The Intriguing Concept of Backward and Forward Time Travel Unveiled

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ABSTRACT:

This research explores the possibility of time travel in both directions, utilizing the principles of speed, space, and gravity. New research suggests that time travel is possible and secure in both directions. It is based on speed, space, and gravity. Space travelers on the Universal Space Station experience time slightly slower than those on Earth, but it is still happening. Space explorers Scott and Stamp Kelly, twins, have traveled 520 days in space and 54 days in space. Time travel is possible in reverse, but it is not always possible. One way to travel back in time is through natural wonders called wormholes, which may connect different time centers. These tunnels are believed to be connected by a large amount of gravity, making travel between them almost instantaneous. However, there are issues with wormhole time travel, such as the need for a known wormhole and the unknown consequences of entering and exiting the wormhole. Scientists have been working on other ways to travel through time, such as using a Tipler Cylinder or an Infinite Cylinder, a long, indestructible tube filled with 10 times the mass of our sun, creating a dense dark gap.

Keywords: Time Travel, Aquarium, Space, NASA, Universal Space Station, Wormholes, Grandfather Paradox, Gravitational Fields.

INTRODUCTION:

In the movie Tenet, the theory of technologies that could alter the passage of time for individuals or objects and combine two ways in one scene is explored. When popcorn Keel’s entropy changes (ΔS), the protagonist's hand plays a critical role in initiating events. There are two ways to travel through time: you'll go forward; otherwise, you might go back. The insane thing is that individuals are traveling forward in time as you observe this article. Traveling to the past can be a bit more precarious due to universe-ending conundrums. However, new research proposes that time travel in both bearings isn't only possible but secure as well. Would you be doing it? At its most fundamental level, time travel revolves around speed, space, and gravity. For example, a moment for somebody standing on the soil will be more distinctive than a moment for somebody who is moving near the speed of light or close to a black hole. [Fig -1] And even though we don't have the innovation to go that quickly, according to arithmetic and science, this is often how time works

