CST Model

--- Physical Description to the Universe Created by the Natural God

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【Abstract】Theory of Completable Space-Time, abbreviated as UPHY, is an innovative physical theory, which is consists of two parts: the Meter-Second Units of System (MS System) and the Cosmic Completable Space-Time Model (CST Model).

The MS System is a newly established physical units of system., it realizes theoretical definitions to all other physical quantities based on two basic quantities of meter and second, and has theoretically discovered a common physical property possessed by all physical quantities - the multi-dimensional space-time structure. The MS System includes but is not limited to those contents such as definition of constant physical quantities, rule of space-time configuration, rule of space-time value, theorem of completable physical constants, theorem of physical units Equivalence, default theorem, MS system's physical units definition system, periodic table of physical elements, etc. Through these, it deepens and expands logical foundation of physics.

The CST Model is a brand-new physical theory about the origin and evolution of the universe. At the very beginning of the universe's creation,

there was no matter at all, only an initial information and unit nothingness there. These two existences spontaneously combined to generate an initial completable space-time, and the universe we live in originated from this initial completable space-time. Evolution of the universe proceeds based on continuous occurrence of a fundamental process set by the initial information, which is a natural process that continuously and successively generates and accumulates all those completable space-times with the initial completable space-time as objective basis. This process is called completable space-time process (CST Process). Based on the CST Process, CST Model has established Fundamental Equation of the Universe (the UPHY's First Law), Elementary Equation of the Universe (the UPHY's Second Law), and Principle of Information Being Materialized (the UPHY's Third Law). With these three laws as theoretical basis, the CST Model has obtained unified physical solution to the universe, which is discussed and demonstrated in Sections 9 to Section 66 of this paper, and its empirical validity is guaranteed by relevant physical experimental results and astronomical observation data. This unified solution proves and confirms objectivity and originality of the Cosmic Information Body namely Natura God, which is a non-materialized existence, purely composed of cosmic information, and its constituent information are sum of all cosmic information that have been generated. Under the nothingness

action, the Cosmic Information Body is materialized into a mirror universe and magnified by $1.0083^{\cdot} \times 10^{93}$ times to generate the materialized universe. That is to say, the Cosmic Information Body gives information regulations for all attributes of the materialized universe, and under the nothingness action, all these information regulations are materialized and magnified into the materialized universe and all its material attributes. Thus it is proven that the Cosmic Information Body is the origin of the universe. The Natural God is a transhuman intelligence and the highest intelligence in the universe. The unified physical solution to the universe obtained by the CST Model indicates that it is Natural God who designs and creates the universe and realizes its own evolution through cosmic evolutionary process it sets.

This paper mainly discusses CST Model and briefly MS System.

【 Keywords 】 Theory of Completable Space-Time (UPHY), Meter-Second Units of System (MS System), Cosmic Completable Space-Time Model (CST Model), Completable Space-Time Process (CST Process), UPHY's First Law, UPHY's Second Law, UPHY's Third Law, Cosmic Information Body, Natural God.

Preface

Human's understanding on the universe is manifested not only in science but also in philosophy and religion. Science pursues physical origin

of the universe, philosophy explores foundation of metaphysics, that is also the origin of the universe, and religion believes cosmic master or the God and personifies it, respectively forming outlooks on the universe, namely scientific outlook on the universe, philosophical outlook on the universe, and religious outlook on the universe. These three cosmic viewpoints have internal connections and unity, and are unified in the understanding about the Natural God (the cosmic information body), although their forms and ways of understanding the universe are quite different.

The scientific exploration about the universe in physics is advancing along a set path, which leads to destination of physics. This destination encompasses humanity's scientific understanding about the designer and creator of the universe. A group of wise and talented physicists such as Newton, Einstein, Planck, Maxwell, Schrödinger, and Yang Zhenning, while creating their immortal chapters of development history of physics, must have also perceived the existence of this cosmic creator. Because the physical world is so perfect, precise, and rigorous, it makes them believe in the existence of a cosmic designer. Certainly, the cosmic creator they worshipped is neither the God nor the personalized god in religious belief, but a non - materialized existence with super human's intelligence and the highest intelligence in the universe, it is Natural God (simply N-God hereinafter). The N-God is knowable and can be understood by humans,

even can be scientifically described. Physics, as the leader of natural sciences, should take the lead in understanding the Natural God and is surely able to uncover the mysterious veil of the N-God. This also drives physicists and enthusiasts of physics to establish a fundamental physical theory that can transcend classical physics, relativity, and quantum mechanics to meet this ultimate exploration needs of physics.

Human's understanding about the N-God is also reflected in philosophy. Philosophy explores the origin of the world, which is completely consistent with the ultimate goal of physics in exploring the N-God. The concept of the Absolute Spirit (cosmic spirit) proposed by the German philosopher Georg Wilhelm Friedrich Hegel (1770 - 1831) is a philosophical understanding to the N-God. Chinese philosopher Laozi or Li Er (around 571 BC - 471 BC), Italian philosopher Thomas Aquinas (around 1225 - 1274), Dutch philosopher Baruch Spinoza (1632 - 1677), German philosopher and mathematician Gottfried Wilhelm Leibniz (1646 - 1716), and others[13] all had philosophical thoughts about the N-God (the Way). In addition, the Taiji Diagram drawn by the ancestors of the Chinese nation (the Hua Xia peoples) is an intuitive perception of a basic process so called the Complete Space - Time Process (CST process) , which was set by the N-God to create the universe and achieve its own evolution.

Humans have perceived the N-God through intuition for a long time.

however due to lack of philosophical and scientific rational understanding, this perception was expressed in form of religion, giving rise to religious belief in God. The N-God is not the personalized God enshrined in religion. It is the N-God, the only objective existence with super human's intelligence and the highest intelligence in the universe, that makes humans have the religious belief in God. In other words, God here refers to all religious outlook on the universe that believe in the existence of an cosmic master. This religious outlook on the universe is a widely held religious belief among humans with cultural heritage of thousands of years. This religious belief has its cosmic background, which is intuitive perception of human about the cosmic information body. The personalized God does not truly exist but is a cultural representation of this perception. It is the objective existence of the N-God that makes humans have the religious belief in God.

The Completable Space - Time Theory (UPHY) is a physical theory created by contemporary Chinese. It consists of the Meter - Second Unit System (MS system) and the CST model. This theory, with the help of its unique logical tool (the MS system), delves into an ultra-micro physical level of the universe, a physical world that has never been touched by science before. The ultra-micro physical world is different from the macroscopic physical world described by classical physics and relativity,

also different from the microscopic physical world described by quantum mechanics. It is the sum of all of existences with a scale in physical size between the constant length (about $10^{-35}m$) and the mirror length quantum (about $10^{-127}m$). It includes both substantiated existences such as graviton ($G_i^{\blacksquare}$), complete space -time (CST), mirror universes and non – substantiated existences such as cosmic information body, cosmic information, and nothingness. The CST model has discovered that the ultra - micro physical world is the most fundamental physical level of the universe, and those existences and their changing laws of the ultra - micro physical world determine the evolution and changing laws of the cosmic, macroscopic, microscopic physical worlds. The CST model has found that the basic principles and laws of classical physics still apply in the ultra - micro physical world, but some basic laws followed by the ultra - micro physical world are not discovered in classical physics, relativity, and quantum mechanics. The CST model has discovered the N-God, which hides in the ultra - micro physical world, it is not matter but a non - materialized existence. It is an information body formed by all of existing cosmic information, namely cosmic information body, an objective existence with super human's intelligence and the highest intelligence in the universe. N - God is not only the formulator of the natural laws but also the designer and creator of the universe. Given knowability and

describability of N - God, the CST model gives physical description and demonstration about the N - God, including but are not limited to:

▪ N – God's expression and its basic properties

▪ Three equations of N - God

▪ Laws of N - God

▪ Embodied forms of N - God and its evolutionary laws

▪ Physical description to basic process of N – God's creating the universe

▪ Deductions of N – God's laws

▪ Evolution of N - God and cosmic evolution

▪ Purpose and ultimate results of cosmic evolution

▪ Investing to logical self - consistency and empirical validity of N - God.

Conclusion: All the verified conclusions and those to be verified in this presented in this paper consistently show that the Natural God (the cosmic information body) is indeed an objective existence, a non - materialized existence with transhuman intelligence and the highest intelligence in the universe, and the designer and creator of the universe. The Natural God gives information regulations for all properties of the universe and materializes all these information regulations through the CST process it sets, while achieving creation, evolution of the universe and its own evolution , and finally will evolve into an [completable information world](#).

Table of Contents

Principle of Spatial Quantization

Author's Profile

Zhang Zhiqiang, male, electronic engineer (retired), born in Jiangsu on 7th January, 1958, currently resides in Dalian, Liaoning Province. Nationality: China.

Research fields: Theoretical physics and cosmology.

Main research achievements: The Completable Space - Time Theory, also known as Ultra - Micro - Physics (UPHY), the Meter - Second Unit System (MS system), the Periodic Table of Physical Elements, and the Complete Space - Time Model on the Universe , that is CST model.

Research experience: In 1979, a scientific inspiration emerged in my mind. During period of 1979 to 1985, established a theory so called Feeding-Back Theory of the Universe. During period of 2005 to 2025, established the Theory of Completable Space-Time based on my previous research. All these research are conducted by myself.

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About This Presentation

This presentation is compiled in English based on author's original work written in Chinese, entitled 甚微观物理学导引 (Introduction to Ultra-micro Physics) , which will be published soon. Translation work for this presentation is contributed to big data models of DeepSeek and Dou Bao.

TEXT

Section One

N-God's Expression and Its Basic Properties

1.1 Expression of N-God

Natural God is knowable and can be quantitatively described in terms of mathematics and physics, which is defined and quantitatively expressed by following formula.

$$\left.\begin{array}{c} \boxed{O_U(i)} = \sum_{j=0}^{i-1} |M_G| s_{j,j-1}^{-2} \\[2mm] STV\left(\boxed{O_U(i)}\right) = \dfrac{i}{1.008\dot{3} \times 10^{93}} \\[2mm] where, \boxed{O_U(i)} - cosmic\ information\ body, \\ |M_G| s_{j,j-1}^{-2} - unit\ information\ of\ G_j, \\ |M_G| -\ modulus\ of\ constant\ mass\ and\ M_G = 0.\dot{5}\dot{4} \times 10^{-7} kg, \\ STV - space\ time\ value, s -\ time\ unit\ , G_j -\ jth\ CST, \\ cosmic\ quantum\ number\ i = \ 1,2,3, \dots, n, \dots, 1.008\dot{3} \times 10^{93}, \\ n = 7.7266 \times 10^{60} -\ constant\ of\ the\ universe\ today. \end{array}\right\} \quad Eq.\,1-1$$

Note: Mathematical symbol $|M_G| s_{j,j-1}^{-2}$ for unit information needs to be viewed as a whole, that represents all cosmic information possessed by G_j.

The expression originates from the N-God's First Equation.

Natural God in today's state is expressed as:

$$\left.\begin{array}{c} \boxed{O_U(n)} = \sum_{j=0}^{n-1} |M_G| s_{j,j-1}^{-2} \\[2mm] STV\left(\boxed{O_U(n)}\right) = \dfrac{n}{1.008\dot{3} \times 10^{93}} = 7.6627 \times 10^{-33} \\[2mm] n = 7.7266 \times 10^{60} - constant\ of\ the\ universe\ today. \end{array}\right\} \quad Eq.\,1-2$$

1.2 Basic Properties of N-God

▪Existence Category: N-God is not any kinds of matter but a non-materialized existence, an objective reality containing all cosmic information and with transhuman intelligence and the highest intelligence in the universe.

▪Physical Composition: N-God is purely composed of cosmic information, and its constituent information is sum of all the cosmic information of the universe. N-God is therefore called as Cosmic Information Body.

▪Natural Attributes: N-God stipulates all attributes of the universe

1.3 Carrier Information and Cosmic Information

As per difference in carriers and transmission speed of information, the CST model divides information into two categories: carrier information and cosmic information. Carrier information is information based on Shannon information definition, currently involved in information theory and technology. Carrier information uses matter as its carrier, and its transmission speed is less than or equal to the speed of light constant. Cosmic information is a non-materialized existence more essential than matter, it does not uses any matter as carrier but transmits along with the mirror universe, and its transmission speed is equal to hyperspatial velocity . The information mentioned in CST model refers to cosmic information.

1.4 Cosmic Quantum Number

The Cosmic Quantum Number is a non-zero sequence of natural

numbers with an upper limit, expressed by the symbol i.

$$\left.\begin{cases} i = 1,2,3,\dots,n,\dots,1.0083 \times 10^{93} \text{。} \\ where, n = 7.7266 \times 10^{60} \text{ is approximate value of today's cosmic} \\ quantum \ number, called \ as \ constant \ of \ the \ universe \ today. \end{cases}\right\} \text{Eq. } 1-3$$

1.4.1 Physical Meaning of the Cosmic Quantum Number:

▪Representing total number of CSTs possessed by the universe.

▪Representing total number of shares of nothingness consumed in the CST process

▪Representing total number of unit information created in the CST process.

▪Representing total space-time value of the universe

▪Direction of the cosmic quantum number increasing unidirectionally corresponds to the direction of evolutionary process of the universe.

1.4.2 Experimental Basis and Accuracy of Constant of the Universe Today

The constant of the universe today is a result from the N-God's Second Equation (mirror universe equation) and CMB's temperature 2.725K[17] , that is, the CST model uses CMB's temperature as standard data for sampling the universe today and as experimental basis for the constant of the universe today, whose accuracy is same as that of CMB's temperature..

1.4.3 Solving to the Constant of the Universe Today

CMB temperature belongs to mirror physical quantities, so the mirror universe equation can be used to solve for the constant. By the mirror universe equation

$$A_{UP}(i) = \beta_A i^{d-1} STV \left(\sum_{j=0}^{i-1} |M_G| s_{j,j-1}^{-2} \right) A_G$$

and considering space-time configuration of thermodynamic temperature is $STC(K) = \beta m^4 s^{-4}$, there is $a - b = 4 - 4 = 0$. According to rule of d and β_A value , we can take $d = 1$ and $\beta_A = 1$. So we have

$$T_{UP}(i) = i^{1-1} \times STV \left(|M_G| \sum_{j=0}^{i-1} s_{j,j-1}^{-2} \right) T_G = \frac{i \times T_G}{1.008\dot{3} \times 10^{93}}$$

For the universe today, $i = n$ and $T_{UP}(n) = 2.7250K$, given $T_G = 0.3556171686496931 \times 10^{33}K$, then we get

$$n = \frac{(2.7250K)(1.008\dot{3} \times 10^{93})}{0.3556171686496934 \times 10^{33}K} = 7.7265907712 \times 10^{60}$$

To take approximate value of this calculation result, we get 7.7267×10^{60}, to call it as the constant of the universe today.

1.4.4 Valid Period of the Constant of the Universe Today

The constant of the universe today is relatively stable. Through simple calculation, it is known that the value 7.7267×10^{60} can remain unchanged for the next forty-two thousand years, which is the physical validity period of the constant of the universe today. When the validity period expires, This constant should be adjusted to 7.7267×10^{60}.

Note: incremental of cosmic quantum number for one year is equal to $2.33877232 \times 10^{50}$.

Section Two

N-God's Law Ⅰ: CST Process---the Basic Process Creating the Universe by N-God

2.1 Origin of the Universe

Objective domain is larger than the universe, Objective realities prior to the universe were infinite nothingness and an initial information. This initial information is the initial state of the N-God, which combined with a unit of nothingness to form an initial Completable Space-time (CST), which was completely isolated from the infinite nothingness outside it. The initial CST was the first existence of the universe, the origin of the universe.

$$\left.\begin{cases} G_0 = U_n \times |M_G|s_{0,-1}^{-2} \\ STV[(G_0)] = 1 \\ where, G_0 - the\ initial\ CST, \\ |M_G|s_{0,-1}^{-2} - the\ initial\ information, U_n - unit\ of\ nothing\ ness. \end{cases}\right\} Eq.\ 2-1$$

2.2 CST Process

The initial information sets a basic process for creating the universe and realizing its own evolution. Evolution of the universe proceeds continuously based on constant occurrence of this fundamental process, which is a quantized process starting with the initial CST (G_0), a process in which completable space-times (CSTs) are continuously generated one after another and accumulated. This process is called as Completable Space-time Process, abbreviated as CST process, illustrated as follows:

▪The G_0 generates the 0th frame of cosmic holographic image. Based on self-replication, automatic upgrade and spontaneous combination properties of information, the initial information made G_0 produced and overflowed an upgrade information $|M_G|s_{1,0}^{-2}$. while G_0, consumed a portion of unit nothingness $\frac{U_n}{1.008\dot{3}\times10^{93}}$, resulted in unit nothingness of the

universe to reduce into remained nothingness $(1 - \frac{1}{1.008\dot{3}\times10^{93}})U_n$.

▪The 0th frame of cosmic holographic image was appearing and then simultaneously condensed into various of specific quantities of physical elements, which were physically characterized by corresponding physical quantities. All of these physical elements together condensed to create the first portion of matter in the universe, thereby forming the initial physical state of the universe (see in Section Thirty-Nine), which marked the birth of the substantiated universe.

▪The overflowed information $|M_G|s_{1,0}^{-2}$ combined with the remained nothingness $(1 - \frac{1}{1.008\dot{3}\times10^{93}})U_n$ to form a new CST (G_1) ,

$$G_1 = \left\{\left(1 - \frac{1}{1.008\dot{3}\times10^{93}}\right)U_n + G_0\right\}|M_G|s_{1,0}^{-2}$$
$$= U_n\left\{\left(1 - \frac{1}{1.008\dot{3}\times10^{93}}\right)|M_G|s_{1,0}^{-2} + |M_G|s_{1,0}^{-2}|M_G|s_{0,-1}^{-2}\right\}。$$

▪The overflow information $|M_G|s_{1,0}^{-2}$ self-replicated all existing information and generates an unit information of G_1.

