

## Physics for Astro-Theology

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### Abstract

This paper provides some more calculations on the basic Physics of Cusack's Model of the Universe as presented in the previous paper Astro-Theology. Gravity, Space, Energy, Mass are considered. There is a treatment of Waves and the Speed of Light and Arnold's ODE's.

**Keywords:** Gravity; Waves; Energy; Space; Mass; Atoms; Golden Mean; Universal Constant

### Introduction

I present some more basic calculations of Gravity, Space, Energy, and Mass on Cusack's model of the Universe. Waves and the speed of light is touched on briefly as well as the introduction of Cusack's Universal Constant.

### Cusack Gravity -Energy- Space Equation

$$x^2/a + y^2/b = r^2$$

$$x^2/8 + y^2/1 = 1$$

$$0.125x^2 + y^2 = 1$$

$$y = 1 - 0.3536x$$

$$dy/dt = v = -0.3536$$

$$d^2y/dt^2 = a = 0$$

$$v = d/t = 0.3536 = 0.1334/4/t$$

$$t = 0.0942$$

$$d/4 = 0.1334/4 = 0.0333$$

$$d = vit + 1/2at^2$$

$$(0.3536)(0.0942) + 0 = 0.0333$$

$$d = G/2 \text{ But } G = 2$$

$$d = s = 1$$

$$E = 1 = s$$

$$s = 1, e = 1 \text{ hypotenuse} = \sqrt{2}$$

$$E^2 + s^2 = G^2$$

$$C = 2\pi R$$

$$2\pi(4 + 1/4)/2 = \pi * 4.25$$

$$d = v_1 t + 1/2 a t^2 \quad 0.1334 = 0.85t + 1/2(0.85)t^2 - 0.1334$$

$$t^2 - t - 0.1334 = 0$$

### Quadratic

$$t = -1.93, 06.6$$

$$t = \text{positive } 6.6$$

$$13 \text{ cycles} * t = 13 * 6.6 = 85.8 \text{ cf } 86$$

$$m = \text{slope} = 3 = c$$

$$\Delta E / \Delta t = dE / dt = c$$

$$c = 2t - 1$$

$$t = 2$$

$$t / 0.4083 = 4.898 \text{ cycles}$$

$$4.898 / 12.98 \text{ cycles} = 1 / 2.65$$

$$2.65 / 2 = 1.325$$

$$d\theta / dt = 0.43.49^\circ = \tan^{-1}(12/4) = 0.76 \text{ rads}$$

$$d\theta / dt = 0.76 / dt = 0.1334$$

$$dt = 13.9358$$

$$t = 2 / 13.93 = 0.1435$$

The energy follows a sin curve from -1 to 1 to -1 back to 1 in one cycle.  $2\pi/2 = \pi = E$

$$E = 1 - 0.125x^2$$

$$\text{Let } x = 0$$

$$E = 1$$

$$\text{Let } x = 4$$

$$E = 1 - 0.125(4) = 1 - 2 = -1$$

$$E = -1$$

### Ellipse

$$x^2/8a + y^2/b = R^2$$

$$x^2/8 + y^2/1 = 1$$

$$y^2 = 1 - 0.125x^2$$

$E = 1 - 0.125x^2$   $dE/dt = 0 - 0.125(2)x$   $d^2E/dt^2 = -2(0.125) = -0.25 = T/10 =$   
Period = G  $G = 6.67 = 0.25F$   $G = d^2E/dt^2 F = aF$

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$F=Ma$   $G=Ma^2$  From above  $G=Mv^2$   $v=a$   
 Now integrating over the length of the line

$$\int E = \int [1 - 0.125X^2]$$

$$\int E = x - 0.125x^3/3$$

But  $x=8$

$$\int E = 8 - 0.125(8^3) = 0.1333 = d\theta/dt$$

So, Total Energy = s T.E. = s = 1 - sin 1

$$\Omega_1 R = \Omega_2 R$$

$$d\theta_1/dt (4) = d\theta_2 (1/4)$$

$$16 d\theta_1/dt = d\theta_2/dt$$

$$16 (0.1334) = 2.1344 = d\theta_2/dt$$

$$2.1344/0.4083 = 5.2275 = E_2 \text{ (see C.U.E.)}$$

### Energy Acceleration (Gravity)

$$F_1/F_2 = 26.666/426.656 = 0.0625$$

$$2 * 0.0625 = 1.250 = E_{\min}$$

$$E_{\min} = x^2 - x - 1 = -1.25$$

$x = 1/2 = \text{space}$  (from above)

