The Ultimate Rise and Fall of General Relativity

Definitive Disproof of General Relativity’s Non-Euclidian Geometry

&

Ultimate Experimental Verification of Cosmic Euclidian Geometry

If the Einstein deflection of starlight really was caused by the curving of inertial space, the whole of the cosmos would appear as just the Sun, Mercury, Venus, Earth, and Moon surrounded by an impenetrable gray fog of diffuse starlight.

It is ironic that the 1919 experiment measuring starlight appearing to curve as it passed the sun was what gave General Relativity its tremendous burst in popularity and now today in 2019, it is the same experiment that provides the ultimate physical disproof of its experimental validity.

Author’s Note

I must state here that I am exclusively an experimental physicist. I do conduct actual physical measurements but my primary activity is in the calculations of experimental values before they are measured. While my predictions might be classed as thought experiments, I accept all measurements at face value and I never engage in the speculations of theoretical physicists that predict results that are contrary to the conservation laws of the scientific method of physical measurement. All of my measurements are primarily based on changes in momentum as measured by force and calculations of force and energy as measured by changes in both linear inertial momentum and radial gravitational momentum. No theories of gravity are used in this explanation. This is purely a physical measurement of gravity. Principles of physical measurement are the opposite of theories. Theories are used to make predictions of measurements based on metaphysical assumptions. I make no assumptions other than the accuracy of my accelerometers.

Typical examples my thought experiments are the physical measurements of the Einstein Bending of Starlight as it passes the sun and the Shapiro Time Delay in which radar signals appear to curve and slow as they pass the sun between Earth and Mercury. It is shown that the deflection of starlight as it passes the sun does not occur within Euclidian space. This imaginary deflection is the result of Einstein’s non-Euclidian geometry derived from his metaphysical assumption of the equivalence of gravitational momentum.

Three Gravitational Parameters: Force, Velocity, and Radius

This explanation of the apparent bending momentum vectors of photon as they pass the sun and the Shapiro time delay are calculated entirely from the values of three complimentary principles of measurement. Earth’s escape/surface velocity, its deceleration of gravity, and its radius.
\[ V_{es} = \sqrt{2gR} = 11,200 \text{ km/s} \quad \& \quad g = \frac{V^2}{2R} = 9.807 \text{ m/s}^2 \]

Gravitational Constant \( G_v = \frac{\sqrt{2gR}}{V_{es}} = 1.414 \text{ m/s} \)

A body’s escape/surface velocity \( V_{es} \) is measured as the square root of two times its deceleration of gravity \( g \) at its radius \( R \). \& A body’s deceleration of gravity \( g \) is measured as its escape/surface velocity squared \( V_{es}^2 \) divided by two times its radius \( R \).

The gravitational constant equation \( (G_v = \frac{\sqrt{2gR}}{V_{es}} = 1.414 \text{ m/s}) \) is a velocity and not a force and it determines the physical gravitational parameters for all bodies. Each of a body’s three gravitational parameters can be determined from the measurement of the other two, \( (V_{es} = \sqrt{2gR}) \), \( (g = \frac{V^2}{2R}) \), and \( (R = \frac{V^2}{2g}) \). For the purposes of this explanation, this equation is used to measure Earth’s gravity as \( g = 9.807 \text{ m/s}^2 \) to determine the Einstein bending of starlight. It is then used to calculate the sun’s surface gravity of 274.2 m/s\(^2\) and measure Shapiro’s time delay of photons passing the sun.

These values are measured with accelerometers here on Earth and are all that is needed to calculate the angle at which starlight appears to curve as it passes the sun and the apparent measured time delay of radar photons that are reflected off Mercury and return to Earth. Only Euclidian geometry and Newtonian laws of force and momentum are used to arrive at a value of 1.74 arc-second for the apparent deflection of starlight and .000190 second for the apparent round trip photon time delay between Earth and Mercury. My measured values with Euclidian geometry are basically exactly the same as General Relativity’s calculated values using Non Euclidian geometry. In my measurements light does not actually curve. It is the changing geometry of gravitational momentum in the Earth and sun that gives the appearance of photon curving and time delay.

