

Early Universe Interpreted By Multibang Theory Based On Yangton And Yington Theory

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Abstract

Recently several mature and very well defined galaxies at high redshifts existing 300M years after the Big Bang (or 13.5B years before present) were found by James Webb Space Telescope (JWST). It indicates that the age of the universe may be 26.7B years instead of 13.8B years claimed by Big Bang Theory. One possible answer to this new discovery is Multibang Theory based on Yangton and Yington Theory. In this paper, a mature galaxy in an ancient Big Bang that is generated long before 13.8B years ago with a large starting Wu's Unit Length (and wavelength), is proposed which has the same wavelength as that of the high redshifts existing 300M years after Big Bang Explosion (or 13.5B years before present) in the Big Bang where earth was born.

Keywords: Big Bang, Redshift, Multiverse, Multibang, Yangton and Yington, Wu's Pairs, Wu's Unit Length

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I. Background

Deep space observations of the JWST have revealed that the structure and masses of very early Universe galaxies at high redshifts ($z \approx 15$), existing at about 300 million years after the Big Bang, may be as evolved as the galaxies in existence for about 10 billion years after the Big Bang [1]. This discovery has raised several serious questions challenging the Big Bang Theory such as: Is the universe started long before 13.8 billion years ago? Is there another Big Bang Explosion beside the one 13.8 billion years ago? Did the other Big Bang Explosion happen before or after 13.8 billion years ago? Are the redshifts of those early galaxies found by JWST observed on earth meaningful, since they are formed in different Big Bang Explosion? Also, how about Hubble's Law? If not, how can we tell the ages of those early galaxies found by JWST? In this paper, a Multibang Theory based on Yangton and Yington Theory is proposed to answer the above questions.

II. Yangton and Yington Theory

Yangton and Yington Theory [2] is a hypothetical theory based on a pair of superfine Yangton and Yington antimatter particles with built-in inter-attractive Force of Creation circulating against each other on an orbit. These pairs of Yangton and Yington circulating particles are named "Wu's Pairs" which is considered as the building blocks of the universe.

Yangton and Yington Theory can be used successfully in explanation of that subatomic particles with string structures are built upon Wu's Pairs and String Force [3] in compliance with String Theory [4], also String force and Four Basic Forces are induced from Force of Creation in accordance to Unified Field Theory [3].

Furthermore, Yangton and Yington Theory can very well bridge Quantum Theory with Relativity, also interprets and correlates space, time, energy and matter in the universe. Therefore, it is believed that Yangton and Yington Theory is a theory of everything.

III. 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 $t_{yy} = \gamma l_{yy}^{3/2}$) 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" [5]. Furthermore, according to Principle of Parallelism 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 [6] caused by Graviton Radiation and Contact Interaction [7], 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 $V^2R = K$ [5]) and Wu's Unit Time (Wu's Spacetime Equation $t_{yy} = \gamma l_{yy}^{3/2}$ [5]) of all the subatomic particles in the object or event can be gradually achieved. This is named "Gravity Affected Wu's Spacetime Shrinkage Theory" [5].

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 [8] and complying with Cosmic Microwave Background Radiation (CMB) [9], 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" [5].

IV. Principle of Parallelism

Under both thermal equilibrium and subatomic equilibrium, because the intrinsic atomic and subatomic structures of a corresponding identical object or event remain unchanged, the correlations between two corresponding identical objects or events should remain unchanged no matter gravitational field and aging of the universe. Therefore, for two corresponding identical objects or events at the same location and time (or at the same gravitational field and aging of the universe), the ratio (real number) between the quantities of the same property of the two objects or events remains constant, no matter gravitational field and aging of the universe. This is named "Principle of Parallelism" [10].

$$P = nP'$$

Where P and P' are quantities of the same property of two corresponding identical objects or events, n is a real number constant.

V. Singularity

Singularity [11] is a tiny spot that was generated from Nothing in the existing space at the beginning of Big Bang Explosion about 13.8 billion years ago, which is the origin of energy and matter. Singularity can also be found in the center of each Black Hole, which is the end of energy and matter.

However, according to Space and Energy Correlated Five Principles of The Universe [12], Yangton and Yington Bubbles (building blocks of Space) are created from None (no space, time, energy and matter) at Singularity with Bubble's Corresponding 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 Corresponding Space and Circulation Energy. The initial Wu's Pairs are in the form of photons (free Wu's Pairs) such as the microwave with long wavelength based on CMB radiation. 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 None at the Singularity during 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.

