IMAGE: A MAP OF THE STARS OF THE ORION CONSTELLATION

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In this Issue

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Paul T E Cusack, BScE, Dule

ABSTRACT

These is a challenge of determining the physical basis for light polarization by chiral molecules. In this paper we consider the molecule of methanol. We see that it is the electron spin that determines the polarization of light for an organic molecule. Electrons obey a wave equation; therein my lie the answer as to why an electron has a positive or negative spin. Civil Engineers don't study Quantum Mechanics. So I leave this problem for those who do study QM. Funny, I wanted to take Modern Physics when I was in year two if my bachelor's degree.

Keywords: polarization; light; chiral molecules; methanol; electron spin; quantum mechanics.

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Keywords: polarization; light; chiral molecules; methanol; electron spin; quantum mechanics.

This is a fascinating problem taken from a an organic chemistry textbook:

Problem Statement

> There is no correlation between R and S configurations with (+) and (-) optical rotations. Some R molecules rotate polarized light clockwise (+) and some rotate polarized light contraclockwise (-). If you can come up with a way to predict the direction of rotation of a structure, you can become famous! [1]

I. INTRODUCTION

In this paper, we will show why a chiral organic molecule rotates polarized light sometimes clockwise and other times contraclockwise. The answer is that it depends on the spin on the electrons.

An electron has a vector pointing up or down depending upon whether it is spinning one way or the opposite. This, of course is treated mathematically with the vector cross product. We see the formula often in AT Math for space as:

$$s=E \times t=|E||t| \sin \text{theta}$$

theta is the angle between the two vectors. Spin creates a vector either pointing up or down since it is dependent on the sine curve.

Sun light has vectors pointing in all directions around an axis or progression. , the Z acis. Electrons have angular momentum.

So how do we solve our problem? The answer is that it is a random event whether a free electron, on say Methanol (Methyl Alcohol CH3OH). This evokes the Fair coin solution viz the GMP. The GMP models the flip of a fair coin as discussed in previous papers on gambling by this author. . If you flip it enough times, it with by Heads 50% of the time and Tails 50% of the time. The average of a random number between 0 and 9 is 5 or 50% also. We know that if we plug 0.50 into the GMP, we get -1.25 which is the minimum for the GMP (t=1/2).

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t^2-t-1=E

(½)^2-(1/2)-1=-1.25

Electron Spin or Spin Quantum Number is the fourth quantum number for electrons in atoms and molecules. Denoted as ms, the electron spin is constituted by either upward (ms=+1/2=+1/2) or downward (ms=−1/2=−1/2) arrows.[3]

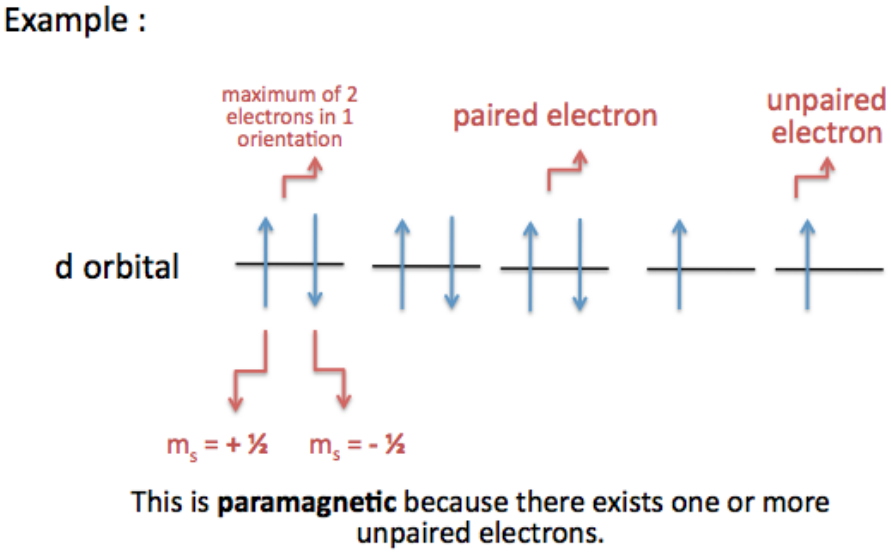

Figure 1: Electron Spin

The experiment mentioned above by Otto Stern and Walter Gerlach was done with silver which was put in an oven and vaporized. The result was that silver atoms formed a beam that passed through a magnetic field in which it split in two.

An explanation of this is that an electron has a magnetic field due to its spin. When electrons that have opposite spins are put together, there is no net magnetic field because the positive and negative spins cancel each other out. The silver atom used in the experiment has a total of 47 electrons, 23 of one spin type, and 24 of the opposite. Because electrons of the same spin cancel each other out, the one unpaired electron in the atom will determine the spin. There is a high likelihood for either spin due to the large number of electrons, so when it went through the magnetic field it split into two beams.[3]

Now we will provide the calculations to show that the electron spin on Methanol, a chiral molecule, and the GMP can be derived from a capacitor. We also calculate the mass of an electron that passes through the dielectric plates. Note figure 1. This shows how we go from Methanol to Carboxylic Acid such as L-tryptophan, the precursor to testosterone and serotonin.

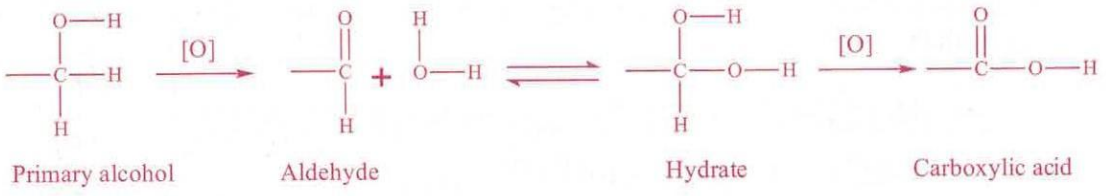

Figure 2: Methanol to Carboxylic Acid [1]

Methanol Characteristics

Diameter =3.77 A
pKa=15.5
=Ln t
t=2.7408

GMP=3.77=E

α=1.31
ρ=0.78

$\varepsilon_s=1+2y_e/1-y_e$
=1+2(1)/1-1=3/0=3

$\varepsilon_s-1/\varepsilon_2+2$
$=4\pi/3\ \rho\alpha$
=4/3(π)(0l.78)(1.31)
=4.280

$\varepsilon_s=-2.915$

T(k)=-8/3π(1/19905)

$\varepsilon_s=2.915$

P=1.602/19905=8.04

$E_{Loc}=E_o-8\pi/3P$
$=E_o-8\pi/3(8.04)$
$=E_o-6.742$

$e^{-6.742}=1.1797\approx118$=Mass of the Periodic Table

118 (938+5.1099)=1.11262=1/898777=1/2.9979^2=1/c^2=M

$E_{Loc}{}^{L^3}=(\varepsilon_s+2)3\varepsilon_s$
=(78.5+2)(3(78.5)
=341.8

$E_{Loc}{}^{L}=(\varepsilon_s+2)/\ 3\varepsilon_s E_o$
=(2.915+2)/3(2.915) (341.8)
=192.1037

$M=N\alpha E_{loc}{}^{L}$
=N(1.31)(341.8)=F x d=F x t=8/3 x π

N=0.01871

N/s=0.01871/3.77=4.96≈5=E y=y′ t=3

M/c=1.7077/2.9979=56.96≈57

4.96 x 57=2828

2828/4=0.7072=1/√2=v=a
CH3OH=12.11+1.078+15.999+1.078=301.66

$t=3=e^{M}$

M=1.0986≈11

1.096/6.023=181969

1819/3.0166=16.57≈1/6=60°

$M=N\alpha E_{Loc}{}^{L}$
=N(1.47)(341.81)
=0.502N

M=0.5N
8/3(π)=1/2N
N=1.6688≈1/6=60°/360°

Reflective index:

$n_D{}^2=\varepsilon_s$
=2.91469

$n_D=1707$

Mass of OH^-=1.078 +15.999=17.07

n α 1/v
1.707=1/v
v=5.858

$n_1/n_2=5858/2=2929=1/341.4=1/E=t$

Pauking of the Spheres

$n_s=4\pi/3\ a_s{}^3\rho$

$=s\ t\ a^3\rho$
$=(4/3)(\pi)(1.31)^3(0.78)$
=7.345
=1/0.26549
=1/F
=E-1/E

$n=(E^2-1)/E$

$nE=E^2-1$

$E^2-nE-1=0$ GMP = the Fair Coin Equation

$E^2-nE-1=0$

derivative E=5 t=3

$2E-n=5$

$n=2E-5$

$E^2-(2E-5)E-1=2E-5$

$E^2-2E^2+5E-1-2E+5=0$

$-E^2+3E+4=0$

$E^2-3E-4=0$

$E=4; -1$

$E=M=4$

Alcohol amu=1.7077 =η

$1.7077 \times 360^\circ=614.52$

$614.52^\circ-360^\circ-180^\circ=74.52^\circ=1.305$ rads≈1.31

Polarized Light

Circular:

