SPACE DYNAMICS- Volume-II
GRAVITATIONAL WAVE, GRAVITY DEVIATION &
GRAVITY BASED MOTION IN THE SPACE

PREFACE

However much the modern sciences are developed, it is very unfortunate of a thing that, man of 21st century cannot answer a child for questions of primary level such as;

1. How Earth is rotating?
2. Why planets orbit around Sun?
3. Why not even a single planet move the other way round?
4. Why non rotating planets posses no satellites?
5. How gravity does attract things?
6. Why gravity doesn't attract electron mass, solar wind, light and heat etc?
7. How weather is changed seasonally?.....

To be frank, there are many things in the world, poorly explained, unexplained or unfound as yet. Otherwise how could such sweet natural things like Air, Water, Land etc could disguise all at once as disastrous Tornados, Tsunamis and earthquakes to kill thousands of unprepared people. It is therefore, of worth to review what we know and what we don't know.

Field specialization has created too many branches in the tree of Knowledge, and the scholars, who reach at far most ends of their field branches, are isolated without adequate linkage with other branches and as a result, a wholesome definition or a conclusion upon any matter could not be possible today.

If knowledge is for knowledge's sake, I don't see any need to develop it any further, but it has yet to be improved on behalf of the mankind, to assure protection against overhanging threats, manmade or natural.

Man is far conservative and knowledge is the most dangerous thing in the world, which creates knowledgeables to protect it right or wrong, by shielding it from challenges.

Deduction through observations, is an old art of getting at far distant realities, as used by philosophers, Universalists and some of the scientists in the past and it could cut off much laborious and expensive experiments.

This is an experimental monograph, born in the desire of explaining the things, so far unexplained or poorly explained. The subject content is compacted in to three volumes and this book, 'Space Dynamics -Volume-2', is to address Mechanism of Gravity, Gravitational Wave, Gravity Deviation and Gravity based Motion in the Space.

Sciences are naturally overwhelmed by unnecessary complexity, and 'Uncertainty' is the certain destination in absence of essential linking theories or otherwise there is a good reason behind everything that happens in this world.

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A man went everywhere exploring the world for 'Truth' and ultimately he got it. But no sooner he threw it away because it was not sweeter than the 'False' that he got used to. That's how the explorer himself treated his discovery and what could be the attitude in others? Therefore, the most difficult thing in the world is bringing something new, for acceptance.

This is a monograph filled with results of a long term struggle in me with nature observations, practices, mathematics and deductions. At the first look the facts may seem quite narrative or not interesting and therefore, the reader is kindly requested to have enough patience to keep on reading the first few pages until the facts start drawing your interest gradually.

1.0 GRAVITATIONAL WAVE
1.1 GRAVITY

Gravity is the physical attraction between any objects of atomic mass and it is the most prominent phenomenon of gathering masses in the space. Gravity attracts only the *Atomic Matter* and it doesn't attract the '*Space Medium Matter*' and '*Space Energy Matter*' such as; electron mass, solar wind, light mass or heat mass etc..(please refer the Space Dynamics- Volume –I for different phases of 'Space Matter') .

Man is so familiar with the effect of Gravity that, no body tends to question how it attracts things. If you want to get some thing close to you, that can be done only in two possible ways such as,

i.   touch the thing by your hand and pull
ii.   ask some body to push it closer to you

But Gravity is so unusual that it pulls you without touching your body and how is that?

Sir Issac Newton (17th century) has well explained the physical qualities of Gravity by the relation of parameters such as;

$$G = \frac{kM}{R^2}$$

..…………………………………..(1)

Where,

G – Acceleration of Gravity (the best physical measure to identify Gravity) {cm/s^2}
M – Mass of the Gravity Source {g}
R – Distance from the source {cm}
k – Gravitational Constant { 6.668 x 10^{-8} cm^3 /gs^2}

Physical qualities of Gravity and Gravity based motion is so clearly explained by the great scientist in the 17th century that, the far extent of the subject that he developed could never be challenged.

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But 'Mechanism of Gravity' is yet to be explained or otherwise you cannot answer the questions such as;

i   why planets orbit around Sun?
ii why not even a single planet orbits other way round?
ii why non rotating planets possess no satellites?
iii why 'Energy Matter' such as electrons, light, heat, solar wind etc don't respond
    to Gravity?

1.2 GRAVITATIONAL WAVE

<u>1.21 Definition</u>
Gravity, of our scale of the World, attracts even distant objects of atomic mass, by means of a wave called 'Gravitational Wave', transmitted through the space medium.
Our space is made up of a uniform medium of density <u>4.773 x 10^{-4} g/cm^3</u> and pressure <u>2.145 x 10^{17} dynes/cm^2</u> (pl ref Space Dynamics Volume-I for calculations of space medium parameters). Gravity is nonfunctional in absolute vacuum because the gravitational wave is not transmitted without a substantial medium.

Gravity in the inner atomic space is different and the gravitational wave is limited to the inner atomic space within the '*Atomic Skin boundary*'.(pl refer 'Space Dynamics Volume-I for the 'Theory of Skin Boundary'). The inner atomic space is referred to as '*1st Moola Space*' and gravity of a nucleus is named as '*1st Moola Gravity*'   . (Please refer Space Dynamics Volume-III for detailed deductions)

1st Moola Gravity can extend its influence beyond the atomic boundary to attract other atoms (*inter atomic attraction*) only if the atoms are touched closely together so that the gravitational wave is transmitted to the adjacent atomic spaces). This subject matter of '*Gravity of Dropped Scales*' is described in depths in the volume-III and the term '*Microgravity*' which is so frequently used nowadays will be contradictory when sciences are developed enough in future to understand '*Scale Dropping of Space Matter and Gravity along the axis of the 4th Dimension*'.

<u>1.22 The Inner Atomic Rotary System</u>

An atom can be considered as a rotary system of mass and electrons are rotating round the nucleus. Rotating systems are usually vibrating themselves and the atomic body therefore, creates waves in the surrounding medium. That is just like how a small creature, fell in to water, creates waves round him. Figure -01 is to show how a gravitational wave of frequency modulation, is transmitted through the space medium.

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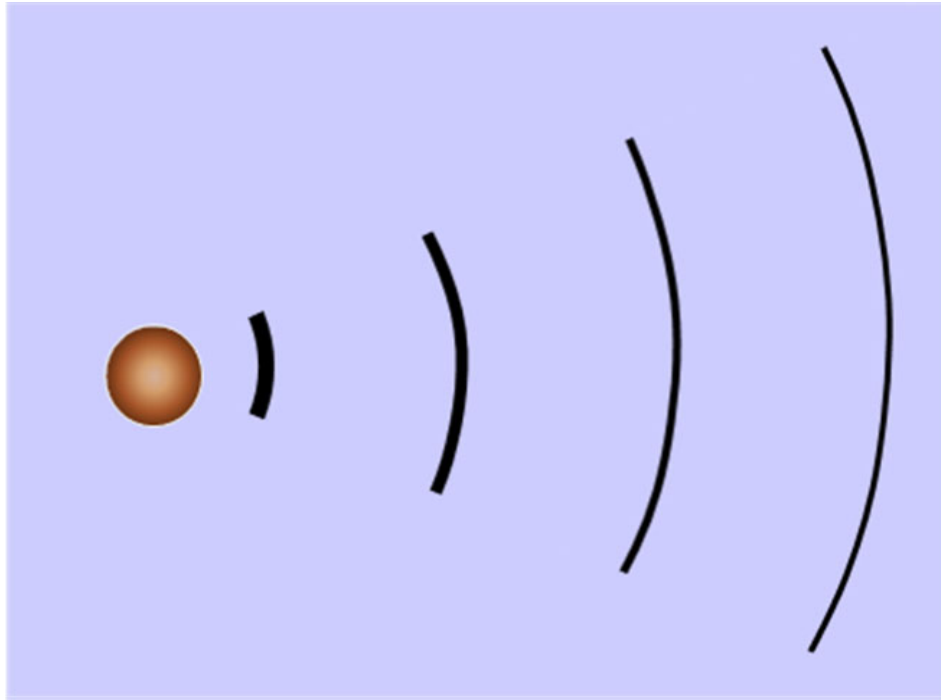
FIGURE-01

1.23 Medium Excitation(λr)

When the Gravitational Wave is transmitted through the space medium, the free space medium is excited such that, a layer of medium particles is pushed forward and drawn back at each stroke of the wave. On that way the vibration is spread out from the gravity source just like spherical shells as shown in the figure-01.

1.24 Definition for Medium Excitation

Medium excitation is defined herein as the distance of a medium particle pushed forward due to a single stroke of the wave, in spite of whether the particle returns to it's initial position or not.

1.25 Medium Elasticity(£)

Unless the medium particles return to their initial positions, after a wave stroke passed away, the medium is not elastic enough and therefore the wave is faded before transmitting far.

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- *Free Space Medium* is elastic at the heist degree and due to that quality itself, waves and rays as well travel far without losing energy.
- Mud in liquid form is not a good elastic medium for wave transmission and energy of any wave in it is lost before traveling far.
- *Pressure* increases elasticity of any medium and Tsunami pressure wave underwater is much faster than the surface tidal wave.(pl ref 'Space Dynamics-Volume-I for mathematical deductions).

