The Discovery of Gravity

by James Carter

In all of physical measurements of force and motion, gravity is the only discovery with three-dimensional motion, force and time. Gravity has a third dimension of time that is not common to its other two dimensions. The third dimension of gravitational time does not have consecutive equal intervals with the other two dimensions of time.

Certainly the force of gravity was discovered and became completely understood by the first of our human ancestors when they were small children and first learned how to stand and walk. They had to learn how to maintain their body's balance against the constant upward push of Earth's surface. When they lost their balance and fell, they learned that the ground always crashed up into them. Once this balancing act became automatic, everyone consciously forgot all about what gravity was actually doing, even through their subconscious minds continually monitored gravity's upward force in order to maintain the body's equilibrium.

The first and greatest experimental discovery in experimental physics may have been Galileo's measurement of the acceleration of gravity. Galileo seems to have been the first scientist to physically measure the upward acceleration of gravity by timing the motions of different sized balls as they rolled down inclined planes. He determined that balls of different masses and sizes all reach the same velocity when rolled down the same plane. He was also reported to have dropped a musket ball and a cannonball from a tall building and measured that they had the same velocity when they simultaneously collided with the upwardly accelerating ground.

In Galileo's time, the most important use of his measurements was to determine the trajectories of cannonballs. Without air resistance, a cannonball's velocity when it reaches the target would be the same as that when it left the cannon's muzzle. The horizontal inertial velocity of the cannonball between cannon and target remains unchanged while the vertical gravitational velocity seems to decelerate to the top of the ball's arc and then accelerate down to the target. These two separate velocity vectors can be combined into the invention of a third conceptual parabolic path with continually changing velocities and vectors.

If we were to measure a cannonball's flight with accelerometers, we find that it changes neither its velocity nor the upward direction of its path. It is the upwardly accelerating Earth that is measured to bring the target up to strike the cannonball. The ball's perceived parabolic path is just the imagination trying to combine these two velocities into a single curved path of motion relative to one's imagination of an unmoving Earth.

Galileo seemed to be content to just measure his discovery of gravitational motion and did not create any inventions that could account for the actual mechanism behind his measured motions. Years later, Rene Descartes invented an aether made up of swirling whirlpools that pulled objects toward the Earth. Then Newton and later Einstein both invented different sets of equations that described gravitational motions using imaginary unmeasured forces and motions.

The Metaphysical Assumption of Equivalence (Einstein)

"In an arbitrary gravitational field no local experiment can distinguish a freely falling non-rotating system (non-inertial) from a uniformly moving system in the absence of a gravitational field." This means that there is no possible way to measure the force that compels a free falling system into the appearance of accelerated motion.

The Principle of Absolute Motion (Carter)

