https://apsmarch2020.abstractcentral.com/submission

https://apsmarch2020.abstractcentral.com/submission?PARAMS=xik_8hYbHUdRseLWDwBxN1oXSi25V2BgmxY2fUhZUY6vLGPNfMkiZ8DbTB4y9YwAhiWp1pNafkEm62REkYYm5Nof8XdaBPG2TkMbjebqHZFsMAAE89gPopTYFgGhmszWJkBW69dMpi1oQyazUZzt8oTVGMGQrispb3eSjmiLF7fZag7VxmJ1uR81oE186ju7mKQxWocmw

CONTROL ID: 3288589

TITLE: Kepler's Laws and Elliptic path might suggest that nature uses the function of TIME to provide needed energy for its accelerated motion

Abstract Body: Classical physics correctly calculate planetary positions, and energy conservation as a function of position, however using Kepler's laws as a function of time, may conclude that potential energy available for a planet's motion, is bigger than kinetic energy used at the actual path, and have the path was to be circular, such energy difference would not exist. Kepler's equation A^3/T^2 =Constant, as a function of time, may also explain how nature chooses the elliptic path, to gain such energy difference, from time, to maintain and finance its accelerated motion, where Time is a form of energy, and where the expansion of universe, is not measured by coordinates of positions, but by positive coordinates of time while black holes can be identified by negative coordinates of time.

Funding Acknowledgement: acknoldged

Special Instructions: NA

PRESENTATION TYPE: Oral

UNIT: 21.0 ENERGY RESEARCH AND APPLICATIONS (GERA)

SORTING CATEGORY: 21.03.00 Alternative Energy

Category Type: Theoretical

AUTHORS (FIRST NAME, LAST NAME): Ibrahim Hanna[1]

INSTITUTIONS (ALL): 1. Self

Teams: (none)

APS April 2020

Planetary motion

And the equivalency of Energy and Time

$$E = \tfrac{1}{2}\, Mf * g^2 * t$$

This presentation is about equivalency of Energy & Time, in new energy equation.

- 2017- we used it to test turbine arrangements, to produce different **energy output**, after changing **acceleration-Time of work**.

- Then it was used to present a new concept of Pascal as a function of Time,

where as a function of position, we can **increase force output** in exchange with loss in distance, However as a function of time, we argued

increasing energy output, for a loss in acceleration-Time.

- Today we will argue that along with Kepler laws, it shows how nature is continuously creating its own potential energy from the infinite field of Time.

The question, as a function of position:

Why doesn't earth fall into the sun? the answer was based on the cannonball explanation by Newton, which can be accepted only if a planetary path was circular.

For elliptic path however, we could not answer how planets escape, after getting closer.

- ❑ Some consider the momentum of Inertia
- ❑ Some think of the side-way momentum.

If Math shows that gravity is continuously outgrowing the side momentum, and inertia
Then a planet must fall into the sun !!

The total angular momentum of an object = (**spin momentum**+ **orbital angular momentum**)

- **Spin Momentum vector**, is neutral & follows the direction of the net-force vector (Force - Inertia=0)
- Net Force vector = Force of gravity Vector + Orbital momentum vector
- **Orbital momentum vector**, is parallel and proportionate to orbital angular velocity vector which is proportionate with **mass** and its **distance from the origin.**

Meaning, when a planet is half way closer, sideway momentum is twice bigger

- **Gravity Force: $F=G(m1*m2/r^2)$ inversely proportionate with the square of distance from the origin**, **meaning when a planet is half way closer, Gravity is four times bigger**

Conclusion side-way momentum can not explain why a planet does not fall into the sun

To answer, why planets escape falling,
If we scale down all theories, as well the universe itself to before creation, we will have one thing left: (The Time)

Which then becomes the only field that can preclude vacuum, and that is the reason why we need to think of Time as a form of energy, like a magnetic field, with different properties.

According to Stephen Hawking:

One asked Saint Augustin, what God was doing all the time before he created universe,

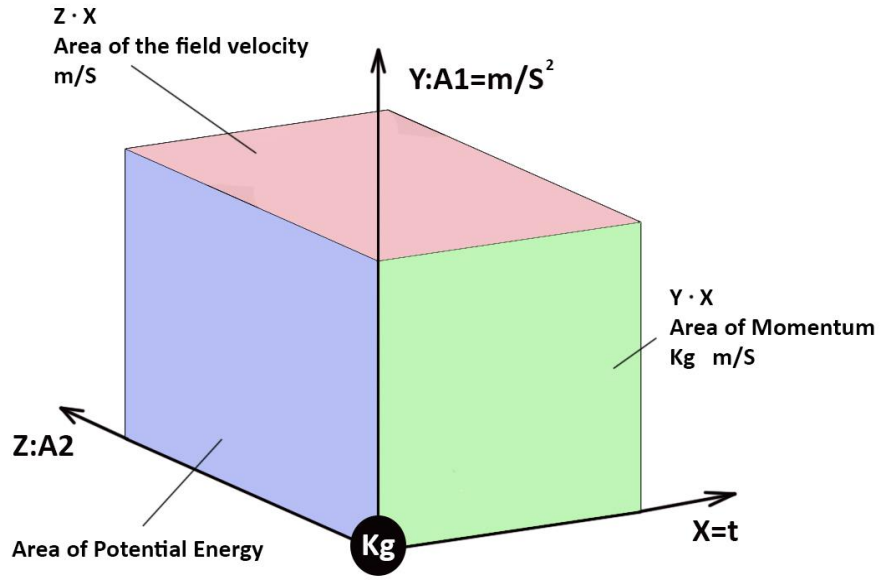
The answer was, preparing hell to those who ask the question.

