ZERO POINT ENERGY PER STEREO RADIAN AND THE DISTRIBUTION OF GRAVITATIONAL ACCELERATION OF PLANETS THROUGHOUT THE SOLAR SYSTEM. THE ORIGIN AND CAUSE OF GRAVITATION

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Volume Two

Steven L. Basic

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To my Daughter, Adrienna Faith Basic,

and

my Son, Christopher Michael Basic

SYNOPSIS

Zero Point Energy (ZPE) is a subject of high interest in the scientific world. The Author has devoted time and efforts aimed at contribution in understanding and relationship of ZPE and the gravitational acceleration throughout the Solar System. The depth and power of his theoretical method directs some light onto previously unknown concepts. It is the results of Author's mathematical analytical achievement to demonstrate a circular frequency and ZPE's linear frequency and vortex-like simultaneous rotation. He named the particle ZPE-photon, and shows likely advance along a linear trajectory at the speed of light. The incorporeal ZPE waves are present in the entire Universe space at all temperatures. The fact is related to the left-hand side of Louis de Broglie equation.

The Author shows that the analytical magnitudes "g ZPE" gravitational fields and the observed "g" agree with a significant accuracy. The tables list valuable data, substantiation, also the locations of maximums and inflection points found at the distances between observed orbits and the center of the Sun. Therefore, the following conclusion becomes self evident: the intensities of the all surface gravities are dependent upon the angular velocities of all celestial spheres throughout the solar system. Previously studied "Occam razor" now is upgraded to a status of new Scientific Assertion.

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ZERO POINT ENERGY PER STEREO RADIAN AND THE DISTRIBUTION OF GRAVITATIONAL ACCELERATION OF PLANETS THROUGHOUT THE SOLAR SYSTEM. THE ORIGIN AND CAUSE OF GRAVITATION

Volume II Chapter 1

Steven L. Basic

INTRODUCTION

Contemporary fundamental physics define four basic forces of nature as: (1) the gravitational force between mass particles, (2) the electromagnetic force between particles with charge including magnetism, (3) the color force between quarks, and (4) the week nuclear interactions that allow quarks to change their type related to neutron decays into a proton, an electron, and an antineutrino. The Author has devoted the intensity of focus to the gravitational fundamental physics forces that leads to understanding the quantum version of gravity and eventually defining the mass-less quanta of two units of spin called gravitons.

Previously the Author has published Volume One entitled *Unified Theory* (Reference 1). Following are Volume Two Chapters 1, 2, and 3. Specifically, the Volume Two defines a complete and exact mathematical algorithm indicating:

> **That the main Cause of Gravitation is the first main component, or, THE ZERO POINT ENERGY of Albert Einstein and Otto Stern, per 'Stereo Radian', the Zero Point Energy as it is, avoiding its more advanced form, because the Taylors polynomial of the first degree, approximates well all advanced forms. Furthermore, as the initial form had been reported in 'Analen Der Physik', 40:551, 1913, and as re-asserted by the most referable references of the Dean of the University of Leiden, Holland, Professor H. Casimir.**

The EXPERIMENTAL discovery of professors Albert Einstein and Otto Stern of the Zero Point Energy equals to the simple product between the Max Plank constant ' h ', and the frequency ' f ' , divided by the number two.

This phenomenon is a wave, therefore, at this stage, we suppose that this radiant source is located at the corona of the sun and illuminates the entire solar system in radial direction. This radiant energy will be shared with all the planets in proportion of planetary stereo radians.

Zero Point Energy surface gravitational fields are a function of two variables. The main—the first independent variable comprise two terms. The first term is the left hand side of Louis De Broglie equation, or, the mass multiplied by the velocity of light squared, per stereo- radian.

The second term is a mass multiplied by the velocity of light squared, per unit stereo-radian. The second variable's left hand side is also mass multiplied by the velocity of light squared. Hence, from this it follows, all three terms are a mass multiplied by the velocity of light squared.

(2.1) THE FIRST INDEPENDENT VARIABLE

The magnitude of the stereo radian per each planet is given by:

$$Stereo_Radian = \frac{r^2}{R^2}$$

And the first term of the main independent variable will become:

$$The_first_term_of_the_Main_Independent_Varible =$$

$$= (\frac{\hbar * f}{2}) * (\frac{r^2}{R^2})$$

Where:
'h' : is the Max Planck constant
'f' : is the frequency
'r' is the planetary mass outer radius
'R' : is the distance between planetary orbit and center of the Sun

The second term of the main independent variable will be obtained for 'r'='R', that represents a thin mass shell of a planet that is illuminated by Sun's radiation and, simultaneously, from inside the planet by infra-red rays of the hot 'Magma'.

The second term of the main independent variable will be:

$$The_second_term_of_the_Main_Independent_Varible =$$

$$= (\frac{\hbar * f}{2})$$

However, according to the first principle and many referable works, the frequency and the resultant angular velocity are inter-related:

$$f = \frac{\Omega_{TOTAL}}{2*3.14159} __ ALSO_DENOTE_\frac{C_3}{2*3.14159}$$

$\underline{\Omega_{TOTAL}}$ **is the circular frequency of the celestial spheres.**

(by definition and according to the first principle)

$\underline{\Omega = 2*\pi*f}$ **-**

- $\underline{'f'}$ **: is the frequency [Hertz]**

Omega total ' $\underline{\Omega_{TOTAL}}$ **' = scalar, simple, sum of the following two: 'A' and 'B' the componential angular velocities:**

A.) In respect to the center of the sun

B.) In respect to the planetary polar axis

Therefore, the first two terms of the main independent variable will read:

$$A_consequenœ_of_the_ZPE,_or,_Taylor_Polynomial=$$

$$=C_2*(h*\Omega_{TOTAL})*(\frac{r^2}{R^2})+C_3*(h*\Omega_{TOTAL})$$

(2.2) THE COMPONENT OF THE CONSTITUTION – ASSERTION BY MADAME MARIE CURIE AND THE ZERO POINT ENERGY

According to reference 1, and also, this volume, pages 25 to 27, the second component of the Energy of Constitution is given by:

$$m*C^2=-\frac{C^2*C_3}{r^2}=E_{MARIE_CURIE}$$

The above expression asserted by Madame Marie Curie, whose analytical form the Author has found one Century later, can be derived from the following simple reasoning :

1.) **The mass, especially Planetary mass, tends to remain Constant :**

$$m = Cons\tan t$$

2.) This constancy applies, also, to the gravitational mass ("Vis gravitatis"):

$$m_{GRAVITATION} = \frac{r^2 * g}{\gamma} = Cons\tan t$$

$$Hence:$$

$$g^{MARIE_CURIE}_{ZERO_POINT_ENERGY} = \frac{(Cons\tan t) * \gamma}{r^2}$$

$$Where:$$

$$'\gamma': _is_the_Newtonan_Cons\tan t$$

$$of\ _Universal_Gravitation$$

The following right hand side of the expression,

$$g^{MARIE-CURIE}_{ZPE} + C_1 = C_1 + \frac{C_4}{r^2}$$

can be evaluated with the planetary Jupiter and Earth data boundary conditions, for C1 and C4.

This evaluation leads toward establishing a negative sign for the constant number '4', and rather imperfect magnitudes of thus calculated accelerations without inclusions of the Main independent variables of Albert Einstein and Otto Stern. Therefore, the following expression for the surface gravitational fields, as a function of two independent variables, will be analyzed:

$$g_{ZPE} = C_1 + C_2 * (h * \Omega_{TOTAL}) * (\frac{r^2}{R^2}) + C_3 * \Omega_{TOTAL} + \frac{C4}{r^2}$$

It may be of some interest to note:

since $(\frac{\hbar}{2})$ **term is a Constant , and also,** (C_2) **is the second Constant, mutual product between two constants is the third Constant** (C_{2_2})**.**

The above reasoning excludes necessity to define 'h' in a particular system of measurements, as Metric, or Imperial. The last term is an integral component of the second term;

its physical meaning is the Zero Point Energy of the visible light photons emitted from the sun in a radial direction, at a Constant radiant pressure, also per 'Stereo Radian". The is function will read,

$$g_{ZPE} = C_1 + C_{2_2} * (\Omega_{TOTAL}) * (\frac{r^2}{R^2}) + C_3 * \Omega_{TOTAL} + \frac{C_4}{r^2} + C_5 * (\frac{r}{R})^2$$

The Astrophysical Data in Table T1 list all the data necessary for an independent and perhaps impartial repetition of this analysis. For the same reason, page No. 12, lists all the constants of integration.

