

# Creations Of Space, Energy, Matter And Time And The Beginning And End Of The Universe Based On Yangton And Yington Theory

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## Abstract

*It is proposed that Yangton and Yington Bubbles are the building blocks of Space and Wu's Pairs are the building blocks of Matter. It is also believed that not only Corresponding Spaces can be generated with Yangton and Yington Bubbles and Wu's Pairs, but also Corresponding Energy can be generated by the interaction between Force of Creation and the Corresponding Spaces created by Yangton and Yington Bubbles and Wu's Pairs. In addition, Time reflects the changes of distribution of energy and motion of matter. As a result, four elements of the universe: Space, Time, Energy and Matter can all be naturally created at the same time with Yangton and Yington particles and Force of Creation based on the Space and Energy Correlated Five Principles of The Universe of Yangton and Yington Theory. Furthermore, based on Aging Affected Wu's Spacetime Shrinkage Theory and Cosmological Redshift, it is proposed that there might be two Singularities and Big Bang Explosions occurred in the history of our universe, which can interpret why some galaxies observed by JMST have redshift corresponding to 26.7 billion years age rather than 13.8 billion years old.*

**Keywords:** Space, Energy, Matter, Time, Big Bang, Singularity, Subatomic Particles, Wu's Pairs, Yangton and Yington Bubbles, Five Principles of the Universe, Yangton and Yington Theory, String Theory, Dark Matter, Singularity, Big Bang Explosion, Wu's Spacetime Shrinkage Theory, Principle of Parallelism, Cosmological Redshift, Hubble's Law, Universe Expansion and Earth Shrinkage.

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## I. Yangton and Yington Bubbles – Building Blocks of Space and Dark Matter

Among the four basic elements of the universe: space, time, energy and matter, it was previously believed that space and energy are the primary elements. Time and matter are the induced secondary elements. Actually, matter is made of energy and represents the distribution of energy. Time on the other hand reflects the changes of distribution of energy and motion of matter.

Previously it was believed that Space and Energy were cogenerated from None prior to Matter and Time [1]. The process should be reversible such that space and energy can recombine to destroy each other so as to ensure that everything eventually will return back to None.

None  $\leftrightarrow$  Space + Energy

Subsequently, after Space and Energy were generated from None, temporary Yangton and Yington Pairs with Force of Creation named "Yangton and Yington Bubbles" [1][2][3] were produced from Nothing (without Matter) by Energy of Creation to occupy a volume of existing space known as the dimension of Yangton and Yington Bubble. Because of the attraction nature of Force of Creation, Yangton and Yington will recombine to destroy each other immediately after creation, such that Yangton and Yington Bubbles are enforced to return back to Nothing by releasing Energy of Creation.

Recently, an unprecedented idea comes into my mind. Just like that all Matters are composed of Wu's Pairs, the permanent Yangton and Yington circulating pairs, could it be possible the Space is made of Yangton and Yington Bubbles [4], the temporary Yangton and Yington Pairs with Force of Creation?

With this new idea, it is believed that Energy of Creation is generated from Singularity in Big Bang Explosion at the beginning of the universe and later produced by the String Force between adjacent Yangton and Yington Bubbles and provided by the kinetic energy of moving particles in space. Although Yangton and Yington Bubbles are temporary particles, it can be continuously regenerated from Nothing (without Matter) by Energy of Creation, such that the entire Space can be constructed and maintained as a continuous network of Yangton and Yington Bubbles. Like H<sub>2</sub>O molecules in water, Space can be considered as a "Sea of Yangton and Yington Bubbles" (Fig. 1)[4], where an object composed of Wu's Pairs can move freely, just like a fish can swim anywhere in the ocean, except beyond the boundary where there is nothing but None.

Even only frequently exist, Yangton and Yington Bubbles composed of a pair of Yangton and Yington particles, are considered half of Wu's Pairs containing 50% of the mass. Also, as the building blocks of Space

with continuous network, Yangton and Yington Bubbles exist everywhere in the universe. Because of these reasons, it is believed that Yangton and Yington Bubbles and Dark Matter [5] are the same thing [4] which interprets the properties of Dark Matter and also gives an indirect proof to the existence of Dark Matter.