The whole counter-intuitive theory of General Relativity is based on the un-verifiable metaphysical assumptions that the measured radial gravitational force and momentum are equivalent but not equal to real measured linear inertial force and momentum. This unmeasurable assumption concludes that the force and momentum of gravity points down and not up as is measured.

The Astrophysical Disaster of General Relativity

The Einstein bending of starlight is caused by the changing inertial geometry of gravitational space. In the theory General Relativity, it is perceived as unmeasurable changes in the inertial space of photon trajectories. In the principle of Expanding Gravitational Momentum, photons undergo no changes in trajectory or momentum when passing near the sun. The apparent measured deflection comes from the perspective of theorists who are trying to calculate the real effects of equivalent force and momentum using non-Euclidian geometry.
If the inertial momentum vectors of photons were actually changed by gravity, as Relativity theorists have always imagined, it would be a disaster for astronomical observations. Consider the photons that Eddington failed to capture on his photographic plates in 1919. They are now a hundred light years away moving through the Milky Way on the trajectories of Eddington’s measured angle of 1.75 arc-seconds. These photons are all believed to move at slightly different angles depending on their distance to the sun when they passed. A simple calculation shows that these photons are now about 128,000,000,000 km away at right angles from their original momentum vectors before they passed the sun.

This problem is compounded by solar photons emitted on vectors parallel to the sun’s surface. These photons will all be slightly curved as they pass by half of the sun’s mass and will eventually end up on momentum vectors that no longer pass through the body of the sun. When alien astronomers on distant planets train their telescopes on the sun, they will not be able to see any of these curved photons. The only photons they will be able to see coming from the sun’s location are those emitted straight up from the center of the solar disk that have not been deflected by the sun’s gravity. If the aliens were viewing the sun from Alpha Centuri (4 light years away) the photons from the sun, bent at 1.75 arc-sec, would be more than 183,000,000 km distant from un-bent photons with straight momentum vectors passing through both Alpha Century and the sun.

Astronomical observations would be completely impossible if General Relativity was correct and all photons in the universe were constantly changing their trajectories from interactions with gravitating bodies. The fact that we can see billions of light years into the cosmos is the result of each photon maintaining an exact speed of c and a perfectly straight momentum vector through Euclidian zero momentum space. The only change that has ever been measured in a photon’s momentum vector occurs at absorption where its momentum is conserved or by reflection where its momentum is conserved by the Compton effect and changes are measured as Doppler effects.

If according to General Relativity, the presence of gravitational mass was able to change a photon’s straight line path by even the slightest amount, the photons from distant galaxies would be far removed from their original Euclidian vectors and would appear as a diffuse cloud of random photons everywhere we looked. Each photon would slightly change its path many times as it passed through and around galaxies. With all this random light pollution, the whole cosmos would appear as a dim gray fog and it is doubtful if the Hubble telescope could even see beyond the solar system.

The Lorentz Transformation of Mass, Space, and Time

Besides the Einstein bending of starlight, General Relativity’s only other
calculated measurement is the gravitational red shift. This is caused by the Lorentz transformation of mass, space, and time and has nothing to do with General Relativity’s fundamental assumption of equivalent or relative momentum.

The Lorentz transformation is not a theory. It is the principle of physical measurement used to calculate the conservation of momentum \( P = ms/t \). It consists of three equations for calculating the measured values of mass in kilograms \( m = M/\sqrt{1-v^2/c^2} \), space in meters \( s = S\sqrt{1-v^2/c^2} \), and time intervals in seconds \( t = T/\sqrt{1-v^2/c^2} \). \( M, S, \) and \( T \) represent the measured values of Mass, Space, and Time at a position of the Zero Momentum Rest for the entire cosmos.

**General Relativity’s Cosmological Paradox**

Ever since Einstein first proposed the theory, the great unexplained paradox for General Relativity theorists has always been their complete inability to confirm the validity of the experimental physicist’s measurement of photons curving their paths as they pass the sun. This problem is compounded by the Shapiro Time Delay in which radar photons appear to curve their trajectories and slow their speed when they pass close to the sun.

The paradox is this. If each photon’s path is slightly changed when it passes a body of mass, how is it possible the Hubble telescope is able to view each photon in the exact direction of the star that emitted it? Except for the cosmic blackbody radiation, the cosmos contains almost no spectral photons that cannot be potentially identified with a source.