1.3 MECHANISM OF GRAVITY

1.31 Gravitational Attraction

If you want to get some thing closer, you have to touch it and pull. Gravity too could not be a magical force and it has to touch things and pull. Yes Gravity touches things by means of a wave but don't pull and instead, it induces a force in masses so that they move towards the Gravity Source by themselves.

1.32 Definition for Gravitational Attraction

When the Gravitational wave struck upon any atomic body, the center of inner atomic rotary system is shifted and that eccentricity creates a force to move the object towards the Gravity Source.
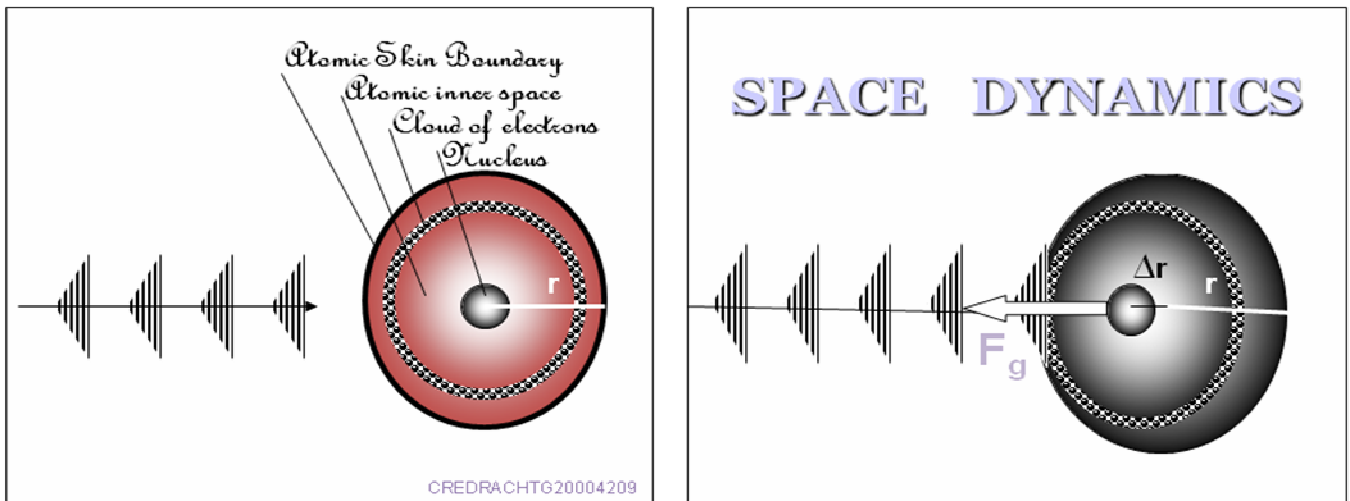

FIGURE-02

As shown in figure 2, the direction of the Gravitational Force (Fg), is directly towards the Gravity Source or opposite to the wave direction.

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1.33 Is Gravity Born by Electricity?

An atom is known to have a nucleus of positive electric charge 'm_1' and a cloud of electrons of negative charge 'm_2', rotating round, and the attraction between the two charged bodies is given by the Coulomb's equation;

$$F = \frac{km_1m_2}{d^2}$$ ....(2)

Where, d- the distance between the two charged bodies and k- a constant.

As shown in the figure-02, the centre of rotation is shifted due to the frequent strokes of the gravitational wave. The eccentricity 'Δr' of the rotation induces an unbalanced force 'F_g' upon the nucleus to move the atom towards the gravity source.

The un-balanced force, F_g ;

$$F_g = \frac{km_1m_2}{(r-\Delta r)^2} - \frac{km_1m_2}{(r+\Delta r)^2}$$

$$F_g = km_1m_2 . \frac{4.r.\Delta r}{(r^2 - \Delta r^2)^2}$$

Δr is so small that;

$$F_g = \frac{km_1m_2}{r^2} . 4\left(\frac{\Delta r}{r}\right)$$

for un-ionized atoms, $m_1 = m_{2 \text{ and}}$ let us say $= m_a$

$$F_g = k\frac{m_a^2}{r^3}(\Delta r)$$

eccentricity (Δr) = medium excitation(λ) due to the wave, at the particular locality.

$$F_g = k\frac{m_a^2}{r^3}(\lambda)$$ ....(3)

- It clearly indicates that gravitational attraction is depending on both the inner atomic parameters (m_a^2/r^3) and wave parameter (λ) too.

- It also emphasizes the existence of 'Atomic Skin Boundary' or otherwise how could the atomic body shifted by the wave stroke, with respect to the nucleus? (pl ref 7.1 of Space Dynamics-Volume-I for the theory of 'Skin Boundary of Matter')

- Gravitational attraction therefore can be described as the force induced by the eccentricity of inner atomic rotary system, occurred due to frequent attacks by the gravitational wave strokes upon the atomic body.

- 'Weight' as a term refers to gravitational attraction but 'Mass' is the more realistic term which gives some impression of density of Matter and the way how Sir Isaac Newton described it dynamically by the equation P=mf (where f is the acceleration) is quite compatible with the subject matter emphasized herein.

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1.34 Newton's Equation of Gravity:-

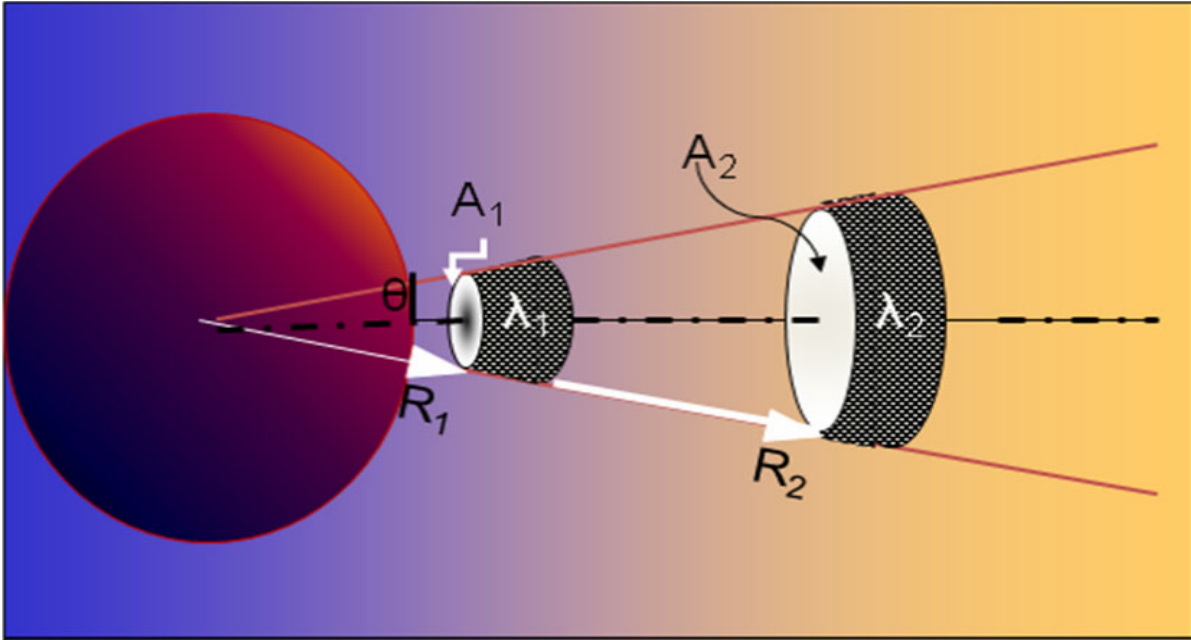Let us prove the Gravitational Equation $G = \frac{kM}{d^2}$ by means of the concept of Gravitational Wave.

FIGURE-03

Two locations of distances R1 and R2 away from the gravity source is considered for calculations as shown in the figure-03. Medium excitation due to the wave at position-1 is λ_1 and that of at position-2 is λ_2. If the medium is elastic for wave transmission the energy of the wave at both positions must be equal.

By consideration of energy of a single wave stroke;
energy at position 1 = energy at position 2 (where P is the pressure of medium).

$$P[A_1\lambda_1] = P[A_2\lambda_2]$$
$$\frac{\lambda_1}{\lambda_2} = \frac{A_2}{A_1}$$
$$= \frac{\pi(R_2\theta)^2}{\pi(R_1\theta)^2}$$
$$= \frac{R_2^2}{R_1^2}$$
$$\lambda_r = k_1 \cdot \frac{1}{R^2}$$
...........................(i)

[Medium excitation at a distance R from the Gravity Source is inversely proportionate to square of the distance (R^2)]

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Medium excitation 'λr' at a distance 'r' from the source is directly proportionate to the strength of the Gravity Source, or in other wards mass 'M' of the source. When mass is
big, the resultant vibration of the body is also big and therefore the gravitational wave transmitted to the medium too is stronger.

ie   (where k_2 is a constant) $\lambda_r = k_2 M$ ……………………(ii)

Acceleration of gravity 'G' is the best physical measure of gravity it is directly proportionate to the medium excitation 'λr' due to the gravitational wave at the particular locality.
ie.   (where k_3 is a constant)

$G = k_3 \lambda_r$……………………..……………………………..(iii)

By combination of above equations (i),(ii) & (iii);

$$G = k \frac{M}{R^2}$$ (where k is a constant)

=======

That is exactly the known equation of Sir Issac Newton and he has evaluated the constant 'k' practically as k = 6.668 x 10^{-8} cm^3 /gs^2

2.0 FREQUENCY OF THE GRAVITATIONAL WAVE

2.1 GRAVITATIONAL STATIC WORK DONE

2.11 What is Static Work Done?
There are enough of nature observations to deduce that every atomic body mass is violently vibrated by the frequent strokes of the Gravitational Wave.
i.   Structural components in buildings which are so strong at the construction, develop cracks gradually to collapse the entire building ultimately. Just imagine, how much energy is required if we wanted to collapse the building like that?
ii.   Archeological remaining of buildings belongs to far historic civilizations are found always several meters below the present ground surface. Isn't it laughable to think people in the past went so deep in the ground to lay their foundations? No, the buildings have been sunken down in to the clayish ground due to the vigorous vibration made by the Gravitational Wave.
iii.   The example of two athletes standing, such that one is caring a heavy weight and the other is empty hand, to observe who can stay still longer. Both athletes stand still without doing any work but the man who carried the heavy weight exhausted soon. Even though he didn't move his load at all he exhausted and this incident remains unexplained as yet..