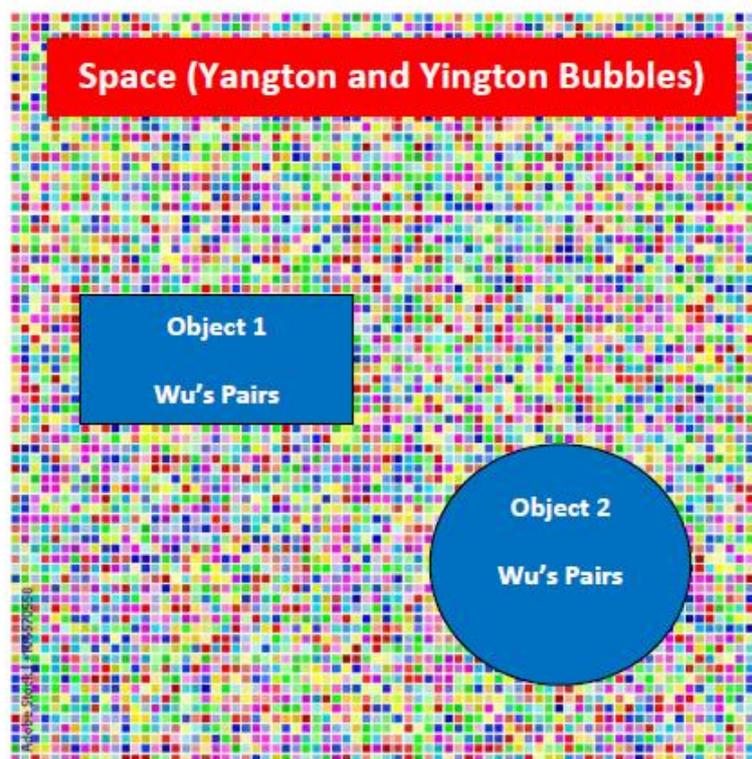


Fig. 1 The correlation between “Space” composed of Yangton and Yington Bubbles and “Matter” composed of Wu’s Pairs.

## II. Wu’s Pairs – Building Blocks of Matter

It was proposed that in the preexisting space, a temporary superfine Yangton and Yington Antimatter particle pairs with inter-attractive Force of Creation known as Yangton and Yington Bubbles were generated in the Singularity by absorbing Energy of Creation generated from Big Bang Explosion. Also, because of the enforcement of the inter-attractive Force of Creation, Yangton and Yington particles can instantly recombine and destroy each other such that Yangton and Yington Bubbles can go back to Nothing by releasing Energy of Creation.

However, alternatively, instead of going back to Nothing, by further absorbing external energy generated from Big Bang Explosion, the temporary Yangton and Yington Bubbles can become a permanent Wu’s Pairs [1][2][3] with a circulation motion balanced between centrifugal force and inter-attractive Force of Creation. In addition, complying with the idea that Space is composed of Yangton and Yington Bubbles generated by Energy of Creation, a corresponding space can be also created with Wu’s Pairs by Energy of Circulation.

## III. Space and Energy Correlated Five Principles of the Universe

Although the idea that Space is made of Yangton and Yington Bubbles and Wu’s Pairs sounds pretty cool, it is incomplete to leave the creation of Energy along in the mystery. In order to incorporate the creations of Space and Energy together with Matter and Time, “Five Principles of The Universe” [6] needs to be revised to “Space and Energy Correlated Five Principles of the Universe” [4] as follows (Italic text):

1. There was *None* in the universe in the beginning.
2. *None* to Something must be an *instant reversible process*.
3. The Something must be a pair of Antimatter particles with inter-attractive force such that they can attract and destroy each other. *Meanwhile, Space and Energy are cogenerated in order to hold Something in a volume of Space with an accumulative state of energy.*

4. From Something to permanent matter *additional internal energy is generated to drive* circulation motion between the two Antimatter particles so as to avoid them from recombination and destruction.
5. Eventually the whole universe will end and go back to *None*.

