iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 10 **Issue:** VI **Month of publication:** June 2022

DOI: https://doi.org/10.22214/ijraset.2022.44507

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue VI June 2022- Available at www.ijraset.com

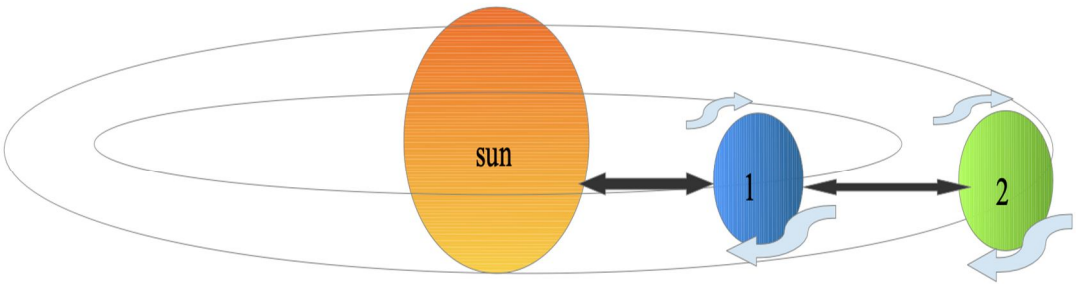
Analysis of Principle Behind the Stability, Self-Revolution and Orbital Formation of Planets around the Sun

Dr. Hemachandran Ravikumar
Department of Astronomy, N&H Research Park

Abstract: ***There are lots of moving parts in the Universe, as nothing exists in isolation. There are trillions of large masses in our Solar System, all orbiting around the galactic centre on timescales of hundreds of millions of years. In this paper, I present the idea of the Existence of the force of attraction by the Sun due to its constituents. Same as that, the debris of the sun due to the big bang may also possess some characteristics of the sun since all these objects possess similar origins. This means "Every object possesses a force of attraction that has the tendency to attract every other object of the universe but this tendency is limited to a certain extent based upon the constituent, size and distance between the object". This force of attraction is exhibited in multiple axis by every object. It altogether results in the formation of a closed-circuit form of connection between every object present inside this cluster of objects in space. The same principle applies to the galactic centre of the universe also. This force of attraction is responsible for the stability, Self revolution and orbital revolution of planets around the sun.***

I. INTRODUCTION

The universe hides many unanswerable questions inside it. With all our development in technology and knowledge, we cannot justify the entire components, composition, etc of the universe. Many hidden secrets are beyond our knowledge, while considering these many questions come to our mind like why do planets revolve around the sun?. Why are the planets spherical shaped and Why don't the other objects are spherical shaped ?. Why does the moon revolve around the earth? Why doesn't it revolve around the sun independently as the earth revolves around the sun ?. Why do planets make self-revolutions?.



Why are rings formed on certain planets ?. All the above questions are the most asked questions of human beings. While considering this we already have some knowledge, that the big bang is how astronomers explain the way the universe began. It is the idea that the universe began as just a single point, then expanded and stretched to grow as large as it is right now—and it is still stretching!. With this scenario, what is the force that holds the planets in a particular object, or what makes them move in the stable pathway, this proves that there is a force acting upon every object of the universe? Again this forms a question of how this force varies from place to place and what is the principle behind the reaction that happens due to this force. In this article, we will discuss the possibilities of action due to the force responsible for all these activities in space. Before discussing all these aspects we must consider the phenomenon behind this force of attraction exhibited by these objects.