In General Relativity theory, photons slow to less than \( c \) as they approach the sun and then speed back up to \( c \) after they pass it. This is thought to cause the observed time delay of photons passing near the sun. Special Relativity has no explanation of how these photons are able to slow and then speed back up or how if ever they are able to get back to their original Euclidean momentum vectors.

According to electrodynamics, photons are potentially blue shifted as they approach the sun and potentially red shifted as they move away. This is a transverse gravitational Doppler shift relative to the sun’s momentum but it has no effect on the actual inertial motion or the wavelengths of the photons themselves. This blue shift would only be real when the photons are absorbed on the sun by atoms with slowed time dilation caused by the sun’s gravitational momentum. The photons themselves do not change but are perceived by the atoms as blue due to the atom’s slowed clocks. These photons would be reflected or emitted as red for the same reason. Transverse shifted photons are red shifted when emitted and blue shifted when absorbed.

The quandary here among relativity theorists is that because of the Shapiro time delay, a postulate of Special Relativity (the constant speed of light) must
be abandoned to account for a General Relativity calculation that is not even based on a physical measurement.

General Relativity “physicists” all seem to imagine that the above effects are perfectly explained by the equivalence principle. While experimental physicists are able to accurately measure absolute force and momentum, no one has ever been able to measure “equivalent” force and momentum.

The Apparent Solar “Bending” of Starlight

**Einstein Angle = 1.74 arc-second @ Apohelion**

Mean Earth’s orbital radius $R_m = 149,600,000$ km
Time of photon travel $T_m = R_m/c = 499$ sec
Earth’s orbital radius @ apohelion $R_a = 152,097,701$ km
Time of photon travel $T_a = R_a/c = 507$ sec
Earth’s orbital radius @ perihelion $R_p = 147,098,074$ km
Time of photon travel $T_p = R_p/c = 490$ sec

Earth gravity $g = 9.807$ m/s$^2$
Distance $D = gT^2/2 = 1221$ km 725 km per arc-second
Einstein angle @ mean $R_m = 1.68$ arc-second
Einstein angle @ apohelion = 1.74 arc-second
Einstein angle @ perihelion = 1.62 arc-second

Einstein’s Bogus Bending Starlight

To understand the mechanics of apparent bending of starlight, we must look at it purely from the perspective of the experimental physicist’s physical measurements rather than the imagined metaphysical calculations of theoretical physicists. If the effects are explained in terms of actual measured changes in the Earth’s and sun’s gravitational momentum, it is plain to see that no changes in individual photon momentum vectors are required to account for the bogus observation of General Relativity’s curving spacetime continuum.

No theory at all is required to account for Einstein’s imagined deflection of photons by curved space because no such phenomenon can be measured to occur within the measurements and calculations of Euclidian geometry. **There need be no theory of gravity beyond a simple description of its measurements.**

The angle of the Einstein non-deflection of light can be calculated from just accelerometer measurements of force and momentum at Earth’s surface. The acceleration of gravitational momentum and the deceleration of gravitational time is not a new “theory of gravity” because it is just a principle of measurement. The only other measurements needed to calculate the apparent deflections are the radius of Earth and radius of its orbit around the sun. None of General Relativity’s metaphysical non-Euclidian complex mathematical
The Shapiro Time Delay of .000190 second is determined by calculating the hypotenuses of four right triangles formed by the orbital radii of Earth and Mercury and the upward gravitational fall of the sun’s surface. General Relativity’s prediction of this value is between .000199 s and .000180 s depending on how various physical parameters are tweaked in the calculations. My calculations do not allow for the tweaking of parameters or the bending of space.

**Shapiro Time Delay from Earth to Mercury**

![Diagram of Earth, Mercury, and Sun with distances and calculations](image)

