



INTERNATIONAL JOURNAL OF ADVANCE RESEARCH, IDEAS AND INNOVATIONS IN TECHNOLOGY

ISSN: 2454-132X

Impact factor: 6.078

(Volume 6, Issue 3)

Available online at: www.ijariit.com

Redefining the gravity

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ABSTRACT

A falling object do not have weight, but only moving force, as moving object has fixed uniform motion (see proof ahead), it neither accelerates nor retards during falling towards Earth. So, every particle on earth has uniform value of inertia. Every particle on earth tends to move towards the center of earth as each particle has a direction towards center but as compared to space each and every direction of particles may be considered as having single infinite side. These forces indicate us all about earths circumstances and prevailing at its beginning. We will take into consideration the mass of earth before collection coming into existence. The weight which we feel on surface of earth is actually a force which tends to move. Objects do not fall due to attraction of earth but due to their own force which we feel as weight. There is no acceleration while falling of an object compared with 3D Graph of space. The falling path of an object is actually curved. All force of earth has alignment towards a single central point. The force which we feel as weight is responsible for retraction of earth towards centre but not due to attraction. There is nether attraction between two points on earth nor between any object and earth.

Keywords— Gravity, attraction, Moving Force, Acceleration

1. INTRODUCTION

Gravity (from Latin *gravitas*, meaning 'weight'), or gravitation, is a natural phenomenon by which all things with mass or energy including planets, stars, galaxies, and even light are brought toward (or *gravitate* toward) one another. On Earth, gravity gives weight to physical objects, and the Moon's gravity causes the ocean tides. The gravitational attraction of the original gaseous matter present in the Universe caused it to begin coalescing and forming stars and caused the stars to group together into galaxies, so gravity is responsible for many of the large-scale structures in the Universe. Gravity has an infinite range, although its effects become increasingly weaker as objects get further away.

Gravity is most accurately described by the general theory of relativity (proposed by Albert Einstein in 1915), which describes gravity not as a force, but as a consequence of the curvature of spacetime caused by the uneven distribution of mass. The most extreme example of this curvature of spacetime is a black hole, from which nothing not even light can escape once past the black hole's event horizon. However, for most applications, gravity is well approximated by Newton's law of universal gravitation, which describes gravity as a force, which causes any two bodies to be attracted to each other, with the force proportional to the product of their masses and inversely proportional to the square of the distance between them.

Gravity is the weakest of the four fundamental interactions of physics, approximately 10^{38} times weaker than the strong interaction, 10^{36} times weaker than the electromagnetic force and 10^{29} times weaker than the weak interaction. As a consequence, it has no significant influence at the level of subatomic particles. In contrast, it is the dominant interaction at the macroscopic scale, and is the cause of the formation, shape and trajectory (orbit) of astronomical bodies.

The earliest instance of gravity in the Universe, possibly in the form of quantum gravity, super gravity or a gravitational singularity, along with ordinary space and time, developed during the Planck epoch (up to 10^{-43} seconds after the birth of the Universe), possibly from a primeval state, such as a false vacuum, quantum vacuum or virtual particle, in a currently unknown manner. Attempts to develop a theory of gravity consistent with quantum mechanics, a quantum gravity theory, which would allow gravity to be united in a common mathematical framework (a theory of everything) with the other three fundamental interactions of physics, are a current area of research.

2. LITERATURE REVIEW

The ancient Greek philosopher Archimedes discovered the center of gravity of a triangle. He also postulated that if two equal weights did not have the same center of gravity, the center of gravity of the two weights together would be in the middle of the line that joins their centers of gravity.

The Roman architect and engineer Vitruvius in *De Architectura* postulated that gravity of an object did not depend on weight but its "nature".

In ancient India, Aryabhata first identified the force to explain why objects are not thrown outward as the earth rotates. Brahmagupta described gravity as an attractive force and used the term "gurutvaakarshan" for gravity. Modern work on gravitational theory began with the work of Galileo Galilei in the late 16th and early 17th centuries. In his famous (though possibly apocryphal^[11]) experiment dropping balls from the Tower of Pisa, and later with careful measurements of balls rolling down inclines, Galileo showed that gravitational acceleration is the same for all objects. This was a major departure from Aristotle's belief that heavier objects have a higher gravitational acceleration.^[12] Galileo postulated air resistance as the reason that objects with less mass fall more slowly in an atmosphere. Galileo's work set the stage for the formulation of Newton's theory of gravity.

