



Research Article

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World-Quantum Theory and Time Travel: Research on the Role of Life in Composition of the Universe

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Abstract

This paper points out that the universe is a set. The universe set contains the universe of every moment; the universe of a moment contains every single world-quantum at this moment; each single world-quantum contains a spiritual world-quantum and a material world-quantum. The author expounds the mathematical relationship between these physical quantities and establishes a new theory, that is, world-quantum theory. According to the viewpoint of the universe set, the author reveals the principle of time travel by applying perception function. This paper demonstrates that a person can travel back to the past by focusing on reminiscing and travel forth to the future with single-minded visualization.

Keywords: Spiritual world-quantum, Material world-quantum, Single world, Universe set, Flash, Perception function, Time travel

Introduction

Scientists say that dark matter is the majority in the universe, but people have never found it. About the truth of the universe, maybe we won't get a satisfactory answer until the influence of spirit on matter is taken into account. Physical and mathematical analysis of spiritual process is indispensable. This is a key to open a treasure trove, which will open the door of time travel. "For broader and more general fields, the connections between them need to be enhanced and mastered by humans. Not just the natural rules themselves need to be understood" [1]. This will help people climb the peak of human civilization and move towards interstellar civilization.

Scope of the Universe Set

The dictionary explains that the universe is the entirety of all matter and its existing forms. The universe is obviously a set. We take a spring as an example to illustrate scope of the set (Figure 1).

Point P is the equilibrium point of the spring, which is neither in the tensile nor compressive form. When the spring is extended to point L, the shape of the spring is denoted as OL; when the spring is compressed to point S, the shape of the spring is denoted as OS. When an observer sees OL, he does not think that the spring has only one form (OL). Although OP and OS do not appear during observation, they objectively exist. So, all forms of the spring constitute a complete set. Similarly, all things that appear now, in the past, and in the future in the universe belong to the universe set (U). In summary, U mentioned in this paper includes all space, time, existence, and their forms of existence.

Maybe some people ask, "The future has not happened. Why is it included in U ?"

We assume the following:

- a. a person saw blooming wildflowers on 04/15/1506.



- b. t_m denotes the time when he saw the blooming wildflowers.
- c. Y_m denotes the person at time t_m .
- d. $u_k(t_m)$ denotes the blooming wildflowers at time t_m .

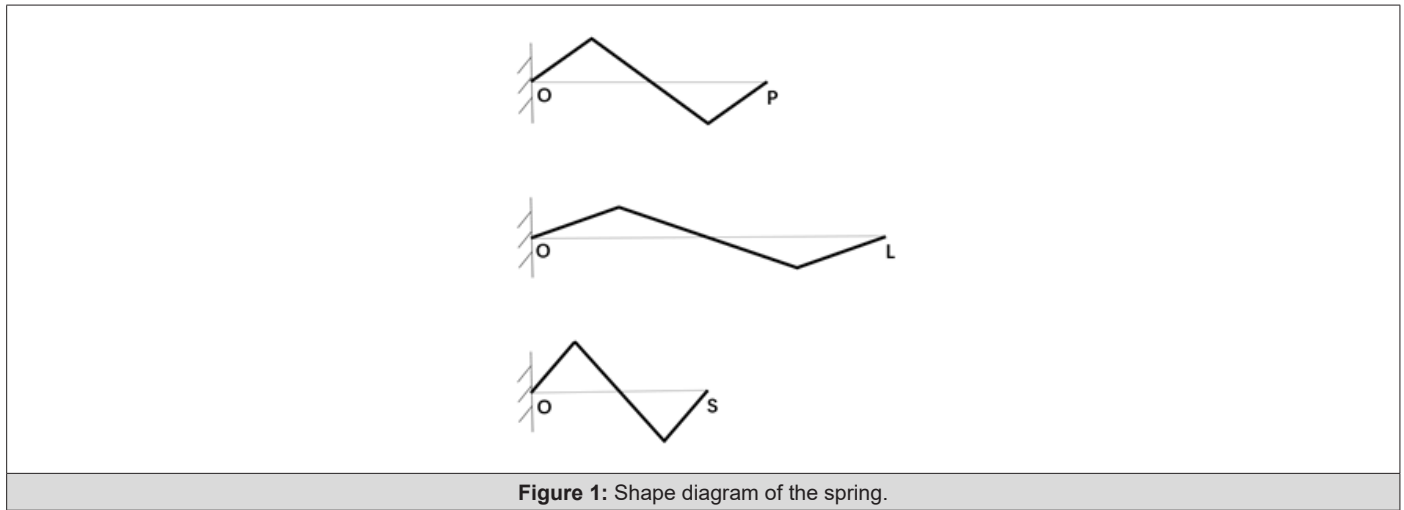


Figure 1: Shape diagram of the spring.

