Controlling Planetary Movements: Displacement of Earth for Preventing Extinction of the Entire Existence of Life Because Increments of Solar Irradiance

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Abstract

Via decrement of mass of planets, we can send the entire planets to far space orbital allocations. We can convert physical matter into energy, it can either get irradiated to outer space, get transmitted back to Earth's potential energy, get used as a self-propellant, or it can get used in a complex model of these systems; it decreases the mass of the planet. By conversion of the matter to energy, Earth will lose some mass that decreases the gravitational fields for Earth; the formulas of the current research are deduced to control the movements of the planets. Celestial bodies, like any other mechanical systems which follow, and are based on, the physical laws of mechanics and dynamical systems, follow these laws. So since the celestial object *"A"* exerts the *"F"* force on the celestial object *"B"*, the celestial object *"B"* exerts an interactive force *"F"* on the celestial object *"A"* also. All celestial objects exert gravitational influences on each other. Scientists believe, once upon a time, the Sun would be much hotter than what it is today. By that point, this high temperature leads to extinction of the entire existence of life on Earth. When the gravitational force changes, a space particle may either get departed from the other particle or come closer to the other particle.

1. Introduction Celestial bodies, like any other mechanical systems which follow, and are based on, the physical laws of mechanics and dynamical systems, follow these laws. So since the celestial object *"A"* exerts the *"F"* force on the celestial object *"B"*, the celestial object *"B"* exerts an interactive force *"F"* on

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the celestial object *"A"* also.[1] Scientists believe, once upon a time, the Sun would be much hotter than what it is today,[2] it's because internal chemical and physical (physical: thermonuclear fusion) reactions of the Sun. Before the Sun becomes a red-giant,[3] it will put the Earth under much high energy irradiations (fig: 1). By that point, this high temperature leads to extinction of the entire existence of life on Earth.[4][5] We can convert physical matter into energy (there is difference between definition of mass and matter). This energy can either get irradiated to outer space, get transmitted back to Earth's potential energy, get used as a self-propellant, or it can get used in a complex model of these systems. It decreases the mass of the planet. Via decrement of mass of planets, we can send the planets to far space orbital allocations:

$$r = \sqrt{G\frac{m_0 m_1 - m m_1}{F}},$$

and since $F = \frac{d(MV)}{dt}$[1] so

$$r = \sqrt{G\frac{m_0 m_1 - m m_1}{\frac{d(MV)}{dt}}};$$

Since Earth consequently goes far from the Sun (the central point of heat and irradiation of light), Earth will receive fewer irradiated energy by the Sun. So we can successfully reduce the temperature of the weather of our planet. By conversion of the matter into energy, Earth will lose some mass that decreases the gravitational fields for Earth; by this formula we shall control the movements of the planets:[1]

$$r = \sqrt{m_1 G\frac{m_0 c^2 - E}{\frac{d(MV)}{dt}c^2}};$$

(The equations are proven in section 2, pages 6 & 7)

c is the speed of light; it is 299792458 meter per second. Mass is showed by m. G is called the Gravitational Constant, and has the value $6.67\times10^{-11}N.m^2.kg^{-2}$

[1]The formula is described here, for the first time, in the hope that it would be useful to displace space particles, but (now) it's obvious that it may also help us to (accurately) calculate an orbital path of sub-atomic particles during emission and absorption of energy, and during nuclear reactions, and it gives us some abilities to move them to a custom place inside an atom (i.e. opposed to a nuclear fission (and completely different than a nuclear fusion), when mass of neutrons and protons gets increased as much as the nucleus begins to absorb a large amount of the nearby free electrons, alike a black hole, its gravity would pull the sub-atomic particles inside, and then it releases energy).

Additionally, through artificial creation of massive planets and stars,[2] those which the main planet is moving around them, we can transfer the main planet to smaller orbits (or also to larger orbits) from the central star which the planet revolves round it. In the next few centuries the East Antarctic Ice Sheet would begin to melt down.[6] Scientists believe, in the next 500,000 years, Earth will have likely been hit by a meteorite of roughly 1 km in diameter, assuming it cannot be averted.[7] In the next 600 million years[3] the Sun's increasing luminosity begins to disrupt the carbonate-silicate cycle. All plants that utilize C3 photosynthesis (~99 percent of present-day species) will die.[8][9] Until the present day some scientists had suggested that we can send some of the human races to somewhere else, such as Titan, a moon of Saturn.[10] So the human race would survive. Few of them can stay alive. They can keep living on another planet. But no one[4] gave any other thesis that saves the whole Earth for a long time on those days. When the gravity of a nearby planet is getting increased, then the main planet will get closer to it. The main planet would be displaced from the central star, and it may either get departed from the central star or come closer to the central star.