3. NEWTON'S THEORY OF GRAVITATION

In 1687, English mathematician Sir Isaac Newton published *Principia*, which hypothesizes the inverse-square law of universal gravitation. In his own words, "I deduced that the forces which keep the planets in their orbs must [be] reciprocally as the squares of their distances from the centers about which they revolve: and thereby compared the force requisite to keep the Moon in her Orb with the force of gravity at the surface of the Earth; and found them answer pretty nearly." The equation is the following:

$$F = G \frac{m_1 \times m_2}{r^2}$$

Where F is the force, m_1 and m_2 are the masses of the objects interacting, r is the distance between the centers of the masses and G is the gravitational constant.

Newton's theory enjoyed its greatest success when it was used to predict the existence of Neptune based on motions of Uranus that could not be accounted for by the actions of the other planets. Calculations by both John Couch Adams and Urbain Le Verrier predicted the general position of the planet, and Le Verrier's calculations are what led Johann Gottfried Galle to the discovery of Neptune. A discrepancy in Mercury's orbit pointed out flaws in Newton's theory. By the end of the 19th century, it was known that its orbit showed slight perturbations that could not be accounted for entirely under Newton's theory, but all searches for another perturbing body (such as a planet orbiting the Sun even closer than Mercury) had been fruitless. The issue was resolved in 1915 by Albert Einstein's new theory of general relativity, which accounted for the small discrepancy in Mercury's orbit. This discrepancy was the advance in the perihelion of Mercury of 42.98 arcseconds per century.

Although Newton's theory has been superseded by Albert Einstein's general relativity, most modern non-relativistic gravitational calculations are still made using Newton's theory because it is simpler to work with and it gives sufficiently accurate results for most applications involving sufficiently small masses, speeds and energies.

4. METHODOLOGY

Objects do not accelerate during falling towards earth. Let's draw a fixed imaginary line PE in space. Let an object O be dropped from initial speed zero from point P towards centre of earth E From a height H. Suppose an object travels from point P towards the surface of earth in 30secs. During this period earth and object have covered a distance of half kms⁻¹ about its axis from west to east and about 30 Kmsec⁻¹ on its orbit.

Extrinsic or formal distance covered by object is H but actually the object and earth have also covered a distance due to its rotation and revolution. During these motions of rotation and revolution, the object is also moving towards earth. We can see only one motion i.e. Motion of object towards earth. We do not feel other two motions that is, rotation and revolution of object. (As if an object lifted from earth or dropped towards earth, the object continues its rotation and revolution constantly as its behaving on surface of earth). The path of falling object will be curved. But formally we feel the path of falling object straight because we have not compared the path of falling object with stationary space. Drawing all the system that is, Path of falling object, motions of object and earth that is, rotation and revolution in 3D graph of space. There will be equal distance in equal intervals of time

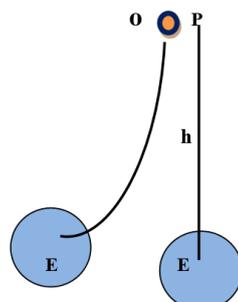


Fig. 1: Figure showing straight path of falling object is illusion

5. RESULT AND DISCUSSION

Our earth is the sum of matter (aggregation, bulk, gross, mass, quantity, summation, whole) We can infer that this existence of quantity of mass has not been from very beginning. This quantity of matter was not eternally as it is. This lump of mass has collected in one volume or edition. The matter of earth not only collected in one volume but this planet has two motions, rotation and revolution. Apart from this, things move towards earth when dropped from a height. These all motions viz rotation, revolution

and moving of objects when dropped from a certain height or when lifted from surface of earth and released come back towards earth. Which infers that this lump of mass has collected at one place with initial forces, the forces which are responsible for all its motions, Viz rotation, and revolution and falling of things towards earth. Considering four objects from four sides of earth to be thrown up wards. All four objects will retain towards centre of earth.