**Shapiro Time Delay Values & Calculations**

- Sun’s Surface Gravity: \( \frac{2742 \text{ km/s}^2}{} \)
- Sun’s upward escape/surface velocity: \( V_{es} = \sqrt{2gR} = 617,800 \text{ km/s} \)
- Radius of Earth orbit: \( R_E = 149,600,000 \text{ km} \)
- Radius of Mercury orbit: \( R_M = 58,000,000 \text{ km} \)
- Geometric Distance @ \( T_0 \): \( R_E + R_M = 207,600,000 \text{ km} \)
- Calculated Time of travel Earth to Sun \( R_E/c \): \( T_0 = 498.67 \text{ sec.} \)
- Calculated Time of travel Mercury to Sun \( R_M/c \): \( T_0 = 193.33 \text{ sec.} \)
- Calculated Time of travel Earth to Mercury: \( T_0 = 692 \text{ sec.} \)
- Calculated round trip travel Earth to Mercury: \( T_0 = 1384 \text{ sec.} \)
- Upward Fall of Sun’s Radius \( F_1 = gT_2/2 \): \( T_0 = 34,092.44 \text{ km} \)
- Upward Fall of Sun’s Radius \( F_2 = gT_2/2 \): \( T_3 = 5,124.49 \text{ km} \)
- Upward Fall of Sun’s Radius \( F_3 = gT_2/2 \): \( T_3 = 5,124.49 \text{ km} \)
- Upward Fall of Sun’s Radius \( F_4 = gT_2/2 \): \( T_4 = 34,092.44 \text{ km} \)
- Photon distance Earth to Sun: \( T_1 = 149,600,003.9 \text{ km} = 498.66668 \text{ s} \)
- Photon distance Sun to Mercury: \( T_2 = 58,000,013.3 \text{ km} = 193.33338 \text{ s} \)
- Photon distance Mercury to Sun: \( T_3 = 58,000,017 \text{ km} = 193.33339 \text{ s} \)
- Total measured round trip time: \( T_1 + T_2 + T_3 + T_4 = 1384.000190 \text{ sec} \)
- Calculated round trip travel Earth to Mercury: \( T_0 = 1384.000000 \text{ sec} \)

**Shapiro Time Delay to Mercury and Back = .000190 second**

General Relativity calculations for the delay are between .000180 & .000199
baggage is needed to produce precise calculations for the measurements of apparent photon bending.

What the observer on Earth actually sees is a star that according to the Euclidian geometry of the cosmos, should be hidden just behind the solar disk. What has actually happened is that in the 8 minutes it takes for photons to reach Earth from the sun, Earth’s gravitational momentum has carried its surface upward a distance 1221 km so that the observer can now see the star just outside the solar disk. This effect has nothing to do with solar gravity and is caused completely by the measured increase in the upward gravitational momentum of Earth’s surface.

**Philosophical Considerations**

The theory of General Relativity and the principle of absolute gravitational force and momentum are based on opposite geometries of space and time. Both begin with the same “non-existent” universal Euclidian void of zero momentum space. General Relativity superimposes its four-dimensional spacetime continuum on this void and allows it to continually curve three-dimensionally around the centers of both moving and stationary bodies of mass. This proposed spacetime serves as the “aether” through which photon and gravitational waves travel. The paths of photons are believed to change with the non-Euclidian curvature of this potentially infinite continuum.

In the principle of absolute gravitational force and momentum it is not the external void of space that curves but rather it is the internal inertial gravitational space within atoms that expands and curves. The upward force of gravity is an acceleration in space and a deceleration in time that maintains a constant upward escape/surface velocity \( V_{es} = \sqrt{2gr} = 11,200 \) m/s at Earth’s surface.

In the concept of General Relativity, the gravitational force exerted by each atom extends continuously and unalterably to every other atom in the universe. Compare this to absolute gravitational momentum where the gravity of each atom and mass body in the cosmos is measured to extends no further than its outer surface. The measured gravitational expansion of Earth is caused by the individual expansion of each atom and does not cause the whole of the universe to expand as a unit like it does with Einstein’s expanding space. All electrons, protons, and photons expand with near perfect synchronicity throughout the whole universe. **The only difference is that electrons expand slightly faster than protons and this is a yin/yang dichotomy that causes the continuing evolution of matter, energy, and gravity and gives life to the Cosmos as a growing entity.**

**Peculiar Gravitational Psychologies**
In the fifty years or so that I have been trying to promote the principle of absolute gravitational momentum, I have had to contend with the peculiar phenomenon of gravitational psychology, in which everyone absolutely refuses to believe in or even consider the gravitational expansion of mass, space, and time. Even though everyone can feel or measure the surface of Earth constantly pushing them upward, no one but small children and experimental physicists seem capable of believing that it is true. Even otherwise very intelligent people prefer to believe in magical ideas like infinite gravitational attractions or a universal but undetectable curving spacetime continuum. The actual measurement and feeling of gravity is much simpler and far easier to understand and calculate than the bazaar theories of infinite attractions and curving spacetime. General Relativity’s gravity of universal reach is infinitely more complex than the gravity that is measured to extend no further than the edge of each proton and electron. This is the true quantum of gravity and not some graviton wave or field.