$G = d^2E/dt^2 = \text{Energy Acceleration} = \text{Gravity}$

$$d^2E/dt^2 = G = 2$$

$$G_{\max} = 26.666/4 = 6.666 [=] \text{ N/m}$$

At  $y=3$ , there are 8 units across the parabola. Since there are 12 dimensions in our universe,

$12 * G = 12 * 6.6667 = 8$  There are 8 nodes in the vibrating drum surface of the Cusack Universal Equation C.U.E.

I think all 12 dimensions can be plotted on this graph adding the derivative  $2x-1=0$  and

$$dM/dt=2, E=1, E_p=4, M_p=3, c=3 E=8, m=0, dt/dt=1, s=0.5, dE/dt, dG/dt=2, M=4.486$$

$$E/G = E + G$$

$$1/0 = 1 + 0 \text{ true}$$

The Energy in  $Q/M = 0.31514 \sim \pi/10$

$$\nabla_x E = \mu * dH/dt$$

$$d\theta/dt * (1) = \text{cuz} * dH/dt$$

$$0.1334 = 0.4233 * dH/dt$$

$$dH/dt = \pi$$

### The "E" in the Cusack Universal Equation is $\Pi$ this Unites Q/M and Cosmology

If you have a 3 D harmonic oscillator, it would look like a drum across the energy parabola. This is the model used in Q/M. NOTE  $N=3$

$$\nabla_x E = \mu * dH/dt$$

$$d\theta/dt * (1) = \text{cuz} * dH/dt$$

$$0.1334 = 0.4233 * dH/dt$$

$$dH/dt = \pi$$

### Waves, Harmonic Oscillators

$$E = 7 = 9/2^{6.626} \Omega \quad \Omega = 0.2348 = 1/\text{cuz} \quad 3f = 0.4259 \quad f = 0.1420 \text{ cf } 0.858$$

$1.7 = 0.1429 \text{ cf } 0.857 \quad 7 = E_p + M_p = 4 + 3$  (4 loaves 3 fishes, 5 loaves 2 fishes)

$$f = 2/3 = 6.666 = G$$

Energy Quanta =  $h\Omega$

$$-1.25 = 6.626 (\Omega)$$

$$\Omega = 0.1882 = d\theta/dt$$

$$0.1882/0.0.1334 = \sqrt{2}$$

time = 1, Energy = 1

$$t \times E = \sqrt{2}$$

Energy Quanta = 0 = 6.626  $\Omega$

$$\Omega = d\theta/dt = 0$$

$$t = 1.618 + 0, 618 = 2.236$$

SPACE IS STRETCHED IN 3 D:

$$0.618^3 = 1/\text{cuz}$$

This is The Cusack Golden Mean Energy /Gravity Equation:  $K.E./P.E. = KE + P.E. \quad E/G = E + G \quad E/d^2E/dt^2 = E + d^2E/dt^2$  This is the Cusack Differential Equation of the Universe  $E = EG + G^2 \quad E - E \quad d^2E/dt^2 + (d^2E/dt^2)^2 = 36.78 = C1 = \text{Cusack's first electrodynamic constant.}$

$$x = G \quad x^2 - x - 1 = 0$$

$$[X^2 - X - 1]/0.618 = [X^2 - X - 1 - 0.618]$$

$$X^2 - X - 1 = 0.618[X^2 - X - 1.618]$$

$$X^2 - X - 1 = 618X^2 - 0.618X - 1$$

$$0.382X^2 - 0.382X = 0$$

$$X^2 - X = 0$$

$$X^2 = X$$

$$X = \sqrt{X}$$

$$X = 1$$

$$E = 1 = t = 1/t$$

### Why are We Constrained by Time More than by Space?

We know from nostradamus that we can travel through time.