We also assume the following:

- a. The aforementioned wildflowers were withering on 11/15/1506.
- b. t_n denotes the time when the person saw the withering wildflowers.
- c. Y_n denotes the person at time t_n .
- d. $u_k(t_n)$ denotes the withering wildflowers at time t_n .

Because Y_m is not Y_n , $u_k(t_n)$ has indeed not occurred for Y_m . But in our opinion on 02/12/2024, $u_k(t_m)$ and $u_k(t_n)$ are on an equal footing. If U contains $u_k(t_m)$, it will contain $u_k(t_n)$. It's just that for Y_m , $u_k(t_n)$ didn't appear at time t_m . Furthermore, the definition of universe in *Companion to the Cosmos* is "everything we may know now and, in the future, i.e., all the space and time that our instruments reach" [2]. This definition conforms to the characteristics of time, i.e., "no physical law says that time really flows from the past to the future through the present. All time is in an equal position" [2].

Cartesian theory says "Human beings are composed of two independent entities, and the relationship between mind and body is similar to that between crew and ship" [3]. **Mathematical Expression of the Relationship between Spirit and Matter** points out that each life is a single world; each single world includes a spiritual world and a material world; and all single worlds are superimposed to form a complete universe [4]. Thus, a person's material world and spiritual world are binary opposites in a contradiction. This contradiction is his single world. His material world is constantly changing, and every form produced by these changes is an element of U . Although his spiritual world is subjective, subjective existence also exists, then every form produced by his spiritual world's changes is an element of U too.

World-Class Quantum

We divide a person's 1-second thinking or feeling into n equal parts, each of which is referred to as "flash". Simply put, flash is a sudden thought, as fast and short as lightning [5]. Assume that we count a person's flashes:

No.1 flash is marked as f_1 , the corresponding time is marked as t_1 , and the spiritual world corresponding to f_1 is marked as $s(t_1)$;

No.2 flash is marked as f_2 , the corresponding time is marked as t_2 , and the spiritual world corresponding to f_2 is marked as $s(t_2)$;

No.3 flash, No.4 flash, etc., are similar. Because t_1 , t_2 and t_3 appear sequentially, flashes are in tandem. In generally, the number of one's flashes in 1 second is 3.0×10^{14} [4]. Each flash corresponds to a spiritual world, *The Holy Bible* also says that "anyone who looks at a woman lustfully has already committed adultery with her in his heart" [6], and their reason is the same. In the spiritual realm, we divide time by flash, so flash can be called time quantum. $s(t_1)$ corresponding to f_1 can also be regarded as macro quantum, and we call it spiritual world-quantum $Q_s(t_1)$, whose generally term is called Q_s .

In a single world, material world and spiritual world are orthogonal, and satisfy the following equation

$$q(t) = m(t) + j \cdot s(t), \tag{1}$$

where:

- a. $q(t)$ is its single world at time t .
- b. $m(t)$ is its material world at time t .
- c. $s(t)$ is its spiritual world at time t [4].

According to equation 1, $q(t_1)$ not only contains $s(t_1)$, but also

contains $m(t_1)$. Because $m(t_1)$ is the presence that accompanies $s(t_1)$, i.e., $m(t_1)$ is the presence that accompanies the spiritual world-quantum $Q_s(t_1)$, we can refer to $m(t_1)$ as material world-quantum $Q_m(t_1)$, whose general term is called Q_m . Compared to microscopic particles in quantum mechanics, $Q_m(t_1)$ clearly represents a world-class macroscopic quantum, because it represents a life's material world at time t_1 . Here we can refer to $q(t_1)$ as the single world-quantum $Q_q(t_1)$, whose general term is called Q_q . $Q_q(t_1)$ is a life's single world-quantum at time t_1 ; and it is a binary contradiction, whose conflicting parties are $Q_s(t_1)$ and $Q_m(t_1)$. The rest flashes are similar. All in all, the contradiction between binary opposites in philosophy can be expressed mathematically as follows: In the complex plane, $Q_s(t)$ and $Q_m(t)$ are orthogonal. Imaginary unit (j) can also be introduced into function to express their relationship. Hence, equation 1 is also written as