Astrophysical Data **Table T1**

No	1	2	3	4
	Planet	**Ω Omega (total) [rad/second]**	**Planetary Radius In millions of Meters (*10^6)**	**Radius of the Orbit around the Sun Meters (*10^11)**
1	**Mercury**	**2.06527 Exp $^{-6}$**	**2.34**	**0.579**
2	**Venus**	**3.4299 Exp $^{-8}$**	**6.26**	**1.08**
3	**Earth**	**7.312013 Exp $^{-5}$**	**6.37**	**1.49**
4	**Mars**	**7.098786 Exp $^{-5}$**	**3.32**	**2.28**
5	**Jupiter**	**1.773567 Exp $^{-4}$**	**69.8**	**7.78**
6	**Saturn**	**1.705567 Exp^{-4}**	**59.2**	**14.3**
7	**Uranus**	**1.613623 Exp^{-4}**	**23.7**	**28.7**
8	**Neptune**	**1.194612 Exp $^{-4}$**	**22.4**	**45**
9	**Pluto**	**1.138180 Exp $^{-5}$**	**3**	**59.1**

The input data are the boundary condition constants.

Astrophysical Data Table T2

	5	6
	$g_{ZPE} = C_1 + C_{2_2} * \Omega_{TOTAL} * \frac{r^2}{R^2} + C_3 * \Omega_{TOTAL} + \frac{C_4}{r^2} + C_5 * (\frac{r}{R})^2$ **This 'EXCEL' analysis (from Venus to Pluto) [m/second ^2]**	**Observed surface gravities g [m/second ^2]**
Mercury	**4.205 (Refer to a Note by Author Concerning the Solar system at Complete Rest, Note dated August 17, 1981)**	3.728
Venus	**8.86**	8.86
Earth	**9.81**	**9.81**
Mars	**4.68**	**3.727**
Jupiter	**25.9**	**25.928**
Saturn	**7.96**	**11.369**
Uranus	**7.86**	**10.89**
Neptune	**8.81**	11.87
Pluto	**4.76**	4.218

In Table T2 please compare columns 5 and 6.

The constants of integration are:

$$C_1 = +11.931096$$

$$C_{2_2} = +1.54933*10^{13}$$

$$C_3 = -25410.53341$$

$$C_4 = -6.15273*10^{13}$$

$$C_5 = -4475265429$$

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Volume II Chapter 2

Steven L. Basic

(2.3) A DESCRIPTION AND COMPONENTS OF THE ZERO POINT ENERGY VARIANCE

Introduction

At the beginning of the Twentieth century a prominent research Scientist and philosopher Nikola Tesla has determined that: '… a Rotation and a Natural Phenomenon of electricity are related as a Cause and Consequence…"

A parallel mirror image assertion is that: '…a Rotation and the surface gravities of celestial spheres throughout the entire solar system—planets—are related as a Cause and Consequence…" has been postulated one century

later, by the author of this Second Volume, and the Unified Theory by Steve L Basic. A synthesis of the both assertions lead toward a conclusion that the surface gravities of celestial spheres—planets—are of electro—magnetic nature.

Since the Zero Point Energy of Albert Einstein and Otto Stern, is a WAVE, square root the first postulate of author, refer to this volume 2, is also a WAVE that has been found to be congruent to the planetary surface gravitation 'g'. By multiplying 'g' with any mass 'm' an expression for the Eternal weight will be obtained. When this weight is multiplied by the square of an 'extent':

('r*r), in light of the Reference 1, page number 65, the fourth line from above, then the variance at the left hand side agrees with the square of amplitude 'r' multiplier of any wave energy, per Reference No 3, page 75. Physical meaning of the left hand side as a product between the eternal weight 'W' and the square of an extent 'r*r' is the Zero Point Energy, whose previously unknown transcendental function at the right hand side has the following variables:

'`W': is the weight [kg]

'r*r": is the square of the 'extent' [meters square]

'N': is the number of relative rotation stages [dimensionless]

‘A’: is the amplitude of the oscillating mass wave [meters]

In light of the second parallel assertion, the Second ‘m*C square’ has been

found, that was hidden by nature, within the first, existing ‘m*C square’.

The times of a single, complete revolution around the sun in years (Smithsonian

Tables) of all the planets are simply proportional to an ascending Fibonacci sequence.

Since the Fibonacci sequence has golden proportions, the solar system is also of Golden Proportion. Reference 1 (page 22)

Please see Table 3 on the next page.

Table 3 (Please compare the magnitudes listed in column (12) and (10)

(1)	(9)	(10)	(11)	(12)	(13)	(14)
Planet	$T_{OBSERVED}$ [sec*onds*]. _ *or the _ time _ required _ for _ one* sin *gle _ complete revolution*	$\frac{T_{OBSERVED}}{4{,}324{,}221}$ **(4,324,221: is a common denominator of the column (9)**	r_A	**Fibonacci Sequence** $\frac{\phi^{r_A} - (-\frac{1}{\phi})^{r_A}}{\phi + \frac{1}{\phi}}$	(12)*(8)	(11)+(7)
Mercury	**7,600,000**	**1.7575**	**3**	**2**	**3194**	**20**
			4	**3**	**2961**	**20**
Venus	**19,400,000**	**4.48635**	**5**	**5**	**3050**	**20**
Earth	**31,600,000**	**7.3078**	**6**	**8**	**3016**	**20**
Mars	**58,400,000**	**13.3737**	**7**	**13**	**3029**	**20**
			8	**21**	**3024**	**20**
Asteroids			**9**	**34**	**3026**	**20**
			10	**55**	**3025**	**20**
Jupiter	**374,000,000**	**86.4895**	**11**	**89**	**2937**	**20**
			12	**144**	**3024**	**20**
Saturn	**930,000000**	**215.489**	**13**	**233**	**3029**	**20**
			14	**377**	**3016**	**20**
Uranus	**2666,000,000**	**615.139**	**15**	**610**	**3015**	**20**
Neptune	**5200,000,000**	**1202.03**	**16**	**987**	**2961**	**20**
Pluto	**7820,000,000**	**1808.40**	**17**	**1597**	**3194**	**20**

Where: ϕ=1.6180339…is the Golden Proportion ('Sectio Auri')

Furthermore, the product between the angular velocities of the mass points (planets) revolving around a central mass (the sun), and the logarithm "naturalis" of the angular velocities are a descending Fibonacci sequence (Reference No. 1, page No 20.)

Therefore, the product between both Fibonacci sequences is equal to the product of the energy and time (Professor Niels Bohr, Reference 28),

this remains constant throughout the visible universe.

Reference No. 1 unifies the following two fundamental theories: The first theory is the historic Theory of Relativity of professor Albert Einstein, and the second theory is a contemporary Quantum Theory of professor Max Planck (Reference 8, and *Unified Theory* Equations 29 to 31, Page 18). This unification postulates a previously unknown relationship between the Energy of Constitution of Matter and the Frequency of any wave.

(2.4) THE MAIN (THE FIRST) POSTULATE:

$$E_{CONSTITUTION} = C^2 * \sqrt{h * f}$$

THE ENERGY OF CONSTITUTION ' E ', BEING THE DIFFERENCE BETWEEN KINETIC AND POTENTIAL ENERGIES, EQUALS TO THE PRODUCT BETWEEN THE VELOCITIES OF LIGHT PROPAGATION IN OUTER SPACE-- SQUARED, AND THE SQUARE ROOT OF THE PRODUCT BETWEENTHE MAX PLANCK CONSTANT ' h ' AND THE RESULTANT FREQUENCY OF A MULTI- WAVE ' f ' (Hertz).

According to the most referable references (Dean of the University of Leiden, Holland, professor H. Casimir)) the EXPERIMENTAL discovery of Professors Albert Einstein and Otto Stern of the Zero Point Energy that has been reported in'Analen Der Physik, 40:551, 1913', equals to the simple product between the Max Plank constant ' h ', and the frequency ' f ' , divided by the number two.

NOTE: The definition 2.2.) is located under the Square Root Symbol of the definition 2.1.).