Gravitational Philosophy and Scientific Logic

I hate to think what William of Oakham would say to all these people who believe in complex General Relativity calculations instead of actual gravitational measurements. Even Isaac Newton couldn’t figure it out, even though he said; “We are to admit no more causes of natural things than such are both true and sufficient to explain their measurements.” Newton invented the concept of the accelerometer, but for some unknown psychological, emotional, or politically correct reasons, he could not bring himself to believe that his accelerometer readings always measured the true direction force and momentum.

I have been told by several people that it would be impossible for matter to keep slowly expanding forever. However, these same people have a firm belief that the Guth inflation once caused the whole cosmos to expand from the point of a singularity to nearly its present size in a tiny fraction of a second.

Actually, gravitational expansion is really a very slow process. Let’s assume that you could transform yourself into one of Maxwell’s demons and shrink down in space and time to the size of a proton, where you could watch its Compton wavelength structure (1.321 x 10^{-15} m) spinning at the speed of light. You assume that this spinning has something to do with the proton’s gravitational expansion, so you sit back and start counting revolutions to determine how long it takes for the size of the proton to double in size. You find it takes 8,000 quadrillion revolutions before the proton has doubled its size.

Compare that to Big Bang’s proposal of the Guth inflation where the cosmic singularity began at diameter of less than one millimeter and expanded in size by \(130,000,000,000,000,000\) times in a tiny fraction of a second.

Now, compare these ideas to the very popular many worlds interpretation
of Quantum Mechanics where the whole cosmos, space and all, bifurcates every time an atom emits a photon. These examples show quite conclusively that an experimental physicist’s measurements of gravitational expansion are simple indeed when compared to the cherished beliefs of all those turkeys who call themselves theoretical physicists.

Philosophically, simple measurements of gravity are nearly insignificant when compared to the many adverse metaphysical assumptions of the Standard Model Theories of Physics and the Big Bang.

In conclusion, there are basically only four metaphysical assumptions in the Standard Model Theories of Physics and the Big Bang and I have found them all to be totally bogus and unverified by any experimental measurement.

1. The Massless Photon
2. The Equivalence Principle
3. The Uncertain Location and Momentum of Point Particles
4. The Eternally Constant Electron/Proton Mass Ratio of 1/1836

If these four ideas are discarded, all of physics and cosmology can be explained in terms of physical measurements and no theories based on metaphysical assumptions are necessary to describe any phenomena.
Gravitational Expansion of Mass, Space, and Time

Accelerometers that measure force to calculate momentum, energy and velocity are the only instruments available to modern experimental physicists. All measured values eventually break down into individual changes in momentum. When we watch TV our eyes measure the individual variations in momentum of the photons emitted by the screen. When we measure gravity with accelerometers and clocks, we can only conclude that it is a three-dimensional upward pushing force that produces three-dimensional outward motion. There are no accelerometer measurements that show gravity to be a two-dimensional downward pulling force.

Accelerometer Measurements of Force and Change in Motion

There are four basic quantities in the Newtonian experimental measurement process: Mass, Space, Time, and Gravity. All conceivable experimental measurements are made with Newtonian type accelerometers to quantify individual values for Mass, Space, Time, and Gravity. These values are combined together in the calculations of momentum, angular momentum and measurements of centrifugal and centripetal force, and linear and rotational kinetic energy. Energy is the idea used to divide the equal momenta produced by of a single force into multiple values. Gravity is a measure of force to calculate radial gravitational momentum. Linear momentum and force exist on individual one-dimensional vectors, angular momentum and centripetal force exist on two-dimensional planes and the force and momentum of gravity are measured and calculated at the surface of three-dimensional spheres.

Einstein’s imaginary ideas about equivalent force and momentum causing inertial space to curve have only been measured with null results.