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Speeds of Light and Time

The speed of light has been considered as a constant for over a hundred years. The fabric of space, the force of gravity, and the measurement of time have also been well established for many years. What if the speed of light, while measuring time, affected by gravity, is not constant? If the speed of a light particle travels a set distance in the fabric of space (in a vacuum) on the surface of the Earth (1G), in a measured amount of time (one second), then that same distance in the fabric of space in space (Zero Gravity) would be different, necessitating the calibration of time.

Fabric of Space Resistance

Einstein's Special Relativity theory focuses on the speed of light, relative to the speed of everything else, consistently traveling no faster than the speed of light (299,792,459 m/s), but always traveling the speed of light, no matter the speed or direction of the source of the light. Many years later, Einstein's theories of General Relativity accounts for large masses warping the fabric of space and time. These theories use the speed of light as the constant for speed and to measure time. Using the speed of light as a constant, without factoring the effects of large masses warping the fabric of space, which may be the actual force causing gravity, creates a factor of time dilation that has been proven time and time again. If time is the constant, and not the speed of light, then the distance light is traveling must be different to balance the equations.

In 1983, an international commission on weights and measures set the speed of light to a precise whole number of 299,792,458, and to make everything consistent, changed the physical measurement of a meter from an actual metal bar in Paris to the distance covered by light in a vacuum in exactly 1/299,792,458 of a second. Since these measurements do not factor the force of gravity, then changes noticed to the measurement of time away from the surface of the Earth may be a result of the change of the measurement of the distance traveled. What if the speed of light is directly correlated with the density of the fabric of space?

General Relativity explains the warping of space around large masses and the forces of gravity. What if the warping of space that Einstein is referring to is caused by the mass displacing the fabric of space, and that displacement is pushing back as the force called gravity? In other words, the warping of the fabric of space is the direct result of the displacement of the fabric of space, creating the force of gravity.

The displacement of the fabric of space could be described as a higher density, without mass, fabric of space, much like foam with very tiny bubbles. Imagine the individual bubbles of foam on an atomic scale, where the size of a single bubble is the size of a Hydrogen atom. The bubbles would either be occupied with a single atom, with all the protons, neutrons and electrons, or empty space, not both. The walls, or shells of the bubbles would be defined as one of the Four Fundamental Forces, the Strong Nuclear Force. This force would be what binds all atomic particles together in their shells and this same

force from the outside of the bubble would be the force of gravity acting on any mass. This boundary would be where General Relativity ends and Quantum Mechanics begins.

Since there is very little mass in any single atom, or empty bubble, light particles pass through them like driving on an open highway. Measuring the speed of light in a vacuum, or the distance light travels in 1/299,792,458 of a second, would be similar to calibrating a speedometer on a highway using mile markers. Similarly, measuring the altitude or airspeed of an aircraft would need calibrating as the surrounding environment changed.

Continuing further with the analogy of light particles passing through the fabric of space like an open highway, imagine light particles passing through Empty Fabric of Space Foam Bubbles (EFSFB). The light particles have been measured to have a maximum speed 299,792,458 meters per second. These measurements have been taken in a vacuum on the surface of the Earth where the force of gravity is measured to be 9.8 meters per second. The distance the light travels in one second through the trillions of empty fabric of space foam bubbles would be “Meter Marker 1”, instead of “Mile Marker 1” on the side of the highway. The density of the fabric of space, or gravity, would create a resistance to the maximum speed the light particles can travel.

The size of the fabric of space foam bubbles would also need to be considered. Measuring the number of individual foam bubbles the light passes through and the size of the individual bubbles would give the calibration measurement for the distance of 1 meter at a force of gravity of 9.8 meters per second. Since measuring empty space is extremely difficult at this time, measuring the probable size of a single Hydrogen atom in the same environment may give the same results.

Speeds of Light

Calibration of the distance measured is the key to discovering the speed of light in different conditions of empty space. If the diameter of an individual empty fabric of space bubble is changed by the force of gravity or the speed of an object traveling through space, then time is the constant, not the speed of light.