Therefore, the EXPERIMENTAL definition 2.2. reflects a typical Taylor's Polynomial of the First Degree relative to the definition 2.1.:

$$E_{CONSTITUTION} = C^2 * \sqrt{2 * (\frac{\hbar * f}{2})}$$

Or:

$$E_{CONSTITUTION} = C^2 * \sqrt{2 * (E^{ZPE}_{EISTEIN_STERN})}$$

(2.5) THE ZERO POINT ENEGY AND THE FREQUENCY DIFFERENCES

If the Zero Point Energy of Albert Einstein and Otto Stern, the State of No. 2 is denoted by =‘h*f2/2’ and the State No.1 =’h*f1/2’, then the difference of the energy of Constitution 1.) reads,

$$(E_2 - E_1) = \Delta E_{CONSTITUTION} = C^2 * \sqrt{\hbar * (f_2 - f_1)}$$

Or

$$\Delta E_{CONSTITUTION} = C^2 * \sqrt{\hbar * \Delta f}$$

Hence

The “Frequency difference” of the energy of Constitution ‘E’, has been found to be congruent to the “Mass difference” of the rest mass, or, of the ‘(dm)* C^2 **‘. This linkage served as a condition for a simultaneous development of the new causal relation with the Copenhagen interpretation of the “Quantum Theory."**

(2.6) ASTROPHYSICAL SIGNIFCANCE OF THE HUBBLE'S DISCOVERY AND THE COPEHAGEN INTERPRETATION OF THE QUANTUM THEORY OF NIELS BOHR AND THE UNCERTAINTY PRINCIPLE OF WERNER VON HEISENBERG

When the Law of Hubble was discovered in twenties of the twentieth century by professor Hubble, the leading scientific advisor of the Pope and professor Albert Einstein have visited Hubble's observatory.

When the Uncertainty-like Principle of Werner Von Heisenberg for rotating mass-like events of Heavenly Spheres, (Ref. No 1, Page No 115, right hand side Quadrant, below):

$$(J*\Omega)*\frac{2*\pi}{\Omega}=\hbar=Const_1$$

is simply multiplied by the relationship of Hubble,

$$(\Omega)_{LEFT_HAND_SIDE-CO-FACTOR}=H_0=(Const_2)_{RIGT_HAND_SIDE_COFACTOR}$$

It is interesting to note, Professor Hubble never claimed that the recession is radial exclusively, for example an observed spiral trajectory with nearly the same angle of the velocity vector, would be possible, then, the Copenhagen Interpretation of the Quantum Theory of Niels Bohr will be obtained:

$$(J*\Omega)^2*\frac{2*\pi}{\Omega}=\hbar*H_0=Const_3$$

If the first state of rotation is denoted as $(J_1 * \Omega_1)$ **; the second state of rotation** $(J_2 * \Omega_2)$ **; and**

$T_2 = \frac{2*\pi}{\Omega_2}$, $T_1 = \frac{2*\pi}{\Omega_1}$ **then Niels Bohr relationship reads:**

$$(J_2 * \Omega_2 - J_1 * \Omega_1)^2 * (\frac{2*\pi}{\Omega_2} - \frac{2*\pi}{\Omega_1}) = \hbar * H_0 = Const_3$$

$$\Delta(J * \Omega)^2 * (\Delta T) = \hbar * H_0 = Const_3$$

And the Uncertainty Principle of Werner Von Heisenberg for rotating mass-like events of Heavenly Spheres reads,

$$\Delta(J * \Omega) * \Delta T = \hbar = Const_1$$

This result confirms an Astrophysical significance of Hubble, Niels Bohr and Werner Von Heisenberg relationships in light of an initial Werner Von Heisenberg--like analytical variance (Ref No 1, Page No 115, right hand side quadrant below.) (Professor Niels Bohr, Reference 28 of the Ref. 1).

(2.7) THE FIRST EXPLANATORY NOTE

Recently published Transcriptional Monograph shows that THE ZERO POINT ENERGY of Albert Einstein and Otto Stern is in CAUSAL and EXACT relation with the energy famously asserted by Madam Marie Curie, reflecting the observed rotation of Celestial Spheres throughout the entire Solar system.

The fundamentals of THE ZERO POINT ENERGY (ZPE), are based on EXPERIMENTAL discovery of professor Albert Einstein and Otto Stern as reported in 'Analen Der Physik', 40:551, 1913. The Einstein—Stern findings state that THE ZERO POINT ENERY equals to the simple product between the Max Plank constant 'h', and the frequency of the ZPE wave 'f', divided by number two.

Many reputable sources confirm Einstein—Stern discovery, including the Dean of the University of Leiden, Holland, Professor H. Casimir, Wikipedia, and more. It is well known, the frequency of any wave 'f' according to the first principles equal 2*(3.14159…)*f = (Angular velocity 'Omega' of a corporeal, or, a Complex Rotation).

This fundamental relationship can be found, also, within principal works of Lev Davidovich Landau.

In continuation, by replacing the frequency 'f' with the Angular Velocity 'Omega' because of this fundamental proportionality, into the expression for the ZERO POINT ENERGY of Albert Einstein--Otto Stern and further more and equating thus obtained variance for 'ZPE' to the Energy of Madam Marie Curie (that is: the second 'm*C square = equals = to a constant divided by the square of an extent, or, the distance between two points in space squared), constancy (invariance) of the AREAL VELOCITY will be obtained. The AREAL VELOCITY equals to a simple 'scalar' product between the tangential velocity on its orbit (of a Celestial Sphere) and the distance to the center of rotation (Sun center).

It is realistic to ask a question: IN NATURE are there Masses that rotate in SPACE with a constant AREAL VELOCITIES and why?

YES, there are: THESE MASSES ARE CELESTIAL SPHERES (PLANETS) throughout the entire Solar System, or The Second Law of Celestial Mechanics of Johannes Kepler.

PRIMER ON THE SUMMARY OF CONCLUSIONS

This EXPLANATORY NOTE confirms exactness of the 'ZPE' of Professor Albert Einstein—Otto Stern, the Second 'm*C squared' as asserted by Madam Marie Curie and the Second Keplers Law of Celestial Mechanics.

Madam Marie Curie famously asserted that the energy may depend, also, upon an 'extent' being the distance between two points in space. It appears that this second 'm*C square' is proportional to a constant divided by the square of the 'extent'.

According to the history of science and technology, the first, or, initial expression 'm*C square' has been discovered at the beginning of twentieth Century by Professor Albert Einstein. Many principal nations, the United States, Russia, China, France and others have built, with greatest possible e efforts, their thermonuclear umbrellas, using the first, or initial 'm*C square' of professor Albert Einstein. Therefore it would be advisable to prove mathematically whether or not the second 'm*C square', famously asserted by Madam Marie Curie, DOES EXIST in NATURE.

On the first page, the right hand side a function under square root was found to be equal to the Zero Point Energy for the all planets throughout the entire solar system. It would be mathematically exact to replace the expression for the Zero Point Energy with a constant divided by square of a radial extent 'r ', by taking square root of the energy of Marie Curie, the energy of constitution becomes proportional to a constant divided by the extent to the first degree, and because, according to theoretical mechanics, the first,

derivative of the energy is equal to a Force—it is possible to understand this Force as Newtonian. Refer to the realm of the exploration of space. Both 'm*C square's' are exact—NOT MUTUALLY exclusive--nor in any way in contradiction.

This monograph is in support of the existence of a corporeal, parallel energy, that is additional to the first $(E = m*C^2)_1$ **energy of Professor Albert Einstein, where 'E' is the energy ; 'm' is the mass and 'C' is the velocity of light in outer Space. The second expression for '** $(E = m*C^2)_2$ **' is inversely proportional to the square of an 'extent'. The 'extent' is the distance between two points in Space.**

To quote Marie Curie who famously stated,

"EVEN WHEN NATURE OF SPACE BECOMES BETTER KNOWN, THE CAUSE OR REALITY WILL REMAIN A MYSTERY AND THE PHENOMENA DEPENDENT UPON AN EXTENT WILL, MOST LIKELY, ALWAYS PRESENT ITSELF TO US AS A PROFOUND AND WONDERFUL ENIGMA".

