TEN QUESTIONS ON DARK PHENOMENA:
Reconciliation of Observations With Modified Gravity and General Relativity
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Abstract: This paper is an introductory outline published for a series of discussions on dark matter and dark energy. Dark energy and dark matter are the   two differences between cosmic observations and the calculations of existing technological systems. It is divided into ten specific questions. Following the ideas of the ten questions, through calculation and Mathematical deduction, the veil of dark energy and dark matter can be gradually unveiled. It is shown that dark energy and dark matter are the accumulated results of miscalculations caused by a series of historical limitations of mankind.

Humans have made a series of advances in the field of dark matter[1] and dark energy[2] research. The theory that is most likely to be close to the truth is the theory of gravity and related observations[3]. We used to calculate mass and energy in a way that completely ignored the existence of gravity, the ubiquitous force of gravity in the universe, which is a huge form of energy capable of lifting planets and even galaxies. Some people like to emphasise the difference in magnitude, but that's just a technicality. As long as there is a constant equilibrium of mass and energy transformations similar to two stars rotating around a common center of mass, that should be recognized as a form of energy. The formula for the law of centripetal force (F=ma or Ma')[4] shows that mass and acceleration are interconvertible within the gravitational force.We have accepted that mass is a form of energy, we cannot deny that cyclic acceleration and gravity are also forms of energy.

There are two key reasons why the double darkness has not been found so far: firstly, mankind has failed to insist that the laws of nature be applied to all dimensions (e.g., we base the macrocosm on the two-star model rather than the dynamic three-star model, which is not only in line with the principle of the greatest stability of a positive triangle but also with the definition of a uniform universe. See the second part of this paper for details); secondly, human beings have failed to inherit the existing true knowledge comprehensively, and the loss of computational tools caused by the monopoly of knowledge has degraded some of the true knowledge to the philosophical stage.[5]

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[1] **Dark matter.**Zwicky F. Die Rotverschiebung von extragalaktischen Nebeln. Helvetica Physica Acta. 1933;6: Discussed dark matter.

[2] **Dark engery.**Annila A, Wikström M. Dark matter and dark energy denote the gravitation of the expanding universe. Frontiers in Physics. 2022;10:1017. Focused on dark energy.

[3] **Pan-gravity theories and related observations**.Lee J, Yang HS. Dark Energy and Dark Matter in Emergent Gravity. Journal of High Energy Physics. 2017;9: Covered general gravitational theory and related observational results.

[4] **F=ma**.The centripetal force law (F=ma) in Newtonian mechanics is standard and can be found in many classical mechanics textbooks.

[5] **For example**, Yin-Yang-Five Elements were originally quantitative calculation systems for the theory of meta-qi. However, they are no longer recognised by science because they have become disconnected from each other. The structure of yin and yang within yuan qi is exactly the same as that of matter and ring acceleration within gravity. Understanding the structure of gravity using the concept of yin and yang balance could be the key to unveiling dark matter and dark energy.

Dark energy and dark matter, as differences in observation and calculation, are both objective and the result of omissions due to the historical limitations of human science. As matter and energy, the two exist objectively; but the fact that the two are treated as dark matter and dark energy is nothing more than the result of errors in calculation and understanding by human science. The double darkness can be divided into ten specific problems, which are categorized into six areas such as violation of the principle of symmetry[6], violation of the principle of maximum stability of positive triangles, arbitrary definition of the main units of magnitude of physics as well as overly homogeneous delineation of the forms of existence of energy. All of them belong to the principle of relativity[7] that does not follow the principle that all laws of physics have the same effect in different coordinate systems.

I. Violation of the Principle of Symmetry

Symmetry is a common law of the universe and of science, and violation of symmetry leads to the emergence of dark energy and dark matter. Current human science violates symmetry in many ways in both the macroscopic and the cosmic fields.

For example, according to the law of gravitation[8] and Newton's second law of motion, the formula for the gravitational force between the Sun and the Earth is $f = GMm/R^2 = ma$. This formula states explicitly that there is a pair of gravitational forces of equal magnitude between two stars of different masses, without explaining why this is so. The formula omits the second half $=-Ma'$. Between the two stars, the centrifugal force that virtually the larger planet is the centripetal force that virtually the smaller planet. To write this equation in its entirety, $f=ma=-Ma'$, would not only create questions about the consistency of this gravitational f with the direction of ma or Ma', but it would also lead to questions about why only one side could be virtually and not the other.

Therefore, this law should be distinctly different from the law of gravity and Newton's second law. This is because the Universal Law of Gravitation describes only the gravitational side and not the repulsive side, and Newton's Second Law records inertial-system rectilinear motion, whereas here the non-inertial-system toroidal motion needs to be described.

Our corrected equation is $F=f-f=0=GMm/R^2-GMm/R^2=ma-Ma'$ [9]. The corrected formula states that equal gravitational forces exist between stars of different masses, enabling the two objects to maintain a stable distance over time. It also reveals that the reason for the existence of the same gravitational force between two stars of different masses is that motion compensates for differences in gravitational force caused by mass.The corrected equations also show that the gravitational constants of the gravitational forces acting on the large and small stars are both G. Therefore, the

[6] **Symmetry.**Weyl H. Symmetry. Peking University Press; 2018.

[7] **The principle of relativity.** Galileo's book, Dialogue Concerning Two Systems of the World (1632), states the principle of relativity: the laws of mechanics have the same form relative to any system of inertia; in other words, all systems of inertia are equivalent in describing the laws of mechanics.

[8] **Law of Universal Gravitation.**Newton I. Philosophiæ Naturalis Principia Mathematica. 1687. Part III The Law of Universal Gravitation.The law of gravitation states that everything attracts each other, and that the magnitude of this gravitational force is directly proportional to the mass of the individual objects and inversely proportional to the square of the distance between them.

[9] **Meaning of part this formula.**Where F is the gravitational force, synthesised by the centripetal force f and centrifugal force-f, between the Sun and the Earth. G is the gravitational constant, M is the mass of the Sun, m is the mass of the Earth, R is the distance between the Sun and the Earth, a is the acceleration of the Earth's common centre of mass around the Sun and the Earth, and a ' is the common centre-of-mass acceleration of the Sun around the Sun.

gravitational constant of the combined gravitational force between the two stars should be 2G.

This error was not caused by Newton. According to 'There is a pair of equal actions between two stars of different masses'[10] , Newton should have recognised 2G as the gravitational constant. Unfortunately, Newton did not determine the exact value of G during his lifetime.

Question1: Why did the Earth not Merge With the Sun? Instead, Why did the two Move Around a Common Center of Mass[11]?

If there is only gravitational force between the Sun and the Earth, it must cause the Sun and the Earth to move in a straight line and merge. It is impossible to keep the two at a steady distance for long.

The law of gravity states that there is a gravitational force between the two stars, but fails to portray a repulsive force[12] equivalent to the gravitational force. We see that the two stars are at a stable dynamic distance from each other, so why have we not looked for a law that is consistent with this equilibrium? Why have we not found

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[10] **Law of Action and Reaction**,and **Law of Universal Gravitation**.Mathematical Principles of Natural Philosophy by I. Newton published 1867. Part I. Newton's Third Law Law of Action and Reaction. and Part III The Law of Universal Gravitation.From these two laws, it can be deduced that there is a pair of gravitational forces of equal magnitude and opposite direction between the two stars.

[11] **Barycenter** (Common Mass Center): Newton demonstrated that two celestial bodies will orbit around their common center of mass under the influence of gravitational force, yet he did not explicitly use the term "barycenter". As a fundamental concept in celestial mechanics, its definition, calculation methods, and applications within celestial systems like the solar system are elaborated in the book *Solar System Dynamics* authored by Murray and Dermott in 1999 (Murray, C. D., & Dermott, S. F. (1999). *Solar System Dynamics*. Cambridge University Press).

[12] **Repulsive Force**: In the field of electromagnetism, the repulsive force between charges and associated phenomena can be described and explained by Maxwell's equations. In cosmology, dark energy models such as the ΛCDM model involve the action of certain repulsive force characteristics to account for phenomena like the accelerated expansion of the universe. For a detailed discussion on the theoretical aspects related to dark energy models, refer to relevant cosmological literature (e.g., Peebles, P. J. E., & Ratra, B. (2003). The cosmological constant and dark energy. *Reviews of Modern Physics*, 75(2), 559–606).