$x^2+y^2=R^2$

$2x^2=1$
$x=1/\sqrt{2}$=Amplitude

$v=s/t=s/R=1/\sqrt{2}$

$\sqrt{2}s=R$
$\sqrt{2}s=1.7077$
$s=12.075$
$\approx 4 \times 3=Mc=Mv=\bar{P}$

$1.7077 \times 3=511.9555=Me^-$

$v=s/t$
$Me^-/M_{OH}=511/1.7077=2.9979=c$

Capacitor

$E=\Delta\varphi/d$

T Period $=24.9=\Delta\varphi/3.77$

$\Delta\varphi=938.73=M\ p^+$

$\omega=2\pi f=d\theta/dt$

$=2\pi(1/5)=125.66=E_{min} \Rightarrow t=1/2=$spin

$=4/\pi=1/t=E=\rho$

$\bar{P}=Mv=(938.73+5.121)(2.9979)=2829$

$2829/4=707.4=1/\sqrt{2}=v$

$v=c=M_{e\text{-}}/M_{OH}$

$AL/M=1/\rho$

$AL/(938.73+5.11)=1/125.66$

$AL=751 \approx \rho_{OH}$

$\rho_{OH}=M/Vol$

$Vol=751/(1.7077)$
$=0.43983$
≈ 0.44

Now

$freq=\omega/(2\pi)$

$=s/M$
$=d\theta/dt/2\pi$

$2\pi \cdot s/M=d\theta/dt=120^{\circ}$

$120\text{-}180=-60^{\circ}$ (Counter clockwise =Sinister)

Dispersion Formula:

$n=1.294611+12706.403/\lambda^2$

$\lambda^2=5876^2$

$1/n=2.717=e^1=E$

Jone's vector

$$J_{RHP}=1/\sqrt{2}\begin{bmatrix}1\\ i\end{bmatrix}$$

$i=\sqrt{-1}=-0.618$

$=1/\sqrt{2}(1)+1/\sqrt{2}(-0.618)=1/\sqrt{2}\ -0.4370=2.7$

$$J_{RHP}=1/\sqrt{2}\begin{bmatrix}1\\ -i\end{bmatrix}$$

$=1/\sqrt{2}-(1)-1/\sqrt{2}(-0.618)=1/\sqrt{2}-1\sqrt{2}(0.618)=-4.1$

$I_{outgoing}=I_{ingoing}\cdot\cos^2\theta$

Period $T=\cos^2\theta=250=\cos^2\theta$

$\theta=60^\circ$

$E^2=\cos^2\theta$

$E=\cos\theta=\bar{P}=Mv$
$=(1.7077)(2.9979)$
$=51119$
$=Me^-$

$E=Me^-=\text{Ln } t$

$t=e^M=e^{5.11}=1.6726=1/6=60^\circ/360^\circ$

$k=\lambda/4=2\pi/4=\pi/2=90^\circ$

$\bar{Ex}=E_o\hat{x}e^{j\omega t-kz}$
$=\sqrt{2}e^{\sqrt{-1}(125.66)(e511)-12.04t}$
$=0.865\approx0.866=\sin 60^\circ$

$\bar{Ey}=E_{o\hat{y}}e^{j\omega t-kz-\lambda/4}$
$=2.185\approx2200$

$\cos\theta=1350=TE=Mc^2=1.5M(9)=1350M$

$1.350(1.7077=1/0.4337\approx1/43.4$

The Ether =Teflon
$\rho_{teflon}=2200\ kg/m^3$

$2200/(4/\pi)=57.11^\circ\approx1$ rad

$\rho_{OH}=751$

$57.11-751=180^\circ$

RHP:

$E=E_oe^{j\omega t}$
$=\sqrt{2}e^{\sqrt{-1})(1-.25)(e5.1099)}$

$=373.4$
$=1/2.67$
$=1/SF$
$=E$

LHP

$E=E_oe^{-j\omega t}$
$=\sqrt{2}e^{-\sqrt{-1})(-1.25)(e5.1099)}$

=373.4
=1/2.67
=1/SF
=E

Spin =(+1/2)+(-1/2)=0=E=M

S=t

S=4/3

Tt2-t-1=E

(4/3)^2-(4/3)-1=0.555=1/180=1/Pi =freq of the human mind. T=Pi

II. CONCLUSION

We see that the polarization of light by a chiral molecule is dependent upon the random direction spin of an electron. It is statistically equal to 0.5. The universe is not chiral. There are two signals, sin and cos. Where they, meet ids where the one universe exists.

ACKNOWLEDGEMENTS

I've reached the limit of what I can calculate with this paper. My eyesight is failing me using a laptop computer. My old HP Envy was destroyed by the cleaning lady who insisted on using a wet rag to clean a touch screen computer even though she was warned several times. My boss bought me a new computer at a cost of $883! That is money I don't have. His name is Greg Hebert. He is a good man. We needed to find a way to pay people who do research. It is the purpose of humanity to forge ahead with the unknown. We have lots of money for basketball stars yet no money for those actually dong something production for the world. Will it ever change?

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Mass Stability & Astrotheology

Paul T E Cusack, BScE, Dule

ABSTRACT

Simon's 12 th problem is the list of unsolved math-physics problems on Wikipedia states that we need to establish molecular structure from first principles. In this paper, that is what we do; from the individual atoms to the periodic table, to the benzene ring, we see the energy is always conserved. It is assumed that the reader is familiar with AT Math. If there was any doubt that Astro theology is the theory that explains the physical universe (as well as the spiritual), they can be laid to rest after reading this paper.

Keywords: simon's 2000 list of unsolved math and physics problems; periodic table, oganessian; benzene; at math.

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Keywords: simon's 2000 list of unsolved math and physics problems; periodic table, oganessian; benzene; at math.

I. INTRODUCTION

Simon's 12 th problem in the 2000 list:

Is there a mathematical sense in which one can justify current techniques for determining molecular configurations from first principles? Source: Wikipedia.

Thee are tow forces in nature, one that draws together and the other that pushes apart. They are gravity and coulombic forces. We will show that the Mass in the universe is the result of these tow opposing forces working against each other.

6.67/1.602=0.24017

GMP $\Rightarrow t^2-t-1=E$
$0.2401^2-0.2401-1=1.18249$=Mass of the Period Table of the elements.

The 118th element is Og.

118/118249=-0.99789

There are 32 elements in the 7th Period, or 32 elements. The Mass of an electron =5.1099mEv

-0.99789/(32x 5.1099)=6.10267

Orbitals

{2+8+8+18+18+32+32} x 5.1099=602.9682=1/98.8≈99

Mass H+=1.0079 →Mass Og=294
ΔM=292.99≈293

292-392=198=t
198-981=693=Ln 2=M
693-936=297=c
297-792=495=E
495-549=99=E
99-99-=0 Convergent

