Concept of Antigravitation

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Abstract- This paper consists of the concept behind the force against the gravitation, and the force is named as force of Antigravitation. Here multiple queries being solved, especially for the researchers to study about the anti-force concept. The thing is explained under the reference of Newton's law of gravitation. This hypothesis may help to understand the real face of the force of attraction and repulsion.

Index Terms- Antigravitation phenomenon, Concept of Antigravitation, Force of Antigravitation, Gravitation and Antigravitation, Law of Antigravitation.

I. Introduction

Newton discovered the law of gravitation. An apple falls down from the tree, but it doesn't fly in sky. He gave the law that the gravity of earth attracted the apple down. One question here arises, why that apple didn't fly up?

$$F_g = \frac{Gm_1m_2}{r^2} \quad \text{---------- [1]}$$

This was the mathematical formula he constructed. Two bodies attract each other. Again a question arises here. If every object attracts each other, then why don't we get attracted by those objects which exist around us? If the bus or faster train passes next to us, we do not get attracted by that. If this thing does not happen, which means Newton's law of gravity holds wrong?

A simple answer to this question is **No!** Newton's law of gravitation never goes wrong. As always a coin has two aspects, here itself we have two different aspects. Those two aspects are the reason of all occurrences.

Here we need to study the formula which Newton discovered. Why did he mention 'G' into the formula? No matter mass and distance is usual for the concept.

'G' is universal gravitational constant which has the unit 'Nm^2/kg^2'. This constant is adjusted into the equation to balance the Force value. When two masses and their distance was calculated; we got the 'Force' experimentally different but calculations were saying something different. And to match experimental values with calculated values, he adjusted the term 'G'.

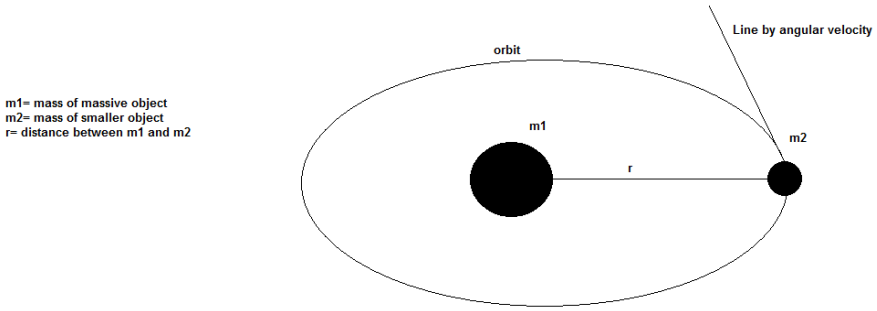
Sophisticated thing was; we observed 'G' value was constant universally. Now this term gives an idea, the masses and distance was relevant, what thing made us to arrange some extra values to match experimental and calculated values? And the thing was 'gravity'.

The concept is cleared. Every object is attracted by each other with some specific force. This happens because of gravity. Now what is the reason behind it of not attracting the objects around us or apple did not fly up? The answer is; all this happens because of antigravitation. Where there is gravity there is antigravity too. And may be this concept controls the universe.

All planets do not imbalance from their orbit from sun, they are in perfect orbit, all the things on the earth are also balanced by the same phenomenon. Hence this concept was literally crucial to be introduced. Hence we need to make a law i.e. Antigravitational law.

II. Elaboration of the Concept:

This is the example of planetary motion. How all the planets are strict in their respective orbit. If we pretend only gravity is the reason all planets are in their orbit, then m2 should be attracted by the m1, but this never happens. The reason behind is antigravitation, which is caused because of angular velocity. And especially planetary motion is controlled by these two forces i.e. gravitational force and antigravitational force.



III. Mathematical Explanation:

F_g is due to m1, that m1's gravity attracts m2.
F_{ag} will be due to velocity of m2.