However, a transcriptional monograph Ref. No. 1, that had been published at the beginning of twenty first century, defines the Second, additional finding:

$(E = m*C^2)_2$ **that does NOT exclude the first initial:**

$(E = m*C^2)_1$ **ONLY incorporates the energy that has been asserted, at the end of ninetieth century, by Marie Curie:**

$$E_{MARIE-CURIE} = (m*C^2)_2 = -\frac{C^2 * C_3}{r^2}$$

where: 'r' is the 'extent', and C_1 is the constant of integration.

The best way of an exact proof of the existence of this corporeal, parallel energy, would be a mathematical comparison between the known

$(E = m*C^2)_1$

$E_1 = m_1 * C^2$

and

$$E_2 = m_2 * C^2 = -\frac{C^2 * C_3}{r^2} = E_{MARIE_CURIE}$$

As their difference

$$(E_1 - E_2) = m_1 * C^2 - m_2 * C^2 = \Delta m * C^2 = RIGT\,HAND_SIDE =$$

$$= m_1 * C^2 - (-\frac{C^2 * C_3}{r^2})$$

By taking $'m_1 * C^2'$ **of the right hand side in front of the parentheses, the right hand side becomes:**

$$m_1 * C^2 (1 + \frac{C_3}{m_1 * r^2})$$

However, surprisingly, in light of the Transcriptional Monograph, page No. 115, (Reference 1) for any value of a variable 'm':

$$\frac{C_3}{m * r^2} \equiv 1$$

Hence:

$$(\Delta m) * C^2 = 2 * m * C^2$$

The left hand side of this equation has been extensively explored with the experimental works since beginning of the Twentieth century, also, this is the case with the theory and the right hand side.

What was NOT known that the complimentary negative energy of Madam Marie Curie:

$(-\frac{C^2 * C_3}{r^2})$ **is an integral component of corporeality:**

$(\Delta m) * C^2$

(2.8) SOME REMARKS CONCERNING THE EXTENT OF AN ASSERTED 'NON—NUCLEAR' FISSION OF ELECTRONIC SHELL DURING THE RESONANCE AND ALTERNATING RADIATION

PRESSURE INTERRUPTIONS

The atomic radius of the electrolytic Aluminum is:

$$r_{ALUMINUOM}^{OUTER} = 0.149*10^{-9}\, meters$$

One half of this radius, or, midpoint of the electronic shell (cloud)

$$r_{ALUMINUOM}^{MEAN} = 7.155*10^{-11}\, meters$$

Refer to the 'Elements of materials science and engineering' Van Vlack,

Addison Wesley Publishing Company, Page No. 54 (1980).

The second, additional, component of the rest energy $(E = m*C^2)_2$

$$(E = \frac{C^2 * \hbar}{r^2})_2$$

At moderate velocities and far from the nucleus, in light of Reference 1, Page 115, where 'C' is the velocity of light in outer space;

$C = 2.9979*10^8 \frac{m}{\sec}$ **and**

$\hbar = 6.7539*10^{--35}\, Kg*m*\sec(in_'MKS'_system)$

Refer to the 'The fundamental Atomic constants' by J.H. Sanders, Clarendon Press, Oxford, England, Page No. 79.

'r': is the location of an electron within the shell.

(2.9) UNIT CASE

In this particular example it would be reasonable to assume, that one single electron will be moved from the midpoint of Aluminum shell, or subjected to 'fission', towards an infinite distance 'r' and thus become a 'free' electron, in one second of time:

$$(E = \frac{C^2 * \hbar}{r^2} = \frac{8.987*10^{16} * 6.7539*10^{--35}}{(7.155*10^{-11})^2})_2$$

$E_2 = 1185_\frac{Kg*m}{\sec}$

$CONVERTING_TO_'HP'(HORSEPOWER)$

$E_2 = 15.808_HP$

$AND_INTO_KILOWATTS$

$E_2 = 11.539_KILOWATT$

This amount of FREE power (11.539 Kilowatt) agrees with very many published experiments. However, this power may be somewhat greater or smaller depending upon the efficiency and the type of the interrupter design.

Since a moving charge (rapid jumps of electrons) across a spark gap that is subjected to a high voltage AC, generates an electromagnetic wave (which may or may not be heterodyning with other waves) causing a removal of electrons by radiation pressure, may well be simplest and perhaps the first, one hundred years known 'NON-nuclear' fission of Atomic electron shell.

(2.10) THE MAIN (THE FIRST) ASSERTION Per Unified Theory,

"SUN'S CORONA OF TWO MILLION VOLTS D.C., AMPLIFIES THE ZERO POINT ENERGY PHOTONS"

A proof of this assertion is reflected on page 62 of the Unified Theory, (Reference 1, page 62), on page 62, ABSORBED ENERGIES BY ALL THE PLANETS OF THE SOLAR SYSTEM,, and the Author's Table T2.
This table 'T2' is an 'Occam's razor', or, simple proportionality, without any constants. The multiplier 'A' that multiplies column '6' is equal=73,569,090. (dimensionless) . In the column 8, observed surface accelerations of all the Planets are shown.

From the Table T2, next page) and the page No 93 of Ref No1,, entitled 'The solar system of Albert Einstein and Otto Stern, it is possible to assert: 'THE SURFACE GRAVITIES OF PLANETS AND ROTATION ARE RELATED AS A CAUSE and CONSEQUENCE. "— per this Volume 2 and the Reference No 1.

Table T 2

No	5	6	7	8
		$E_C = C^2 * \sqrt{\frac{6.752398 Exp(-35)}{2*\pi}} * \frac{r}{R} * \sqrt{\Omega_{TOTAL}}$	'6' *A This analysis 'Ec'	Observed
1	Mercury	1.71Exp-8		
2	Venus	3.17Exp-9		
3	Earth	1.15Exp-7	8.765	9.81
4	Mars	3.62Exp-8	2.813	3.727
5	Jupiter	3.52Exp-7	25.927	25.928
6	Saturn	1.57Exp-7	11.712	11.369
7	Uranus	3.09EXP-8	2.276	10.89
8	Neptune	1.80Exp-8		
9	Pluto	5.05Exp-10		

(2.11) SOME REMARKS CONCERNING THE DISTRIBUTION OF ETERNAL WEIGHTS OF CELESTIAL SPHERES THROUGHOUT THE ENTIRE SOLAR SYSTEM

In accordance with reference No. 1, and Author's monograph presented on July 7, 2011, at the Nikola Tesla Science Foundation, Philadelphia, the Mass Moment of Inertia Solution of an Euler—LaGrange differential equation, reads,

$$J = J_{NEWTON} * (\frac{C_1}{\Omega} + \frac{C_2 * \ln(\Omega)}{\Omega} + C_3 + \frac{C_4}{\Omega^2}) \quad \text{.....[1]}$$

Where:

' J **' : is the Mass Moment of Inertia**

' J_{NEWTON} **' : is the Newtonian Mass Moment of Inertia**

$$= m_I * r^2$$

' m_I **' : is the inertial mass ("Vis Insita").**

' R **' : is the orbital radius relative to a center of rotation.**

' $\Omega = \frac{V}{r}$ **' : is the angular velocity.**

' V **' : is the tangential velocity of a revolving mass.**

' $C_{1,} _ C_2 _ C_3 _ C_4$ **' : are constants of integration.**

Since: $J_{NEWTON} = m_I * r^2 = \frac{m_i * r^2}{\gamma} * \frac{\gamma * g}{g} = \frac{m_I * m_G * \gamma}{g}$ **....[2]**

Where: ' $m_G = \frac{r^2 * g}{\gamma}$ **' : is the Gravitational mass ("Vis Gravitatis"].**

' γ **' : is the Newton's constant of Universal Gravitation.**

' g **' : are the surface gravities of Planets**

Furthermore, Ref. 1: $m_I * m_g = \hbar * f$ **…….[3]**

Where:

'h' : is the constant of Max Planck

'f' is the frequency

From page No. 115, Ref. 1, and from Page No. 115.5 of this Note:

J = Constant …….[4]

Substituting equations [2] , [3], and [4] into the equation [1], the equation No.1 will read,

$$J = \frac{\hbar * f * \gamma}{g} * (\frac{C_1}{\Omega} + \frac{C_2 * \ln(\Omega)}{\Omega} + C_3 + \frac{C_4}{\Omega^2})$$ **…….[5]**

However, in light of reference No. 1 and No. 36 and the first principles:

$$\Omega = 2 * \pi * f$$

……..[6]

Substituting the relationship No. 6 into the equation [5]:

Equation No. [5] is valid for all values of 'J' including 'J=1' :

$$1 = \frac{\gamma}{2 * \pi * g} * (C_1 + C_2 * \ln(\Omega) + C_3 * \Omega + \frac{C_4}{\Omega})$$

……..…..[7]

Hence:

$$g = \frac{\gamma}{2 * \pi} * (C_1 + C_2 * \ln(\Omega) + C_3 * \Omega + \frac{C_4}{\Omega})$$

……[8]

It is very well known that in Nature a Constant velocity does exist . For example,

1.) **'C' a constant velocity of light propagation in Outer Space:**
2.) **Constant fraction of 'C' orbital of the electrons**
3.) **Simply 'Unity = 1' .**

The Unity may involve assertion of a Constant tangential velocity Existence in Nature, and the equation becomes,

$$g = \frac{\gamma}{2*\pi*D}*(C_3 + C_4*\ln(r) + C_5*r + \frac{C_6}{r})$$

'D=Denominator, that involves densities', from the Solution of an Euler – LaGrange differential equation (Ref. 2).