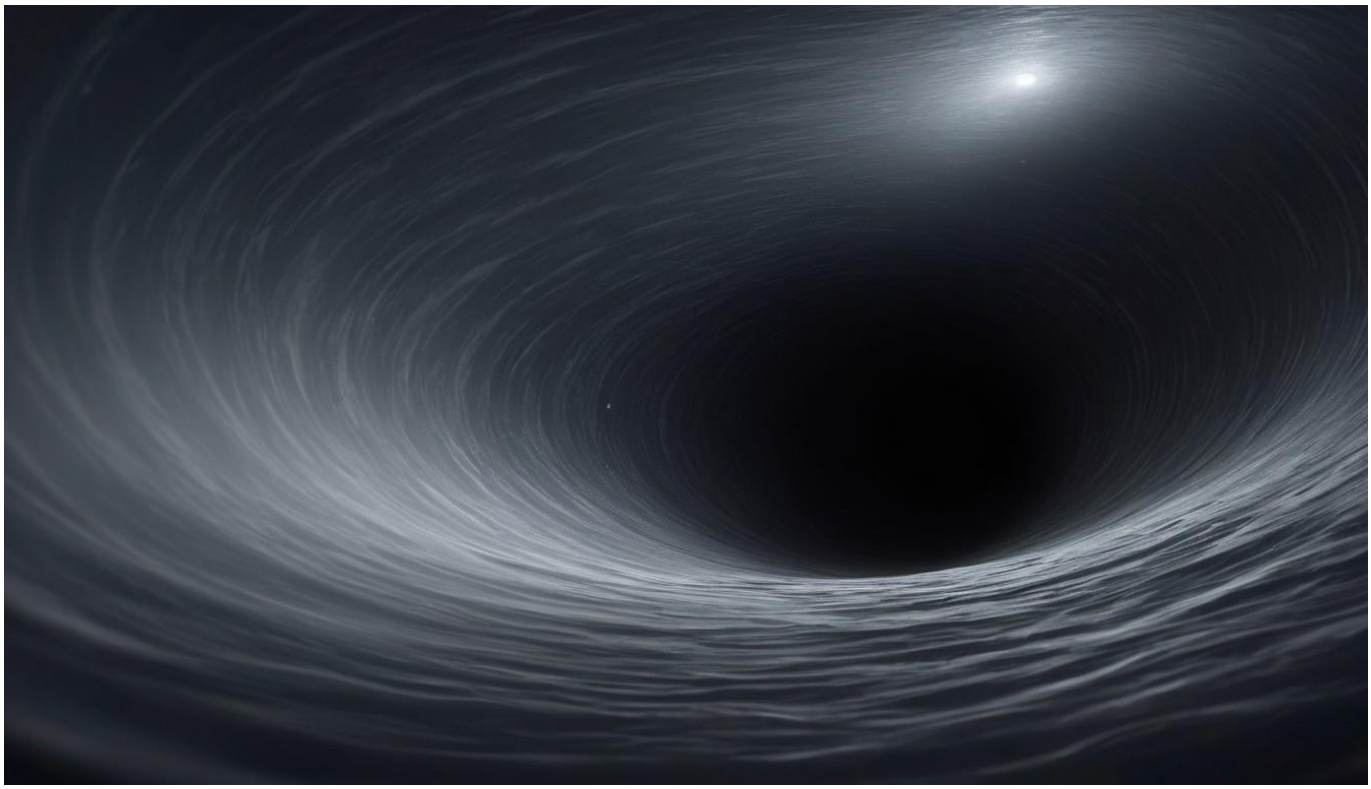

Figure 1

THE REALITY OF TIME TRAVEL:

We will indeed watch time shifts in activity over our world right now as time travelers whiz by at 17,130 miles per hour. [7] Where are these courageous pioneers of time, you'll inquire? On the Universal Space Station. That's right, flying over your head right now is the team of the Universal Space Station, and they are traveling both through time and space. (“International Space Station Overview: NASA,” 2024) [7] This is because they are moving much faster than we are here on the soil. The faster somebody is moving, the slower time goes for them relative to somebody who is standing still or moving gradually. [5] This can be fair to how the universe works. In this manner, space travelers on the Worldwide Space Station are encountering time slightly slower than when they're on Earth. [8] To be reasonable, it is not much slower, but it is still happening. Scott and Stamp Kelly are both space explorers for NASA. [7] They are, moreover, indistinguishable twins. In any case, Scott has gone through 520 days in a circle, whereas Stamp has logged 54 days in space. Since they are indistinguishable twins, they were born on the same day, only six minutes apart. But Scott's additional time spent circling the

planet at tall speeds implies he is 5 additional milliseconds more youthful than his twin brother, who has spent more time on soil. Stamp has traveled 5 milliseconds forward within the future from his point of view. This is an intangible sum of time, but it is truly cool to think about. It's not as if time travel is genuine, but it's happening at whatever point somebody is in a circle over the planet. The speeds at which our current spacecraft move are nowhere near fast enough to travel a critical distance through time, but this may not continuously be the case. If you were a space explorer on the first-ever shuttle to travel 99.999% the speed of light, you'd critically travel into long-standing time. [6] At this speed, each moment on the soil is worth 20 hours for you on the light-speed spaceship. This implies that, on the off chance that you traveled at the speed of light for one day, you'd have been speeding along for 86,400 seconds. Once you return to the soil and stop moving, you'll have matured one day, but on the soil, 72,000 days will have gone by. In less complex terms, you'd have traveled approximately 197 years into the future. This form of time travel is hypothetically conceivable once the innovation exists. In any case, until that point, the essential source of human time travelers will be anybody who circles the planet at high speeds. Traveling forward in time is the simple portion. It is traveling in reverse time, which leads to a few issues. That being said, you are, to some degree, a time traveler yourself each time you see the night sky. Since everything in space is distant, it takes a long time for the light from the stars to reach us here on Earth. This implies that once you see stars, you're looking back in time at how that star looked hundreds, thousands, or indeed millions of years into the past. For example, the North Star, also called Polaris, is found in the handle of the Small Scoop or Ursa Minor constellation. [9] Polaris is roughly 323 light-years away from where you are standing after you go stargazing. (Wikipedia Contributors 2024) At whatever point you see Polaris, you're looking 323 years into its past. On the off chance that Polaris detonated right now, it would not vanish from our night sky for another 323 long time. And on the off chance that you need to time travel a little closer to home, all you need to do is look at the moon. At whatever point you observe the moon, you're looking into the moon's past by around a moment. Typically, it takes the light reflected from the moon around 1.3 seconds to reach the soil. So, watching the past isn't so difficult, but traveling to the past may be an experience for other creatures. [3] One way that somebody may travel back in time is by using natural wonders in space called wormholes. [10] It is hypothesized that these “tunnels” interface two distinctive focuses within the universe. But wormholes may not just interface space; they might also connect various focuses in time as well. [10] To be clear, no wormholes have ever been found, but science appears to suggest that they are not only conceivable but may be more common than we think. When talking approximately about the universe, it is critical to remember that space and time are closely interwoven. In truth, they are sometimes treated as one variable called space-time. The way a wormhole may work is that an enormous sum of gravity folds space-time in on itself and connects two fantastically distant focuses, making traveling between them almost instantaneous. If this is the case, the wormhole might do the same thing to two focuses in time as well. In this manner, if traveling through a wormhole is conceivable without being smashed by gravity, torn apart by interdimensional turbulence, or flickered out of

presence by a few obscure constraints, time travel may be conceivable by entering one conclusion of a wormhole and coming out of the other. But wormhole time travel clears us of a couple of issues. First and foremost, we haven't found one, however, and at the moment, we have no thought about what would happen once inside the wormhole. However, there is some great news: scientists have been cooking up other ways to travel through time. One idea is to utilize what is called a Tipler Cylinder [fig-2]—named after the cosmologist who proposed it—or an Infinite Cylinder. [12] [11]