[2]Major methods are described in the section 2. Moreover, matter creation is the process inverse to particle annihilation. It is the conversion of massless particles into one or more massive particles. Since all known massless particles are bosons and the most familiar massive particles are fermions, usually what is considered is the process which converts two bosons (e.g. photons) into two fermions (e.g., an electron–positron pair). This process is known as pair production. Pair production is the creation of an elementary particle and its antiparticle, for example creating an electron and positron, a muon and antimuon, or a proton and antiproton. Basically, pair production is a direct conversion of radiant energy to matter.

[3]Units are short scale: Thus, a billion years means 1×10^9 years and a million years means 1×10^6 years.

[4]Another minor research on this issue (only the issue of the future of Earth) is done before, by D. G. Korycansky. But the research is only regarding to the effects of the gravitational force of Kuiper Belt Objects on Earth, and similar gravity-assist techniques. Inside the article you see: Korycansky et al. (2001) have presented a scheme for altering planetary orbits in the solar system, in particular that of the Earth as a means to escape (for a period) the consequences of the secular brightening of the Sun over the next few billion years.

$\triangle Q = (1/2)[(V.V)_{post} - (V.V)_{pre}]$

Given an estimate of a typical KBO mass, about 10^6 encounters are required to shift the Earth's orbit to that of Mars (1.5 A U). The process takes place over $\sim 6 \times 10^9$ years, leading to an encounter once every 6000 years or so on the average.

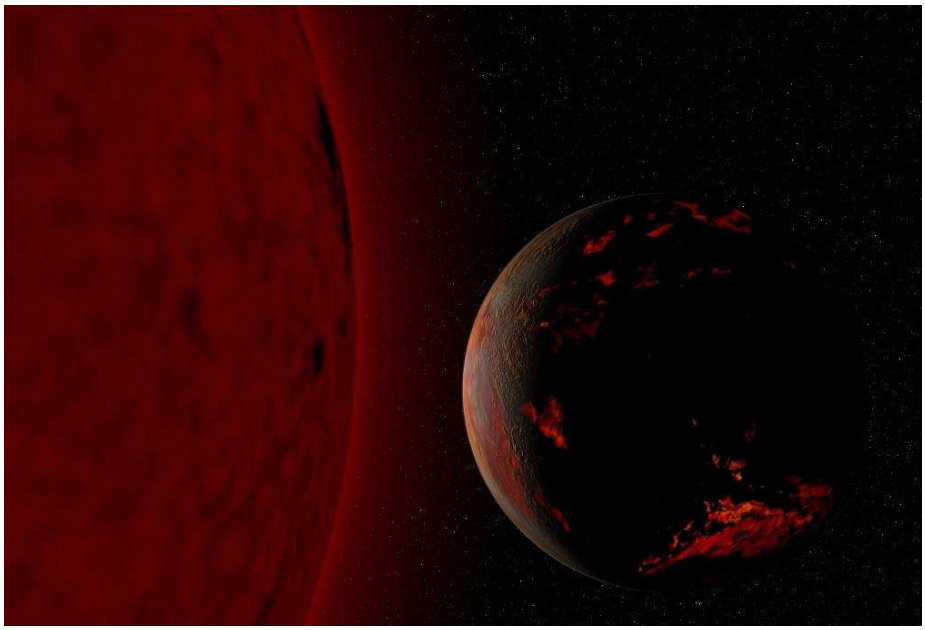

Figure 1: Earth in 5-7 billion years from now. Since we don't use this theory in application in next 1 billion years, oceans begin to evaporate

2. Applications on increment and decrement of the mass of the planets Since transformation of energy into matter is not as easy as transformation of matter into energy (for example by creation of an artificial nuclear explosion (fig: 3) we can turn physical matter into energy, some amount of the matter will be vaporized only, and some amount of the matter would be displaced only, the force which is created by the power of the explosion would displace them), and we exhibit these relations by the equation: $E = mc^2$,[11][12] you may prefer not to create some matter (by a process which is called pair production - in which the rest mass of particles is created from energy of annihilating photons) but increase the mass of the planet by adding some extra mass to the planet, directly. Theoretically, adding some extra mass to the nearby planet of your own planet, through crashing several meteoroids, small asteroids, etc. to it, is not such a useful but a possible method. Meanwhile (when we use this method) we only may increase the mass of the nearby planet (the closest planet to our own planet), since it would be so dangerous for alive bodies of the main planet that you cause the main planet (through many artificial crashes) begins to move towards the nearby planet/star by this method (fig: 2). Moreover, a powerful nuclear explosion in a comet/KBO[5] can help us to direct them towards the outer space of the Earth, instead of firing the comet directly on the surface of a nearby planet (fig: 2). The comet/KBO can be directed towards the outer space of the Earth by a physical, strong cable connection (by several cables of graphene ribbons, or

