THE QUANTUM MECHANICS OF A GRAVITATIONAL OPEN ENERGY SYSTEM

The amount of energy created by the earth's open gravitational system capturing a foreign object can be calculated using quantum dimensional calculus. That energy gain is equal to the mass of the object times the gravitational constant at the surface as *multiplied* by the distance at which the object is captured minus one radius distance *squared* then *divided* by the distance to the center of the earth in earth radii. The distance is calculated and measured in radius units which constitute the quantum value of the gravitational system.

Mass of the sun = 1.9891 (10^{30}) kilograms; Mass of Earth = 5.97219 (10^{24}) kilograms

average Earth's radius of orbit around the Sun = 149,669,180 km

$$y = \left(\begin{array}{l}\text{Distance at which the earth's gravity captures object}\\ \text{from sun's gravitational system [in kilometers].}\end{array}\right)$$

$$\frac{mass(earth)}{y^2} = \frac{mass(sun)}{(1.49669180e11\ meters)^2}$$

$$\frac{5.97219\ (10^{24})\ kg}{y^2} = \frac{1.9891\ (10^{30})\ kg}{(1.49669180e11\ meters)^2}$$

$$y^2 = \frac{5.97219\ (10^{24})\ kg(1.49669180e11\ meters)^2}{1.9891\ (10^{30})\ kg} = 6.725766057e16\ meters^2$$

$$y = 259340819.327699\ meters = 259,340.819327699\ kilometers$$

$$x = \left(\begin{array}{l}\text{Distance in earth radii at which object is captured in}\\ \text{Earth's gravitational system from the Sun's gravity}\end{array}\right)$$

$$r = \text{radius of earth in kilometers} = 6378.1\ kilometers$$

$$x = \frac{y}{r} = \frac{259340.8193\ kilometers}{6378.1\ kilometers} = 40.6611403553$$

$$(r)(1000) = \text{radial distance in meters} = 6,378,100\ meters$$

$$G = \text{gravitational constant at surface in meters} = 9.80665\ meters/\sec.^2$$

$$m = \text{ mass of captured object in kilograms}$$

Energy gained at maxiumum distance of capture

$$Energy\ created\ in\ capture = \Delta E = mG\frac{(x-1)^2}{x}r(1000)$$

$$\frac{(x-1)^2}{x} = 38.6857338656$$

$$\Delta E = m\left(9.80665\ meters/\sec.^2\right)(38.6857338656)(6378100\ meters)\ Joules$$

$$\Delta E = m\left(2.4197073266869\ 10^9\right)\ Joules$$

Formula for Energy Created by Earth's Gravitational System through Capture

If a body in solar orbit approaches the earth such that its velocity of solar orbit equals that of the earth's solar velocity at a distance which is equal to or less than 40.661 earth radiuses, then that body will be pulled by the earth's gravitational field to the earth's surface with a gain in energy which is the following:

$$x = \begin{pmatrix} distance,\ in\ earth\ radial\ units,\ \ at\ which\ object's \\ solar\ velocity\ equals\ earth's\ solar\ velocity. \end{pmatrix} \qquad x \le 40.661140$$

$$r = radius\ of\ earth\ in\ meters$$

$$G = \begin{pmatrix} gravitational\ constant \\ at\ surface\ of\ earth. \end{pmatrix} = 9.80665\ meters/\text{sec.}^2; \qquad m = object's\ mass\ in\ kg$$

$$\Delta E = mG\frac{(x-1)^2}{x}\ r$$

The Quantum Mechanics of the Open Field-Energy Integral

If one were to drill a hole to the center of the earth and drop an object into it, that object would change in its rate of acceleration (in vacuum) as it fell, just as it would when falling from above the surface of the earth. However, the rate of change in acceleration would differ between falling in the hole and falling from above the surface. The rate of acceleration would *increase* as an object approached the surface of the earth from above, but the rate of acceleration would *decrease* as it approached the center of the earth. This latter is certain as the relationship between the falling object and earth's mass would change as it fell in the hole. At the center of the earth, the change in acceleration would be "0" and would become negative as it fell past the center.

