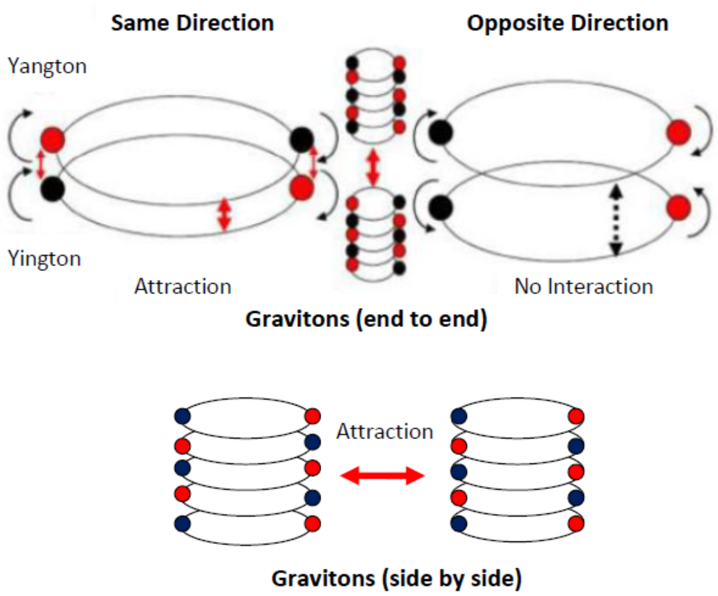

Fig. 6 Gravitational force between two graviton particles

7. Higgs Boson and Higgs Field

According to Standard Model and Quantum Field Theory, the mass of a particle is the magnitude of the barrier applied to the particle by "Higgs Bosons" [12] that are generated from Higgs Field [12]. Since Higgs Bosons can be considered as the carriers of string force that are generated by Wu's Pairs, therefore the magnitude of the barrier caused by the string force carried by Higgs Bosons is proportional to the amount of Wu's Pairs. In other words, the mass of a particle is proportional to the amount of Higgs Bosons as is that of

Wu's Pairs. This concurs with that the mass is the total amount of Wu's Pairs based on Yangton and Yington Theory.

8. Electron, Positron and Electrical Force

When a number of Wu's Pairs come together they can stack up to form a string or ring structures, or cross each other's orbits to form a structure that is either with Yingtons circulating the Yangton center as the electrons (Fig. 7) [3] or with Yangtons circulating the Yington center as the positrons (Fig. 7) [3].

Since photon, a free Wu's Pair, can be absorbed and emitted from an electron jumping between two energy levels in an atom; it is proposed that electron is composed of a group of Wu's Pairs, where Yangtons are loosely confined in the center due to the compression of the centrifugal force caused by the circulation of Yingtons. Similarly, positron is composed of a group of Wu's Pairs, where Yingtons are loosely confined in the center due to the compression of the centrifugal force caused by the circulation of Yangtons. Therefore, electron can have an appearance looks like a sphere of Yingtons, and positron, on the other hand, can have the appearance looks like a sphere of Yangtons (Fig. 7) [3].

Because of the attraction between Yangton and Yington, a strong attractive force can be generated between an electron and a positron. Also, a repulsive force can be formed between two electrons as well as between two positrons. When a positron meets an electron, because of the attraction, they collide and destroy each other to release Gamma Ray (γ). This phenomenon is known as "Positron-Electron Annihilation" [13].

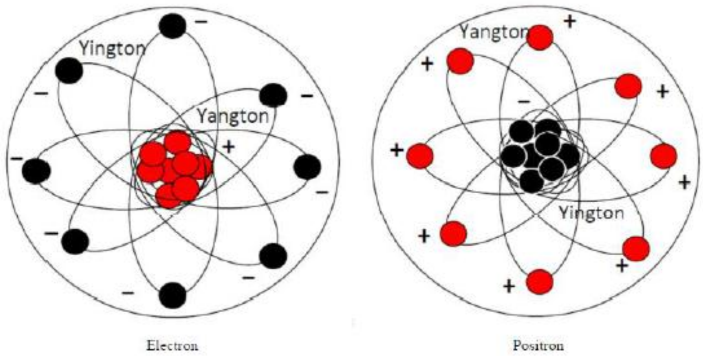

Fig. 7 Hypothetical structures of electrons and positrons.