Dynamic Lunar Gravity = Sun Static Gravity   Diagram1.

F

T
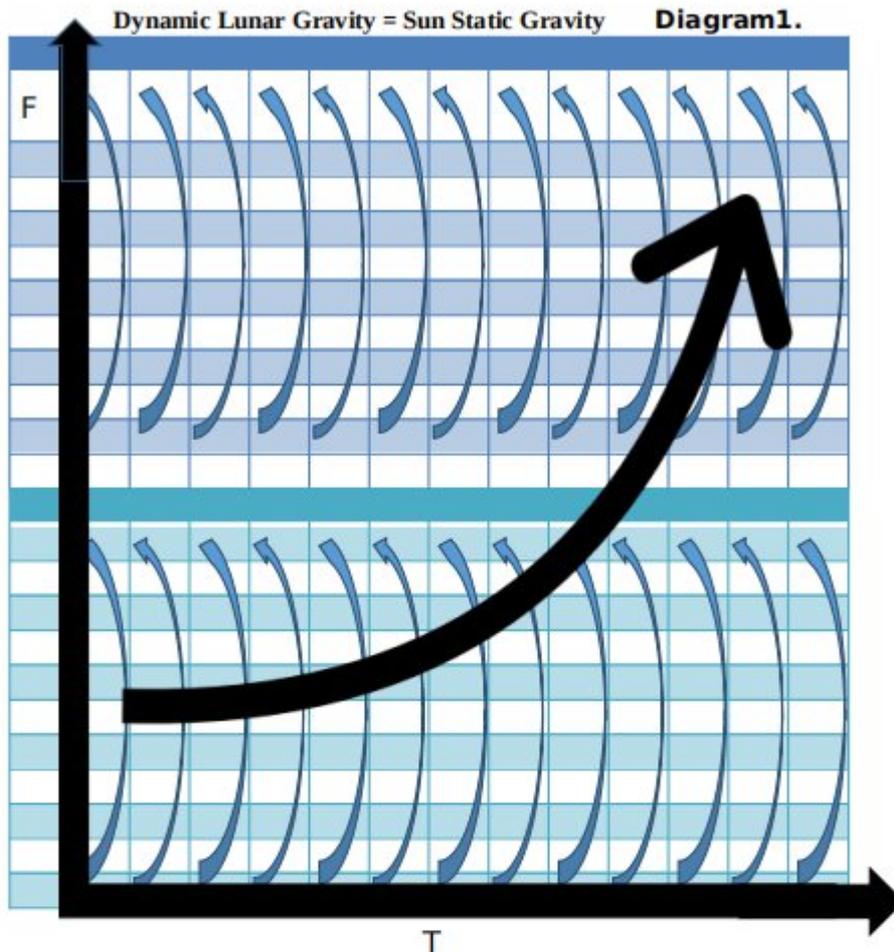
The width of each column is 27.3,representing the lunar revolution period of 27.3 days;

The height of each column is 2.02×10^{20}, representing the lunar gravity 2.02×10^{20}N.

There are 13 columns from the lower left to the upper right, representing that the one-year revolution period of the earth contains 13.3 times the revolution period of the moon.

There are 13 columns from right to upper left, representing that the one-year revolution period of the earth also contains 13.3 times the rotation period of the moon.A total of 13.32 times from bottom to top.That is, $176 \times 2.02 \times 10^{20}N=3.56 \times 10^{22}$N, which is exactly equal to the gravitational force of the sun on the earth.The 13 arrows up and down indicate that this dynamic force is present at every moment of the year.

the universal repulsive force[13]? This is a clear violation of the principle of symmetry.

If there is no external force, why does the Earth not move in a gravitationally straight line but around the common center of mass of the Sun and Earth under conditions of gravitational force only between the Sun and Earth? The dominant

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[13] **Universal repulsive force.**This repulsive force is not an electromagnetic repulsive force, but a reverse gravitational force of the same nature as gravity, and it is therefore inaccurate to call it a 'universal repulsive force'. For example, we all know that there is a pair of gravitational forces between the sun and the earth, a pair and not a single one, because it contains both centripetal and centrifugal forces. In this case, the centrifugal force of the Earth's motion around the Sun's geological centre is the centripetal force of the Sun's motion around the Sun's geological centre, and similarly, the centrifugal force of the Sun's motion around the Sun's geological centre is the centripetal force of the Earth's motion around the Sun's geological centre. The virtual one is unfounded.

explanation is due to the pull of other planets, and a simpler explanation is due to the presence of the dynamic gravitational force[14] of the Moon.

The circular motion of the Earth around the solar-terrestrial center requires the simultaneous existence of two forces that are equal and at right angles to each other. We now recognize only one of them, the gravitational force between the Sun and the Earth.

This other force is the dynamic gravitational force of the Moon on the Earth, which is equal to the product of the static gravitational force and the coefficient of motion. At this time we can complete the centripetal and centrifugal force formulas f=ma=Ma'. ma' is the centrifugal force equal to the centripetal force ma. It is no longer necessary to virtualise either side: for the centrifugal force is due to the difference in gravitational force due to the motion compensating for the mass. Nor is the angle formed by the Sun's gravitational force on the Earth and the Moon's gravitational force on the Earth a static angle; this dynamic average angle is 90°. Since the Moon has much more motion relative to the Earth than the Sun, the dynamic gravitational force formed by the product of the Moon's mass and motion exactly balances the gravitational force of the Sun's mass and its motion on the Earth (see section II3 of this paper for details).

Question2: Why is the Stereotype of Centrifugal Force[15] as a Virtual Force not Abandoned?

The centrifugal force is a virtual force that is not well-founded. While the use of 1G as the gravitational constant for calculating the departure of a spacecraft from the ground is consistent with the expected value, it is the use of this constant on the surface of the Earth that results in the need to use only half of its value. Centripetal and centrifugal forces are in opposite directions, so it is not possible to measure the full gravitational constant at the Earth's surface. To calculate the gravitational force between two stars, we must also take into account the gravitational constants of the same magnitude on the surfaces of other planets. Now when we calculate the gravitational force between two stars of the same size, we are considering the gravitational force of the smaller star as the centrifugal force and virtually eliminating it. So which side of the gravitational force between two stars of the same mass is being calculated as a virtual force?

Gravitational structure integration implies dark phenomena

$$\oint_{a1}^{a2} fda = \oint_{a1}^{a2} mada = \oint_{m1}^{m2} fdm = \oint_{m1}^{m2} madm$$

In it,f=ma.Gravitational force (f) is equal to mass (m) multiplied by acceleration (a). This means that the gravitational force (f) can be converted into an integral with either acceleration (a) or mass (m) as the variable and the other as the parameter.

Therefore, it is illogical that we currently only recognise mass as a form of energy, yet not acceleration and gravitational force. In this context, the existence of dark matter and dark energy is not surprising.

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[14] **Dynamic gravity.** Dynamic gravity is equal to the product of static gravity and the coefficient of motion. For example, f=ma=Ma'. f is the gravitational force, m is the mass of the small star, a is the acceleration of the small star, M is the mass of the large star, and a' is the acceleration of the large star.

[15] **Centrifugal Force & Fictitious Force**: Analysis in non-inertial frames can be found in classical mechanics textbooks. For instance, Landau, L. D., & Lifshitz, E. M. (1976). *Mechanics* (3rd ed.).The concepts of centrifugal force and fictitious force in non-inertial systems are comprehensively covered.

If the centrifugal force is a virtual force, why can it resist the centripetal force? This is not only a violation of symmetry, but also a violation of the law of conservation of energy[16], as well as a violation of Newton's discovery of the law of action and reaction[17].

One sees a pair of gravitational forces as a combination of centripetal and centrifugal forces, originally following the principle of symmetry. But then the principle of symmetry was violated by the later elimination of one of these forces. Since we know that the Earth does not move around the Sun, but the Sun and the Earth move around a common center of mass, and that the pair of gravitational forces between the Sun and the Earth are each other's centripetal and centrifugal forces, why do we not phase out the obsolete view that centrifugal force is a virtual force?