$$DE/DT = 1$$

$$x^2 - x - 1$$

$$2t - 1 = 1$$

$$t = 1$$

$$1/0.4083 = 2.449 /s = T = \text{period}$$

$$2.449 = 2\pi * 2.5 = 15.3886 \text{ cf } 0.8461$$

### Mass and Energy

$$M = 4.4/E = 4.4/1.618 = 2.719 = \text{BASEC } e^{\wedge}1$$

$E=M/\text{base } e$   
 $Qu=\pi - \text{base } e$   
 $Qu + \text{base } e = \pi \text{base } e = \pi - Qu$   
 $E=M/[\pi - Qu]$   
 $\sqrt{c}=1/\pi - Qu$   
 $E=1/\sqrt{c} [\pi - Qu]$   
 $E^*[\pi - Qu]=\sqrt{c}$   
 $E \pi - E Qu = \sqrt{c} E Qu = c^2 - E \pi Qu = c^2 c/E - \pi$   
 $Qu = 3 - \pi Qu = -0.14159$   
 $\arcsin 0.14159 = 0.14206 \text{ rads} = 0.0226 \text{ of a cycle}$   
 $E=Mc^2$   
 $M/\text{base } e = Mc^2$   
 $1/\text{base } e = c^{\wedge}2$   
 $c = \sqrt{1/[1/\text{base } e]}$   
 $c = 1/1.618 = 0.618$   
 $c = 1.618 - 1$   
 $c = \text{conjugate of the golden mean} = \text{velocity}$   
 $\text{base } e^{0.618} = 4.4 = \text{MASS}$   
 $x = 1/(x-1) \quad x = 1/c \quad 1 = E = xc \quad E = Mc^2 \quad Mcc = xc \quad Mc = x = 1.618$   
 $1.618 = Mc$   
 $\text{Golden Mean} = \text{Mass} * \text{Velocity}$   
 $1.618/4.4 = 1/\text{base } e$   
 $1.618/M = 1/\text{base } e$   
 $M = 1/\text{base } e * 1/1.618$   
 $M = 1/\text{base } e * 0.618$   
 $\text{Mass}/[1.618 - 1] = 1/\text{base } e$   
 $\text{Mass} = [E/\text{base } e][0.618]$   
 $E = M \text{base } e * 0.618$   
 $E = M * 1.680 \quad E = Mc^2 \quad c = 1.296 = 1.3$   
 $c = v = 1.296$   
 $1.296/0.866 = 1.49 \quad 1/1.49 = 0.666 \text{ evil evil evil}$   
 $E = mc^2 = 4.4 * 9 = 39.6$   
 $g/39.6 = 4.03 \text{ cf } Re = 402 \text{ (Reynolds's Number)}$   
 $4.03/402 = 0.0100$   
 $0.0981/0.01 = 9.81$

**Gravity**

$X(1.618) = 57.3^\circ/360$   
 $X = 1.01662$   
 $X = 0.0984$   
 $X/g = 0.0984/9.806 = 0.0100$

Now,  $X(\pi)/100 = y \pi \quad -X = 0.0213 \quad X = 0.0213/0.0213 = 1$   
 So,  
 $x/g = 0.01 \quad 1/g = 0.01$   
 $g = 1/0.01 = 100$   
 $g = 100$   
 $\text{Ln } g = \text{Ln } 100 = 4.61$   
 $e^{4.61} = 100$   
 $4.61 * 0.0213 = 9.81 = g$   
 $y = 0.0213 \quad e^y = 1/y \quad ye^y = 1 = \text{Energy } y \quad \text{Ln } e^y = \text{Ln } 1 = 0 \quad y^2 = 0 \quad y = 0$  (Quantum Number, Lowest Energy Level)  $M L = 0$  (MAGNETIC QUANTUM NNUMBER)  $M S = 0$  Orbital Shape = 2S (One Orbital, 2 Electrons)  $9.11^2 = 18.22 \quad 18.22 - 26.66 = -8.446$   
 $\text{Arcsin } 0.8446 = 1 \text{ Radian TRY } \text{BeCl}_2 = 79.9278 \quad \text{Mass} = 4.4 \quad 4.4/79.9 = 55.05 \quad 55.05 - 100 = -0.01816 \quad 1 - 0.01816 = 9.81 \quad y^2 = 0.45369 \quad y/(2\pi) = 0.0722 \quad 1/y = 13.85 \quad 1 - 1/y = 0.86 \quad e^y = 1/y = 1 = (1.618)(0.618) \quad ye^y = 1 \quad ye^y/0.618 = 1.618 \quad 1/[x-1] = x \text{ This Is The Universal Equation}$