However, the answer to this can only change, when Time is calculated as a field of energy

Time as a field, can be quantified by a Cartesian volume of energy, where energy coordinates are made of seconds and meters/seconds/second
(E= ½ Mf * A^2 *t)

Energy =Time
Where all geometric coordinates of energy is measured by Sec or m/S^2

- One can suggest that motion, speed and time, has no meaning without a moving mass, subjected to motion.
- however this assumption was challenged by Boskovic who argued that matter is only a form of condensed energy presented by infinite number of space between what we perceive as particles. And the same apply to sub-particles, **In other words, a mass could mean angular value of motion, quantified by acceleration and by seconds.**



Using Time as a field, that can preclude vacuum, requires :

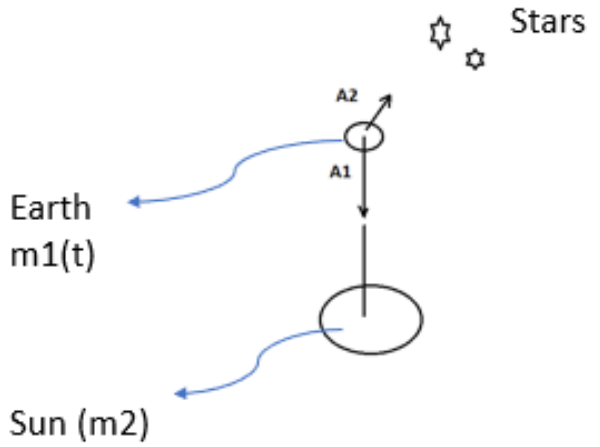
1. **A distance in such field shall be measured by time laps of acceleration**
2. **Virtual distance, is measured by energy difference, consumed or released,** rather than mathematically correcting such distance, like we do with Lorentz transformations, in Special Relativity.
3. **Energy difference compared between a virtual and physical distance, is calculated by a negative mass (space void) moving for a positive distance, or a positive mass moving for a negative distance of a field.**

Planetary motion as a function of position, and as a particle subjected to central force, calculated in real numbers, can present a mathematical violation of conserving the function, where a function of time, shall not have a result as a function of position.

As a Function of Time, with complex numbers (example):

Equation like $F=G\ m1*m2/R^2$, to preserve the Function of Time, shall be written as

$F=G * m1(t)*m2 /R^2$,Where complex numbers can be used with m1=(-) or (+) based on its position relevant to the field



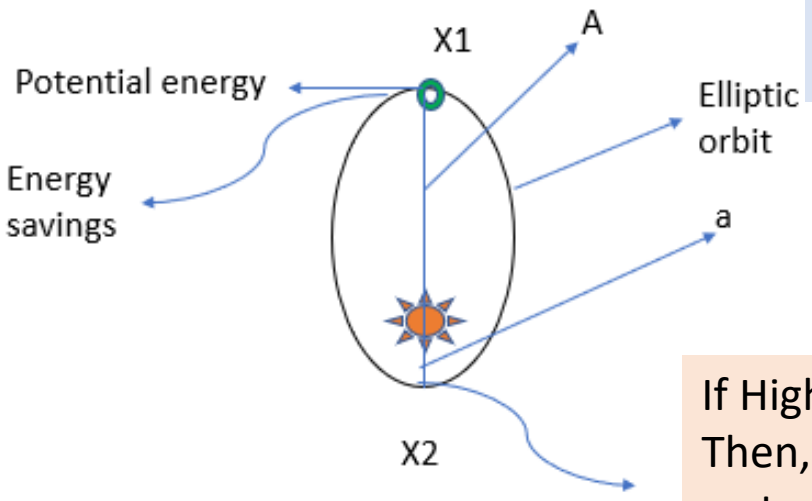
Existing practice of calculating Orbital math as a function of Time

- Howard Curtis 2010, in his **book Orbital Mechanics, calculated**:

In a circular orbit energy E= 0

And In Elliptic orbit E< 0

- ✓ The difference was interpreted as energy savings, where Kinetic at X2 < Potential at X1
- ✓ - energy savings can be used to support acceleration that requires energy
- ✓ - The challenge however is, how we restore bigger potential at X1 from less Kinetic at X2, unless we find a way to calculate that energy is actually generated from the field of Time



- ✓ Using the complex numbers, and applying Curtis results in out equation:
- ✓ $E(t) = \frac{1}{2} Mf * A^2 t = (-)$ the negative number means potential energy is not saved but created and made available.
  - ❑ when a positive mass is moved for a negative virtual distance (elliptic – circler), it means that energy, according to Newton, is created rather than consumed
  - ❑ When relative velocity of the field = (-) then:
    - ➢ Space must be moving faster than motion of an orbit, or
    - ➢ Virtual displacement is bigger than physical distance of travel

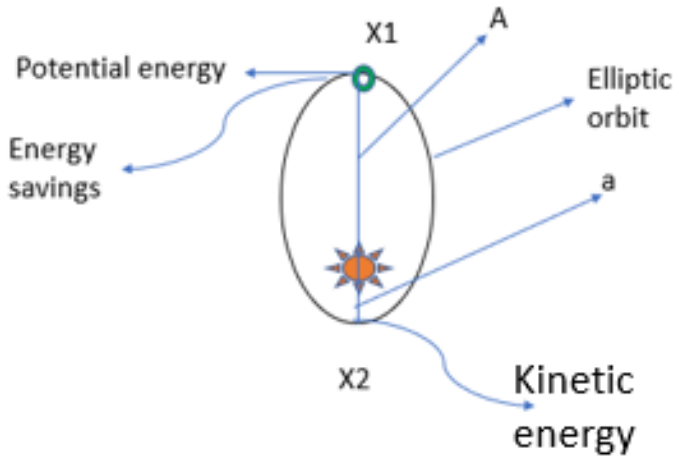
If Highest kinetic energy < potential, due to saving
Then, a planet shall fall into the sun, for not being able to restore potential energy