Measuring the time differences of atomic clocks at different altitudes, and different directions flying around the Earth proves Einstein’s theory that a clock at higher elevation will tick faster than will a clock closer to Earth. It does not prove that time itself is any different, at any time, or at any place.

Predicting the effects of gravity on the speed of light can done by subtracting the force of gravity metric from the light traveled distance over time.

The standard formula for calculating speed is as follows:

$$R = \frac{D}{T}$$

R – Rate of an object traveling a certain distance over time.
D – Distance
T – Time

Factoring the force of gravity into the standard speed formula is as follows:

$$C = \frac{D_L - G_F}{T_s}$$

C – The rate of the speed of light, adjusted for the rate of the gravitational force.
D_L – The length of the path travelled by light in vacuum during a time interval of $1/299{,}792{,}458$ second.
G_F – The rate of the force of gravity (m/s).

Starting with the known speed of light on Earth at 299,792,458, that will calculate the speed of light in space at 299,792,467.8 meters per second.

$$299{,}792{,}458 = \frac{299{,}792{,}467.8 - 9.8}{1}$$

Using this formula, the calculations for the speed of light in different gravitational conditions eventually leads to the speed of light equal to zero. This is obviously the case in the situation of a Black Hole, as the force of gravity near a Black Hole is much greater than the speed of light.

Speed of light rates at known gravitational forces:

Location	Force of Gravity		Adjusted Speed of Light	Rate
Empty Space	0 (0 G)	=	299,792,467.8	m/s^2
Earth	9.8 m/s^2	=	299,792,458	m/s^2
Sun	274 m/s^2	=	299,792,193.8	m/s^2
Black Hole	G > C	=	0	m/s^2

This formula also implies that the true speed of light in space would be 9.8 meters per second faster than any measurements taken on the surface of the earth, making the actual distances to neighboring stars just a little bit closer.

Speeds of Time

If the speed of light does not remain constant in all gravitational conditions, then the measurement of the distance travelled is no longer constant as well. Using the same gravity adjusted standard formula for measuring speed, the measurement of Distance Dilation (DD) becomes the variable, and time remains the constant.

If the speed of light in a vacuum, with zero gravity, is measured to be 299,792,467.8 m/s and the speed of light on the surface of the Earth at 9.8 m/s gravity force, then the Time Dilation Calibration Factor (TDCF) would be 0.9999999673 seconds.

$$299{,}792{,}458 = \frac{299{,}792{,}467.8 - 0}{.9999999673}$$

Using this same formula, the calculations for the TDCF in different gravitational conditions eventually leads to time equal to zero. This is also the theoretical case in the situation of a Black Hole, as the event horizon is said to be the point of no return, or where time is supposed to stop. Time may not stop, but the measuring system may no longer be relative, as the measurement of a meter is collapsed to the atomic level, and simultaneously the speed of light reducing to zero.

Time Dilation Calibration Factor at known gravitational forces:

Location	**Force of Gravity**		**Time Calibration Factor**	**Time**
Empty Space	0 (0 G)	=	1	Second
Earth	9.8 m/s^2	=	.9999999673	Second
Sun	274 m/s^2	=	.9999991187	Second
Black Hole	G > 0	=	Null	

This formula may also explain the expansion of the universe and light traveling faster than the speed of light. Imagine the known visible universe as an extremely large volume of space. The entire fabric of space that everything in our universe resides. If the force of gravity around all planets, stars, black holes, and galaxies is the displacement of the fabric of space, then the outer portions of the universe would have less displacement and would be less dense, allowing for light to travel a greater distance in a fixed amount of time.

Yes, light would travel faster than the speed of 299,792,458 m/s^2, which is the measured speed of light on Earth, although the measurement for a meter would also increase in less than zero gravity conditions, making the speed of light a constant 299,792,458 m/s^2.