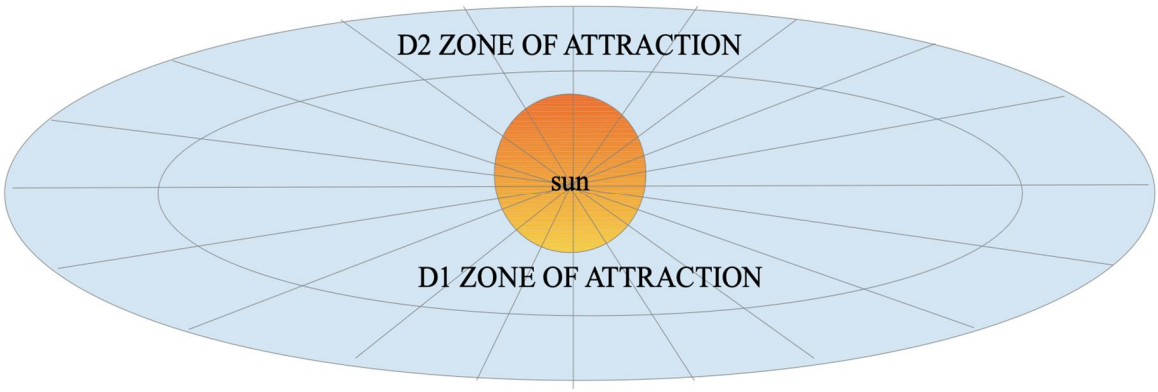
©IJRASET: All Rights are Reserved

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue VI June 2022- Available at www.ijraset.com

II. PRINCIPLE OF SPECIFICITY

According to science, all the matter found in the universe today including the matter in plants, animals, the earth, stars, and galaxies was created at the very first moment, thought to be about 13 billion years ago, the universe began scientists believe that every speck of its energy jammed into a very tiny point. This extremely dense point exploded with unimaginable force, creating matter and propelling it outward to make the billions of galaxies of our vast universe. This explosion is called the Big Bang. If every matter is created from the bang, if the Sun can attract everything towards it in a multi-axis direction i.e 360°. Then the debris of the big bang or the other matters of the bang, Also possess the same Tendency and characteristics of producing "Force of Attraction" over the object but the capacity of objects varies independently i.e- Force of attraction by the sun(M) > Force of attraction by its debris(N).

"Each and every object in the universe reacts independently to the sun's force of attraction depending upon their nature of constituent and size of the object. This explains the ***"Law of specificity".***



1) *Example 1.1: When a magnet is moved upon a group of articles like wood, rubber, copper, iron, plastics, iron powder, etc. Instantly the iron powder gets attracted first, followed by iron, But not the wood and rubber, these articles get undisturbed. This clearly explains the* ***"Law of specificity"*** *i.e- the specific attraction depends upon the Size & Nature of the object.* Hence, The force of attraction by debris is directly proportional to the nature and size of the object.

Force of attraction by debris(N) ∝ Nature of constituent(C) & Size of the object (S)

III. PRINCIPLE OF SPECIFIC ATTRACTION

This concept works based on the "***Law of specificity***".The difference in the Size and Constituent of the object determines the Strength of the attraction by the planets.

1) The planets with constituents which have more affinity to get attracted by the sun form shorter orbits; however, the size may be.
2) The planets with constituents which have less affinity to get attracted by the sun form larger orbits; however, the size may be.

*Specific attraction ∝ Constituent of the object and Size**

***(**Size of the object is considered in specificity?. Because the law of specificity does not deal only with the object, It also deals with the sun. While comparing the size of the sun with other objects, The Sun is comparatively larger, Hence the size is not considered. However, size plays an important role in objects other than planets. eg- The moon, comets, etc.**)**

IV. PRINCIPLE OF REPULSION AND RETRACTION

This law is According to the principle of Specific Attraction, *"Each and every object possesses the force of attraction, But this force of attraction is extended to a certain extent depending on the size and constituent of that object. This level of attraction varies with the increase in distance from the midpoint of two objects."*

i.e- The force is greater in closer and lesser in far, As the distance increases, the force of attraction between the objects decreases.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