The second logarithmic term ' $C_4*\ln(r)*\frac{1}{D}$ **' can reverse its polarity, therefore will be denoted as Rutherford's term, to commemorate his early experimental "Pre-Fission" and "Pre-Fusion" studies in years about 1911.**

The first, the third and the fourth analyzed (Ref.2) terms:

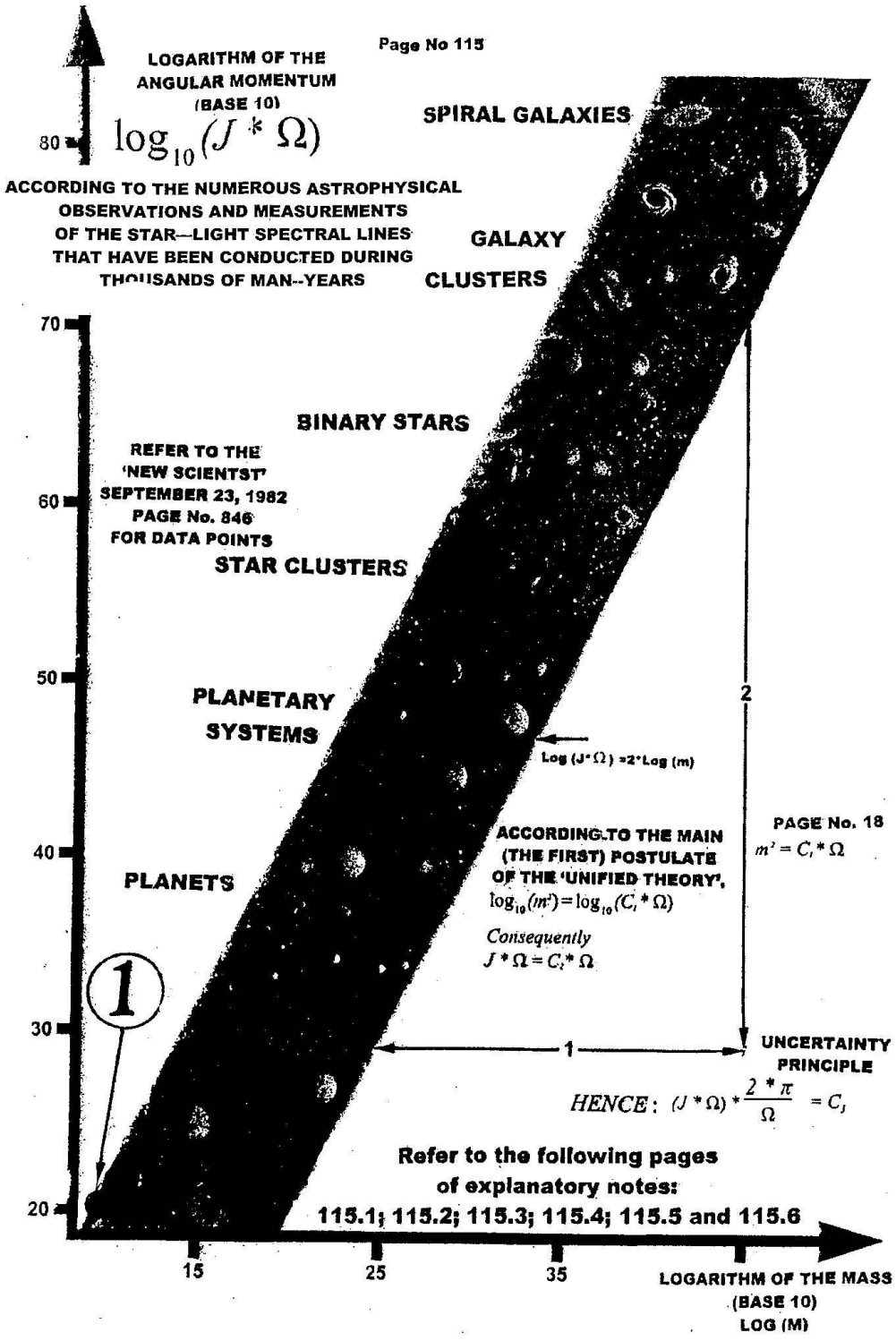
$$(C_3 + +C_5*r + \frac{C_6}{r})*\frac{1}{D}$$ **.....[10]**

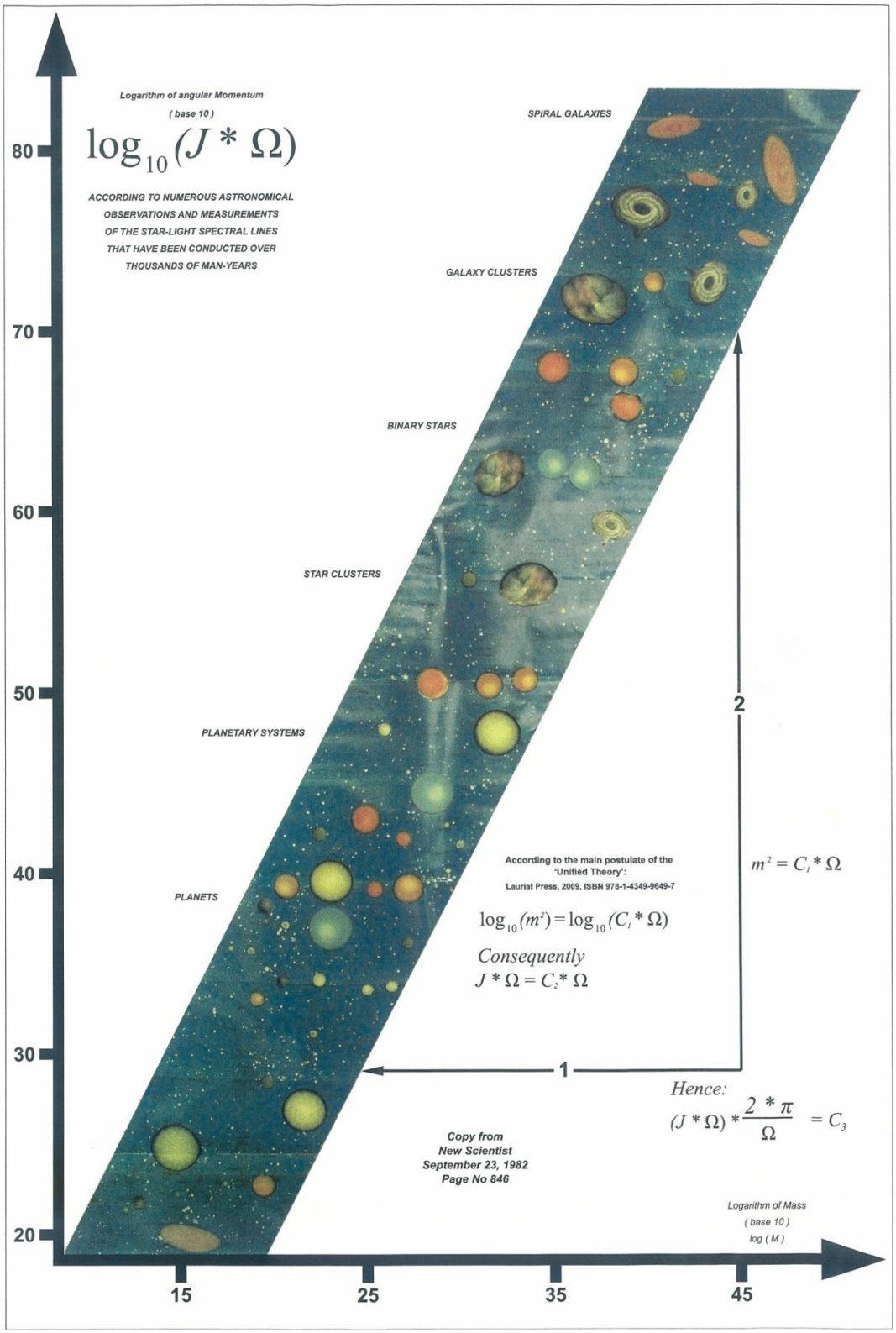
have been in the Public Domain for two decades (Ref. 2). Their physical meaning has been found to be: the surface gravities of Planets throughout the entire Solar System : 'g'.