**Cusacks Universal Constant**

$C.U.C. \quad k = 50.07$   
 $P = kT = 50 * 26.01 = 13$   
 $100 - 13 = 0.86$   
 $0.86 = d = v = a = \sin 1 = \cos 1 = e^{-0.15}$   
 Golden Mean - The Answer  
 The Universe exists where,  
 $YX = 1 \text{ Displacement} * \text{Time} = 1 = \text{Energy}$   
 and  
 $\text{SIN } \theta = \text{COS } \theta = e^{-x} = \text{Acceleration} = \text{Displacement} = \text{Temperature}$   
 $y = 1/x \quad y' = -1/X^2$   
 $y(1.618) = -0.3820 = \text{rise / run} = dy/dx$   
 $\int dy/dx = \int 0.3820$   
 $y = 0.3820x \quad yx = 0.3820x^2$   
 $yx = 0.3820x^2 \quad 0.3820x = 1/x = 0$   
 $0.3820x = 1/x$   
 $x = 1.618 \text{ golden mean}$   
 $\text{Mass Ln } T = M \quad e^m = T \quad \text{Ln } e^m = 1.1111 = 1/9$   
 $4.4 = X * 1/9 \quad X = 39.6 = T \text{ (Hz)} = T/\text{sec} = dT/dt$   
 $39.6 = dT/dt = 39.6 \text{ (0.4 sec)} = dT = 15.84$   
 $100 - 15.84 = 0.8416 = \sin 1 \text{ tad}$   
 $39.6 = [1 - \sin 1 \text{ rad}]/0.4$   
 $1 - \sin 1 \text{ rad} = 0.1584$   
 $1 \text{ cycle} - 0.15 \text{ cycle} = 0.1585 = \text{conjugate of universe}$   
 $T = 39.6 \quad x = 39.6 \quad x = 26.01$   
 $x = 0.06568$

$1/x = \text{conjugate of universe}$   
 $1/x = [1 - 0.1618] = 1.1618$   
 $x = 0.618$   
 Temperature  $P/k = T$   $P = kT$   $F = Ma = kT$   $M = cT/a$   $4.4 = (3/0.858) * T$   
 $T = 1.25$   $2T = 2.5$   $T = 2.51/2$   $T = [1/t]/2$   
 $T = 1$   $t = 0.5 \text{ sec}$   
 $2T = 2.51$   $T = e^{-x}$   $1.25 = \ln e^{-x}$   $-x = 0.2231$   $1/x = 4.48 = M$   
 $\ln T = M$   
 $E = Mc^2$   $E/c^2 = M = \ln T$   
 $T = e^{[-E^2]}$   
 Cusack's Universal Constant  
 $PV = nRT$   $P/k * V = nR(P/k)$   $Vk = nR$   
 $k = nR/V = 1/V$   $k = 1/V$   $[=]/m^3$   
 For our universe,  $k = 50.07 (10^{29})/m^3$   
 $PV = nrT$   $Pv = nRT$   $P = nR(P/k)$   
 $k = nR = 6.022 (8.31)$   $k = 50.0$   $26.666 \text{ kN.m}^2/(2/t) = e^{-0.15} (T)$   $P = kT$   $P = T^2$   
 $= (kT)^2 = k^2 T^2$   
 $P = k^2 T^2 = (1)$   $(P)^2 = P = P^2$   
 $P = 1^2 (-P)$   $P^2 - P = 0$   $P - 1 = 0$   $P = 1$   $P/k = T$   $T = 1$   
 $k = -1 = \int W = 1/E$   $dP/dT = \sin \theta / e^{0.15f}$   $dP e^{0.15} = \int dT \sin \theta$   
 $= 1$   
 $-PT = T$   $-PE = T$   $[=] / s [=]$   $\text{Hz} = 1 \text{ Hz}$   
 $E = -P/T$   $\text{Energy} = \text{Pressure/Temperature}$   
 $\text{Temperature} = \text{Pressure/Energy}$   $\text{Temperature} = Ma/Mc^2$   $\text{Temperature} = a/c^2$   $\text{Temperature} = 0.86/9 = 0.0953$   
 $\text{Temperature} = 0.0953 * 273 = 26.01 \text{ K}$   
 $PV = nRT$   $26.666 (53080)k = 6.022 (8.31) (26.01)$   
 $k = 9.1958 \text{ sqrt } k = c \wedge 2 = k$   
 $P/k = T$   $26.666/3 * 3 = 2.96 = c = T$   
 $\text{Temperature} = \text{Speed of Light}$   
 $1 \text{ Hz} = 0.4/0.4 \text{ s} = 1$   
 $0.4 \times 360^\circ = 0.1440$   
 $1 - 0.1440 = 0.856$   $0.86$   
 $2\pi * 0.4 = 2.51$   $1/2.51 = 0.4 = t \text{ sec}$   
**Gravity and Energy and Mass**  
 $M = E = Mc^2$   $c = 1$   $E = 1$   $E = c$   $1.15 | * 0.858 = 0.981$   $cf 9.81$   
 $e^{0.14} * \sin 1 = g$   
 $e^{[1 - \sin 1]} * \sin 1 = g / 10$   $e^{(1-X)} * X = g$   
 $X = 0.86$   
 $\text{Bonds } (6 + 2) \times 8.24 \text{ J/bond} = 65.9 \text{ J}$