VI. Big Bang Explosion

The Big Bang Theory [13] is the prevailing cosmological model (Fig. 1) 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, during Big Bang Explosion, an extremely large number of Yangton and Yington Bubbles (building blocks of Space) [14] were generated in an extremely short time period at Singularity from None, such that activation energies were 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 further Wu's Pairs (building blocks of Matter). As a consequence, a very high density and high temperature state of Yangton and Yington Bubbles (Space) and Wu's Pairs (Matter) were generated, this drive the inflation at the initial stage of the universe.

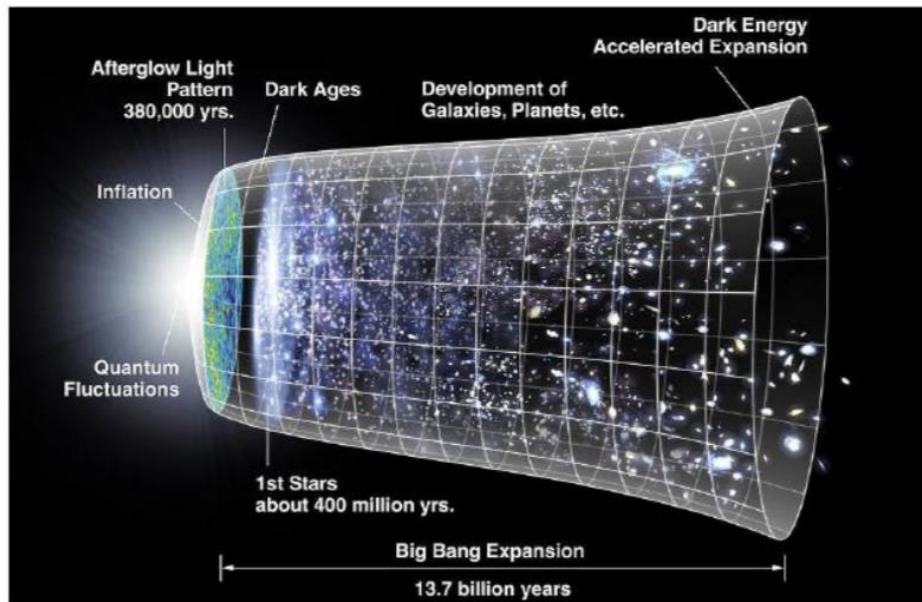


Fig. 1 Big Bang and the expansion of the universe.

VII. Beginning of the Universe

According to Big Bang Theory, in the beginning of the universe, there was no Energy, Matter and Time, except Space. A Singularity was first generated in the empty Space 13.8 billion years ago, and then Energy and Matter were produced immediately from Singularity by Big Bang Explosion. Big Bang Theory has been broadly accepted by scientists in the past decades.

In contrast, according to Space and Energy Correlated Five Principles of the Universe of Yangton and Yington Theory, Corresponding Spaces and Energies were cogenerated with Yangton and Yington Bubbles (building blocks of Space) and Wu's Pairs (building blocks of Matter) in a chain reaction triggered by the activation energy generated by the string forces between the overcrowded Yangton and Yington Bubbles at the Singularity in Big Bang Explosion in the beginning of the universe [12]. Therefore, Space can be considered as a continuously connected network of Yangton and Yington Bubbles with Matter composed of Wu's Pairs dispersed inside the Space.

As a consequence, instead of stretching Space, Inflation at the early stage of the universe is caused by the aggressive generation of Yangton and Yington Bubbles (building blocks of the Space) and subsequently by the fast formation of Wu's Pairs (building blocks of Matter), which is different from the Expansion caused by further evolution of the universe based on Cosmological Redshift and Hubble's Law, that is actually caused by Aging Affected Wu's Spacetime Shrinkage Theory (Earth Shrinkage Theory) instead of Acceleration Doppler Effect.

VIII. Multiverse and Multibang

If ever there is another universe created from None by another Singularity and Big Bang Explosion with no connection to the existing universe, then these two universes must totally separate from each other by None, which is known as Multiverse. However, if a Singularity and Big Bang Explosion is generated with the activation energy provided by the existing universe, then these two Singularities and Big Bangs are connected together to form one universe. However the starting Wu's Unit Lengths of the Yangton and Yington Bubbles as well as the initial wavelengths of the photons, of the two Singularities and Big Bangs could be different subject to the conditions at the time of creation. This is known as Multibang Theory (Multi Big Bang).