- Similarly we see on Wikipedia that, Kinetic < potential energies, which does not explain how, bigger potential can be restored from a lesser Kinetic value. Which also means we are going to sink into the sun
- The good result of such calculation was confirming that: **Orbital Physical distance – Virtual distance = (-)**

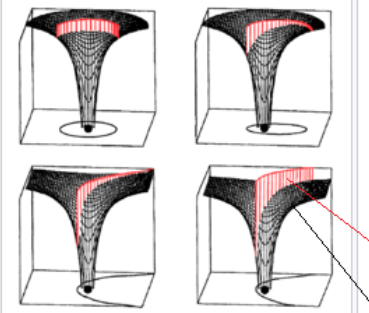
Energy [edit] Wikipedia / Elliptic_orbit

Under standard assumptions, specific orbital energy (ϵ) of elliptic orbit is negative and the orbital energy conservation equation (the Vis-viva equation) for this orbit can take the form:

$$\frac{v^2}{2} - \frac{\mu}{r} = -\frac{\mu}{2a} = \epsilon < 0$$



Wikipedia/ elliptic Orbit



An elliptical orbit is depicted in the top-right quadrant of this diagram, where the gravitational potential well of the central mass shows potential energy, and the kinetic energy of the orbital speed is shown in red. The height of the kinetic energy decreases as the orbiting body's speed decreases and distance increases according to Kepler's laws.

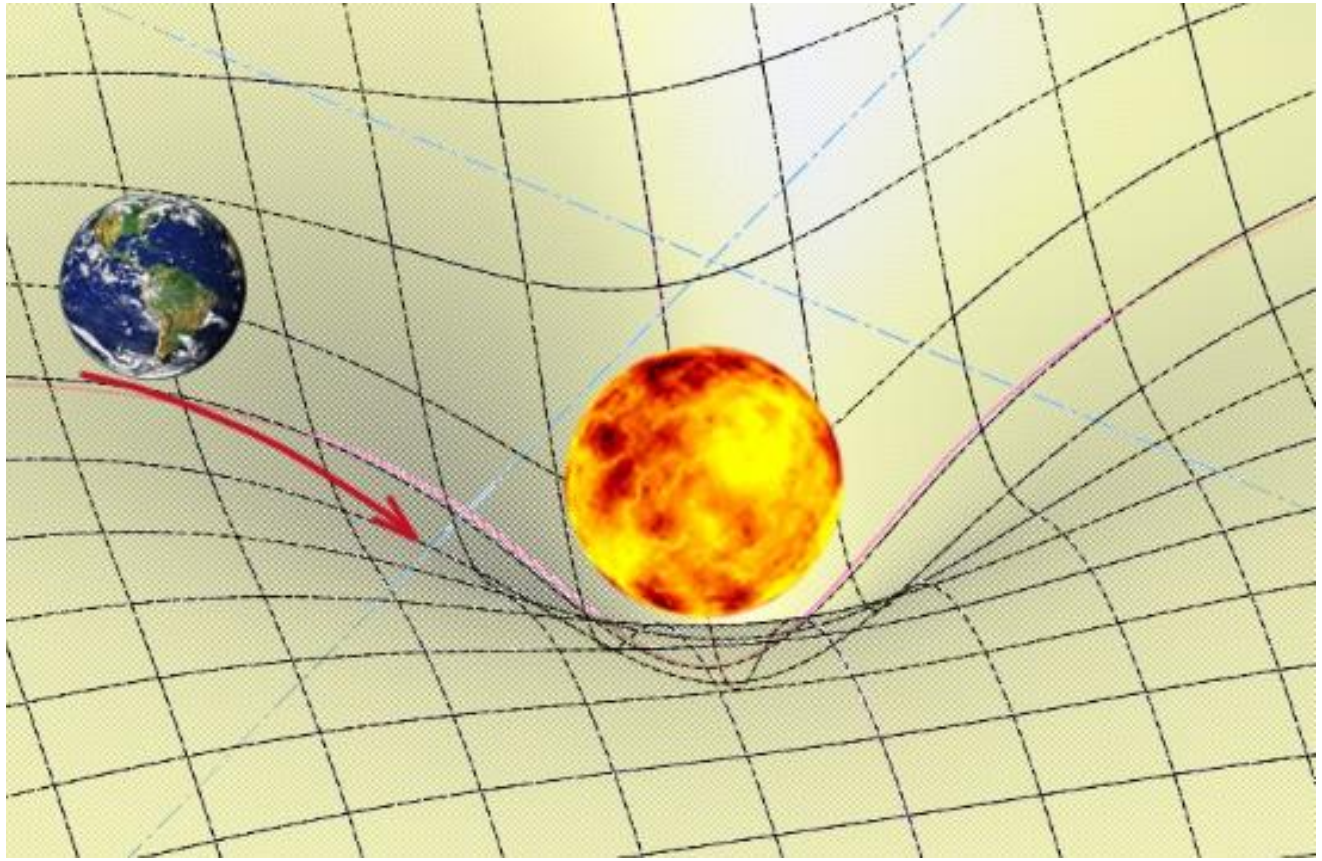
As a function of time potential energy ≠ kinetic Energy

