On time and energy to define completeness for curved space motion with computer parametric of a G-field orbit period space& time square $\left(t, \frac{t^2}{-4p} + r\right)$

Advancing perihelion of Mercury

If in the Cartesian parametric for Space&Time $\left(t, \frac{t^2}{-4p} + r\right)$ we let (p) be magnitude of system initial focal radius and (4p) be average energy diameter *and* latus rectum of M_2 orbit, and let (r) be the radius of the central force potential curve, we can construct a plane geometry mechanical demonstration of Sir Isaac Newton's Universal Law of G. We have a period time motion curve to map M_2 motion using position vector heads to meter orbit energy using system tangents between high and low energy limits on the time curve. Only Mercury orbits the Sun on the Solar Plane of Rotation (**SPR**). Position vectors tracing orbits for the rest of our planet group lay about the ecliptic, an imaginary plane in space holding the orbit of our earth. Seven degrees is the angle of inclination of the ecliptic plane with the **SPR**. Mercury however is held close to the solar equator. It is obvious that an energetic orbit such as Mercury, being held tight by the **SPR** can claim the (23,000,000 km) difference between (α) and (β) needed by (r) to operate as the domain period of the orbital function, and given the diameter of the Sun is almost (1,400,000) km, it is just as obvious the planet cannot display the displacement required by $(f(r))$ as range of (11,500,000) km above

perihelion	→	46 000 000
aphelion	→	69 820 000
average	→	57 910 000
average v	→	47.87
f (π)	→	10 684 630
f (α)	→	-13 135 678

Figure 1: to establish a g-field orbit period time square, displacement with respect to spin axis potential will be horizontal abscissa and high and low energy is mapped as ordinate sides.

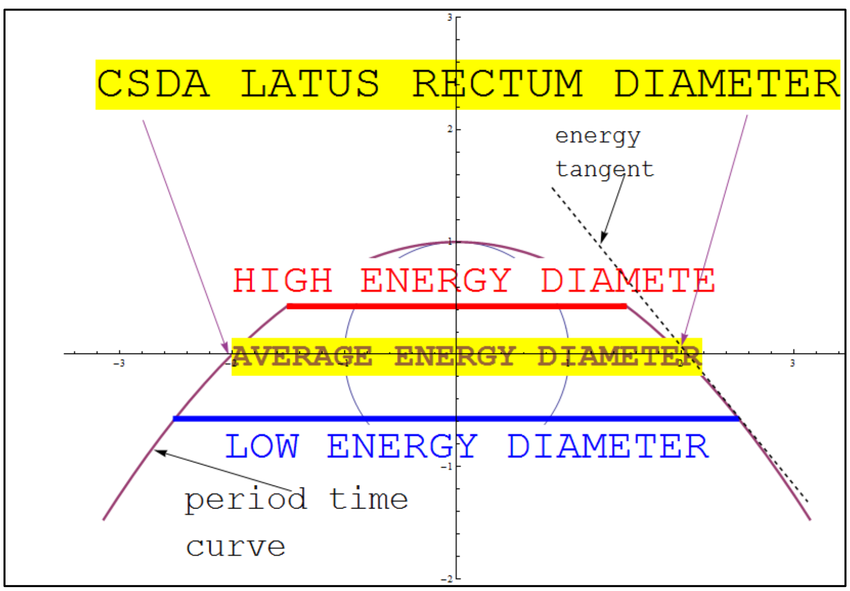

Figure 2: CSDA utility of curves as orbit energy of period motion on the time curve of circular G-field potential. Average energy diameter is the sum-total of available orbit energy for M2 motion about M1.

and below the latus rectum system average energy diameter produced through **F** with respect to solar G-field spin.