Data.   Sun, Earth, Moon 3 Star Data are Closed Loop

Starbody	Sun	Earth	Moon
mass(kg)	1.9891×10^{30}	5.966×10^{24}	7.342×10^{22}
Rotation speed(m/s)		2.9783×10^{4}	1.023×10^{3}
Distance (m)	Sun-Moon distance 1.496×10^{11}	Sun-Earth distance 1.496×10^{11}	Earth-Moon distance 3.844×10^{8}
Rotation acceleration (m/s^2)	From Sun to Earth $a_1 = 5.93 \times 10^{-3}$	From Earth to Moon $a_2 = 2.7 \times 10^{-3}$	From Moon to Earth $a_3 = 3.3 \times 10^{-5}$
Rotation period(d)	Stellar year $T_1 = 365.26$	Sun-Earth gravity around Sun-Earth-Moon common centre-of-mass period $T_3 = 246$	Stella month $T_2 = 27.32$
Gravitational force(N)	Sun-Earth $f_1 = 3.54 \times 10^{2}$	Earth-Moon $f_2 = 1.98 \times 10^{20}$	Sun-Moon $f_3 = 4.35 \times 10^{20}$
Gravity ratio	$f_1/f_2 = 1.787 \times 10^{2}$	$f_3/f_2 = 2.2$	$f_1/f_3 = 8.126 \times 10$
Period square ratio	$T_1^2/T_2^2 = 1.787 \times 10^{2}$	$T_1^2/T_3^2 = 2.2$	$T_3^2/T_2^2 = 8.108 \times 10$
Acceleration ratio	$a_1/a_3 = 1.787 \times 10^{2}$	$a_1/a_2 = 2.2$	$a_2/a_3 = 8.181 \times 10$

II. Violation of the Most Stable Principle of Positive Triangles

The principle of the most energy-efficient and stable positive triangle is a universal law of physical experiments and mathematical calculations, applicable at all levels from micro to macro. However, in the current scientific system, it is only applicable in the microcosm and mesocosm, but not in the macrocosm and macrocosm.

Question3: Why is the Field of Cosmology not Based on a Three-body[18] S

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[16] **Law of Conservation of Energy**: This law is closely related to Noether's Theorem. According to Noether's theorem, the invariance of time translation corresponds to the law of conservation of energy. In an isolated system, the total energy remains constant; energy can only be transferred from one object to another or transformed from one form to another. For a detailed mathematical and physical treatment of Noether's Theorem and its connection to the conservation of energy, see the works of Noether herself (Noether, E. (1918). Invariante Variationsprobleme. *Nachrichten von der Königlichen Gesellschaft der Wissenschaften zu Göttingen, Mathematisch-physikalische Klasse*, 2, 235–257) and subsequent interpretations in advanced physics textbooks.

[17] **Action-Reaction Law**: "The action force and the reaction force between two interacting objects are always equal in magnitude, opposite in direction, and act on the same straight line." (Newton, I. (1687). *Philosophiæ Naturalis Principia Mathematica*.)
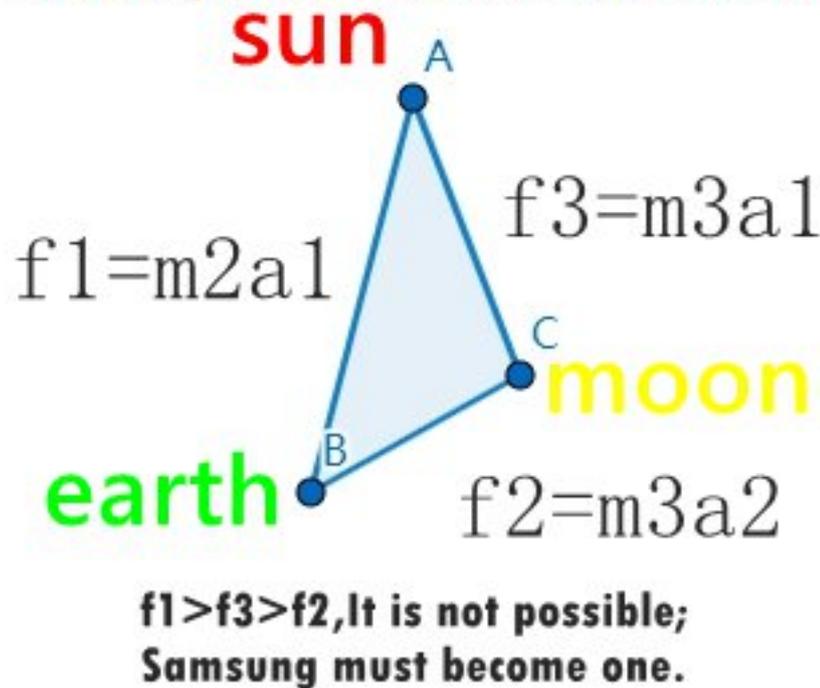
[18] **Three-Body Problem & Dynamic Triple-Star System** : The three-body problem has a long history in celestial mechanics, with early significant contributions from Poincaré, H. In 1890, in his work *Les méthodes nouvelles de la mécanique céleste*, Poincaré explored the complexities associated with the motion of three interacting bodies. For modern numerical studies of triple-star systems and related orbital dynamics, one can refer to simulations conducted by NASA and other relevant research institutions (e.g., some detailed descriptions of NASA orbital simulations can be found in scientific reports on NASA's official website or in relevant astrophysics

tructure That Adheres to the Principle of the Most Stable Equilateral Triangle?

Why don't we use dynamic values to describe parts of the universe that fit the definition of a uniform universe?

Why do we assume that the Sun, Earth and Moon, which travel at completely different speeds, experience the same time, when the three points of Beijing, New York and London are at different times on Earth? Static gravity cannot clearly describe this time difference, so dynamic gravity[19] must be used instead.

Centrifugal force virtualisation model:

sun A

$f3=m3a1$

$f1=m2a1$

C
moon

B
earth

$f2=m3a2$

f1>f3>f2,It is not possible;
Samsung must become one.

Gravitational model I between the three stars of the Sun, the Earth, the Moon and the three stars: unbalanced between the two stars and the three stars.

The dynamic three-star structure is based on dynamic gravity. Dynamic gravity is equal to static gravity multiplied by the coefficient of motion. For example, the dynamic gravity of the triangle between the three stars of the Sun-Earth-Moon:$f_1a_3=f_2a_1=f_3a_2$. where $f_1f_2f_3$ are the three static gravitational forces between the Sun-Earth and the Earth-Moon, and between the Sun-Moon, respectively, and a_1 is the acceleration of the whole of f_2 around the common centre of mass of the Sun-Earth-Moon, a_2 is the acceleration of the whole of f_3 around the common centre of mass of the Sun-Earth-Moon, and a_3 is the acceleration of the whole of f_1 around the common centre of mass of the Sun-Earth-Moon.

Due to the circular motion acceleration to compensate for the gravitational

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journals that collaborate with NASA on such research projects). Poincaré, H. (1890). *Les méthodes nouvelles de la mécanique céleste*. Gauthier-Villars.

[19] **The Differences Between the Two Dynamic Gravity Models Are as Follows**:In my model, mass is compensated for by motion itself, thereby forming a closed loop between dynamic and universal gravity.In contrast, Tesla's dynamic gravity model forms a closed loop between radiation and gravity.See https://themillenniumreport.com/2016/01/teslas-dynamic-theory-of-gravity/

difference between the sun, the earth and the moon caused by the mass difference, resulting in the dynamic gravitational force between the three stars equal. The dynamic gravitational force constitutes the dynamic positive triangle gravity, which makes our macroscopic understanding of the universe conform to the principle of the most stable positive triangle.