9. Proton, Neutron, Weak Force and Strong Force

A neutron [14] is composed of three quarks, one up quark and two down quarks, and three gluons. Since all matter have string structures of Wu's Pairs, it is believed that a neutron containing three quarks and three gluons should have the shape as a donut or a triangular pretzel (Fig. 8).

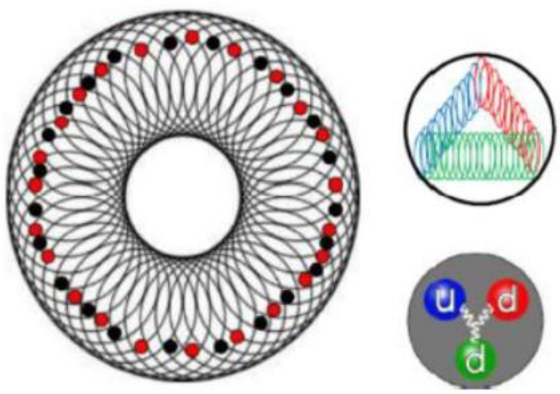

Fig. 8 A hypothetical structure of neutron.

A proton [15] is also composed of three quarks, two up quarks and one down quark, and three gluons. Therefore, like the neutron, a proton containing three quarks and three gluons should also have the shape as a donut or a triangular pretzel. However, because of the Inverse Beta Decay, it is believed that a proton contains a neutron with an embedded positron and electron neutrino (Fig. 9).

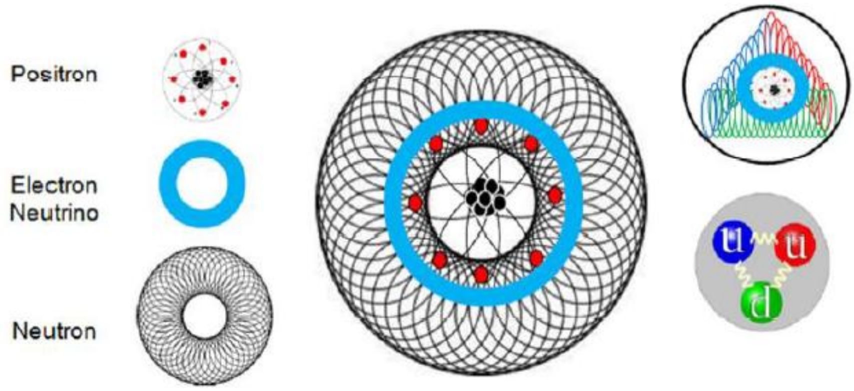

Fig. 9 A hypothetical structure of proton.

The bonding force between a neutron and a positron is known as "Weak Force" (Fig. 9) [16] which is induced by the multiple Yangtons on the surface of the positron.

In order to balance the repulsive electromagnetic force caused between protons, strong force is needed to hold protons together in the nucleus. Strong force is the attractive force generated between two neutrons, and also between a neutron and a proton. When two neutrons with ring structures made of Wu's Pairs come together, attractive force can be generated between the two neutrons with either the same or opposite circulation directions. This attractive force is known as "Strong Force" (Fig. 10) [17], which are many magnitudes larger than the gravitational force.

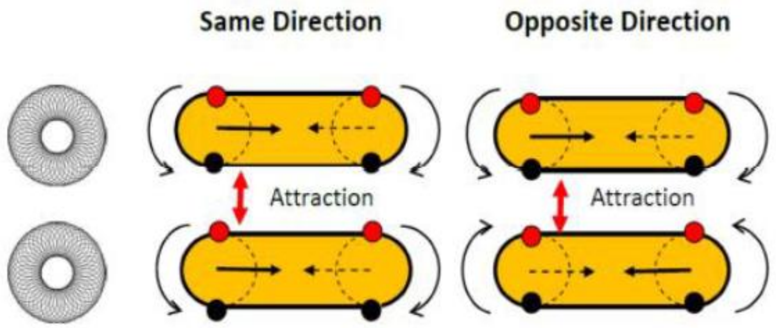

Fig. 10 Strong force between two neutrons.