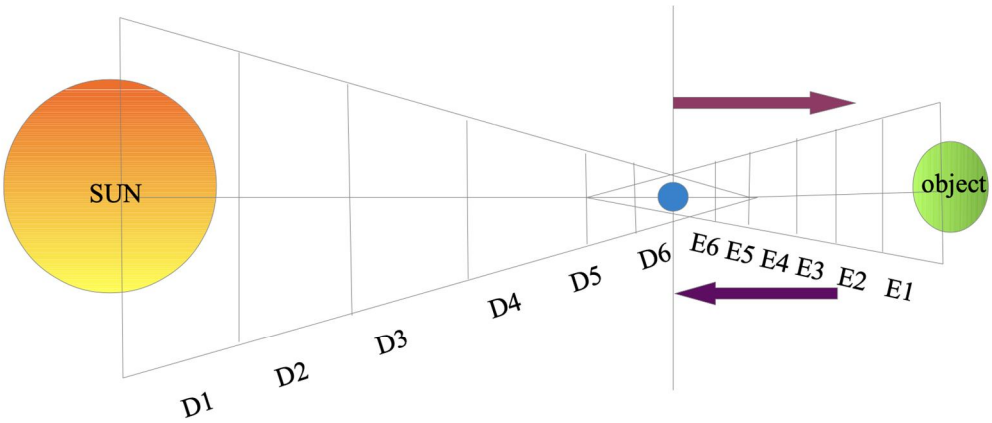
eg- the sun is 3000 times larger than the earth, so it has a large range of force attraction, which is extended in all 360°Axis. But the size of planets is small, Hence they have a smaller range of attraction when compared with the sun.

Consider the Energy level of the sun varies as

D1>D2>D3>.....=10s>20s>30s>....
(were S denotes the strength of the force of attraction)

The energy level for objects as,

E1>E2>E3>.....=10s>20s>30s.....
(were S denotes the strength of the force of attraction)



In this the force of attraction of the sun varies from D1 D2 D3 D4 D5 .....and goes on extending to the enormous range. But the object's force of attraction is limited from E1 to E6. As we already stated both the sun and the objects have similar origins they share similar characteristics, So E6=D6=60s (were S is strength)

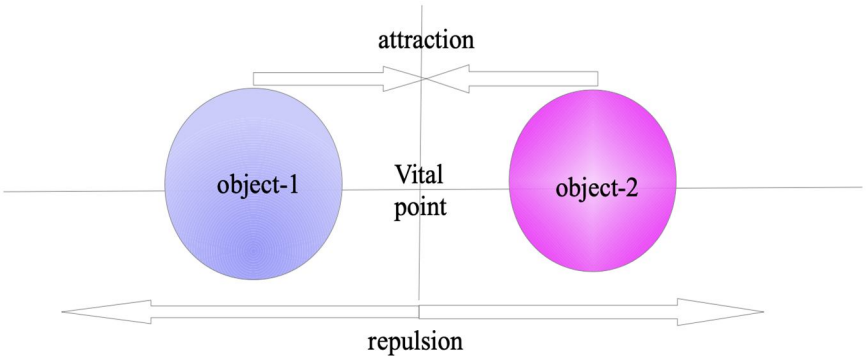
Hence consider, **D1>D2>D3>.....=E1>E2>E3>E4>E5>E6(Limited)**

1) While the object is far away from the sun its force of attraction is not considered, as its force is very much smaller than the sun's force of attraction.
2) Here the sun's force of attraction plays a major role, it tends to attract the object towards itself
3) Now the object moves closer to the sun and reaches a certain point and starts to retract backwards due to the equality in the strength of their force of attraction(i.e equal force repulse)This point is called the point of vitality or Vital point (V).
4) After repulsion there is a loss in the equality of the strength of their force of attraction, Hence the object is again attracted towards the sun thus forming a cyclic attraction and repulsion.

Hence this gives, *The law of Repulsion and Retraction,*

"Every object attracts every other object of the universe until they both reach the point of equality of their force of attraction between them, thereafter they tend to repel in the direction opposite to their force of attraction"

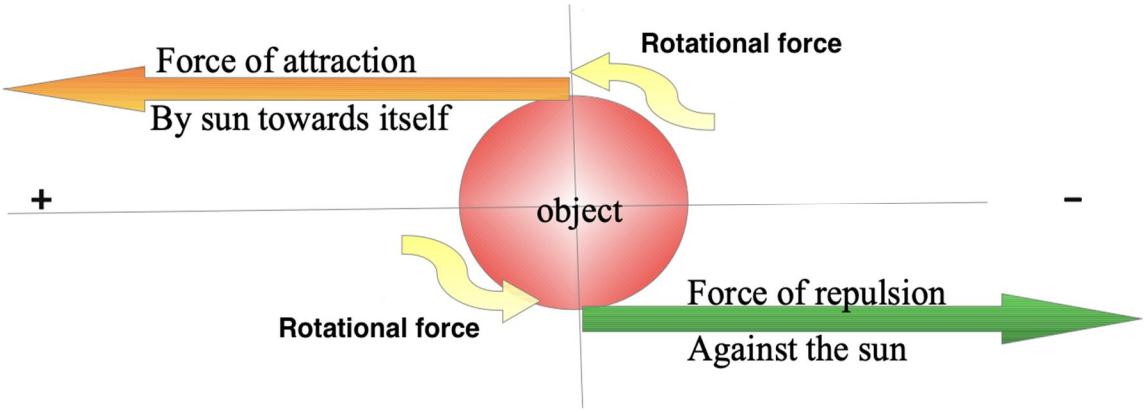
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue VI June 2022- Available at www.ijraset.com