Figure 2

This time machine consists of a long, indestructible tube. The tube would be filled with matter equal to 10 times the mass of our sun, which would make a very dense spaghettified dark gap. The entire barrel containing the stretched-out dark gap would spin billions of revolutions per minute. The revolution of the prolonged dark hole would cause space-time to distort in a way that would permit a transport traveling in an exact direction through its swells to travel back in time and conclude within the past. The analysts who are considering this shape of time travel have concluded that the way the gadget would work is on the off chance that the barrel is

infinitely long or made out of a few obscure fabrics that might contain the dark gap and permit it to some way or another curve back in on itself. So, we are a long way from making the boundless barrel a reality. This sort of time travel would be on a “closed time-like curve,” meaning that to dodge any sort of paradox, time travelers who went back in time would have previously existed wherever they finished up. It is fantastically confusing, and science has found no way to clarify this phenomenon, but time travelers would somehow or another get to be a portion of the past and the future at the same time. Trippy right? Another cutting-edge hypothesis in the journey of time travel comes from the Technion-Israel Institute of Innovation. It is here that hypothetical physicist Amos Ori came up with the idea of making a time machine out of space itself. His vision consists of making a space zone wrapped in it like a donut. This would create a donut-shaped vacuum where timelines would collapse into one another by utilizing gravitational waves to control space-time. Subsequently, a time traveler could enter the timeline at one spot and exit at a few points within the past. There is a capture to this sort of time machine, be that as it may. The time traveler might as well travel as far back as when the time machine was turned on. This can be because time would, as it were, be able to crease in on itself as far back as the first instance of time inside the donut-shaped space vacuum. Another key challenge would be to control the gravitational fields at will. This is theoretically possible, but we are nowhere close to having the technology right now. [4]

THE ISLAMIC POSITION ON 'TIME TRAVEL':

The Quran narrates events of time travel from centuries ago that are now explained by science. These events include a parable about Prophet Uzair, who fell asleep under a tree and woke up after a hundred years, with his donkey turned into bones. Science explains this by gravitational time dilation, which explains the slow travel of time for the seven men in a cave. These events demonstrate the possibility of time travel, even without scientific theories, and serve as a reminder of the power of God over all things.

{And if I knew the unseen, I could have acquired much wealth, and no harm would have touched me.} [Quran 7:188]

{And no soul perceives what it will earn tomorrow, and no soul perceives in what land it will die. Indeed, Allah is knowing and acquainted.} [Quran 31:34] Allah, the Exalted, says (what means): {and with Him are the keys of the unseen; none knows them except Him.} [Quran 6:59] And He says (what means): {Say, "None in the heavens and earth knows the unseen except Allah.} [Quran 27:65] (“Islam Web English” 2015) [1]

DISCUSSIONS:

To send someone back in time, they would need to be launched through the vacuum, whereas the gravitational field in it was at the same time moved to permit the traveler to loop back to a prior point within the timeline. Without the exact control of gravitational waves to manipulate space-time, the donut-shaped time machine wouldn't work. Putting aside the specialized issues that require to be overcome sometime recently, time travel is possible. There's another problem that has been plaguing scientists since they began with the thought of traveling back through time. This can be a paradox. When traveling backward in time, all sorts of insane things can happen. The most popular is the “grandfather paradox.” It goes like this: If you are a time traveler who goes back in time and kills your granddad at that point, you would never have been born, and so you may never have gone back in time to murder your grandfather in the first place. Conundrums like this have driven numerous researchers to conclude that time travel to the past is impossible or that, on the off chance, the chances of a conundrum happening may be so likely that it would end the complete universe. But recently, analysts have been looking at these timeline inconsistencies in another way. It is presently hypothesized by some that if a conundrum were to happen, the universe would settle the issue itself. Take the “grandfather paradox,” for example. [2]

CONCLUSIONS:

If you went back and murdered your granddad, hence making it inconceivable for you to be born in the first place, the universe might adjust, and you might find out that the man you slaughtered wasn't truly your granddad at all. Maybe you were adopted and you never knew. Researchers who believe that paradoxes will naturally redress themselves claim that this permits time travel to the past without causing the universe to be devastated by irregularities in the timeline. Whether this is genuine or not, it at least permits researchers to make calculations and speculations about time travel to the past. When it comes to time travel, there are some key takeaways. Traveling to the future is theoretically easy; all you wish to do is go truly quick. Traveling to the past is hard and takes some favor math, a parcel of gravity, and innovation we don't have yet. Not to mention that if paradoxes don't normally settle themselves, traveling back in time seems to end the whole universe.

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