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198 x 693 x 297 x 495x99=1997~2

t=2

GMP⇒2^2-2-1=E=1

Oganessian #118

118 p+ x938.27208816

118 e- x 5.1099

118.4(943.3819)=111696+1/2=1.617.46≈1.618 Golden Mean

GMP

1.618^2-1.618-1=-76

1-0.76=0.24⇒1.602/6.67

Covalent radius for Og:

r=157=π/2

r=d=s=E ×t=|E||t|sin θ

E=1/sin θ=1/F

α=ω^2R=(dθ/dt)R

$\omega^2=157^2$

$=(157)^2(293)(3/8)$
$=271\approx e^1=E$

Eigenvector

√√3=1.316=1/0.759835=24.01

$F=2M\omega^2$
$=2(292.99)(\pi/2)^2=1444$

E=1/F=1/1444=692=Ln1998=M when t=2

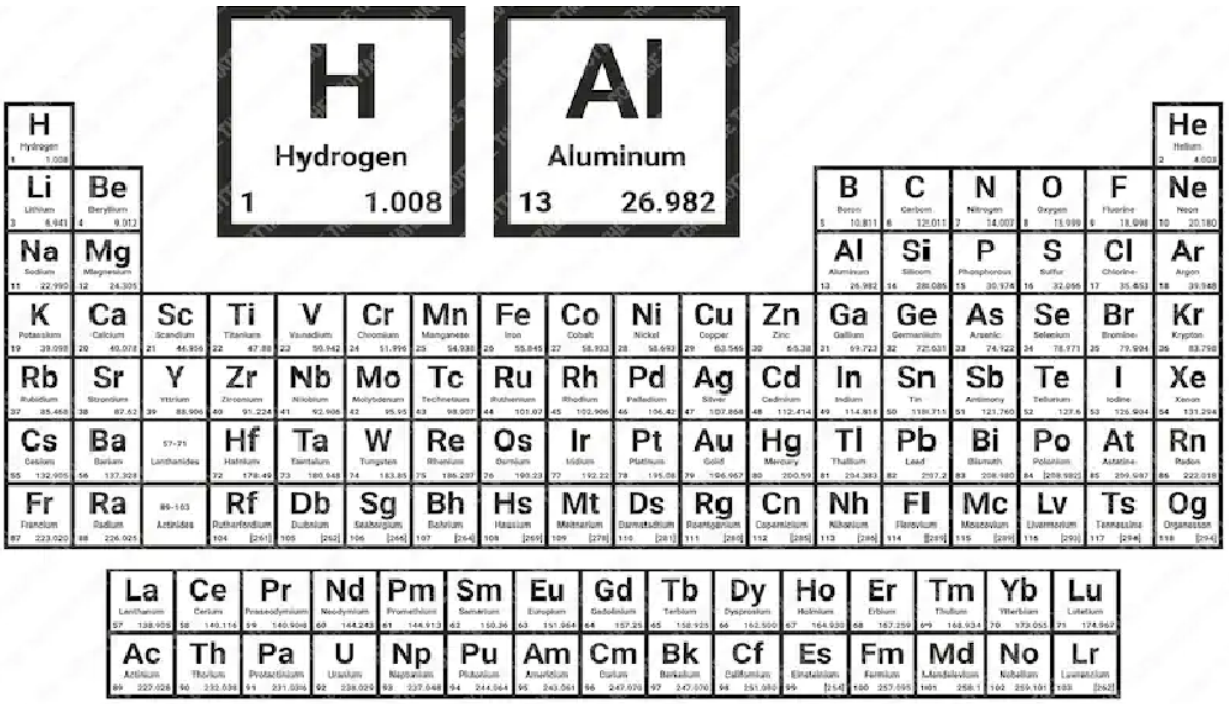

Figure 1: Periodic Table of the elements showing Og in lower right corner

We now use Benzene, a prolific molecule in organic chemistry to show why the atoms come together to conserve energy.

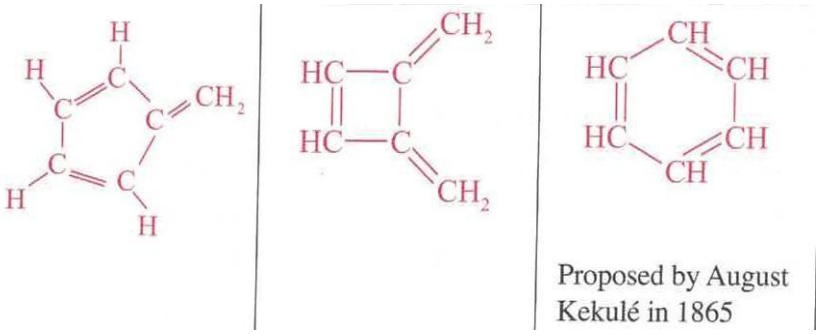

Figure 2: Benzene proposed structures. Source Barron's E Z Chemistry

3 C-C 3(710)=2130

3 C-C 3(607)=1821

6 C-H 3(337.2)=2023.2

SUM=59742

PE+Mc^2=

M=6(12)+6(1)=78

PE=78(2.9979)^2=4222.3

TE=PE+BDE=59742+4222.3=10196

But the molecules all have the same number of each bond type.

Caron needs 4 e-

28 x 1.602=4485.6

M=Ln t=4485.6

T=1.50=1/G

15 e- shared x 1.602=24.03=1.602 x 6.67

So what is the difference for the Benzene ring? It is that 3 electrons are shared between 6 Carbons. So, energy is minimized:

3e-/6 x (1.602)+6(1.602)+He-6(1.602)=20.025

e^20.025=2.99698=c=2.997 ~3

t=c=3=eigen value ☐ E=5 ☐ y=y' for the eigen function.

For the middle architecture:

3 e-+6e-+6e-=20.025 same

They are both symmetric molecules. Space must be conserved which is based on the cross product of energy and time(KE).

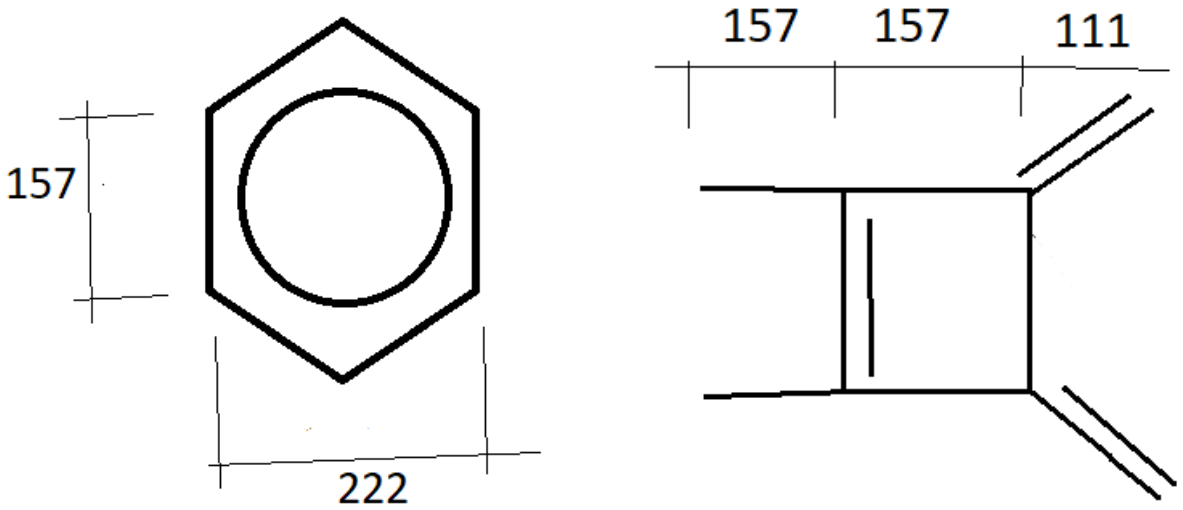

Figure 3: Two architectures for C6H6. The circle represents 3 electrons shared

s=Ext=E t sin theta

s=t

E=1/sin theta=20.025

Theta=28.6 deg=0.5 rads

GMP: 0.5^2-0.5-1=-1.25=Emin of the GMP

Area of the Benzene Ring:

S=(157)^2+(Pi/4)^2(Pi/4)^2/1/2

=375=1/F=E where F=SF=8/3

Area of the middle structure:

157+157+111=425

111+157+111=379

Area -804

804

375 by 46.6% So the Benzene structure minimizes space. So that is why the Benzene ring is selected from first principles using AT Math.

II. CONCLUSION

The Mass of the universe are established from first principles of Astro theology. The joining up of atoms of elements follows the laws of the conservation of energy and space using coulombic forces.

ACKNOWLEDGEMENTS

I'd like to acknowledge Dr Owen Dunn of St Malachy's High School who taught me chemistry in 10 months. And Prof Carl Thompson at UNB Saint John who taught me Organic Chemistry for Health Sciences over a summer course. I also thank the government of New Brunswick for paying for my primary and secondary education, and the people of Canada for paying me a pension while I work at research. Finally, I thank my parents for educating me at home and allowing and encouraging me to learn while they worked to support us. Above all, I thank God for letting me push His pen; yet the many mistakes are all mine.

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Physical Chemistry & Astrotheology

Paul T E Cusack, BScE, Dule

ABSTRACT

In this brief paper, we show the calculations that confirm that Astrotheology is the correct and most advanced and ancient physics theory ever assembled.

Keywords: periodic table; astrotheology.

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Keywords: periodic table; astrotheology.