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2.12 Expression for Static Work Done

Atomic mass is continuously vibrated by the strokes of the Gravitational Wave and therefore work is done though, the objects are not moving apparently.

As shown in the figure-04 a weight 'm' is kept on a stand. Due to the frequent strokes of the Gravitational Wave, the weight is vibrated about its rest plane.   If anything, under a force is vibrated, a work is done and it can be evaluated as follows;

Work = (Force) x (Displacement per a stroke) x Frequency of the Wave.

Center of Gravity

Displacement per stroke

δh

Rest plane of the weight

m

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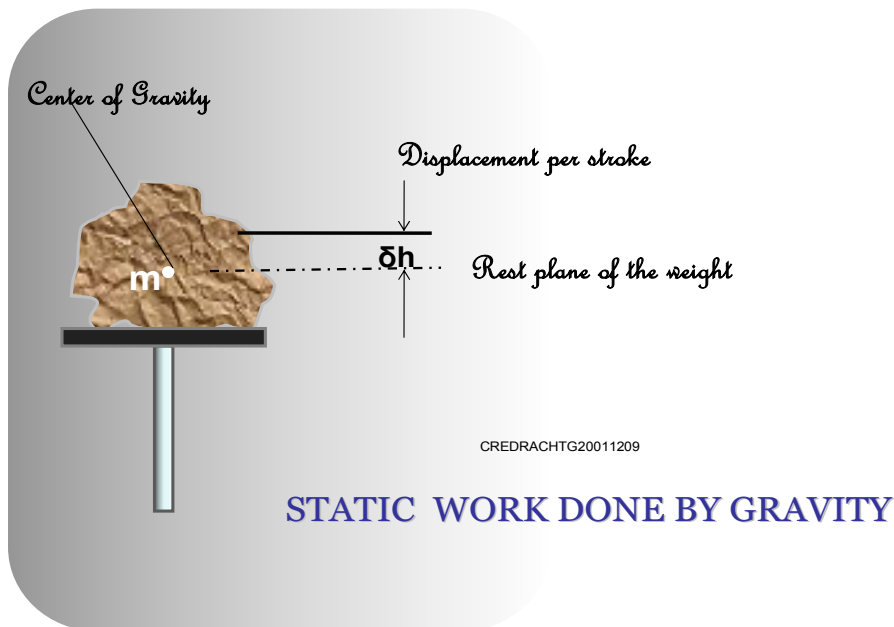
STATIC WORK DONE BY GRAVITY

FIGURE-04

Gravitational work done of the mass 'm' per second, as shown in the figure-04,
= (Gravitational force)x(Displacement per stroke)x(Frequency)
$= (mG) \times (\delta h) \times (N)$
$= NmG\delta h$.(Where, N is the frequency of the gravitational wave and G is the acceleration of Gravity.

The object which is vibrated by the wave, exhibits a free motion under gravity and therefore 'δh' can be calculated by Newton's equation $s = ut + \frac{1}{2}ft^2$.

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$$\delta h = (0)t + \frac{1}{2}(G)t^2$$ (where t is the time taken= time per a single wave stroke)

$$= \frac{1}{2}G\left[\frac{1}{2N}\right]^2$$

$$= \frac{G}{8N^2}$$

Therefore 'Gravitational Static Work Done' by the mass 'm' per second can be calculated as;

$$W_s = NmG\left(\frac{G}{8N^2}\right)$$

$$W_s = \frac{mG^2}{8N}$$ ……………………………………………………(4)
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If frequency of the gravitational wave is known, the hidden static work done by masses under gravity, can be evaluated by means of above relation.

2.2 LABORATORY EXPERIMENT TO DEDUCE FREQUENCY OF THE GRAVITATIONAL WAVE
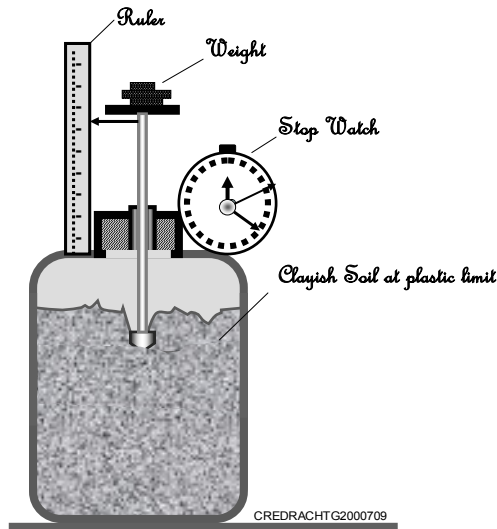

FIGURE-05

- Apparatus: As shown in the figure-05, wetted clayish soil at plastic limit is filled in to the glass utensil. The stand in the apparatus is free to move vertically and an indicator is fixed with it to measure distances of sinking. Also a stop watch is included with the apparatus.

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- **Procedure**:

The stand is loaded by small weights, one by one, until the piston just starts to penetrate in to the soil and that weight is measured.

If the weight of the stand is known the total weight 'M' at the initiation of motion is known. That is the resistance against penetration.

Then the stand is loaded with smaller weights so that the total weight 'm' is lower than 'M' and the sinking with time is measured. On that way readings are recorded for different loads lower than 'M'.

- **Notation :**

m- load + weigh of the stand (g)

M- total weight at the initiation of apparent motion (g)

T- time duration (seconds) –this is fixed for simplicity

L- depth of sinking (cm)

N- frequency of the gravitational wave (strokes/second)

G- acceleration of gravity (cm/s^2)

- **Calculation:**

Work done in sinking against resistance $= MG \times L$

Potential energy drop by sinking $= mG \times L$

The hidden work $MGL - mGL = GL(M - m)$

Gravitational static work done 'Ws' by the weight 'mG' during time 'T', as deduced by the equation-(4),

$$W_s = \frac{mG^2T}{8N}$$

The hidden work is done by the impulsive strokes of the gravitational wave.

i.e

$$GL(M - m) = \frac{mG^2T}{8N}$$

$$L = \frac{GT}{8N} \times \frac{m}{(M - m)}$$

'L' and 'm/(M-m)' in above expression, are the only variables and by the gradient 'C' of the plotted graph the constant, 'GT/8N' is given.

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$$C = \frac{GT}{8N}$$

$$N = \frac{GT}{8C}$$

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2.21 Result:

Frequency of the Gravitational wave of Earth, was found as 10^7 per second, by above experiment carried out on 11th Sep 1993 and it is concluded that, the gravitational wave must be of the range of TV & Radar, in accordance with the Electromagnetic Spectrum.

2.22 Discussion:

It is an engineering practice to drop a heavy weight repeatedly to drive a concrete pile in to hard ground and it would not work if the weight is just put on the top of the pile. The impulsive strokes by the weight dropped under gravity, could make the pile penetrate in to soil little by little.

Similarly the weight above the piston of the stand, in above experiment, applied blows repeatedly (due to the gravitational vibration of matter at a frequency of 10^7 per second) resulting ultimately an apparent penetration in to the soil of which the work done could be measured.

2.3 NATURE OBSERVATIONS ON GRAVITATIONAL STATIC WORK

2.31 Structural failures to be observed after years:-

Structural building components such as; foundations, column footings, beams &walls etc. are cracked, but not just after construction. It takes perhaps years or decades to fail a building completely.

Then who is to be blamed? The Design Engineer or the Constructor? No, the culprit is Gravity who vibrates the structure violently by continues strokes of the Gravitational Wave.

FIGURE-06

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If such structural components are well designed within the safe domain of their load bearing capacities, the Engineer should not be blamed but designers on the whole, have to pay utmost attention on gravity settling of foundations and column footings when they are directly exposed to touched with wet clayish soil.

Whenever water table of the ground comes up, the soil in the subsurface comes to its plastic limit and a plastic work could be expected, under the footing due to the gravitational vibration of the heavy building. The vibration is not seen because it is so infinitely small and the frequency is so high as 10^7 per second and therefore, only the ultimate failures could be observed as cracks after years.