When a neutron comes close to a proton made of a neutron, positron and electron antineutrino, both the weak force between neutron and positron (Fig. 11), and the strong force between neutron and neutron (Fig. 11) are generated to overcome the repulsive force between protons so as to keep them together inside the nucleus.

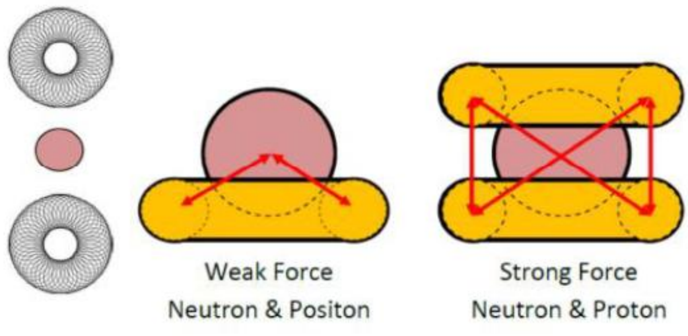

Fig. 11 Weak force and strong force.

10. Dark Matter

Dark Matter [18] like any other subatomic particle is composed of a number of Wu's Pairs. It is proposed that Dark Matter has a tetrahedral structure of four Yangton and Yington Pairs (Fig. 12). Each Yangton and Yington Pair is circulating on its own orbit at 109.5° away from the other three pairs. Because the Yangton center coincides to the Yington center, there is no dipole in the center of the tetrahedral structure. As a result, there is nearly no attractive force between two Dark Matters neither between Dark Matter and any other substance. Only limited gravitational force can be generated by Dark Matter. Therefore, Dark Matter cannot be used as the building blocks of substance. Also, because it has a very stable structure and no particle can escape from it, therefore Dark Matter is invisible and that is why it is named "Dark Matter".

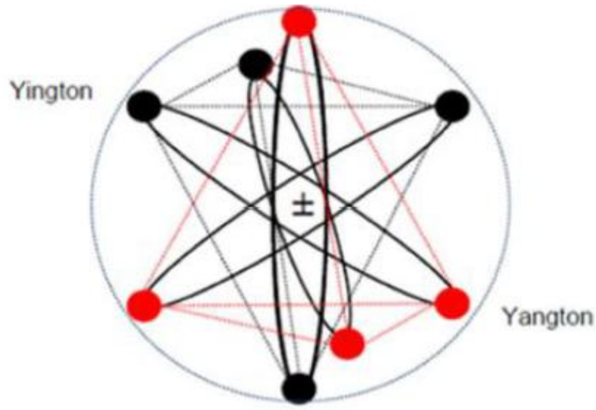

Fig. 12 A hypothetical tetrahedral structure of Dark Matter.

11. Hubble's Law

The discovery of the linear relationship between Redshift and distance for stars more than 5 billion years away, coupled with a supposed linear relation between recessional velocity and Redshift yields a straight forward mathematical expression for "Hubble's Law" (Fig. 13) [19] as follows:

$$V = H_0 D$$

Where

- V is the recessional velocity, typically expressed in km/s.
- H0 is Hubble's constant and corresponds to the value of H (often termed the Hubble parameter a value that is time dependent and can be expressed in terms of the scale factor) in the Friedmann equations
- Taken at the time of observation denoted by the subscript "$_0$". This value is the same throughout the universe for a given comoving time.
- D is the proper distance (which can change over time, unlike the comoving distance, which is constant) from the galaxy to the observer, measured in mega parsecs (Mpc) the 3-space defined by given cosmological time. (Recession velocity is just V = dD/dt).