As the foundations of Space and Energy Correlated Five Principles of the Universe [4], it is important to know that both Space and Energy are created from None and Law of Conservation of Energy cannot be applied to creation of Energy. In other words, Law of Conservation of Energy is only true in energy transformation between two systems without creation of Space. Also, Force of Creation is created inevitably as the “Nature Strength” to drive everything back to None. The interaction between Force of Creation and the corresponding Space gives Internal Energy to Yangton and Yington Bubbles and Circulation Energy to Wu’s Pairs. Furthermore, because both Space and Energy are cogenerated with Matter, therefore Matter must be created from None instead of Nothing.

The revisions of Space and Energy Correlated Five Principles of the Universe [4] are discussed in detail as follows:

1. The reversible process in 2nd Principle should happen instantly after the formation of Something (Yangton and Yington Bubbles). Otherwise, Something will become permanent and can be generated and exist anywhere in the universe. Therefore, it is believed that None to Something must be an instant reversible process.
2. The formation reaction of temporary Yangton and Yington Bubbles in 3<sup>rd</sup> Principle should be revised as follows:



Where None has no space, time, energy and matter,  $\Theta$  represents Force of Creation, Yangton  $\Theta$  Yington represents Yangton and Yington Bubble (Something),  $S_{\text{Bubble}}$  is the corresponding space generated by the Bubble and  $E_{\text{Bubble}}$  is Bubble’s internal energy generated by the interaction between Force of Creation and the corresponding space generated by the Bubble.

Although this reaction doesn’t need any external Energy of Creation as reactant, small external activation energy is required to make it an instant reversible reaction. Once this process is triggered, it will be continuously reversed and recycled by itself. Also, it is believed that the activation energy is first produced by the string forces between the overcrowded Yangton and Yington Bubbles generated from the tiny point Singularity in Big Bang Explosion at the beginning of the universe, and later produced by the String Force between adjacent Yangton and Yington Bubbles and provided by the kinetic energy of moving particles in space.

3. Similarly, the formation reaction of permanent Wu’s Pairs in 4th Principle should be revised as follows:



Where Yangton  $\Theta$  Yington represents temporary Yangton and Yington Bubble. Yangton  $\Phi$  Yington represents permanent circulating Wu’s Pair.  $S_{\text{Bubble}}$  is the corresponding space generated by the Bubble and  $E_{\text{Bubble}}$  is Bubble’s internal energy generated by the interaction between Force of Creation and the corresponding space generated by the Bubble.  $S_{\text{Wu's Pair}}$  is the corresponding space generated by Wu’s Pair and  $E_{\text{Circulation}}$  is the circulation energy generated by the interaction between Force of Creation and the corresponding space generated by Wu’s Pair.

Again, this reaction doesn’t need any external Energy of Circulation as reactant. However, it is triggered by much bigger activation energy than that of the Bubble formation reaction, which can only be produced by the string forces between the overcrowded Yangton and Yington Bubbles generated from the tiny point Singularity in Big Bang Explosion at the beginning of the universe. This is the reason why Wu’s Pairs can only be created in Big Bang Explosion at beginning of the universe.

#### **IV. Bubble’s Internal Energy Versus Circulation Energy**

It is believed that Energy of Circulation generated in Wu’s Pairs formation reaction is much bigger than Bubble’s Internal Energy generated in Yangton and Yington Bubbles formation reaction, because Wu’s Pairs have much bigger size than that of Yangton and Yington Bubbles. Also, due to the large activation energy, Wu’s Pairs maintain permanent without reverse and break down unless under severe environments such as black holes or final stage of aging of the universe.