- *Recommendation*

*Therefore it is recommended to apply a sand layer in between the bed soil and structural foundations, as a measure of safety against gravity settling, because sand is elastic enough to sustain the **gravitational vibration** of buildings and it prevent them from sinking down.*

- *Threat of Landslides*

Gravitational Vibration and due Static Work done aggravates landslides in steep earth slopes because of mud formation at bottommost susceptible slip planes under saturated wet conditions. Early detection of disastrous landslides has been very easy with this finding of mud formation in bottommost layers of loaded soil due to 'Gravitational Static Work done'.
(pl refer the publication 'Detection of Landslides', 2007, by the same author)

2.32 The Phenomenon of Mountain Fountain
There are several types of streams to be observed in the nature such as rainwater runoff, seasonal melting glazier draining streams and live streams originated from fountains. Rainwater draining streams are naturally disappeared when surface soil moisture is dried out without rain and the glazier melting too is stopped when winter comes.

But live streams which are initiated from mountain fountains, are not dried out perhaps even in droughts. It could be observed that live streams are always originated at rocky mountain regions and fountains are moreover sprung out considerably at higher altitudes.
The hydrologists calculations for mean stream flows, based on annual rainfall over the catchments area, are correct only for the rainwater draining streams but not accurate for fountain originated live streams because the phenomenon behind is quite different.

Otherwise how could only a particular valley, possesses a river when other valleys with similar catchments in the same climatic region (perhaps the other side of the same mountain) possess no river or stream?

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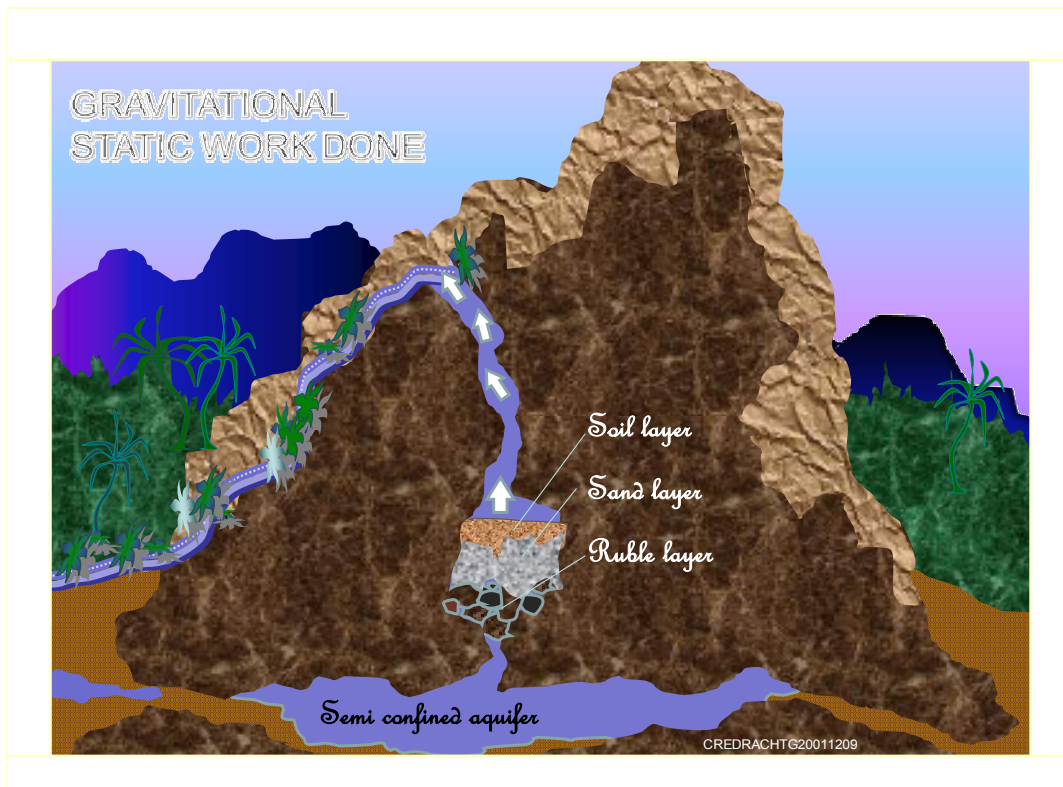*Cyril H Thalpe Gamage*

FIGURE-07

It is obviously due to the static work done of the *Gravitational Vibration* of a huge rocky mountain fragment upon a confined aquifer at the bottom, which creates a natural Gravity Pump where a non return valve is naturally formed as shown in the figure-07. .

The non-return valve is formed where sand and soil layers are deposited upon a heap of rocky particles. The mechanism then is very simple and when water in the confined aquifer is compressed by the vibrating heavy weight above, a flow of water is pumped up gradually through the non-return valve making a fountain at the top.

- ## Artificial Rivers in Future?
This type of live streams which are initiated by mountain fountains, are not dried out even during droughts, as far as water is there in underground aquifers and the same phenomenon can be followed perhaps in future to create artificial rivers.
Freshwater resources in the world are depleting while seawater level rises and therefore the mankind in future will have to build up artificial gravity pumps to lift seawater in to treatment beds for freshwater.

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03. THE THEORY OF GRAVITY DEVIATION

3.1 GRAVITY DEVIATION

3.11 Definition

Influence direction of Gravity is deviated when the Gravity Source is rotating or moving.

3.12 Angle of Gravity Deviation

The angle of inclination at which the influence direction of Gravity is deviated is defined as the angle of Gravity Deviation.
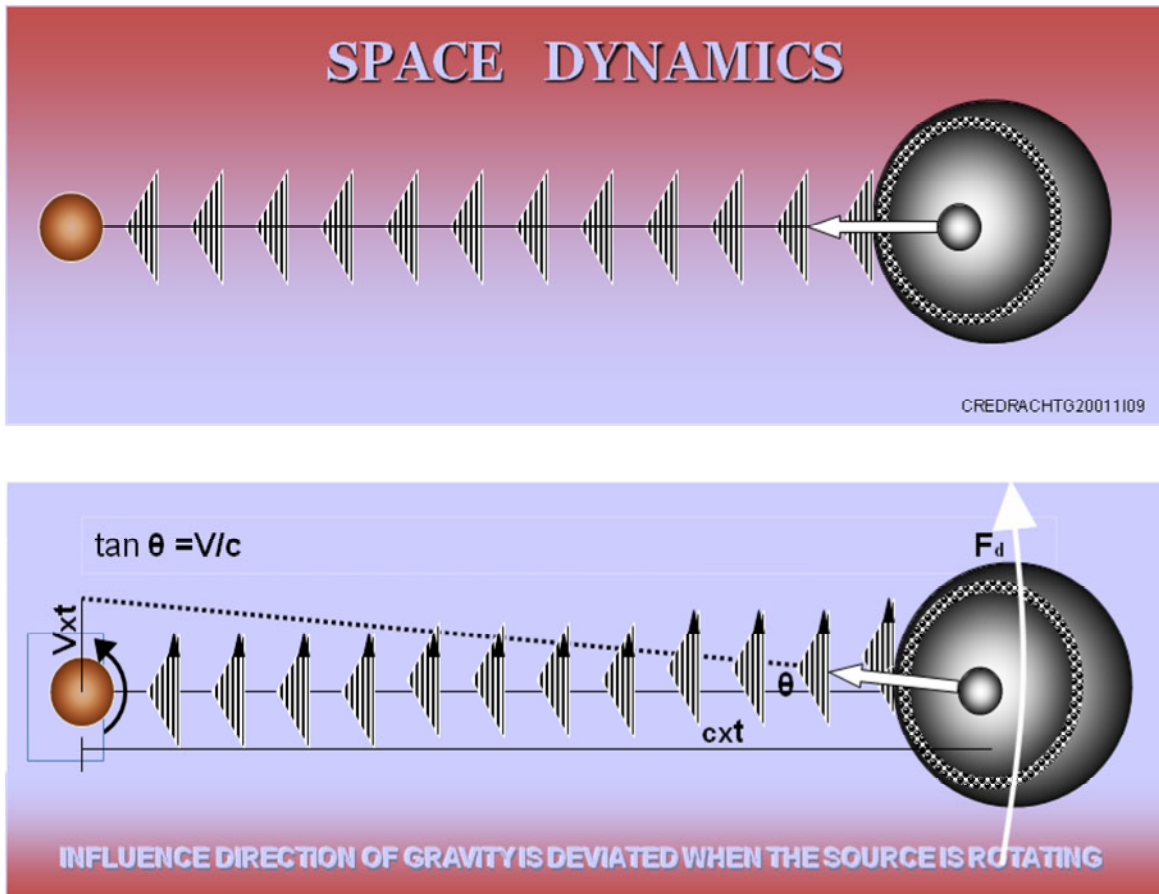

FIGURE-08

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As shown in the figure-08, the gravitational wave is transmitted towards the object through a path deviated due to rotation of the gravity source. The angle of gravity deviation 'θ' can be deduced such as;

tanθ = Distance travelled by the wave on the direction of the rotation
          Distance travelled by the wave to meet the object

= Partial velocity of the wave at the projection x time
   velocity of the gravitational wave x time

= Partial velocity of the wave at the projection
   velocity of light

$$= \frac{V}{c}$$

$$\theta = \tan^{-1}\left[\frac{V}{c}\right]$$ ....(5)
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- **Discussion**

The solar system could not exist unless solar gravity is deviated due to rotation of the Sun.
Planets are driven round the Sun by the lateral component of the deviated gravity, 'G sinθ' or otherwise, all the planets could have been swallowed by Sun long ago.
Therefore as a rule, any non rotating Sun in the space could not posses planets and similarly, non rotating planets could not posses natural Satellites.