▪G_1. had two basic information of $\left(1 - \frac{1}{1.008\dot{3}\times10^{93}}\right)|M_G|s_{1,0}^{-2}$ and

$|M_G|s_{1,0}^{-2}|M_G|s_{0,-1}^{-2}$ as well as one composite information generated spontaneously from these two basic information. Under effect of nothingness, three holographic events were generated, respectively expressed as

$$U_n\left\{\left(1 - \frac{1}{1.008\dot{3}\times10^{93}}\right)|M_G|s_{1,0}^{-2}\right\}$$

$$U_n\{|M_G|s_{1,0}^{-2}|M_G|s_{0,-1}^{-2}\}、$$

$$U_n\{\left(1 - \frac{1}{1.008\dot{3}\times10^{93}}\right)|M_G|s_{1,0}^{-2} + |M_G|s_{1,0}^{-2}|M_G|s_{0,-1}^{-2}\}。$$

These three holographic events constituted the 1st frame of cosmic holographic image, which was appearing and then simultaneously condenses into matter.

At the same time, G_1 consumed a portion of unit nothingness of $\frac{U_n}{1.008\dot{3}\times10^{93}}$ and generates an overflow information $|M_G|s_{2,1}^{-2}$.

▪The overflow information $|M_G|s_{2,1}^{-2}$ combined with both the remained nothingness $\left(1 - \frac{2}{1.008\dot{3}\times10^{93}}\right)U_n$ and G_0、G_1 together to form the followed CST (G_2).

$$G_2 = \{\left(1 - \frac{2}{1.008\dot{3} \times 10^{93}}\right)U_n + \sum_{0}^{1} G_j\}|M_G|s_{2,1}^{-2}$$

$$= U_n\{\left(1 - \frac{2}{1.008\dot{3} \times 10^{93}}\right)|M_G|s_{2,1}^{-2}$$

$$+ \left(1 - \frac{1}{1.008\dot{3} \times 10^{93}}\right)|M_G|^2 s_{2,1}^{-2} s_{1,0}^{-2}$$

$$+ |M_G|^3 s_{2,1}^{-2} s_{1,0}^{-2} s_{0,-1}^{-2} + |M_G|^2 s_{2,1}^{-2} s_{0,-1}^{-2}\}。$$

▪The overflowed information $|M_G|s_{2,1}^{-2}$ self-replicated all existing information and generates an unit information of G_2.

▪ G_2 had four basic information and certain numbers of composite information generated spontaneously from these four basic information. Under effect of nothingness, All of these information turned into

corresponding holographic events and together constituted the 2nd frame of cosmic holographic image, which was appearing and then condensed into matter.

At the same time, G_2 overflew an upgrade information $|M_G|s_{3,2}^{-2}$, which combined with both remained nothingness of $\left(1 - \dfrac{3}{1.008\dot{3}\times10^{93}}\right)U_n$ and G_0、G_1、G_2 to form following CST (G_3)......, and so on.

In this way, the CST process constantly occurs, and CSTs are continuously generated one by one.

▪Each CST overflows an upgrade information $|M_G|s_{i,i-1}^{-2}$, which self-replicates all information that has been crated and generates an unit information of the next CST. The number of basic information contained in the unit information is equal to 2^i , also contains certain numbers of composite information generated spontaneously from all of these basic information.

▪Overflow information, remained nothingness, and all CSTs that have been generated together combine to form the succeeding CST, expressed as

$$\left.\begin{cases} G_i = \{\left(1 - \dfrac{i}{1.008\dot{3} \times 10^{93}}\right)U_n + \displaystyle\sum_{j=0}^{i-1} G_j\}|M_G|s_{i,i-1}^{-2} \\ STV(G_i) \equiv 1 \\ \text{where, } |M_G|s_{i,i-1}^{-2} - \text{the overflow information of } G_{i-1}. \end{cases}\right\} \text{Eq. } 2-2$$

▪ G_i is consist of cosmic modulus $\left(1 - \dfrac{i}{1.008\dot{3}\times10^{93}}\right)U_n + \sum_{j=0}^{i-1} G_j$ and the overflow information $|M_G|s_{i,i-1}^{-2}$. The cosmic modulus has substantial properties, and the overflow information is a non-materialized existence,

and their space-time values are reciprocal. The space-time value of G_i is always equal to 1. The overflow information replicates all the existing information in the universe and generates the unit information of G_i

▪Each CST consumes a portion of nothingness $\frac{U_n}{1.008\dot{3}\times10^{93}}$. The amount of remained nothingness possessed by G_i is equal to $\left(1 - \frac{i}{1.008\dot{3}\times10^{93}}\right) U_n$.

▪ G_i is physically represented by ith frame of cosmic holographic image, that informationally specifies latest changes in the materialized universe.

▪The ith frame of the cosmic holographic image appears and then simultaneously condenses into various of specific quantities of physical elements, such as dimensional spaces, dimensional times, mass, energy, and other physical elements, which are physically characterized by constant physical quantities and original physical quantities. All these physical elements together condense into matter, whose mass is equal to the constant mass $M_G = 0.\dot{5}\dot{4} \times 10^{-7} kg$, that distributes in spaces of the universe in form of i numbers of gravitons ($G_i^{\blacksquare}$).

▪All of the generated CSTs accumulate to form an cosmic body, that is purely composed of all kinds of matter. The cosmic body is squarely the material world.

$$\left\{ \begin{array}{c} The\ Cosmic\ Body = \sum_{j=0}^{i-1} G_j \\ where, G_j - jth\ CST,\ j\ takes\ vbalue\ from\ i, \\ cosmic\ quantum\ number\ i = 1,2,3,\dots,n,\dots,1.008\dot{3} \times 10^{93}. \\ n = 7.7266 \times 10^{60} - constant\ of\ the\ universe\ today \end{array} \right\} Eq.\ 2-3$$

▪Generating rate of CST is equal to the constant frequency, that is, total of $7.416198487095662\ldots\times10^{42}$ number of CSTs are created per second.

▪The universe will at most and ultimately has $1.008\dot{3}\times10^{93}$ numbers of CSTs. The universe today has had 7.7266×10^{60} numbers of CSTs.

▪Basic physical characteristics of ith quantum state of the universe mainly includes (1) generating and displaying ith frame of cosmic holographic image.(2) i numbers of CSTs have accumulated forming the cosmic body $\sum_{j=0}^{i-1}G_j$ which contains i^2 numbers of gravitons ($G_i^{\blacksquare}$). (3)The cosmic body and ith h cosmic holographic image are consists of the materialized universe at ith quantum state. (4)The cosmic information body $|M_G|\sum_{j=0}^{i-1}s_{j,j-1}^{-2}$ is forming and containing i numbers of unit information. (5) The remained nothingness of the universe changes to $\frac{i}{1.008\dot{3}\times10^{93}})U_n$.

The CST process is a quantized process whose quantization characteristics include, but are not limited to:

▪CSTs generated by the CST process are discrete and are generated one after another, and $STV(G_i)\equiv1$.

▪All CSTs consume equal amounts of nothingness, i.e., the amount of nothingness consumed by each CST is equivalent and equal to $\frac{U_n}{1.008\dot{3}\times10^{93}}$.

▪The CST process generates $G_i^{\blacksquare}$, and all of $G_i^{\blacksquare}$ are all-identical and discreteness, and total numbers of $G_i^{\blacksquare}$ are equal to i^2.

▪All CSTs generate its own cosmic holographic image , and the spacetime

values of all the cosmic holographic images are equivalent and equal to 1.

▪Values of physical quantities generated by all CSTs are respectively equal. For example, the amount of one dimensional time generated are equivalent and equal to the constant time $t_G = 1.3483 \ldots \times 10^{-43} s$, the amount of one-dimensional space generated are equivalent and equal to the constant length $L_G = 0.4045 \ldots \times 10^{-34} m$, mass of matter generated are equivalent and equal to the constant mass $M_G = 0.\dot{5}\dot{4} \times 10^{-7} kg$, and so on.

▪Values of physical quantities such as general physical quantities, mirror physical quantities, original physical quantities of the universe are all functions of cosmic quantum number as a single independent variable, which are discreteness and do not exist those values corresponding to numerical value of any two adjacent cosmic quantum numbers.

▪The cosmic information body evolves continuously as the CST process constantly occurs, and is composed of all unit information that have been generated. The unit information has discreteness, and their space-time values are all equal and equal to $\frac{1}{1.008\dot{3} \times 10^{93}}$.

Completable space-time is the basic unit composing the universe. The reason for calling the basic unit of the universe as completable space-time is because the concept needs to reflect two major characteristics of the basic unit of the universe: the information completeness and 10-dimensional space-time properties of the basic unit.

The universe is finite due to the amount of nothingness inside the universe is one unit nothingness, which is a finite amount. The evolution of the universe is constantly consuming the nothingness inside the universe, and exhaustion of unit nothingness leads to the termination of cosmic evolution. At the same time, during the process of cosmic evolution, general physical quantities of the universe are all finite amounts, and respectively reach their extreme values at the moment when the cosmic evolution terminates, which also indicates that the universe is physically a finite amount from its beginning to end.

The CST process however is infinitely on-going. The overflow information generated at the moment of termination of a specific universe serves as initial information for the succeeding universe, and the evolution of the succeeding universe will begin to evolve through the CST process. In the infinitely occurring CST process, finite universes (including the universe we live in) will be continuously generated one by one , evolving, die out in such a cycle.

2.3 Nothingness and Unit Nothingness

Nothingness is a non-materialized existence that does not possess any material properties For example, it does not has spatial properties, temporal properties, mass properties, energy properties, temperature properties, or any other properties of matter. Nevertheless, the nothingness has a natural

function that nothingness could materializes cosmic information into a materialized existence and amplifies this materialized result $1.008\dot{3} \times 10^{93}$ times. his natural function of nothingness is called as Effect of Nothingness.

The symbol U_n is used to represent unit nothingness, and its existence can be quantitatively expressed as

$$\left\{ \begin{array}{c} U_n = |G|m^3 \\ STV(U_n) = 1.008\dot{3} \times 10^{93} \\ \text{where, } m - \text{length unit} \\ |G| = 6.6745786383860966\ldots \times 10^{-11}\ldots \end{array} \right\} \text{Eq. } 2-4$$

Although the expression of the unit nothingness also follows the Rule of Space-time Configurations and the Rule of Spacetime Values (see in Section Seven as well) , nevertheless the physical interpretations of these two rules do not apply to it because unit nothingness is not a physical element. The expression of unit nothingness $|G|m^3$ should be viewed as a whole.

Section Three

N-God's Law II: N-God's First Equation

3.1 N-God's First Equation

Natural God designs basic unit of the universe—the Completable Space-time (CST), adopting the fundamental logic of unity of opposites, and implements this logic throughout entire process of cosmic evolution. This unity of opposites is specifically reflected in the aspect that the CST

is composed of two existences with opposing properties, namely the cosmic modulus with materialized nature and the overflow information with non-materialized nature, ,these two opposing parts form an entirety (CST). Numerical attributes of these two parts are opposite and reciprocal of each other, and space-time value of the CST is always equal to 1.

$$
\left\{
\begin{array}{c}
Taiji\ Equation \\[4pt]
G_i = \left\{\left(1 - \dfrac{i}{1.008\dot{3} \times 10^{93}}\right) U_n + \displaystyle\sum_{j=0}^{i-1} G_j\right\} |M_G| s_{i,i-1}^{-2} \\[6pt]
\left\{A_G、\ A_g(i) \in G_i\right\} \\[2pt]
STV(G_i) \equiv 1 \\[4pt]
Cosmic\ Body\ Equation \\[4pt]
\displaystyle\sum_{j=0}^{i-1} G_j = U_n \times \displaystyle\sum_{j=0}^{i-1} |M_G| s_{j,j-1}^{-2} \\[6pt]
STV\left(\displaystyle\sum_{j=0}^{i-1} G_j\right) = i \\[6pt]
STV\left(\displaystyle\sum_{j=0}^{n-1} G_j\right) = n = 7.7266 \times 10^{60} \\[6pt]
wher,\ G_i - ith\ CST, \left\{A_G、\ A_g(i) \in G_i\right\} - a\ set\ of\ the\ constat \\
physical\ quantities\ and\ the\ \ original\ physical\ quantites \\
belonging\ to\ CST, \\[4pt]
\displaystyle\sum_{j=0}^{i-1} G_j - the\ cosmic\ body, \\[6pt]
\left(1 - \dfrac{i}{1.008\dot{3} \times 10^{93}}\right) U_n - the\ remained\ nothingness, \\[6pt]
\displaystyle\sum_{j=0}^{i-1} |M_G| s_{j,j-1}^{-2} - the\ cosmic\ information\ body, \\[4pt]
|M_G| s_{i,i-1}^{-2} - overflow\ information\ of\ G_{i-1}\ or\ unit\ informaiton \\
of\ G_i, U_n - unit\ nothingness,\ A_G - constant\ physical\ quantities, \\
A_g(i) - original\ physical\ quantities, |M_G| = 0.\dot{5}\dot{4} \times 10^{-7}, \\
cosmic\ quantum\ numbers\ i = 1,2,3,\dots,n,\dots,1.008\dot{3} \times 10^{93}, \\
n = 7.7266 \times 10^{60} - constant\ of\ the\ universe\ today.
\end{array}
\right\} \quad \text{Eq. } 3-1
$$

The CST process is described by the N-God's First Equation , that is the most fundamental equation to describe origin and evolution of the universe, also called as UPHY's first Law. In other word, the N-God First Equation is a descriptive equation for the most basic physical process (CST Process) upon which the origin and evolution of the universe relies.

3.2 Physical meanings of the equation

▪The Taiji Equation is the descriptive equation for any CST, which shows that the CST is specifically composed of three components: the remained nothingness $\left(1 - \dfrac{i}{1.008\dot{3}\times 10^{93}}\right) U_n$, the cosmic body $\sum_{j=0}^{i-1} G_j$ and the overflow information $|M_G| s_{i,i-1}^{-2}$.

▪All of the constant physical quantities and original physical quantities are generated from CST.

▪The cosmic body equation shows that the cosmic body is equal to sum of all CSTs generated. In perspective of information, it is equivalent to say that the cosmic information body generates the cosmic body under effect of nothingness,

▪Materialized universe is composed of the cosmic body and the cosmic hologram image.

▪Space-time value of CST is always equal to 1.

▪CST generates all kinds of physical elements physically represented by constant physical quantities and original physical quantities.

▪Total space-time value of the cosmic body varies and equals the cosmic quantum number.

▪Total space-time value of today's comic body is equal to the constant of the universe today, that is 7.7266×10^{60}.

3.3 Philosophical Basis of the CST Model

The operational principle of the universe is the greatest reason in the world, and the great path is simple. "Simple" implies not only simplicity but more importantly the profundity, simple and profound. This greatest reason is physical truth of origin and evolution of the universe, that is, physical mechanism of origin and evolution of the universe. Human understanding on the universe is not only reflected in science but also manifested as philosophical and religious worldviews. Scientific understanding on the universe also needs to draw nourishment from existing philosophical understandings and even religious insights about the universe. Whether Eastern philosophy or Western philosophy, they hold the same viewpoint about the origin of the universe , that is the universe originates from "nothing" , and "something" arises from "nothing", the "nothing" is not absolute void but a kind of existence relative to "something."

The Tai Chi thought, characterized by the Taiji diagram as a significant recognition feature of the thought, is Chinese's ancient philosophical

understanding about principle of cosmic operation and is also an intuitive insight into the universe as a whole, which is of great philosophical reference value in cosmological research.

The Tai Chi Diagram has a history at least 5,000 years. It is not only the origin of the Tai Chi thought but also the origin of Chinese culture. In terms of its emergence time, the Tai Chi Diagram reflects intuitive understanding of the ancient Chinese ancestors (Hua Xia peoples) about the overall universe and its operational principles. The Tai Chi thought encompasses the Tai Chi Diagram, Tao, the Book of Changes. The complementary symmetry it advocates and the notion of "Tao generates the One" are ideological essence of the Tai Chi thought.[13]

Establishing a cosmic model can draw some useful inspirations from the Tai Chi thought. For example, the universe arises from nothingness, that is a kind of existence, not absolute void, matter belongs to "something" but is not inherent. Matters are gradually produced and accumulates through process of cosmic evolution. Basic unit of the universe is basically composed of two parts of materialized existence (something) and non-materialized existence (nothing), and these two parts form a unity of opposites. These two parts have opposite attributes and are interdependent and transformable. Internal structure of the basic unit of the universe has complementary symmetry and a numerical attribute of the whole being

equal to 1. Basic logical form of basic unit of the universe is $AA^{-1} = 1$. Continuous change of the basic unit is original drive for cosmic evolution;. Cosmic evolution relies on a kind of most fundamental process, and the continuous occurrence of this process is directly related to operation principle of the basic unit of the universe.
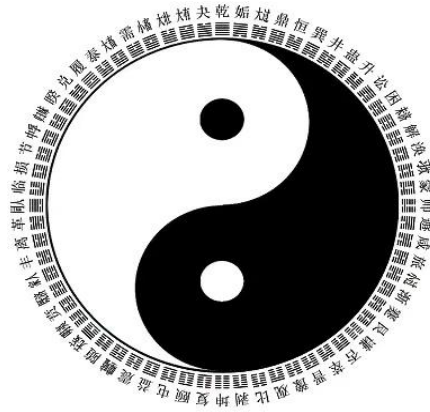
图四、伏羲六十四卦与太极图

The above is the philosophical reference selected by the CST model, which lays philosophical foundation for the establishment of the CST model.