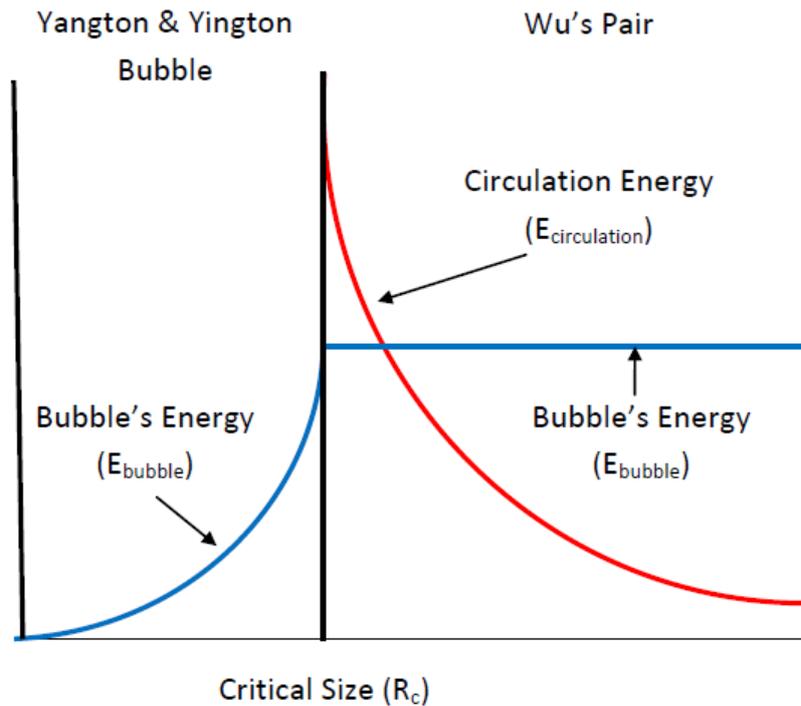


Fig. 2 Energy ( $E_{\text{Bubble}}$ ) and Space ( $S_{\text{Bubble}}$ ) are generated with temporary Yangton and Yington Bubble which increase with the size of Yangton and Yington Bubble by Hooke's Law. Once the critical size is reached, permanent Wu's Pair is formed. Additional energy ( $E_{\text{circulation}}$ ) and space ( $S_{\text{Wu's Pair}}$ ) following Coulomb's Law are created for Yangton and Yington circulation.

Fig. 2 [4] shows the correlations between Bubble's internal energy ( $E_{\text{Bubble}}$ ) generated with temporary Yangton and Yington Bubbles and circulation energy ( $E_{\text{Circulation}}$ ) generated with permanent Wu's Pairs. Before reaching the critical size, triggered by small external activation energy, temporary Yangton and Yington Bubbles can be generated with both corresponding space and internal energy following Hooke's Law. Once the critical size is reached, further triggered by large external activation energy, permanent Wu's Pairs can be created with additional corresponding space and energy following Coulomb's Law for the circulation of Yangton and Yington Pairs.

## V. Creation of Matter

Once Wu's Pairs were formed, all subatomic particles such as quarks, leptons, bosons, photon, electron, neutron and proton, with string force and four basic forces including gravitational force, electromagnetic force, weak force and strong force can be generated from Wu's Pairs and inter-attractive Force of Creation. Simple atoms were then produced and finally stars and galaxies were formed and the entire universe was born.

## VI. Creation of Time

Time is proposed as a secondary element of the universe. It reflects the changes of distribution of energy and motion of matter. Without matter and energy there would be no time. Therefore, time is formed in accompany with matter and energy.

In conclusion, it is believed that Yangton and Yington Bubbles are the building blocks of Space and Wu's Pairs are the building blocks of Matter. It is also believed that not only Corresponding Spaces can be generated with Yangton and Yington Bubbles and Wu's Pairs, but also Corresponding Energies can be generated by the interaction between Force of Creation and the Corresponding Spaces created by Yangton and Yington Bubbles and Wu's Pairs. In addition, Time reflects the changes of distribution of energy and motion of matter. As a result, four elements of the universe: Space, Time, Energy and Matter can all be naturally created at the same time with Yangton and Yington particles and Force of Creation based on Space and Energy Correlated Five Principles of The Universe of Yangton and Yington Theory.

## VII. Singularity

Singularity [7] is a tiny spot that was generated from Nothing in space in Big Bang Explosion [8] about 13.8 billion years ago, which is the origin of energy and matter. Singularity can also be found in the center of every Black Hole, which is the end of energy and matter.