V. PRINCIPLE OF SELF REVOLUTION

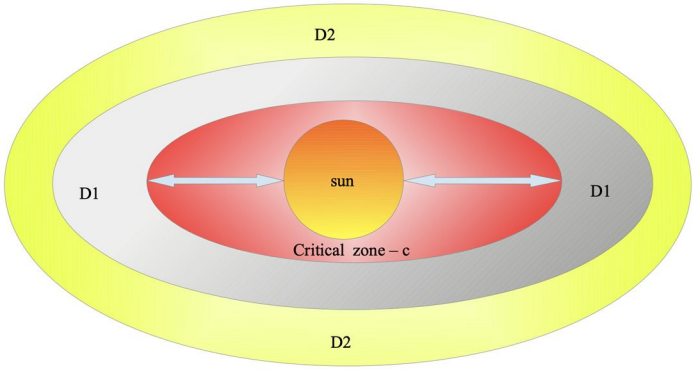
As above stated, in the law of attraction and repulsion,

"The force of attraction and the force of repulsion are equally acting in a different direction, On the same object, the two different horizontally acting linear force is converted to rotational force since the object is held by Sun's force of attraction acting on both the upper and lower poles of the object, that results in self revolution"



VI. CRITICAL ZONE OF SUN

"The critical zone (D) of the sun is the area lying very close around the sun, where no object gets exist due to maximal force of attraction of the sun persist in this area causes engulfing of the objects by the sun"



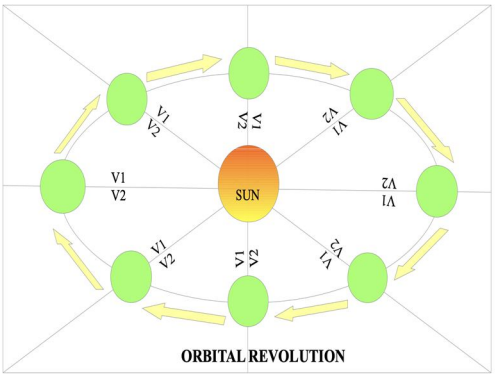
©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue VI June 2022- Available at www.ijraset.com

VII. PRINCIPLE OF ORBITAL ROTATION

As already stated the Sun's force of attraction is extended towards the universe in all directions, the object cannot escape from the sun's force of attraction, So the object gets attracted towards the sun's force of attraction but after reaching the vital point the objects tend to repel away from each other and self revolves in accordance Law of repulsion and retraction. On this basis, *"Every self revolving object tends to move in a direction perpendicular to the initial vital point and reaches the final vital point. Thus every final vital point is the initial vital point for reaching a further final vital point, hence forming orbital rotation"*