Ideal cosmic model should be like this: starting from a basic assumption, it can not only adhere to and implement the philosophical principle of "creating something from nothing" but also obtain a unified physical solution to the universe.

Section Four

N-God's Law III: Embodied Forms of N-God

Nature God has two embodied forms: the Mirror Universe and the Cosmic Body. The mirror universe is not matter but a materialized

existence generated by the cosmic information body under the effect of nothingness. All of information provisions stipulated by N-God are embodied in form of physical characteristics of the mirror universe. While all of physical characteristics of the mirror universe either are amplified $1.008\dot{3} \times 10^{93}$ times to be general physical quantities of the universe or are directly to be the mirror physical quantities, and all these physical quantities together form the cosmic body.

4.1 Mirror Universe

Except for the expressional symbol, the mirror universe can be expressed by same mathematical expression as that of the cosmic information body.

$$
\left.\begin{aligned}
&O_U(i) = \sum_{j=0}^{i-1} |M_G| s_{j,j-1}^{-2} \\
&STV[O_U(i)] = \frac{i}{1.008\dot{3} \times 10^{93}} \\
&\text{where, } O_U(i) - \text{the mirror univers} \\
&, |M_G| s_{j,j-1}^{-2} - unit\ information\ of\ G_j, \\
&\text{cosmic quantum numbers } i = 1,2,3, \dots, n, \dots, 1.008\dot{3} \times 10^{93};
\end{aligned}\right\} \text{Eq. } 4-1
$$

Mathematical expression of Today's Mirror Universe is shown below

$$
\left.\begin{aligned}
&O_U(n) = \sum_{j=0}^{n-1} |M_G| s_{j,j-1}^{-2} \\
&STV[O_U(n)] = \frac{n}{1.008\dot{3} \times 10^{93}} = 7.6627 \times 10^{-33} \\
&{}_U(n) - Today's\ mirror\ universe, \\
&n = 7.7266 \times 10^{60} - constasnt\ of\ the\ universe\ today.
\end{aligned}\right\} \text{Eq. } 4-2
$$

4.2 Cosmic Body

Natural God provides information provisions for all attributes of the

mirror universe and the cosmic body (material world). Under the effect of nothingness, the cosmic information body is materialized and   generated the mirror universe, which in turn is amplified by $1.008\dot{3} \times 10^{93}$ times to to generate the cosmic body.

Following Eq.4-3 gives expression for the above illustration.

$$\left.\begin{array}{c} U_n \times \boxed{O_U(i)} \rightarrow (being\ materialized) \rightarrow O_U(i) \\ \left(amplified\ 1.008\dot{3} \times 10^{93}\ times\ \right) \\ \rightarrow U_n \times \sum_{j=0}^{n-1} |M_G| s_{j,j-1}^{-2} = \sum_{j=0}^{i-1} G_j \end{array}\right\} \quad Eq.\ 4-3$$

that is, the Natural God is the information source of the material world. In other word, the N-God sets up information provision for all attributes of the material world. Natural God generates the cosmic body under the effect of nothingness. The cosmic body is the material world and is equal to sum of all CSTs that have been generated. Both the mirror universe and the cosmic body are originated from the N-God. Thus It is concluded that the Natural God is the origin of the universe.

Section Five

N-God's Law IV: N-God's Second Equation

N-God's Second Equation, also known as the Mirror Universe Equation, which is basic equation describing and solving physical characteristics of the mirror universe as well as a reflection of Natural God's stipulations. According to this equation, the values of physical characteristics possessed

by the mirror universe at any quantum state can be uniformly solved.

The N-God's Second Equation is a semi-theoretical and semi-empirical equation obtained based on the CST process and N-God's First Equation. Its prototype can be directly obtained from the CST process

$$
\left.
\begin{cases}
\quad\quad\quad A_U(i) = i \times A_G \\
\text{where, } A_U(i) - \text{the general physical quantities,} \\
\quad A_G - the \text{ constant physical quantities,} \\
\text{cosmic quantum numbers } i = 1,2,3,\dots,n,\dots,1.008\dot{3} \times 10^{93}.
\end{cases}
\right\} \text{Eq.5-1}
$$

Based on it, the mirror universe equation shown in Eq.5-2 can be summarized through analysis and calculation.

$$
\left.
\begin{cases}
\quad\quad A_{UP}(i) = \beta_A i^{d-1} STV \left(\displaystyle\sum_{j=0}^{i-1} |M_G| s_{j,j-1}^{-2} \right) A_G \\
\textit{where,} \quad A_{UP}(i) - \textit{the miirror physical quantities,} \\
\quad A_G - \textit{the constant physical quantities,} \\
\textit{d is an integer and its value is taken } a - b \textit{ under the} \\
\textit{rule of space} - \textit{time configuration } STC(DimA) = Bm^a s^{-b}, \\
\textit{when } a - b = 0, \pm 1, d \textit{ takes } 0,1,-1 \textit{ respectively for each.} \\
\quad \beta_A - \textit{an coefficient, taking 1 or a specific value,} \\
\quad \displaystyle\sum_{j=0}^{i-1} |M_G| s_{j,j-1}^{-2} - \textit{the mirror universe,} \\
\textit{cosmic quantum numbers } i = 1,2,3,\dots,n,\dots,1.008\dot{3} \times 10^{93}, \\
\quad n = 7.7266 \times 10^{60} - \textit{constasnt of the universe today.}
\end{cases}
\right\} \text{Eq. 5} - 2
$$

According to the mirror universe equation, values of various physical quantities possessed by the mirror universe at any quantum state can be uniformly calculated. For example, the calculation results of nine mirror physical quantities corresponding to the initial state, three-minute evolution state, today's evolution state, and the final evolution state of the universe are calculated and summarized in Table-1.

Table 1 36 Data of Evolution States of the Mirror Universe

Quantum state→ Physical Qu'ty↓	1 Initial state	1.3349×10^{45} three-minute n state	7.7266×10^{60} Today's state	$1.008\dot{3} \times 10^{93}$ Final state
Mirror time $t_{UP}(i)$	$\dddot{t}_G = 1.3371 \times 10^{-136}s$	$1.7848 \times 10^{-91}s$	$1.0331 \times 10^{-75}s$	$t_G = 1.3483 \times 10^{-43}s$
Mirror length $R_{UP}(i)$	$\dddot{L}_G = 0.4011 \times 10^{-127}m$	$0.5354 \times 10^{-82}m$	$3.0991 \times 10^{-67}m$	$L_G = 0.4045 \times 10^{-34}m$
Mirror mass $M_{UP}(i)$	$\dddot{M}_G = 0.5409 \times 10^{-100}kg$	$0.7220 \times 10^{-55}kg$	$4.1793 \times 10^{-40}kg$	$M_G = 0.\dot{5}\dot{4} \times 10^{-7}kg$
Mirror energy $E_{UP}(i)$	$\dddot{J}_G = 0.4868 \times 10^{-83}J$	$0.6498 \times 10^{-38}J$	$3.7613 \times 10^{-23}J$	$J_G = 0.4\dot{9}\dot{0} \times 10^{10}J$
Mirror temperature. $T_{UP}(i)$	$\dddot{T}_G = 0.3526 \times 10^{-60}K$ (absolute zero)	$0.4706 \times 10^{-15}K$	$2.7250K$ CMB's temperature	$T_G = 0.3556 \times 10^{33}K$
mirror momentum $\|p_{UP}(i)\|$	$\dddot{P}_G = 1.6228 \times 10^{-92}kgms^{-1}$	$2,1662 \times 10^{-47}\ kgms^-$	$1,2538 \times 10^{-32}\ kgms^{-1}$	$P_G = 16.3636\ kgms^{-1}$
Mirror angular moment $\|L_{UP}(i)\|$	$\dddot{h} = 6.5646 \times 10^{-127}Js$	$1.1697 \times 10^{-36}Js$	$3.9191 \times 10^{-5}Js$	$6.6745 \times 10^{59}Js$
Mirror mass density $\rho_{UP}(i)$	$\frac{3}{4\pi}\dddot{\rho}_G = 8.1720 \times 10^{2}kgm^{-3}$	$\frac{3}{4\pi}4.5859 \times 10^{-88}\ kgm^{-3}$	$\frac{3}{4\pi}1.3688 \times 10^{-119}\ kgm^{-3}$	$\frac{3}{4\pi}8.0375 \times 10^{-184}\ kgm^{-3}$
Mirror force $\|F_{UP}(i)\|$	$\dddot{N}_G = 1.2035 \times 10^{-49}N$	$1.6065 \times 10^{-4}N$	$9.2991 \times 10^{11}N$	$N_G = 1.2315 \times 10^{44}N$

Section Six

N-God's Law V: N-God's Third Equation

6.1 N-God's Third Equation

$$\left\{ \begin{array}{c} \textit{General Equation of the Universe} \\ A_U(i) = \beta_A i^d A_G \\ \textit{Mirror Universe Equatjion} \\ A_{UP}(i) = \beta_A i^{d-1} STV\left(\sum_{j=0}^{i-1} |M_G| s_{j,j-1}^{-2} \right) A_G \\ \textit{Nothingness Action Equation} \\ A_U(i) = \left(1.008\dot{3} \times 10^{93} \right) A_{UP}(i) \\ where, A_U(i) - general\ physcial\ quantities \\ A_{UP}(i) - mirror\ physical\ quantities, \\ A_G - constant\ physical\ quantities, \\ d\ is\ an\ integer\ and\ its\ value\ is\ taken\ a - b\ under\ the \\ rule\ of\ space - time\ configuration\ STC(DimA) = Bm^a s^{-b} \\ when\ a - b\ =\ 0, \pm 1, d\ takes\ 0, 1, -1\ respectively\ for\ each. \\ \beta_A\ -\ an\ coefficient, taking\ 1\ or\ a\ specific\ value, \\ \sum_{j=0}^{i-1} |M_G| s_{j,j-1}^{-2}\ -\ he\ mirror\ universe, \\ cosmic\ quantum\ numbers\ i = 1,2,3, \dots, n, \dots, 1.008\dot{3} \times 10^{93}\ ; \\ n = 7.7266 \times 10^{60}\ -\ constant\ of\ the\ universe\ today. \end{array} \right\} \quad \text{Eq. } 6-1$$

Based on the N-God First Equation and Second Equation, N-God Third Equation can be obtained (See Appendix II). The N-God Third Equation is elementary equation of the universe, known as UPHY Second Law, that is used to uniformly calculate values of physical quantities of the universe. This equation consists of three equations respectively as the general equation of the universe, the mirror universe equation, and the nothingness -action equation, as shown in Eq.6-1.

6.2 Physical Meanings of the Equation:

▪The general physical quantities, mirror physical quantities and most of original physical quantities are variables, and their unified solutions can be obtained by the N-God third equation, which is independent of observer's

position in the universe, independent of physical frame of reference and its state of motion in which the observer stays, and independent of any mathematical coordinate system

▪For a given cosmic quantum number, the universe has an unique and definite set of general physical quantities, mirror physical quantities and original physical quantities.

▪The values of physical quantities of the universe are functions of the cosmic quantum number as a single independent variable.

▪Magnifying the mirror physical quantity by $1.008\dot{3} \times 10^{93}$ times equals corresponding general physical quantity.

The UPHY Second Law plays a very important role in the CST model, it is based on this law that those important theoretical results such as unified solution to physical quantities of the universe, dynamic solution to cosmic evolution , general and today's solutions to cosmic background radiation, general and today's solutions to cosmic expansion constant, solution to the elementary charge, solution to physical characteristics of the mirror universe, expression of the graviton, 16 physical parameters of the graviton, 21 physical correlations of the graviton, graviton's equation, and the mirror force are obtained.

6.3 Thirty-Six Data of Dynamic Evolution of the Universe

The UPHY Second Law also reflects information regulation by the

natural God for all physical quantities of the universe and applies to uniformly solve general physical quantities, mirror physical quantities, and original physical quantities, and then obtain am unified solution to physical quantities of the universe. For example, according to this law, calculated results for nine general physical quantities respectively corresponding to initial state , three-minute sate, today's state and final state of cosmic evolution can be uniformly solved as shown in Table-2.

Table-2   36 Data of Dynamic Evolution of the Universe

Quantum state→ Physical Qu'ty↓	1 Initial stat	1.3349×10^{45} three-minute n state	7.7266×10^{60} Today's state	$1.008\dot{3} \times 10^{93}$ Final state
Age of the universe $t_U(i)$	$t_G = 1.3483$ $\times 10^{-43}s$	$180s$	Theoretical: $1.0418 \times 10^{18}s$ abt.33 billion years）. Observed: $0.435 \times 10^{18}s$ abt.13.8billion years.	1.3595 $\times 10^{50}s$
Radius $R_U(i)$	$L_G = 0.4045$ $\times 10^{-34}m$	0.5399 $\times 10^{11}m$	Theoretical: $3.1254 \times 10^{26}m$ Observed： $10^{26}m$?	0.4078 $\times 10^{59}m$
Total volumes of spaces $V_U(i)$	$\frac{4\pi}{3} \times 0.6619$ $\times 10^{-103}m^3$	$\frac{4\pi}{3} 1.5745$ $\times 10^{32}m^3$	Theoretical: $1.2789 \times 10^{80}m^3$. Observed： None.	$\frac{4\pi}{3} 0.6786$ $\times 10^{176}m^3$
Total masses $M_U(i)$	$M_G = 0.\dot{5}\dot{4}$ $\times 10^{-7}kg$	0.7281 $\times 10^{38}kg$	Theoretical: $4.2142 \times 10^{53}kg$ Observed： $10^{53}kg$?	$0.54\dot{9}$ $\times 10^{86}kg$
Total energies$E_U(i)$	$J_G = 0.4\dot{9}\dot{0}$ $\times 10^{10}J$	0.6553 $\times 10^{55}J$	Theoretical: $3.7930 \times 10^{70}J$	0.4950 $\times 10^{103}J$

			Estimated by mass-energy equation; $10^{69}J$?	
Cosmic temperature $T_{UP}(i)$	$T_0 = 0.3526 \times 10^{-60}K$ 绝对零度	$0.4747 \times 10^{-15}K$	Theoretical: 2.725K Observed： 2.725K (CMB temperature）	$T_G = 0.3556 \times 10^{33}K$
Total norms of momentum $\|p_U(i)\|$	$p_G = 16.3636\ kgms^{-1}$	$2,1843 \times 10^{46}\ kgms^{-1}$	Theoretical: $1,2643 \times 10^{62}\ kgms^{-1}$; Estimated by product of total mass and speed of light: $10^{61}\ kgms^{-1}$?	$1,649\dot{} \times 10^{94}\ kgms^{-1}$
Total norms of orbital angular moments $\|j_U(i)\|$	$h = 6.6194 \times 10^{-34}\ Js$	$1.1795 \times 10^{57}\ kgm^2s^{-1}$	Theoretical: $3.9517 \times 10^{88} kgm^2s^{-1}$ Estimated by product of total masses and the radius and speed of light : $10^{87}kgm^2s^{-1}$?	$6.77301 \times 10^{152} kgm^2s^{-1}$
Average mass density $\rho_U(i)$	$\frac{3}{4\pi}8.2402 \times 10^{95}kgm^{-3}$	$\frac{3}{4\pi}4.6242 \times 10^5\ kgm^{-3}$	Theoretical: $3.2951 \times 10^{-27}\ kgm^{-3}$ Observed： $10^{-27}\ kgm^{-3}$?	$\frac{3}{4\pi}8.1045 \times 10^{-91}\ kgm^{-3}$

Section Seven

N-God's Law VI: Five Regulations for Physical Quantities

Natural God gives some regulations on space-time attributes for all physical quantities. By definition of constant physical quantities and SI units of system, descriptions to those regulations can be obtained such as Rule of Space-Time Configuration , Rule of Space-Time Values, Comple-

table Constant Theorem, and Physical Units Equivalence Theorem.

7.0 Definition of Constant Physical Quantities.

The definition is logically the only axiom in UPHY , which states that

$$
\left.\begin{array}{c}
\textit{For any physical quantity designated by physical unit DimA,}\\
\textit{there always exists an cooresonding constant physical quantity}\\
A_G \textit{ whose space time value is constantly equal to } 1.\\
\textit{that is, } STV(A_G) = STV(|A_G|DimA) \equiv 1\\
\textit{and } STV(G) = STV(h) = STV(c) = STV(k_B\} = STV(N_A) \equiv 1\\
\textit{where, } STV(A_G) \textit{ said to take space time value of } A_G ,\\
|A_G| \textit{ said modulus of } A_G.\\
G - \textit{gravitaitonal constant, } h - \textit{Planck constant,}\\
c - \textit{speed of light },\\
k_B - \textit{Boltzmann constant, } N_A - \textit{Avogadro cnstant.}
\end{array}\right\} \text{Eq.} 7-0
$$

Notie: For any physical quantity $A = |A|DimA$, to call $|A|$ as modulus of

A . STV is abbreviation of Space-Time Value, which mathematically

means numerical value of physical units and physical quantities.

This definition holds logical status of axiom in UPHY. An axiom is
logical origin of a theoretical system; The truth of an axiom cannot be
proven by itself, but rather by the truth of all its inferences.