We can say that objects fall towards centre of earth from four side of earth from certain heights. But if the points from which the objects fall and sides be compared to space. All four points from which the objects are supposed to fall and the four sides can be considered to have moved from single infinite point towards an infinite side, met at a single central point.

If earth may be eliminated imaginary, the four objects would meet at a central point and will stop. But the force is still present in four objects as a single mass. The force may be considered as having gravity to tend to move. Same is the case with earth. The force which we feel as weight when we lift an object from surface of earth. The weight which we say force of attraction between object and earth. But basically, earth do not attract the object, but it is the tendency of an object to move if let free. Same is the case with whole earth. Its rotation if compared to space, it has infinite direction.

Every particle on earth tends to move towards the center of earth as each particle has a direction towards center but as compared to space each and every direction of particles may be considered as having single infinite side. These forces indicate us all about earths circumstances and prevailing at its beginning. We will take into consideration the mass of earth before collection coming into existence. Presuming the matter of earth before assignment or beingness and keeping in view its forces it indicates that all matter or particles of matter have moved from distinct far-off infinite points with a force in whirling pattern and collected at one place.

As those particles moved from infinite points towards infinite side so all matter can be considered as has moved from single infinite point towards infinite side till entity or atman or existence of earth. According to Newton's law, moving object will go on moving until opposed by some opposite force. Now after the existence of earth all these forces are present and inherences in earth. So, all these forces are responsible for its motions i.e., rotation, revolution and falling of an object towards earth when lifted from earth up to some height and released. All this mechanism i.e., collection of mass of earth its rotation and revolution has happened at any single occasion in whirling pattern. How things fall towards earth when dropped from height? As already stated, collection of mass of earth has started with a force and this force is existing in every particle of earth.

Suppose an object is on surface of earth. This object revolves with earth around the sun, secondly this object rotates with earth about the axis of earth and this object if lifted up to some height and dropped will move towards earth. But during falling the object will experience all other two forces i.e., rotation, revolution in the same way as it was experiencing on earth before lifting. There is only a gap between earth and falling object otherwise the object will experience all motions during falling until the object will touch the surface of earth. An object will experience all motions i.e., rotation, revolution whether it is on surface of earth or it is falling towards earth. When the object will touch the surface of earth, it will stop due to opposition of surface of earth otherwise the object would go on moving constantly but the force by which object is falling is constantly existing in the object

whether during falling or in stationary position on surface of earth. Suppose the earth is eliminated the object will go on moving. So the matter of earth is moving force in assemblage and remained in a specified state or position. Now suppose an object having moving force of X by which it has come from infinite point towards infinite side and we lift it by a force less than X and released free, it will attain its eternal force again and will go on moving back towards earth. The object will become Stationary if pushed by a force of X in opposite direction towards an infinite side up to that infinite point from which it has come or the object will go on moving if pushed by a force greater than X towards infinite point.

It concludes that every object moves by its own force and earth do not attract things just like moon also can not attract things if we take an object near the surface of moon. As already stated weight is the moving force in an object which it has attained at the summation of mass of earth. Suppose an object has X force of inertia on surface of earth. Now let the object be moved in a rocket on the surface of moon. The object will experience less weight as it has worked against the X force of inertia which it has on earth. X - the moving force up to moon. Same will be the case with rocket.

Rocket will also experience less weight as compared to the weight which it will have on earth. Rocket will work by its own mechanism on moon. There will no effect of moon on rocket. The object stay on moon if kept by force otherwise the object will work due to its own force of inertia which it has on earth, the difference will be only the object will lose weight on moon. Every two points from two opposite sides of earth if supposed to meet when let them to move freely, after eliminating the earth, by their own moving force, after joining they will stop moving but it will experience all motions i.e., rotation and revolution. It means every two opposite particles from opposite sides of earth will show geodetic properties and will experience all motions just like in earth. Each and every particle has equal force of motion. More the mass more is force but speed of motion is constant. Suppose if heavy and light objects be dropped from a height, they will show equal motions even they have different forces. Force is directly proportional to mass But speed of motion is equal and constant. There is no weight. It is force by which an object experiences to move if lifted from surface of earth. Neither there is weight due to attraction of earth. The weight which we feel in an object is responsible for motion. Weight is not due to attraction between earth and object. But weight is the force which is present in the mass of earth, responsible for motion of objects. Falling objects do not have weight. When object is stopped, we feel weight. Weight is resistance of object in its way of motion. So every particles on earth tends to move towards the centre earth but not due to attraction of earth, so all this moving force makes earth contracted, constringent or shrunked and do not aloof. The whole force due to which earth is shrunked has direction towards centre of earth.