Newtonian Gravitational Equation

$$m_e = mass\ of\ the\ earth$$

$$m = mass\ of\ the\ captured\ object$$

$$r = distance\ of\ separation\ as\ measured\ by\ centers\ of\ gravity$$

$$A = acceleration;$$

$$F = \frac{m(m_e)}{r^2} = m(A)$$

$$A = \frac{m_e}{r^2}$$

$$\begin{Bmatrix} \textit{"r" is measured in quantum units which are determined by the radius of} \\ \textit{the earth since formula does not operate for distances less than "r = 1."} \end{Bmatrix}$$

$$Quantum = Earth\ radius\ in\ meters = Q = 6{,}378{,}100\ meters$$

$$d = distance\ in\ meters = r(Q)$$

$$\frac{m_e}{(r=1)^2} = maximum\ acceleration\ at\ surface\ of\ earth = \frac{G_Q}{1^2}$$

Let the point at which an object "m" is captured by the earth's gravitational field and begins accelerating towards the earth's center be equal to "x" as measured in earth radiuses.

$$G = gravitational\ constant\ at\ surface; \qquad G_Q = gravitational\ constant\ in\ quantum\ units$$

$$\left(Acceleration\ of\ "m"\ at\ "x"\right) = \frac{m_e}{x^2} = \frac{G_Q}{x^2}$$

$$\begin{pmatrix} Summation\ of\ acceleration\ rates \\ across\ the\ fall\ from\ "x"\ to\ surface \end{pmatrix} = \int_1^x \frac{G_Q}{x^2}\ d(x)$$

The factor "G" divided by "x squared" is the derivative of the quantum negation of subdivision:

$$D\left[\left(1-\frac{1}{x}\right) G_Q\right] = \frac{G_Q}{x^2}$$

The derivative of the negation of subdivision provides a negative form of integration which establishes the quantum. There are no rational values or geometric points between "0" and "1." A quantum is defined as two points "0" and "1" which are separated with no points in-between.

$$\left(1-\frac{1}{x}\right) = \int \frac{G_Q}{x^2}\ d(x)$$

$$Let\ x = 1$$

$$\left(1-\frac{1}{1}\right) = \int_0^1 \frac{G_Q}{x^2}\ d(x) = 0$$

There is no area under the

integral between "0" and "1."

The integration of the gravitational constant "G" divided by "x squared" between "x" and "1" is the summation of acceleration rates for the object from the time it is captured by the earth's gravitational field until it impacts the surface of the earth.

$$\left(1-\frac{1}{x}\right)G_Q = \int_1^x \frac{G_Q}{x^2}\ d(x) + \int_0^1 \frac{G_Q}{x^2}\ d(x) = \int_1^x \frac{G_Q}{x^2}\ d(x) + 0$$

$$\left(1-\frac{1}{x}\right)G_Q = \int_1^x \frac{G_Q}{x^2}\ d(x) = summation\ of\ acceleration\ rates\ across\ fall.$$

The negation of subdivision by the "x" distance for the gravitational constant establishes the summation of acceleration across the fall. The summation of acceleration rates is the absolute acceleration rate across the fall.

From conventional acceleration mathematics we know that the terminal velocity is equal to the acceleration rate multiplied by the time of acceleration. Terminal velocity is also equal to twice the distance of acceleration divided by the time of acceleration. These can be set equal to determine a time value.

$$\left(1-\frac{1}{x}\right)G_Q(t) = \frac{2(x-1)}{t}$$

$$t^2 = \frac{2(x-1)}{\left(G_Q\right)(x-1)/x} = \frac{2x}{G_Q}$$

$$t = \sqrt{\frac{2x}{G_Q}}$$

From this we can calculate terminal velocity in terms of the value of “x” and the gravitational constant “G.”

$$terminal\ velocity = \left(\frac{x-1}{x}\right) G_Q \sqrt{\frac{2x}{G_Q}}$$

$$terminal\ velocity = \left(\sqrt{\frac{2G_Q}{x}}\right)(x-1)$$

From this terminal velocity at impact, we can calculate the energy which the gravitational field has generated for the foreign object using the standard formula for energy as mass times velocity squared divided by 2.

$$Energy\ gained = \Delta E = m\frac{\left[\left(\sqrt{\frac{2G_Q}{x}}\right)(x-1)\right]^2}{2} = mG\frac{(x-1)^2}{x}Q$$

$$Q = 6{,}378{,}100\ meters$$

The energy gained by the open gravitational system fits the classic definition of energy as mass accelerated over distance. The distance of acceleration is the distance from which the foreign object is captured by the earth’s gravitational system. That can occur by the following:

> *If a body in solar orbit approaches the earth such that its velocity of solar orbit equals that of the earth’s solar velocity and, it does so at a distance which is equal to or less than 40.661 earth radiuses, then that body will be pulled by the earth’s gravitational field to the earth’s surface with a gain in energy as determined by the above formula.*