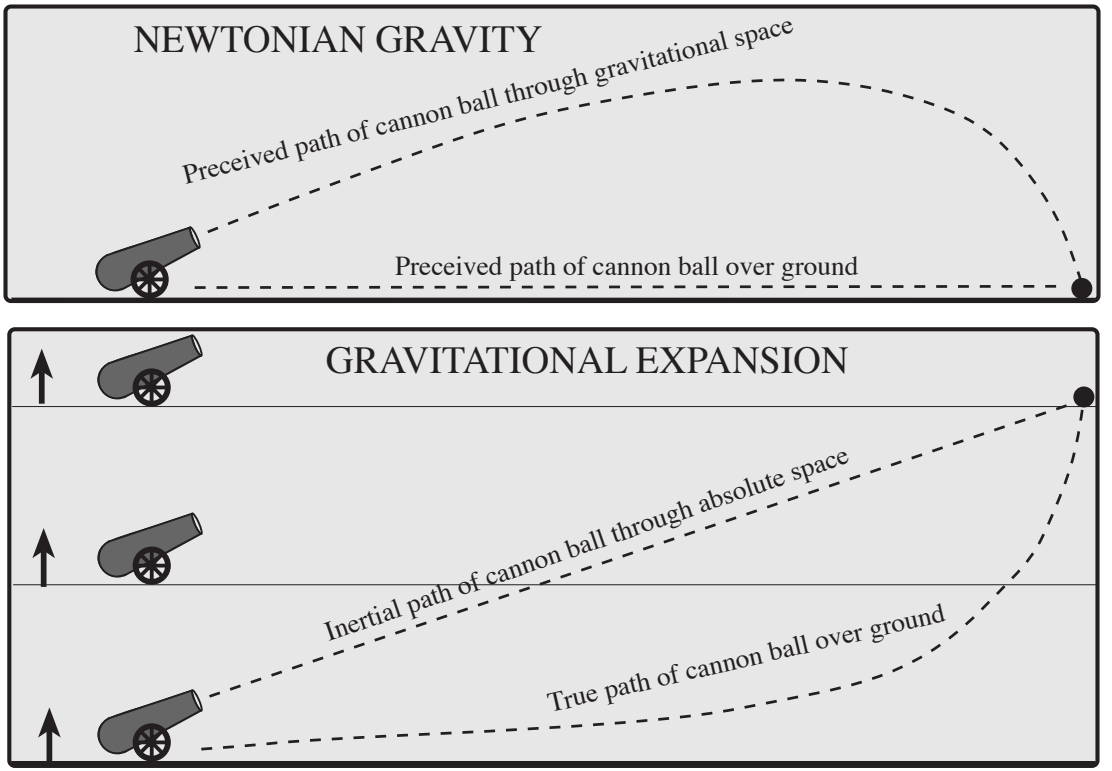
"All acceleration measured by an accelerometer produces real change in motion, either acceleration or deceleration, relative to photon rest. All change in motion relative to photon rest, either acceleration or deceleration, is registered by an accelerometer. Deceleration is distinguished from acceleration by the increasing rate of an atomic clock undergoing deceleration and the slowing rate of a clock undergoing acceleration. All change in motion is absolute and can be measured as force with an accelerometer.

The Invention of the Equivalence of Gravity and Inertia

Although Einstein figured out a dynamic for gravity using the crutch of equivalent spacetime to hold up his equations, he failed to realize that once his gravity theory had learned to walk and balance itself, he could throw away its curved spacetime crutch.

When Einstein tried to figure out gravity, he began where Descartes left off and quantified his own invention of etherial motion. His invention to reverse the measured direction of gravitational force and motion was a metaphysical assumption called the principle of the equivalence of gravity and inertia.

He then invented negative Newtonian equations for his idea that described an all pervasive field-like aether medium called the four-dimensional spacetime continuum. Like Newton's equations for Universal Gravitation, Einstein's General Relativity equations worked in a general way to describe many of the motions in the universe that are assumed to be gravitational in nature. Unlike Newton, however, Einstein also offered the quasi conceptual mechanism of a constantly moving, but undetectable, spacetime aether-like continuum to make it all work. Einstein accepted Euclid's imaginary third dimension as real and then imagined a fourth dimension called spacetime. This combination of space and time was thought to be a field-like entity (gravitational field) that caused gravity by mysteriously curving in toward Earth. Instead of falling bodies actually moving toward Earth, Einstein believed that it was the space that they occupied that was moving while a body's inertial motion remained unchanged and it experienced no measurable acceleration.



The problem with Einstein's theory is that a curving spacetime continuum is even more counter-intuitive and harder to imagine than Newton's occult gravitational attraction. Einstein imagined that gravity was caused by a constantly changing non-inertial geometry hidden within a non-Euclidian space. What is measured to be a constant upward deceleration, Einstein imagined to be a position of virtual rest.

However, the invalidating flaw in the physics of General Relativity is the invention of equivalence. The equivalence assumption is not physics. Equivalence is a negative metaphysical assumption rather than a positive physical principle. It postulates universal force and motion that cannot be detected with any of the measuring instruments of experimental physics. If you take away the equivalence principle, General Relativity is the same as the gravitational expansion of mass, space and time. Both explain gravity in terms of changing geometry.

