

New Gravity Theory of Physics

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Abstract— According to “NEW GRAVITY THEORY OF PHYSICS” neither Earth held the atmosphere nor atmosphere held the Earth instead the Earth itself entangled in atmosphere because the way it was formed. Due to the atmospheric force all bodies fall on Earth. This theory successfully explains the Earth’s gravity (in fact, it explains all planet’s gravity), planet’s rotation, planets tilt, and Solar System formation. In future it may have wider applications.

Keywords— Earth’s gravity, Atmospheric force, torque, Effect of Sun’s gravitational force on Earth, Earth’s rotation, Earth’s tilt, Solar System formation.

Symbols — π (3.142), r (radius), A (Cross Sectional Area)

I. INTRODUCTION

To “NEW GRAVITY THEORY OF PHYSICS” neither Earth held the atmosphere nor atmosphere held the Earth instead the Earth itself entangled in atmosphere because the way it was formed. Due to the atmospheric force all bodies fall on Earth. This theory successfully explains the Earth’s gravity (in fact, it explains all planet’s gravity), planet’s rotation, planets tilt, and Solar System formation. In future it may have wider applications.

II. COVER LETTER:

Newton told that Earth held the atmosphere due to its gravity but it is wrong because neither Earth held the atmosphere, nor atmosphere held the Earth. Instead the Earth itself entangled in atmosphere because the way it was formed. Due to the atmospheric force all bodies fall on Earth.

III. NEW GRAVITY THEORY OF PHYSICS

We are all worry about Earth’s gravity (Earth’s attraction). In this article I will tell and explain you about Earth’s gravity, what Sir Isaac Newton told about Earth’s gravity, why actually the Earth attracts all bodies towards it and its merits.

IV. GRAVITY

Gravity means the force of attraction of Earth of all bodies towards it exactly at its center. Newton told that gravity is the force of attraction between the Earth and all other bodies and gravitational force is the force of attraction between two or more heavy mass bodies.

But it is unknown that why Earth attracts all bodies towards it. This is an experimental theory. According to Newton Earth has its own gravity and due to its gravity it held the atmosphere and hence atmospheric pressure. But according to “NEW GRAVITY THEORY OF PHYSICS” Earth do not have its own gravity, instead it attracts all bodies towards it due to the atmospheric force. For proof of my theory I will tell an experiment but it is very difficult. If you succeed in making the experiment you will get accurate result. In this experiment I told to take a 2 ml syringe, in addition to

this I told two conditions. By following these two conditions if you pull the syringe plunger up everything below the bottom of the syringe plunger in fact, everything in the syringe moves up due to the creation of free space in it. If you are unable to make the experiment just try it once, twice or thrice until you get some idea. Later concentrate on theory.

[4.1]: Experiment:

Take a 2 ml syringe and take one ml water in the syringe. Now I have two conditions. Those two conditions are,

- The hole of the syringe must and should be completely closed. Air should not enter into the syringe hole.
- You have to pull the syringe plunger up.

Observation:

Following these two conditions if you pull the syringe plunger up the changes that can be observed in the syringe are water also goes up. But it is opposite to Newton’s theory. Newton told that Earth held the atmosphere due to its gravity [Ref. 1. Newton, Newton’s Universal Law of Gravitation 1687] According to Newton if Earth held the atmosphere due to its gravity then water must and should remain in the syringe when the syringe plunger is pulled up following these two conditions. Newton told that Earth held the atmosphere but here due to the absence of atmosphere in the syringe, water is moving up or the Earth is losing its gravity. Hence the decision is that gravity of Earth is due to the atmospheric force.

Do the experiment by taking one ml water and inserting one gm metal in the syringe. The changes that could be observed in the syringe are, water goes up and the gm metal floats on water.

From this experiment it is clear that Earth’s gravity is due to the atmospheric force and Earth not held the atmosphere, instead due to the atmospheric force all the bodies fall on the Earth.