- **Recommendations**

1.   Select appropriate orbits for artificial satellites so that component of Earth's deviated gravity is in support of their motion or otherwise they will hit upon the ground some day or other by reducing velocity gradually due to space resistance.
2.   Scientists plan to use gravity of big planets like Jupiter, Saturn etc. to accelerate their spacecrafts but care has to be taken to select the equatorial plane and the rotating direction of the host planet or otherwise the help of gravity deviation would not come. Therefore the spacecraft has to enter in the same direction of the planet rotation as shown in the figure-09 or otherwise it will loose speed and hit upon the planet ultimately.
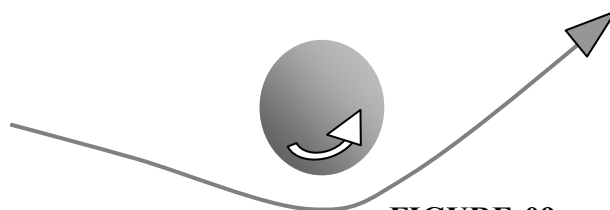

FIGURE-09

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3.13 Lateral Force Component to Revolve round the Gravity Source

Tthe lateral component of deviated gravity upon any object within the gravitational field of a rotating Gravity Source can be expressed as;.

$$F_d = mG \sin \theta$$ …………………………(6)

where 'G' is the acceleration of gravity at the object and 'm' is the mass of the object & 'θ' is the angle of gravity deviation of the Gravity Source.

- ***Conclusion***

Equation-05 shows that angle of gravity deviation 'θ' is independent of the distance from the Gravity Source. But when distance is increased the strength of the Gravitational Wave is decreased and therefore the acceleration of gravity too is decreased. On that way the distant planets are revolving with low velocities and closer planets are revolving at higher velocities because the lateral component of deviated gravity of sun is bigger at the closer vicinity.
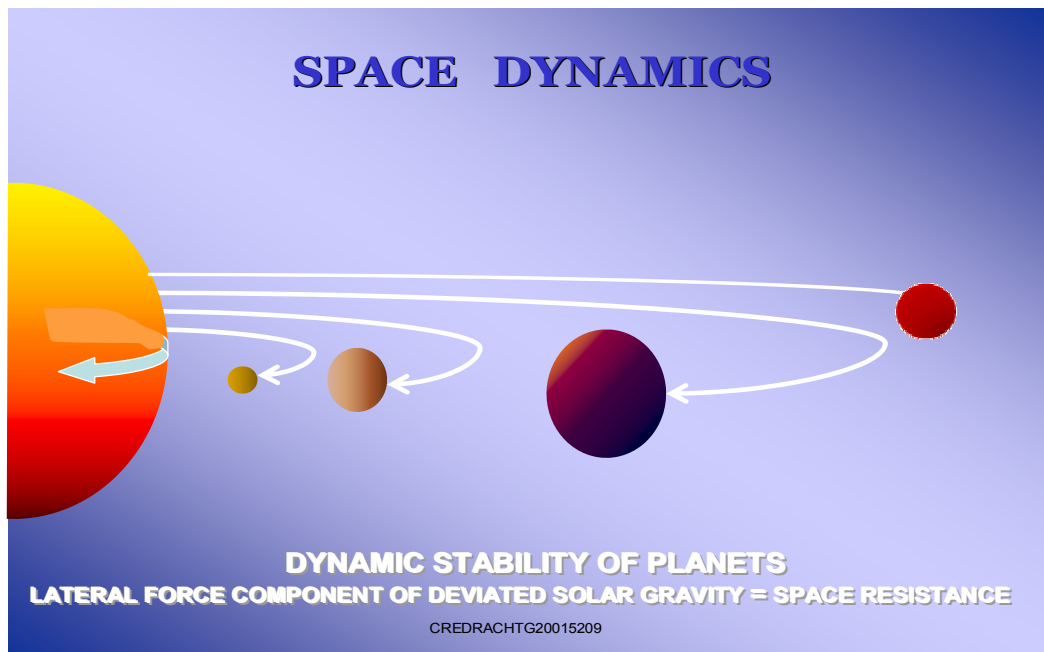
04   GRAVITATIONAL DYNAMICS IN THE SOLAR SYSTEM

SPACE DYNAMICS

DYNAMIC STABILITY OF PLANETS
LATERAL FORCE COMPONENT OF DEVIATED SOLAR GRAVITY = SPACE RESISTANCE
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FIGURE-10

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4.1 DYNAMIC STABILITY OF PLANETS

Planets are revolving round Sun keeping a uniform motion due to the dynamic equilibrium of the forces such as; 1). the force component upon the planet due to the deviated gravity of Sun, in support of the revolution and 2) the 'Space Resistance' upon the planet, in against the motion.

$$F_d = R_s$$

ie.

Therefore space resistance upon the planet is given by, $Rs = m\, G \sin\theta$. Through that relation lots of important physical qualities of a planet can be deduced such as, i.) planet atmosphere, ii) surface roughness and iii) material density of the crust etc. (pl ref Space Dynamics Volume-III for the Equation for Space Resistance upon a planet and verification of the value for density of the space medium, $\rho = 4.773 \times 10^{-4}$ g/cm^3, through that)

4.11 Calculations for Solar Angle of Gravity Deviation

Angle of Solar Gravity Deviation, $\theta = \tan^{-1}[V/c]$ by the equation-(5).

$$\theta = \tan^{-1}\left[\frac{V}{c}\right]$$

Where, V – lateral velocity of the gravitational wave due to rotation of Sun
= (radius of Sun)(angular velocity of sun's rotation)
= $(6.960 \times 10^{10}$cm$)(2.865 \times 10^{-6}$ ra/s$)$
= 1.994×10^5 cm/s;
  c - velocity of light which is also being the critical velocity of the space
      medium and therefore almost equal to the velocity of the gravitational
wave (pl refer .'Space Dynamics-Volume-I for critical velocity of a medium)
= 2.998×10^{10} cm/s;
ie, $\theta = \tan^{-1}(1.994 \times 10^5 / 2.998 \times 10^{10})$
       $\theta = 3.81 \times 10^{-4}$ °
       ============

- *Discussion*
1. This value of θ is constant throughout the solar system and it is same at Mercury and at Pluto as well with no difference. But the force component to revolve the planets, is decreased with increasing distance from the Sun, because strength of the gravitational wave is faded away gradually.
2. Solar Gravity Deviation doesn't support the comets which are not orbiting in the same direction of the Sun's rotation and therefore they must gradually wind their paths which could be very dangerous for other solar members because winding comets or asteroids may hit upon other planets.
3. Angle of Gravity Deviation of Earth also, can be evaluated similarly and it is constant through out it's field. Therefore any asteroid that reaches to be burned in the atmosphere, must be observed a little bit inclined towards the rotating direction of the Earth.

A science is not improved as far as theories remain unchallenged
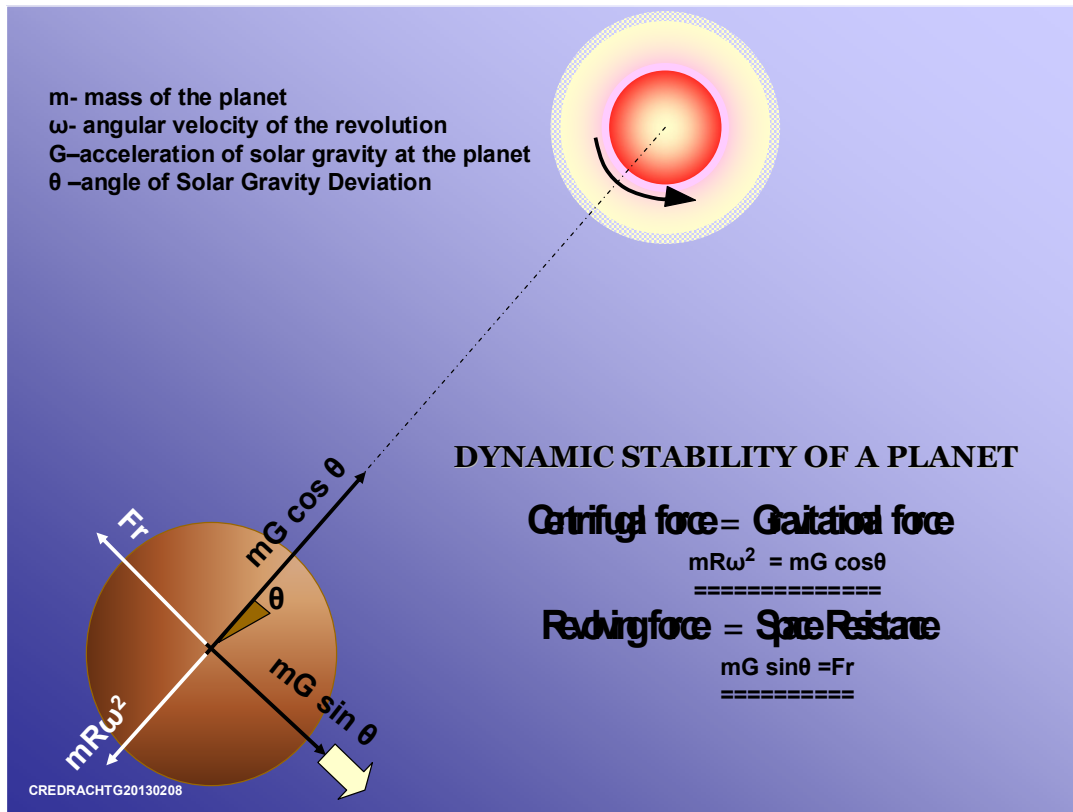*Cyril H Thalpe Gamage*

