On spacetime curvature and gravity probe

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Abstract

General relativity explains gravity as distortion of the structure of spacetime by matter , affecting the inertial motion of the other matter. General relativity predicts that the path of light is bent in a gravitational field. Light passing a massive body is deflected towards that body. This effect has been confirmed by observing the light of stars or distant quasars being deflected as it passes the sun. ***In this work , the author experimentally attempts to show that it is not mass which curves spacetime but the attractive force of the mass that warps the spacetime.***

Key words Gravity , Newton , Einstein , spacetime curvature , geometry of space

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It is well known that the concept of gravity began with Aristotle, Copernicus, Tyco de Brahe , Kepler , Newton and Einstein. Aristotle said that heavy objects fall faster than light ones. This notion dominated people for nearly 2000 years. But Galileo disproved this idea by conducting an experiment at the leaning tower in Pisa. Tyco Brahe devoted his life for several decades and collected a number of data. His assistant Kepler by using his mentor's data, carved out a set of empirical laws known as Kepler's law of motion. By studying and applying Kepler's ideas Newton deduced his law of gravity in terms of masses. Newton's laws of motion and universal gravitational laws were un-challenged by the research community for more than 250 years. From 1905 to 1915, Einstein rigorously studied gravity and formulated that due to the presence of mass in the space, the spacetime is curved. The presence of mass in the space alters / deforms the geometry of space. And gravity is nothing but the manifestation of spacetime curvature. This spacetime curvature of Einstein was experimentally established by a number of times.. The author, re – studied spacetime curvature and formulates that IT IS NOT THE MASS BUT THE ATTRACTIVE FORCE OF THE MASS THAT WARPS SPACE. In this work, an experiment to prove this hidden truth has been proposed

Experiment:

Take a huge magnetic ball and an iron ball such that the mass of these two balls are equal. First, hang the magnetic ball in a dark room at a laboratory. Pass on light beams towards this magnetic sphere by using a small pen – torch. Photograph these light beams. Second, repeat this experiment with the iron ball. According to Einstein's spacetime curvature phenomena, the bending of light rays by the curvature of magnetic ball and the bending of light beams by the

warping of the iron ball SHOULD be identical.[[1] to [5]] We can observe light bending in the first experiment and we cannot distinguish the same effect in the second experiment.

What is the reason? It is simple .The curvatures are of the two balls are different. The curvature made by the magnetic ball is greater than the warping created by the iron ball. Why these equal masses behave differently? Why this is being so? The magnetic ball due to its magnetic force pulls the spacetime towards it more strongly than the iron ball. Since the spacetime curvature created by the magnetic ball is heavier than the spacetime curvature caused by the iron ball. This is the reason that the deflection of light towards the magnetic ball is noticeable and the same phenomenon regarding the iron ball is not distinguishable. This shows that it is not the mass but the attractive force of the mass which curves spacetime.

According to the newly discovered principle of gravitational red shift and blue shift, light that travels away the astronomical object is experiencing red shift, whereas a light that travels toward the astronomical object is experiencing blue shift.[6] Instead of using the small torch to produce light in the experiment, a small candle may be used. In this case, both light bending and gravitational blue shifts are easily noticeable in the magnetic ball rather than iron ball.

Discussion

Newton worked with four independent entities mass, energy, space and time. Einstein unified space and time by Lorentz transformation and matter and energy by the famous relation $E = mc^2$ Thus Einstein's relativity reduces Newton's four quantities in to two : space-time and mass-energy. For Newton gravity is " action at a distance". He simply outlined that two objects attract each other. In 1692 Newton wrote a letter to Richard Bentley. He wrote; ***"You sometimes speak of gravity as essential and inherent to matter. Pray do not ascribe that notion to me, for the cause of gravity is what I do not pretend to know and therefore would take more time to consider it."*** Nearly after 250 years, Einstein found the cause for the effect of gravity. Both these great scientific pillars had doubts about their theories. The following three sayings are the evidences:

" I am like a child playing on the shore with pebbles and shells while the whole ocean lies before me" - Newton. "In my field equations the left hand side is of fine marble but the right hand side is of perishable wood" – Einstein." When I compare all our theories with the mighty reality, they are all trash. However they are the most precious ones we have today" - Einstein

An apple fall was a clue for Newton for his creation of his gravitational law and a person falling from the roof of a house does not feel gravity was an another clue for Einstein to coin his equivalence principle which led him for the formulation of his gravitational theory But for me , Einstein's famous quotations are the clues for this experiment. When questioned whether he had proved Newton wrong, Einstein's polite reply was : *"No, if I have seen anything new that is because I see the world standing on the shoulders of Newton"*. This experiment is not against general relativity. It is a refinement of the theory.***"The whole of science is nothing more than a refinement of everyday thinking" –*** **Einstein**

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