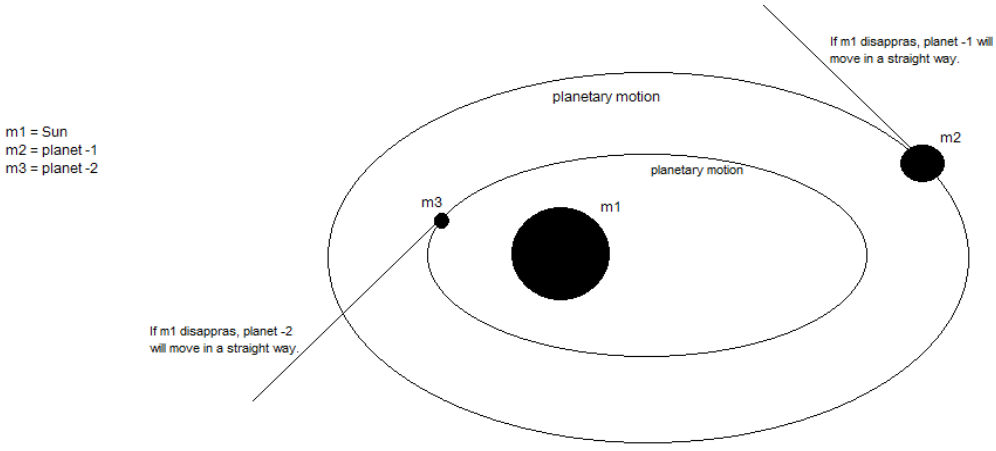
As Newton introduced the formula for the force of gravitation. Here I am introducing the formula for force of antigravitation. I denote this term as F_{ag} , i.e.

$$F_{ag} = \frac{m_2 v^2}{r} \quad \text{---------- [2]}$$

Here we denote our attributes such that:
F_{ag}= Force of Antigravitation
m_2= Mass of revolving object
v = Velocity of revolving object
r = Distance of m_1 to m_2

Here we see three different cases and their respective consequences with equation [1] and equation [2] :

1) If $F_g = F_{ag}$:
The object will be in the motion. i.e. planets are revolving around the sun.
2) If $F_g > F_{ag}$:
The object will be attracted towards center. i.e. planets will be attracted towards the sun.
3) If $F_g < F_{ag}$:
The object will lose contact with center and will go in tangent path. i.e. planets will leave solar system and will go straight.



This mathematics proves that, planetary motion is not only because of force of gravitation but also force of antigravitation.

Let's see some examples regarding this concept:

1) Mars revolves around the sun. Then $F_g = F_{ag}$:

G = 6.67408 * 10^{-11} N.m^2/kg^2
m_1=1.989 * 10^{30} kg (mass of Sun)
m_2 = 6.39 * 10^{23} kg (mass of Mars)
r = 2.279 * 10^{11} m (Distance of Mars to Sun)
v = 24004.935 m/s (Velocity of Mars around the Sun)

Newton's law of gravitation:

$$F_g = \frac{Gm_1m_2}{r^2}$$

If we substitute above values in the equation [1], we get
F_g = 1.633196343838789 * 10^{21} Newton

According to equation [2]

$$F_{ag} = \frac{m_2v^2}{\mathrm{r}}$$

If we substitute above values in above equation, we get
F_{ag} = 1.615688380352566 * 10^{21} Newton

Here we got two values. F_g and F_{ag}. And both the values are approximately equal. Hence we claim that Mars is revolving around the Sun.

2) Venus revolves around the sun. Then $F_g = F_{ag}$:

G = 6.67408 * 10^{-11} N.m^2/kg^2
m_1=1.989 * 10^{30} kg (mass of Sun)
m_2 = 4.867 * 10^{24} kg (mass of Venus)
r = 1.088 * 10^{11} m (Distance of Venus to Sun)
v = 35021.388 m/s (Velocity of Venus around the Sun)

Newton's law of gravitation:

$$F_g = \frac{Gm_1m_2}{r^2}$$

If we substitute above values in the equation [1], we get
F_g = 5.457952437270218 * 10^{22} Newton

According to equation [2]

$$F_{ag} = \frac{m_2v^2}{\mathrm{r}}$$

If we substitute above values in above equation, we get
F_{ag} = 5.4865477059855964 * 10^{22} Newton

Here we got two values. F_g and F_{ag}. And both the values are approximately equal. Hence we claim that Venus is revolving around the Sun.