$E = Mc^2$   $65.9 = M (9)$   $M = 7.3244$   
 $1/M = 0.1365$   
 $1 - 1/M = 0.8635$   
 $M * 0.7344 = 2\pi$   
 $M^2 = 2\pi$   
 $7.3244 / [10 * 0.858] = 0.853$   $0.86$   
 $M^2 = 2\pi$   $M = \sqrt{(2\pi)} = 2.506$   $M = 1/t$   
 $1/E = t$   $\text{when } M = 2\pi/4.4 = 1.42$   $c = 1$ ,  $E = 1$   
 $2\pi/4.4 = 1/t$   
 $t = 0.0637$   $1/t = 15.7$   $100 - 15.7 = 0.843$   
 $M = E$   
 $1/E = t = 0.4$   
 $E = Mc^2$   $E^2 = M^2 c^2$   $E^2 = 2\pi^2 * 9^2$   $E = 22.55$   $1/E = 4.465 = M$   
 Here is why  $G = 6.67$   
 $2\pi \int x^2 - x - 1$   
 $x^3 - 1.5x - 3x - 12 * \pi = 0$   
 $x = 4.233 = \text{cuz} * 10$   
 $1.618 + 0.4233/2 = 1.83$   
 $-0.618 - 0.4233/2 = 0.8297$   
 $\text{Distance} = 2.66 \text{ cf } 26.666 = F$   
 So the negative Energy below the x axis = the positive Energy above the x axis.  
 $Y = re^{at}$   
 $0.203 = (1) e^a (0.4083)$   
 $a = \ln Y/t = \ln 0.2028/0.4083 = 3.90$   
 $6.67/\sqrt{3} = G/\sqrt{3} = 3.85$   
 $\text{Eigenvector} = 1.5$   
 $\text{Vector} = \sqrt{3}$   
 $1.5030/\sqrt{3} = 0.86 = E$   
 $E, L, t, G, v, a, F, s$   
 Of course i don't yet know, but i don't think there is sand outside the universe. Its just energy acceleration or gravity pulling down on the surface of the ellipsoid.  
 So newton gave us  
 $26.666 = 6.67 (M_1 M_2) (1)$   
 $M_1 M_2 = 4$   
 $M_1 M_2 = 2 * 2 = 4 = (dM/dt)^2$   
**[V I Arnold]**  
 $x_0 = \int C \text{ Epil}$   
 $\text{Eigenvector Eig} = 1/G = dE^2/dt^2$   
 $x_0 = \int [1/d^2 E/dt^2] = 1/(2t-1)$