7.1 Rule of Space-Time Configuration

7.1.1 Statement of the Rule of Space-Time Configurations

$$
\left.\begin{array}{c}
\textit{All physical quantities designated by physical unit } (DimA)\\
\textit{have natures of multi} - \textit{dimensional space} - \textit{time structure,}\\
\textit{whose composition of space} - \textit{time components are expressed}\\
\textit{by space} - \textit{ time configuration of DimA.}\\
STC(DimA) = Bm^a s^{-b}\\
\textit{where, } STC(DimA) - \textit{spacetime configuration of DimA}\\
m - \textit{unit of one dimensional space,}\\
s - \textit{unit of one dimensioinal time,}\\
a, b \textit{ are integers and } a, b = 0, \pm1, \pm2, \pm3, \pm4, \pm5,\\
B \textit{ is an coefficentand } B \geq |G| = 6.745786383860966 \times 10^{-11}.\\
\textit{To call this law as rule of space time configuraiton of}\\
DimA \textit{ abbreviated as rule of spacetime configuraitons}
\end{array}\right\} \text{Eq.} 7-1
$$

7.1.2 Corollary: For any physical quantity A = |A|DimA, its space-time configuration is expressed as $STC(A) = |A|Bm^a s^{-b}$, where |A| said modulus of A.

7.1.3 Examples of Space--Time Configuration

Unit mass: $STC(kg) = |G|m^3 s^{-2}$

Unit energy: $STC(J) = |G|m^5 s^{-4}$

Unit force: $STC(N) = |G|m^4 s^{-4}$

Unit power: $STC(W) = |G|m^5 s^{-5}$

Unit momentum: $STC(kgms^{-1}) = |G|m^4 s^{-3}$

Unit angular moment: $STC(kgm^2 s^{-1}) = |G|m^5 s^{-3}$

Unit mass density: $STC(kgm^{-3}) = |G|m^0 s^{-2}$

Unit thermodynamic temperature:

$$STC(K) = \frac{a^{-1}}{|N_A| \times 10^{-23}} m^4 s^{-4}$$

Unit current intensity: $STC(A) = \sqrt{|G|} m^3 s^{-3}$

;Unit electric charge: $STC(C) = \sqrt{|G|} m^3 s^{-2}$;

Unit voltage: $STC(V) = \sqrt{|G|} m^2 s^{-2}$;

Unit magnetic flux: $STC(W_b) = \sqrt{|G|} m^2 s^{-1}$

Unit magnetic induction intensity: $STC(T) = \sqrt{|G|} m^0 s^{-1}$

Unit electric density: $STC(Am^{-2}) = \sqrt{|G|} m^1 s^{-3}$

Unit electric field strength: $STC(Vm^{-1}) = \sqrt{|G|} m^1 s^{-2}$

Unit magnetic field strength: $STC(Am^{-1}) = \sqrt{|G|} m^2 s^{-3}$

Unit magnetic moment: $STC(JT^{-1}) = \sqrt{|G|} m^5 s^{-3}$

Unit radiant flux density: $STC(E) == |G|m^3 s^{-5}$

7.1.4 Physical Interpretation for the Space- Time Configuration

All real physical quantities have the attribute of multi-dimensional space-time structure, and their space-time component composition follows the rule of space-time configuration , that is, the multi-dimensional space-time structure is composed of specific number of dimensional spaces m^a or dimensional times s^b, or specific number of dimensional spaces and dimensional times $m^a s^{-b}$.

7.1.5 Experimental Basis of the Space Time Configurations

Those fundamental physical constants and relationships between symbols of physical units exhibited in SI unit system have been confirmed by physical theories and large number of physical experiment results, which constitutes the experimental basis of physics, while the rule of space-time configurations is obtained based on SI unit system and the definition of constant physical quantities and, therefore, the rule of space-time configuration has the same experimental basis.

7.1.6 Definitions to Dimensional Spaces and Times

$$\left\{ \begin{array}{l} To\ define\ m^a\ designating\ dimensional\ spaces. \\ where,\ m\ said\ unit\ of\ one\ dimensional\ space, \\ a\ said\ number\ of\ dimensions\ and\ a = 0,1,2,3,4,5. \\ To\ define\ s^b\ designating\ dimensional\ times. \\ where,\ s\ said\ unit\ of\ one\ dimensional\ time, \\ b\ said\ number\ of\ dimensions\ and\ b = 0,1,2,3,4,5. \end{array} \right\} \quad Eq.\ 7-2$$

7.1.7 Acquisition of Space-Time Configurations

Omitted here. See details at Rule of Space Time Configuration

7.2 Rule of Space-Time Values

7.2.1 Statement of the Rule of Space-Time Values

$$\left\{\begin{array}{c}
All\ physical\ quantities\ designated\ by\ physical\ units\ (DimA)\\
have\ numerical\ attributes\ expressed\ by\ spacetime\ values\\
STV(DimA) = STV(Bm^a s^{-b}) = B \times STV(m^a) \times STV(s^{-b})\\
where, STV(DimA)\ said\ space - time\ values\ of\ DimA.\\
a, b\ are\ integers\ and\ a, b = 0, \pm1, \pm2, \pm3, \pm4, \pm5;\\
B\ is\ coefficient\ and\ B \geq |G| = 6.6745786383860966 \times 10^{-11};\\
STV(m)\ and\ STV(s)\ said\ space - time\ values\ of\ unit\ length\ and\\
unit\ time\ respectively, and\\
STV(m) = 2.4720661623652209 \times 10^{34}\\
STV(s) = 0.7416198487095662 \times 10^{43}\\
To\ call\ this\ law\ as\ rule\ of\ spacetime\ values\ of\ DimA,\\
abbreviated\ as\ rule\ of\ spacetime\ values
\end{array}\right\} \quad Eq.\ 7-3$$

Corollary: For any physical quantity $A = |A|DimA$, the space-time value of the physical quantity is equal to

$$\left\{\begin{array}{c}
STV(A) = STV(|A|Bm^a s^{-b})\\
= |A| \times B \times STV(m^a) \times STV(s^{-b})\\
where, A - any\ physical\ quantity,\\
m^a - dimensional\ spaces, s^{-b} - dimensional\ times,\\
STV - spacetime\ value, a, b = 0, \pm1, \pm2, \pm3, \pm4, \pm5.
\end{array}\right\} \quad Eq.\ 7-4$$

7.2.3 Examples of Space-Time Values

$STV(kg) = 1.8333333 \times 10^7$ and is unique.

$STV(K) = 0.2812012715238 \times 10^{-32}$ and is unique.

$STV(A) = 0.302585535036 \times 10^{-30}$ and is unique.

$STV(mol) = 6.014759519136 \times 10^{23}$ and is unique.

$STV(J) = 2.\dot{0}3\dot{7} \times 10^{-10}$ and is unique.

$STV(N) = 0.824022054121 \times 10^{-44}$ and is unique.

$STV(kgms^{-1}) = 0.06\dot{1} \times 10^0$ and is unique.

$STV(kgm^2 s^{-1}) = 1.51070709922 \times 10^{33}$ and is unique.

$STV(kgm^{-3}) = 0.1213559752433 \times 10^{-95}$ and is unique.

$STV(C) = 2.24403438715 \times 10^{12}$ and is unique. and is unique.

$STV(JT^{-1}) = 1.84913382522 \times 10^{38}$ and is unique.

$$STV(W_b) = 6.73210316147 \times 10^{20} \text{ and is unique.}$$

$$STV(Vm^{-1}) = 0.367205626989 \times 10^{-56} \text{ and is unique.}$$

$$STV(Am^{-1}) = 0.122401875663 \times 10^{-64} \text{ and is unique.}$$

7.2.4 Physical Interpretation to Space-Time Values

All real physical quantities designated by the physical units ($DimA$) have numerical attributes. These attributes originate from numerical nature of multi-dimensional space-time structure of physical quantities and can be expressed by space-time values of physical units. Space-time values are regulation to modulus of the constant physical quantity and also regulation to numerical equivalent relationship between physical quantities. Space-time values of physical units are unique.

See more at https://www.ultra-physics.com/uphyshow/02.html

7.3 Completable Constant Theorem

Elementary constants signed C_p are divided into two categories which are the first category and the second category of elementary constants. Criterion of judgement is that if $STV(C_p) \equiv 1$, then the C_p, is belonging to the first category, otherwise belonging t the second category.

The first category of elementary constants are collectively referred as completable physical constants, the second ones are referred as default physical constants. The completable physical constants are a large class of elementary constants, including some known elementary constants in physics, such as the gravitational constant, Planck constant, the speed of

light in vacuum, Boltzmann constant, Avogadro constant, molar gas constant, etc., and also include a large number of the constant physical quantities. All completable constants can be solved uniformly by a formula so called completable constant theorem.

7.3.1 Statement of the Completable Constant Theorem

$$\left\{ \begin{array}{c} For\ any\ physical\ unit\ (DimA), there\ would\ exist\ an \\ corresponding\ physical\ constnat\ C_P\ ,and \\ C_P = A_G = \dfrac{1}{STV(DimA)}DimA = \dfrac{1}{STV(Bm^a s^{-b})}DimA \\ STC(C_P) = m^0 s^0 \\ STV(C_P) \equiv 1 \\ where,STV(DimA)\ said\ spacetime\ value\ of\ the\ DimA, \\ Bm^a s^{-b}\ said\ spacetime\ configuraiton\ of\ the\ DimA, \\ A_G\ said\ constant\ physical\ quantity\ for\ the\ DimA. \end{array} \right\} \text{Eq. 7 – 5}$$

7.3.2 An Exercise

Try to solve the gravitational constant, Planck's constant, the speed of light, Boltzmann's constant, Avogadro's constant, and the molar gas constant uniformly based on the completable constant theorem.

Solution: According to the completable constant theorem

$C_P = \dfrac{1}{STV(DimA)}DimA$, we have

$\blacksquare C_P = \dfrac{STV(kg)STV(s^2)}{STV(m^3)}m^3 kg^{-1}s^{-2}$

.Substituting the space-time values of kilogram, second, and meter, thus

$C_P = \dfrac{(1.8333333\times10^7)(0.7416198487095662\times10^{43})^2}{(2.4720661623652209\times10^{34})^3}m^3 kg^{-1}s^{-2} =$

$6.67457851 \times 10^{-11}m^3 kg^{-1}s^{-2} = G$ (gravitational constant)

Observed data: : $6.67430 \times 10^{-11}m^3 kg^{-1}s^{-2}.$[14]

$\blacksquare C_P = \dfrac{1}{STV(Js)}Js$

Substituting the space-time values of joule and second, we get:

$$C_P = \frac{1}{(2.0\dot{3}\dot{7}\times10^{-10})(0.7416198487095662\times10^{43})}Js = 6.619416831457 \times$$

$10^{-34}Js = h$ (Planck's constant).

Observed data: $6.62607015 \times 10^{-34}Js$.[14]

$\cdot C_P = \frac{1}{STV(ms^{-1})}ms^{-1}$

Substituting the space-time values of meter and second, we get:

$$C_P = \frac{0.7416198487095662\times10^{43}}{2.4720661623652209\times10^{34}} ms^{-1} = 2.999999999999 \times 10^8 ms^{-1} =$$

c (speed of light in vacuum

Observed data: $2.99792458 \times 10^8 ms^{-1}$.[14]

$\cdot C_P = \frac{1}{STV(JK^{-1})}JK^{-1}$

Substituting the space-time numerical values of joule and Kelvin, we get:

$$C_P = \frac{2.812012715238\times10^{-33}}{2.0\dot{3}\dot{7}\times10^{-10}}JK^{-1} = 1.380442605662 \times 10^{-23}JK^{-1} =$$

k_B(Boltzmann constant).

Observed data: $1.380649 \times 10^{-23}JK^{-1}$.[14]

$\cdot C_P = \frac{1}{STV(mol^{-1})}mol^{-1}$

Substituting the space-time value of mole, we get:

$$C_P = 6.014759519136 \times 10^{23}mol^{-1} = N_A \text{ (Avogadro's constant)}.$$

Observed data: $6.02214076 \times 10^{23}mol^{-1}$.[14]

$\cdot C_P = \frac{1}{STV(JK^{-1}mol^{-1})}JK^{-1}mol^{-1}$

Substituting the space-time values of joule, Kelvin, and mole, we get:

$$C_P = \frac{(2.812012715238\times10^{-33})(6.014759519136\times10^{23})}{2.0\dot{3}\dot{7}\times10^{-10}} JK^{-1}mol^{-1}$$

$= 8.3030303030 JK^{-1}mol^{-1} = R$ (molar gas constant or ideal gas

constant).

Observed data: $8.314462618JK^{-1}JK^{-1}mol^{-1}$.[14]

---Done.

The above theoretical calculation results differ slightly from the observed values. This is because inevitable interference with the measured physical quantity during observation could causes measurement results to deviate from the inherent value of the measured physical quantity. The complete physical constant theorem clearly shows that the above six cornerstone elementary constants discovered in physics are nothing more than member of a vast family of completable physical constants, and are just tip of iceberg of the first category of elementary constants.

7.3.3 Commonly Used Constant Physical Quantities

By the completable constant theorem, some commonly used constant physical quantities can be solved, such as

▪Constant length $L_G = 0.404519917477 \times 10^{-34}m$ & $STV(L_G) \equiv 1$

▪Constant time $t_G = 1.348399724926 \times 10^{-43}s$ & $STV(t_G) \equiv 1$。

▪Constant mass $M_G = 0.5\dot{4} \times 10^{-7}kg$ & $STV(M_G) \equiv 1$

▪Constant temperature $T_G = 0.355617168649 \times 10^{33}K$ & $STV(T_G) \equiv 1$

▪Constant frequency $f_G = 0.741619848709 \times 10^{43}Hz$ & $STV(f_G) \equiv 1$

▪Constant momentum $p_G = 16.\dot{3}\dot{6} \times 10^{0}kgms^{-1}$ & $STV(p_G) \equiv 1$

▪Constant force $N_G = 1.213559762433 \times 10^{44}N$ & $STV(N_G) \equiv 1$

▪Constant acceleration $a_G = 2.224859546128 \times 10^{51}ms^{-2}$ & $STV(a_G) \equiv 1$

▪Constant energy $J_G = 0.4\dot{9}\dot{0} \times 10^{10}J$ & $STV(J_G) \equiv 1$

▪Constant area $s_G = 0.1\dot{6}\dot{3} \times 10^{-68}m^2$ & $STV(S_G) \equiv 1$

- Constant volume $V_G = 0.661941683145 \times 10^{-103} m^3$ & $STV(V_G) \equiv 1$

- Constant current intensity $I_G = 3.304850642904 \times 10^{30} A$

  & $STV(I_G) \equiv 1$

- Constant speed $v_G = c = 3.\dot{0} \times 10^8 ms^{-1}$ & $STV(v_G) \equiv 1$

- Constant entropy $k_B = 1.380442605662 \times 10^{-23} JK^{-1}$

  & $STV(k_B) \equiv 1$

- Constant angular moment $h = 6.619416831457 \times 10^{-34} Js$
  & $STV(h) \equiv 1$

- Constant mass density $\rho_G = 8.24022054121 \times 10^{95} kgm^{-3}$

  & $STV(\rho_G) \equiv 1$

- Constant charge quantity $C_G = 4.456259697815 \times 10^{-13} C$

  & $STV(C_G) \equiv 1$

- Constant magnetic flux $\emptyset_G = 1.485419899271 \times 10^{-21} W_b$

  & $STV(\emptyset_G) \equiv 1$

7.4 Physical Units Equivalence Theorem

Energy conversion factors[1] in physics reflect numerical relationship between some physical units based on some scattered physical formulas. The physical units equivalence theorem summarizes all those numerical relations for all physical units only in one sentence and uses only one formula to achieve the unified solution of to numerical equivalent relationship between any two physical units. This theorem reveals numerical equivalent relationship and equivalent value between any two physical units. The equivalent value between physical units specifies

conversion quantity between corresponding characteristic physical quantities when physical form of matter is transformed.

7.4.1 Statement of Physical Units Equivalence Theorem

$$\left\{ \begin{array}{c} \text{A physical unit } DimA \text{ is equivalent to another physical unit } DimA^* \\ \text{under their equivalent value that is equal to ratio of} \\ \text{spacetime values of these two physical units.} \\ \text{Called such relationship as equivalent relation of physical units.} \\ \text{that is , } DimA = STV\left(\frac{DimA}{DimA^*}\right) DimA^* = P \times DimA^* \\ \text{where, } P = STV\left(\frac{DimA}{DimA^*}\right) - \text{equivalent value of the physical units.} \end{array} \right.$$

$$Eq. 7-6$$

7.4.2 Corollary: "Energy conversion factors" conform to the physical units equivalence theorem.

7.4.3 Calculation Examples

Example 1: Solving numerical equivalent relationship and equivalent value between thermodynamic temperature and unit of current intensity.

By the physical units equivalence theorem this, we get

$$K = \frac{STV(K)}{STV(A)} A = \frac{2.812012715238 \times 10^{-33}}{0.302585535036 \times 10^{-30}} A = 9.293282028268 \times 10^{-3} A \text{。}$$

that is, numerical equivalent relationship between the unit of thermodynamic temperature and the unit of current intensity is $K = 9.293282028268 \times 10^{-3} A$, , and the equivalent value of these two physical units is equal to $9.293282028268 \times 10^{-3}$.

Example 2: Solving the numerical equivalent relationship and equivalent value between unit of mass and unit of energy.

By the theorem, we have

$$kg = \frac{STV(kg)}{STV(J)}J = \frac{1.8333333\times10^7}{2.037037037037\times10^{-10}}J = 9\times10^{16}J。$$

that is, the numerical equivalent relationship between the unit of mass and the unit of energy is $kg = 9\times10^{16}J$, , and the equivalent value of these two physical units is equal to 9×10^{16}.

More calculation results are listed om Table-3 as shown below.