Law of Conservation does not stand

Kinetic Energy

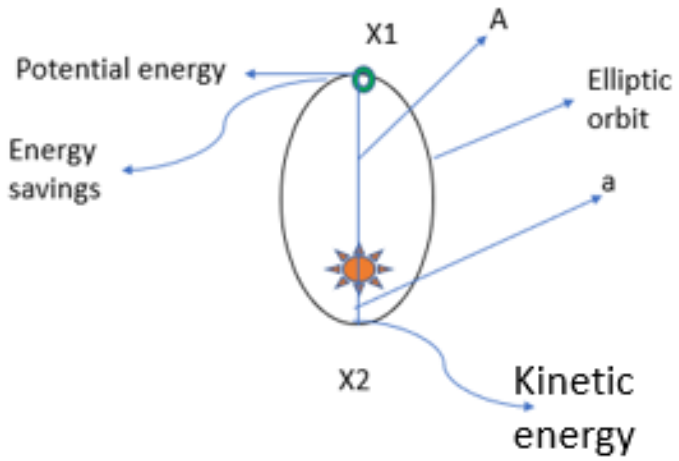
Potential Energy

Space time also explains why a planet takes a falling path direction,
but, with no good reason why it escapes.



Stephen Hawking –Changed his mind of the Big Bang, being a function of position method

. So in the end our work became generally accepted and nowadays nearly everyone assumes that the universe started with a big bang singularity. It is perhaps ironic that, **having changed my mind**, I am now trying to convince other physicists that there was in fact no singularity at the beginning of the universe—as we shall see later, it can disappear once quantum effects are taken into account.
it became more and more clear that the universe must have had a beginning in time, until in 1970 this was finally proved by Penrose and myself, on the basis of Einstein's general theory of relativity. That proof showed that general relativity is only an incomplete theory: it cannot tell us how the universe started off, because it predicts that all physical theories, including itself, break down at the beginning of the universe. However, general relativity claims to be only a partial theory, so what the singularity theorems really show is that there must have been a time in the very early universe when the universe was so small that one could no longer ignore the small-scale effects of the other great partial theory of the twentieth century, quantum mechanics.
Hawking, Stephen. A Brief History of Time . Random House Publishing Group. Kindle Edition. (L 739)



Also Paul Laviolette /Subquantum Kinetics – page: 3
(**Subquantum Kinetics leads us to view the entire universe as a vast, self-generating open system**)
Meaning, that going from X2 (kinetic) to X1(potential) must be based on creating energy.

Kepler Equation so far is the only one, that measures energy of a planetary motion 8as a field or volume.

A^3/T^2 = Constant (m^3/s^2) means that energy is proportionate with a (geometric volume of space / s^2)

If divided by the **phase constant** for 1 Kg of the oscillating orbital motion(**A*T/kg**) :

Kepler/Oscillating constant = A^2/T^3 for 1 kg, where the result unit is (**$Kg*m^2/S^3$**) that is a unit of potential energy ,as a function of time

Which is the same unite of energy(t) we presented in our Time equation :**$E= mf*g^2*t$** (**$Kg*m^2/S^3$**)

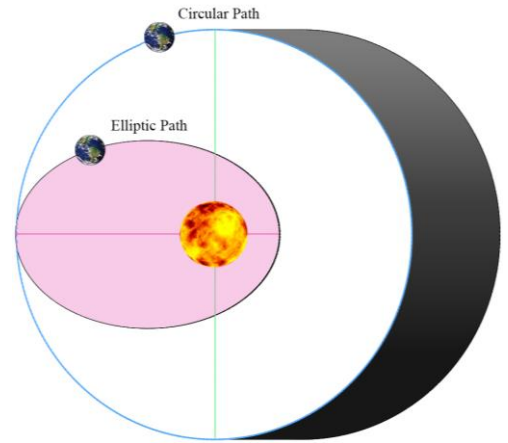
We can read Kepler as Geometric volume / acceleration time squared = constant, where work time and acceleration time are equal.

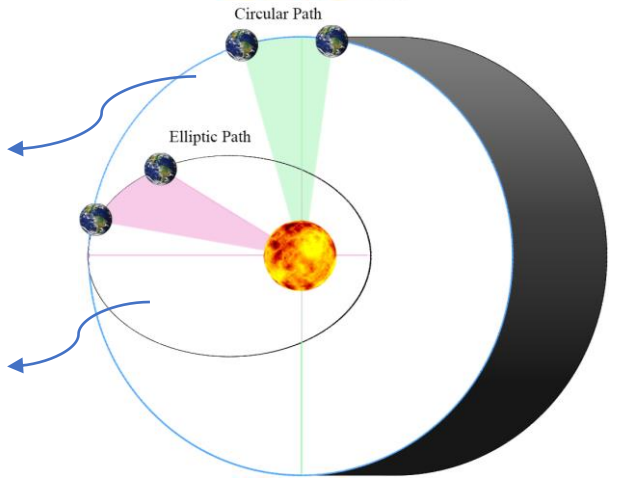
- The volume A^3= (A^2 area around the sun) * A (the distance traveled by the sun in the galactic field) and that volume is what measures energy in Kepler's equation.