However, mankind's present understanding of the macroscopic universe is based on the static two-star structure, which does not conform to the principle of the most energy-efficient and stable positive triangle. When we calculate the gravitational force
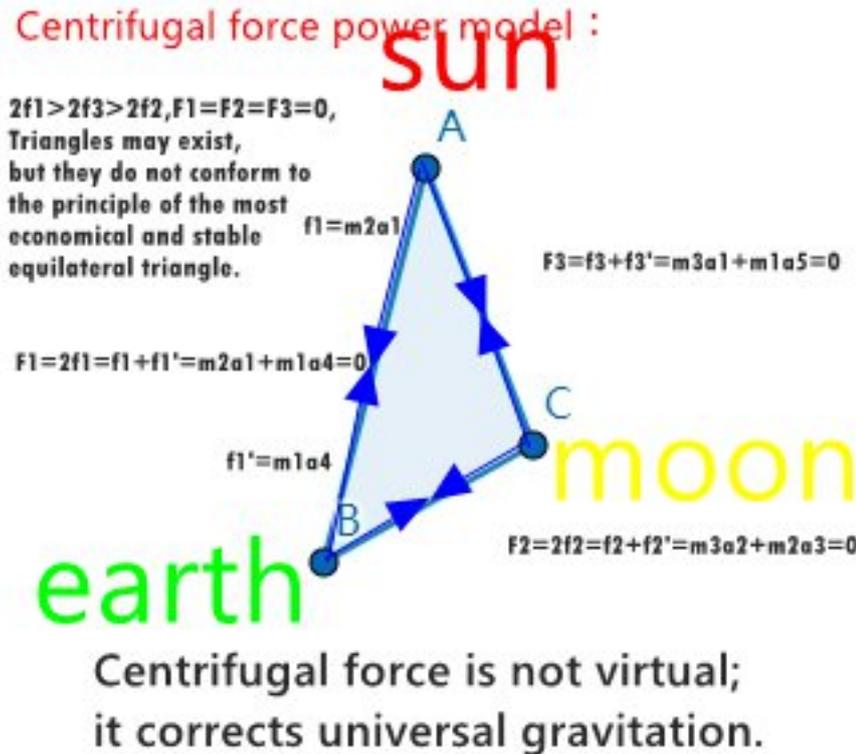
Gravitational model II between the three stars of the Sun, the Earth and the Moon: equilibrium between the two stars, unbalance between the three stars.
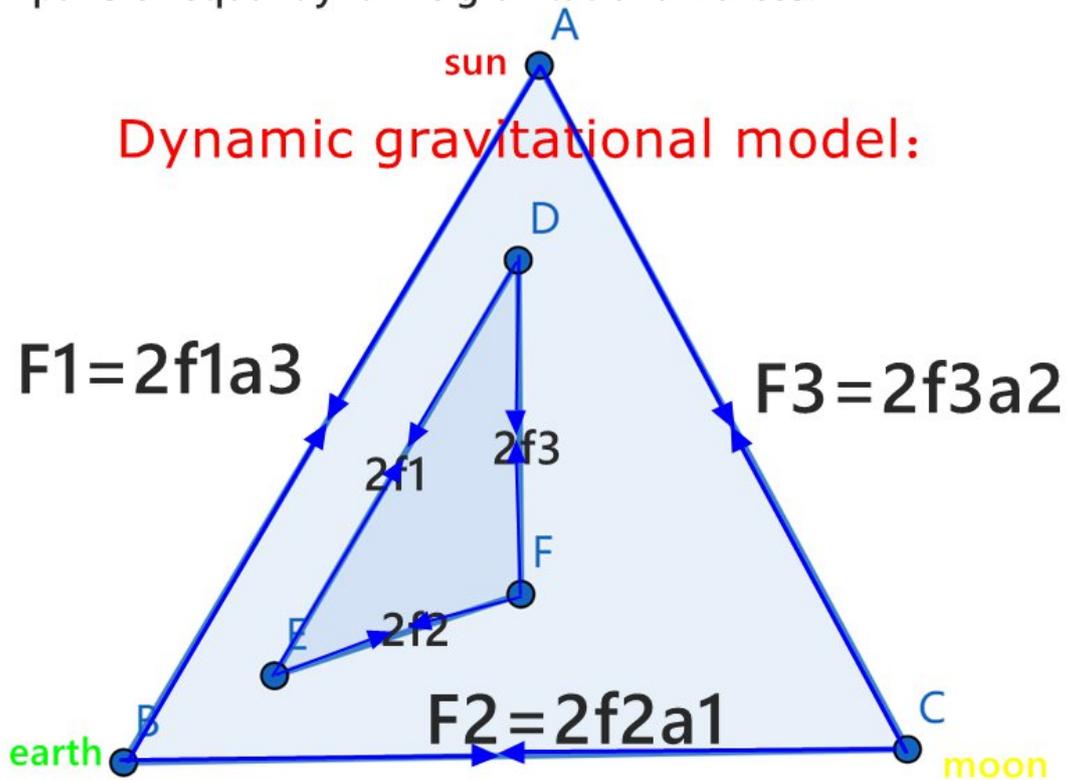
between the three stars of the sun, earth and moon, we calculate the gravitational force between the sun and earth, the earth and moon and the sun and moon respectively, and then take the sum of the three as the gravitational force existing between the three stars. There is such a disregard for the different speeds of motion and the different timescales of each of the three stars, reducing the three-star structure to a superposition of the two-star structure[20]. The appearance of dark energy is nothing to be alarmed about. There is a significant difference between the mass of each of the three stars of the Sun, Earth, and Moon and their motions. Fortunately, the mass gradient is opposite to the motion gradient[21], which facilitates us to establish the

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[20] **Static Binary System** : An analytical solution to the Kepler problem, which is relevant to the study of static binary systems, can be found in various theoretical mechanics textbooks. These textbooks typically cover the fundamental principles and mathematical derivations related to the motion of two bodies under the influence of gravitational forces. For example, standard textbooks like Goldstein, H. (1980).

[21] **The Mass Gradient is Inversely Proportional to the Motion Gradient** : One aspect of this relationship is that mass is inversely proportional to acceleration, which leads to the balance between centripetal force and centrifugal force. For instance, considering the interaction between the Sun and the Earth, the gravitational force f is given by $f = R2GMm = ma = Ma'$, or $F = f - f = ma + Ma'$. Here, F represents the gravitational force between the Sun and the Earth, f is the centripetal force, $-f$ is the centrifugal force, m is the mass of the Earth, M is the mass of the Sun, a is the acceleration of the Earth around the common barycenter of the Sun and the Earth, a' is the

three-star dynamical model. The three-star dynamical model is not only more consistent with the principle of the greatest stability of the positive triangle but also more consistent with the definition of a homogeneous universe[22] than the current two-star static model. Why haven't we built a three-star model to replace the two-star model?

The Sun, Earth and Moon are subject to three pairs of equal dynamic gravitational forces.

Dynamic gravitational model：

$F1=2f1a3$

$F3=2f3a2$

$2f1$

$2f3$

$2f2$

$F2=2f2a1$

sun A

D

F

E B earth

C moon

f1>f3>f2,f1+f1'=0=f2+f2'=0=f3+f3',
F1=F2=F3=2GGm1m2m3/RRrr.The Sun, Earth,
and Moon experience equal gravitational
forces due to dynamic gravity.

Gravitational model III between three stars of the Sun, Earth and Moon: balance between two stars, also balance between three stars.

The Earth moves faster than the Sun, the Moon moves faster than the Earth, and the three masses multiplied by the coefficient of motion form a positive triangle.

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acceleration of the Sun around the common barycenter of the Sun and the Earth, and R is the distance between the Sun and the Earth. For more in-depth theoretical analysis and related discussions on such force and motion relationships in celestial systems, refer to advanced astrophysics and celestial mechanics literature (e.g., Murray, C. D., & Dermott, S. F. (1999).

[22] **Homogeneous Universe**：The concept of a homogeneous universe is rooted in the Cosmological Principle, which was discussed by Einstein, A. in 1917. This principle assumes that on a large scale, the universe is homogeneous and isotropic. Modern observations, such as those from the Cosmic Microwave Background (CMB), have provided strong support for this principle. For example, the Planck Collaboration in 2020 published results from their studies of the CMB, which further validate the Cosmological Principle. Einstein, A. (1917). Kosmologische Betrachtungen zur allgemeinen Relativitätstheorie.
Sitzungsberichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin, 1, 142–152. Planck Collaboration. (2020). Planck 2018 results. VI. Cosmological parameters. *Astronomy and Astrophysics*, 641, A6.