[5]Kuiper belt object

several cables of carbon nanotubes[16], etc. that the basement of the system on the surfaces are such flexible (rotor) connections) between two comets/KBOs too. A rocket can push and make a small comet/KBO deviated from its main path and directs it towards the outer space of the Earth. Additionally, slowing the speed of the comets down that it causes a change on its orbital path is a popular method. The celestial object gets close to our planet and the planet's gravity (for an interval of time) will grab hold of it (fig: 4. We must make a consideration about several interruption methods during the entire process if the comet gets directed towards a wrong path. Note: generally for calculations of every methods of planetary movements, we also must have a consideration about tidal locks and interplanetary forces[13][14][15], for example the existing force between Earth and the Moon, and Mars, and Jupiter, and the Earth's kinetic energy must get considered. Hopefully with progress and advancement in technology, in the future, we can convert physical matter into light somehow easier than what we do today. So this method (by turning matter into energy, and also implying an external gravitational force on the Earth) would become the only useful method. So artificial creation of nuclear explosions by bombs (fig: 3), or designing artificial crash (fig: 2) would not be useful in those days, in future.

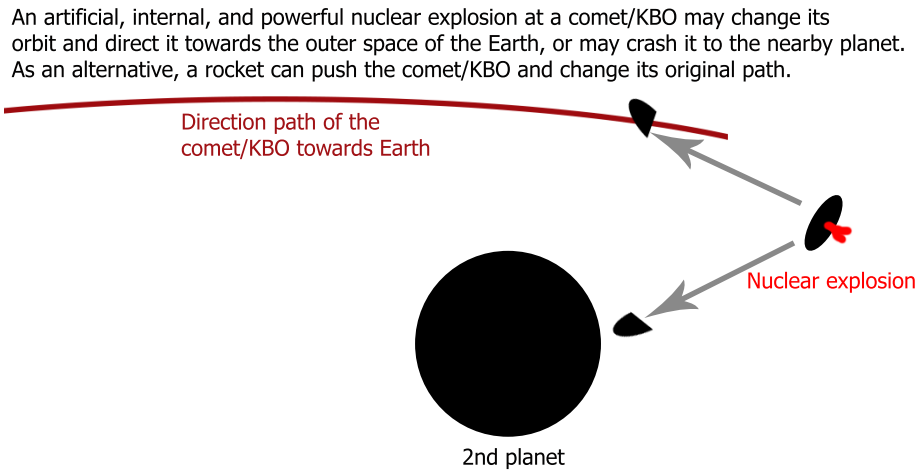

Figure 2: Theoretical model

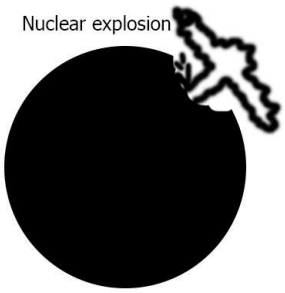

Figure 3: Matter gets transmitted into energy, then we must try to soften the hole by filling the hole with the matter which is remained, to keep the planet's shape circular

$$F = G\frac{m_0 m_1}{r^2} \Rightarrow r^2 F = G m_0 m_1 \Rightarrow r^2 = \frac{G m_0 m_1}{F} \Rightarrow r = \sqrt{\frac{G m_0 m_1}{F}} \quad (1)$$

$$\Rightarrow r = \sqrt{G\frac{(m_0 - m)m_1}{F}} \Rightarrow r = \sqrt{G\frac{m_0 m_1 - m m_1}{F}} \ \square$$

Since m_0 is the mass of the main planet and m_1 is the mass of the nearby planet (or star) and m is the mass of the previously transformed matter into energy (in kg), in the first equation F is $F_{(m_0 - m,\, m_1)}$ and it isn't $F_{(m_{0(Earth)},\, m_{1(Sun)})}$ (we just will expand this basic equation for its instantaneous form ($F_{(m_{0(Earth)},\, m_{1(Sun)})}$), but meanwhile since the one doesn't go beyond theoretical experiments, the one can use the numerical values of $F_{(m_0,\, m_1)}$ for calculations by the first (basic) equation).

$$Since: \ r = \sqrt{G\frac{m_0 m_1 - m m_1}{F}}, \ and \ F \ (our \ instantaneous \ F) \ is \ equal \ to: \quad (2)$$

$$\frac{d(M_{(instantaneous\,total\,mass)} V_{(relative\,(earth,\,sun))})}{dt} \Longrightarrow r = \sqrt{G\frac{m_0 m_1 - m m_1}{\frac{d(MV)}{dt}}} \ \square$$

$$E = mc^2 \Rightarrow |m| = \frac{E}{c^2}; \ -m = mass\ of\ lost\ (transformed)\ physical\ matter. \quad (3)$$