$$Q_q(t) = Q_m(t) + j \cdot Q_s(t) .$$

A life has different Q_q at different times, so its single world is quantized. We assume that $u(t)$ denotes the universe of time t , then $u(t)$ is the superposition of all single worlds at time t [4]. So $u(t)$ is also a set, i.e.,

$$u(t) = \{Q_{q1}(t), Q_{q2}(t), Q_{q3}(t), \dots\} ,$$

where:

- a. $Q_{q1}(t)$ is No.1 life's single world-quantum at time t .
- b. $Q_{q2}(t)$ is No.2 life's single world-quantum at time t .

- c. $Q_{q3}(t), Q_{q4}(t)$, etc., are similar.

U includes $u(t_1), u(t_2), u(t_3)$, etc. Maybe someone will ask, "Does something not belong to U if it is independent of all lives' single worlds?" This thing is not in No.1 life's single world at time t_1 , i.e., it does not belong to $Q_{q1}(t_1)$. It is not in No.1 life's single world at all times, i.e., it does not belong to $\{Q_{q1}(t_1), Q_{q1}(t_2), Q_{q1}(t_3), \dots\}$. Similarly, it does not belong to $\{Q_{q2}(t_1), Q_{q2}(t_2), Q_{q2}(t_3), \dots\}$, $\{Q_{q3}(t_1), Q_{q3}(t_2), Q_{q3}(t_3), \dots\}$, etc. It is not associated with any single world, i.e., it does not exist in U . Consequently, the boundary between the inside and outside of U is very clear. In short, it is also the boundary between existence and non-existence.

Time Travel to the Past

Assume that Mr. Yang was deeply impressed by the blooming wildflowers when he saw them, and recalls the scene a few years later. Now we assume the following:

- a. u_k denotes the wildflowers and their scene.
- b. t_a denotes the time when Mr. Yang saw u_k .
- c. $u_k(t_a)$ denotes u_k of time t_a .
- d. Y_a denotes Mr. Yang of time t_a .
- e. t_b denotes the time when Mr. Yang is reminiscing about $u_k(t_a)$.
- f. Y_b denotes Mr. Yang of time t_b .

Can Y_b travel back to $u_k(t_a)$? (Figure 2).

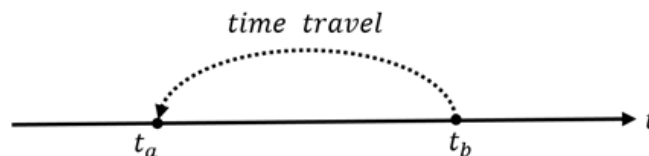


Figure 2: Time sequence diagram of time travel back to the past.

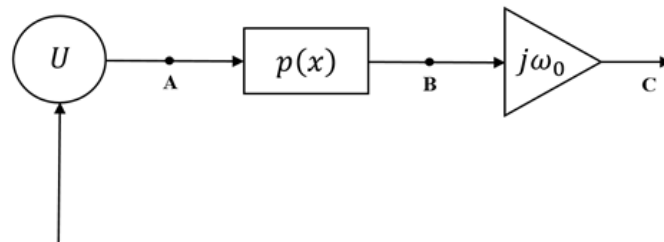


Figure 3: Block diagram of spiritual activity's process.

U includes all $u(t)$ in the past, present and future, so when Y_b recalls $u_k(t_a)$, Y_b can perceive $u_k(t_a)$. Spiritual activity seems complicated, but we can apply the knowledge from the field of electronic information to establish its mathematical model (Figure 3). U in Figure 3 represents the universe, which is a signal source for

generating input signals. Point A is the input end. $p(x)$ and $j\omega_0$ represent a life, which is an active network for processing signals. Point C is the output end. The line connecting point C to U is used to feed back the output signals to the signal source, and the universe is updated. The circle represents the universe set (U). When

$x = u_k(t_a)$, the rectangle represents that Y_b recalls $u_k(t_a)$, i.e., his spiritual world perceives $u_k(t_a)$. The triangle represents the utility of his spiritual activity [5] (Figure 3).