I. INTRODUCTION

In this paper, we consider the Periodic Table of the elements from Chemistry to prove that AT Math and Astrotheology Theory is the correct theory. It fits in well with the table.

Periodic Table =118 Elements

$118(Mp^{+}+Me^{-}+Mn^{o})$
$=118(938+5.1099+938)$
$=34692$

$346.92/(8/3)=13.0098\approx E$

$E^2+E-2=t$
$13^2+13-2=180=\pi=t$

$\pi^2-\pi-1=57.29^{o}=1$ rad

$\#118 \times 938=1.10684\ p^{+}-5.1099\ e^{-}$
$=-4.00306=M$

$M=\text{Ln } t=\text{Ln } \pi=1.2566=E_{min} \Rightarrow t=1/2$

Teflon Pressure $p=-1.75(1506)+5761$
$=3125$

$Mt=4(18)=72=8 \text{ x } 9=tc^2$

$Mt=4(8)=32=0.3125=1/p$

$p=1/[Mt)=1/M(1/t)=E^2$

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$\sqrt{72}=8485=1/117.8\approx1/118$

$M\ H^{+}=1.0078 \times 6.023=607$

$t=e^{M}=e^{6.07}=432.6=1/2.3117=1/Ln\ \pi=1/M$

Ionization Energy for Helium

$M=\#2 \times 6.023=12.046$

$t=e^{M}=e^{12.046}=170.476$

$170.476^{2}-170.476-1=2.987\approx c$

$c^{2}=8.33488$

$Mc^{2}=4.00(8.33488)=33333=1/3=1/t=E$ when $y=y'$

Now

M-s-t=F-E
4.00-4/3-1=E-2.666

E=1

E=M-s-t+F

$[=]\ kg\cdot m^{3}\cdot s\cdot[kg\cdot m/s^{2}]/m^{2}$

$=kg\cdot m^{3}\cdot s\cdot kg/m^{3}/s^{2}$

$=kg^{2}/s$

$E=M^{2}/Moment=4.00^{2}/(1585.3)=1.0092\approx M\ H^{+}$

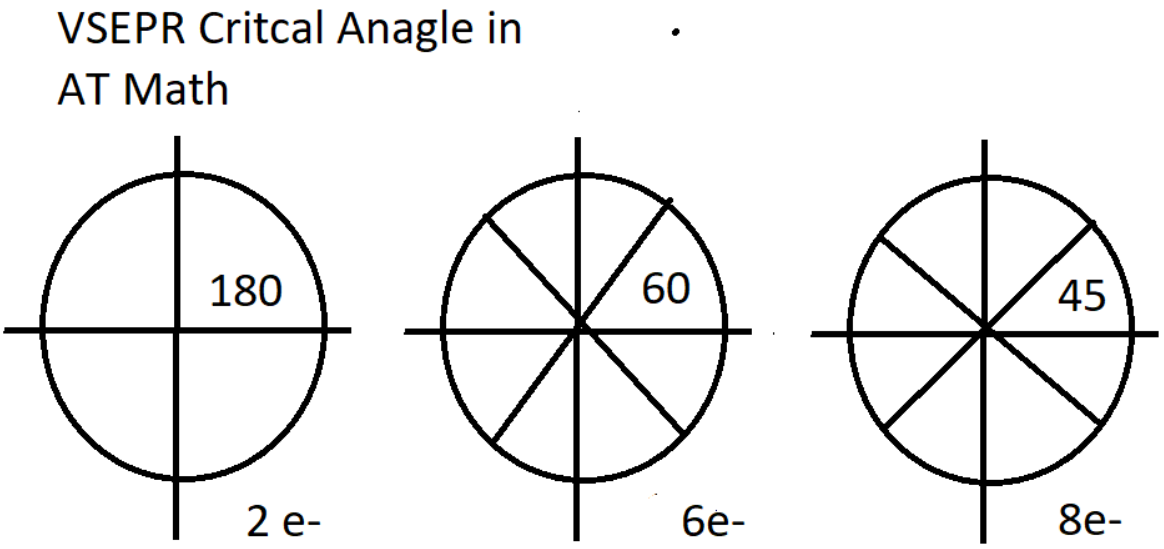
$4 \times 4/3\ x8/3=\sqrt{2}=E$

The Octet rule in chemistry of Bonds is 8 electrons in a shell because M=1/81=0.012345679

M=0.012345679 +0.7777777+2(H+ & He++)=9.012=3.002^2=t^2=c^2

II. CONCLUSION

So we see that Astrotheology ids the best theory for cosmology based on these calculations.



Average Temp of the universe=3K=t=KE=1/2Mv²

t=KE=3=1/2(M)(1/√2)²

M=12

$t=e^{M}=e^{12}=1.627$

GMP: E=263

Pressure=-8/3/19905=-1.339

-1.339 x 101.325=-1/(1-0.7367)=1/1-263=-E

1/(1-E)=-E

1/(1-E)=-E
E^2-E-1=0 ⇒GMP

F/A ·1/SA·A/F=1/SA=1/s=E

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Solution to Four Mathematical Physics Problems

Paul T E Cusack, BScE, Dule

ABSTRACT

This paper addresses four of the "toughest" problems in mathematical physics. We use our knowledge of AT Math which should be well know to you by now. I began my research in January of 2016 when I questioned whether pi and base e terminate. Of course, they do or we wouldn't have a physical universe. Really, my research began when I was in grade 6 contemplating tangents to circles and how God broke out of the never-ending cycle. We end with this paper today that contemplates the circle in another form, that of Pi. Good bye, good luck and bon chance.

Keywords: separatrix separation; exponents and dimensions; impossibility theorems, and spin glass problems, at math.

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Solution to Four Mathematical Physics Problems

Paul T E Cusack, BScE, Dule

ABSTRACT

This paper addresses four of the "toughest" problems in mathematical physics. We use our knowledge of AT Math which should be well know to you by now. I began my research in January of 2016 when I questioned whether pi and base e terminate. Of course, they do or we wouldn't have a physical universe. Really, my research began when I was in grade 6 contemplating tangents to circles and how God broke out of the never-ending cycle. We end with this paper today that contemplates the circle in another form, that of Pi. Good bye, good luck and bon chance!

Keywords: separatrix separation; exponents and dimensions; impossibility theorems, and spin glass problems, at math.

I. INTRODUCTION

In this paper, we attempt provide the solution, using our knowledge of AT Math, to solve four outstanding Mathematical Physcis problems including separatrix separation, exponents and dimensions, impossibility theorems, and spin glass problem. The problems descriptions come from the website New Scientist 5 of the World's toughest unsolved Math problems.

II. SEPARATRIX SEPARATION

A pendulum in motion can either swing from side to side or turn in a continuous circle. The point at which it goes from one type of motion to the other is called the separatrix, and this can be calculated in most simple situations. When the pendulum is prodded at an almost constant rate though, the mathematics falls apart. Is there an equation that can describe that kind of separatrix?

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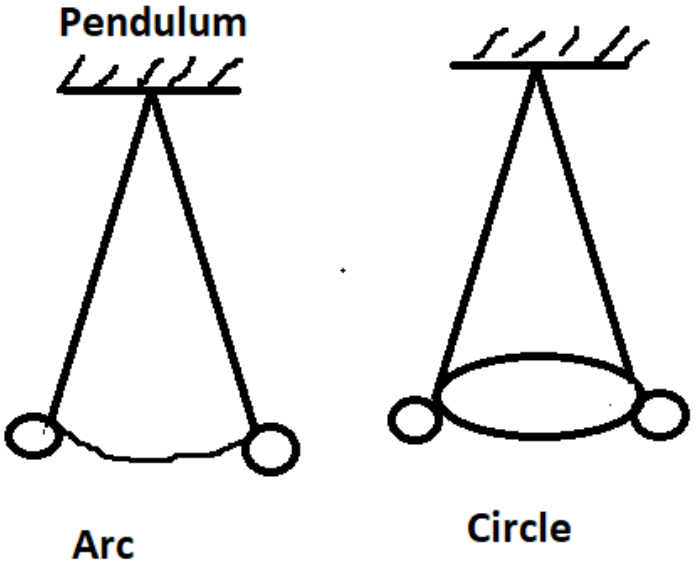