In the experiment Earth is losing its gravity due to the absence of atmosphere in the syringe or due to the creation of free space in the syringe. In the same way assume that the Earth has no atmosphere anywhere around it. Then also the entire Earth loses its gravity and it will not attract any body

towards it. Hence gravity of Earth is due to atmospheric force.

Acceleration due to gravity (g) is directly proportional to atmospheric pressure.

That is $g \propto P$ where P is atmospheric pressure.

Acceleration due to gravity (g) decreases as the atmospheric pressure decreases. Similarly acceleration due to gravity (g) increases as the atmospheric pressure increases.

[4.2]: Reason: Why All the Freely Falling Bodies Accelerate?

All the freely falling bodies accelerate not due to Earth's gravity but it is due to the increase of atmospheric pressure from the point above the Earth's surface where the body starts falling to the point where the body stops falling or reaches the Earth.

EXPLANATION:

When the syringe plunger is pulled up following two conditions water also goes up and also the one gm metal floats on water. To pull the syringe plunger up it requires many newtons of force because the column of air above the syringe has weight. Atmosphere exhibits its collapsing property (see collapsing nature of atmosphere) which it conserved after the formation of planet Earth and hence the syringe plunger accelerates. Pulling the syringe plunger up means is that you are pushing the column of air above the syringe plunger up.

If you use a 2 ml syringe of diameter $d=8\text{mm}$ ($\text{radius } r=4\text{mm}$) then the force required to pull the syringe plunger up is as follows.

$F \propto A$ where A is the cross sectional area of the syringe.

$F=P \times A$ where 'P' is constant of proportionality and 'P' must be atmospheric pressure. Because

pressure = Force ÷ Area, according to Pascal's law

$$P=F/A$$

$$F=P \times A$$

$$\text{And cross sectional area of the syringe } A = \pi r^2$$

$$\text{Force } F=P \times \pi r \times r$$

$$\text{And } \pi=3.142 \text{ then}$$

$$\text{Force}=101325 \times 3.142 \times .004 \times .004$$

Because the atmospheric pressure at sea level is equal to 101325 pascals.

$$\text{Force}=5.094 \text{ newton.}$$

Similarly if you take a 5 ml syringe of diameter $d=10\text{mm}$ ($\text{radius } r=5\text{mm}$) then the force required to pull the syringe plunger up is

$$\text{Force } F=101325 \times 3.142 \times .005 \times .005$$

$$F=7.959 \text{ newton}$$

Also the force required to pull the syringe plunger up is equal to the product of mass of column of air above the syringe plunger and acceleration due to gravity.

$$\text{Also Force } F=m \times g$$

Where 'm' is the mass of column of air above the syringe plunger

$$\text{Also } F=P \times A$$

Equating these both on right hand sides we get,
 $m \times g=P \times A$

The above equation shows that acceleration due to gravity is directly proportional to atmospheric pressure.

That is $g \propto P$

Acceleration due to gravity decreases with increase in altitude because the atmospheric pressure decreases with increase in altitude.

Acceleration due to gravity increases with increase in depth of Earth. Because as the depth increases the mass of column of atmosphere increases and hence atmospheric pressure increases.

At the center of Earth the acceleration due to gravity is more because the atmospheric pressure is more at the center of the Earth. Then also we feel zero gravity at the center of the Earth because when you reach the center of the Earth then the mass of atmosphere will be equally distributed in all directions and equal mass of column of atmosphere pushing on you at the center from all sides all it cancels.

Gravity of a planet depends on the atmospheric pressure.

MERITS OF NEW GRAVITY THEORY OF PHYSICS:

[4.3]: The "NEW GRAVITY THEORY OF PHYSICS" explains the most major challenging problem in physics that is the Earth's spin and rotation on its own axis. It is explained as follows.

EXPLANATION:

All we know that the Earth revolves around the Sun at the same time it spins and rotates on its own axis. Also we know that the Earth's atmosphere has huge atmospheric weight and atmospheric pressure. According to "NEW GRAVITY THEORY OF PHYSICS" the Earth spins and rotates on its own axis due to the torque acting on Earth about its axis of rotation. It is explained as follows.