We assume that Y_b concentrates on reminiscing about $u_k(t_a)$. We start counting the number of Y_b 's flashes from time t_a , and No.1 flash (f_1) corresponds to time t_{a1} . According to Figure 3, we have

$$f_A(t_{a1}) = U ;$$

$$f_B(t_{a1}) = U \cdot p(x) = \{u_1, u_2, u_3, \dots\} \cdot p(u_k(t_a)) = u_k(t_a),$$

where $p(x)$ is perception function with sampling property [5]. We use an analogy to illustrate the perception process: Y_b is similar to a FM radio, and $u_k(t_a)$ is similar to a radio station. The process of Y_b 's reminiscing about the past is similar to constantly tuning the radio's frequency to the radio station's frequency. When the difference between the radio's frequency and the radio station's frequency is small enough, the radio clearly plays the same sound as the radio station. Similarly, when the difference between $u_k(t_a)$ and the scene reminisced about by Y_b is small enough, i.e., when the vibration frequency of Y_b 's single world-quantum (Q_q) is consistent

with that of $u_k(t_a)$, Q_q resonates with $u_k(t_a)$. So we say that Y_b perceives $u_k(t_a)$, and $u_k(t_a)$ appears in Y_b 's single world.

If the spiritual activity is measured in imaginary unit (j), each flash can be represented as $j\omega_0$, where ω_0 is a coefficient. $j\omega_0$ at time t_{a1} acted on the object $u_k(t_a)$. The triangle in Figure 3 represents result of the perceptive behaviour at time t_{a1} , i.e., utility produced by the spiritual activity [5]. The utility of f_1 , i.e., the output of triangle (Figure 3) at time t_{a1} , can be expressed as follows:

$$f_C(t_{a1}) = u_k(t_a) \cdot j\omega_0.$$

$f_C(t_{a1})$ not only has characteristic of the behavioural subject ($j\omega_0$), but also has characteristic of the behavioural object $u_k(t_a)$. We assume that t_{a1}^+ represents the time point when time t_{a1} ends (Figure 4), then Y_b 's single world at t_{a1}^+ is

$$q(t_{a1}^+) = u_k(t_a) + u_k(t_a) \cdot j\omega_0,$$

where $u_k(t_a)$ is Y_b 's material world at t_{a1}^+ , because $u_k(t_a)$ is the objective things perceived or thought by Y_b ; and $u_k(t_a) \cdot j\omega_0$ is Y_b 's spiritual world at t_{a1}^+ , because it is Y_b 's perception or thinking of $u_k(t_a)$. (Figure 4).

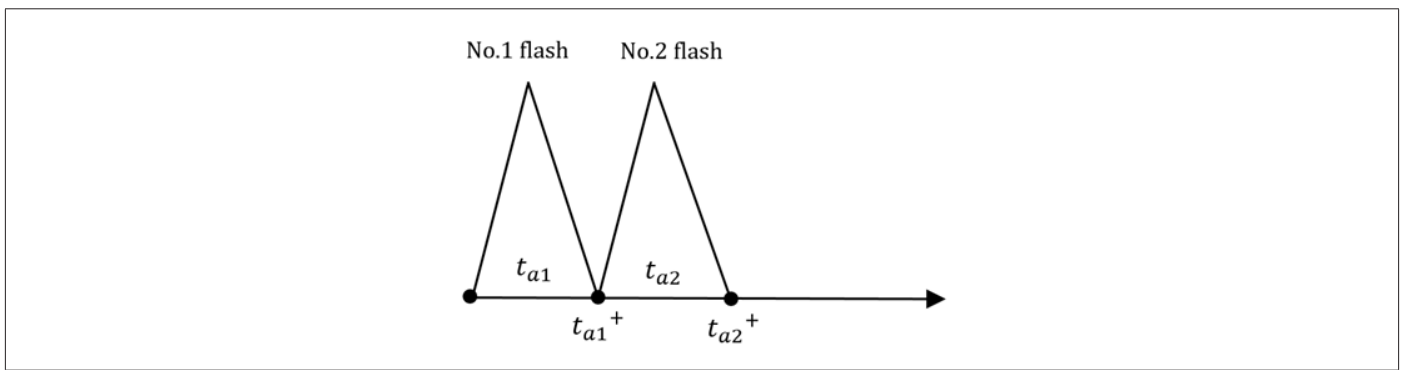


Figure 4: Diagram of the relationship between flash and time.

