

## **Rethinking Time: The Non-Absolute Nature of Temporal Reality**

### **Authors and Affiliations:**

Ruhan S.

### **Abstract:**

This research challenges the conventional view of time as an absolute entity going in a straight line at a constant speed by investigating its relativity. Employing the comparison of time between celestial bodies and open space-time, we present compelling evidence supporting the idea that time is not a universal constant. Our findings reveal that time is but a mere illusion, suggesting a paradigm shift in our understanding of temporal reality. This study contributes to seeing light as an entity of particle-wave duality rather than a body moving at very high speeds.

### **Introduction:**

The concept of time has long been considered an absolute and universally constant entity. However, recent advancements in time dilation have prompted a re-evaluation of this traditional perspective. This paper aims to explore the relativity of time and its implications for our understanding of temporal reality. While the traditional view posits time as an absolute construct, our study challenges this notion by proving time as related to other factors rather than an absolute entity in free space-time. The following sections will present our findings, discuss their significance, and propose avenues for further research in the dynamic field of temporal studies.

“Accordingly, the question of the essence of time leads back to the question of the "origin" of time. The question of the origin is oriented towards the primitive forms of the consciousness of time in which the primitive differences of the temporal are constituted intuitively and authentically as the originary [originären] sources of all certainties relative to time. The question of the origin of time should not be confused with the question of its psychological origin—the controversial question between empiricism and nativism.”<sup>2</sup>

In his text “Phenomenology of Internal Time Consciousness”, E. Husserl clearly mentions that us as humans many times mistake time for ‘us’, since time is taught to us as a concept of a “timeline” rather than a dimension of particle-wave duality.

## Methods:

This study employed a study of time and light in free space to investigate the relativity of time. The chosen design allowed for three main questions to be asked:

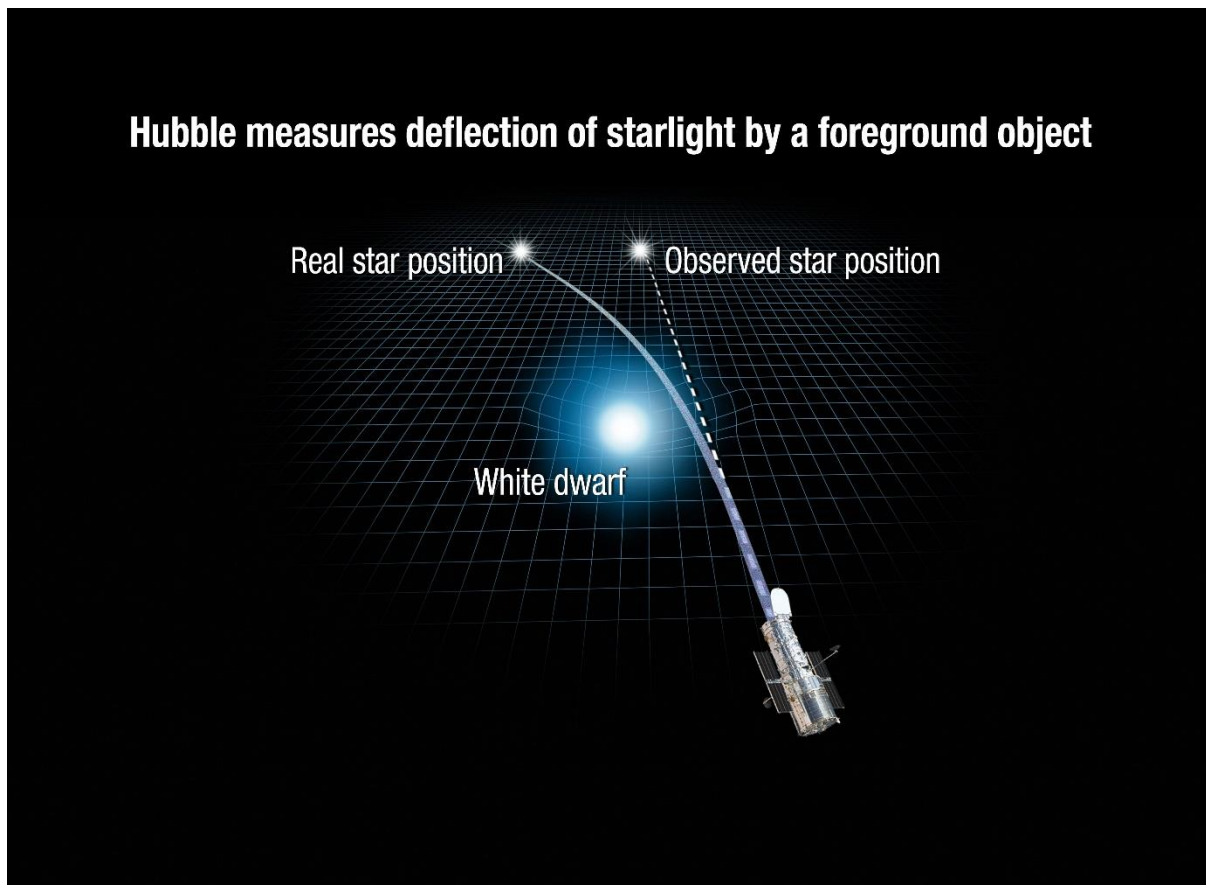
### What is time? What is light? And What is space?