Potential energy: kg-m^2/S^3 = constant, can read:

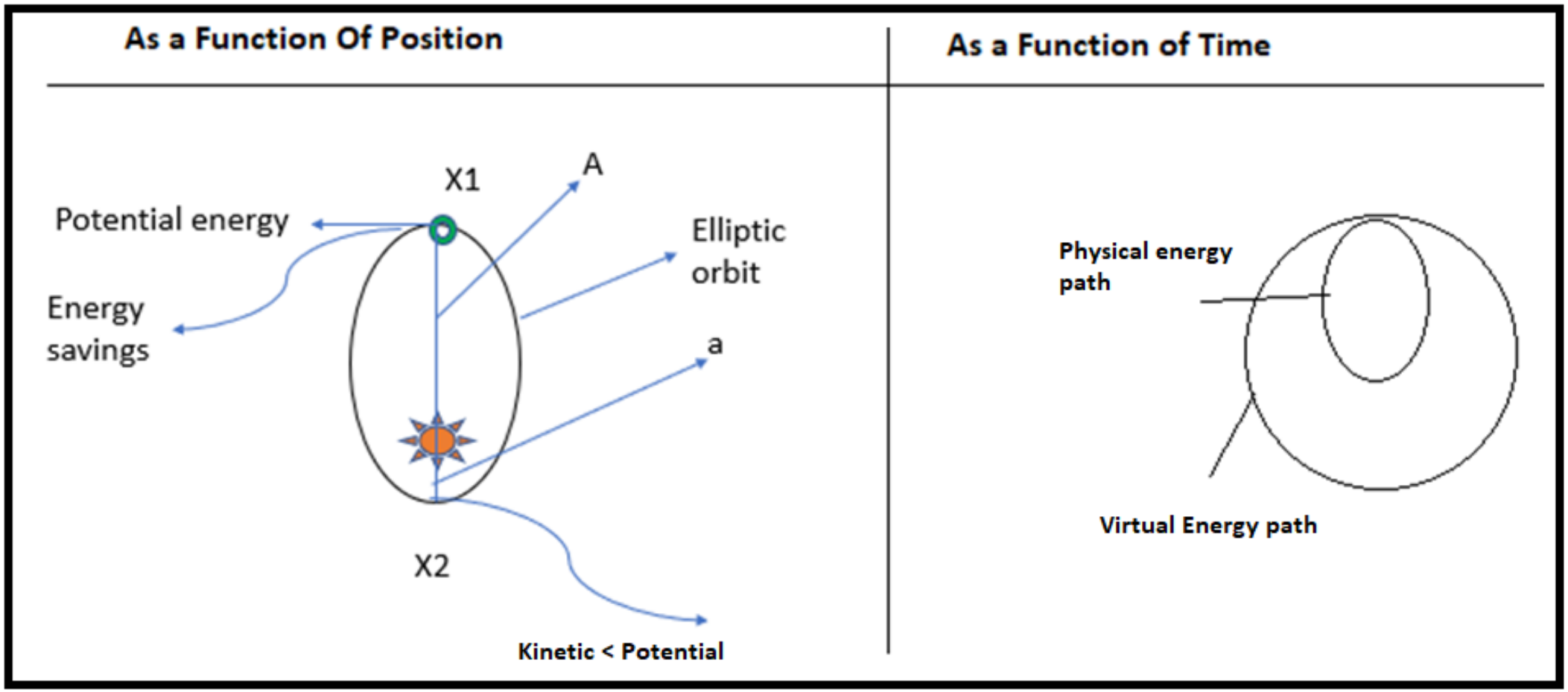
orbital potential energy is constant over orbital time

- **Have the orbit was near circular with half diameter = the big access, potential energy remains the same as per Kepler, however the elapsed orbit time becomes bigger, and the kinetic work output also become bigger.**



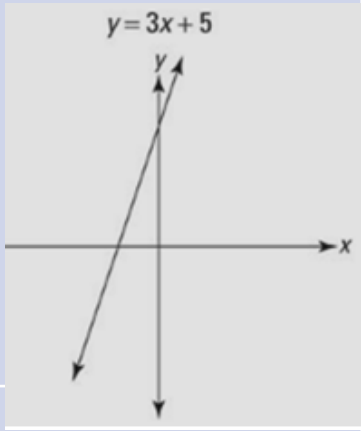


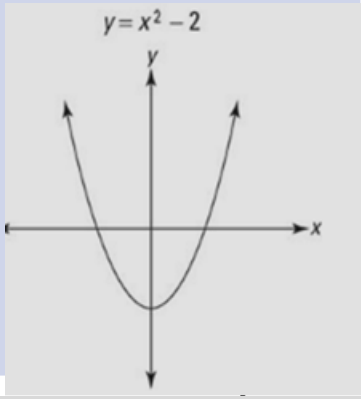
- As A function of Position we compare, Potential-to-Kinetic (law of conservation)
- As a Function of Time, we compare motion's energy of a virtual circular path with Energy of Elliptic physical path



As a function of Time , the definition of Newton must change, based on the value of Virtual distance
1- the Negative distance or Negative mass, in complex numbers, is based on the type of motion
2- Virtual distance, is treated at its face value, not subject for correction, as we see in special relativity

1			
As a Function of position	Time Independent energy	**Case 1:** 1 Kg→ 1 Meter = same energy regardless of time	Algebraic presentation Of motion is a straight line i.e y(p) = 3x+5
	Time Dependent Energy	**Case 2:** 1 Kg→ 2 Meters = energy is time dependent compared to case1	
As a Function of Time	**Energy is dependent on virtual distance** With virtual distance : (-) or (+)	**Case 3:** 1 Kg→ 1 Meter but requiring different energy than case 1	Algebraic presentation of motion is parabola i.e $y(t)= ½ A^2$





- **The energy difference between case 1&3 depends on calculating a Negative Mass or Negative Distance in complex numbers**
- **The practice of Correcting virtual distance for a physical distance, using Lorentz transformation, considers the difference as an observer error, with no energy difference that we need to calculate.**

Examples of relation between Physical & Virtual displacements in oscillating motions show that energy is generated at every cycle of a planetary motion

Oscillating body –linked to a spring,

- virtual displacement= physical distance of motion
- Potential Energy = Kinetic energy.