However, according to Space and Energy Correlated Five Principles of The Universe, Yangton and Yington Bubbles (building blocks of Space) are created from None at Singularity with Bubble's Space and Bubble's Internal Energy. And subsequently Wu's Pairs (building blocks of Matter) are generated from Yangton and Yington Bubbles with Wu's Pair Space and Circulation Energy. Time is generated accordingly to reflect the changes of distribution of energy and motion of matter. As a result, four elements of the universe: Space, Time, Energy and Matter can all be created together from Singularity in Big Bang Explosion. Thus, it is believed that Singularity is a point gate entrance to None, beyond the Singularity there is no space, time, energy and matter.

## VIII. Big Bang Explosion

The Big Bang Theory [8] is the prevailing cosmological model (Fig. 3) for the universe from the earliest known periods through its subsequent large-scale evolution. The model accounts for the fact that the universe expanded from a very high density and high temperature state, and offers a comprehensive explanation for a broad range of phenomena, including the abundance of light elements, the cosmic microwave background, large scale structure and Hubble's Law. If the known laws of physics are extrapolated to the highest density regime, the result is a Singularity that is typically associated with the Big Bang Explosion 13.8 billion years ago. After the initial expansion, the universe cooled sufficiently to allow the formation of subatomic particles, and later simple atoms. Giant clouds of these primordial elements later coalesced through gravity in halos of Dark Matter, eventually forming the stars and galaxies visible today.

According to Space and Energy Correlated Five Principles of The Universe, in Big Bang Explosion, an extremely large number of Yangton and Yington Bubbles were generated in an extremely short time period at Singularity from None, such that activation energies could be produced by the string forces between the overcrowded Yangton and Yington Bubbles which triggered the chain reactions of the formations of Yangton and Yington Bubbles and Wu's Pairs. As a consequence, a very high density and high temperature state of Yangton and Yington Bubbles (Space) and Wu's Pairs (Matter) was generated which drives the inflation at initial stage of the universe.

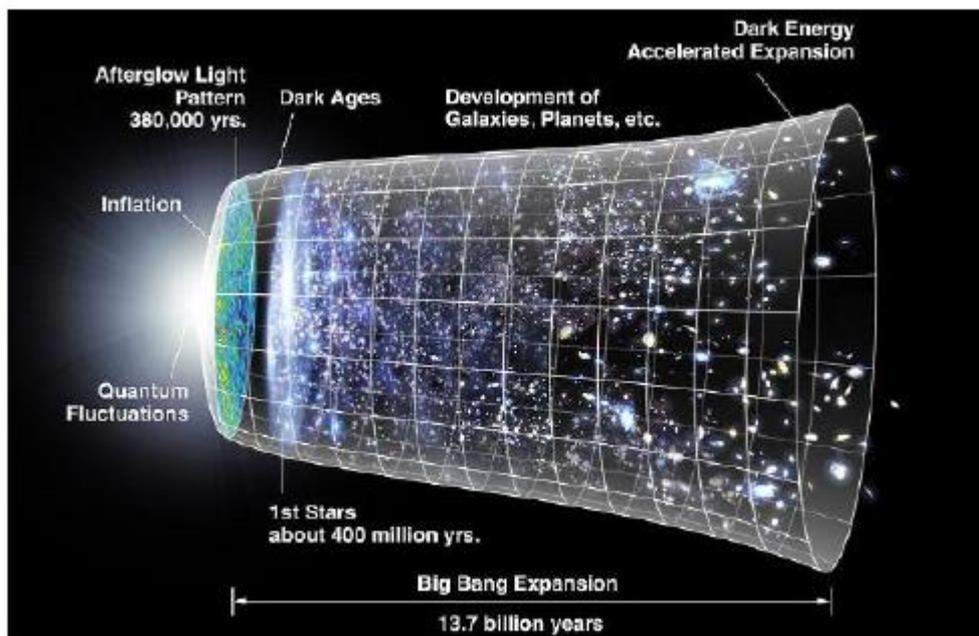


Fig. 3 Big Bang and the expansion of the universe.