FIGURE-11

4.12 Typical Calculation for the Force Component on Earth to Revolve

Lateral force component on Earth, due to the 'Solar Gravity Deviation' is given by the equation-(6) such as;

$$Fd = m \, G\sin\theta$$

where 'm' is mass of Earth, $\quad m = 5.980 \times 10^{27}$ g;

$$G = \frac{kM}{d^2}$$

'G' is the Solar Gravity at Earth
'k' is the Newton's gravitational constant $\quad = 6.668 \times 10^{-8}$ cm3/gs^2
'd' is the distant from Earth to Sun $\quad = 1.497 \times 10^{13}$ cm
'M' is the mass of the Sun $\quad = 1.991 \times 10^{33}$ g

ie. $\quad G = (6.668 \times 10^{-8}$ cm3/gs$^2)(1.991 \times 10^{33}$ g $) / (1.497 \times 10^{13}$ cm $)^2$

$$G = 0.592 \text{ cm/s}^2;$$

ie. $\quad Fd = (5.980 \times 10^{27}$ g$)(0.592$ cm/s$^2) \sin(3.81 \times 10^{-4 \, o})$

$$\underline{Fd = 2.354 \times 10^{19} \text{ KN}}$$

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- **Discussion**

1.   Earth is at a dynamic stability in its orbital motion round Sun due to the balance of the two forces such as; the component from solar gravity deviation, 'Fd' =2.354 x 10^{19} KN and the space resistance 'Fr' against motion.

2.   Resistance upon a planet due to friction of the space medium depends on mainly the density of the space medium(ρ = 4.773 x 10^{-4} g/cm^3 – from 'Space Dynamics Volume-I') and surface qualities of the planet such as; roughness, density of the crust materials, nature of the atmosphere, polarization & electromagnetic field behavior and velocity of the motion. (The relation is build in 'Space Dynamics –Volume-III)

3.   In consideration of above explained dynamic equilibrium of the two forces, a lot of important clues of surface qualities of distant planets, could be deduced mathematically and also, some important hints on seasonal monsoonal climatic changes upon a polarized planet could also be deduced.

4.2 THEORY OF 'SOLAR FAMILY PLANE'
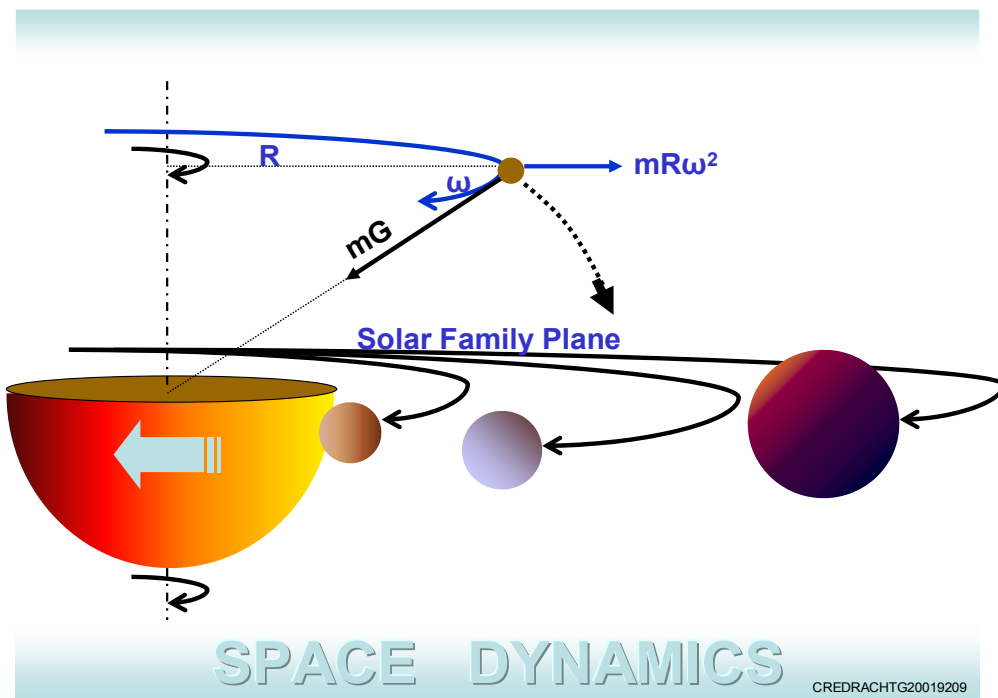### 4.21 Why planets are revolving almost upon a Single Plane?

FIGURE-12

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- ***Definition for the Family Plane***

Planets in their orbital motion round Sun, are undergone a force component of the deviated gravity of Sun, to support for revolving and also to settle them onto a plane named as ecliptic, equatorial plane or 'Solar Family Plane'.

If any alien body is placed in the solar system, it is subjected to the phenomenon of Gravity Deviation of Sun and starts revolving about just like other planets do. In addition to that, it is subjected to a force component, as shown in the figure-12, to be settled onto the same Family Plane.

Therefore in consideration of the resolution of forces on perpendicular plane to the revolving direction (pl see fig-12), the alien body is subjected to two forces such as;

1.   Solar Gravity 'mG', to attract the object towards the center of Sun and,
2.   Centrifugal force '$mR\omega^2$' due to the rotation about the solar axis, under the solar gravity deviation.

Then the resultant of above two forces tends to shift the alien body gradually on to the Family Plane of Sun.

4.22 Theory of Rotation of Orbits

- ***Unstable Orbits***

Elliptical orbits are not stable and they are either being settled onto more stable cyclic orbits or otherwise, they have been winding to end up their carrier motion by winding towards the gravity source.
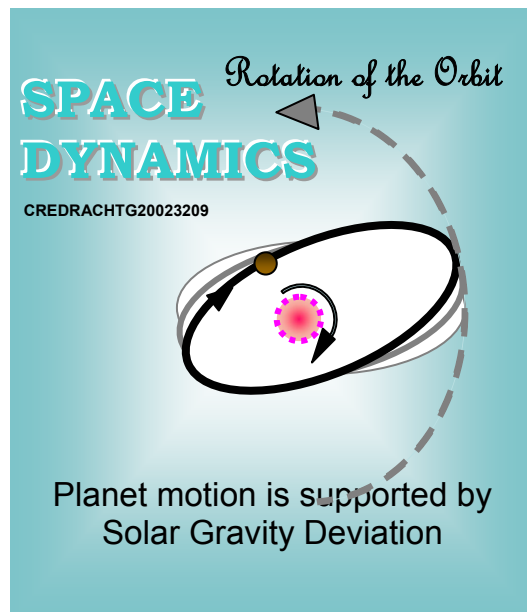
.

FIGURE-13

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- **Dynamic Stability of Orbits**
1.   Stability in Mono-Centric Cyclic Orbits.
Elliptic orbital motion in the solar system is not stable and planets are being shifted gradually towards stability in mono centric cyclic orbits. As shown in the first picture of the figure -13, the motion is accelerated by the intensive solar gravity deviation at the closer stretch (perihelion) and as a result, the orbit itself is rotated very gradually around gravity source. At the same time the elliptical orbit is transferred in to a more cyclic orbit gradually (pl see fig-14). .According to that phenomenon, the planets having more cyclic orbits must be senior to the others in the solar family.

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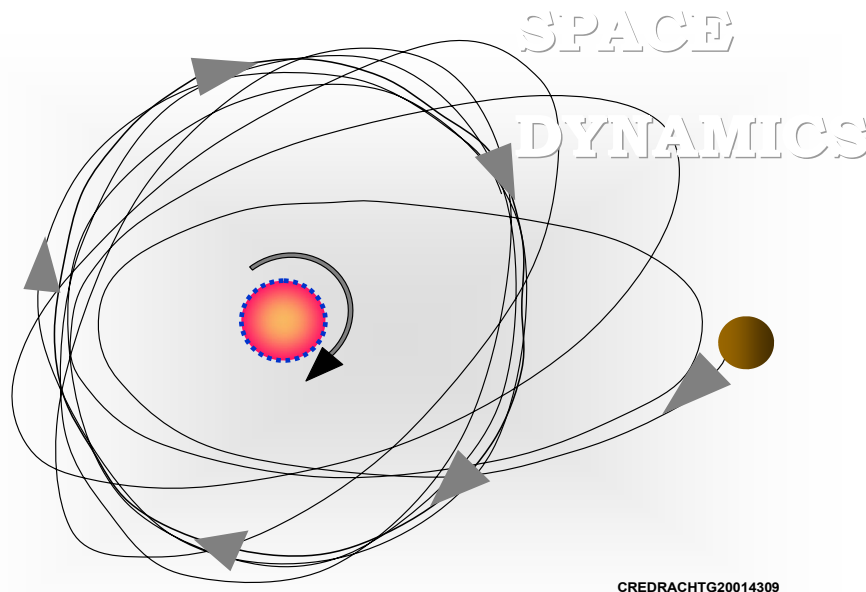
Planetary motion from Un-stability to Stability in the Solar System

FIGURE-14

2.   Danger in Winding of Elliptical Orbits
A comet, asteroid or any other space object, as shown in the 2nd picture of the figure-13, which is keeping a motion in the opposite direction of the Sun's rotation, is very dangerous to other members of the solar system because at each closer visit to Sun it reduces velocity due to buffering action of solar gravity deviation. As a result, the orbit too develops a slow rotation round Sun and at the same time converges within the solar system probably causing big collides ultimately with other planets or the gravity source. (Pl see figure-15).