.Table-3 Numerical Equivalent Relationships and Equivalent Values of Seven Physical Units

Equivale-Values $STV(\frac{dimA}{dimA^*}))$	m	s	kg	K	A	mol	J
$m =$	1	0.3333×10^{-8}	1.3484×10^{27}	0.8791×10^{67}	8.1698×10^{64}	0.4110×10^{11}	1.2136×10^{44}
$s =$	2.9999×10^{8}	1	0.4045×10^{36}	0.2637×10^{76}	2.4509×10^{73}	0.1233×10^{20}	0.3640×10^{53}
$kg =$	0.7416×10^{-27}	2.4720×10^{-36}	1	0.6520×10^{40}	6.0589×10^{37}	0.3048×10^{-16}	8.9999×10^{16}
$K =$	1.1377×10^{-67}	3.7923×10^{-76}	1.5341×10^{-40}	1	9.2948×10^{-3}	0.4676×10^{-56}	1.3804×10^{-23}
$A =$	0.1224×10^{-64}	0.4080×10^{-73}	0.1651×10^{-37}	0.1076×10^{3}	1	0.5031×10^{-54}	0.1485×10^{-20}
$mol =$	2.4331×10^{-11}	8.1103×10^{-20}	3.2807×10^{16}	2.1386×10^{56}	1.9877×10^{54}	1	2.9527×10^{33}
$J =$	0.8240×10^{-44}	2.7467×10^{-53}	0.1111×10^{-16}	0.7243×10^{23}	6.7321×10^{20}	0.3386×10^{-33}	1

7.5 Default Theorem

The Default Theorem provides new method for solving physical equa-

tions, which indicates that magnitude of the characteristic physical quantity (the physical quantity to be solved) in any physical equation is equal to product of total space-time value of the equation and relevant constant physical quantity

7.5.1 Statement of Theoretical Value of the Theorem

$$
\left\{
\begin{array}{c}
\text{For any physcial euqiton } F = f(x_i, y_j, z_k), \quad \text{then the solution is :} \\
F = STV[f(y_j, z_k)]A_G = STV[f(y_j, z_k)]|A_G|DimA \\
\text{where, } F - \text{physcial quantity to be solved, ,} \\
x_i - \text{constant factor, , } y_j - \text{default factor, } z_k - \text{numberical facor, } \\
A_G - \text{the relevant constant physical quantity, ,} \\
DimA - \text{physical unit,} \\
STV[f(y_j, z_k)] - \text{taking spacetime value of } f(y_j, z_k).
\end{array}
\right\} \text{Eq. } 7-7
$$

Note: *For physical equations, if the space-time value of a physical quantity equals one, it is called a constant factor, otherwise, called as default factor.*

7.5.2 Physical Meaning of the Theorem

A specific physical process has nature of multidimensional space-time structure, which is formed by all multidimensional space-time structures of various physical quantities involved in the process. Magnitude of physical quantity to be solved (the characteristic physical quantity) in the equation that reflects this process is uniquely stipulated by space-time value of the composite multidimensional space-time structure and the constant physical quantity of the characteristic physical quantity.

7.5.3 Theoretical Value of the Theorem

The Defect Theorem presents a new method for calculating physical

equations, providing a fixed calculation format for physical equations, which facilitates computerized operation for solution of physical equation . The theorem itself is also a specific manifestation of self-consistency and compatibility of the MS units system. When using the theorem to solve a correct physical equation, the results are always consistent with those obtained by traditional calculation methods. This also serves as a physical verification of correctness of space-time configurations, space-time values, and constant physical quantities.

Moreover, this theorem is widely applied in CST Model, especially in mathematical expressions of basic laws and principles of the model.

Section Eight

N-God's Law VII: Principle of Information Being Materialized

8.1 Statement and Expression of the Principle

Natural God dictates that matter originates from the CST process and is formed by condensation of the cosmic holographic image into the most fundamental unit of matter ---the graviton (signed G_i). All other kinds of matter are essentially composed of gravitons and three-dimensional space. This decree is expressed by the Principle of Information Being Materialized, which states:

Under effect of nothingness, all information of completable space-time G_i are materialized and amplified 1.008×10^{93} times to generate

corresponding holographic events commonly constituting a frame of cosmic holographic image $C_{HI}(i)$. This frame of $C_{HI}(i)$ manifests and then immediately condenses into various physical elements physically represented by the original physical quantities $\{A_g(i) = A_G$、$\frac{A_G}{i}$、$\frac{A_G}{i^2}, ... \}$. Subsequently all these physical elements condense and generate i number of gravitons whose masses are equal to the constant mass $M_G = 0.5\dot{4} \times 10^{-7} kg$. All-identical operation of the mirror universe upgrades and reorganizes all i^2 number of $G_i^{\blacksquare}$ to maintain them all-identity. Duration of this process last a constant time $t_G = 1.348399724926 \times 10^{-43} s$.

This principle is mathematically expressed as:

$$\left\{ \begin{array}{c} \text{Condensation Relationship of } G_i^{\blacksquare} \\ G_i = U_n\left\{\left(1 - \frac{i}{1.008\dot{3} \times 10^{93}}\right)|M_G|s_{i,i-1}^{-2} + |M_G|s_{i,i-1}^{-2}\left(\sum_{j=0}^{i-1}|M_G|s_{j,j-1}^{-2}\right)\right\} \to iG_i^{\blacksquare} \\ \text{All} - \text{Identical Relationship of } G_i^{\blacksquare} \\ (U_n)\left(\sum_{j=0}^{i-1}|M_G|s_{j,j-1}^{-2}\right) \to i^2 G_i^{\blacksquare} \\ \text{where, } G_i^{\blacksquare} - \text{graviton, } U_n - \text{unit nothingness,} \\ \sum_{j=0}^{i-1}|M_G|s_{j,j-1}^{-2} - \text{the cosmic information body,} \\ " \to " \text{ said herein consensantion or reorganization and informaiton upgrade,} \\ \text{cosmic quantum numbers } i = 1,2,3, ..., n, ..., 1.008\dot{3} \times 10^{93}, \\ n = 7.7266 \times 10^{60} - \text{constant of the universe today.} \end{array} \right.$$

$$\text{Eq. } 8-1$$

8.2 Inferences of the Principle

▪ This principle indicates that matter is not inherent but is continuously produced as the CST process constantly occurs.

▪The materialized universe is composed of the cosmic body and the cosmic holographic image. The cosmic body is the material world, purely composed of all kinds of matters. Cosmic image is squarely the cosmic holographic image that is a holographic spherical envelope with thickness of constant length and radius equaling to the radius of the universe. This holographic spherical envelope "wraps" the cosmic body and changes rapidly at a constant frequency (approximately 10^{43} Hz). The cosmic image physically represents all the latest states of the cosmic body and condenses into material changes of the cosmic body.

▪Matter is essentially a result produced by cosmic information under effect of nothingness Cosmic information is the most fundamental cause of matter's creation, that is, cosmic information is the cause, and matter is the effect. Information materialization process is completed within a constant time, so this physical process has simultaneity of cause and effect, and it is true from both macroscopic and microscopic perspective.

▪ Human's perceptual knowledge to the cosmic body is based on materialized interface of the cosmic image, and are obtained through sensory organs and material mediums such as electromagnetic fields to forming phenomenal world (observable universe). The phenomenal world only partially reflects the cosmic body. Deeper and more understanding to the cosmic body requires the aid of scientific rationality.

8.3 Production Rate of Matter in the Universe

According to the CST process and the principle of information being materialized, production rate of matter in the universe can be calculated as expressed as:

$$\left\{ \begin{array}{c} \sigma_U(i) \equiv \dfrac{M_G}{t_G} = \dfrac{0.\dot{5}\dot{4} \times 10^{-7} kg}{1.3483\ldots \times 10^{-43} s} \\ = 4.045199174779452\ldots \times 10^{35} kg s^{-1} \\ where, \sigma_U(i) - production\ rate\ of\ matter\ in\ the\ universe, \\ M_G - constant\ mass 、 t_G - constant\ time. \end{array} \right\} \quad Eq.\ 8-2$$

This formula is independent of the cosmic quantum number, indicating that the production rate of matter in the universe is constant and does not change with the evolution of the universe.

As per Eq. 8-2, it can be inferred that total masses of the universe are equal to product of the production rate of matter and age of the universe.

$$\left\{ \begin{array}{c} M_U(i) = \sigma_U(i) \times t_U(i) = i \times M_G \\ where, M_U(i) - total\ masses\ of\ the\ universe, \\ t_U(i) - age\ of\ the\ universe, M_G - constant\ mass \\ \sigma_U(i) - production\ rate\ of\ matter\ in\ the\ universe, \\ cosmic\ quantum\ numbers\ i = 1,2,3,\ldots,n,\ldots,1.008\dot{3} \times 10^{93}, \\ n = 7.7266 \times 10^{60} - constant\ of\ the\ universe\ today. \end{array} \right\} \quad Eq.\ 8-3$$

8.4 Philosophical Implications

Based on physical mechanism of matter production, mass theorem (see in Section Nineteen), hyperspatial correlation of objects (see in Section Fourteen), and holographic events (see in Section Seventeen), it can be inferred that:

▪All things happened in the past have not disappeared but have condensed into matter or are curled up within matter.

▪All changes of matters are caused by all things happening in the universe.

▪All history condense into reality.

8.5 Classification of Existences

UPHY divides existences into two categories: non-materialized existences and materialized existences.

▪Non-materialized existences include nothingness, cosmic information (initial information, basic information, composite information, unit information, etc.), and the cosmic information body.

▪Materialized existences include but are not limited to the completable spacetime, holographic events, cosmic holographic images, the mirror universe, matter (graviton, clumped matter, and vacuum), physical elements, multidimensional space-time structure, the cosmic body (material world), the materialized universe (the cosmic body + the cosmic holographic image).

Under this classification, it is known that matter is not the only reality) in the universe.

Section Nine

N-God's Law VIII - The Most Fundamental Unit of Matter

---Graviton ($G_i^{\blacksquare}$)

Natural God establishes graviton as the most fundamental and the only Basic unit of matter, and also regulates that all objects and particles are

essentially consist of gravitons and three-dimensional space.

The graviton, signed $G_i^{\blacksquare}$ is a fundamental particle composed of a point-like rigid body and three-dimensional space, that is, the point-like rigid body moves at the constant velocity within the constant volume to form the graviton. This point-like rigid body is referred to as $G_i^{\blacksquare}$'rigid body, and it is an absolutely rigid substance condensed from the cosmic holographic image. The "G" in the symbol of $G_i^{\blacksquare}$ represents first letter of "Graviton," , indicating the graviton. The subscript "i" represents the cosmic quantum number, reflecting graviton's continuous evolution along with increment of the cosmic quantum number The "$\blacksquare$" indicates that the graviton's volume is constant, and is a cube whose side length is the constant length.

9.1 Original Physical Quantities and Expression of $G_i^{\blacksquare}$

9.1.1 Original Physical Quantities

Original physical quantities are those possessed by the $G_i^{\blacksquare}$, and their values are jointly determined by constant physical quantities and the cosmic quantum numbers.

$$\left.\begin{cases} \qquad A_g(i) = A_G、\ \dfrac{A_G}{i}、\ \dfrac{A_G}{i^2}、\ \dots \\ \quad where, A_g(i) - original\ physical\ quantities, \\ \qquad A_G - constant\ physical\ quantities, \\ cosmic\ quantum\ numbers\ i = 1,2,3,\dots,n,\dots,1.008\dot{3} \times 10^{93}; \\ \qquad n = .7266 \times 10^{60} - constant\ of\ the\ universe\ today. \end{cases}\right\} Eq.\,9-1$$

In the expression, $\dfrac{A_G}{i}$ is a set of solutions obtained by the general equation of the universe $A_U(i) = \beta_A i^d A_G$ under condition of $\beta_A =$

1、 $d = -1$. Based on this solutions and analysis , $\frac{A_G}{i^2}$ can be obtained and confirmed . The ellipsis "..." in the expression indicates that existence of $\frac{A_G}{i^3}$、 $\frac{A_G}{i^4}$、 $\frac{A_G}{i^5}$ are not excluded.

9.1.2 Expression for $G_i^{\blacksquare}$

$$
\left.
\begin{array}{c}
G_i^{\blacksquare} = \{A_g(i) = A_G、 \frac{A_G}{i}、 \frac{A_G}{i^2}、 ...\} \\
\text{where,} \, G_i^{\blacksquare} - \text{the graviton} \\
\{A_g(i) = A_G、 \frac{A_G}{i}、 \frac{A_G}{i^2}、 ...\} - \text{a finite set of} \\
\text{original physical quantities,} \\
A_g(i) - original \; physical \; quantities, \\
A_G - constant \; physcial \; quantities, \\
cosmic \; quantum \; numbers \; i = 1,2,3,...,n,...,1.0083 \times 10^{93}, \\
n = 7.7266 \times 10^{60} - \text{constant of the universe today.}
\end{array}
\right\} Eq. 9-2
$$

By Eq.9-2, we can get expression for the graviton at present.

$$
\left.
\begin{array}{c}
G_n^{\blacksquare} = \{A_g(n) = A_G、 \frac{A_G}{n}、 \frac{A_G}{n^2}、 ...\} \\
\text{where,} \, G_n^{\blacksquare} - \text{Today's graviton today,} \\
n = .7266 \times 10^{60} - constant \; of \; the \; universe \; today.
\end{array}
\right\} Eq. 9-3
$$

Since the constant of the universe today remains unchanged for the next 42,000 years, so the $G_n^{\blacksquare}$ is relatively stable.

9.2 Evolution of $G_i^{\blacksquare}$

Most of original physical quantities of the $G_i^{\blacksquare}$ vary along with evolution of the universe, while some of them remain constant. The $G_i^{\blacksquare}$ evolves and becomes smaller and smaller as the universe evolves, and most of its original physical quantities show an inverse relationship with the cosmic quantum number. Table-4 provides values of nine original physical quantities for each of four quantum states of evolution of the universe

Table-4 36 Data of $G_i^\blacksquare$'s Dynamic Evolution

Quantum state→ Physical quantities↓	1 Initial state	1.3349×10^{45} Three minutes state	7.7266×10^{60} Today's state	$1.008\dot{3} \times 10^{93}$ Final state
$G_i^\blacksquare$time $t_g(i)$	$t_G = 1.3483$ $\times 10^{-43}s$	1.0101 $\times 10^{-88}s$	0.1745 $\times 10^{-103}s$	$\dddot{t}_G = 1.3372$ $\times 10^{-136}s$
$G_i^\blacksquare$radius $R_g(i)$	$L_G = 0.4045$ $\times 10^{-34}m$	0.3030 $\times 10^{-79}m$	0.5235 $\times 10^{-95}m$	$\dddot{L}_G = 0.4011$ $\times 10^{-127}m$
$G_i^\blacksquare$volume $V_g(i)$	$V_G = 0.6619$ $\times 10^{-103}m^3$	$V_G = 0.6619$ $\times 10^{-103}m^3$	$V_G = 0.6619$ $\times 10^{-103}m^3$	$V_G = 0.6619$ $\times 10^{-103}m^3$
$G_i^\blacksquare$mass $M_g(i)$	$M_G = 0.\dot{5}\dot{4}$ $\times 10^{-7}kg$	0.4086 $\times 10^{-52}kg$	0.7059 $\times 10^{-68}kg$	$\dddot{M}_G = 0.5409$ $\times 10^{-100}kg$
$G_i^\blacksquare$energy $e_g(i)$	$J_G = 0.4909$ $\times 10^{10}J$	0.3677 $\times 10^{-35}J$	0.6353 $\times 10^{-51}J$	$\dddot{J}_G = 0.4868$ $\times 10^{-83}J$
$G_i^\blacksquare$ temperature $T_g(i)$	$T_G = 0.3556$ $\times 10^{33}K$	0.2663 $\times 10^{-12}K$	0.4602 $\times 10^{-28}K$	$\dddot{T}_G = 0.3526$ $\times 10^{-60}K$ Absolute zero
$G_i^\blacksquare$momen-tum $\|p(i)\|$	$P_G = 16.3636$ $kgms^{-1}$	$1,2258$ $\times 10^{-44}\,kgms^{-1}$	$2,1178$ $\times 10^{-60}\,kgms^{-1}$	$\dddot{P}_G = 1.6228$ $\times 10^{-92}kgms^{-1}$
$G_i^\blacksquare$orbital angular moment $\|L_{gR}(i)\|$	$h = 6.6194$ $\times 10^{-34}\,Js$	$h = 6.6194$ $\times 10^{-34}\,Js$	$h = 6.6194$ $\times 10^{-34}\,Js$	$h = 6.6194$ $\times 10^{-34}\,Js$
$G_i^\blacksquare$mass density $\rho_g(i)$	$\rho_G = 8.2402$ $\times 10^{95}kgm^{-3}$	6.1729 $\times 10^{50}\,kgm^{-3}$	1.0664 $\times 10^{35}\,kgm^{-3}$	$\dddot{\rho}_G = 8.1721$ $\times 10^2\,kgm^{-3}$

From the calculation results in Table 4, it's clear that as the universe evolves, values of physical quantities of the $G_i^\blacksquare$ decrease from constant physical quantities at initial quantum state all the way up to the mirror quantum at the final quantum state.

9.3 Primary Properties of $G_i^\blacksquare$

9.3.1 $G_i^\blacksquare$ is the most fundamental unit of matter, the smallest matter in the universe, and is indivisible. The $G_i^\blacksquare$ is neither a fermion nor a boson;. All objects and elementary particles are essentially composed of $G_i^\blacksquare$ and

three-dimensional space.

9.3.2 The volume of $G_i^{\blacksquare}$ is constant and equal to the constant volume

$V_G = 0.6619 \times 10^{-103} m^3$

9.3.3 The rigid body of $G_i^{\blacksquare}$ tends to become smaller and smaller as the

universe evolves.