### **IX. Wu's Spacetime Shrinkage Theory**

Under both thermal equilibrium and subatomic equilibrium, an object or event at a massive graviton bombardment (or at a large gravitational field in a stationary single parent object system) or in an early stage aging of the universe should have a larger Wu's Unit Length and Wu's Unit Time (Wu's Spacetime Equation  $t_{yy} = \gamma l_{yy}^{3/2}$  [9]) than that at a less intensive graviton bombardment (or at a small gravitational field in a stationary single parent object system) or in a later stage aging of the universe. This is named "Wu's Spacetime Shrinkage Theory" [9]. Furthermore, according to Principle of Parallelism [10] based on the intrinsic atomic and subatomic structures of a corresponding identical object or event, a bigger dimension and duration, as well as a larger wave length and a smaller light speed and slower clock can also be obtained.

More specifically, under thermal equilibrium, for an object or event at a massive graviton bombardment or at a large gravitational field, because of the heavy graviton attraction bombardment [11] caused by Graviton Radiation and Contact Interaction Theory [12], the circulation speed of Wu's Pairs is getting slower. As a consequence, subatomic equilibrium with large Wu's Unit Length (Wu's Pair Circulation Equation  $V^2R = K$  [9]) and Wu's Unit Time (Wu's Spacetime Equation  $t_{yy} = \gamma l_{yy}^{3/2}$  [9]) of all the subatomic particles in the object or event can be gradually achieved. This is named "Gravity Affected Wu's Spacetime Shrinkage Theory" [9].

On the other hand, under thermal equilibrium, for an object or event at a long aging of the universe, because of the attraction caused by Force of Creation based on Five Principles of the Universe and complying with Cosmic Microwave Background Radiation (CMB) [13], the circulation speed of Wu's Pairs is getting faster. As a consequence, subatomic equilibrium with small Wu's Unit Length and Wu's Unit Time of all the subatomic particles in the object or event can be gradually achieved. This is named "Aging Affected Wu's Spacetime Shrinkage Theory" [9].

### **X. Cosmological Redshift**

According to Aging Affected Wu's Spacetime Shrinkage Theory, when the universe was young, both Wu's Unit Length ( $l_{yy} = 2r$ ) and Wu's Unit Time ( $t_{yy} = T$ ) of the object or event were bigger. Also, based on Principle of Parallelism and Wu's Spacetime Transformation [14], it makes the dimension longer ( $L \propto l_{yy}$ ), duration larger ( $T \propto l_{yy}^{3/2}$ ) and velocity ( $V \propto l_{yy}^{-1/2}$ ) smaller compared to the corresponding identical object or event on the present earth.

As a consequence, photon emitted from a light source on a star more than 5 billion years ago (5 billion light years away) has slower speed ( $C \propto l_{yy}^{-1/2}$ ), lower frequency ( $\nu \propto l_{yy}^{-3/2}$ ) and longer wavelength ( $\lambda \propto l_{yy}$ ) than that of the corresponding identical light source on the present earth. When the photon quenches onto earth, Redshift can be observed with intensity increasing with the wavelength dependent on the age and distance of the star, such that Redshift can be used to determine the age and distance of the star. This phenomenon is called "Cosmological Redshift" [15].

Furthermore, according to Aging Affected Wu's Spacetime Shrinkage Theory and Principle of Parallelism, like Wu's Unit Length, the normal unit length is getting smaller through aging of the universe. Although the distance between star and earth never changes, the amount of the normal unit length of the distance is getting bigger. This is called Wu's Spacetime Reverse Expansion Theory [16] (aka Earth Shrinkage Theory) which can be derived mathematically to explain Hubble's Law and expansion of the universe without Dark Energy [17].

### **XI. Beginning of the Universe**

According to Big Bang Theory, in the beginning of the universe, there was no Matter, Energy and Time, except Space. A Singularity was first generated 13.8 billion years ago, and then Energy and Matter were produced from Singularity in Big Bang Explosion [8]. This theory has been broadly accepted by scientists in the past decades. However, the recent observations found from James Webb Space Telescope (JWST) indicated that because of the large redshift, some galaxies in the universe may be 26.7 billion years old [18]. This suggests that there could be more than one Singularities and Big Bang Explosions occurred in the history of the universe.