IV. Statement of Antigravitation Law:

Every particle attracts every other particle in the universe according to the Newton's law of gravitation, but this law states only about attraction. There is not only attraction in the universe but repulsion as well. To balance the motion there must be two forces, one which was explained by Newton, another one I am explaining here.

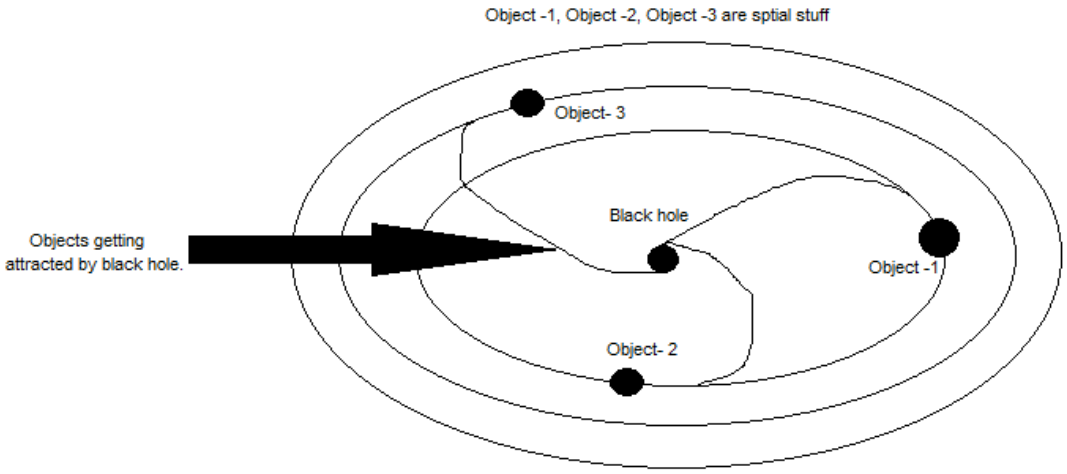
Antigravitation law states that the force of repulsion in two bodies varies with the mass of lower body along its velocity square and inversely as the distance between them.

$$\boldsymbol{F_{ag} = \frac{m_2v^2}{\mathrm{r}}}$$

More clearly the planetary motion in our solar system fits this law. As I have given possible solutions above which prove the exact phenomenon. This motion has two equal forces, i.e. gravitational force and antigravitaional force. The motion of planets will happen if and only if these two forces are equal. Any change in that forces will make certain changes, which are shown in above cases as well.

Why does black hole attract everything in it?

The answer is there in second case, $F_g > F_{ag}$. Of course black holes do have very huge gravity, hence nothing can escape from it. And for special stuff here F_{ag} is much smaller than F_g. This is actually the reason for our galaxy formation.



This is how all motions happen.

V. Results or Findings:

Now looking towards the equation $\boldsymbol{F_{ag}}$, we eventually got that this equation is nothing but the explanation of centripetal force, which takes place when a body is moving around the specific heavy object and balanced in a circular motion. Any how the object is balance against the gravity, hence we declare that the force of gravity is opposed by centripetal force, we named this force as **Antigravitational force**, whereas the force is **centripetal force**.

The point is to observe that the body didn't attract the star while force of gravity exists over; even the planet was moving against the gravity. Keenly we say, that is antigravitation. Now that depends on the motion with the body of universe, hence the formula structure would be different at different places. Finally we conclude there is a force definitely acting over the body against the gravitational force and that is nothing but **the force of antigravitation**.

What **Albert Einstein** mentioned about the motion of planets around the sun is due to space curvature, and **Isaac Newton** stated some other reason. Hence by looking at this point we conclude that both concepts are true. The balance into the planet and star is due to gravitational force and motion of planets is due to space curve. Instead both the concepts hold true. Now here one more phenomenon we understood i.e. **Antigravitation**.

VI. Conclusion:

Hope here we get a conclusion with the answer of the question that why we don't get attracted by the bodies around us? Hence the simple answer is **antigravitation**. There may be some antigravational force which does not let us get attracted towards any higher object as that of planets' centripetal force.

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