The work in reference 2 was peer-reviewed by the known Scientist Rahmanyan Chandrasekhar and his associates, and recommended for publishing, in the *Indian Journal for Theoretical Physics*, (1997 and 1999). Therefore, the second term of Lord Ernest Rutherford,

$$C_4 * \ln(r) * \frac{1}{D}$$

was developed into the Taylor's polynomial of the first degree; its magnitude has been found to be proportional to the Surface Gravities of all the Planets through the entire Solar System. The symbol 'r' represents the outer Planetary radii.


Page No 115
LOGARITHM OF THE ANGULAR MOMENTUM (BASE 10)
$\log_{10}(J * \Omega)$
80
70
60
50
40
30
20
ACCORDING TO THE NUMEROUS ASTROPHYSICAL OBSERVATIONS AND MEASUREMENTS OF THE STAR--LIGHT SPECTRAL LINES THAT HAVE BEEN CONDUCTED DURING THOUSANDS OF MAN--YEARS
SPIRAL GALAXIES
GALAXY CLUSTERS
BINARY STARS
REFER TO THE 'NEW SCIENTST' SEPTEMBER 23, 1982 PAGE No. 846 FOR DATA POINTS
STAR CLUSTERS
PLANETARY SYSTEMS
PLANETS
1
2
Log (J*Ω) =2*Log (m)
ACCORDING TO THE MAIN (THE FIRST) POSTULATE OF THE 'UNIFIED THEORY',
$\log_{10}(m^2) = \log_{10}(C_i * \Omega)$
Consequently
$J * \Omega = C_i * \Omega$
PAGE No. 18
$m^2 = C_i * \Omega$
1
UNCERTAINTY PRINCIPLE
HENCE: $(J * \Omega) * \frac{2 * \pi}{\Omega} = C_j$
Refer to the following pages of explanatory notes:
115.1; 115.2; 115.3; 115.4; 115.5 and 115.6
15
25
35
LOGARITHM OF THE MASS (BASE 10) LOG (M)


Logarithm of angular Momentum
(base 10)
$\log_{10}(J * \Omega)$
ACCORDING TO NUMEROUS ASTRONOMICAL OBSERVATIONS AND MEASUREMENTS OF THE STAR-LIGHT SPECTRAL LINES THAT HAVE BEEN CONDUCTED OVER THOUSANDS OF MAN-YEARS
SPIRAL GALAXIES
GALAXY CLUSTERS
BINARY STARS
STAR CLUSTERS
PLANETARY SYSTEMS
PLANETS
80
70
60
50
40
30
20
15
25
35
45
2
1
According to the main postulate of the 'Unified Theory':
Lauriat Press, 2009, ISBN 978-1-4349-9649-7
$\log_{10}(m^2) = \log_{10}(C_1 * \Omega)$
Consequently
$J * \Omega = C_2 * \Omega$
$m^2 = C_1 * \Omega$
Hence:
$(J * \Omega) * \frac{2 * \pi}{\Omega} = C_3$
Copy from
New Scientist
September 23, 1982
Page No 846
Logarithm of Mass
(base 10)
log (M)

(2.13) ASTROPHYSICAL SIGNIFICANCE OF WERNER VON HEISEBERG UNCERTAINTY – LIKE PRINCIPLE

With reference to the Diagram shown on the previous Page No. 115, the green point denoted by '1' (the left lower quadrant), has the following coordinates:

Abscissa 1: Log (m) =10, where 'm' is the mass and Log base10.

Ordinate 1: Log= (J*Ω) =20, where 'J' is the 'mass moment of inertia', 'Ω' is the angular velocity [radians per second] and Log based 10.

The second point 2 has coordinates:

Abscissa 2: Log (m) =0, m=1

Ordinate 2: Log (J*Ω) =0, J*Ω =1

An equation of a straight line passing through the points 1 and 2, also through the entire observed region, will read:

Log (J*Ω) =2*Log (m)…….. (1)

(2.14) A CAUSAL RELATION BETWEEN THE MAIN (THE FIRST) AND THE SECOND POSTULATES

Per Ref. No. 1, a photon like Nature of masses is shown

$$\frac{E}{C^2} = m_{PHOTON} = \sqrt{\hbar * f}$$

on the Page No. 18, Where:

'E': is the energy, 'C': is the velocity of light in outer space, 'h': is the constant of Max Planck and 'f' is the total frequency—angular velocity.

This mass will be substituted experimentally observed equation No. 1 (refer to Reference 1, Page No. 115)

Log (J*Ω) =2*Log (m)…….. (1)

$$Log(J*\Omega) = Log(m^2) = Log[(\sqrt{\frac{\hbar}{2*\pi}}*\Omega)^2] \text{ ..... (9)}$$

$$Log(J*\Omega) = Log(\frac{\hbar}{2*\pi}*\Omega) \text{ ..... (10)}$$

Since ' $\frac{2*\pi}{\Omega}$ **' term is the time for one single revolution around a central mass, the 'Uncertainty Principle' of Werner Von Heisenberg, for a rotating mass like event follows as the second postulate of the 'Unified Theory':**

$$(J*\Omega)*\frac{2*\pi}{\Omega} = \hbar \quad \text{.....(11)}$$

Diagram No. 115 in reference 1, shown on the first, title page, and on the Page No. 21 of this Volume No 2, reflects the work of a Supreme Intelligence. The data points were in public domain for over three decades but remained unacknowledged to a great extent.

Please refer to the writing in *New Scientist,* page 846, September 23, 1982. A result of mathematical computations, related to an exact slope of this straight line (Ordinate = 2, Abscissa = 1, Reference 1, Page 115) is now available. All the symbols were added by Author's hand, demonstrate that the human mind CAN be in HARMONY with the INTENT of this Supreme Intelligence.

In the history of Science and Technology there is no record that the Surface Gravities of all the Planets throughout the Solar System are simply proportional to the Zero Point Energies of Albert Einstein and Otto Stern. However, within the Author's work an analytical proof of this proportionality is evident: the Taylors polynomial of the of the first degree of the Occam's razor is the Zero Point Energy of Albert Einstein and Otto Stern, refer to Authors monograph presented during the event in summer of 2011, in Philadelphia, at the Nikola Tesla Science Foundation.

(2.15) APPLICATIONS

AUTHOR'S EXPERIMENTAL ACCOMPLISHMENTS. It has been well established that physicists are either theoreticians, or experimentalists. Recognized in many ways by the scientific world, Nikola Tesla was both, the theoretician and experimentalist. The Author Basic has learned from experience that he owns a characteristic of deriving the theory and proving principles experimentally.

In the experiment that follows, the Author was inspired by the simplicity and importance of the effect of electromagnetic waves on generating electrical potential. The experiment design and the experimental work he has carried out, with a great degree of repeatability.

The experiments consisted of using thin Copper plates 10" * 20", connected to the grounding through a standard bridge rectifier consisting of four Zener Diodes. The positive (+) and the negative (-) terminals of the bridge were wired to a digital multi-meter. The plate he illuminated with a bulb emitting visible light; then he applied an infrared and later an ultraviolet lamp. All three voltage readings on multi-meter were different, for this range of differing frequencies.

A FUEL--LESS—MULTI—STAGE—OSCILLATOR—MECHANICAL ENERGY

AMPLIFIER OF ACADEMICIAN MILKOVIC

At the beginning of twenty-first century a color photograph has been granted to the Author concerning possible project work. Since then very many replications were made in the United States of America, and other countries. Academician's name 'Veljko Milkovic' is well noted at the Wichita Public Library and the U.S.A. Library of Congress.