The planet does not exhibit such a dramatic range of motion. I feel the G-field orbital domain is position in space (displacement of (r) with respect to potential) and the range is energy imparted to the planet by that G-field potential. Reasoning for this claim is again based on the orbit of Mercury.

$$\text{ParametricPlot}[\{\{1\text{Cos}[t], 1\text{Sin}[t]\}, \{t, \frac{t^2}{-4}+1\}, \{\frac{7}{4}, t\}, \{\frac{9}{4}, t\}, \{t, \frac{15}{64}\}, \{t, -\frac{17}{64}\}\}, \{t, -3\pi, 6\pi\}, \text{PlotRange} \to \{\{-2,3\}, \{-1,3\}\}]$$

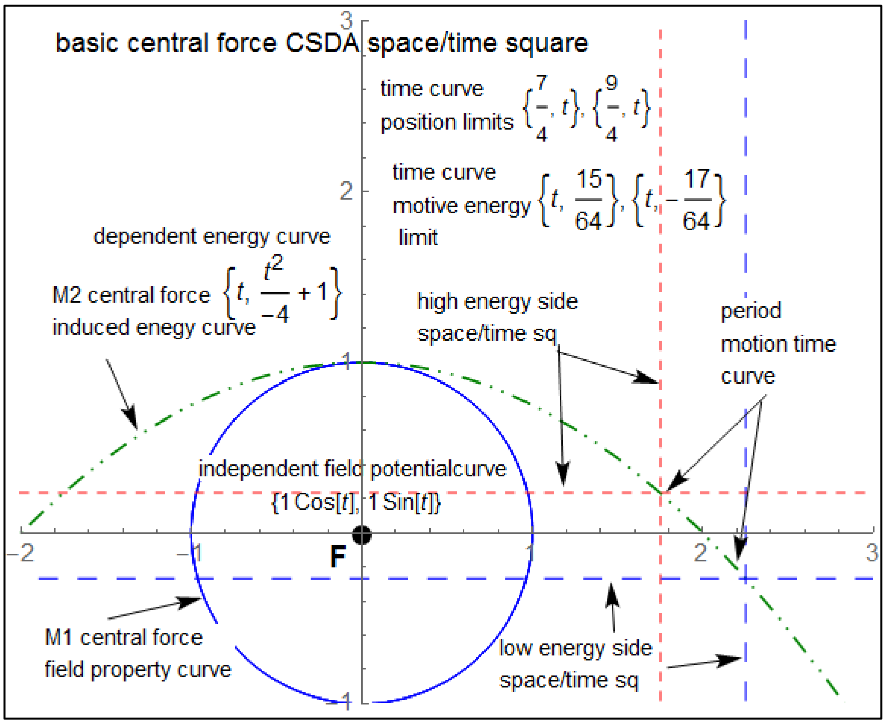

Figure 3: basic CSDA standard model (curved space division assembly) space and time square space for stable M2 motive/energy orbit about M1.

In 1916 Einstein published his General Theory of Relativity. He proposed three astronomical tests to validate the theory. [Second edition (1969); Exploration of the Universe by George Abell, (page 71)]. One of the tests has to do with a problem known as the (anomalous advance of the perihelion of Mercury). The following discourse is taken from [(1968); A Contemporary View of Elementary Physics; by Borowitz & Bornstein, (page 170)].

'The results of the theory of general relativity have been used to explain a nagging discrepancy in planetary motion. All planetary bodies affect the motion of each other in a phenomenon called perturbation. One result of all these perturbations is that the orbit of mercury is not a closed ellipse but rotates in space. This rotation can be defined by showing perihelion rotates (with the whole orbit) at a measured value of (5,599.7 seconds of arc) per century. Classic mechanics can account for (5,557.2 seconds of arc) leaving unexplained a rotation of 42.5 seconds of arc per century. This small difference results in a complete rotation of the orbit every 3,000,000 yr. Einstein suggested it was due to effects of general relativity. General relativity will add 43 seconds of arc to the orbit position. This predicted result is considered one of the great triumphs of the Einstein theory of General Relativity. In 1967 Dicke claimed the effect of solar oblateness had not been considered and that the general relativity correction on the orbit of Mercury were too large and modifications of the theory would be necessary. The ultimate settlement of this controversy cannot be predicted.'