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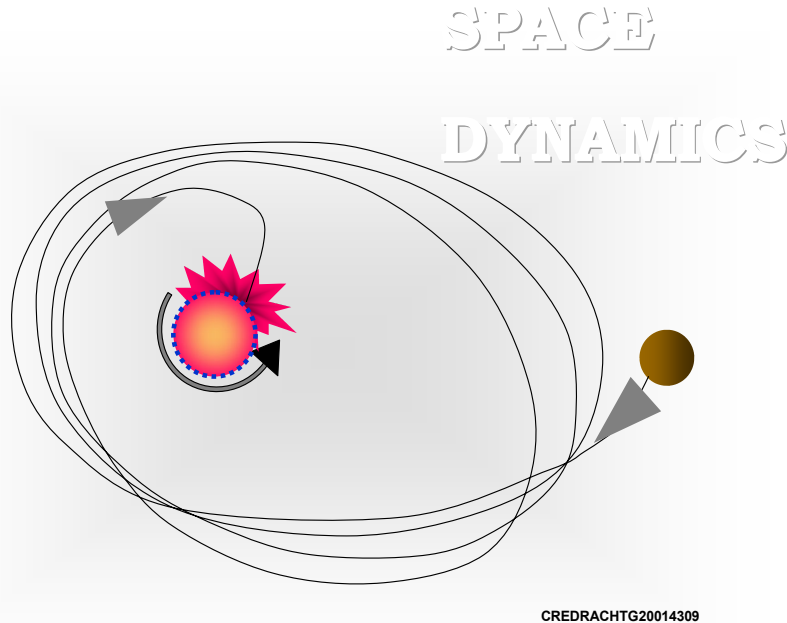
Opposite wise orbiting of **any Asteroid, Comet or Alien**
to end up with a blasting collide

FIGURE-15

4.23 What is the future of Mercury?

Elliptical orbits are not dynamically stable and the planets having highly elliptical orbits are, either being settled to stability or otherwise being winded to be swallowed by Sun. Eccentricities in orbits of Mercury and Pluto are outstanding and it is worth drawing more attention.

•   According to the theory of 'Rotation of Orbits', Mercury is either falling a victim to Sun or otherwise settling in to stability. If it reduces it's velocity at each closer visit to Sun due to the friction of denser flux of solar wind, then the rotation of its orbit must be in the same direction of the Sun's rotation and then it must be winding towards the dead end, .causing another Solar Big Bang.

•   If rotation of the orbit of Mercury (Precession) is in the other way round, then there is no danger and it is certainly being settled in to a more stable cyclic orbit about Sun.

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- Therefore scientists of the field must observe the direction of the gradual rotation of Mercury's orbit and record any changes of its sidereal period in order to forecast the fate of the unfortunate planet and rest of the world because the entire Solar System is going to be reformed whence Mercury fells a victim to Sun. Most probably it could wipe out the great human civilization from the Earth.

4.24 Is Pluto an Alien?
In consideration of the high inclination and eccentricity of Pluto's orbit, there are two probabilities such as;
i.   Pluto, being an alien, who entered in to our solar system, is been settling gradually down onto the solar family.
ii.   Pluto, being projected out far off from the Sun, at a 'Solar Big Bang' long ago , could have been late to settle down onto the family plane because the influence of solar gravity deviation is very low at that far most corner in the solar system.too

- However that can be finalized by the theory of 'Rotation of Orbits' if scientists could observe the direction of the gradual slow rotation of the Pluto's orbit.
- Anyway Pluto is certainly not a danger to the solar system because it is far off from other planets and most probably it is settling down onto the solar family plane and at the same time to a more stable cyclic orbit.

4.25 Natural Satellites
Any rotating planet also possess an equatorial plane onto which natural satellites are settled. . Mechanism behind the phenomenon is again the gravity deviation of a rotating planet. *As a proof of the theory, no natural satellite could be observed in the possession of a non rotating planet*.

4.25 Artificial Satellites
Artificial satellites too are subjected to the same above explained phenomena such as; 1).Gravity Deviation & 2)..Equatorial Plane. The original orbits of artificial satellites must be gradually deviated and speed could be reduced unless the correct direction of motion and orbital paths closer to the equatorial plane are selected. Ill planed satellites can be gradually deviated and hit upon the planet ultimately by loosing speed and original orbits. Besides that, designers should not neglect the important fact that, the free space is resistive against motion.

4.26 Hole in the Ozone Layer?
Not only satellites but even a single air particle, in the atmosphere, must obey the theory of 'Equatorial Plane' and air is thickened towards the equator due to the Gravity Deviation of the rotation of Earth. Therefore polar zones must be naturally exposed to the space with thin atmospheric heights in comparison with the equatorial regions.

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The hole in the ozone layer therefore, could be a discovery for science but could not be a discovery for the nature.. The ozone layer plays an important role of absorbing the nonstop flow of charged particles that come from the space and pass them gradually in to the lower atmospheric layers, being ionized. (The phenomenon is described under the theory of 'Electromagnetic Spherical Vortex' in 'Space Dynamics-Volume-III, where the mechanism of Earth's rotation too is explained)

4.27 Rings of Saturn
If a planet with a thick atmosphere, is rotated at increasing speeds as shown in the figure-16, the dense particles in the atmosphere are gathered on equatorial plane creating a ring ultimately according to the theory of equatorial plane.('Family Plane').
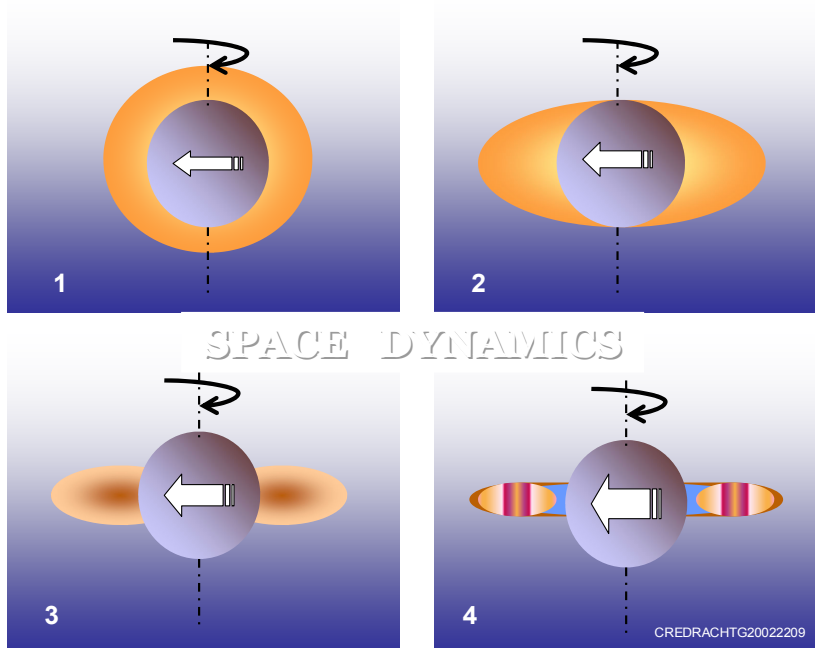

FIGURE-16

Expanded ring is well rounded ultimately due to the self gravity of the cloud. Therefore denser particles are placed in the central region of the ring due to higher self gravity. Material at the far most region must be comparably heavier than that of at the inner end of the ring because centrifugal force upon a heavy particle is bigger than that of a light one. Color difference of layers indicates the difference of materials gathered in the zones.
(Saturn rotates about its axis very speedily completing a round in 10.2 hours.)