The independent variable is  $\delta$  (*The energy held by a celestial body in free space*), and the dependent variables are  $\Theta$  (*The amount that celestial body is bending space-time*),  $c$  (*The speed of light*) and  $T$  (*The 'speed' of time*).

The data collected were analysed using various analytical techniques.

## Results:

Figure 1



Courtesy: <https://esahubble.org/> (Hubble Telescope NASA)

We can see in fig. 1 that light is being bent by the space-time being bent due to the energy of the white dwarf. Let's remember this as a fundamental idea and name this as the nature of light.

Figure 2



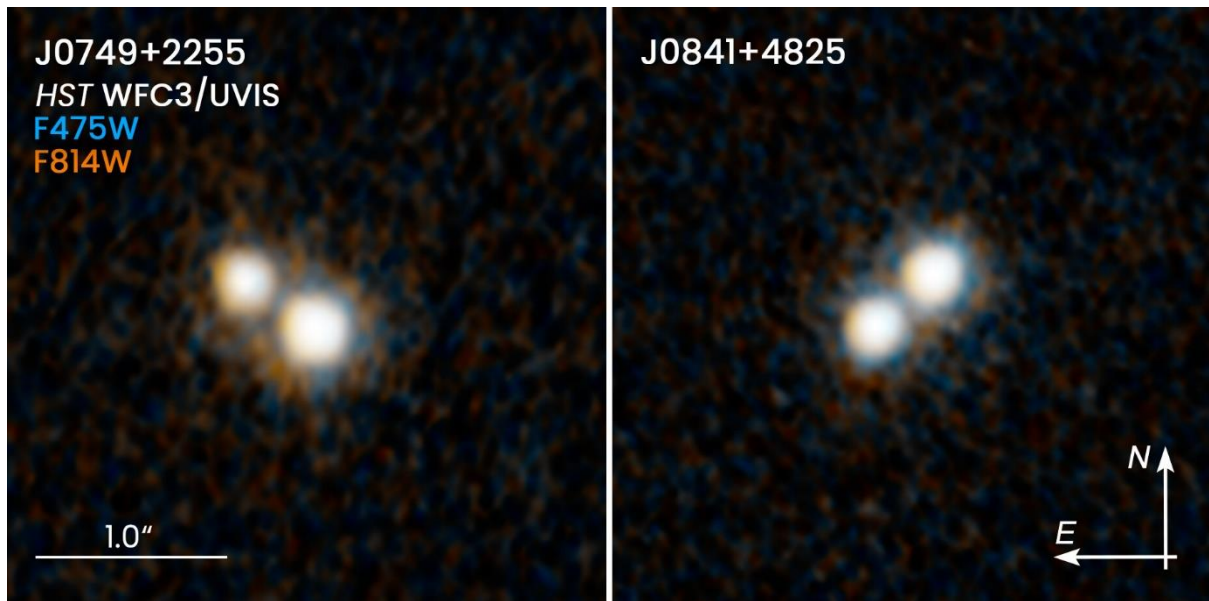
Courtesy: <https://hubblesite.org/> (Hubble Telescope NASA)

We can see in Fig.2 that the light is being bent by the black hole so vigorously that the event horizon appears to be a big black sphere. It is hypothesized that if an entity would go near the event horizon, for the observer it would appear as the entity has stopped moving and become stationary. This clearly shows, that the supermassive blackhole is bending time for the entity, so much so that time stops moving due to all the energy of the entity being sucked into the black hole and/or time moving so fast due to the massive energy of the black hole that the observer's time can not match the time of the entity. Proving particle-wave duality for time.

“We encounter the same difficulty with all physical statements in which the conception “simultaneous” plays a part. The concept does not exist for the physicist until he has the possibility of discovering whether or not it is fulfilled in an actual case. We thus require a definition of simultaneity such that this definition supplies us with the method by means of which, in the present case, he can decide by experiment whether or not both the lightning strokes occurred simultaneously”<sup>1</sup>

In his theory of relativity, Einstein suggests that we need a definition of “simultaneous”. Perhaps here too, we need a definition of “simultaneous”.