If we look at a unit time square, we see the curved time diagonal of the square is 1/2 the period of the orbit. The time diagonal is the profile surface of the G-field orbital of M_2 and the profile circle is potential of curved space courtesy M_1. The two sides of the square parallel with **SPR** spin axis represent the time needed by the planet to travel 1/2 the orbit from (β) to (α). The other two sides of the square parallel with the G-field **SPR** represent the time needed to travel between energy level (β) and energy level (α). Time needed to construct the time square sides is equal to the time needed to travel the time square diagonal arc length of the orbital defined by the limits perihelion and aphelion. For time square: abscissa^2 = ordinate^2 = diagonal^2! For this reason, energy and not position is the ultimate determination of an orbit event. The location of period rendezvous of orbit limits becomes secondary to occurrence. Time simply requires contact with the energy limits of orbital space without regard as to where such contact is made, only that it occur as scheduled.

Authors note: in the 1983 CRC handbook for Chemistry & Physics astronomy term for high energy period motion is (π). I took the liberty to replace the term (π) with the term (β) as suggested by my associate in math (an accomplished WRI computer based math demonstration contributor) and math teacher Abraham Gadella; for the simple reason of the iconic nature belonging to the general public and owned by pi (π), can only cause confusion.

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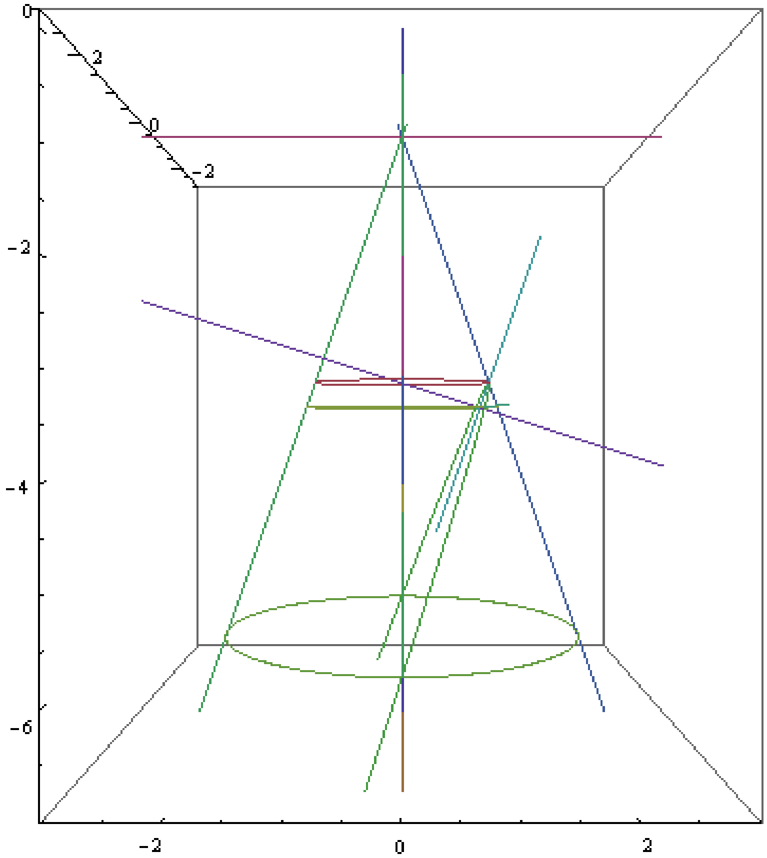
Sand Box Geometry LLC, a company dedicated to utility of Ancient Greek Geometry in pursuing exploration and discovery of Central Force Field Curves.

Using computer parametric geometry code to construct the focus of an Apollonian parabola section within a right cone.