Period T=0.250=1/4

Period T=1/freq=1/t=E

x^2-y^2R^2

Let x=y

$2x^2=R^2$

Let R=2

$2x^2=2^2$

$x^2=2$

$x=\sqrt{2}=t$

M=Ln t=Ln $\sqrt{2}$=0.34657

TE=M[1/2π]
=0.34657 /2π
=0.05516

Proddinf Force

F=Ma=sin t
=sin $\sqrt{2}$
=0.02468

M=ln t

$e^M=t$
& v=d/t

s=t

v=1
t=1

t=KE=1/2Mv²
e^M=1/2M(1)
M=1/2Ln t
M=1/2Ln 1
=0

F=Ma=(0)a=sin t
t=0,π,2π

s=|E||t|sin θ
s=t

t=Etsin θ

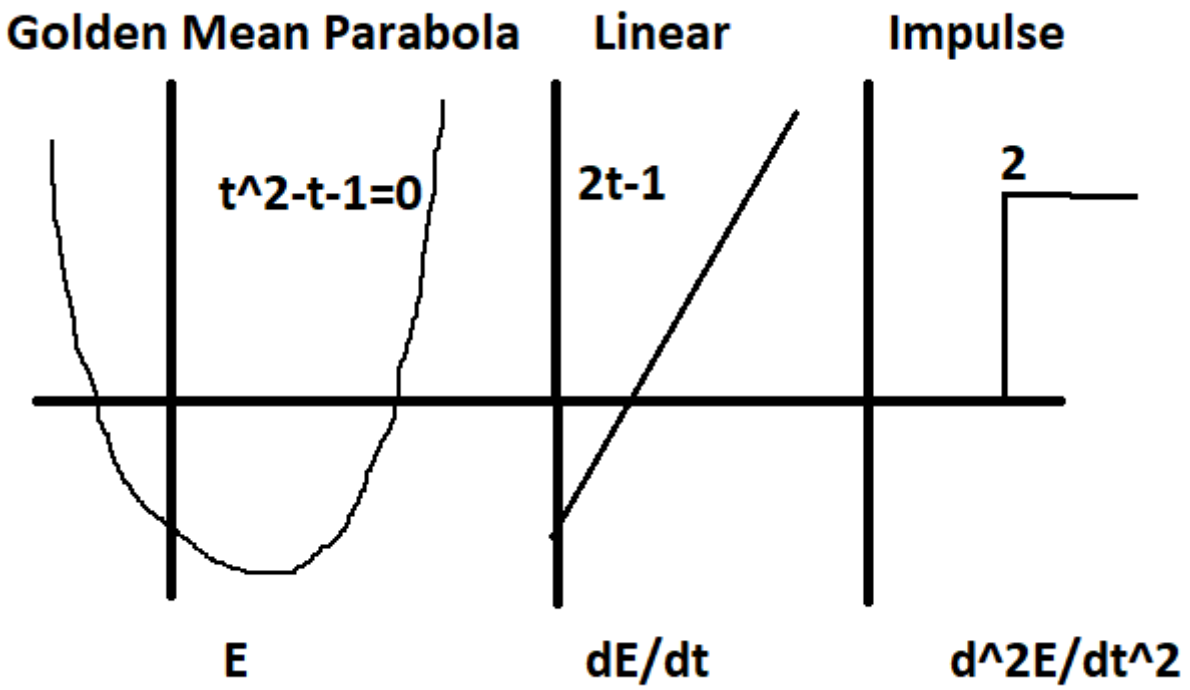
E=1/sin θ

Prodding Force=Golden Mean Parabola
t²-t-1=E

(√2)²-√2-1=E

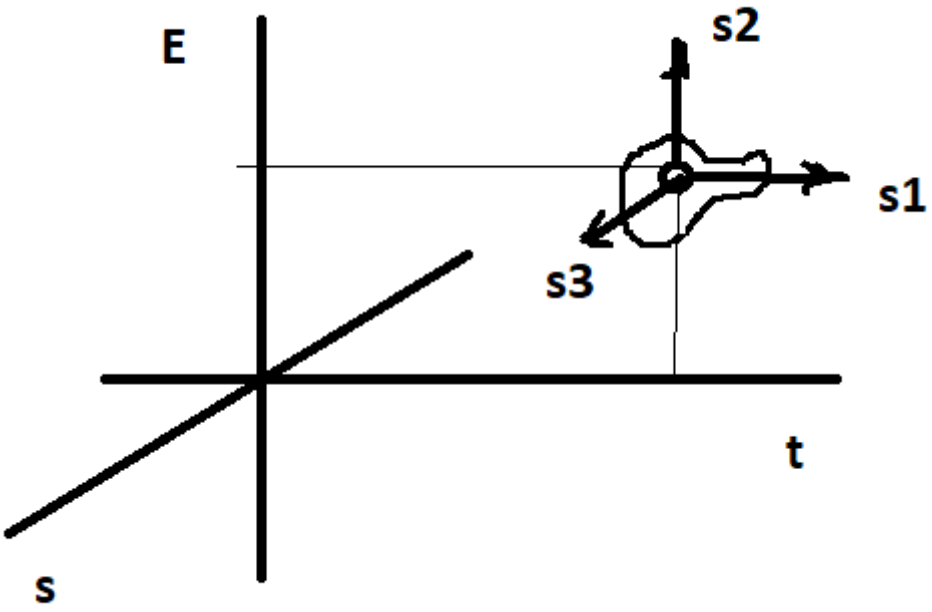
=39.58~4
=F=sin θ

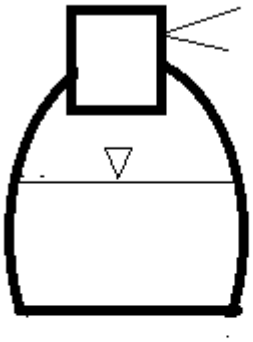
E=1/sinθ=1/F=1/(Ma)=1/0=1

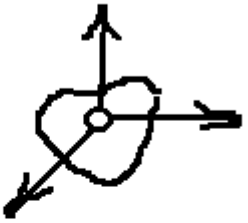


III. EXPONENTS AND DIMENSIONS

Imagine a squirt of perfume diffusing across a room. The movement of each molecule is random, a process called Brownian motion, even if the way the gas wafts overall is predictable. There is a mathematical language that can describe things like this, but not perfectly. It can provide exact solutions by bending its own rules or it can remain strict, but never quite arrive at the exact solution. Could it ever tick both boxes? That is what the exponents and dimensions problem asks. Apart from the quantum Hall conductance problem, this is the only one on the list that is at least partially solved. In 2000, Gregory Lawler, Oded Schramm and Wendelin Werner proved that exact solutions to two problems in Brownian motion can be found without bending the rules. It earned them a Fields medal, the maths equivalent of a Nobel prize. More recently, Stanislav Smirnov at the University of Geneva in Switzerland solved a related problem, which resulted in him being awarded the Fields medal in 2010.







P1=Mv1=M(0)=0 P2=Mv2

deatlP=P2-P
=Mv2
=cos t

Conservation of Momentum

$\Delta\bar{P}=\bar{P}_2-\bar{P}1$
$=Mv_2-o$
$=Mv_2$
$=\cos\theta$

$\int\int\Delta P ds dt=Pst \quad s=t$
$=Pt^2 \qquad E=t$

$=E\cos\theta$

$=Pt^2=(1/t)\cos\theta$
$=Pt^3$
$t^3=1$

$t=1$

$\bar{P}=\cos\theta$

$\int\int dP\, dsdt = Pt^2$
$=P(1)^2$
$=P$
$=\cos\theta$

$dP/dt=-\sin\theta$
$Pt^2=-\sin\theta$
$=P(1)^2=-\sin\theta$
$P=-\sin\theta=\cos\theta$

$y=y'$

And,
$P=Mv_2$

$v=s/t=1$

$P=M$
But $M=\ln t$
$\cos t=Ln\, t$
$-\sin t=1/t=E$

But $E=1/\sin t$

$-\sin^2 t=1$
$-\sin t=\pm 1$
$\sin t=\pm 1$

$t=\pm\pi/2$

Now, $s=\sqrt{[s_1^2+s_2^2+s_3^2]}$

$v=s/t=\sqrt{[s_1^2+s_2^2+s_3^2]} / (\pm\pi/2)$

$2\sqrt{s}/\pi=\pm 1$

$\sqrt{s}=\pm\pi/2$

$s=\pm 1.253$
$=E\ min$

$s=t=Emin$

$s=Et\sin t$

$t=\sin t$

$t=0$

$E=1/\sin t=1/0=1$

Impossibility theorems

There are plenty of mathematical expressions that have no exact solution. Take one of the most famous numbers ever, pi, which is the ratio of a circle's circumference to its diameter. Proving that it was impossible for pi's digits after the decimal point to ever end was one of the greatest contributions to maths. Physicists similarly say that it is impossible to find solutions to certain problems, like finding the exact energies of electrons orbiting a helium atom. But can we prove that impossibility?