IX. Multibang and Redshift

Recently several mature and very well defined galaxies at high redshifts existing 300M years after the Big Bang (or 13.5B years before present) were found by James Webb Space Telescope (JWST). It indicates that the age of the universe may be 26.7B years [1] instead of 13.8B years claimed by Big Bang Theory. One possible answer to this new discovery is Multibang based on Yangton and Yington Theory.

Fig. 2 shows the correlations between Multibang and redshifts. According to Aging Affected Wu's Spacetime Shrinkage Theory and Principle of Parallelism, both Wu's Unit Length and wavelength in Multibang

decrease with time. B_1 is the Big Bang where earth was born. B_2 is the Big Bang generated at the same time as B_1 . B_3 is the Big Bang generated before B_1 and B_4 is the Big Bang generated after B_1 . They all have bigger starting Wu's Unit Lengths and wavelengths than that of B_1 . Otherwise, the duration from the starting time of the Big Bang to the time of generation of the light of wavelength λ_R is smaller than 300M years, which renders immature structures. As a result, those galaxies of T_2 , T_3 and T_4 in corresponding B_2 , B_3 and B_4 with the same wavelength λ_R as that of T_1 in B_1 , all have more mature and defined structures than that of T_1 in B_1 . Simply because that T_2 , T_3 and T_4 each one is several billion years after the starting time T_0 , T_x and T_y of the corresponding B_2 , B_3 and B_4 , which is much longer than T_1 (13.5B years before present) that is only 300M years after T_0 (13.8B years before present) in B_1 where earth was born.

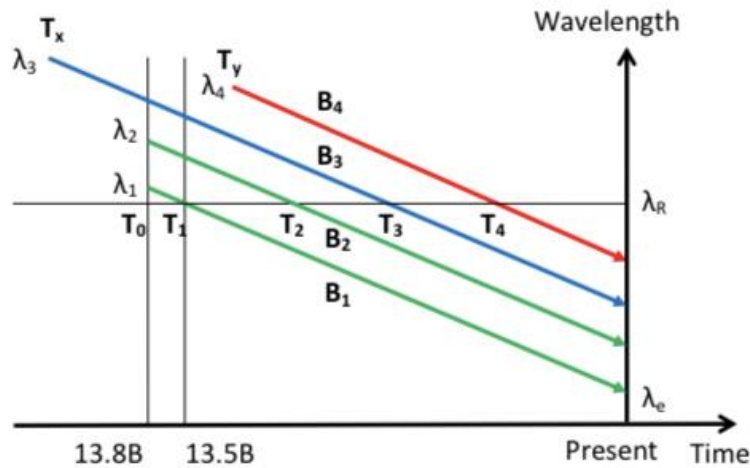


Fig. 2 The correlations between Multibang and Redshifts. B_1 is the Big Bang where earth was born. B_2 is the Big Bang generated at the same time as B_1 . B_3 is the Big Bang generated before B_1 and B_4 is the Big Bang generated after B_1 . Because of the longer aging time, several billion years than 300M years, those galaxies at T_2 , T_3 and T_4 in B_2 , B_3 and B_4 with the same wavelength λ_R as that of T_1 in B_1 have more mature and defined structures than that in B_1 .

However, it is assumed that under the same conditions, the Big Bang should have the same starting Wu's Unit Lengths and wavelengths. Therefore, B_2 which is generated at the same singularity and the same time as B_1 , but having larger starting wavelength, is unlikely to happen. On the other hand, B_4 which is generated after B_1 , should have a later Big Bang Explosion that is more visible than B_1 . Since there is no other Big Bang observed except B_1 , it is reasonable to assume that B_4 also doesn't exist. The only possibility is B_3 , which is generated earlier than 13.8B years, having larger starting Wu's Unit Length and wavelength than that of B_1 where earth was born. Since B_3 is older than 13.8B years, the Big Bang Explosion of B_3 is very difficult to observe even by JWST.

Furthermore, the redshifts that is caused by the photon generated from other Big Bangs and observed on earth (or JWST), has no correlations of age and distance between the light source and earth. Thus it cannot be used for the analyses and derivations of a theory such as Hubble's Law [15]. This is simply because that Principle of Parallelism can only be applied on the Corresponding Identical Objects or Events generated in the same Big Bang.

As a result, according to Yangton and Yington Theory, a mature galaxy in an ancient Big Bang that is generated long before 13.8B years ago with a large starting Wu's Unit Length (and wavelength), can have the same wavelength as that of the high redshifts existing 300M years after Big Bang Explosion (or 13.5B years before present) in the Big Bang where earth was born.