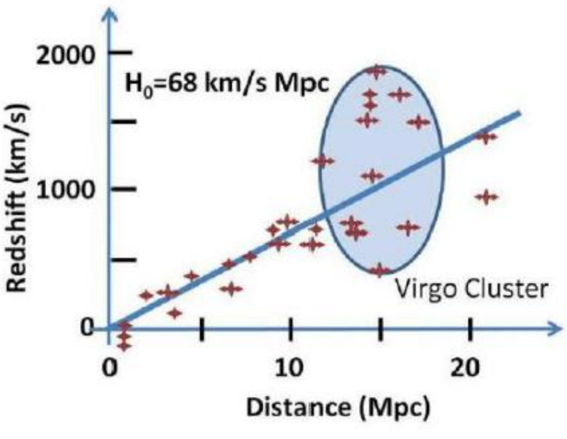

Fig. 13 Hubble's Law – the linear relationship between Redshift and distance.

12. Acceleration Doppler Effect

The Doppler Effect [20] can be easily understood in the Non-Inertia Transformation process with the signal source traveling at a constant speed either towards or away from the observer such as that of sound propagation. However, the photon emission from the light source is an Inertia Transformation [21] which obeys Equation of Light Speed [21] in which Speed of Light (observed on earth) is equal to the vector summation of Speed of Light Source (observed on earth) and Absolute Light Speed (Light Speed observed on Light Source). Both Redshift and Blue shift are observed on earth only when the wavelength of light changes with the acceleration speeds of the light source. This phenomenon is named "Acceleration Doppler Effect" [22].

For a star far away from earth, the ground observer is considered stationary to the light origins of all photons that emitted from the light source (star). Therefore, the Vision of Light [21] of each photon observed by the ground observer is the same as that observed at the light origin of the photon in the Absolute Space System.

The light source (star) can either move toward or away from the observer on earth. Assuming it takes time t for a photon travelling from light source (star) to earth. V_o is the speed of the light source (star) at its beginning, V_t is the speed of the light source (star) at time t and a is the constant acceleration of the light source (star) in time t. S is the distance of the light source (star) traveling from the light origin in time t. P is the distance of the photon traveling from the light origin to earth in time t, V_ot is the distance of the photon dragged by the light source (star) in time t and D is the distance between the light source (star) and the photon when it reaches earth at time t. Also λ_1 is the wavelength, ν_1 is the frequency and C_1 is the light speed of the photon from the light origin observed either on the light origin or earth.

OS = **S** = Distance between light source and light origin = Motion of light source away from light origin.
SP = **D** = Distance between light source and photon = Vision of light observed from light source.
OP = **P** = Distance between photon and light origin = Vision of light observed from light origin and ground.

$$\mathbf{OP} = \mathbf{OS} + \mathbf{SP}$$
$$\mathbf{P} = \mathbf{S} + \mathbf{D}$$
$$\mathbf{D} = \mathbf{P} - \mathbf{S}$$

Also,

$$\mathbf{OP} = \mathbf{P} = \mathbf{C}t + \mathbf{V_0}t$$

Where **C** is the Absolute Light Speed, $\mathbf{V_0}$ is the initial moving speed of light source from light origin and t is time.

In the case that light source (star) moves away from the observer on earth at a constant acceleration speed,

$S = -(V_ot + ½ at^2)$
$P = Ct - V_ot$
$D = P - S = Ct + ½ at^2$

Therefore,

$\lambda_1 = D/\nu t = (Ct + ½ at^2)/\nu t = (C + ½ at)/\nu > \lambda$
$C_1 = P/t = (Ct - V_ot)/t = C - V_o < C$
$\nu_1 = C_1/\lambda_1 = (C - V_o)/((C + ½ at)/\nu) < \nu$

When the light source (star) moves away from the observer on earth at constant acceleration speed, the wavelength becomes bigger, both the frequency and light speed become smaller, and thus Redshift can be observed.