Impossibility Theorem

Pi is the ratio of Circumference to the Area of a circle.

$Circ=2\pi R$

$Area=\pi R^2$
$A'=2\pi R$

$Circ = A'$

$A=A'$
$\pi R^2=\pi R$
$R=2$
$dia=4$

$Circ=2\pi(2)=4\pi$

$Area=\pi R^2$
$=\pi(2)^2$
$=4\pi$

$Circ /Area=1$

$Circ/dia=4\pi/4=\pi$

$dia \times \pi / dia=\pi$

$Circ=2\pi R=\pi d$

$\pi(4/\pi)=4=dia$

$Circ/Area=2\pi R/\pi R^2=1$

$R/2=1$

$R=2$

$R^2=2^2=(dia/2)^2$

$dia^2=16$

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Circ=√16 · π ·2
=8π
=251=Period T=1/freq=1/t=E

E=1/t=8π=1/t

t=0.0397

t x 2π=0.25=1/4

E=4=√dia

Circ=2πR=πd
=4π

Continuing,

Circ=2πR=πR² =π/dia=π/4=45°

Now y=y'

sin θ=cos θ

sin 45°=cos 45°

sin (Circ.)= sin (2πR)=1/√2

2πR=π/4

8R=1

R=1/8=0.125=E min

t=8

Circ=2πR=2π(0.125)=0.78539=π/4

sin² (π/4) + cos²(π/4)=1

true!

Circ=2πR

Let R=t

Circ=2πt=2π(8)=16π

Circ. =2π(1/E)=2π(0.125)=16π

16π ×1/6=16π ×31/155=32π=2^5π

=1.0053

1.0053 x π=63.165=1/15631416=1/(1583)(2π)

=0.9947π=3125

3125 ×16=5.0000=E when t=3 Golden Mean Parabola.

Finally,

Pi is the number that makes E=1 in the Golden Mean Parabola

$\pi^2-\pi-1=E=57.29^\circ=1$ rad=E

E=1/t

E=t=1

$\pi^2-\pi-1=1/(2\pi)$

$x^2-x-1=1/(2x)$

x(x-1)-1=1/(2x)

even -1=1/(2x)

odd=1/(2x)

2x=1/odd

x=1/(2 x odd)

x=1/even

x=1/[x(x-1)-1]

$x^3-x-1=0$

$\pi^3-x-1=0$

31-1-x=0

x=3=t ⇒ y=y’ E=5

x=1/[x(x-1)-1]

E=t =y=x

x=1/[x(y-1)-1

x[x(y-1)-1=1

$x^2(y-1)-x=1$

$(y-1)x^2-x-1=0$

y=1=E x=1=t
even=1/x=y’ when y=Ln t M=ln t
Solution is x=π

IV. SPIN GLASS

To understand this problem, you need to know about spin, a quantum mechanical property of atoms and particles like electrons, which underlies magnetism. You can think of it like an arrow that can point up or down. Electrons inside blocks of materials are happiest if they sit next to electrons that have the opposite spin, but there are some arrangements where that isn't possible. In these frustrated magnets, spins often flip around randomly in a way that, it turns out, is a useful model of other disordered systems including financial markets. But we have limited ways of mathematically describing how systems like this behave. This spin glass question asks if we can find a good way of doing it.

$\bar{s}=E\times\bar{t}$

$s=|E||t|\sin\theta$

$E=1/\sin\theta=1/F=3/8$

$c\sin\theta=t\,E$
$3\sin\theta=8\times1/8$

$\sin\theta=1/3=1/c$

$E-G=0=\sin\theta$

$\theta=0,\pi,2\pi$

$Mc^2-G=0$

$\int\int Mc^2dt=\int\int G=\int\int d^2E/dt^2$

$E=\int G^2/2=M^2/2\cdot 2c^3/3$

$G^3=M^2c^3$

$6.67^3=M^2\,(3)^3$

$M^2=0.801$

$M=2.99\sim c$

$E=Mc^2=2.99(2.99)^2=2.67=SF$

V. CONCLUSION

AT Math provides the solution to 5 of the world's toughest unsolved math problems.

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2. Cusack, PTE., Dimensionless Constants. (submitted).

The Instigation of Astrotheology

Paul T E Cusack, BScE, Dule

ABSTRACT

For the sake of posterity and human interest, I thought I'd record my recollections of how I came to develop Astrotheology Theory. Astrotheology I, of course, the latest correct version of how the universe came to be and is sustained. It gives us the Structure of the Universe (an ellipsoid) and the Superforce. It gives us the Teflon Ether and a useful formula for energy, time, mass, and space. Also, we see how the human mind is calibrated to pick up on the signal that is the known universe

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INTRODUCTION

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I recall in High School at the almost all boys Catholic St Malachy's High School in the Uptown of Saint John, Canada, that my best teacher of all time, Mr Paul Assaff, UNB MA who taught us Enriched Math for 3 years put on the chalk board x=1/(x-1). He called it the Golden Mean Parabola. It wasn't part of the lesson that day; just something he mentioned before beginning his lecture for the day. That parabola is the most important item in AT Math.

At the same high school, I was in conservation with a fellow student Robert Cyr. He told me that, from the enriched Chemistry he was taking from yet another great teacher, Dr Owen Dunn, that Scientists figured that they coulsd not know the position and velocity of a particle at the same time. He also said when they look, they see what they expect to see. I asked Robert, what happened when they are equal? Robert said that is probably the answer to the problem. He asked, Dpo you mind if /I use that? I said No, I'm going to write a paper about it someday! Indeed, I did. It is AT Math.

In High School, Physics Teacher Joe Breen, who was a good teacher but a bad person, passed around a couple of magnets. We could feel the repulsion from the two magnets that relaxed when they we brought within a certain range of each other. That was important in developing Hook's law for the spring that is the universe. In Junior High School, Mr Collins emphasised that the formula for a spring is F=-ks. He made known to us that the negative sign is important. Indeed it is. He said he din';t know why the negative sign was there; only that it weas. It was because the direction of the force is opposite the spring compression. In engineering at UNB, Dr John Dawe discussed the Hook's Law in a graph of the linear function. The modulus of elasticity I coined to be *cuz* =Pi-base e=3/14159265-2.7182828=0.4233. I had wondered as a teenager if subtracting two irrational numbers would yield a rational number. I believed that irrational numbers were impossible since the area of a circle is finite. Area= PiR^2. I wondered about these things because I read books such as the Red Limit in the Astronomy Book Club when I was a teenager.

When I was enrolled at UNBSJ for Light and sound for Engineers, I recall the professor (whose name I forget) taught us that Kinetic Energy is always relative to something. I asked, where is the stationary point in the universe? He didn't answer either because he did not know or he didn't hear me. From this I realized that Einstein was wrong. I also known he was wrong because this idea I got from reading a physics textbook, that time would stop if all Kinetic Energy stopped. Therefore, the formula for time =KE=1/2Mv^2

At the university of Waterloo, I learned my greatest lesson even though I was only there for 4 months. It was from my Linear Algebra teacher. I forget his name. When I went to his office, he told me to drop the pencil and working black ink. Don't erase. Get a stack of white paper and start doing math research. He said, You don't have to meet every woman in the world before you decide which one you are going

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to marry.! He was quite right. But I didn't hear him until I was 45 in 2012 when I began my investigation into AT Math.

Also at Waterloo, the same Math professor introduced us to the vector cross product. This is where the space equation came from s=E x t=|E||t|sin t When space =time, E=1/sin t=csc t We also learned in Linear Algebra the eign vector, the eign value and the characteristic function.

Also at Waterloo, I had a Physics Professor who taught us that all things human follow the bell curve. It had nothing to do with Engineering, but everything to do with AT Math. The fame Pinko on the Price ios Right reminded me that the end slot that the disk ends up in is random. The slot thinks its drawing it. It isn't. It just plain luck. But statistics is telescopic. We have the central limits theorem which tells us that every measurement of the same thing falls into a bell curve. Cicil Engineers takes more statistics than Electrical or Mechanical.