Initial vital point = v1 = Final vital point = v2

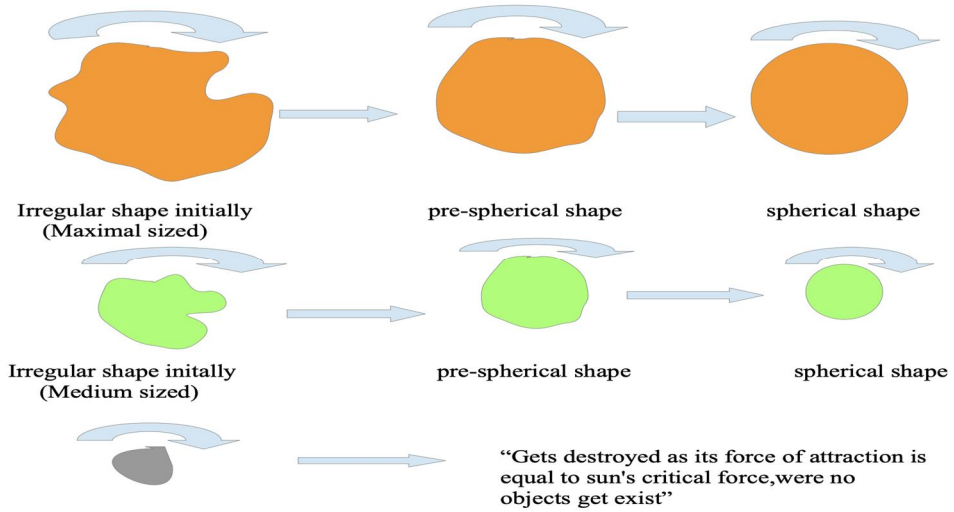


The above-given diagram clearly explains the movement of the objects in the orbit.

VIII. PRINCIPLE OF SPHERICAL FORMATION

We all are aware that the objects in the universe are the debris from the Sun, derived from the big bang. These objects are sized varyingly as minimal, medium-sized and maximal. Initially, all these objects are irregular in shape but due to the sun's force of attraction, they are attracted toward the sun and the object's force of attraction produces a force of repulsion and causes a self revolution by the Law of self revolution.

"Every object undergoing a self revolution due to two differently acting forces upon an object, moulds the objects to spherical shape. This formation depends upon the size of an object. i.e- Maximally sized objects have more affinity, while Medium-sized objects have minimal affinity and Minimum sized objects are negligible hence their force of attraction is equal to the sun's critical zone of attraction where no objects can exist "



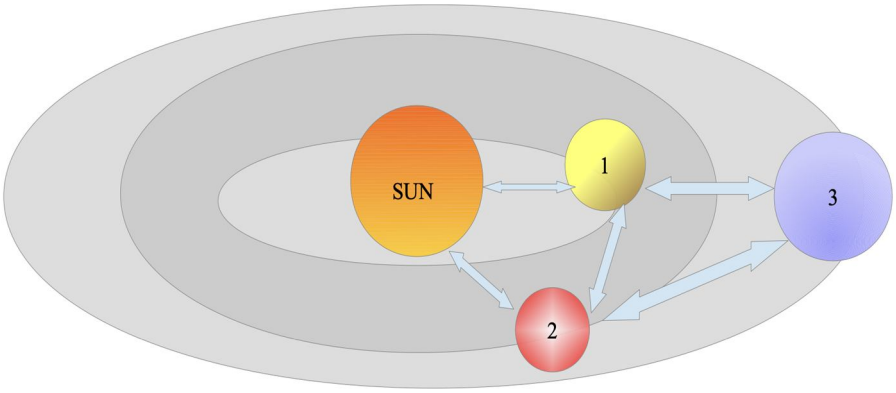
©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue VI June 2022- Available at www.ijraset.com

IX. PRINCIPLE OF STABILITY OF OBJECTS

The objects in the universe, especially planets, revolve in a particular orbit around the sun, but how do they maintain stability among them. i.e- Why don't they collide with each other ?. The exact reason would be the force of attraction exhibited by them. According to the law of repulsion & retraction, the objects get attracted to the sun until they meet the equality of their force of attraction between them then they start repulsion same as this, there is the formation of equality of their force of attraction between the planets, hence they don't collide with each other.