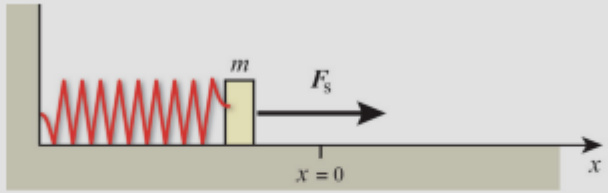
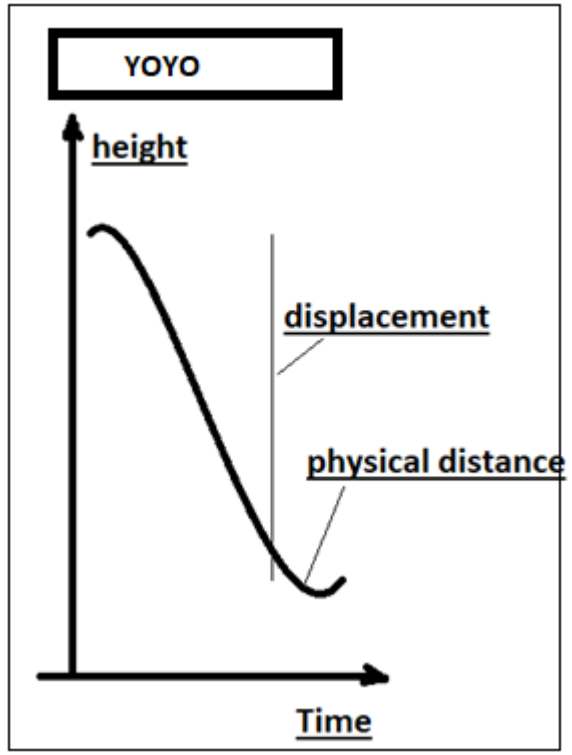


Figure 10.1

A mass moves on a frictionless surface attached to a spring, whose other end is fixed in place. That moment pictured here is some time after the mass was released. At this instant, the spring is compressed and the force exerted on the mass (F_s) points in the positive direction.

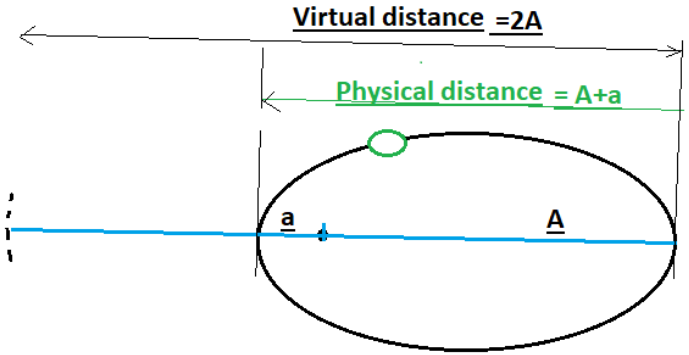


Motion of a yoyo

- **Physical distance – virtual displacement =(+)** positive, where oscillation will not continue without External energy added at the end of each cycle

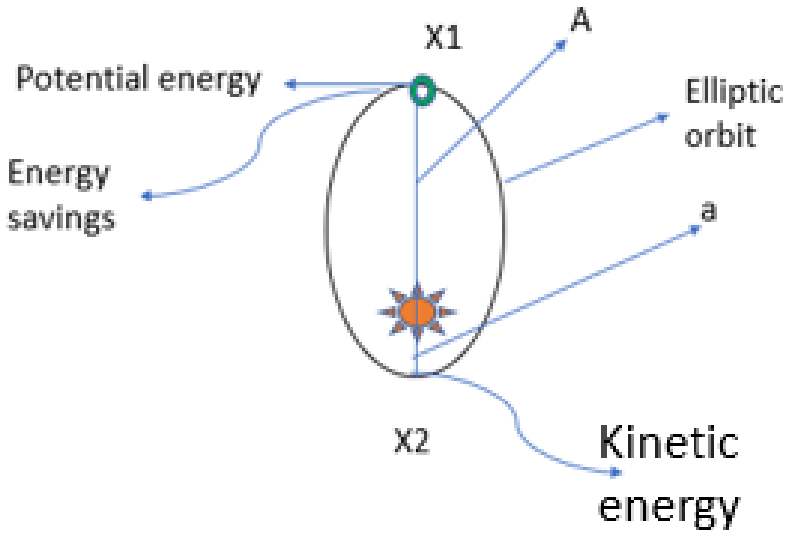
Planetary Motion

- **Physical elliptic path distance- virtual displacement calculated by Kepler = (-) negative**
- Potential energy is simply created and gained, from a positive mass moving a negative distance of the field



- Potential energy creation from the field of Time
explains restoring higher potential from a lower kinetic value, at every second during a planetary motion.

Acquiring energy from the Field of Time, seems to apply to every matter, including our living bodies,
where sleep and body recharge, means actual energy gain, we share with gains made by our planet, aliened with day and night and decided by body and planet's position, relevant to planet's motion in the field of time.