X. Conclusion

Recently several mature and very well defined galaxies at high redshifts existing 300M years after the Big Bang (or 13.5B years before present) were found by James Webb Space Telescope (JWST). It indicates that the age of the universe may be 26.7B years instead of 13.8B years claimed by Big Bang Theory. One possible answer to this new discovery is Multibang Theory based on Yangton and Yington Theory. In which, a mature galaxy in an ancient Big Bang that is generated long before 13.8B years ago with a large starting Wu's Unit

Length (and wavelength), can have the same wavelength as that of the high redshifts existing 300M years after Big Bang Explosion (or 13.5B years before present) in the Big Bang where earth was born.

References

- [1]. Rajendra P Gupta. "JWST Early Universe Observations And Λ CDM Cosmology". Monthly Notices Of The Royal Astronomical Society, Volume 524, Issue 3, September 2023, Pages 3385–3395, <https://doi.org/10.1093/mnras/stad2032>.
- [2]. Edward T. H. Wu, "Yangton And Yington—A Hypothetical Theory Of Everything", Science Journal Of Physics, Volume 2015, Article ID Sjp-242, 6 Pages, 2015, Doi: 10.7237/Sjp/242.
- [3]. Edward T. H. Wu. "Subatomic Particle Structures And Unified Field Theory Based On Yangton And Yington Hypothetical Theory". American Journal Of Modern Physics. Vol. 4, No. 4, 2015, Pp. 165-171. Doi: 10.11648/J.Ajmp.20150404.13.
- [4]. Polchinski, Joseph (1998). String Theory, Cambridge University Press ISBN 0521672295.
- [5]. Edward T. H. Wu. "Time, Space, Gravity And Spacetime Based On Yangton & Yington Theory, And Spacetime Shrinkage Versus Universe Expansion". American Journal Of Modern Physics. Vol. 5, No. 4, 2016, Pp. 58-64. Doi: 10.11648/J.Ajmp.20160504.13.
- [6]. Edward T. H. Wu. "Graviton Bombardment, Static And Dynamic Graviton Fluxes And Their Effects On Space, Time, Light And Properties Of Objects And Events." IOSR Journal Of Applied Physics (IOSR-JAP), 15(2), 2023, Pp. 16-25.
- [7]. Edward T. H. Wu. "Gravitational Waves, Newton's Law Of Universal Gravitation And Coulomb's Law Of Electrical Forces Interpreted By Particle Radiation And Interaction Theory Based On Yangton & Yington Theory". American Journal Of Modern Physics. Vol. 5, No. 2, 2016, Pp. 20-24.
- [8]. Edward T. H. Wu " Five Principles Of The Universe And The Correlations Of Wu's Pairs And Force Of Creation To String Theory And Unified Field Theory." IOSR Journal Of Applied Physics (IOSR-JAP), Vol. 10, No. 4, 2018, Pp. 17-21.
- [9]. Penzias, A. A.; Wilson, R. W. (1965). "A Measurement Of Excess Antenna Temperature At 4080 Mc/S". The Astrophysical Journal. 142 (1): 419–421. Bibcode: 1965apj...142..419P. Doi:10.1086/148307
- [10]. Edward T. H. Wu. "Principle Of Correspondence, Principle Of Parallelism And Redshift Based On Yangton And Yington Theory." IOSR Journal Of Applied Physics (IOSR-JAP), 12(3), 2020, Pp. 14-18.
- [11]. Claes Uggla (2006). "Spacetime Singularities". Einstein Online. 2 (1002).
- [12]. Edward T. H. Wu. "Creations Of Space, Energy, Matter And Time And The Beginning And End Of The Universe Based On Yangton And Yington Theory." IOSR Journal Of Applied Physics (IOSR-JAP), 15(4), 2023, Pp. 60-67.
- [13]. "Big-Bang Model". Encyclopedia Britannica. Retrieved 11February 2015.
- [14]. Edward T. H. Wu. "Space And Dark Matter Made Of Yangton And Yington Bubbles." IOSR Journal Of Applied Physics (IOSR-JAP), 15(4), 2023, Pp. 06-13.
- [15]. Edward T. H. Wu. "Hubble's Law Based On Wu's Spacetime Shrinkage Theory And Principle Of Parallelism." IOSR Journal Of Applied Physics (IOSR-JAP), 12(6), 2020, Pp. 18-22.