Figure 3

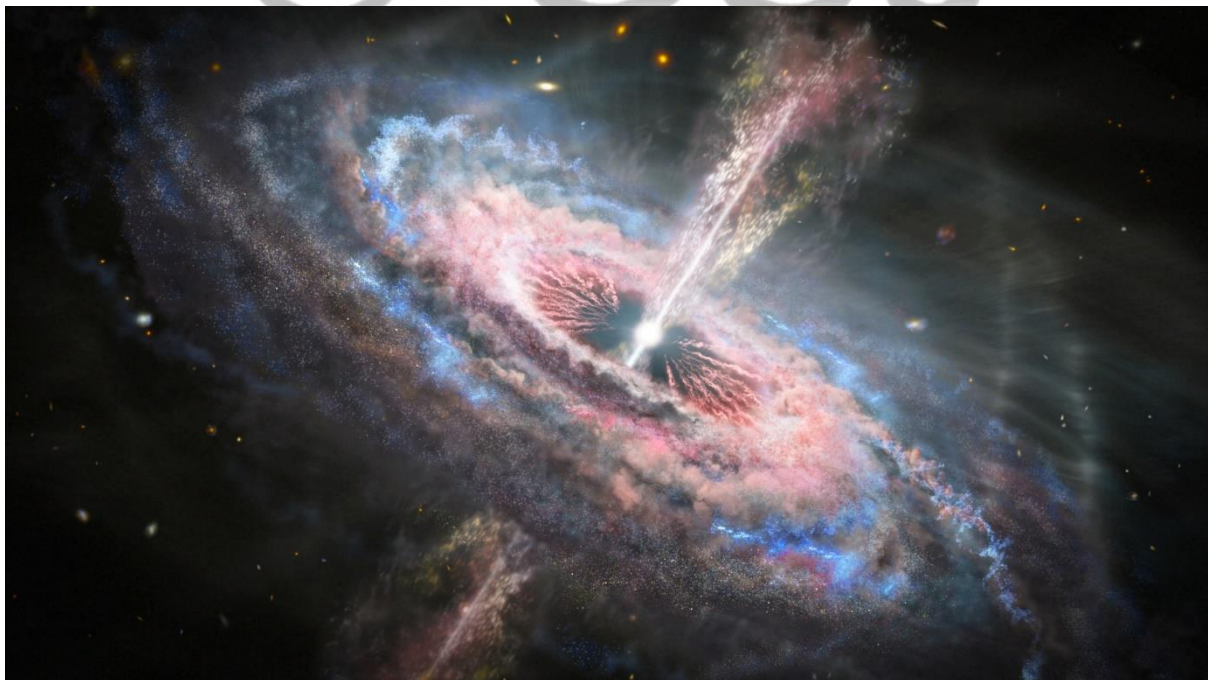


Courtesy: <https://esahubble.org/> (Hubble Telescope NASA)

We can see in Fig.3 that the pair of Quasars are bending light and time so much so that light is seen as it is being emitted from the pair, but it is actually being bent into them.

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Figure 4



Courtesy: <https://esahubble.org/> (Hubble telescope NASA)

We can see in Fig.4 the same illusion as in Fig.3 i.e., light and time being bent so vigorously that it appears that light and time come to a stop at the event horizon, but light is being bent so vigorously that it seems that the event horizon is emitting it and time being bent so vigorously that it stops for the observer.

**Discussion:**

Lets say we have a celestial body named  $\varphi$ , which holds an energy  $\delta_\varphi$ , bends space time the quantity of  $\Theta_\varphi$ , speed of light for  $\varphi$  is  $c_\varphi$  and speed of time for  $\varphi$  is  $T_\varphi$ . We are comparing  $\varphi$  to an area in free space-time called  $\chi$  the same are as  $\varphi$  occupies. Soon, we will come to find out that bending of space time is not influenced by mass (m), but it is influenced by the energy held ( $\delta$ ).

Now, we know

$$\theta \propto \delta \text{ --- 1}$$

And, by Fig. 1 we can see that the light bends according to  $\Theta$ . So,  $T \propto \theta$ .