At that time the Author was intensely occupied thinking whether his laboratory results may also be calculable from the postulates of the Reference No. 1:

An additional amount of power ' P_2 **' Ref. 1., page No. 65,**

Fourth line from above. to the power of the oscillating mass of a free fall is given by the expression for an additional amount of positive power 'P2' that has to overcome a negative power of roller bearings of suspensions. A negative power of any gear boxes and generator inductions, has been derived from the first postulate of Reference 1, Pages No. 18 to 21,

$$E_{CONSTITUTION} = C^2 * \sqrt{h * f}$$

Taking that this energy of constitution is simply proportional to the 'Strain Energy of the earth gravitational Field' of Lev Davidovich Landau:

$$Pag$$

$$(W_{WEIGHT}) * r^2 * f =$$

$$= ZERO_POINT_POWER = P_2 =$$

$$(1.0904 * W * f * r^2 * \sqrt{N}) * \frac{1}{\sqrt{\sqrt{A}}}$$

$$WHERE:$$

$$'W': _THE_WEIGHT_OF_THE$$

$$OSCILLATIN G_MASS_IN_A$$

$$SUCCESSIVE_FREE_FALL$$

$$MODE,'f'_IS_THE_FREQUENCY,$$

$$'N': _IS_THE_NUMBER_OF_$$

$$STAGES_OF_RELATIVE$$

$$ROTATION_(TYPICALLY_1_TO_$$

$$3)_'A': IS_THE_AMPLITUDE$$

$$OF_OSCILLATIO NS,'r': IS - THE_EXTENT$$

$$OR,CENTER_OF_ROTAION_TO_THE_$$

$$CENTROID_OF_MASS_DISTANCE.$$

The Constants were calculated with the following fundamental data:

$$C = 2.9979*10^{8}\ \frac{m}{\sec}$$ and

$$\hbar = 6.7539*10^{--35}\ Kg*m*\sec(in_'MKS'_system)$$

Refer to the 'The fundamental Atomic constants' by J.H. Sanders, Clarendon Press, Oxford, England, Page No. 79. And acceleration of earth surface gravity: g=9.81 m/sec square

$$g*C_1 = C^2*\sqrt{h*f}$$

By multiplying both sides of the equation with the product:

$$'m*r^2*f'$$

And converting to Watts by multiplying with '1000/75/1.37

$'g*m*r^2*f'$ **: is the ZERO POINT POWER.**

This additional power has been calculated on Pages No 27 and 29 of this monograph.

The Academician's Water Pump example data: There is only one single stage of rotation; estimated Weight W=60.-kilograms, the distance between the center of the Weight and the center of rotation 'r'=2 meters, the Amplitude

‘A’=2 meters. With this data:

$$Page_48$$

$$W * r^2 \ * f = ZERO_POINT_POWER =$$

$$1.0904 * W * r^2 * f * \sqrt{N} * \frac{1}{\sqrt{\sqrt{A}}} =$$

$$1.0904 * 60 * 4 * 1.566 * \sqrt{1} * \frac{1}{\sqrt{\sqrt{2}}} = 344.612$$

$$__Watts$$

$$POWER_OF_THE_FREE_FALL =$$

$$= P_1 = 21.726 * W * \sqrt{A}$$

$$WHERE:$$

$$'W'_IS_THE_WEIGHT_OF_THE_OSCILLATIN G_MASS$$

$$'A':_IS_THE_AMPLITUDE_OF_OSCILLATIO NS.$$

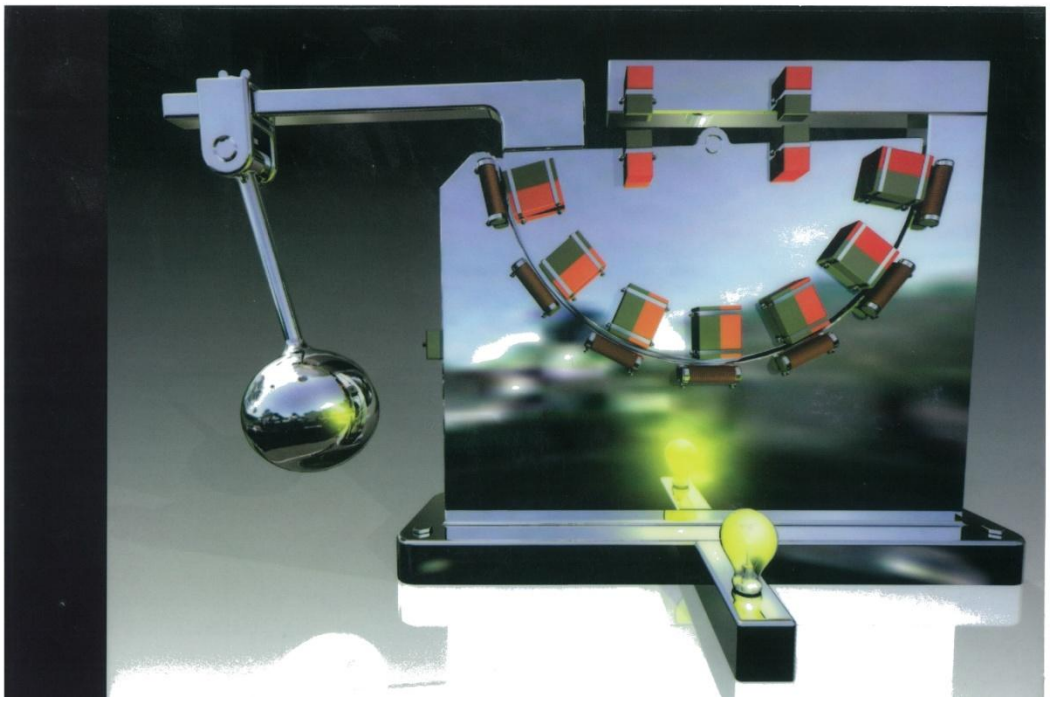
$$WITH_THE_SAME_DATA:$$

$$P_1 = 21.726 * 60 * \sqrt{2} = 1843.512_Watts$$

$$COEFFICIEN\,T_OF_OVERUNITY_POWER = 1.18693$$

These analytical quantities can be compared, by a visual inspection, with the laboratory measurements shown in the following photograph, since the electric bulb had, approximately, fifty Watts, maximum.

A FUEL—LESS—MULTI—STAGE—OSCILLATOR MECHANICAL ENERGY AMPLIFIER OF ACADEMECIAN MILKOVIC



ZERO POINT ENERGY PER STEREO RADIAN AND THE DISTRIBUTION OF GRAVITATIONAL ACCELERATION OF PLANETS THROUGHOUT THE SOLAR SYSTEM. THE ORIGIN AND CAUSE OF GRAVITATION

Volume II Chapter 3

Steven L. Basic

CHAPTER 3 OBJECTIVE

The main objective of the Chapter Three is to provide an exact mathematical proof that the square of the gravitational masses of all the celestial spheres (planets) is equal to the ZERO POINT ENERGY of Albert Einstein and Otto Stern.