However, the current calculation method only counts the rest mass alone, leading to the fact that the three celestial bodies, the Sun, the Earth & the Moon, do not seem to obey the principle of the most energy-efficient and stable principle of the positive triangle between them.

If the difference between the dynamic and static gravitational forces[23] is regarded as dark matter, and the repulsive force (i.e. centrifugal force) is regarded as dark energy, the three stars of the Sun, Earth, and Moon form a positive triangle consisting of matter, dark matter, and dark energy together, which is the standard energy three-body structure, and conforms to the principle of the positive triangle being the most stable and the most energy-efficient, as well as conforming to the definition of a homogeneous universe.

The above theory is based on the refutation of the understanding that, on a small scale, the matter of the universe is unevenly distributed, with stars and planets, nebulae and galaxies, and clusters of galaxies with relatively concentrated distribution. On a large scale, the universe is uniformly distributed. If you look at a space of several hundred million light-years, the state of distribution of matter and the total amount of matter is more or less the same, and it is uniform.

This is a wrong view of the universe when viewed statically. Two atoms of the same mass, one moving at high speed and the other stationary, contain very different amounts of energy. The same is true for the macro. To view the dynamic universe statically is to take the total amount of tangible matter in a region as the total amount of physical energy in that region. To view the universe dynamically is to gain the understanding that the universe is uniformly smooth over a wide range of sizes. Viewing the universe statically between the Sun and the Moon, the Sun has a much larger mass than the Moon. However, when calculated dynamically, the mass of the Sun multiplied by the acceleration of the Sun around the common center of matter of the Sun and the Moon is exactly equal to the mass of the Moon multiplied by the acceleration of the Moon around the common center of matter of the Sun and the Moon. When the universe is viewed dynamically, the total amount of mass and energy at the Sun and Moon ends is exactly equal. The Moon's end is making up for mass with motion, thus bringing the total amount of physical energy between the two to equality.

It is amply demonstrated that not only is motion a unity with matter and space-time, not only is motion an inseparable part of the universe[24], but also, motion is the universe itself[25], and eternal non-inertial motion is necessarily an existential form of energy. Representing the motion involved in the calculation is the toroidal motion acceleration. The acceleration of circular motion is constant, unlike the acceleration of linear motion, which exists transiently. Motion and mass are conjugated and transformed into each other, which is the very meaning and origin of yin and yang

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[23] **Dynamic Gravitation**：Dynamic gravitation is closely related to General Relativity, which is described by the Einstein field equations. The theory of General Relativity predicts the existence of gravitational waves, which have been experimentally detected by the LIGO (Laser Interferometer Gravitational-Wave Observatory) experiments. These detections have provided strong evidence for the validity of General Relativity in the context of dynamic gravitational phenomena. For detailed information on General Relativity and gravitational waves, refer to textbooks on general relativity such as Misner, C. W., Thorne, K. S., & Wheeler, J. A. (1973).

[24] **Quantum Field Theory(QFT1920—).**Fundamental framework in theoretical physics combining quantum mechanics, special relativity, and classical field theory. It describes elementary particles as excited states ("quanta") of underlying quantum fields permeating spacetime. Key to the Standard Model of particle physics, QFT mathematically formalizes particle creation/annihilation, interactions (e.g., via Feynman diagrams), and forces mediated by gauge bosons. Renormalization resolves infinities in calculations. Applications extend to condensed matter physics (e.g., superfluidity) and cosmology.

[25] **Motion is the universe itself.**See Engels, Anti-Dühring(1878), Dialectics of Nature(1873).

balance[26].

Summary and Addition

The three stars of Sun-Earth-Moon form a positive triangle as $f_1a_3=f_2a_1=f_3a_2$. However, according to the current technological system, the acceleration is generally less than 1, resulting in dynamic gravity instead of static gravity: $f_1a_3 < f_1$, $f_2a_1 < f_2$, $f_3a_2 < f_3$. Thus the positive triangular gravity between three stars is less than that between two stars, and the dynamic gravity can not make up for the difference in static gravity. It must be corrected.

III. The Determination of the Gravitational Constant G is too Arbitrary

The gravitational constant G is now determined at a value of 6.67×10^{-11}N, which is three points of chance and needs to be reviewed.

Question4: Why did We Choose G Instead of 2G as the Gravitational Constant?

The gravitational constant should include both centripetal and centrifugal force constants. Centrifugal force and centripetal force are in opposite directions but have the same properties. Whether one of them is considered centripetal or centrifugal force is entirely determined by the choice of frame of reference. For example, between the Earth and the Moon, the centrifugal force of the Earth is the centripetal force of the Moon, and the centrifugal force of the Moon is the centripetal force of the Earth. The practice of virtually treating the two as one or the other is perplexing.

Cavendish's torsion-symmetry experiment[27] can only measure the centripetal force constant, and no other measurements at the surface of the Earth will give the full gravitational constant, because it is a constant that includes both centripetal and centrifugal forces in both directions. Therefore it is 2G, not G.

Since this gravitational constant happens to be half on the surface of the Earth and the other half on the surface of other planets, it has not prevented humans from launching spaceships into space. Thus the error was particularly undetectable, and so it was accepted for a long time.

During his lifetime, Newton did not determine the exact value of the gravitational constant, but he pointed out the existence of a pair of equal interactions between two stars of different masses. Along these lines, Newton would have agreed that the gravitational constant was 2 G. Cavendish was the first determiner of the constant, and the error was in the way the constant was used, so the error had nothing to do with Cavendish.

However, it was a serious error that led to later generations having to virtually the centrifugal forces and cost mankind the opportunity to find universal repulsion in scientific theory.

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[26] **Balance of yin-yang.** Huangdi Neijing Ling Shu, Yin Yang Xiriyue Chapter. Related to Yin - Yang, Five Elements and Vitality Theory.

[27] **Gravitational Constant & Cavendish Experiment（Torsion Balance Experiment）**：Cavendish was the first to measure the gravitational constant *G* through the torsion balance experiment. His findings were presented in a paper published in *Philosophical Transactions* in 1798 (Cavendish, H. (1798). Experiments to determine the density of the earth. *Philosophical Transactions of the Royal Society of London*, 88, 469–526). The modern value of the gravitational constant *G* is based on the recommended data by CODATA (Committee on Data for Science and Technology). These values are derived from a series of high-precision experiments and comprehensive analyses. For detailed information on the CODATA-recommended values and the related experimental methods, one can refer to the official CODATA publications (e.g., Mohr, P. J., Taylor, B. N., & Newell, D. B. (2012). CODATA recommended values of the fundamental physical constants: 2010. *Reviews of Modern Physics*, 84(4), 1527–1605).

Although this use of half of the constants did not affect mankind's expedition into the universe, it led to the emergence of dark energy in the human scientific system.

Question5: Why is the Gravitational Constant G Equal to 6.67×10^{-11}N Instead of Being Directly Equal to 6.67N?

Since the gravitational values are obtained by multiplying the mass by 10^{-11}, they are all significantly less than the mass. This not only causes the product of mass and acceleration to be less than the mass itself, as if the same mass of dynamic matter contains less energy than static matter instead, making the value of gravity less than the value of the mass that makes up the gravitational pull, but it also results in the product of the two accelerations to be almost negligible[28], making the dynamic gravitational pull less than the static gravitational pull.

Conversely, if the acceleration is greater than 1, the product of the two accelerations is geometrically amplified. The difference between accelerations less than 1 or greater than 1 implies a large amount of dark matter and dark energy.

If gravity is a manifestation of matter and repulsion is a manifestation of energy, then the difference between the dynamic centripetal force and the static centripetal force is dark matter, and the centrifugal force, or repulsion, is dark energy.

Question6: Is it too Arbitrary for us to Define 1N as 1kg.m/s''[29]?

The gravitational constant G has units, and the structure of this composite unit involves the relationship between mass and volume of matter.

This 10^{-11} determination that G contains is caused by 1N = 1kg.m/s'' and is quite accidental.