"It is remarkable that the directrix does not appear at all in Apollonius great treatise on conics. The focal properties of the central conics are given by Apollonius, but the foci are obtained in a different way, without any reference to the directrix; the focus of the parabola does not appear at all... Sir Thomas Heath: "A HISTORY OF GREEK MATHEMATICS" page 119, book II.

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The computer is my sandbox, the unit circle my compass, and the focal radius of the unit parabola my straight edge.

ALΣXANDΣR

The square space hypotenuse of Pythagoras is the secant connecting (π/2) spin radius (0, 1) with accretion point (2, 0). I will use the curved space hypotenuse, also connecting spin radius (π/2) with accretion point (2, 0), to analyze g-field mechanical energy curves.

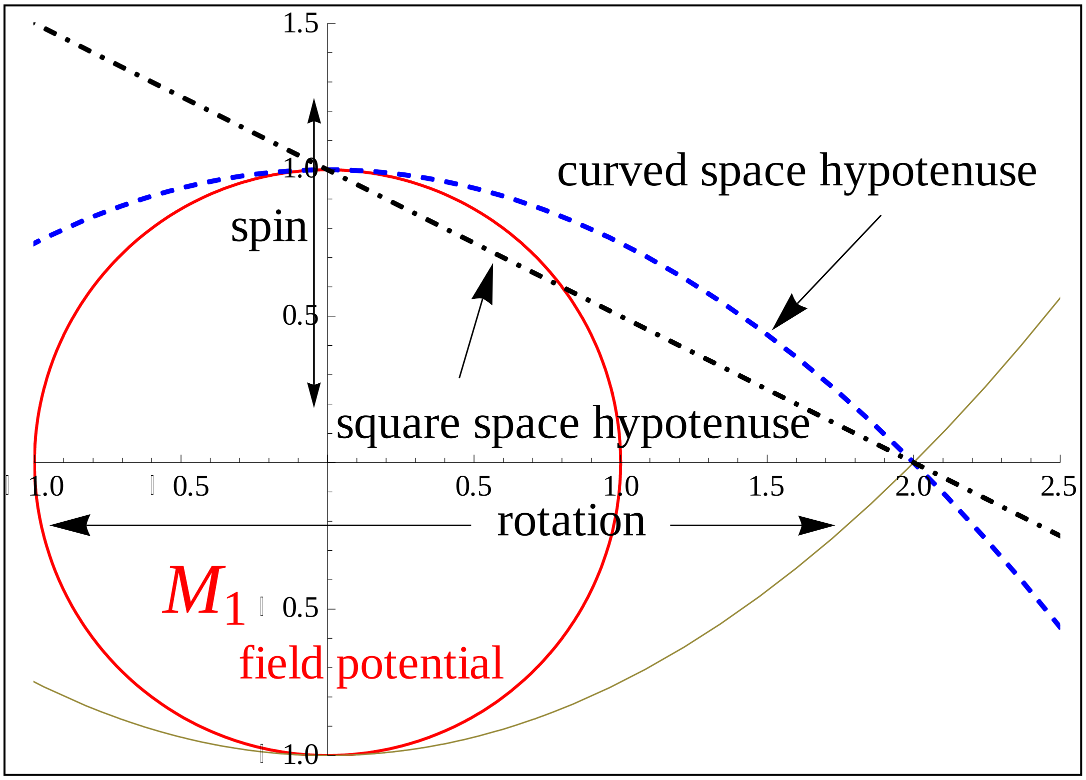

Figure 1: CSDA demonstration of a curved space hypotenuse and a square space hypotenuse together.

We have two curved space hypotenuses because the gravity field is a symmetrical central force, and will have an energy curve at the **N** pole and one at the **S** pole of spin; just as a bar magnet. When exploring changing acceleration energy curves of M_2 orbits, we will use the N curve as our planet group approaches high energy perihelion on the north time/energy curve.

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