I forget exactly when, but I do recall realizing one time I was sitting in the living room with my brother-in-law. I said, The function equals its derivative. Y=y' Donnie had taken calculus three times. I took it twice. I failed it when I was at the University of Waterloo. Robert Cyr and I enrolled in Waterloo where we met our Waterloo. We didn't have calculus like the rest of the engineering students. They had grade 13; we had grade 12. We returned and enrolled in UNB.

We know from Physics that when the function equals its derivative, the velocity equals its acceleration. It kind of like walking up an escalator going down. I exclaimed to my brother In law, The function equals the derivative!

My interest lay in Architecture because I could draw. I applied to McGill Architecture but didn't gain acceptance. You need to have straight A's ion first year engineering which I did despite begin there for only half the year. I went from Mechanical Engineering with an eye to Aeronautical Engineering; Electrical which I thought was more math based; to Civil Engineering which had structures. The only "F" I got at UNB was in the main Electrical Engineering course. A Muslim, who thought I was trying to steal whom he thought was his girlfriend, poisoned me before the exam. I got a zero- did not write a number. I make too many mistakes to be a structural engineer. My grades ranged from D to A-. no consistency in grading and testing. (They really need standardized tests for Engineering as they do in the USA)

In Mechanical Engineering I had to take Light and Sould for Engineers; In electrical I had to take Differential Equations. Had I gone straight to Civil Engineering I would not have gotten these courses. (You've got to get the math when you are young, or you'll never get it.) Also, the extra Electricity Circuits was valuable. Civil Engineers study Mechanics. It is the oldest of the Engineering subjects and most basic.

Also, at UNBSJ, I took psychology. IN basic Psych 1003, we learned that the human brain functions at 31.8Hz. I later realized that this is 1/Pi=0.318. That was crucial to understand how the brain functions. When I went to a Grateful Dead concert, I took a hit of acid (LSD). I came to see the mind flickering. This grand error in judgement was a boon for me. (I don't recommend taking any drugs.)

When doing AT Math calculations, I stumbled upon 1/81=0.012345679. This is very important. Each decimal crest over to the next number on the scale. It is equal, to the Mass. The Gravitational constant comes from 7 of cycles of (Pi-1)=6.67. We also know that M=Ln t; or MdM/dt=1/t=E We also realized that Force =-Ma=sin t and P=Mv=cos t. From this we get the two pole solution.

When I was a boy laying in bed at night, I realized that the universe continues in circles. The only way to beat is is the break free from the circular time as a tangent. X^2+y^2=R^2 x=y x=1/sqrt2=sin 45=cos 45. I also noticed that nature, in my case water, don't care where it goes. It just goes down hill. Humans care where we go, hopefully not Hell!

I began writing Astrology in January 2016. Since then I've published, with the help of generous journals, 1500 papers or an average of 4 per week for 7 years. I've never been paid a cent for all that work. I never tire. I could write another 1500 papers, but I've run out of material. I'm told I'm an Eminent Scientist and an eminent Medical Researcher. I suppose we'll be adding Mathematical, Economics, Archaeologist, and Engineer. I don't consider myself to be a scientist nor engineer. I'm a guy with a Bachelor of science in Engineering. I don't have a Masters degree let alone a PhD. I wouldn't pass a subject test for a PhD. A friend's younger brother cursed me when we were kids that I wouldn't rise above the bachelors level. Maybe some day, I'll get an honourable doctorate which must be better from the other type, the dishonourable doctorate!

If I had had the cooperation from adults just getting what I earned, I would have accomplished a lot more. It is what it is.

I began putting pen to paper in January of 2016. I relied on the Bible that tells us that God's spirit hovers over the water and that Man was made from Clay. The first few steps of Astrotheology were awkward. I didn't truly hit my pace until after 700 written pages that I published in Paulymath (All my books are out of print and can't be recovered. I had no sales after years of trying).I know now that Astrotheology is the correct theory. How mush longer it will take to be discovered, I don't know and really don't care. They'll did it up eventually. I know it is correct. Of course Einstein thought he was right as well, but he was mostly wrong.

The kicker is that this mathematical physics has been around since 4000 BC at least with the Minoans. The Jews believe the world began in 3760 BC. Moses, who likely had contact with the Minoans in 1450 BC, recorded it in Genesis and from there spread all around the world to the Maya in Mexico. Nothing new under the Sun.

I had only head mentioned the Ether. It was lucky that I called it that, the Teflon Ether. I used every one of the courses I took in Engineering at UNB, mainly UNB Saint John. (All you need is the 2 year diploma; not the 5 year degree.) I didn't use as much from UNB Fredericton. Professors were not as good and classes were too big. Classes were too big at Waterloo as well. There weren't enough seats there!

With the Ether comes light as a medium for light to travel through. Light is both a wave and a particle much like water waves. There is no need for Maxwell's Equations. And the universe is not expanding; It is being compressed by the superforce. The Universe is an egg-shaped ellipsoid. Light is not bent by gravity as Einstein thought. It is passing through the voids in the Carbon tetrafluoride Teflon Ether. You get better results on the experience that proclaimed Einstein was right!

If you want to know how the universe works, dig up my 1500 papers. My memory is poor like Einstein, work hazard. The rest is History. This is how I came to develop the Theory called by me, Astrotheology. God left his fingerprints on the Universe. You don't have to chose between belief in God and belief in science. That is the essence of my theory and what I hopple take away from it. As a gift from God, it was an awful lot of work. I plan to retire from what I'm doing; I'm going to get a job!

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Universal Roulette Wheel

Paul T E Cusack, BScE, Dule

ABSTRACT

In this brief paper, we have a lot of information. It uses AT Math and Einstein's Theory of Gravity. Space can be thought to be curved as the ball rolls in the roulette wheel. When the wheel spins fast enough, the Superforce is reached and gravity is opposed to keep the ball suspended a the wheel edge. Einstein's constant is 0/4233=Pi-e=cuz. We use the mechanics of the roulette ball course to model the universe. The result is a cardioid which converges on Euler's Trig Identity and the Pythagorean Theorem.

Keywords: astrophysics; astrotheology; cusack's roulette wheel.

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Keywords: *astrophysics; astrotheology; cusack's roulette wheel.*

I. INTRODUCTION

We can model the universe as a typical roulette wheel where the ball rolls around the rotating dish. When the force on the ball is equal to the Superforce,(8./3), the visible universe comes into existence.

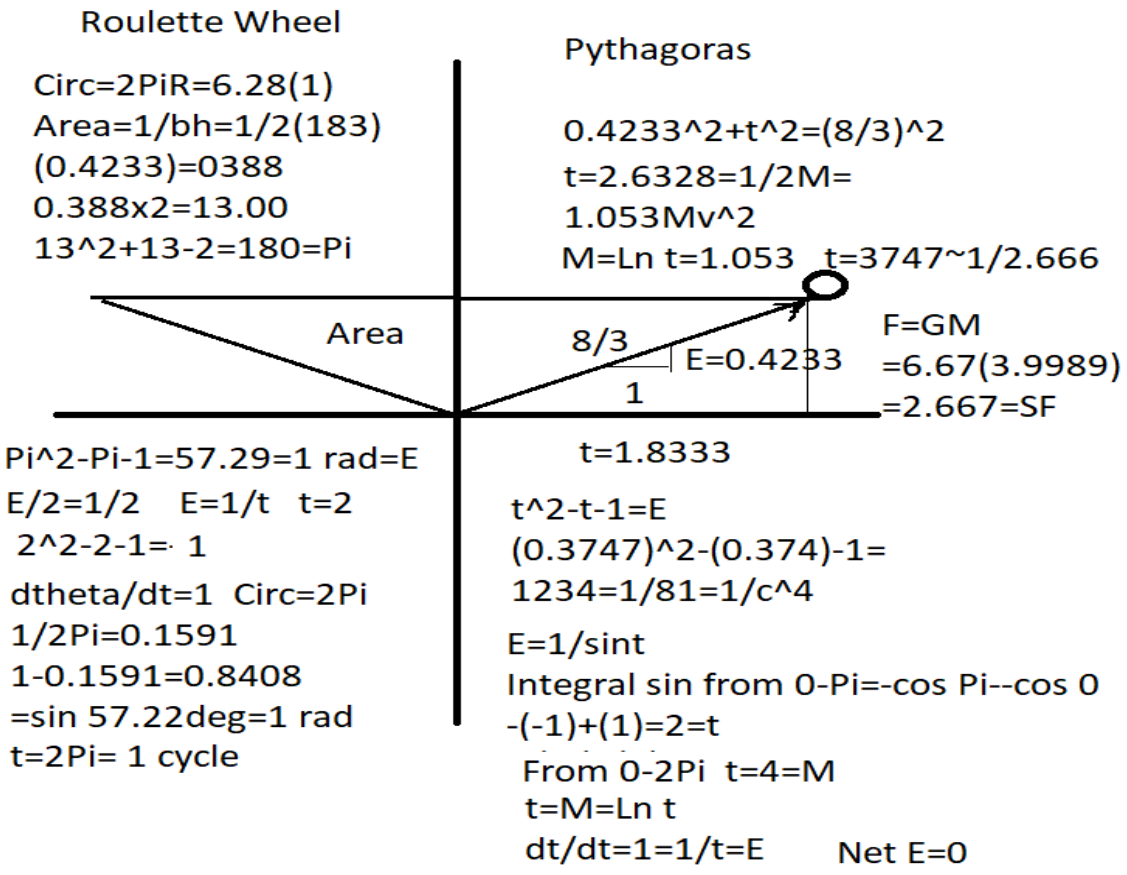

Figure 1: Is a roulette wheel in profile. The slope of the dish is cuz=(Pi-e)=0.4233. the wheel rotates at dtheta/dt=1.