During the initial determination and constant revision of the Newtonian N as a unit of physics, including the successive International Conferences of Weights and Measures (CGPM)[30], only the question of its accuracy was considered, and it was never considered whether or not it was reasonable to correspond 1N to 1kg and 1m and 1s''.

According to the formula of acceleration $a = GM/R^2$, people define 1N as 1kg.m/s'', which directly leads to the acceleration of most of the stars less than 1.

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[28] **The acceleration of circular motion is different from that of linear motion** : The acceleration in circular motion persists continuously, whereas linear acceleration is typically of a transient nature. Based on this distinction, it can be argued that the acceleration of circular motion should be considered as an independent form of energy existence. For a more in-depth theoretical discussion on the differences between circular and linear motion accelerations, and their relationships with energy concepts, refer to classical mechanics textbooks (e.g., Marion, J. B., & Thornton, T. F. (1995). *Classical Dynamics of Particles and Systems* (5th ed.). Saunders College Publishing).

[29] **Definition of Newton (N)** : The definition of the Newton (N), the SI unit of force, is based on the standards set by the International System of Units (SI). These standards are detailed in the official documents of the Bureau International des Poids et Mesures (BIPM). For the precise and official definition and related information, one can consult the BIPM's official publications and documents available on their official website (Bureau International des Poids et Mesures. (n.d.). International System of Units (SI). Retrieved from https://www.bipm.org/en/measurement-units/).

[30] **The International Metrology Congress (General Conference of Weights & Measures, CGPM)** : Since 1889, the General Conference of Weights & Measures (CGPM), abbreviated as the International Metrology Congress, has convened every four years. Delegates representing the governments of member countries attend this conference to receive the work report from the International Committee for Weights and Measures (CIPM, Comité International des Poids et Mesures). The conference serves as a platform for discussing matters related to the enhancement and promotion of the International System of Units (SI system) and for reviewing the latest measurement standards developed by member countries. For historical records and detailed information about the CGPM conferences, one can refer to the official archives and publications of the BIPM, as well as relevant scientific and metrological literature (e.g., BIPM. (n.d.). General Conference of Weights and Measures (CGPM). Retrieved from https://www.bipm.org/en/cgpm/).

Acceleration less than 1 inevitably causes the dynamic mass to be smaller than the static mass instead.

1N=1kg.m/s'' is not only the unit of the force, but also the unit of the total volume of matter in the universe and its length. If this grasp is not accurate, dark matter and dark energy are bound to appear.

Summary

The error in the value of the gravitational constant G exponentially amplifies the previous two errors: substituting 1G for 2G and not following the principle of the greatest stability of a positive triangle. The superposition of the three errors leads to surprisingly large values of dark energy and dark matter in the scientific system of mankind. The acceleration of a star's motion is less than 1, which not only causes the product of the mass and acceleration of the star to be less than the static mass itself, but also causes the product of the two accelerations to be much less than one acceleration, and the gravitational force of the star to be often less than the mass of the star, and the dynamic gravitational force to be less than the static gravitational force instead.

IV. Why is There no Unity Between the Micro and Macro Aspects of Science?

The principle of relativity[31] tells us that all laws of physics are fully applicable in all frames of reference. If a certain law does not apply at the macroscopic or cosmic level, it is not surprising that dark energy and dark matter appear at this level.

Question7: Why is the Cosmological Constant[32] not Further Divided Into two P arts: the Support Constant[33] and the Expansion Constant[34]?

The cosmological constant Λ should be divided into the support constant -G and the expansion constant P, i.e. $\Lambda=-G+P$.

The support constant is provided by the repulsive force, i.e. centrifugal force, which cancels out the gravitational force, i.e. centripetal force, to achieve a stable distance between the stars that is maintained over time.

From a Newtonian perspective, the mass of a large star distorts the space around it more than that of a small star. From a relativistic perspective, the small star orbits faster than the large star, resulting in a time dilation around the small star, where the product of the mass of the small star and its acceleration around the center of mass of the binary star is equal to the product of the mass of the large star and its acceleration

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[31] **The principle of relativity and the theory of relativity**. The gravitational constant G relates to non-inertial systems and involves not only the principle of relativity but also general relativity.

[32] **Cosmological Constant** : The concept of the cosmological constant was introduced by Einstein, A. in 1917 in his paper "Cosmological Considerations in the General Theory of Relativity" (Einstein, A. (1917). Kosmologische Betrachtungen zur allgemeinen Relativitätstheorie. *Sitzungsberichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin*, 1, 142–152). Later, its existence was confirmed by supernova observations, as reported by Perlmutter et al. in 1998 (Perlmutter, S., et al. (Supernova Cosmology Project). (1998). Measurements of omega and lambda from 42 high-redshift supernovae. *The Astrophysical Journal*, 517(2), 565–586).

[33] **Support Constant** : The cosmological constant is proposed to be decomposed into a supporting constant and an expansion constant. The supporting constant, provided by the centrifugal force, does not contribute to the expansion of the universe, while the expansion constant, which is associated with the thermal energy derived from the temperature difference between the average temperature of the universe and absolute zero, has no supporting effect. Mathematically, it is expressed as the cosmological constant Λ = supporting constant - G + expansion constant P, where "G" represents the initial letter of "gravitation" and "P" represents the initial letter of "pressure". This theoretical concept represents a novel perspective on the cosmological constant, but it currently lacks broad acceptance in the mainstream scientific community and may require further theoretical and observational validations.$\Lambda=-G+P$. G is the initial letter of "gravitation". P is the initial letter of "pressure".

[34] **Expansion Constant** : ditto.

around the center of mass of the binary star. Thus, dynamically, not only is the gravitational force between the large and small stars is equal, but also the degree of distortion of space around the binary is equal. The equal gravitational force of the large and small binaries means that the centripetal and centrifugal forces of the large star are equal. This is the source of the support constant. As they resist both pressure and repulsive forces, supports cannot provide an expansion effect.

The expansion constant is provided by the difference in thermal energy between the mean temperature of the universe and absolute zero, denoted by P. The energy conversion rates of hot and cold matter are different. There is a huge energy difference between the universe at the current average temperature[35] and the universe at absolute zero.It is this difference that is responsible for the expansion of the universe. Ignoring this difference is the same as forgetting the difference between physics and mathematics. Just as one ignores the difference in energy contained in a static and dynamic star of the same mass[36].

Why does the mass-energy equation[37] not take into account the different energy conversion rates of hot and cold matter? The fact that the mass-energy equation ignores temperature may be related to Einstein's mindset of always attempting to solve physical problems geometrically. This line of thinking is rightly distinguished, but it is also error-prone[38]. The mass-energy equation ignores this discrepancy, and it is impossible not to have dark energy.

Summary

The existence of an average temperature of the Universe above absolute zero gives rise to an expansion coefficient that remains insignificant on the macroscopic scale but has significant cumulative effects on the cosmic scale. This is the value that constitutes the expansion part of the cosmological constant in addition to the support constant provided by the repulsive force. The cosmological constant should be divided into a support constant and a thermal expansion constant: $\Lambda = -G + P$.

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[35] **The Average Temperature of the Universe** : The relevant data regarding the average temperature of the universe were obtained through measurements by the COBE (Cosmic Background Explorer) satellite in 1990.For more detailed information on the COBE satellite's measurements and their implications, one can refer to relevant scientific literature (e.g., Smoot, G. F., et al. (1992). Structure in the COBE Differential Microwave Radiometer First-Year Maps. *The Astrophysical Journal*, 396, L1–L5).