9.3.4 $G_i^{\blacksquare}$ is always the substance with the greatest mass density of $\rho_g(i) =$

$\frac{\rho_G}{i}$, and $\rho_g(n) = 1.0664 \times 10^{35} kgm^{-3}$ at present.

9.3.5 The total number of $G_i^{\blacksquare}$ in the universe is equal to square of the

cosmic quantum number.

$$\left.\begin{cases} N_{gU}(i) = i^2, \\ N_{gU}(n) = n^2 = (7.7266 \times 10^{60})^2 = 5.9700 \times 10^{121} \\ \text{where, } N_{gU}(i) - \text{total numbers of } G_i^{\blacksquare} \text{ in the universe,} \\ N_{gU}(n) - \text{total numbvers of } G_n^{\blacksquare} \text{ in the universe today,} \\ cosmic\ quantum\ numbers\ i = 1,2,3,\dots,n,\dots,1.0083 \times 10^{93}; \\ n = 7.7266 \times 10^{60} - \text{constant of the universe today.} \end{cases}\right\} Eq.\ 9-4$$

9.3.6 $G_i^{\blacksquare}$ is condensed from the cosmic holographic image.

9.3.7 All of $G_i^{\blacksquare}$ remain all-identical due to the all-identical operation of

the mirror universe, meaning that all of $G_i^{\blacksquare}$ are a class of all-identical

particles.

9.3.8 $G_i^{\blacksquare}$ is material basis for generation of universal gravitation and

absolute force (universal repulsion) .See in Section Twenty.

9.3.9 The mirror universe all-identical operation causes $G_i^{\blacksquare}$ to instantly

form QSG occupied state. See in Section thirty Two.

9.3.10 $G_i^{\blacksquare}$ and three-dimensional space compose the vacuum and clumped

matter. See in Section Twenty Nine.

9.3.11 Orbital angular moment of $G_i^{\blacksquare}$ constantly equates Planck constant.

9.4 Solutions to 16 Physical Parameters of $G_i^{\blacksquare}$

$$
\begin{cases}
No.1\ G_i^{\blacksquare}\ radius\ R_g(i) = \dfrac{L_G}{i}, \ R_g(n) = \dfrac{L_G}{n} = 0.5235 \times 10^{-95} m \\[2mm]
No.2\ G_i^{\blacksquare}\ time\ t_g(i) = \dfrac{t_G}{i}, \ t_g(n) = \dfrac{t_G}{n} = 0.1745 \times 10^{-103} s \\[2mm]
No.3\ G_i^{\blacksquare}\ mass\ M_g(i) = \dfrac{M_G}{i}, \ M_g(n) = \dfrac{M_G}{n} = 0.7059 \times 10^{-68} kg \\[2mm]
No.4\ G_i^{\blacksquare}\ energy\ e_g(i) = \dfrac{J_G}{i}, \ e_g(n) = \dfrac{J_G}{n} = 0.6353 \times 10^{-51} J \\[2mm]
No.5\ G_i^{\blacksquare}\ momentum\ \|p_g(i)\| = \dfrac{p_G}{i}, \ \|p_g(n)\| = \dfrac{p_G}{n} = 0.2117 \times 10^{-59} kgms^{-1} \\[2mm]
No.6\ G_i^{\blacksquare}\ volume\ V_g(i) = V_g(n) \equiv V_G = 0.6619 \times 10^{-103} m^3 \\[2mm]
No.7\ G_i^{\blacksquare}\ frequency\ f_g(i) = \dfrac{f_G}{i}, \ f_g(n) = \dfrac{f_G}{n} = 0.9598 \times 10^{-18} Hz \\[2mm]
No.8\ G_i^{\blacksquare}\ acceleration\ \|a_g(i)\| = \dfrac{a_G}{i}, \ \|a_g(n)\| = \dfrac{a_G}{n} = 0.2879 \times 10^{-9} ms^{-2} \\[2mm]
No.9\ G_i^{\blacksquare}\ mass\ density\ \rho_g(i) = \dfrac{\rho_G}{i}, \ \rho_g(n) = \dfrac{\rho_G}{n} = 1.0664 \times 10^{35} kgm^{-3} \\[2mm]
No.10\ The\ first\ G_i^{\blacksquare}\ force\ \|F_{g1}(i)\| = \dfrac{N_G}{i}, \ \|F_{g1}(n)\| = \dfrac{N_G}{n} == 0.1570 \times 10^{-16} N \\[2mm]
No.11\ The\ second\ G_i^{\blacksquare}\ force\ \|F_{g2}(i)\| = \dfrac{N_G}{i^2}, \ \|F_{g2}(n)\| = \dfrac{N_G}{n^2} = 0.2032 \times 10^{-77} N \\[2mm]
No.12\ G_i^{\blacksquare}\ temperature\ T_g(i) = \dfrac{T_G}{i}, \ T_g(n) = \dfrac{T_G}{n} = 0.4602 \times 10^{-28} K \\[2mm]
No.13\ G_i^{\blacksquare}\ volicity\ \|v_g(i)\| = \|v_g(n)\| \equiv v_G = 3 \times 10^8 ms^{-1} \\[2mm]
No.14\ G_i^{\blacksquare}\ orbital\ angular\ moment\ \|L_{gR}(i)\| = M_g(i)v_G R_U(i) \equiv h \\[2mm]
No.15\ G_i^{\blacksquare}\ spin\ angular\ moment\ \|L_{gS}(i)\| = \dfrac{h}{i}, \ \|L_{gS}(n)\| = \dfrac{h}{n} = 0.8567 \times 10^{-94} Js \\[2mm]
No.16\ G_i^{\blacksquare}\ current\ intensity\ I_g(i) = \dfrac{I_G}{i}, \ 有 I_g(n) = \dfrac{I_G}{n} = 0.4277 \times 10^{-30} A \\[2mm]
\dots\dots \\[2mm]
where,\quad A_G = \dfrac{1}{STV(DimA)} DimA = \dfrac{1}{STV(Bm^a s^{-b})} DimA \\[2mm]
h - Planck\ constant, R_U(i) - radius\ of\ the\ univberse, and\ R_U(i) = i \times L_G, \\[2mm]
cosmic\ quantum\ numbers\ i = 1,2,3,\dots,n,\dots,1.0083 \times 10^{93}; \\[2mm]
n = 7.7266 \times 10^{60} - constnat\ of\ the\ universe\ today.
\end{cases}
$$

Eq.9-5

Based on the graviton expression and united solution of the physical quantities of the universe, we can obtain general solution and today's solution of 16 physical parameters of $G_i^{\blacksquare}$ as shown in Eq.9-5.

9.5 Twenty-one Items of Physical Correlations of $G_i^{\blacksquare}$

$$
\left\{
\begin{array}{c}
No.01 \ \textit{Sum of masses of all } G_i^{\blacksquare} \textit{ are equal to total masses of the universe.} \\
No.02 \ \textit{Sum of radius of all } G_i^{\blacksquare} \textit{ are equal to radius of the universe.} \\
No.03 \ \textit{Sum of times of } G_i^{\blacksquare} \textit{ are equal to age of the universe.} \\
No.04 \ G_i^{\blacksquare} \textit{ mass density and the cosmic quantum numberse jointly} \\
\textit{determine average mass density of the universe.} \\
No.05 \ G_i^{\blacksquare} \textit{ temperatrue and the cosmic quantum numbers jointly} \\
\textit{determine the temperatrue of cosmic background radiation.} \\
No.06 \ G_i^{\blacksquare} \textit{ frequency and the cosmic quantum numbers jointly} \\
\textit{determine peak frequecy in spectrum of cosmic background radiation.} \\
No.07 \ G_i^{\blacksquare} \textit{ energy and the cosmic quantum numbers jointly determine} \\
\textit{average energiy of photos in the cosmic background radiation.} \\
No.08 \ \textit{Sum of energies of all } G_i^{\blacksquare} \textit{ are equal to total energies of the universe.} \\
No.09 \ \textit{Sum of momentums of all } G_i^{\blacksquare} \textit{ are equal to} \\
\textit{total momentum norms of the universe。} \\
No.10 \ \textit{Sum of } G_i^{\blacksquare} \textit{ orbital angular moment are equal to} \\
\textit{total orbital angular moment norms of the universe .} \\
No.11 \ G_i^{\blacksquare} \textit{ spin angular moment and the cosmic quantum numbers jointly} \\
\textit{determinetotal spin angular moment norms of the universe.} \\
No.12 \ \textit{Product of } G_i^{\blacksquare} \textit{ energy and age of the universe is constantly equal to} \\
\textit{Planck constant.} \\
No.13 \ \textit{Ratio of } G_i^{\blacksquare} \textit{ energy and cosmic dilation constant is constantly equal to} \\
\textit{Planck constant.} \\
No.14 \ \textit{Ratio of } G_i^{\blacksquare} \textit{ energy and } G_i^{\blacksquare} \textit{ frequency is constantly equal to} \\
\textit{Planck constant.} \\
No.15 \ G_i^{\blacksquare} \textit{ orbital angular moment is constantly euqal to} \\
\textit{Planck constant.} \\
No.16 \ G_i^{\blacksquare} \textit{ wavelength is always equal to radius of the universe.} \\
No.17 \ \textit{Vibration period of } G_i^{\blacksquare} \textit{ is always equal to age of the universe.} \\
No.18 \ \textit{Ratio of } G_i^{\blacksquare} \textit{ enegy and } G_i^{\blacksquare} \textit{ temperature is constantly equal to} \\
\textit{Boltzmamm constant.} \\
No.19 \ \textit{Ratio of cube of } G_i^{\blacksquare} \textit{ radius and product of } G_i^{\blacksquare} \textit{mass and square of} G_i^{\blacksquare} \textit{ time} \\
\textit{is constantly equal to gravitational constant.} \\
No.20 \ \textit{Ratio of } G_i^{\blacksquare} \textit{radius and } G_i^{\blacksquare} \textit{time is constantly equal to speed of light constant.} \\
No.21 \ \textit{Product of } G_i^{\blacksquare} \textit{energyand } G_i^{\blacksquare} \textit{time is equal to} \\
\textit{ratio of Planck constant and square of the cosmic quantum numbers.}
\end{array}
\right.
$$

Eq. $9 - 6$

Based on the expression of the graviton, the general solution of the 16 physical parameters of the graviton, and the unified solution to physical quantities of the universe, 21 items of physical correlations of the graviton can be obtained as shown in Eq.9-6.. The proof process for all these 21

items physical correlations can be seen at .

9.6 $G_i^{\blacksquare}$'s Equation

$G_i^{\blacksquare}$'s equation is expressional form of N-God Third Equation (UPHY's Second Law) in the case of original physical quantities $A_g(i) = \frac{A_G}{i}$.

$$
\left\{
\begin{array}{c}
A_U(i) = \beta_A i^{d+1} A_g(i) \\[2mm]
A_{UP}(i) = \beta_A i^d STV\left(\sum_{j=0}^{i-1} |M_G| s_{j,j-1}^{-2} \right) A_g(i) \\[2mm]
A_U(i) = 1.008\dot{3} \times 10^{93} \times A_{UP}(i) \\
\text{where, , } A_U(i) - \text{general physical quantities,} \\
A_{UP}(i) - \text{mirror physical quantities,} \\
\text{, } A_g(i) - \text{original physical quantities,} \\
d \text{ is an integer and its value takes } a-b \text{ under the rule of} \\
\text{spacetime configuration } STC(DimA) = Bm^a s^{-b}, \\
\text{when } a - b = 0, \pm 1, d \text{ takes } 0, 1, -1 \text{ respectively for each.} \\
\beta_A - \text{an coefficient, taking 1 or a specific value,} \\
\sum_{j=0}^{i-1} |M_G| s_{j,j-1}^{-2} - \text{the mirror universe,} \\
\text{cosmic quantum number } i = 1,2,3,\dots,n,\dots,1.008\dot{3} \times 10^{93}; \\
n = 7.7266 \times 10^{60} - \text{constant of the universe today.}
\end{array}
\right\} \quad Eq.\,9-7
$$

The $G_i^{\blacksquare}$'s equation is composed of the general equation of the universe , the mirror universe equation, and the nothingness act equation, which are functional equation with the cosmic quantum number as single independent variable, ondition for the equation to hold is $A_g(i) = \frac{A_G}{i}$.

Based on the equation and physical parameters of $G_i^{\blacksquare}$, we can uniformly calculate some of values of general physical quantities of the universe

9.6.1 Total masses of the Universe today

Space-time configuration of the mass unit is $STC(kg) = |G|m^3 s^{-2}$, then , $a - b = 3 - 2 = 1$. According to the rule, d can takes 1 and $\beta_A = 1$. By the $G_i^{\blacksquare}$'s equation,, we get $M_U(n) = \beta_A n^{d+1} M_g(n) = n^2 M_g(n)$
$= (7.7266 \times 10^{60})^2 (0.7059 \times 10^{-68} kg) = 4.2142 \times 10^{53} kg$ 。

Astronomical estimation: $10^{53} kg$?[2]

9.6.2 Radius of the Universe today

Space-time configuration of the length unit is $STC(m) = m^1 s^0$, then $a - b = 3 - 2 = 1$. According to the rule, d can takes 1 and $\beta_A = 1$. By the $G_i^{\blacksquare}$'s equation,, we get
$\beta_A n^{d+1} R_g(n) = n^2 R_g(n)$
$= (7.7266 \times 10^{60})^2 (0.5235 \times 10^{-95} m) = 3.1253 \times 10^{26} m.$

Astronomical estimation: $10^{26} m$? [2]

9.6.3 Age of the Universe today

Space-time configuration of the time unit is $STC(s) = m^0 s^1$, then $a - b = 0 - (-1) = 1$. According to the rule, d can takes 1 and $\beta_A = 1$. By the $G_i^{\blacksquare}$'s equation,, we get
$t_U(n) = \beta_A n^{d+1} t_g(n) = n^2 t_g(n)$
$= (7.7266 \times 10^{60})^2 (0.1745 \times 10^{-103} s)$
$= 10.4186 \times 10^{17} s = 3.3034 \times 10^{10} years$ (abt.33 billion years）.

Astronomical estimation: The Hubble constant is between $48 \sim 71 kms^{-1} Mpc^{-1}$[2]. If taking $71 kms^{-1} Mpc^{-1}$, , calculated result for age of the universe is $1.38 \times 10^{10} years$ (abt.13.8 billion years).

Note: Age of the universe today can also be calculated as 33 billion

years based on cosmic expansion constant $Z_C(n) = 29.617 kms^{-1} Mpc^{-1}$

(See in Section Forty Nine)

9.6.4 Average mass density of the Universe today

Space-time configuration of the mass density unit is $STC(kgm^{-3}) = |G|m^0s^{-2}$, then $a - b = 0 - 2 = -2$. According to the rule, d should takes -2,. Since geometric shape of total spatial volume of the universe is a sphere with radius of the universe as the spherical radius, so $\beta_A = \frac{3}{4\pi}$.

By the $G_i^{\blacksquare}$'s equation,, we get

$$\rho_U(n) = \beta_A n^{d+1} \rho_g(n) = \frac{3}{4\pi} n^{-1} \rho_g(n)$$

$$= \frac{3}{4\pi} \frac{1.0664 \times 10^{35} kgm^{-3}}{7.7266 \times 10^{60}} = 3.2949 \times 10^{-27} kgm^{-3}$$

Astronomical estimation: $10^{-27} kgm^{-3}$? [2]

Section Ten

N-God's Law IX - Ten-Dimensional Space-Time

N-God specifies multidimensional space-time structure (expressed by STS hereinafter) of the cosmic body , that is 10 dimensional space-time structure consisting of 5 dimensional spaces and 5 dimensional times.

Matter is materialized existence generated by condensation from all various physical elements, and the materialized universe is consists of the cosmic body (material world) and the cosmic holographic image. All physical elements have attribute of multidimensional space-time structure, thereby endowing the materialized universe to have property of 10

dimensional space-time consisting of 5 dimensional spaces and 5 dimensional times. Physical elements are physically represented by physical quantities, while any physical quantity is certain amount of unit physical quantity. Unit physical quantities are defined as

$$\left\{ \begin{array}{c} To\ define\ physcial\ realities\ possessing\ attributes\ of\ STS \\ \left\{ \begin{array}{c} STC(DimA) = Bm^a s^{-b} \\ STV(DimA) = B \times STV(m^a) \times STV(s^{-b}) \\ A_G = \dfrac{1}{STV(DimA)}DimA = \dfrac{1}{STV(Bm^a s^{-b})}DimA \end{array} \right\} \\ as\ unitphyscial\ quantities, signed\ by\ DimA. \\ where,\quad STC - spacetime\ configuration, \\ STV - spacetime\ value, \\ A_G - constant\ physcial\ quantity, \\ a, b\ are\ integers\ and\ a, b = 0, \pm 1, \pm 2, \pm 3, \pm 4, \pm 5. \\ B\ is\ cofficient\ and\ B \geq |G| = 6.6745786383860968 \times 10^{-11}, \\ m - unit\ of\ one\ dimensional\ space\ (length\ unit), \\ s - unit\ of\ one\ dimensional\ time\ (time\ unit), \\ STV(m) = 2.4720661623652209 \times 10^{34}, \\ STV(s) = 0.7416198487095662 \times 10^{43}. \end{array} \right\} Eq.\,10-1$$

Although physical meaning of the 4th dimensional space and the 5th dimensional space, the 2nd dimensional time, the 3rd dimensional time, the 4th dimensional time and the 5th dimensional time themselves are currently unknown,, however those physical properties of STSs constituted by them are objective and well-known to us. For example,

(1) We do not know the physical meaning of the 2nd dimensional time s^2 itself in the space-time configuration $|G|m^3 s^{-2} = |G|\dfrac{m^3}{s^2}$, but we know that of the 3rd dimensional space m^3. Now we know that physical characteristic of the STS $\left\{ \begin{array}{c} STC(kg) = |G|m^3 s^{-2} \\ STV(kg) = 1.8\dot{3} \times 10^7 \\ M_G = 0.\dot{5}\dot{4} \times 10^{-7} kg \end{array} \right\}$ is the unit mass (kilogram).