All we know that the Sun's gravitational force attracts the Earth. When the Sun's gravitational force attracts the Earth, the atmospheric force opposes the Sun's gravitational force and it keeps the Earth within the atmosphere safely. Due to the opposition of Sun's gravitational force by atmospheric force some amount of Sun's gravitational force lost manifests as torque and produces Earth's rotation. The amount of torque that the Sun's gravitational force produces on any planet depends on the amount of atmospheric force of that planet. If atmospheric force of a planet is least, then it opposes less Sun's gravitational force and this Sun's gravitational force produces less torque on the planet and the planet rotates slowly. On the other hand if the planet has high atmospheric force, then it opposes more Sun's gravitational force and this Sun's gravitational force produces more torque on the planet and the planet rotates faster. It is important to note that the atmospheric force alone does not produce any torque on the planet, instead both the Sun's gravitational force and atmospheric force produce torque on the planet and the planet rotates. Also it is important to note that the Sun's gravitational force produces an equivalent amount of torque

that the atmospheric force opposes the Sun's gravitational force. The atmospheric force just keeps the planet within the atmosphere safely. Hence for rotation of any planet of our Solar System both the Sun's gravitational force and the atmospheric force are necessary. It means that in the absence of any one of these forces planet rotation is impossible. It means that if there is no Sun (star) and if the planet has atmosphere then the planet rotation is impossible. Also if there is Sun and the planet has no atmosphere then also the planet rotation is impossible.

[4.4]: The “NEW GRAVITY THEORY OF PHYSICS” also explains the Earth’s tilt. It is explained as follows.

Why the Earth's axis is tilted 23.44 degrees from the plane of its orbit around the Sun?

The Earth's rotation axis is tilted 23.44 degrees from the plane of its orbit around the sun because the Earth is an irregularly shaped ellipsoid that is it is not perfectly spherical in shape. In case if when the Earth would had perfect spherical shape then it would not had been possible for Earth's tilt and it was possible that the Earth would had been rotating without any tilt. Due to the irregular shape of Earth when the Sun's gravitational force attracts the Earth, there are chance of rotation of Earth within the atmosphere that is the Earth may rotate and the atmosphere may remain at rest that is the atmosphere may not rotate. This situation is possible if and only if when the Earth rotates without any tilt and if the Earth rotates without any tilt the Earth collapses itself due to its irregular shape and it forms perfect spherical shape. Hence in order to overcome this problem the Sun's gravitational force produces torque on Earth about its axis of rotation with a tilt of 23.44 degrees from the plane of its orbit around the Sun.

Key Point: Mercury's axis is tilted just 2 degree from the plane of its orbit around the Sun because it is almost spherical in shape.

[4.5]: The “NEW GRAVITY THEORY OF PHYSICS” also explains how our Solar System was formed. It can be explained by dust occupation theory. According to this theory the planets of our Solar System are formed by the occupation of dust in collapsing gas. It is explained as follows.

Dust Occupation Theory:

Our Solar System was formed approximately 4.6 billion years ago from a dense cloud of interstellar gas and dust. When this dust cloud collapsed, it formed a solar nebula- a spinning, swirling disk of material. Close enough to the center of the nebula small groups of lucky dust particles crashing into one another, clumped into larger objects. Dust clumps became pebbles, pebbles became larger rocks called planetesimals. Planetesimals became into bulk lumps of masses of rocky dust. The presence of gas helped particles of solid material stick together. Far enough from the center of the nebula that water can freeze, tiny fragments of ice hitched a ride with dust. Dirty snowballs amassed into bulk lumps of

masses of soft dust. Thus the solar nebula consisted of bulk lumps of rocky dust and gas close enough to the center of the nebula and bulk lumps of soft dust and gas far enough from the center of the nebula.