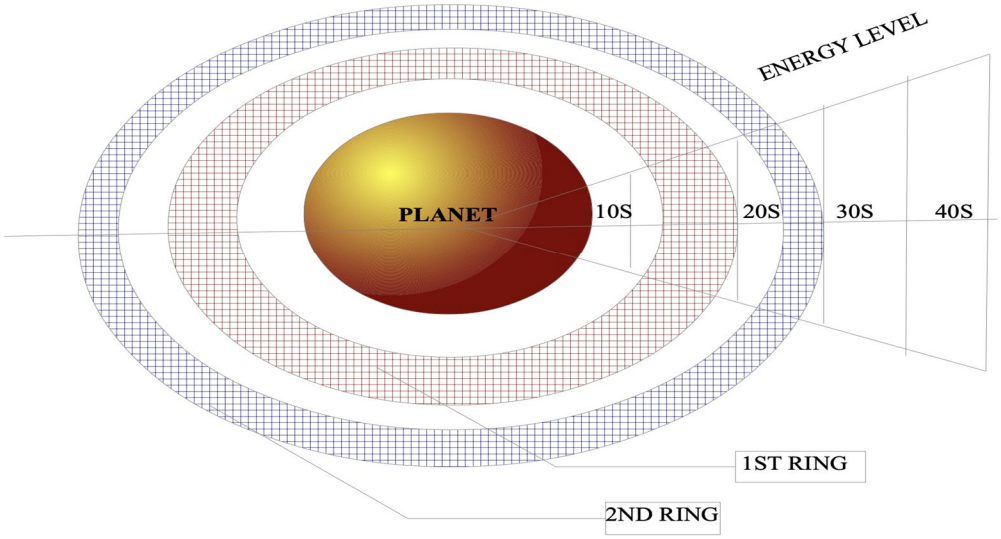
"Every object extends a force of attraction to a certain extent, this forms the boundary of that object and every other object that moves closer to this boundary forms equilibrium due to the equality in their range of force of attraction, thus protecting from the further movement of one object towards the other"



X. PRINCIPLE OF RING FORMATION

We know that there are some planets in the universe which contain rings, these rings are also formed by the planet's force of attraction. When small infinitesimal sized particles compared to objects that are destroyed in the critical zone of the sun, come in contact with any planet's force of attraction it forms the ring around the planet in their respective ranges concerning their force of attraction level. These particles may be smaller particles or debris of that planet formed due to revolution, etc.

"Every infinitesimal particle coming in contact with any planet's force of attraction, forms the ring around the same planet in their respective ranges concerning their force of attraction".



XI. DETERMINATION OF FORCE OF ATTRACTION

The force of attraction exhibited by each object varies from one another. To determine the force of attraction some constant values like the speed of revolution of the objects are considered.

"The force of attraction exhibited by the object is directly proportional to the speed of revolution of the object around the sun"

(This is by Newton's third law of motion. i.e- the horizontal force of attraction and repulsion acting in two different directions creates a rotational force that further leads to revolution so the force of attraction is nearly equal to the speed of the object)

Sun's force of attraction = M constant
Object's force of attraction = N varying
Force at the equality = V = 0
(vital point)

Here, The ***Force of attraction of object ∝ speed of the object***

Force of attraction of object = G x Speed of the object
(where G is constant, the surface gravity of the object is considered)

The Force Of Attraction Of Planets

The force of attraction of the objects or H.C (Hema Chandran) force of attraction of planets can be determined by the product of their Surface gravity which is constant for every object of the universe and the Speed of Revolution of the object around the sun, Since the revolution is the result of the force of attraction it is considered (In accordance with Newton's third law of motion)

H.C Force Of Attraction = Surface Gravity x Speed of the Object

("The force of attraction of an object is constant everywhere, But this force of attraction varies with the object to object, This is responsible for the various activities of space ")

For Example - To Determine the force of attraction by Earth,

Force of attraction of earth (E) = ?

The surface gravity of earth = 9.8 m/s^2

Speed of revolution of earth = 30000 m /s

Force of Attraction of Objects = Surface Gravity x Speed of the Object

Force of attraction of earth = $9.8\frac{m}{s^2}$ x $30000\frac{m}{s}$

$$= \frac{30000 \times 9.8 \times m^2}{s^3}$$

$$= \frac{294000m^2}{s^3}$$

$$= 294000\ m^2 / s^3$$

Force of attraction of earth = $294\ x\ 10^3\ \boldsymbol{N}$

$$\boldsymbol{Force\ of\ attraction\ by\ earth(E)\ =\ 294\ x\ 10^3\ N}.$$

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue VI June 2022- Available at www.ijraset.com

XII. CONCLUSION

"Each and every object extends a force of attraction to a certain extent, this force of attraction produces the force of repulsion when contact with other objects force of attraction which is responsible for their shape, self revolution and revolution around the Sun, this force of attraction is directly proportional to the speed of the object around the sun". This force of attraction is called as H.c Force of Attraction