(2) We do not know physical meaning of the 5th dimensional space m^5 and the 4th dimensional time s^4 themselves in the space-time configuration $|G|m^5s^{-4} = |G|\frac{m^5}{s^4}$, but now we know that physical characteristic of the STS $\begin{cases} STC(J) = |G|m^5s^{-4} \\ STV(J) = 2.\dot{0}3\dot{7} \times 10^{-10} \\ J_G = 0.4\dot{9}\dot{0} \times 10^{10}J \end{cases}$ is the unit energy (Joule).

(3) We do not know physical meaning of the 4th dimensional space m^4 and the 4th dimensional time s^4 themselves in the space-time configuration $|G|m^4s^{-4} = |G|\frac{m^4}{s^4}$, , but now we know that physical characteristic of the STS $\begin{cases} STC(N) = |G|m^4s^{-4} \\ STV(N) = 0.8240 \times 10^{-44} \\ N_G = 1.2136 \times 10^{44}N \end{cases}$ is the unit force (Newton);

(4) We do not know physical meaning of the 5th dimensional time s^5 itself but know that of the 3rd dimensional space in the space-time configuration $|G|m^3s^{-5} = |G|\frac{m^3}{s^5}$. Now we know that physical characteristic of the STS $\begin{cases} STC(Wm^{-2}) = |G|m^3s^{-5} \\ STV(Wm^{-2}) = 4.4946 \times 10^{-122} \\ (Wm^{-2})_G = 0.2225 \times 10^{122}Wm^{-2} \end{cases}$ is the unit radiant flux density.

(5) We do not know physical meaning of the 3rd dimensional time s^3 itself but know that of the 3rd i=dimensional space m^3 in the space-time configuration $\sqrt{|G|}m^3s^{-3} = \sqrt{|G|}\frac{m^3}{s^3}$, . Now we know that physical characteristic of the STS $\begin{cases} STC(A) = \sqrt{|G|}m^3s^{-3} \\ TV(A) = 0.3025 \times 10^{-30} \\ I_G = 3.3048 \times 10^{30}A \end{cases}$ is the unit current intensity (Ampere).

(6) We do not know physical meaning of the 5th dimensional space m^5 and the 3th dimensional time s^3 themselves in the space-time configuration

$\sqrt{|G|}m^5s^{-3} = \sqrt{|G|}\frac{m^5}{s^3}$, but now we know that physical characteristic of

the STS $\begin{cases} STC(JT^{-1}) = \sqrt{|G|}m^5s^{-3} \\ STC(JT^{-1}) = 0.1849 \times 10^{39} \\ m_G = 5.4079 \times 10^{-39}JT^{-1} \end{cases}$ is the unit magnetic moment.

(7) We know physical meaning of the 3rd dimensional space m^3 , but do

not know that of of the 2nd dimensional time s^2 itself in the space-time

configuration $\sqrt{|G|}m^3s^{-2} = \sqrt{|G|}\frac{m^3}{s^2}$. Now we know that physical

characteristic of the STS $\begin{cases} STC(C) = \sqrt{|G|}m^3s^{-2} \\ STV(C) = 0.2244 \times 10^{13} \\ C_G = 4.4562 \times 10^{-13}C \end{cases}$ is the unit electric charge

(Coulomb).

(8) We know physical meaning of the 2nd dimensional space m^2 but do not

know that of 3rd dimensional time s^3 itself in the space-time configuration

$\sqrt{|G|}m^2s^{-3} = \sqrt{|G|}\frac{m^2}{s^3}$. Now we know that physical characteristic of the

STS $\begin{cases} STC(Am^{-1}) = \sqrt{|G|}m^2s^{-3} \\ STV(Am^{-1}) = 0.1224 \times 10^{-64} \\ (Am^{-1})_G = 8.1700 \times 10^{64}Am^{-1} \end{cases}$ is the unit magnetic field strength;

(9) We do not know physical meaning of the 4th dimensional space m^4 and

the 4th dimensional time s^4 themselves in the space-time configuration

$\beta m^4s^{-4} = \beta\frac{m^4}{s^4}$. Now we know that $\beta = \frac{a^{-1}}{|N_A|\times10^{-23}} = 22.7773$ and

physical characteristic of the STS $\begin{cases} STC(K) = \beta m^4s^{-4} \\ STV(K) = 2.8120 \times 10^{-33} \\ T_G = 0.3556 \times 10^{33}K \end{cases}$ is the unit

thermodynamic temperature (Kelvin).

(1)] We do not know physical meaning of the 5th dimensional space m^5

and the 5th dimensional time s^5 themselves in the space-time configuration

$|G|m^5s^{-5} = |G|\frac{m^5}{s^5}$. Now we know that physical characteristic of the STS

$$\begin{cases} STC(W) = |G|m^5 s^{-5} \\ STV(W) = 0.2745 \times 10^{-52} \\ W_G = 3.6406 \times 10^{52} W \end{cases} \text{ is the unit power (Watt).}$$

The universe possesses ten-dimensional space-time consisting of 5 spatial dimensions and 5 temporal dimensions, it is not an assumption but a substantiated physical recognition grounded in those relationships of physical quantities described in the SI units system, elementary physical constants as well as the unified solution to physical quantities of the universe. The evidences for 10-dimensional space-time include but are not limited to:

▪The Complete Physical Constant Theorem, the Physical Unit Equivalence Theorem, and the Defect Theorem commonly prove correctness of the space-time configurations and space-time values of physical units. Spacetime configuration $STC(DimA) = Bm^a s^{-b}$ indicates that physical quantities universally have physical attributes of multidimensional spaces m^a and multidimensional times s^{-b}, where $a, b = 0,1,2,3,4,5$.

As stated in the MS unit system, the physical basis of space-time configuration and space-time value are those elementary physical constants and the SI symbol relationship of all physical units whose objectivity have been repeatedly verified by physical theories and experiments. Certainly multidimensional space-time attributes of physical quantities expressed by space-time configuration and space-time value are of objectivity.

▪The unified solution to physical quantities of the universe indicates that

values of them are related to the difference between spatial dimensions and temporal dimensions of these physical quantities ($d = a - b$) , and theoretical calculation results of these physical quantities are consistent with corresponding astronomical observation or related physical experiment results. This constitutes an empirical basis for physical quantities possessing attributes of multidimensional space-time structure,

▪The mass-energy equation confirms the mass theorem (see in Section Nineteen), while the mass theorem to hold is base on hyper-spatially radiation of the $G_i^{\blacksquare}$ flow (see in Section Twelve), and caused by all-identical operation of the mirror universe (see in Section Eleven) which is performed along a path in 4th dimensional space or 5th dimensional space, but cannot performs in three-dimensional space. This also constitutes a physical evidence for 4th dimensional space or 5th dimensional space.

▪The elementary charge and CMB physical property constitute empirical evidence for 10-dimensional spacetime. Generation mechanism of the elementary charge described in Section Fifty Two and its calculation results depend on 10 dimensions of space-time. The CMB photon 's average energy described in Section Fifty relies on 10 dimensions of space-time, and the CMB spectral peak wavelength relies on 5 spatial dimensions

Section Eleven

N-God's Law X: All-identical Operation of the Mirror Universe

Nature God stipulates all-identity nature of gravitons and instantaneous characteristics of graviton occupancy states (QSG occupied states), and realizes all these characteristics through the All-identical Operations of the Mirror Universe.

The mirror universe , with its holographic nature and hyperspace velocity $v_{ss}(i)$ and using i numbers of $G_i^\blacksquare$ generated by ith CST as standard, upgrades information of existing $(i$ -1$)^2$ numbers of $G_{i-1}^\blacksquare$ and reorganizes them all. Information upgrading ensures that all of i^2 numbers of $G_i^\blacksquare$ possess the same information. graviton reorganizing transforms existing $(i$ -1$)^2$ numbers of $G_{i-1}^\blacksquare$ into i^2 -i number of $G_i^\blacksquare$, so that the i^2 numbers of $G_i^\blacksquare$ could maintain identical physical properties, and make them reform their QSG occupancy states in the universe. This process lasts a constant, called as all-identical operation of the mirror universe is , expressed as shown in Eq.11-1.

$$\left\{ \begin{array}{c} (U_n)\left(\sum_{j=0}^{i-1} |M_G| s_{j,j-1}^{-2} \right) \to i^2 G_i^\blacksquare \\ \sum_{j=0}^{i-1} |M_G| s_{j,j-1}^{-2} - the\ cosmic\ information\ body, \\ "\to "said\ information\ upgrade\ and\ reorganization\ of\ gravitons, \\ G_i^\blacksquare - graviton, U_n - unit\ nothingness, \\ cosmic\ quantum\ numbers\ i = 1,2,3,\dots,n,\dots,1.008\dot{3} \times 10^{93}, \\ n = 7.7266 \times 10^{60} - constant\ of\ the\ universe\ today. \end{array} \right\}$$

$$Eq.\ 11-1$$

The mirror universe, with its hyperspatial velocity, completes the "visit" (information upgrade and reorganization of gravitons) all the i^2

numbers of $G_i^{\blacksquare}$ one by one along a specific path in a constant time. This path is a straight line consisting of i^2 numbers of $G_i^{\blacksquare}$' radius with its length squarely equaling to radius of the universe $i^2 R_g(i) = iL_G = R_U(i)$. This straight-line path exists in the 4th dimensional space or the 5th dimensional space, and can't exist in three-dimensional space, because the smallest unit of three-dimensional space is a space quantum (QSG) with its side length equaling to the constant length. The duration of the all-identical operation of the mirror universe lasts one constant time once $\frac{R_U(i)}{v_{ss}(i)} = \frac{iL_G}{iv_G} = t_G$.

Section Twelve

N-God's Law XI: Principle of Hyperspatial Radiation of $G_i^{\blacksquare}$ Flow

Natural God guarantees hyperspatial correlation between all objects in the universe through the all-identical operation of the mirror universe, and physically realize such universal correlation by mean of hyperspatial radiation of $G_i^{\blacksquare}$ flow. The key points of this stipulation are:

▪All objects in the universe achieve hyperspatial correlations through the hyperspatial radiation of $G_i^{\blacksquare}$ flow.

▪The instantaneous nature (hyperspatial nature) of $G_i^{\blacksquare}$ flow is stemming from the all-identical operation of the mirror universe , it has nothing to do with velocity of gravitons themselves.

▪The time required for such kind of hyperspatial correlation between all objects is constantly equal to the constant time, and unrelated to distance between the objects.

12.1 Radiation Energy Equation of $G_i^{\blacksquare}$ flow

$G_i^{\blacksquare}$ flow is a particle flow formed by certain number of gravitons. Any two objects mutually radiate equivalent amounts of $G_i^{\blacksquare}$ flow, and its radiation energy is directly proportional to masses of these two objects and inversely proportional to the distance between them; The all-identical operation of the mirror universe makes the radiation of $G_i^{\blacksquare}$ flow instantaneous and causes the $G_i^{\blacksquare}$ flow to be able to instantaneously form a QSG occupied state in space belonging to the opposite object. It can be expressed by radiation energy equation of $G_i^{\blacksquare}$ flow.

$$
\left.
\begin{cases}
E_{1,2}(i) = STV\left(\dfrac{M_1 M_2}{R}\right) J_G & (G_i^{\blacksquare}\text{fow equation } \text{I}) \\[2mm]
E_{1,2}(i) = \dfrac{1}{i} N_{g1} N_{g2} STV\left(\dfrac{1}{R}\right) e_g(i) & (G_i^{\blacksquare}\text{fow equation } \text{II}) \\[2mm]
E_{1,2}(i) = \{\dfrac{N_{g1} N_{g2}}{ik}\} e_g(i) & (G_i^{\blacksquare}\text{fow equation } \text{III}) \\[2mm]
\quad\text{where, } E_{1,2}(i) - \text{radiant energies of } G_i^{\blacksquare} \text{ folw,} \\
M_1 、 M_2 - \text{masses of any two objects}, k - positive\ integers \\
\quad R = kL_G - \text{distance between any two objects,} \\
e_g(i) - G_i^{\blacksquare} \text{ energy}, J_G - \text{constant energy}, L_G - \text{constant length,} \\
\quad N_{g1} 、 N_{g2} - \text{numbers of } G_i^{\blacksquare} \text{ contained by the objects,} \\
\quad i - \text{cosmic quantum numbers.}
\end{cases}
\right\} \text{Eq. } 12-1
$$

12.2 Instantaneous Nature of $G_i^{\blacksquare}$ flow

The mirroring universe, with its holographic nature and hyperspatial velocity (see in Section Fourteen), performs information upgrades and reforming for all gravitons and ensures that all gravitons remain all-identical. The all-identical operation of the mirror universe causes $G_i^{\blacksquare}$ flow radiation to take place instantaneously at position of the opposite side of

any two objects, it is unrelated to the speed of the gravitons of $G_i^{\blacksquare}$ flow themselves. The instantaneous nature of $G_i^{\blacksquare}$ flow radiation makes the gravitons in the $G_i^{\blacksquare}$ flow achieve and complete their QSG occupancy state in space of the opposite object within a constant time (instant), no matter how far away these two objects are. Physical indicators of the hyperspatial radiation of $G_i^{\blacksquare}$ flow are the hyperspatial velocity and the maximum action distance, which are hyperspatial velocity and the maximum action distance, respectively equaling to product of cosmic quantum number and the constant speed, and equaling to product of cosmic quantum number and the constant length.

Section Thirteen

Examination on Objectivity and Reality of the Natural God

As previously mentioned, N-God's First Equation is a descriptive equation to the CST process, N-God's Second Equation is a descriptive equation to the physical characteristics of the Mirror Universe, and N-God's Third Equation is a descriptive equation to the physical characteristics of the Cosmic Body. These three equations all contain expression of the Natural God, that reflects the Natural God's stipulations on physical characteristics of the Mirror Universe and the Cosmic Body. Based on N-God's three equations, a unified solution to physical quantities of the universe can be obtained. To compare theoretical results of this

unified solution with existing astronomical observation data and physical experimental results for consistency, if such comparison results show consistent match, then objectivity of the Natural God get confirmed, this certainly constitutes an empirical examination to the Natural God. On the other hand, logical self-consistency between Natural God's laws and Natural God's expression, between the Natural God's expression and corollaries of Natural God's laws (see in Section Fourteen to Section Sixty-six) can also serve as a evidences for examining objectivity and reality of the Natural God, given unity of epistemology, logic, and ontology. The followings are going to examine objectivity and reality of the Natural God from aspects of logical self-consistency and empirical evidences.

13.1. Examination on Logical Self-Consistency of the Natural God

The Universe is a whole and as well as an evolving process, in which all existences are universally interconnected that manifest mutual correlation, mutual influence, and mutual interaction. All these internal connections within the universe can trace back to he Mirror Universe or the Cosmic Information Body through one or more physical associations discussed and demonstrated by CST model.

▪Gravitons are the most fundamental units of matter, and all matter are essentially composed of gravitons and three-dimensional space. According

to the principle of information being materialized, gravitons are condensed from the cosmic holographic images which indicate that matters are result of the Cosmic Information Body's interacting with nothingness. Consequently, origin of matters can be traced back to the Cosmic Information Body. (See in Sections Eight, Seventeen and Twenty-nine).

▪The cosmic information body stipulates all physical properties of the mirror universe, and mirror physical quantities being amplified $1.008\dot{3} \times 10^{93}$ times become general physical quantities of the universe. Therefore, all of general physical properties of the universe can be traced back to the Mirror Universe and even to the Cosmic Information Body (See in Sections Thirty-nine to Fifty-four).

▪All objects in the Universe are hyper-spatially correlated with each other via hyperspatial radiating of $G_i^{\blacksquare}$ flow, and instantaneity of the $G_i^{\blacksquare}$ flow comes from all-identical operation of the mirror universe. Therefore, the hyperspatial correlation of objects can be traced to the Mirror Universe (See in Sections Eleven, Twelve, Fourteen and Nineteen).

▪Universal gravitation, universal repulsion and resultant force norm action are elementary interactions generated jointly by the $G_i^{\blacksquare}$ flow and dilation of space, while instantaneity of $G_i^{\blacksquare}$ flow comes from the all-identical operation of the mirror universe. Therefore these tree elementary interactions can be traced back to the mirror universe (see in Sections

Twenty and Twenty-three).

▪The resultant force form action is original drive for cosmic expansion, and this elementary action results from the combined action of all matters in the universe on any object. The resultant force norm action is transferred by $G_i^{\blacksquare}$ flow, meanwhile instantaneity of the $G_i^{\blacksquare}$ flow comes from all-identical operation of the mirror universe. So cosmic expansion is also rooted in the mirror universe. (See Sections Twenty-three and Twenty-five).

▪The mirror universe, with its holographic properties and hyperspatial speed travels throughout the universe and forms cosmic background radiation. The mirror universe is the source of cosmic background radiation (see Section Twenty-six).

▪The elementary charge originates from electromagnetic co-existence state of the Mirror Universe (see Section Fifty-two).

▪Mass of any object originates from and is equal to sum of energies of $G_i^{\blacksquare}$ flow hyper-spatially radiated from all of other objects in the universe divided by square of constant speed. The instantaneity of the $G_i^{\blacksquare}$ flow stems from the all-identical operation of the mirror universe. Therefore formation of all objects can also be traced back to the Mirror Universe (see Section Nineteen). Etc., and so on.