So $u_k(t_a)$ appears in Y_b 's single world $q(t_{a1}^+)$. Assume that Δt_{a1} denotes the influence of Y_a , his friends, birds and ants on u_k . Then at the end of f_1 , i.e., at t_{a1}^+ , u_k updates to

$$u_k(t_{a1}^+) = u_k(t_a) + f_C(t_{a1}) + \Delta t_{a1} = q(t_{a1}^+) + \Delta t_{a1}.$$

Because Y_b 's single world $q(t_{a1}^+)$ is added to $u_k(t_{a1}^+)$, Y_b affects the universe at t_{a1}^+ .

In f_2 , i.e., at time t_{a2} , because $u_k(t_a)$ has already appeared in Y_b 's single world, Y_b can perceive $u_k(t_{a1}^+)$ as long as Y_b sees, smells, touches or thinks about $u_k(t_{a1}^+)$. According to Figure 3, we obtain

$$f_A(t_{a2}) = U ;$$

$$f_B(t_{a2}) = U \cdot p(u_k(t_{a1}^+)) = u_k(t_{a1}^+);$$

$$f_C(t_{a2}) = u_k(t_{a1}^+) \cdot j\omega_0.$$

After derivation similar to the previous text, we obtain

$$q(t_{a2}^+) = u_k(t_{a1}^+) + u_k(t_{a1}^+) \cdot j\omega_0;$$

$$u_k(t_{a2}^+) = q(t_{a2}^+) + \Delta t_{a2}.$$

Y_b 's single world $q(t_{a2}^+)$ is added to $u_k(t_{a2}^+)$, so Y_b affects the universe at t_{a2}^+ . f_3, f_4 , etc., are also similar and will not be repeated here. It can be seen that the development of the above event is similar to our current mode of perceiving things. Y_b is continuously involved in the past event because of his focusing on reminiscing. Therefore, Y_b travels back to the past $u_k(t_a)$ by focusing on reminiscing, and interacts with the universe $u(t_a)$.

Time Travel to the Future

Assume that the wildflowers and their scene (u_k) mentioned above are withering at time t_c (Figure 5). Now we assume that $u_k(t_c)$ denotes u_k of time t_c . Can Y_a travel forth to the future if he intently visualizes the withering wildflowers? (Figure 5).

t_c is the time when $u_k(t_c)$ actually occurs; t_a is the time when Y_a intently visualizes the withering wildflowers. We assume that the visualized scene is consistent with $u_k(t_c)$, i.e., Y_a perceives

$u_k(t_c)$. We start counting the number of Y_a 's flashes from time t_c , and No.1 flash (f_1) corresponds to time t_{c1} . According to Figure 3, we have

$$f_A(t_{c1}) = U ;$$

$$f_B(t_{c1}) = U \cdot p(x) = U \cdot p(u_k(t_c)) = u_k(t_c).$$

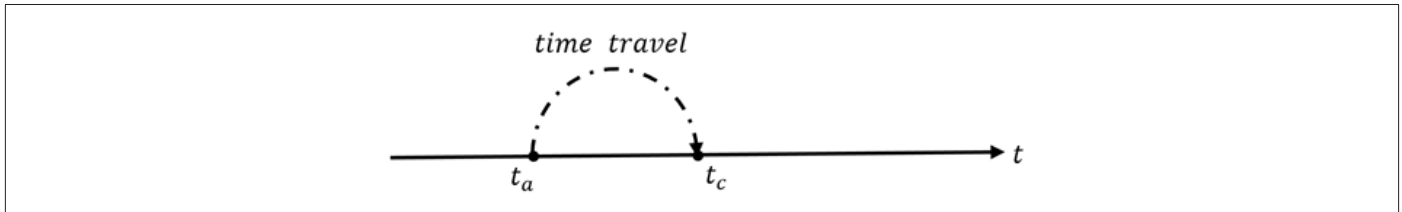


Figure 5: Time sequence diagram of time travel forth to the future.