13. Hubble's Law and Acceleration Doppler Effect

Although Hubble's Law is an experimental result, it can be proved by Acceleration Doppler Effect [23]. According to the mathematics in the derivation of Redshift in Acceleration Doppler Effect, where a star is moving away from earth at a constant acceleration speed a, D is the distance from the star to earth, P is the distance from the earth to light origin, S is the distance from light source to light origin,

$D = P - S = Ct + ½ at^2 = (C + ½ at)\ t$

For stars more than 5 billion years away, the acceleration ½ at becomes much bigger than C (in other words, V is much bigger than C). Therefore,

$D/t = ½ at$

Because

$\lambda_1 = D/\nu t = (Ct + ½ at^2)/\nu t = (C + ½ at)/\nu = \lambda + ½ at/\nu$
$(\lambda_1 - \lambda)/\lambda = (½ at)/C$
$(\lambda_1 - \lambda)/\lambda \propto at$

Therefore,

$$D/t \propto (\lambda_1 - \lambda)/\lambda$$

Also,

$V = V_0 + at$
$at \gg V_0$
$V = at$

Therefore,

$$V \propto (\lambda_1 - \lambda)/\lambda$$

Where λ_1 is the wavelength of the photon emitted from the star observed on earth and λ is the wavelength of the photon on earth, $(\lambda_1 - \lambda)/\lambda$ is the redshift, V is the velocity of the star moving away from earth and D/t is the proper distance.
Because both V and D/t are proportional to $(\lambda_1 - \lambda)/\lambda$
Therefore,

$$V = kD/t$$

Also,

$$V = H_0 D$$

$$H_0 = k/t$$

Where k is a constant and H_0 is Hubble's Constant.
For those stars they separated from earth at the same time, both t and $H_0 = k/t$ are constants and V-D curve becomes a straight line. Also, when the universe gets older, t is bigger, H_0 is smaller, and V-D curve becomes flat with a smaller slope. Furthermore, for those stars more than 5 billion light years away, 1/t becomes small and converges to a constant, so as H_0. As a result, redshift is proportional to both D and V, which obeys Hubble's Law (Fig. 13) [19].

14. Dark Energy

By fitting a theoretical model of the composition of the universe to the combined set of cosmological observations, scientists have come up with the composition of about 68% Dark Energy, 27% Dark Matter and 5% normal matter. Dark Matter works like glue. Its mass generates sufficient gravity to keep galaxies from drifting apart by spinning. Dark Energy [24] is proposed by scientists to explain the energy needed for the acceleration and expansion of Universe. However, where is the Dark Energy coming from? Does Dark Energy really exist? Or is it simply an imagination? So far, nobody has a clue. Therefore, it is named "Dark Energy".

15. Wu's Spacetime Theory and Spacetime Shrinkage Theory

According to the Five Principles of the Universe [25], through the aging of the universe, Wu's Pair (Yangton and Yington circulating pair) – the building block of the universe is getting smaller and eventually Yangton will recombine with Yington to destroy each other such that everything will go back to Nothing.
As a consequence, Spacetime $[x, y, z, t](l_{yy}, t_{yy})$ is shrinking because the diameter of Wu's Pair l_{yy} (Wu's Unit Length) is getting smaller due to the aging of the universe, meantime the period of the circulation of Wu's Pair t_{yy} (Wu's Unit Time) is also shrinking according to Wu's Spacetime Theory $t_{yy} = \gamma l_{yy}^{3/2}$ [26]. This is named "Wu's Spacetime Shrinkage Theory" [26].

16. Hubble's Law and Wu's Spacetime Shrinkage Theory

Although Hubble's Law can be used to explain the expansion of the universe and derived successfully from the Acceleration Doppler Effect, it is hard to believe that a star can move faster than light speed and with an acceleration backed up by a mysterious Dark Energy. To avoid these problems, a model based on Wu's Spacetime Shrinkage Theory is proposed to interpret Hubble's Law. Because of the shrinkage of the circulation period (t_{yy}) and orbital size (l_{yy}) of Wu's Pairs due to the aging of the universe, a photon emitted from a star more than 5 billion light years away has a larger wavelength than that on the present earth, which causes redshift and obeys Hubble's Law.