"The force of Attraction of Objects = Surface Gravity x Speed of the Object"

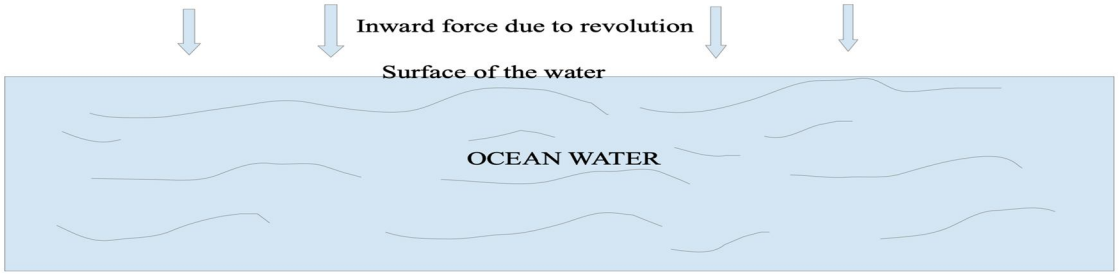
OBJECT	SURFACE GRAVITY (m/sec^2)	REVOLUTION SPEED(m/s)	(H.C) FORCE OF ATTRACTION(m^2/sec^3)
SUN	274	20000	5480000
MERCURY	3.7	47360	175232
VENUS	8.87	35020	310627
EARTH	9.8	30000	294000
MARS	3.71	24080	89336
JUPITER	24.92	13070	325704
SATURN	10.44	9690	101163
URANUS	8.87	6800	60316
NEPTUNE	11.15	5340	59540
PLUTO	0.58	4670	2708

The above-given values are calculated values of the force of attraction of the objects or H.C force of attraction of planets

A. Concept Related to H.C Force of Attraction

1) Reason for non-oozing out of ocean water?

The force of attraction exhibited by the objects creates a self revolution in the object, this causes the inward force to act upon the surface of the earth, hence forming a tension above the surface of the matters of the earth like ocean water, So it doesn't ooze out of the earth



This is similar to the Tumbler-water experiment. i.e- Just pour some water inside a glass and rotate your arm fastly, this creates an inward force to act upon the surface of the water and prevent it from oozing out.

B. Data Availability

The data underlying this article are available in the article and in its online supplementary material.

REFERENCES

[1] J. Horner, N. W. Evans, M. E. Bailey, D. J. Asher, The populations of comet-like bodies in the Solar system, Monthly Notices of the Royal Astronomical Society, Volume 343, Issue 4, August 2003, Pages 1057–1066, https://doi.org/10.1046/j.1365-8711.2003.06714.x

[2] Mackay, D. H. (2012) 'The Sun's global magnetic field', Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences. Royal Society, 370(1970), pp. 3151–3168. DOI: https://doi.org/10.1098/rsta.2011.0536.