$2t-1=1.5$   
 $t=1/4$   
 $x^2-x-1=1.1875$   
 $1/1.1875=0.8421$  cf 0.8415  
 the golden mean 1.618 is an eigen value of the energy equation. g is the eigen vector  
 from wikipedia:  
 $G=1.618 E=8 G^2 + E^2=72 \sqrt{72}=8.485$  cf. 0.8415  
 Mass Gap  
 $a^2/2! + A^3/3! \dots$   
 $e^t=1/G=1.5=1+0.4083+ 0.0483^2/2+0.4083^3/6+0.4083^4/24=1.5030=$   
 MASS GAP  
 $e^A=\lim n \implies \infty [E+A/n]$   
 So, from above  $e^t=1/G$   
 $e^t=d/dt [E^t+0]^n$   
 $e^t=E^t]^n$   
 $e^t=dE/dt^n$   
 $\ln e^t=n \ln dE/dt$   
 $t=\infty (\ln 0)$   
 $t=\infty * 1$   
 $t=\infty$   
 $e^\infty=\infty$   
 $e^t=1/G$   
 $G=0$   
 It is outside the universe  
 IF  $E=1$   
 THEN  $e^t=\lim n \implies \infty [1+t/\infty]^\infty$   
 $\lim (1)=0$   
 $\int e^x = \int X^2 - X - 1$   
 $X^3/3 - X^2/2 - X - 1$   
 $-X = -[1.618^3/3 - 1.618^2/2 - 1.618] + [0.618^3/3 - 0.618^2/2 - 0.618] = 0.9607$   
 $E=Mc^2 0.9607 = M(c)^2 M=0.3.14$   
 Repulsive Energy=3.14= $\pi$   
 Forces up and down in balance  
 UP:  
 $M \rho * \text{volume below X axis} = 3 * 3.14 = 9.42$   
 $E=Mc^2=9.42 (9)=84.78$  cf 0.,86  
 DOWN:  
 $L=1.35 * 2\pi \text{ rotation} = 84.78$  cf 0.86  
 In balance! the universe is like a ship boyant between attractive and repulsive forces. Noah's ark let call it. The critical level was when -e reached  $\pi$

The universe is in the same way - repulsion and attraction.  
 The repulsion is 3.14=energy  
 The attraction is the area  $O=P\pi R^2=\pi(1)=3.14$   
 There must be two opposing forces. note that the attractive is stronger since  $E \text{ MIN}=-1.25$  .  
 $SO, T.E.=8 1.25/8=0.1565$  CF 0.8435  
 $1/ 0.1565=6.39$  "Pregnant 3'S"  
 So the universal energy comes into balance (attraction and repulsion) when  $E=8, E \text{ MIN}=1.25,$   
 $X^2+Y^2=R^2=\pi$   
 $2X^2=\pi 3.14159/2=X^2$   
 $X=1.2533= E_{\min}$

### The Speed of Light?

$dM/dt=t/c$   
 $2=0.4083/c c=0.204$  cf 0.203=E  
 $c \text{ oz}=4411764.70588 c \text{ oz}=1.4705 c=1/0.6800c$   
 So here we have the derivative  $x=1/2 E=0$  the Energy=0,  $x=1.618$  and the integral  $x=0.5+0.5=1, E=8$   
 The derivative of the blue function (S shaped) is 1.5 This is  $1/6.667=1/G$   
 If you look at the green function (parabola) is the shape of the universal ellipsoid end on  $1 \times 8 \times 22$   
 At  $x=1,$  and  $E=8,$  we have the slope of the integral=1.5.  
 The shape of our universe is determined by the constant G (or G is determined by the shape!)  
 The slope of the integral is a vector field. slope  $m=1/1.5=G$   
 The S shaped function is what the gravity field looks like across and outside the material universe. Note the derivative - the Energy- goes to  $1/\infty=0$ .