Now, let's compare  $\varphi$  and  $\chi$ .

$$\delta_\varphi > \delta_\chi \text{ --- 2}$$

$$\Theta_\varphi > \Theta_\chi \text{ --- 3}$$

It is seen that humans age slower in space, speed of time is slower in free space. Hence,

$$T_\varphi > T_\chi \text{ --- 4}$$

The speed of light, is calculated by  $\frac{\Delta d}{\Delta t}$ , but time is not absolute. Remembering the nature of light, we know it's not just a speed that can be calculated by the above-mentioned formula as seen in Fig.1 and the following explanation. So, we conclude that speed of light rather than being based on the distance travelled, is based on time. Hence,

$$c_\varphi < c_\chi \text{ --- 5}$$

By, 2 and 3 we know now that  $\theta \propto \delta$ .

By, 3 and 4 we know that  $\Theta \propto T$

And by, 4 and 5 we know that  $T \propto \frac{1}{c}$

Previous studies in the field have primarily approached the concept of time as a fundamental and independent dimension. However, our findings challenge this conventional perspective by revealing that time is but a mere illusion. This notion aligns with recent theoretical frameworks that consider the interplay between space-time and entities, marking a departure from traditional understandings of temporal reality.



“When he created dynamics, Newton introduced five absolutes: time, its direction, position and direction in space, and scale. None of these is needed to represent the irreducible content of dynamics, which solely concerns the relations between objects (mass ratios of the particles and ratios of the separations between them in the N-body problem); indeed, the 'absolutes' introduce redundant gauge degrees of freedom (dofs) into the N-body problem if, as often, it is used to model an 'island universe' in Euclidean space.”<sup>3</sup>

In his research paper Entropy and Cosmological Arrows of Time, Julian Barbour is also disregarding the idea of time being absolute in Newtonian physics and Euclidian space.

While the revelation that time is an illusion may be a new conception to the average mind, it is consistent with our observations of space-time bending by an entity. The unexpected nature of this finding underscores the need for a paradigm shift in our understanding of temporal dynamics. Potential explanations for this unexpected outcome may lie in the intricate relationships between space and time, which demand further exploration.

Our study aimed to investigate the fundamental nature of time as a particle-wave in the presence of space-time curvature induced by an entity. The realization that time is an illusion directly addresses this objective, providing a profound insight into the dynamics of space-time interactions. Each set of findings contributes significantly to answering our research questions by reshaping our understanding of the space-time fabric of reality.

Despite the ground breaking nature of our findings, it is essential to acknowledge certain limitations in our methodology. The study's scope may have been constrained by the specific characteristics of the entity studied, and the implications may be limited to certain contexts. Furthermore, the observational methods employed may introduce biases, emphasizing the importance of cautious interpretation.

Building upon our discoveries, future research should definitely delve deeper into understanding the mechanisms behind the illusion of time within the context of space-time curvature. Exploring variations in entities, their characteristics, and the extent of space-time bending may unravel additional layers of temporal dynamics. Investigating these aspects will contribute to a more comprehensive comprehension of the relationship between time and the bending of space-time.

While the immediate practical applications of our findings may not be evident, the theoretical shift in our understanding of time opens doors to innovative perspectives on space-time manipulation. This has the potential to influence fields such as astrophysics and quantum physics, with implications for our perception of reality and the boundaries of temporal experience.

While our results challenge established notions of time, it is essential to acknowledge the complexities inherent in studying phenomena at the intersection of space and

time. Objectivity ensures that our interpretations remain grounded in the data and the methodologies employed.

In summary, our study has revealed that time is not an absolute but rather an illusion shaped by the bending of space-time by an entity. Time is not absolute, rather it is an attribute attached to an entity that depends on the bending of the fabric of space time by the energy held by that entity. Light is not a body travelling at very high speeds, but is an energy which can be attracted towards other celestial bodies holding energies and can become stationary when the energy is too high, looking as if it is being emitted by the body. Space is but a mere manifestation of the same, space is like an ocean containing empty energy waiting for higher energy to fill it.

This ground breaking insight challenges existing literature, addresses our research objectives, and points towards new directions for future exploration. While methodological limitations should be considered, the practical implications of our findings may extend beyond the immediate scope of our study. In conclusion, our research significantly contributes to reshaping our understanding of time and its relationship with space-time curvature.

### **Acknowledgements:**

In utmost reverence, I express profound gratitude to the Almighty deity, the source of inspiration and knowledge for this noble idea. In humble acknowledgment of divine guidance, I present this study as a small offering placed at His feet. May He, in His limitless grace, accept it and continue to reveal the mysteries of the cosmos unto me.

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My heartfelt thanks go to my loving grandparents, mother and sister for they are the ones giving me an environment of such high hospitality, immense love and support, and teachers for their unwavering dedication towards my excellence and inspiration throughout the intricate journey of this research. Their enduring encouragement has been a wellspring of inspiration, and their unwavering support has played a pivotal role in the triumphant completion of this study.

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