Every particle on earth has a force of motion which acts symmetrically towards the centre of earth. No two particles on earth pull to each other. Each and every particle is free to act on another particle except two particles of opposite sides of earth. Each particle has force of inertia to move towards the centre of earth. Net force of inertia of earth is absolutely free to act on any object moving on the surface of earth, are on falling objects. Material of aeroplane or a rocket has its own force of inertia or eternal force by which it tends to come towards earth until it is flying by more force than its force of inertia but earth is completely independent or free from affecting the plane or rocket.

No two particles have attraction. Each and every particle is a moving force or every particle is a force of inertia. If two objects be dropped from a height one mm apart from each other. Both objects will go on falling towards earth but they will not join by their attraction. As soon as both objects released, they will show the property of eternal force, i.e., moving force but cannot join. It is illusion that gravity of earth will dominate the falling objects. Even if two objects cannot join when dropped from a height with their attraction, then how this mass of earth met with attraction. Obviously, mass of earth has collected with moving force, which is present in it. i.e., force of inertia.

The force which is responsible for falling of objects, which is present in every particle. Every point of mass of earth has not property of attraction else than property of force of motion. No two points show property of attraction how small they are at any place on earth. The falling object will go on moving but it is stopped by the opposing force of earth, but the object has still force of inertia which we feel as weight. Suppose if two pieces of mass from two opposite sides of earth be allowed to meet after eliminating earth. We will feel this combination of mass weightless, because they met with equal and opposite forces of inertia. We all feel sky on upper-side so earth has infinite sides. A person from any point on surface of earth will feel sky on upper side. So, earth do not have any side. It has infinite sides. So, we can also say earth has one infinite sides. So, if objects from all round the earth be thrown up wards, they will return back towards earth. Their path will be considered a single infinite Side.

Therefore, all mass of earth has started from single infinite point towards a single infinite side and met at a central point i.e., centre of earth. So whole earth is a single point of force, In constringency position, its force in the shape of mass, considering its mass as force, if an object is lifted upwards, the force (object) will retain again its position by its own force i.e., will go on moving towards earth, but not due to attraction of earth. Collection of mass of earth has occurred even from lacks of kilometres. As per the moving force of inertia all particles be considered as particles of moving force of inertia, they have direction towards centre of earth. So there is no any force in particles of earth other than the force of inertia or moving force by which each particle tends to move towards an infinite side i.e., centre of earth. There is no any mechanism of attraction between two particles on earth just like magnet. It is only and only force of inertia.

Even mass of earth at centre will show all properties as are on surface. Suppose earth be divided into four equal parts. Each part will tend to move towards a central point. Each and every part has its force to move towards the centre. So, at the centre there is no zero gravity. The particle on surface of earth tends to move towards centre of earth. In the same the particle at centre tends to move but it is stopped due to opposite force. Each and every particle of earth tends to move towards centre. So, there is no zero gravity at centre. Suppose we will take four points from centre of earth. Each point from four sides of earth. They will show zero movement due to opposing forces just like whole earth. Each and every particle of earth whether at surface or at the centre has equal force of motion or force of inertia. Each and every particle of earth is even in all properties.

So all matter of earth has force of motion. A falling object is weight less, it is only moving force. When the object stops the moving force is stopped which we feel as its weight, but during falling it was force in motion. After stopping it has still potential energy in it. An object in rest on surface of earth has weight which is directly proportional to potential energy. It has potential to move. If this object is set free by removing earth imaginary from its path of motion, The potential energy or weight ness will change to moving force at a particular rate of motion which is fixed for mass on earth. Which is its eternal character to go on moving.