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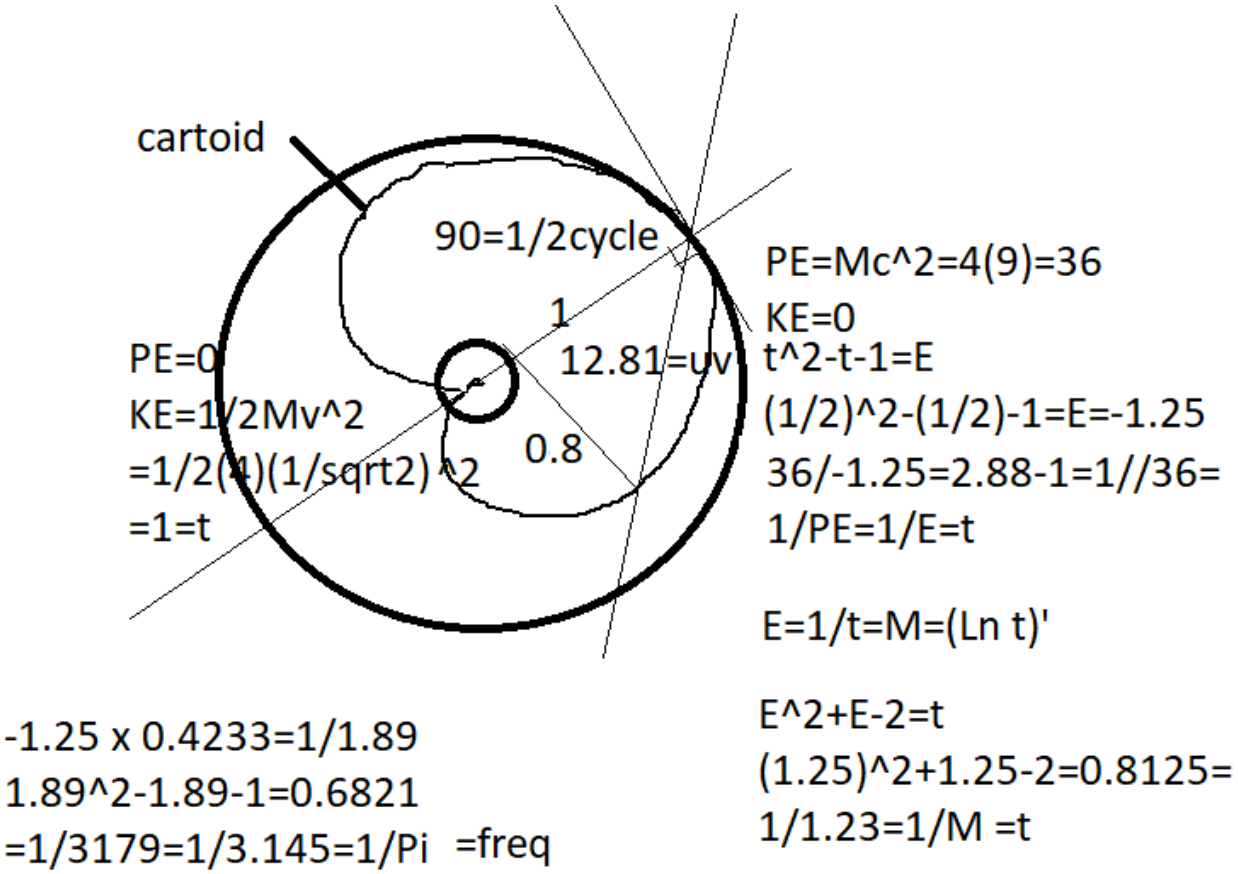

Figure 2: Plan view of Roulette Wheel & resulting cardioid equation for the universe. Cartesian & Parametric Equation of a Cardioid

$x=a\cos t(1-\cos t)=t=1/2$

$y=a\sin t(1-\sin t)=E=2$

Let $x=y$

$y=\sin t$

$x=y'=\cos t$

$y=y'$

$2(x^2+y^2+ax)=a(2(x^2+y^2)$

$2(R^2+ax)=2a(R^2)$

Let $R=1$

$2(1+ax)=a(2(1)$

$2+2ax=2a$

$1+ax=a$

$ax-a+1=0$

Let $a=1$

$x-1+1=0$

$x=0=t$

From above:

x=cos t

0=cos t

t=Pi/2

y=sin t=sin Pi/2=1=y=E

cos 90°=0=y'

sin 90°=1=t

Circle:

X^2-y^2=R^2

2x^2=1

X=1/sqrt2=sin 45=cos 45

Trig Identity:

sin^2+cos^2=1

1/2+1/2=1

Einstein had space curved. He was apparently correct. We have the Force of gravity F=Ma with M=4 and G=-2/3. F=Superforce. The other formulas in Figure 1 should be familiar to the Astro theologian by now.

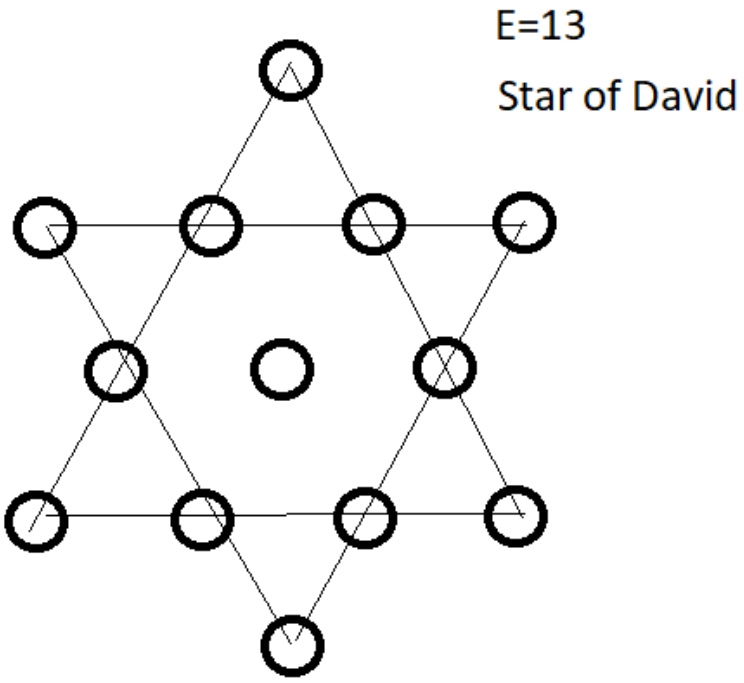

Figure 3: The Jewish Star of David has 13 points which indicates that the Hebrews knew Astrotheology Math. The star is on the flag of Israel. It is two isosceles triangles 60-60-60

$$E^2+E-2=t=1/2$$

$$E^2+E-2.5=0$$

$$E=1.1583;-2.158$$

$$E=1/\sin 60 \text{ deg} =1.1547$$

$$s=t$$

$$s=|E||t| \sin 60 \text{ deg}$$

$$E=1/\sin 60\text{deg}$$

$$13^2+13-2=180=Pi$$

II. CONCLUSION

The simple roulette wheel with the rolling ball can be used to model the universe. Its all very interesting, but I think I can put down my pen now!

REFERENCES

1. Cusack., PTE., *Astrotheology Cusack's Universe* J of Phys Math. Jan 2016.