-m is the amount of the mass of the matter that we convert into energy. If the main planet (e.g. the Earth) is losing some mass, then since $m_{0\,(Earth)}$ is

getting decreased, for the instantaneous moments of the artificial displacement of the planet (over combination of the 1st equation with the 3rd equation):

$$r = \sqrt{G\frac{m_0 m_1 - \frac{Em_1}{c^2}}{F}} \Rightarrow r = \sqrt{m_1 G\frac{m_0 c^2 - E}{Fc^2}}\ \square \tag{4}$$

$$Since:\ r = \sqrt{m_1 G\frac{m_0 c^2 - E}{Fc^2}},\ and\ F\ (our\ instantaneous\ F)\ is\ equal\ to:\ (5)$$

$$\frac{d(M_{(instantaneous\,total\,mass)}V_{(relative\,(earth,\,sun))})}{dt} \Longrightarrow r = \sqrt{m_1 G\frac{m_0 c^2 - E}{\frac{d(MV)}{dt}c^2}}\ \square$$

F is the total force between the masses;

G is the gravitational constant $6.673 \times 10^{-11} N(\frac{m}{kg})^2$;

m_0 is the main planet's mass;

m_1 is the second planet's mass (or star's mass);

M is the total mass (instantaneous mass of the main and the second planet that we would calculate its derivative by mathematical differentiation);

t is time (and dt would be an instant of time);

E is energy;

V is, relative, total velocity (speed);

r is the distance between the centers of the masses of the planets, or the planet and star.

Following to the Newtonian mechanics, $g \propto m$ and $v \propto g$, meanwhile following to the general relativity theory at the orbital speed of the Earth we wouldn't observe a sensible change for the mass; there is no general definition for this mass, in general relativity, the velocity is independent from mass so $v \not\propto m$ $\square$

When the gravity is getting decreased, then the planet gets departed from the central star (of the solar system), by consequently higher speeds. When the gravity of the central star is getting increased, then the planet comes closer to the central star, by consequently higher speeds. We must take attention to the following: It's impossible to increase the mass of the Earth approximately more than $369,850.7 \times 10^{17} ton$ in the current orbital allocations of the Earth or it will fall into the Sun.[6] Since, for a definite point of a particle system, on that point $F_T = \sum F = F_1 + F_2 + F_3 + ... + F_n$ so in addition to the tidal or interplanetary forces, you must also think about the optimum situation during the moment when you need to fix the planet in a new orbit by a complex method. The method would be including exertion of a temporary gravitational force. A moon or a planet can exert a great gravitational force to the main planet for many hours. Then, for example, a physical, strong cable connection (by several cables of graphene ribbons, or several cables of carbon nanotubes[16], etc.) nulls

[6] The calculation is simple using the orbit velocity and the escape velocity formulas.

the remaining noises relating to acceleration, and it secures the planet in its new orbit, etc.[7] When the gravity of a nearby planet is getting increased, then the main planet will get closer to it. The main planet would be displaced from the central star, and it may either get departed from the central star or come closer to the central star.

3. A brief description regarding to the published scheme of the KBO's gravity-assist model We carefully direct a comet or asteroid towards the outer space of our planet. The particle comes closer to the Earth, and then passes the Earth. It transfers some of the comet's/asteroid's gravitational energy to the Earth. We must repeat this incident for many times. Meanwhile, scientists believe, the influence of resonance phenomenon must get considered. The slightest miscalculation could fire the comet/asteroid straight at the Earth; causes devastating consequences.

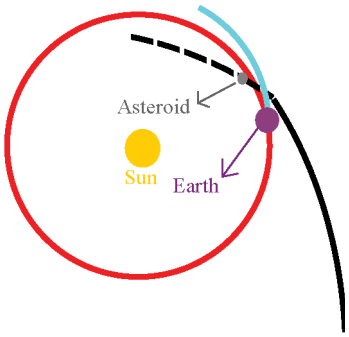

Figure 4: The theoretical scheme of the gravity-assist model

Hopefully with progress and advancement in technology, in future, we can convert physical matter into light somehow faster and easier. Increment of the mass of a planet via conversion of energy and light into physical matter is so hard, it's not impossible but at the current moments we talk about it as a theory only.

[7]Some researchers believed, celestial bodies which are not located at least 1.15 au (astronomical unit) away from the central star, are not able to leave the orbits that the celestial bodies are located on them.[13] So we could see a same thing about the Earth. If it was true, then a strong but flexible artificial connection between Earth and Mars by many cables (those which were made up by a proper material such as carbon nanotubes) could be required for a 0.15 au displacement of Earth against the Sun. Recently NASA made a discussion regarding that we can displace the Earth from its current orbital position. So following to the NASA's recent gravity-asist plan, we won't make any further consideration about what those researchers belived and mentioned in earlier times.

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