Mass α moving force. Every particle on earth has a character, nature, property, tone or quality to go on moving. If no moving property, no inertia no weight. So earth is moving force in static state, $F \propto$ mass of earth. This force is unaffected and cannot be destroyed by any physical or chemical means. Just like the force of attraction in a magnet can be destroyed by physical or chemical means but the force of inertia or moving force of magnet can be destroyed. This force is entirely different from all other forces on earth. Just like matter can neither be created nor destroyed on earth. Similarly force of inertia in matter of earth can neither be created nor destroyed by any physical or chemical means.

This force will reduce subject to the force against it towards an infinite point with speed, just like a rocket may reduce its weight when launched from earth. A falling object do not have weight, but only moving force, as moving object has fixed uniform motion (see proof ahead), it neither accelerates nor retards during falling towards Earth. So, every particle on earth has uniform value of inertia. So, objects do not accelerate during falling towards earth, it is illusion. Verification of illusion. Suppose an object A is falling from a height of X in 1 min from infinite Point in space towards earth. As revolution of earth is 30Km/s and rotation is about $\frac{1}{2}$ Km/sec at equator and decreases towards poles. The falling object will also experience all these motions during falling. But the falling object has third motion, i.e., motion towards earth. Now if we take a reference point O in space which is starting point of object A. Then take an imaginary line AB parallel the falling object from point O.

Let the object touches earth after 1 mim. After this let us compare whole system of falling object its path and earth with the fixed imaginary line AB in space. During this period the earth and falling object has moved 30Km/s about its orbit and $\frac{1}{2}$ miles/sec about its axis. Then if we draw an imaginary 3-dimensional graph for this whole system i.e., the point O. falling path of object

rotation of object and earth, revolution of object and earth the imaginary line in space. We will see equal distances will be in equal intervals of time. It infers that objects don't accelerate during falling when compared with fixed imaginary line in fixed space. The falling path of object towards earth will show curvature when path is compared with reference imaginary line in space. It infers that objects would not accelerate during falling towards earth when compared with fixed imaginary line in fixed space.

6. CONCLUSION

- The weight which we feel on surface of earth is actually a force which tends to move.
- Objects do not fall due to attraction of earth but due to their own force which we feel as weight.
- There is no acceleration while falling of an object compared with 3D Graph of space.
- The falling path of an object is actually curved.
- Mass \propto moving force.
- All force of earth has alignment towards a single central point.
- The force which we feel as weight is responsible for retraction of earth towards centre but not due to attraction.
- There is nither attraction between two points on earth nor between any object and earth.
- Moving force can be turned in mechanical energy.

7. REFERENCES

- [1] Halliday, David; Robert Resnick; Kenneth S. Krane (2001). Physics v. 1. New York: John Wiley & Sons. ISBN 978-0-471-32057-9.
- [2] Serway, Raymond A.; Jewett, John W. (2004). Physics for Scientists and Engineers (6th ed.). Brooks/Cole. ISBN 978-0-534-40842-8.
- [3] Tipler, Paul (2004). Physics for Scientists and Engineers: Mechanics, Oscillations and Waves, Thermodynamics (5th ed.). W.H. Freeman. ISBN 978-0-7167-0809-4.
- [4] Thorne, Kip S.; Misner, Charles W.; Wheeler, John Archibald (1973). Gravitation. W.H. Freeman. ISBN 978-0-7167-0344-0.
- [5] Panek, Richard (2 August 2019). "Everything you thought you knew about gravity is wrong". Washington Post.
- [6] Hofmann-Wellenhof, B.; Moritz, H. (2006). Physical Geodesy (2nd ed.). Springer. ISBN 978-3-211-33544-4. § 2.1: "The total force acting on a body at rest on the earth's surface is the resultant of gravitational force and the centrifugal force of the earth's rotation and is called gravity".
- [7] Milky Way Emerges as Sun Sets over Paranal". www.eso.org. European Southern Obseevatory. Retrieved 29 April 2015.
- [8] ^ Clark, Stuart (11 February 2016). "Gravitational waves: scientists announce 'we did it!' – live". the Guardian. Retrieved 11 February 2016.