The ZERO POINT ENERGY definition as defined in Unified Theory (Ref. 1), Page 65

$$E_{zpe} = W * r^2 \equiv m_i * \frac{g * r^2}{\gamma} * \gamma \equiv m_{INERTIAL} * m_{GRAVITATIS}$$

$$SINCE_m_{INERTIAL}_IS_PROPORTIANAL_TO_m_{GRAVITATIS}$$

$$\therefore_E_{ZPE} = m^2 \therefore m = \sqrt{E_{ZPE}} \therefore m * C^2 = E_ = C^2 * \sqrt{E_{zpe}}$$

$$_OR_THE_FIRST_POSTULATE_OF_REF._NO._1$$

$$SINCE_: \frac{r^2}{R^2}_IS_THE_RATIO_BETWEEN_SQUARES$$

$$OF_THE_PLANETARY_RADIUS_'r'_AND_THE$$

$$RADIUS_TO_CENER_OF_THE_SUN_'R'_,OR,_EQUAL$$

$$TO_THE_PLANETARY_STEREO_RADIAN,_AND$$

$$2 * \pi * f_{REQUENCY} = \Omega_{ANGULAR_VELOCITY}$$

The following expression for the Energy of constitution will be obtained:

$$E = C^2 * \sqrt{\frac{6.752398 Exp(-35)}{2 * \pi}} * \frac{r}{R} * \sqrt{\Omega_{TOTAL}}$$

The first term of this expression may be calculated:

$$The_first_term = C^2 * \sqrt{\frac{6.752398 Exp(-35)}{2 * \pi}} = 0.294627682$$

Other terms for the celestial spheres (Planets) of the entire solar system are:

(Table T1, the same as on page 10 is repeated for easier reference)

Astrophysical Data

Table T1

No	1	2	3	4
	Planet	Ω Omega (total) [rad/second]	Planetary Radius In millions of Meters (*10^6)	Radius of the Orbit around the Sun Meters (*10^11)
1	Mercury	2.06527 Exp $^{-6}$	2.34	0.579
2	Venus	3.44299 Exp $^{-8}$	6.26	1.08
3	Earth	7.312013 Exp $^{-5}$	6.37	1.49
4	Mars	7.098786 Exp $^{-5}$	3,32	2.28
5	Jupiter	1.773567 Exp $^{-4}$	69.8	7.78
6	Saturn	1.705567 Exp^{-4}	59.2	14.3
7	Uranus	1.613623 Exp^{-4}	23.7	28.7
8	Neptune	1.194612 Exp $^{-4}$	22.4	45
9	Pluto	1.138180 Exp $^{-5}$	3	59.1

Planets: Circular frequency of the celestial spheres.

(by definition and according to the first principles)

$$\Omega = 2 * \pi * f$$

-

-

$'f'$ **: is the frequency [Hertz]**

Omega total '$\underline{\Omega}$' = scalar, simple, and the sum of the following two, the main angular velocities:

C.) In respect to the center of the sun

D.) In respect to the planetary polar axis

The dimension of the Omega total is: [Radians per second]

(2.16) RADIANT ENERGIES ABSORBED BY ALL THE PLANETS OF THE SOLAR SYSTEM

The Author finds considerable importance in the radiant energies absorbed by planets. **The Solar System may be observed through the frame set by Albert Einstein and Otto Stern, and in light of Leonard Euler's and Werner von Heisenberg radial acceleration of the random Zero Point Energy Photons generated by two million Volts potential at the surface of the Sun's corona. In his study the Author cannot disregard the fact that, the radiant energies are absorbed by all the planes in the Solar system.**

On the next page is the Author's Data Table T2, where,
Column 5 represents planet name
Column 6 represents the values obtained by equation on column top
Column 7 represents the multiplier "A" = 62.801,558 (dimensionless)

Table T 2

No	5	6	7	
		$E = C^2 * \sqrt{\frac{6.752398 Exp(-35)}{2*\pi}} * \frac{r}{R} * \sqrt{\Omega_{TOTAL}}$	(Excel aided calculations) ‘A’=	
1	**Mercury**	**2.2097e-9**	*62,801,558	
2	**Venus**	**3.16917E-9**	*62,801,558	
3	**Earth**	**1.07793E-7**	*62,801,558	
4	**Mars**	**3.61512E-8**	*62,801,558	
5	**Jupiter**	**3.52068Exp-7**	*62,801,558	
6	**Saturn**	**1.59312Exp-7**	*62,801,558	
7	**Uranus**	**3.09097EXP-8**	*62,801,558	
8	**Neptune**	**1.60316Exp-8**	*62,801,558	
9	**Pluto**	**5.04623Exp-10**	*62,801,558	

It is significant to note that Table T2 implies to “Occam Razor”, or simple Proportionality, as discovered by Albert Einstein and Otto Stern. The Author Steven L. Basic has determined an Excel multiplier “A” = 62,801,558 (dimensionless), to be the multiplier within the column number 6.

The magnitude of “A” is gravity related.

Table 3 show the Author's Data.

Column 6 represents the names of Planets

Column 7 represents 'g ZPE' (column 6 * A+3) in m/second ^2

Column 8 are values of observed surface gravities 'g' in m/second ^2 for the planets listed

Table 3

No	6	7	8
		g ZPE=(column 6 *A+3) [m/second ^2]	**Observed surface gravities 'g' [m/second ^2]**
1	**Mercury**	**3.138752**	**3.728**
2	**Venus**	**3.199028**	**8.86**
3	**Earth**	**9.769568**	**9.81**
4	**Mars**	**5.270351**	**3.727**
5	**Jupiter**	**25.110418**	**25.928**
6	**Saturn**	**13.00504**	**11.369**
7	**Uranus**	**4.943**	**10.89**
8	**Neptune**	**4.0068**	**11.87**
9	**Pluto**	**3.031691**	**4.218**

In the table above, a visual observation and mutual comparison between the two columns 7 and 8, displays the gradients , magnitudes, maximums and

the minimums, and confirms that this is a solar system of Albert Einstein and Otto Stern in light of Leonard Euler's and Werner von Heisenberg's radial acceleration of the random Zero Point Energy photons.

CONCLUSIONS

In his present study the Author was able to direct some light onto previously unknown facts and concepts.

- **Conclusion I: the Zero Point Energy wave posses a linear frequency nature**

- **Conclusion II: the Zero Point Energy fundamental particle posses a nature of a Circular frequency, radians per second, due to vortex-like simultaneous rotation.**

- **Conclusion III: following the thought of Nikola Tesla, research scientist and philosopher, any rotation and phenomenon of electricity are related as a cause and consequence. The Zero Point Energy is assigned to be a fundamental particle with an "equivalent mass".**

- **Conclusion IV: the Zero Point Energy fundamental particle unit is given name of ZPE-photon.**

- **Conclusion V: An electrostatic Direct Current field of high Voltage accelerates rotation of the ZPE-photon that tends to advance along a linear trajectory at the speed of velocity of light (Leonard Euler, Werner von Heisenberg, and the contemporary mathematicians.)**

Continued

- **Conclusion VI: the incorporeal Zero Point Energy waves are present thru-out the entire space and all the temperatures, whose equivalent energy is that of the left-hand side of Louis de Broglie equation; or, their equivalent corporeal "Mass" multiplied by the square of the velocity of light.**

- **Conclusion VII: The Zero Point Energy waves are immaterial, although the future energy may be based on principles of fuel-less mechanical energy amplifiers.**

- **Conclusion VIII: The Author's analytical results on the solar system planets and the energy absorbed by the planets, lead him to assertion that the origin and cause of gravitation are parallel to the nature of the Zero Point Energy.**

- **Conclusion IX: The Zero Point Energy photons of inter-gravitational field may in fact be related to graviton unit, capable of spin angular moment of masses throughout the Universe.**

- **Conclusion X: despite the fact that a cause of gravity is highly complex, its fundamental particles are likely to obey the rules of chromo-dynamics.**

- **Conclusion XI: the gravitons belong to boson group of fundamental particles. The dynamic nature within the Universe does not exclude possibility that the Zero Point Energy particles are the co-particles of graviton having a spin of 2, a boson rotating about its own axis.**

- **Conclusion XII: within the space-time in the Universe the Zero Point Energy waves gave rise to itself.**

- **Conclusion XIII: the intensities of all the surface gravities of Celestial Spheres throughout the Solar System are Causal--Consequence of the rotating Zero Point Energy Photon emission from the Sun .**

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(Photograph of the Author on this back page size 2”x2)

About the Author

Steven L. Basic holds Master of Science degree in Aerospace Engineering from a reputable European University. In his career he worked as a Principal Stress Engineer for the British and American Aerospace industries.

The author has published four studies in the Indian Journal for Theoretical Physics concerning the distribution of gravitational acceleration and gravitational mass of planets throughout the solar system. In this Volume 2, the Author re-enforces his assertion concerning a linkage between the gravitation and rotation. Furthermore, he describes and shows in substantial detail the algorithm as well as his theory of Zero Point Energy, the Uncertainty Principle, and Copenhagen Interpretation of Quantum Theory within the Outer Universe. This algorithm he also applies to a worldwide well known 'down to Earth', Over Unity Machine of an Academician, as an open, repeatable, mathematical analysis-numerical example. This machine oscillates for two hours without incorporation of the magnetic levitation bearings, to be developed in the future.

The second volume elevates the presented "Occam Razor" toward a scientific assertion. This work is a result of many years of scientific consideration in fundamental physics and mathematical string theory realization.