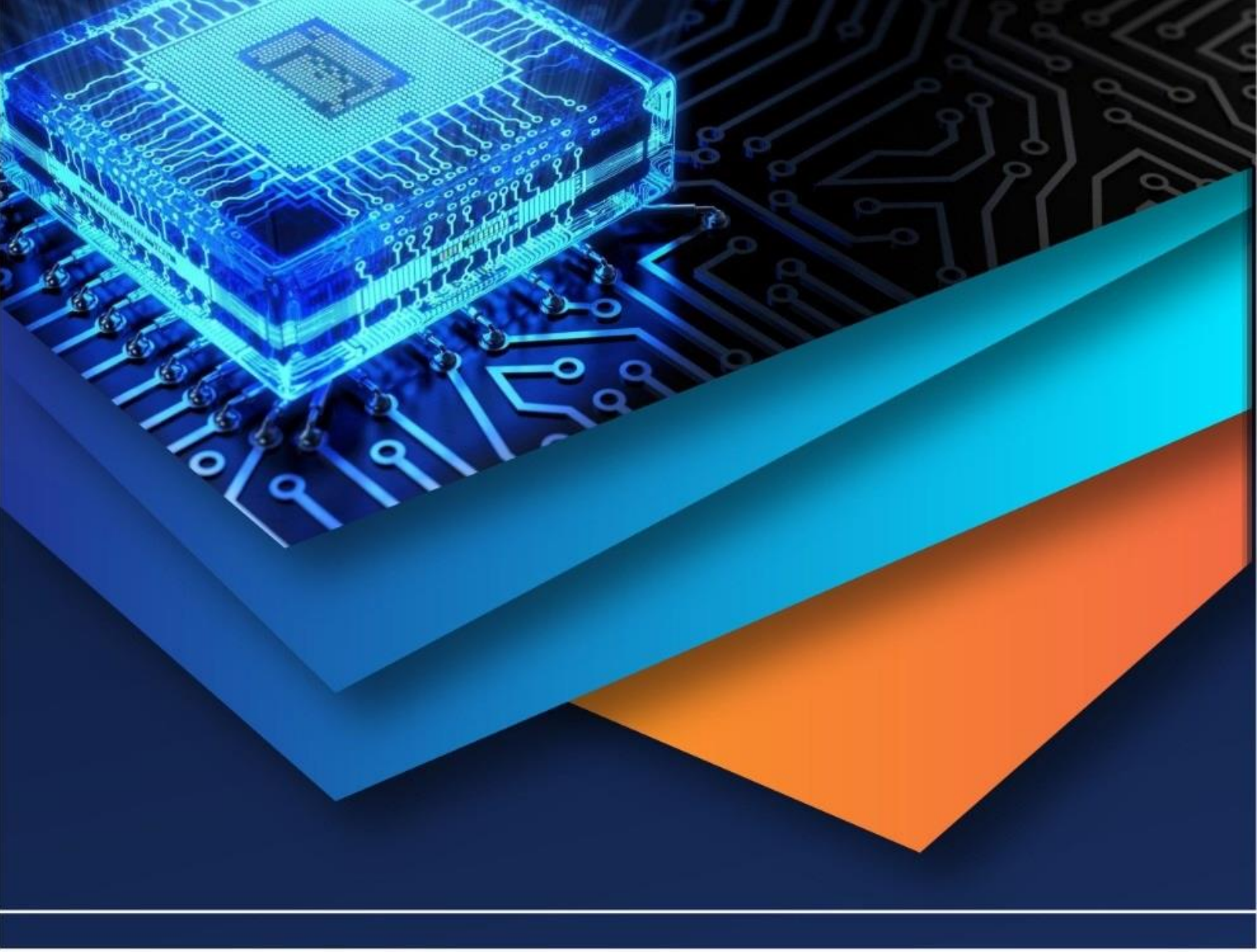
[3] Adam, M. G., Bondi, H. and Bondi, H. (1962) 'The observational tests of gravitation theory, Proceedings of the Royal Society of London. Series A. Mathematical and Physical Sciences. Royal Society, 270(1342), pp. 297–305. DOI: https://doi.org/10.1098/rspa.1962.0219

[4] Walmesley, C. (1761) 'LII. Of the irregularities in the planetary motions, caused by the mutual attraction of the planets: In a letter to Charles Morton, M. D. Secretary to the Royal Society, by Charles Walmesley, F. R. S. and Member of the Royal Academy of Sciences at Berlin, and of the Institute at Bologna', Philosophical Transactions of the Royal Society of London. Royal Society, 52, pp. 275–335. doi: https://doi.org/10.1098/rstl.1761.0053

[5] Dormand, J. R., Woolfson, M. M. and McCrea, W. H. (1974) 'The evolution of planetary orbits', Proceedings of the Royal Society of London. A. Mathematical and Physical Sciences. Royal Society, 340(1622), pp. 349–365. doi: https://doi.org/10.1098/rspa.1974.0156

[6] Wilson, H. A. (1923) 'An experiment on the origin of the earth's magnetic field', Proceedings of the Royal Society of London. Series A, Containing Papers of a Mathematical and Physical Character. Royal Society, 104(727), pp. 451–455. doi: https://doi.org/10.1098/rspa.1923.0120

[7] Milne, E. A. (1937) 'The inverse square law of gravitation—II', Proceedings of the Royal Society of London. Series A - Mathematical and Physical Sciences. Royal Society, 160(900), pp. 1–23. doi: https://doi.org/10.1098/rspa.1937.0091



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)