The equivalence principle is unique among all physical principles. It is a negative invention that allows for acceleration without change in motion and change in motion without measurable acceleration. The equivalence principle is an imaginary mechanism designed to create a change in motion that cannot be measured except relative to Earth. Other physics inventions propose mechanisms to explain the measurement of a discovery but the invention of equivalence imag-

ines a mechanism for a force that has yet to be measured. Rather than an invention to explain the dynamics of a positive physical measurement like all other principles, equivalence invents a dynamic for physical measurements that, in principle, cannot be made. At the same time, equivalence completely negates the dynamics of measurements that can be made. Every scientific test used to verify the equivalence of gravity and inertia has exactly measured its predicted null result. Einstein's basic proof of equivalence was negative. It was his claim that the force and motion of gravity could never be directly measured.

Gravitational and inertial measurements are not some kind of equal and opposite equivalent motions. They are exactly one and the same type of measured inertial motion. The equivalence principle can thus never be considered to be a discovery because it has no correspondence with any physical measurements.

Three Measured Dimensions of Mass, Space, Time, and Gravity

Gravity is not a metaphysical four-dimensional continuum of force and energy. Gravity is the dynamic physical third dimension of mass, space and time. There are but three physical dimensions of mass, space and time that can be measured by physicists. It is pointless to create a fourth metaphysical dimension for gravity that can only be calculated but not measured.

The measurement of the ***first dimension*** is the one dimensional momentum vector of the inertial motion of photons and other mass bodies. Momentum is measured as an infinite number of possible vectors. These one-dimensional vectors do not detect or imply a second or third dimension.

The measurement of the ***second dimension*** is the two dimensional angular momentum of the inertial rotations within photons and atoms. Angular momentum is measured as a possibly infinite number points and circles. These two-dimensional circles have a size and location but do not detect or imply a third dimension of mass, space and time.

The measurement of the ***third dimension*** of gravitational mass, space and time is the three-dimensional gravitational momentum of photons and large three-dimensional accumulations of atoms. Gravitational momentum is measured at the surface of large bodies as an acceleration of mass and a deceleration of time. These complementary changes maintain the Earth's three-dimensional upward momentum as a constant velocity. Gravity is a constant velocity and not a force. Because of the deceleration of time, gravity is measured as both an acceleration and deceleration that translates into a constant velocity with the expansion of yard sticks and the slowing of time.

In their first two dimensions, mass, space and time remain constant in all equations. In the third dimension of upward gravitational velocity, mass, space and time are all continually transformed at the heart of every photon and atom. In gravity measurements, the rate of inertial time decelerates with the gravitational acceleration of expanding atoms and photons. These accelerations and decelerations cancel each other out so that it appears to the observer that gravitational force and time remain at constant values even though they are being continually transformed. Both photons and atoms continually expand in size at the same decelerating rate.

In the time that it takes for the radius of Earth to double, all photons, atoms and other yardsticks in the universe also double in size. These bodies are in a perfect universal synchronicity with one another. During the same time, the force of gravity has decelerated to 1/4 and the duration of a second or minute has doubled. These changes all complement each other so that the transforming parameters of mass, space and time appear to remain constant.

The third dimension proposed by Euclid is a metaphysical deduction created from only one and two dimensional measurements. There are no three-dimensional measurements of mass, space, and time that can be made within the first two dimensions of Euclidian space. Combinations of measurements can be made to infer a third dimension to Euclidian space but it is always only imagined or calculated and never physically detected.

There is no need for a metaphysical unmeasured equivalent fourth dimension of imaginary inertial spacetime to explain gravitational motion. Gravity is the simple mechanical transformation of the third dimension of Euclidian space and not a magical all encompassing fourth dimension of spacetime that can only be calculated as a non-Euclidian space connected to all of matter.

Gravitational force, space and time is not a fourth dimension but rather the third dimension of space connected to the time and motion of matter and photons. Gravitational time and motion are the only three dimensional measurements that it is possible to make. This replaces Euclid's metaphysical third dimension of space with a dynamic physical dimension that is measured as the three dimensions of gravitational force, space and time. Gravity combines the complementary motions of mass, space and time within a single dynamic third dimension.