### The Universe in Totality

RECALL  $e^t=G$   
 $M M' * E'' = E \rho$   
 $e^t G = 1$   
 $e^{xt} X^* y'' = y$   
 CLAIRNAUT EQUATION  
 $1/G = M_p/E_p * dM/dt$   
 $1/E'' = M_p * M' / E_p$   
 $d^2E/dt^2 = E_p / M M'$   
 $E=G = f(E_p, M_p)$   
 $G=1/ e^{kt} * x_0$   
 If  $x_0=k=1$   
 $1/e^t = 1/[ f(E_p, M_p) ]$

We know from the Cusack Gravity Equation

$$1/G = M_p/E_p * (dM/dt)$$

$$E_p/E'' = M * M'$$

$$E'' = M M'/E_p$$

$$\int E'' dm = E' M = \int [M * M'/E_p] dm$$

$$EM = M^2 M' * 1/E_p$$

$$E = M^2 * 1/E_p$$

$$E = 2^2 * 1/4 = 1$$

$$E = dE/dt$$

$$dE/dt = d^2E/dt^2 = G = 6.67$$

$$E = G$$

### Ordinary D.E

$$t - t_0 = 1/k \int d\phi/x_0$$

$$d\phi = x_0 e^{k(t-t_0)} = x_0 e^{(0.4083)t} = 1.5 x_0$$

$$t - t_0 (1/1) (1.5 x_0/x_0) = 1/G = 1/6.66$$

$$e^t = 1.5 e^t = 1/G \ln(e^t) = \ln(1/G) t = \ln t'$$

$$\phi(t) = e^{kt} x_0 = e^{(0.4083)t} (1.5) = 1.5^2 = 1/t^2$$

$$1/t^2 = x_0 = x_0 e^{0.4083}$$

$$1/1.5 = 1.5(1) x_0 = 1/t^3 = x^{-3}$$

$$\int \frac{1}{x^2} \int \ln x^2 = 1.1597 \text{ cf. } 0.84$$

$$E * t^s = 8 * 0.5 * 0.4083 = 1.633$$

$$1/1.633 = 0.620$$

$$\text{derivative of } E = 2t - 1 = 2(.81) - 1 = 0.620$$

space \* time = 0.204 = Y = universe 0.202 x 8 = 1.618 = GOLDEN MEAN

$$1.618/0.618 = 1 = \text{Pr (Universe exists)}$$

$$E = 9/2 h \Omega$$

If we multiply this by 0.9406

$$31.7 \Omega \text{ (Human perception 31.8 Hz)}$$

$$31.7 \Omega / [2 * 100] = 0.1586$$

$$1 - 0.1585 = 0.8415$$

$$\sin^1 = 57.29^\circ = 1 \text{ radian}$$

$$a = 31.7 \theta/s^2$$

$$\int a = v = 31.7 \theta = 31.7 (0.1334) = 4.2288 = \text{cuz} * 10$$

$$x^2 - x - 1$$

$$\lim x \implies 0.806 = 2x - 1$$

$$x = 0.612$$

$$\lim x \implies 0.81 = 0.620$$

So 0.618 is in between where the energy crest over.

$$0.618 = h \Omega$$

$$0.618/6.262 = .00933 \text{ cf. } 0.00927$$

The derivative of the Energy function at  $x=0.81$  is  $\sqrt{-1}$  So the slope of the tangent to the universal function is  $\sqrt{-1}$

$$1/81 = 0.12345679$$

$$\Delta N = 7 - 6 - 5 - 4 - 3 - 2 - 1 = 0 = -16$$

$$9 - 7 = 2 = G = d^2E/dt^2 = dM/dt$$

So the equation of the universe crests over at  $d^2E/dt^2$  or  $dM/dt$  or  $G$

$$x^2 - x - 1 = 2 = G$$

$$(2^2 - 2/G) = 3$$

$$G = 6.67$$

$$\Delta N = 1/8 = 0.125$$

$$2/8 - 1/8 = 1/8 = \Delta N$$

$$\Delta N = \text{K.E.} / [\text{P.E.} + \text{K.E.}]$$

$$0.125 = \Delta N = 1 / [mgh + 1]$$

$$0.125 = 1 / [x + 1]$$

$$0.125x + 0.125 - 1 = 0$$

$$x = 7$$

$$\text{Now } 1/0.806 = 1.2407$$

$$1.2407 - (-1.25) = 2.4907 = T \text{ Period}$$

$$1/T = t = 0.4015 \text{ cf. } 0.4083$$

So, there are 8 steps to get to cresting over to 2.  $1/0.125 x = 2$

$$x = 4 = E_p$$

So when the Energy density = 4, the universe comes into existence.