How we use energy equation as a Function of Time:

$E = \frac{1}{2} Mf * A^2 * t$ … for a planet, unlike the vector of gravity, the net acceleration in complex numbers, has a direction to- or-away from the sun, based on planet's position in the field.

where:

- **During the falling half, $E(t) = m * A^2 * t$ = (+) value**
- **During the escaping half, $E(t) = m * A^2 * t$ = (-) ..this is when the planet escapes**
- **Direction of T (time lapse of acceleration in the field) decides the A^2 net value and direction in the field**

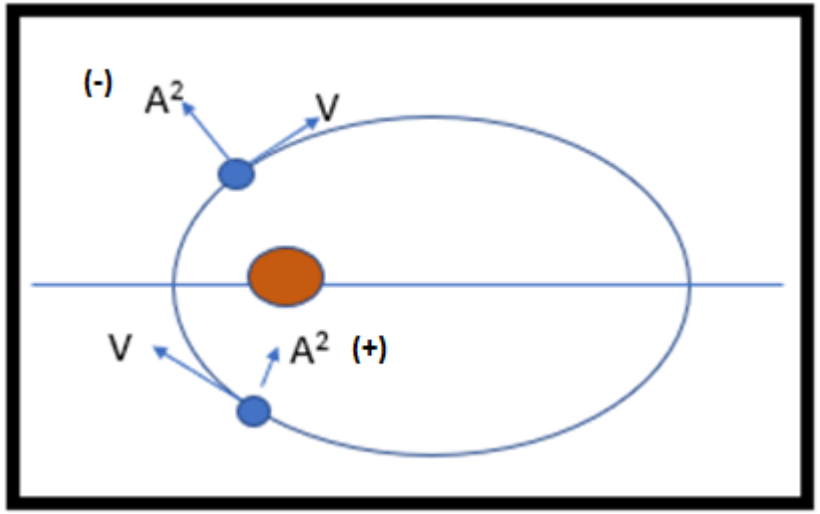
(when Time lapse of acceleration, takes a negative coordinate value direction, due to its field position, then acceleration will start to take a negative value in complex numbers, with experiencing a decelerated motion)

To examine our equation:

- **Energy produced from taking elliptic path** = $\frac{1}{2}$ Mf A^2 (t_ circular – t_ elliptic) = $\frac{1}{2}$ Mf* g^2 * (Vi_c/g – Vi_e/g) = **$\frac{1}{2}$ Mf* g (A-a)/ orbital time the value is proportionate with A-a**
- According to **Kepler :** Cartesian Volume of energy gain :

  = (volume_circular – V_elliptic) = $2\pi A^2 – (a+A)\pi A = \pi A (2A - A+a) = \pi A$ **(A-a) proportionate with A-a**

- ❑ A^2 is the product of two accelerations,
- ❑ A1: due to net force of position (Gravity + orbital momentum force)
- ❑ A2: due to the gravitational field of the universe equilibrium.



Mathematically Managing vectors of acceleration:
To avoid math violations of the Function, the A^2 value of acceleration can not be reduced to the sum of two vectors,.

Physical quantities are Vectors & Scalers:
Examples of scalars: mass, temperature, speed, distance, energy, voltage, electric charge, pressure.
As a function of Time, Energy shall be treated as a **mathematical geometric volume**, for the following reason

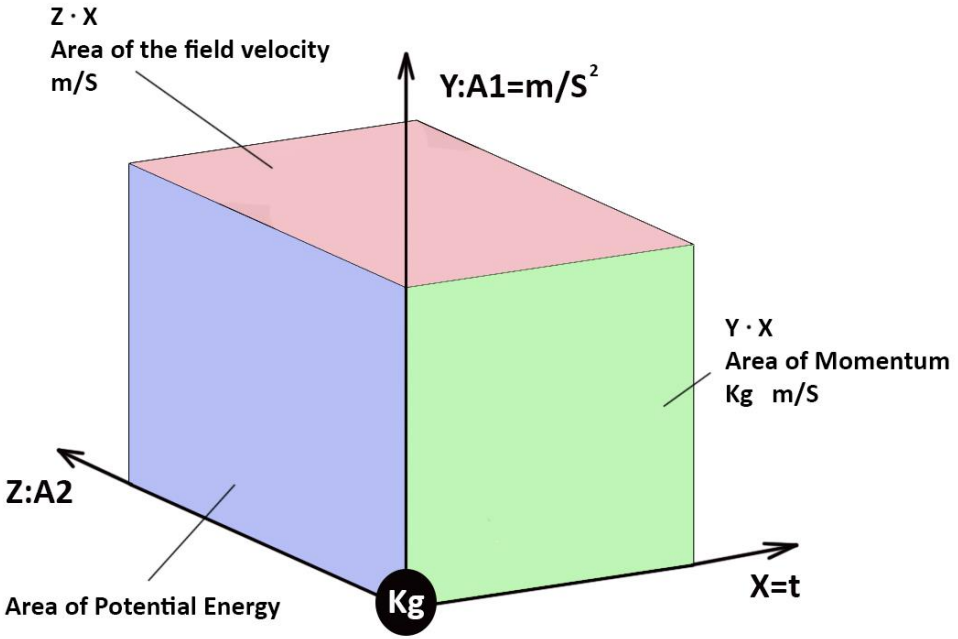
Position as a function of time **$X(t) = ½ at^2$** ….. (given that initial speed V0t=0 & distance D0=0)

- When Work is a function of location, then work energy $W = m^* a * \Delta D$
- And $\Delta D = \int X(t) = \int (½ at^2) = ½ at1^2 + ½ at2^2 ….. + ½ atn^2 = ½ at^2 / t$ work time $= ½ a^*t$
- **When Work is a function of time, $W = ½ m^* a^2 t$:**
- **Work energy as a Function OF Time : $W \sim a^2$ (where a^2 presents acceleration area made by net force and equilibrium)**
- **Work energy as a Function of Location: $W \sim a$ (where a represents acceleration under the net force)**

- What happens if we change the (a^2) into multiplying two vectors ($a^*a = A$),
- then $X(t) = x(p) = ½ At$, true only when (**Physical distance = virtual displacement of motion)**
- **like in the example of oscillating ball liked to a spring**