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4.3 GRAVITY BASED MOTION

4.31 Possibility to hit upon a Non- Rotating Planet.
It is very easy for asteroids to hit upon a non-rotating planet because there is no supporting force from the planet to rotate it about. The motion of the asteroid depends on its initial velocity 'U' and the distance from the center of the planet to the moving direction of the asteroid (pl see fig-17)
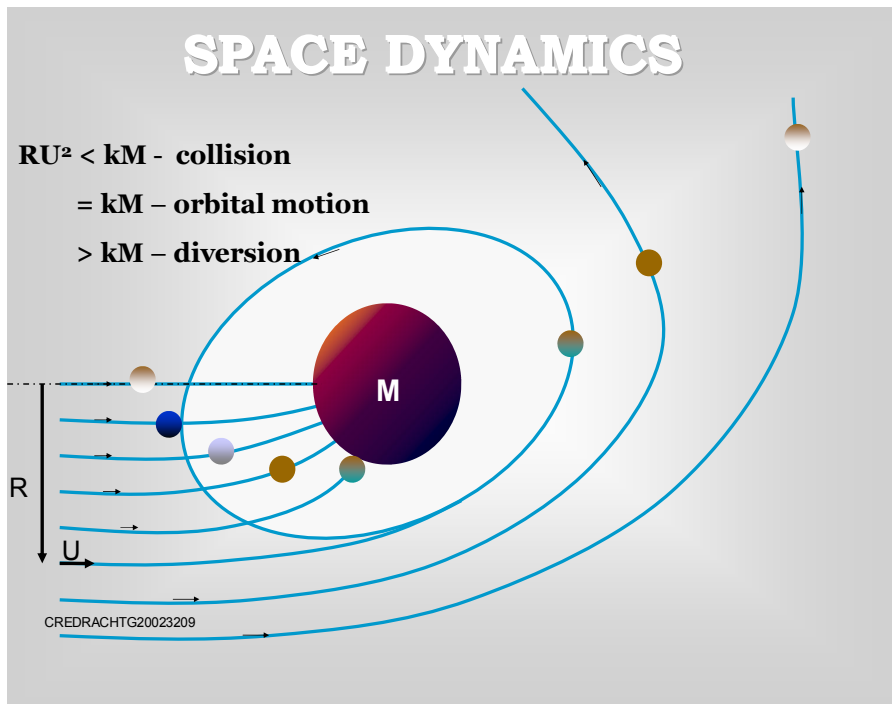

FIGURE-17

- **Condition to full fill for orbital motion around the planet**

The gravitational attraction by the planet 'm$[kM/R^2]$' when the asteroid is moving at the closest vicinity 'R' must be equal to the centrifugal force due to it's velocity 'U' .
   ie

$$m\left[\frac{U^2}{R}\right] = m\left[\frac{kM}{R^2}\right]$$ (where k is the gravitational constant)

$$RU^2 = kM$$
===========

In case, $Ru^2 < kM$ collision with the planet is unavoidable and if it is greater than km, then the asteroid is only diverted away. But there could be no eternal orbiting at all around a non rotating planet because, the velocity is gradually decreased due to space resistance and the asteroid may certainly hit upon the planet ultimately.

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- **Possibilities to hit upon a Rotating Planet.**

There are less possibilities to hit upon a rotating planet because a supporting force is induces in the alien body to rotate due to gravity deviation of the planet.
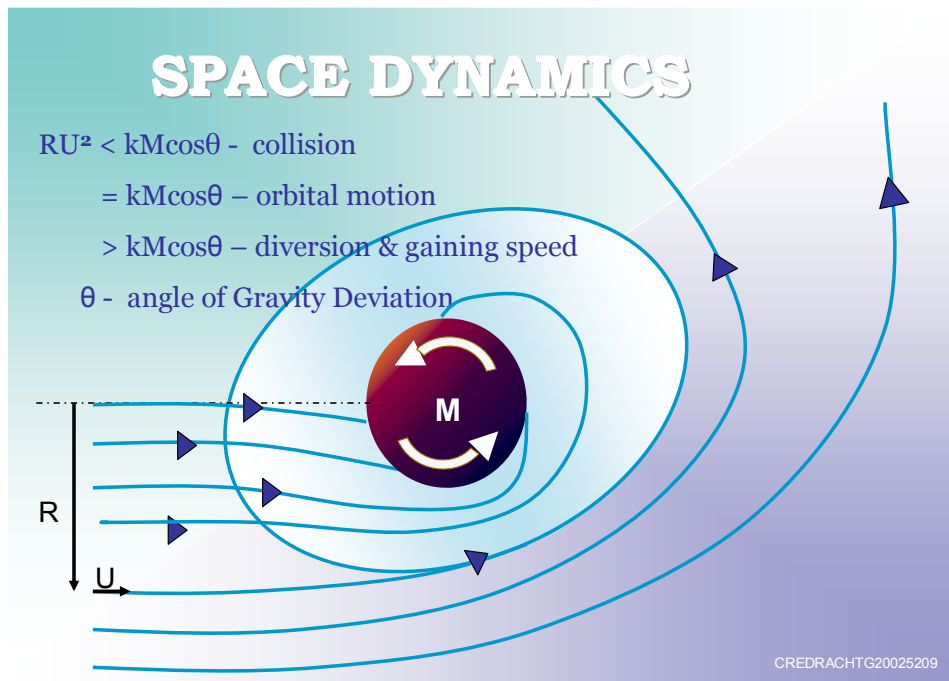

FIGURE-18

- An eternal orbital motion around the planet is assured when the lateral component of gravity deviation is equal to the medium resistance.
- Any alien body which approaches a rotating planet in the correct direction, only can be diverted with an increased velocity or otherwise it will decrease velocity to hit upon the planet..

05 WINNING OF GRAVITY

5.1 SOME CLUES FROM THE PAST
5.11 Beings of non atomic matter?

Human civilization has a far historic legendary background of sky walking of supreme beings like Gods. Spontaneous gravity proof sky walking of Gods or any other spiritual beings could not be explained by so far developed sciences but that is no reason to reject them because sciences have to be developed enough at first to reject something scientifically.

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- **Gravitational Logic**

The gravitational logic against such legendary things is, any being or thing made of atomic mass, is succumbed to the mighty force of Gravity. But there are other two types of matter in the space (as described in 'Space Dynamics Volume-I') such as; 1).Space Medium Matter and 2). Energy Matter. Non of them respect for gravity and if such beings are possibly made of such non atomic matter, they should not be subjected to the influence of Gravity.

- **But why don't we observe them?**

Things are observed by a naked eye, when light rays are reflected by the objects of atomic matter. However it is not the nucleus of an atom which reflects light rays back, but the substantial skin boundary of the atom. Therefore figures of beings, who are made up of non atomic matter (without nucleuses but with a substantial skin boundaries), could be observed perhaps by human eye under special conditions when mind and organs are tuned for that. (pl ref. clause 1.6 of 'Space Dynamics-Volume-I' for the structures of non atomic matter in the space).

5.12 'Sky walk' by Human beings?

A language is a mirror image which reflects the knowledge of the civilization, by whom it is used. According to the dead languages of Asians such as 'Pali', 'Sanskrit' and 'Brahmi scripture', the fact of 'sky walking' by human beings has been said repeatedly and the facts could be supported in several cases such as;

i.   Buddha has visited thrice to Sri Lanka from India (over 2500 years ago) by 'sky walking' and there are lots of archeological findings including stone scripts written in Brahmi to support the relevant events.

ii.   Monk Mahinda, the son of great emperor Asoka of India, brought Buddhism to Sri Lanka and according to archeologically supported history, he has just appeared on a huge rock in the jungle to surprise the king who was then upon a hunting track of a deer for fun.

However, as it is said, the ability of gravity proof sky walking, could be achieved by any human being by a long term practice of mind concentration through meditation. Electro magnetism of human brain has become a modern study field but no answer from the past to explain the exact mechanism how they could win the 'Mighty Force of Gravity'. That could be perhaps because the languages are almost dead by now.

5.2 FUTURE OF WINING GRAVITY

5.21 Electromagnetic Gravity Shields?

If energy flux of the gravitational wave upon a certain area, can be absorbed by some sort of a gravity shield, then a limited gravity free space could be created.

Perhaps the gravitational wave could be stopped, deviated or faded by projection of some sort of an electromagnetic wave of a selected frequency. However any such mechanism or machinery has to consume energy in order to win gravity.

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5.22 Power Generation by Gravity?

Gravitational static work as deduced in equation (4) can be used to generate power if an appropriate mechanism is created to convert wave energy in to electricity. If gravitational vibration could crack down huge structural buildings in to pieces, that energy could have been absorbed by means of a right mechanism to meet our energy demand. Perhaps a multi story building could be able to generate its energy requirement by means of its self weight in future.

5.23 Artificial Gravity Sources?

Artificial gravitational fields can be created perhaps in future to attract things and get heavy works done. The only thing that man has to do is transmitting a strong vibration through the space medium.

5.3   DISCUSSION

Naturally man on Earth is so used to the influence of Gravity that, he could not even think how gravity is formed. Physical impact by Gravity was very well explained by Sir Issac Newton in 17th century and important physical parameters of the phenomenon too were deduced by him. But the mechanism of Gravity remained unexplained for centuries just like how the famous hand rules of Fleming in electromagnetism remained unexplained as yet.
(pl ref 'Space Dynamics-Volume-III' for mechanisms behind the Fleming's hand rules)

The concept of 'Moola Gravity' just mentioned in this second volume of the monograph is to cover a big area of the infinitesimal world of gravity which explains mainly the attraction between inter atomic particles and behavior of the so called Dark Matter.(pl ref Space Dynamics Volume-III)
Any science is naturally overwhelmed by unnecessary 'Complexity' when linking theories are missing and there could not be any difference of 'Physics' either for Microscopic or Macroscopic scale of the world.

END

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