It is obvious that Hubble's Law can be derived from Wu's Spacetime Shrinkage Theory. However, I did make some mistakes in my previous publication [27]. With a clear logic and more careful mathematical analysis, a new approach is presented as follows:

Figure 14 shows a schematic diagram of the visions of star on earth. In the beginning (when photon is emitted from the star), the distance X measured on earth between the star and earth is the multiplication of the Normal Unit Length L_i and the Amount of Normal Unit Length M_i. At the final stage (when the photon reaches the earth), the distance of the star X measured on earth becomes the multiplication of the Normal Unit Length L_f and the Amount of Normal Unit Length M_f. The distance of the star X stays the same. But the vision of the star D_E reflects the distance of the star moves from initial distance M_iL_f to the final distance M_fL_f observed on earth. Because M_fL_f is much bigger than M_iL_f, D_E is approximately equal to the distance X between the star and earth (Fig. 14).

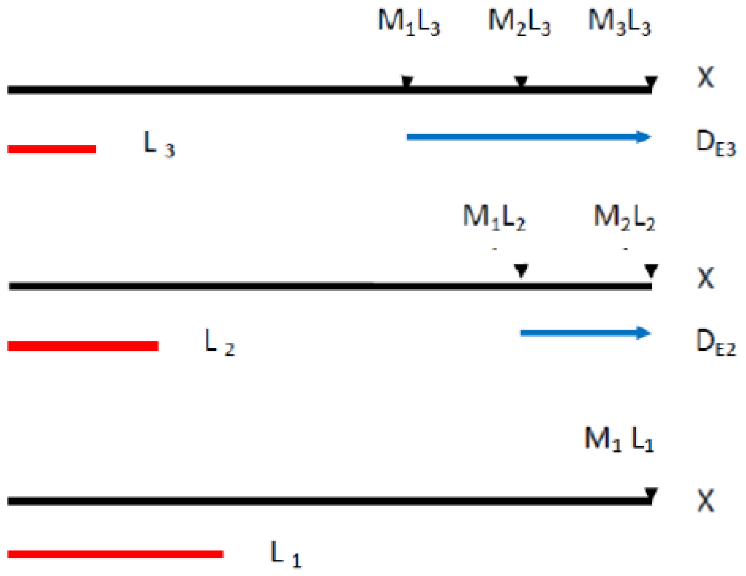

Fig. 14 The distance of a star measured by a shrinking ruler on earth.

The differential of the Amount of Normal Unit Length of the vision of star $d(d_E)$ can be represented by:

$$d(d_E) = dM$$

Because

$X = ML$

$dM = X\, dL^{-1}$

Also

$L \infty\, l_{yy} \infty\, \lambda$

Therefore,

$$d(d_E) \infty\, dL^{-1}$$
$$d(d_E) \infty\, d\lambda^{-1}$$
$$d_E \infty\, (1/\lambda_f - 1/\lambda_i)$$
$$d_E \infty\, 1/\lambda_i\, (\lambda_i - \lambda_f)/\lambda_f$$

For a star 5 billion light years away, λ_i becomes very large and $1/\lambda_i$ converges to a constant. Therefore,

$$d_E \infty\, (\lambda_1-\lambda)/\lambda$$
$$d_E \infty\, (l_{yy1} - l_{yy})/l_{yy}$$

Where d_E is the Amount of Normal Unit Length of the vision of star. λ_1 is the wavelength and l_{yy1} is the Wu's Unit Length of the photon generated in the initial stage on the star. λ is the wavelength and l_{yy} is the Wu's Unit Length of the photon generated at the final stage on the present earth. $(\lambda_1-\lambda)/\lambda$ is the redshift and $(l_{yy1} - l_{yy})/l_{yy}$ is named "Wu's Spacetime Shrinkage Factor".