The bulk lumps of soft dust and gas collapsed and broken into several pieces. Separate pieces of soft dust and gas are formed within the disk. The pieces of gas started to collapse under its own gravity and each gas piece formed with free space in it. On the other hand the pieces of soft dust formed, started to collide with each other giving birth to their moons, asteroids, meteoroids and comets. After collision separate pieces of larger and smaller soft dust pieces are formed. The larger soft dust pieces formed by collision entered and occupied the free space of larger collapsing gas pieces. After the dust occupation the larger gas pieces stopped collapsing. They formed gas giant planets. The middle- sized smaller soft dust pieces formed by the collision entered and occupied the free space of smaller collapsing gas pieces. After the dust occupation the smaller gas pieces stopped collapsing. They formed gas giant planet's moons.

The bulk lumps of rocky dust and gas also collapsed and broken into several pieces. Separate pieces of rocky dust and gas are formed within the disk. The gas pieces formed started to collapse under its own gravity. On the other hand the rocky dust pieces formed started to collide (except Mercury and Venus because they don't have moons) with each other giving birth to their moons, asteroids, meteoroids and comets (our moon also formed by the collision of Earth with other planet). After the collision separate pieces of larger and smaller rocky dust pieces are formed. The larger rocky dust pieces formed by the collision entered and occupied the free space of larger collapsing gas pieces. After the dust occupation the larger gas pieces stopped collapsing. They formed rocky (terrestrial) planets. The middle- sized smaller dust pieces formed by the collision entered and occupied the free space of smaller collapsing gas pieces. After the dust occupation the smaller gas pieces also stopped collapsing. They formed terrestrial planet's moons.

The smallest dust pieces leftover from the collision of both rocky and soft dust pieces remained just the same. Thus the asteroids, meteoroids and comets are formed.

When the Sun formed at the center of the nebula, all the planets, moons, asteroids, meteoroids, and comets started to revolve around the Sun. Thus our Solar System was formed.

Note: After the occupation of dust in collapsing gas, the gas pieces stop collapsing because the free space is completely filled by dust and it forms new planets and moons. Further the atmosphere that was created around each planet and moon exerts an equal and opposite atmospheric pressure everywhere on the surface of each planet and moon. Equal and opposite atmospheric pressure everywhere on the surface of each planet and moon all it cancels. As a result the net atmospheric pressure on the surface of each planet and moon becomes zero. Hence the atmosphere created around each planet and moon stops collapsing. However it is important to

note that the atmosphere that was created around each planet and moon has conserved its collapsing property and it further exhibits its collapsing property when free space is created in it.

[4.6]: Collapsing nature of atmosphere:

The atmosphere surrounded by any planet or moon of our Solar System exhibits its collapsing property. It can be explained by taking the example of our Earth's atmosphere as follows.

Take a 2ml or 5ml syringe. From one hand hold the syringe hole completely air tight (air should not enter into the syringe hole) and from the other hand pull the syringe plunger up and then leave it. The observation is that the syringe plunger accelerates or it moves with change in velocity due to the creation of free space in the syringe. This means that the atmosphere exhibits its collapsing property only when if the free space was created in it. Take a quick glance on dust occupation theory which states that the planets of our Solar System are formed by the occupation of dust in collapsing gas. In both these phenomena it is clear that the atmosphere starts collapsing when free space is created in it. Hence the acceleration of syringe plunger is due to the collapsing nature of atmosphere. But according to Newton the syringe plunger accelerates due to Earth's gravity and he stated that Earth held the atmosphere due to its gravity. But from this theory it is clear that the atmosphere exhibits its collapsing property when free space is created in it and hence the syringe plunger accelerates. This proves that neither Earth held the atmosphere, nor atmosphere held the Earth. Instead the Earth itself entangled in atmosphere because the way it was formed.

V. CONCLUSION:

Earth not held the atmosphere.

REFERENCES

- [1]. Newton, Newton's second law of motion $F=ma$ 1687
- [2]. Newton, Newton's Universal Law of Gravitation 1687.