Relativity of time: A study of 2 Peter 3: 8 in light of Eistein's theory of relativity

The relativity of time is known for most physicists in the context of Eistein theory of relativity. AT the same time, relativity of time is prevalent in the study of the bible. In this discussion, I study an interesting text found in 2 Peter 3:8, and reconcile tit with the Special and General theories of relativity of Eistein. We can see that

1.Introduction

We examine the relativity of time as expressed by apostle Peter who states this:" But, beloved, be not ignorant of this one thing, that one day is with the Lord as a thousand years, and a thousand years as one day" (2 Pet 3:8, KJV). The apostle is not stating a new concept but is rephrasing a verse in Psalm that states that for a thousand years in your sight are as yesterday when it is past, or as a watch in the night (Psalm 90:4, KJV). Peter was encouraging believers to patiently wait for the coming of the Lord. Indeed, some people may say that a thousand years have passed since the promise of the Lord coming. But if it only one day for God, His promise is more understandable.   If you share the passion I have I have in examining scriptures and comparing them with science, I invite you to follow my examination of this text. It is reference to the Einstein theory of relativity.

2.A thousand years as a day using the special relativity of time

The special theory of relativity states that the clock in a moving spacecraft is slower compared to a clock in a stationary frame of reference. For this purpose, it is useful to restrict our calculation to the text in 2 Peters 3: 8 where a thousand years on earth are as a day in God's eyes. We can use the formula for special relativity of time

$$t = \frac{t_0}{\sqrt{1-\frac{v^2}{c^2}}}$$

If we let:

- **t_0 = 1 day** (God's time),
- **t = 1000 years** (Earth time),
- **c** = the speed of light,
  we can solve for **v**, the velocity of God's "reference frame."
  Rearranging the equation yields:

$$v = c\sqrt{1 - \frac{t_0^2}{t^2}} \, .$$

The result shows that the necessary velocity is approximately 0.99999999999625c, or extremely close to the speed of light. This aligns poetically with biblical descriptions of God as light, such as 1 John 1:5 ("God is light") and Revelation 21:23, which depicts God's glory as a source of radiant illumination

3. A thousand years as a day using the General relativity of time

General Relativity expands the concept of time dilation by showing that **gravity also affects time**. A clock located near a massive gravitational source runs more slowly than one farther away. To explore Peter's statement through this lens, we use the simplified gravitational time dilation equation:

$$t = t_0 * \sqrt{1 - \frac{2GM}{rc2}},$$

Letting:
- **t = 1 day** (God's time),
- **t₀ = 1000 years** (Earth time),
- **M** = mass of a hypothetical extremely dense object,
- **r** = distance from its center,

we solve for **r**:

$$r = \frac{1}{1 - \frac{t^2}{t_0^2}} * \left(\frac{2GM}{c^2}\right).$$

The resulting value of **r** is approximately: r = 1.0000000000075 * (2GM/c²).
This is essentially the Schwarzschild radius, the boundary surrounding a black hole where time slows dramatically. In conceptual terms, if an observer were located at or near the event horizon of such a massive gravitational body, one day of personal experience could correspond to a thousand years passing elsewhere. Since we have no biblical reference on the gravity of heaven, it may not be strange to infer a world of infinite gravitational field that change time.

Conclusion

The statement in 2 Peter 3:8 provides a profound theological reflection on the difference between divine and human perspectives on time. While the biblical authors did not intend to articulate scientific principles, their insights resonate surprisingly well with Einstein's later discoveries. Both Special Relativity and General Relativity demonstrate that time is not fixed or universal; it is flexible, dependent on motion, and gravity.