Also, the Amount of the Normal Unit Velocity "v" of the reverse expansion can be represented by:

$$v = dM/dt$$

Because

$ML = X$

$v = d(X/L)/dt = X\, dL^{-1}/dt$

Also,

$L \infty\, l_{yy} \infty\, \lambda$

Therefore,

$$v \infty\, dL^{-1}/dt$$
$$v \infty\, d\lambda^{-1}/dt$$
$$vt \infty\, (1/\lambda_f - 1/\lambda_i)$$
$$vt \infty\, 1/\lambda_i\, (\lambda_i - \lambda_f)/\lambda_f$$

For a star 5 billion light years away, λ_i becomes very large and $1/\lambda_i$ converges to a constant. Therefore,

$$vt \infty\, (\lambda_1-\lambda)/\lambda$$
$$vt \infty\, (l_{yy1} - l_{yy})/l_{yy}$$

Where v is the amount of the unit velocity of the reverse expansion. λ_1 is the wavelength and l_{yy1} is the Wu's Unit Length of the photon generated in the initial stage on the star. λ is the wavelength and l_{yy} is the Wu's Unit

Length of the photon generated at the final stage on the present earth. $(\lambda_1-\lambda)/\lambda$ is the redshift and $(l_{yy1} - l_{yy})/l_{yy}$ is named "Wu's Spacetime Shrinkage Factor".
Because both d_E and vt are proportional to $(\lambda_1-\lambda)/\lambda$, therefore,

$$v = (k/t)\, d_E$$

And

$$v = H_0 d_E$$
$$H_0 = k/t$$

Where k is a constant and H_0 is Hubble's Constant.
As a result, Hubble's Law can also be derived from Wu's Spacetime Shrinkage Theory. Because of this reason, instead of the expansion of the universe due to the Acceleration Doppler Effect, Hubble's Law can also be interpreted by Wu's Spacetime Shrinkage Theory due to the aging of the universe. This is named "Wu's Spacetime Reverse Expansion Theory".

17. Wu's Spacetime Reverse Expansion Theory Versus Universe Expansion Theory

During Wu's Spacetime shrinkage process, the potential energy of Yangton and Yington circulating pairs can be converted to their kinetic energy with no need of external energy. Also, the distance between the star and earth remains unchanged at all time. There are no such things as that the star is undergoing acceleration and moving at a speed faster than the light speed. Because of these reasons, it is believed that Wu's Spacetime Reverse Expansion Theory based on Wu's Spacetime Shrinkage Theory is more realistic than Universe Expansion Theory in explanation of Cosmological Redshift and Hubble's Law. In other words, it is believed that Wu's Spacetime on earth is actually shrinking instead of that the universe is expanding and accelerating.

18. Conclusion

Based on Yangton and Yington Theory, it is proposed that Dark Matter is composed of Wu's Pairs with a tetrahedral structure. There is nearly no attractive force between two Dark Matters, neither between Dark Matter and any other substance. Only limited gravitational force can be generated by Dark Matter. Therefore, Dark Matter cannot be used as the building blocks for any substance. Also, because Dark Matter has a very stable structure and no particle can escape from it, therefore Dark Matter is totally invisible. That is why it is named "Dark Matter". On the other hand, Dark Energy is proposed in explanation of Hubble's Law. Although acceleration Doppler Effect can be used to derive Hubble's Law in interpretation of universe expansion and acceleration based on a superfast acceleration speed and an imaginary Dark Energy, there is no such kind of energy can be found in the space. That is why it is named "Dark Energy". Furthermore, Wu's Spacetime Shrinkage Theory based on the shrinkage of the diameter l_{yy} (Wu's Unit Length) and circulation period t_{yy} (Wu's Unit Time) of Wu's Pairs due to aging of the universe can also be used successfully in derivation of Hubble's Law. Without acceleration and Dark Energy, Wu's Spacetime Reverse Expansion Theory gives a more reasonable explanation to Cosmological Redshift and Hubble's Law.

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