In contrast, according to Space and Energy Correlated Five Principles of the Universe of Yangton and Yington Theory, Space and Energy were cogenerated with Yangton and Yington Bubbles and Wu's Pairs (Matter) in the Singularity and Big Bang Explosion. Also, Space is a continuous network of Yangton and Yington Bubbles with Matter composed of Wu's Pairs dispersed inside. Therefore, if ever there was another universe created from None by another Singularity and Big Bang Explosion, then these two universes must totally separate from each other by None, which is known as Multiverse.

However, if a new Singularity and Big Bang Explosion is allowed to be generated in the space of an existing universe, then the galaxies with an age older than 13.8 billion years can be realized. Our universe could actually start from 26.7 billion years ago with an ancient Singularity and Big Bang Explosion. Then about 13.8

years ago, a new Singularity and Big Bang Explosion was produced somewhere at the edge of the existing universe. Thus, together our present universe was formed.

Furthermore, there is another possibility. Wu's Pairs with large Wu's Unit Length can be created by the universe other than the one that earth is formed, such that a big redshift from the galaxies of the other universe corresponding to 26.7 billion years age instead of 13.8 billion years old can be observed by JWST based on Aging Affected Wu's Spacetime Shrinkage Theory.

## **XII. Black Hole**

A "Black Hole" [19] is a place in space where massive gravity is generated by the extremely large density caused by squeezing matter into a tiny space. This can happen in a dying star. Because no light can escape, Black Holes are invisible.

Due to the massive gravity, Wu's Pairs expand to form a hollow structure around the Black Hole. At the center of the Black Hole, a Singularity is produced where the balance between Force of Creation and centrifugal force is broken and the circulation of Wu's Pairs collapses. As a consequence, Yangton and Yington recombine and destroy each other with the corresponding space and energy, such that all matters disappear and the universe returns back to None. In other words, Black Hole is the grave yard of all matters. Singularity is the point gate entrance where everything goes back to None, and there is no space, time, energy and matter beyond.

## **XIII. End of the Universe**

At the end of the universe, it is proposed that Yangton and Yington particles will recombine to destroy each other with the corresponding space and energy such that everything will return back to None. According to Yangton and Yington Theory, universe can be ended in one of the following two ways:

### **1. Black Holes**

There is a Singularity in each Black Hole, where the circulation of Yangton and Yington Pairs is disrupted by the massive gravitational force, and then Yangton and Yington particles will recombine to destroy each other with the corresponding space and energy, such that everything will be sucked into the Black Hole and eventually go back to None.

### **2. Aging of the Universe**

According to Wu's Spacetime Shrinkage Theory, after trillions of years, due to the attraction caused by the built-in Force of Creation in Yangton and Yington Bubbles and Wu's Pairs, recombination and destruction of Yangton and Yington particles with the corresponding space and energy will occur, and finally all Yangton and Yington Bubbles and Wu's Pairs will go back to None.

As a result, at the end of the universe, not only Yangton and Yington particles in Yangton and Yington Bubbles and Wu's Pairs will recombine to destroy each other, but also the corresponding space and energy will annihilate each other, either at the Singularities in the black holes or by itself through the aging of the universe, such that everything will disappear and the whole universe will go back to None where there is no space, time, energy and matter.

## **XIV. Conclusion**

It is proposed that Yangton and Yington Bubbles are the building blocks of Space and Wu's Pairs are the building blocks of Matter. It is also believed that not only Corresponding Spaces can be generated with Yangton and Yington Bubbles and Wu's Pairs, but also Corresponding Energy can be generated by the interaction between Force of Creation and the Corresponding Spaces created by Yangton and Yington Bubbles and Wu's Pairs. In addition, Time reflects the changes of distribution of energy and motion of matter. As a result, four elements of the universe: Space, Time, Energy and Matter can all be naturally created at the same time with Yangton and Yington particles and Force of Creation based on the Space and Energy Correlated Five Principles of The Universe of Yangton and Yington Theory. Furthermore, based on Aging Affected Wu's Spacetime Shrinkage Theory and Cosmological Redshift, it is proposed that there might be two Singularities and Big Bang Explosions occurred in the history of our universe, which can interpret why some galaxies observed by JMST have redshift corresponding to 26.7 billion years age rather than 13.8 billion years old.

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