The utility of f_1 , i.e., the output of triangle (Figure 3) at time t_{c1} , can be expressed as follows:

$$f_C(t_{c1}) = u_k(t_c) \cdot j\omega_0.$$

Then Y_a 's single world at t_{c1}^+ is

$$q(t_{c1}^+) = u_k(t_c) + u_k(t_c) \cdot j\omega_0.$$

So $u_k(t_c)$ appears in Y_a 's single world $q(t_{c1}^+)$. Assume that Δt_{c1} denotes the influence of pedestrians, hares and crows on u_k at time t_{c1} . Then at the end of f_1 , i.e., at t_{c1}^+ , u_k updates to

$$u_k(t_{c1}^+) = q(t_{c1}^+) + \Delta t_{c1}.$$

Because Y_a 's single world $q(t_{c1}^+)$ is added to $u_k(t_{c1}^+)$, Y_a affects the universe at t_{c1}^+ .

In f_2 , i.e., at time t_{c2} , because $u_k(t_c)$ has already appeared in Y_a 's single world, Y_a can perceive $u_k(t_{c1}^+)$ as long as Y_a sees, smells, touches or thinks about $u_k(t_{c1}^+)$. According to Figure 3, we obtain

$$f_A(t_{c2}) = U ;$$

$$f_B(t_{c2}) = U \cdot p(u_k(t_{c1}^+)) = u_k(t_{c1}^+);$$

$$f_C(t_{c2}) = u_k(t_{c1}^+) \cdot j\omega_0.$$

After derivation similar to the previous text, we obtain

$$q(t_{c2}^+) = u_k(t_{c1}^+) + u_k(t_{c1}^+) \cdot j\omega_0 ;$$

$$u_k(t_{c2}^+) = q(t_{c2}^+) + \Delta t_{c2}.$$

Y_a 's single world $q(t_{c2}^+)$ is added to $u_k(t_{c2}^+)$, so Y_a affects the universe at t_{c2}^+ . f_3, f_4, \dots , are also similar and will not be repeated here. It can be seen that the development of the above event is similar to our current mode of perceiving things. Y_a is continuously involved in future event because of his single-minded visualization. Therefore, Y_a travels forth to the future $u_k(t_c)$ with single-minded visualization, and interacts with the universe $u(t_c)$.

Conclusion

To sum up, a life is a single world, and the single world at a moment is a single world-quantum (Q_q). Every Q_q includes a spiritual world-quantum (Q_s) and a material world-quantum (Q_m). The mathematical relationship between Q_s and Q_m conforms to the definition of contradiction in dialectics, i.e., "the relationship

between opposites is both opposite and unified, mutually exclusive and interdependent" [7]. The universe set (U) includes the universe of every moment, and the universe of a moment includes all Q_q at this moment. So the basic elements in U are world-class quanta, i.e., Q_s and Q_m . This conclusion reflects the universality of contradictions in dialectics, i.e., "contradiction exists in the development process of everything; there is a contradictory movement from beginning to end in the development of everything" [7]. Therefore, the universe is quantized. It includes all time and space of the past, present and future, as well as the existence and its forms. This is the world-quantum theory. This paper elucidates the role of spirit in mathematics and physics, and puts forward a new view of world-quantum.

A person can travel back to the past by focusing on reminiscing. Perception function plays an important sampling role in demonstrating time travel, and all world-quanta constitute the sampled universe set. Similarly, a person can travel forth to the future with single-minded visualization. Time travel is not a fantasy because the principle of telepathy in life is the same. The following is an example of the ancient Chinese sage Zeng Shen: "When Zeng Shen was chopping firewood in the mountains, guests came to his home, and Zeng Shen's mother was a loss. Seeing that Zeng Shen did not come back, she bit her finger. Zeng Shen suddenly felt heartbroken and went home carrying firewood" [8]. At that time, Zeng Shen's single world-quantum resonated with his mother's single world-quantum, so Zeng Shen suddenly felt heartbroken. This is described in terms of telepathy, and the principle of perception function can also be explained it as follows: Zeng Shen's mother perceived Zeng Shen's single world, and her pain sensation was superimposed on Zeng Shen's single world. So Zeng Shen felt heartbroken. In summary, life plays a crucial and important role in the composition of the universe.

Acknowledgment

None.

Conflict of Interest

None.

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