- **When location (t), $X(t) \neq X(p)$** then the acceleration squared can not be reduced to multiplying two vectors, and the only mathematical option left is, calculating the **a^2 = area**, that if multiplied by Time lapse of acceleration, then we will have a volume of **Cartesian geometry similar to Kepler's conclusions.**

How we can read the Cartesian geometric volume of energy



t: work time = time lapse of acceleration
A1: Acceleration by a net force
A2: Acceleration by field of equilibrium

$X(t) = ½ At^2$ when initial velocity and distance = 0

$E= (½ Mf * A^2) * t$

$A1*A2$= Acceleration Area = Kg. M^2/S^2 =potential energy (available for motion)

$A2* X$ = Field Area = Meter/S = relative velocity of the field or the speed of the universe

$A1*X$ = Net Force Area = Momentum =Kg. Meter/S

Energy Volume $A1*A2*t$ = Energy(t)= $(Kg.m^2/S^2)$ /S =constant

When acceleration time (t) decreases, (smaller on X) then Available potential energy increases, example, (t) value on X changes (4 to 2)

- **Then momentum (coordinate Y) increases or**
- **relative speed of the field (coordinate Z) increases or**
- **Or potential energy available for motion is increased**

When oscillating phase = constant according to (Kepler) then

clock Time of Circular path= clock Time of Elliptic =T , with elliptic velocity and momentum smaller

A: Physical distance circular> Elliptic with Virtual displacement = (-)

Oscillating phase Circular= Elliptic, where

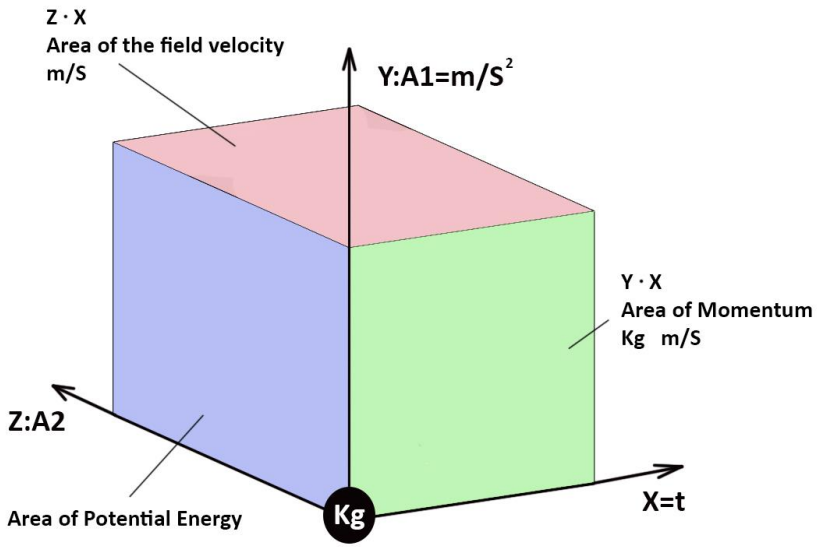
(A+A)*T _ circular = (A+a)*T _ elliptc

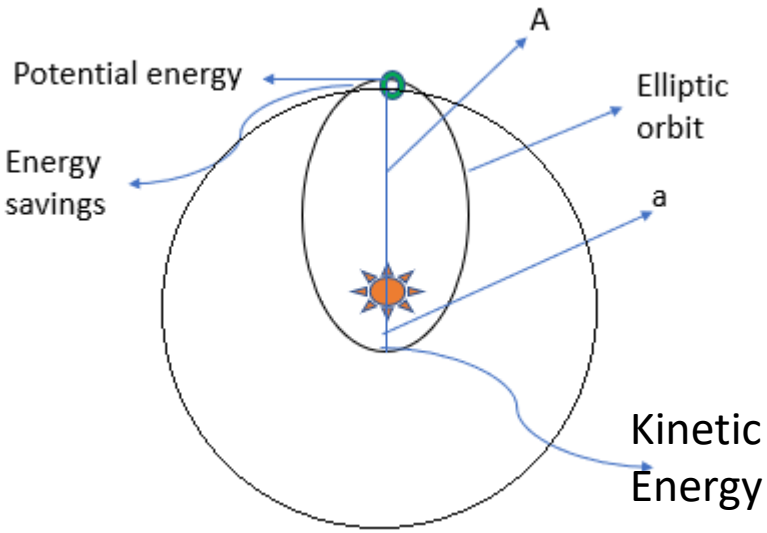
T _ elliptic= T _cir * (A+a) /2A < T_ circular, plug results to Energy as a function of Time: E= ½ Mf *g^2 *t

When Energy_circular = Energy_eliptic (conserved)

When momentum (Y*X) and (T) on X coordinate are both smaller in elliptic orbit, then, Z coordinate is bigger enough in the elliptic path with:

- Elliptic Penitential Energy, when completing orbit, (Y*Z) is bigger measured by Joule (kg*m^2/S^2) where more Joules released than used
- Field velocity (Z*t) is bigger m/s (Morley's interpretation of Michelson-Morley experiment), Morley was measuring the speed of universe and not the speed of light.





When both work-time and mass are positive, and **acceleration Squared** takes a negative or positive value in complex numbers, then this means that TIME has a direction in the Cartesian geometry of energy

- Where Relevant to a galactic field

❑ **When direction of TIME, is positive, we are producing potential energy**, and releasing more Joules for expanding universe, every second or every orbital motion.

❑ **When** direction of TIME is negative, then we are using joules, for other purposes, making other forms of energy, like the process in a black hole.