[36] **Misinterpretation Caused by Treating the Dynamic Universe as Static** : This refers to the incorrect understanding that arises when humans perceive the dynamic universe as static. For example, in the case of two atoms of the same mass, where one is in high-speed motion and the other is stationary, the atom in motion clearly possesses more energy. However, when calculating the gravitational force between the Earth and the Sun, despite the Earth's much higher moving speed relative to the Sun, they are often treated as stationary, which directly results in the virtualization of the centrifugal force. This misinterpretation highlights the importance of considering the dynamic nature of celestial bodies in gravitational and cosmological studies.[3636]

[37] **Mass-energy equivalence (E = mc²)** : Albert Einstein proposed the special theory of relativity in 1905, which includes the famous mass-energy equation E = mc². In this equation, on the left side, "E" represents the energy related to mass transformation, and on the right side, "m" is the atomic mass and "c" is the speed of light. The equation has been elaborated from the perspective of the meta-energy theory in Yuan Li's work "Parallel Science 1.0: Chinese Traditional Science Systems, Part I, Chapter 3, Section 2" published by the American Academic Press in July 2019. Additionally, it is also discussed in Yuan Li's "Chinese Natural National Science Compendium, Part 1: Chinese National Science System and Contemporary Values" published by the Chinese National Science Publishing House in September 2008.

[38] **Einstein's Mistakes** : Einstein, despite his remarkable contributions to physics, made at least four notable errors. He initially believed that gravitational lensing effects could not be observed; he mistakenly thought that gravitational waves did not exist due to mathematical misunderstandings; he added a constant term to the gravitational equation to avoid the prediction of the universe's expansion; and he persistently resisted the development of quantum mechanics. These instances highlight that even great scientists can make errors in their scientific thinking and that scientific progress often involves correcting and refining previous theories. For a more in-depth discussion of these aspects, one can refer to historical and scientific review articles on Einstein's work.

V. Why Have We not Recognized More Forms of Energy ?

Not only are all four forces of nature forms of energy existence, but energy also has four forms of existence other than tangible matter.

Question8: Why Don't We Recognise That all Four Forces of Nature are Forms of Energy?

The forces of nature are fundamentally different from those used by human beings, so hy have we not acknowledged this difference?

Unlike the forces used every single day by human beings, the four forces of nature[39] are the basic materials for the formation of dark matter and dark energy. Why do we confuse natural forces with artificial forces[40]?

The four forces of nature are clearly and fundamentally different from the forces that humans use every single day: 1 The four forces of nature exist constantly, while the forces that humans use exist briefly.2 The four forces of nature do not have a master, while the forces that humans use every single day have a human being or an animal as well as a machine as their master.3 The four forces of nature are composed of a combination of tangible matter and invisible energy of motion, while the forces that humans use every single day have only the energy of work to form them.4 The forces of nature There is no fixed point of equilibrium, and the forces used by humans are all formed by distance.

Table1. The Foundation of Dark Energy and Dark Matter:
Four Natural Forces Versus the Forces Used by Humans

Comparison Dimensions	Four Fundamental Forces of Nature	Forces Commonly Used by Humans
Types of forces	Gravitational force, electromagnetic force, strong nuclear force, weak nuclear force;	Mechanical force, electric power, human power, animal power, fuel power, etc.
Energy Source	Spontaneously exists without the need for human energy input (such as Earth's gravity, nuclear fusion of the sun)	Requires active energy supply from humans or machines (such as electric power drive, burning fuel)
Time Persistence:	Eternal Existence (such as gravitational effects on a cosmic scale)	Brief existence, dependent on continuous energy supply (such as the motor stopping after the power is turned off)

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[39] **Fundamental Forces** : The fundamental forces in nature include the gravitational force, electromagnetic interaction force, weak interaction force, and strong interaction force. These forces play crucial roles in shaping the structure and behavior of matter at various scales, from the microscopic world of subatomic particles to the macroscopic universe. Standard textbooks on particle physics and cosmology provide comprehensive coverage of these forces and their interactions (e.g., Griffiths, D. J. (2008). *Introduction to Elementary Particles* (2nd ed.). Wiley-VCH).The three forces in nature all contribute to the mass of matter, so they have not been overlooked by humans. The only force that we have omitted from our calculations is the gravitational force.

[40] **Transient Forces in Daily Life** : This refers to the unsustainable and temporary forces commonly used in human daily life, such as human power, animal power, electrical power, mechanical force, as well as chemical and physical forces. These forces are distinct from the fundamental forces of nature and are typically applied for practical purposes in human activities and technological applications.

Comparison Dimensions	Four Fundamental Forces of Nature	Forces Commonly Used by Humans
The fundamental basis of force	Determined by the fundamental properties of matter (mass/charge) and kinetic energy (e.g., magnetic fields are generated by electron motion)	Achieved through energy conversion (e.g., chemical energy → mechanical energy)
Controllable	Cannot be manually turned off (e.g., cannot eliminate Earth's gravity)	Can be actively started, stopped, or adjusted (e.g., switch controls lights)
Scope of action	Covers from microscopic (nuclear forces) to macroscopic (gravity) levels.	Usually limited to the scale of human activities at the macro level.
Energy consumption	Does not consume additional energy (such as the need for energy to maintain planetary orbit motion)	Must continuously consume energy (such as a car needing constant refueling)
Typical phenomenon	Tide (gravitational force), photosynthesis (electromagnetic force), nuclear power plant (strong nuclear force)	Car driving (internal combustion engine), electric light illumination (electric energy), archery shooting (elastic potential energy)
Dependency conditions	Relying only on the fundamental properties of matter (such as mass to generate gravity)	Depending on artificial systems (such as power grids, engines and other infrastructure)
Historical existence	From the birth of the universe to its existence	It has emerged with the development of human civilization
Mass-energy attributes	All three types of microscopic forces can be measured in terms of mass. Only gravity has not been converted into mass, nor is it measured as independent energy; therefore, it may be an important source of dark matter and dark energy	These forces consume energy while they exist

Of these, the three visible forces correspond to the tangible mass of matter, which is broadly recognized by mankind in agreement. The only invisible force, gravity, should correspond to dark energy. Although gravity is recognised as a space-bending effect[41], this cannot agate the fact that it is also a material of spacetime containing energy.

The four forces of nature are clear independent forms of energy, so why have we not given them a corresponding status?

However, three of the four forces of nature form the mass of matter and are therefore not missed. The only thing we have left out is gravitational energy.

The four forces of nature are fundamentally different from the forces used by humans:

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Question9: Energy has Five Forms of Existence[42]. Why do We Only Recognize Tangible Matter as a Form of Energy?

Energy has five modes of existence[43]: matter, gravity, acceleration, space-time, and information. Why do we recognise only a very few ways in which energy exists, such as tangible matter and its temperature?

If the energy in the universe appears in a form other than visible matter, we are bound to treat it as dark matter and dark energy.

For example, the gravitational formula F=ma shows that the mass that constitutes the gravitational force is inversely proportional to the acceleration of the torus when the gravitational force F is determined. The two can be substituted for each other, the greater the mass m the smaller the acceleration a, the smaller the mass m the greater the toroidal acceleration a. This suggests that ring acceleration is as much a form of energy as mass. Since we have already recognized that mass is a form of energy, why don't we recognize that cyclic acceleration is also a form of energy?

If one agrees that the toroidal acceleration is a form of energy existence, the gravitational force F, which consists of the mass m and the toroidal acceleration a, must also be a form of energy existence. The gravitational force is constant, unlike the forces used every single day by humans, which are transient. The toroidal acceleration is also constant, unlike the acceleration of linear motion, which is transient.

From the point of view of whether or not it is constant and whether or not it is a form of mass transformation, we cannot deny that both cyclic acceleration and gravitational force are forms of energy.

Both space-time and information are capable of being transformed into energy because both space-time and information also consist of energy, or rather, destroying both space-time and information must consume energy. Therefore, both space-time and information are also forms of energy.

It has been said in the West that 'motion is the way matter exists'[44]. Wheeler summarises general relativity as 'Matter dictates how spacetime curves, and spacetime dictates how matter moves'[45]. Doesn't this interaction between spacetime and matter and motion consume energy? If energy is consumed and mass does not change in the process, where does the consumed energy come from? I am afraid that there are only two possibilities: one is the consumption of space energy; the other is the consumption of motion energy. In any case, this demonstrates that energy exists in many forms beyond matter and heat.

Why do we reject the wisdom of our ancestors?

Original data：Sun, Moon and Earth data

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[42] **The five forms of existence of matter**. Yuan Qi has five forms of existence, i.e., the fluid state, the burning state, the life state, the crystal state, and the ash state, and has the five characteristics of moistening the lower part of the body, inflaming the upper part of the body, curving and straightening the body, from the leather, and harvesting the earth, respectively. See the Chinese pre-Qin work Shangshu. Hong Fan.