$$x^4 - x - 1 = 0 \quad x = -1$$

$$\delta E / \delta t = 1/t = E$$

$$E = 8 = 1/0.125$$

$$1/1.25 = 0.8$$

$$0.8^2 - 0.8 - 1 = 1.24 \sim 1.25$$

$$1/t = 1.24 = 0.806 \sim 81$$

$$1/81 = .012345679$$

$$y = mx + b$$

$$y_1 = \infty / 0 \quad X$$

$$y_2 = 0x$$

$$y_1 = y_2 \quad \infty / 0 \quad x = 0$$

$$x = 0$$

$$y_1 = \infty$$

$$z = 0$$

The physical Universe begins at the origin and continues for infinity.

### Cusack's Constant

$$X = 1/(X-1)$$

$X - [1/(X-1)] = 0$   
 $\sqrt{1 - 1/3.666} = \sqrt{0.7272} = 0.85$   
 $[\sqrt{X - [1/(X-1)]}] = \sqrt{0} = 0$   
 $[\sqrt{X - [1/(X-1)]}] - \sin 1 = 0$   
 $[\sqrt{X - [1/(X-1)]}] = \sin 1$   
 $X - 1/X - 1 = 0.72$   
 $X - 1/(X-1) - 0.727 = 0$   
 $X = 1.873 = \text{CUSACK'S CONSTANT}$   
 $X/c = 1.873/2.985$   
 $\sin^3 \theta = 1.873/2.985 = (0.8471^3)$   
 $\theta = 1 \text{ rad}$   
 $c = 1.873/\sin^3 \theta$   
 $\text{Cusack's Constant} = 1.873$   
 $\ln(1.873) = \sin^3 1 \text{ RAD}$   
 $\ln(1.873) = \int [\sin * \cos * e^{-x}] = \text{NmK}$   
 $1/\text{Cusack Constant} = 0.534 \text{ (APRIL 3, 2005)}$   
 $y = \sin \theta + \cos \theta$   
 $y' = -\cos \theta + \sin \theta + C$   
 $\max / \min y' = 0$   
 $y' = 0 = \sin \theta - \cos \theta$   
 $\sin \theta = \cos \theta$   
 $\theta = 1 \text{ rad}$   
 $\cos \theta = d \sin \theta = F = Ma \quad d = F = Ma \quad d = Ma \quad d = a \quad M = 1 = E \text{ (minimum energy)}$

$$E = Mc^2 \quad 1 = d/a * c^2 \quad c^2 = 1$$

$$c = 1$$

### Golden Mean

To sum up, if we take the three functions representing force, displacement, and temperature, we have the following:

$$y = e^{0.14} + C3$$

$$y = \sin 1 + C2$$

$$y = \cos 1 + C1$$

$$C1 = C2 = C3 = 1 = \text{Energy}$$

Take the derivative of one function:

$$y = \cos \theta + 1$$

$$y' = -\sin 1 + 1 = -0.858 + 1 = 0.142$$

$$y' = y = e^{0.14} + E = 0.14 = 1.14 + E \quad E = 1 \text{ when } y = y'$$

AREA UNDER CURVE:

$$\int \sin 1 + \int \cos 1 + \int e^{0.14}$$

$$= -\cos 1 + \sin 1 + \ln 1.14 = -0.86 + 0.86 + 0.1327 = 0.1327 = 1 - \cos 1 = E - a = E - v = E - d = E - T$$

$$a = v = d = T \text{ acceleration} = \text{velocity} = \text{displacement} = \text{temperature}$$

The temperature of space is  $-236^\circ \text{C}$  cf  $-270^\circ$

This is the condition under which the universe exists.

### Conclusion

Astro-Theology, Cusack's Universe provides a new way of looking at our stable universe.

### References

1. Arnold VI (1978) Ordinary Differential Equations MIT Press, USA 1: 1-290.