[43] T**he five forms of Yuanq**i.The five elements in the narrow sense refer to the five forms of tangible matter, and the five elements in the broad sense refer to the five forms of energy. See the Chinese pre-Qin work Shangshu. Hong Fan.

[44] **"Motion is the mode of existence of matter."** This statement is from Chapter 6, "Political Economy", Part II of *Anti-Dühring*. Friedrich Engels published *Anti-Dühring* in 1878.

[45] **"Matter dictates how spacetime curves, and spacetime dictates how matter moves."** This is Wheeler's summary of relativity, from Gravitation by Misner, C. W., Thorne, K. S., & Wheeler, J. A., published in 1973 by W. H. Freeman and Company.

Although this article uses three or more decimal places where possible, in reality only one or two places affect the final result. Therefore, a direct equal sign is used in the calculations instead of an approximate one.

Sun (fixed star)

Average distance between sun and earth	149,598,023km
quality	1.9891×10^{30}kg

Earth (planet)

Average distance between sun and earth	149,598,023km
revolution period	365.256363days
quality	5.97237×10^{24}kg

Moon(satellite)

Average distance between moon and earth	384403km
revolution period	27.32days
quality	7.349×10^{22}kg

Summary

The four forces of nature are clearly and fundamentally different from the forces that humans use every single day: 1 The four forces of nature exist constantly, while the forces that humans use exist briefly.2 The four forces of nature do not have a master, while the forces that humans use every single day have a human being or an animal as well as a machine as their master.3 The four forces of nature are composed of a combination of tangible matter and invisible energy of motion, while the forces that humans use every single day have only the energy of work to form them.4 The forces of nature There is no fixed point of equilibrium, and the forces used by humans are all formed by distance.As it,energy has five modes of existence: matter, gravity, acceleration, space-time, and information.

VI. Why do Physical Formulas not Correspond to Either Experiments or Mathematical Derivations?

Physics is an experimental science, and if experiments and mathematical calculations match each other, most of them can be sure to be correctly understood, and should be applied to all fields from microscopic to macroscopic.

When physics is neither mathematical nor experimental, I am afraid that the appearance of dark energy and dark matter is normal.

Question10: Why don't we abandon physical formulas that are neither based on experimentation nor on mathematics?

Why do we habitually stick to physical formulas that are neither experimental nor mathematical when we can see that the distance between the two stars can be kept stable for a long time and the corresponding mathematical equations can be worked out?

Nowadays common physics equation 1: $f = GMm/r^2 = ma$ (f is the gravitational force between the two stars, M and m are the masses of the large and small stars, G is

the gravitational constant, r is the distance between the two seats, and a is the acceleration of the small star around the large star)

This physical equation does not show the relationship between centripetal and centrifugal forces.

Mathematical equations in line with reality: $\because$ $F=f-f=GMm/r^2-GMm/r^2=ma+Ma'=0,\therefore f=GMm/r^2=ma=-Ma'$

(In the above formula, F is the gravitational force between the two seats including centripetal and centrifugal forces, f is the centripetal force, -f is the centrifugal force, M and m are the masses of the big star and the small star, G is the gravitational constant, r is the distance between the two stars, a is the acceleration of the big star's mass to the small star, and a' is the acceleration of the small star's mass to the big star.)

This mathematical formula is logically sound and in line with the reality verification that the two stars remain at a stable distance for a long time.

The now common physics equation 2: $Guv = Ruv-1/2Rguv + \Lambda guv = 8\Pi GTuv/C4.$[46] (This is Einstein's equation for the gravitational field.) Guv is the Einstein tensor; Ruv is the Ricci tensor reduced and merged from the Riemann tensor, representing the curvature term, which represents the degree of curvature of the space; R is the curvature scalar reduced and merged from the Ricci tensor; guv is the metric tensor, which represents the rule of the spatial computational rules; Tuv is the energy-motion tensor that

Tuv is the energy-motion tensor, which represents the distribution and motion of matter; Λ is the cosmological constant, which represents the effect of expansion; Π is the circumference; G is the gravitational constant; and C is the vacuum speed of light. The meaning of the whole equation: the energy-momentum distribution of matter in space determines the curved condition of space.)

This equation cannot distinguish between the energy conversion rates of high-temperature plasma matter and ultra-low-temperature matter of the same mass.

The field equation that corresponds to reality: $Guv=Ruv-Rguv/2+\Lambda guv=8\Pi GTuv/C^4=Ruv-Rguv/2+(-G+P)guv$ (the cosmological constant term Λ consists of the support constant -G and the expansion constant P. The difference between the mean temperature of the universe and absolute zero is the source of the expansion constant)

Since the static mass that constitutes the gravitational force has already been calculated[47] by us, the centripetal force is not completely missed and what is missed is the difference between the dynamic and static gravitational forces, which should correspond to dark matter. The centrifugal force, which corresponds to the repulsive force, is completely omitted and should correspond to dark energy.

The mass-energy equation ignores the difference in internal energy between the mean temperature of the universe, 2.7315k, multiplied by the total mass-energy, and the absolute zero universe. While the expansion due to this temperature difference in

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[46] **Einstein Field Equations**: Proposed by Einstein in 1915 in "The Foundation of the General Theory of Relativity" (Annalen der Physik, 49(7), 769–822), they are the core of General Relativity. They describe the interaction between matter and spacetime: matter curves spacetime, which in turn affects matter's motion.

[47] **The Relationship between Mass, Gravity, and Forces**: The statement posits that the existence of mass gives rise to gravity, and mass itself is composed of three microscopic forces. While dynamic gravity has been overlooked in our previous understanding, human science has accounted for rest mass. This implies that the centripetal force has not been entirely neglected, as it is related to the motion and interactions associated with the accounted mass. However, since the centrifugal force has been completely omitted from consideration, it is hypothesized that it may correspond to dark energy.

thermal energy is not obvious at the macroscopic scale, the cumulative effect of thermal expansion is at the cosmic scale and should be a major part of what constitutes the cosmological constant in addition to centrifugal force.The average temperature of the universe is above absolute zero, which should be the root cause of its expansion.

The current gravitational field equations cannot distinguish between today's universe and the post-hot-silent universe. However, by dividing the cosmological constant into support and expansion constants, it is possible to clearly distinguish between the two, as they have significant differences in heat density.

Summary

The modified gravitational equation $F=f-f=GMm/r^2-GMm/r^2=ma+Ma'=0$ is not only in line with the cosmic reality of maintaining a stable distance between binary stars for a long time, but also faithfully reflects the balanced symmetrical relationship between centrifugal and centripetal forces. The modified gravitational equation $Guv=Ruv-\frac{1}{2}Rguv+\Lambda guv=8\Pi GTuv/C^4=Ruv-\frac{1}{2}Rguv+(-G+P)guv$ clearly distinguishes between the support constant due to centrifugal force and the expansion constant due to the thermal energy of the temperature difference between the mean temperature of the Universe and the absolute zero, which is consistent with the real observational data and does not conflict with the theory of relativity.$\Lambda=-G+P$ is not only able to give different descriptions of the universe at the current temperature and the universe after thermal silence, but also reveals the root cause of the expansion of the universe.

Conclution

The ten questions above boil down to one question: why have we not followed the principle of relativity in the macroscopic and cosmic domains? The cosmological constant is not only present in the Einstein gravitational equation, but also deserves a place in Newton's law of universal gravitation. The inclusion of the cosmological constant in the equation of universal gravitation is on a significantly different scale than the equation that follows the introduction of the cosmological constant into the gravitational field equation. The former, which has centripetal force equal to centrifugal force (centrifugal force corresponds to repulsive force and has no expansion coefficient) within the scale of gravity, can be called a macroscopic formula. The cosmological constant of the latter, which consists of the support constant due to centrifugal force and the thermal expansion coefficient due to the average temperature of the universe of 2.725 k, contains both the macroscopic part of maintaining the interstellar distance and the cosmic expansion part and should be referred to as the cosmic formula.

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