All these intrinsic consistency and universality not only reflect unity of

the Natural God and the Universe, but also reflect logical self-consistency between the Natural God and the materialized universe.

13.2. Examination on objectivity and Reality of the N-God

Empirical examination on the Natural God is just to investigates objectivity and reality of the mirror universe. It can be conducted from at least five aspects. [1]Objectivity of the mirror universe can be examined using the mass-energy equation as a basis for examination. [2] Reality of the mirror universe can be determined using phenomenon of quantum entanglement as a basis for examination. [3] Objective of the mirror universe can be determined by conformity of values of general physical properties of the mirror universe with experimental results and astronomical observations as a basis for examination. [4] To determine reality of the mirror universe by using experimental data of elementary charge and the CMB's physical characteristics as a basis for examination. [5] experimental verification to four theoretical predictions directly related to the mirror universe will be direct evidence for objectivity and reality of the mirror universe.

13.2.1 Using Mass-Energy Equation as Basis

The mass-energy equation $E_\odot = M_\odot c^2$ is basis for determining truth of the mass theorem $M_\odot = \frac{\sum E_{j,\odot}}{v_G{}^2} = \frac{E_{U\odot}}{v_G{}^2}$ and its corollary $E_\odot = E_{U\odot}$. The mass-energy equation has been repeatedly verified by physical experiments, and the equation can be obtained independent of the theory

of relativity (See at: <u>acquirement of mass-energy equation</u>). From proof process of the mass theorem (see in Section Nineteen), it can be seen that establishment of the mass theorem relies on instantaneity of $G_i^{\blacksquare}$ flow that stems from all-identical operation of the mirror universe. The Mirror Universe is the only entity in the universe with hyperspatial velocity, and it is existence of the mirror universe that makes $G_i^{\blacksquare}$ flow possess nature of instantaneity and ensures stand of the mass theorem. Therefore, the mass theorem and the mass-energy equation are indirect evidences for objectivity of the Mirror Universe. (see in Sections Twelve and Nineteen).

13.2.2 Using Phenomena of Quantum Entanglement as Basis.

Velocity of any matter, either any object or particles, can not be faster than speed of light constant. Cosmic information moves hyper-spatially along with the mirror universe that is a materialized existence instead of matter and is the only materialized existence moving at hyperspatial velocity in the Universe. The fact that quantum entanglement has superluminal properties has been verified as true by many physical experiments. This also constitutes indirect proof for objectivity of the ,mirror universe (see in Sections Fourteen and Fifty-one).

13.2.3 Using Astronomical Observation Datum as Basis

There are not so many observed datum in astronomy about general physical quantities of the universe. Aside from observational data of CMB, there are other ones with some uncertainty Moreover, some of them are estimated results from theoretical analysis based on other observed data.

As mentioned before, theoretical values of the general physical quantities of the universe can be obtained based on physical properties of the mirror universe, including the theoretical values of following six physical quantities of the universe today listed in Table-5 (refer to Sections Forty, forty-one, Forty-two, Forty-four, Forty-nine, Fifty).

Table-5 Comparison of Theoretical Values and Observed Datum

Physical quantities	Observed datum or estimated results	Theoretical values
Total masses of the universe	$10^{53}kg$?	$4.2145 \times 10^{53}kg$
Radius of the universe	$10^{26}m$?	$3.1254 \times 10^{26}m$ (33 billion light years)
Age of the universe	1.38×10^{10} years?	3.3036×10^{10} (33 billion years)
Average mass density of the universe	$10^{-27}kgm^{-3}$?	$3.2951 \times 10^{-27}kgm^{-3}$
Temperature of CMB	$2.72548K$	$2.7250K$
Cosmic expansion constant	$H_0 =$ $48{\sim}71kms^{-1}Mpc^{-1}$?	$Z_C(n) =$ $29.617kms^{-1}Mpc^{-1}$

The observed or estimated values shown in Table-5 are results of modern cosmology's understanding about relevant physical quantities through theoretical analysis based on the Hubble constant , It is believed that they are measured or estimated values about the observable universe instead of the entire universe. The CMB temperature particularly, has very

accuracy and is the experimental basis for CST model to calculate the constant of the universe today. Other theoretical values shown in the table are values of general physical quantities of the entire Universe. Accuracy of all theoretical values are the same as that of $2.7250K$, eliminating uncertainty of observed or estimated results about them. There is a significant difference between theoretical value of the cosmic expansion constant and the Hubble constant, this is why the estimated result about age of the universe in modern cosmology is smaller. Analysis to this difference is given in Section Fifty-seven. Cosmic expansion constant today is $2.7250K$, and age of the universe is 33 billion years refer to Sections Forty-nine).

Despite of some uncertainty that exists in these observed or estimated results, the theoretical values and the observed or estimated values do have uniform conformity in terms of order of magnitude. This conformity can serve as an indirect confirmation about objectivity of the mirror universe.

13.2.4 Using Observed Datum of Elementary Charge and CMB as Basis

As demonstrated in Section Fifty-two that elementary charge is generated from the mirror universe, and theoretical calculations result matches its observed values. As discussed in Section Fifty that the mirror universe is the source of CMB and stipulates physical characteristics of the CMB,, and theoretical calculation result well match observed datum of

CMB as shown in Table-6. Obviously all of them can serves as proof for objectivity of the mirror universe. Therefore observed datum of elementary charge and CMB constitute empirical evidence of reality of the mirror universe.

Table-6 the Mirror Universe, Elementary Charge and CMB

Physical quantities	Characteristic Values of the mirror universe today	Observed datum of Elementary charge and CMB
charge	$\pm\, 1.6003244134 \times 10^{-19} C$	$\pm 1.60217662 \times 10^{-19} C$
Velocity	$v_{ss}(n) = 2.3179 \times 10^{69} ms^{-1}$	CMB exists all over the universe.
Temperature	$T_{UP}(n) = 2.7250K$	$T = 2.72548K$
Feak frequency	$\alpha\, f_{UP}(n) = 1.6034 \times 10^{11} Hz$	$1.6020 \times 10^{11} Hz$
Average energy of photo	$\dfrac{10}{2} E_{UP}(n) = 1.8808 \times 10^{-22} J$	$1.0163 \times 10^{-22} J$
Peak wavelength	$\dfrac{\lambda_{UP}(n)}{5} = 1.0558mm$	$1.06mm$
Density of energies	$N(T)\dfrac{10}{2} E_{UP}(n)$ $= 7.72 \times 10^{-14} Jm^{-3}$	$4.17 \times 10^{-14} Jm^{-3})$

13.2.5 Using Predictions to Exam Objectivity of the Mirror Universe

According to the theoretical predictions given by the CST model, there are at least four options for experimental verification to the Mirror Universe. If any of these four experimental result verify the theoretical prediction, it will be direct evidence of objectivity of the mirror universe

▪There exist a sort of electric current so called vacuum current generated by the mirror universe today, that is about $25.3238 \times 10^{-3} A$ (refer to

Section Fifty-three).

▪There exist a sort of force so called mirror force generated by the mirror universe today, that is about $9.2991 \times 10^{11} N$ (refer to Section Fifty-four).

▪CMB spectrum peak frequency shifts toward high frequency end by +4.850 Hz annually or $\frac{+48.50 Hz}{10\ years}$ (refer to Section Fifty-five).

▪CMB' has unique physical nature of unshieldability (See in Sections 56).

Based on all examination results the above, it can get conclusion that the mirror universe is an objective existence, a reality existing in the universe. Therefore the Natural God is too.

Section Fourteen

Deduction 01 of N-God's Law: Hyperspatial Action

Action at a distance is also called as hyperspatial action, that is physical action and stipulated by the Natural God. This stipulation is realized through the hyperspatial radiation of $G_i^\blacksquare$ flow and originally caused by all-identical operation of the mirror universe.

14.1 Definition of Hyperspatial Action

Hyperspatial action is a basic physical action by which objects could instantaneously produce interactive forces or physical effects through hyperspatial radiation of $G_i^\blacksquare$ flow regardless of distance.

Note: The instant is a quantity of time and equal to the constant time, which can be approximately expressed by Planck time.

14.2. Quantitative Indicators of Hyperspatial Action

The hyperspatial action has three quantitative indicators, which are hyperspatial velocity, maximum acting distance and action time.

▪The hyperspatial velocity is generated by the mirror universe, equaling to $1.008\dot{3} \times 10^{93}$ times of the mirror speed. Its physical meaning is that the mirror universe goes over the materialized universe and can reach at anywhere within one constant time (an instant).

$$\left\{ \begin{array}{c} v_{ss}(i) = v_{UP}(i) \times 1.008\dot{3} \times 10^{93} = i \times v_G \\ v_{ss}(n) = n \times v_G = 2.3179 \times 10^{69} ms^{-1} \\ where, v_{ss}(i) - hyperspatial\ velocity, \\ v_{UP}(i) - mirror\ speed, v_G - constant\ speed, \\ cosmic\ quantum\ numbers\ i = 1,2,3,\dots,n,\dots,1.008\dot{3} \times 10^{93} \\ n = 7.7266 \times 10^{60} - constant\ of\ the\ universe\ today. \end{array} \right\} \quad Eq.\ 14-1$$

Hyperspatial velocity is conducted for both transferring hyperspatial action and transmission of cosmic information. It should be pointed out that the hyperspatial velocity is not speed of any object or the carrier information.

▪The maximum action distance of the hyperspatial action is equal to radius of the universe, that is equal to the product of cosmic quantum number and constant length, $R_U(i) = iL_G$ and $R_U(n) = nL_G = 3.1254 \times 10^{26} m$

▪The action time of the hyperspatial action is equal to constant time $t_G = 1.348399724926 \times 10^{-43} s$.

14.3. Physical Mechanism of Hyperspatial Acton

The physical mechanism of the hyperspatial action is the all-identical operation of the mirror universe. that is Cosmic information transfer hyper-

spatially along with the mirror universe to realize hyperspatial correlations between all objects by means of instantaneity of QSG occupied states

14.4. Physical Forms of Hyperspatial Action

Interactive forces produced by hyperspatial action include but are not limited to those elementary actions such as gravitational force, absolute force (universal repulsive force), resultant force norm action. Physical effects produced by hyperspatial action include but are not limited to hyperspatial radiation of $G_i^{\blacksquare}$ flow, formation of object's mass, hyperspatial correlation of objects, quantum entanglement.

According to the principle of hyperspatial radiation of $G_i^{\blacksquare}$ flow, the mass theorem and its corollary , it is known that all objects in the universe have material-based sociation ($G_i^{\blacksquare}$ flow,) due to instantaneity of the $G_i^{\blacksquare}$'flow. Any changes in mass or distance of any object would result in corresponding changes in status of all other objects in the universe. As such material-based connections hyper-spatially take place between all objects, so called such connections as hyperspatial correlation of objects.

Note: $G_i^{\blacksquare}$ flow radiation between objects are not mechanical movements of gravitons, it caused by all-identical operation of the mirror universe and has nothing to do with velocity of the graviton itself.

Section Fifteen

Deduction 02 of N-God's Law: Cosmic Equal Right Principle

The Natural God stipulates that all locations in the universe are of equal right. This stipulation can be described by a principle so called Cosmic Equal Right Principle. The principle is a deduction from the Natural God's third equation (UPHY's Second Law), as well as further development to the Copernican principle and the cosmological principle. The cosmic equal right principle provide God's-eye view over the universe.

15.1 Statement of the Principle

All locations in the universe are cosmological equal right.

The cosmic equal right means that cosmic phenomena universally occurring looks alike from same observer at different locations in the universe; Acquired values of general physical quantities, mirror physical quantities, constant physical quantities, and original physical quantities are respectively same and equal to the observer at different locations in the universe. All these results are independent of observer's position in the universe, independent of physical frame of reference and its state of motion in which observer stay, and have nothing to do with mathematical coordinate system established by the observer to describe them.

15.2 Basic Characteristics of Cosmic Equal Rights

▪For any location A, there would always exist another location B in the universe, relative to location B, the location A is apart from the location B with radius of the universe. That is, all locations in the cosmic body are

located at place of the radius of the universe and simultaneously maintain their three-dimensional spatial relationships. This is due to all-identical operation of the mirror universe and 10-dimensional space-time attribute of the cosmic body.

▪Everywhere in the three-dimensional space of the universe, there would be $\frac{dR_U(i)}{dt} \equiv v_G$, where, $R_U(i) = i \times L_G$ is radius of the universe, v_G is constant speed (see in Section Twenty-five).

▪The cosmic expansion constant is same everywhere in the universe and equal to $Z_C(i) = \frac{2.2884 \times 10^{62}}{i} kms^{-1}Mpc^{-1}$, and $Z_C(i) = 29.617 kms^{-1}Mpc^{-1}$ (see in Section Forty-nine).

▪The cosmological constant is equal everywhere in the universe and equal to $Z_C(i) = \frac{2.2884 \times 10^{62}}{i} kms^{-1}Mpc^{-1}$, and $Z_C(i) = 29.617 kms^{-1}Mpc^{-1}$ (see in Section Forty-nine).

▪For two observers separated by radius of the universe, they can get same observed result that the opposite side is receding at the speed of light constant. Specifically an observer located at place of the radius of the universe relative to the Earth can also observes that the Earth is receding at speed of light constant.

▪The absolute time is the same everywhere in the universe and is equal to age of the universe $t_U(i) = i \times t_G$ (see in Section Sixty-one).

▪Inherent time is the same everywhere in the universe and is equal to increment of the absolute time $\Delta t_U(i) = \Delta i \times t_G$ (see in Section 61).

▪All objects and particles in the universe are moving absolutely at constant speed or speed of light constant (see in Section Twenty-four.

▪Temperature of the universe is the same everywhere and is equal to that of the mirror universe $T_{UP}(i) = i \times \ddot{T}_G$, where $\ddot{T}_G$ said absolute zero, which is just CBR's temperature (see in Section Fifty).

▪Mass density in the universe is the same everywhere on a large scale and is equal to the average mass density of the universe $\rho_U(i) = \frac{3}{4\pi} i^{-2} \rho_G$ (see in Section Forty-four).

▪Observation or calculation results about values of general physical quantities acquired by the same observer at everywhere in the universe are respectively equal.

▪Observation or calculation results about values of mirror physical quantities acquired by the same observer at everywhere in the universe are respectively equal.

▪Observation or calculation results about values of constant physical quantities acquired by the same observer at everywhere in the universe are respectively equal.

▪Observation or calculation results about values of original physical quantities acquired by the same observer at everywhere in the universe are respectively equal.

▪The universal gravitational constant G, Planck constant h, Boltzmann

constant k_B, speed of light constant c and all completable physical constants are of universality and valid everywhere in the universe, and their values remain unchanged.

▪The basic laws of physics apply at everywhere in the universe. that is, universality of physical laws.

Section Sixteen

Deduction 03 of N-God's Law: Cosmic Information and Its Classification

Cosmic information is non-materialized existence more essential than matter. Information is divided into carrier information and cosmic information as per differences in carriers and transmission speeds. Carrier information is the information referred to in current information theory and information technology. All carrier information takes matter as its carrier, and its transmission speed is less than or equal to speed of light constant. While cosmic information does not take any matter as its carrier, and transmit along with the mirror universe at hyperspatial speed. The information described in this paper refers to cosmic information.

16.1 Definition of Cosmic Information

Cosmic information is non-materialized existence that stipulate all properties of materialized existences.

16.2 Classification and Expressions of Cosmic Information

Basic types of cosmic information include initial information, basic information, composite information, unit information, overflow information, etc.

▪Initial information is the initial state of the cosmic information body that initiated the origin and evolution of the universe. Its expression has been presented in Section Two.

▪Basic information is the most fundamental form of cosmic information, expressed as

$$\left.\begin{array}{c} C_{Iq}(i) = \prod_{1}^{q} |M_G| s_{j,j-1}^{-2} \\ where, C_{Iq}(i) - basic\ informaiton\ belonging\ to\ G_i, \\ q - numbers\ of\ s^{-2} contained\ in\ basic\ informaion \\ |M_G| = 0.\dot{5}\dot{4} \times 10^{-7},\ s - time\ unit, \\ j\ takes\ value\ form\ i,\ i - cosmic\ quantum\ number. \end{array}\right\} \text{Eq.}\ 16-1$$

Basic information expression reflects a sort of chain structure possessed by cosmic information. For example, two basic information belonging to the 5th CST G_5 can be expressed as

$$C_{I5}(5) = (1 - \frac{1}{1.008\dot{3} \times 10^{93}}) |M_G|^5 s_{5,4}^{-2} s_{4,3}^{-2} s_{3,2}^{-2} s_{2,1}^{-2} s_{1,0}^{-2},$$

$$C_{I6}(5) = |M_G|^6 s_{5,4}^{-2} s_{4,3}^{-2} s_{3,2}^{-2} s_{2,1}^{-2} s_{1,0}^{-2} s_{0,-1}^{-2}$$

▪Composite information is generated from spontaneous combination of basic information, expressed as

$$\left.\begin{array}{c} C_{Ic}(i) = \sum_{2}^{p} \prod_{1}^{q} |M_G| s_{j,j-1}^{-2} \\ where, C_{Ic}(i) - composite\ information\ belonging\ to\ G_i, \\ p\ is\ a\ positive\ integer\ and\ p \geq\ 2. \end{array}\right\} \text{Eq.}\ 16-2$$

. For example, the two basic information above can spontaneously combine to generate an composite information

$$\left(1 - \frac{1}{1.008\dot{3} \times 10^{93}}\right)|M_G|^5 s_{5,4}^{-2} s_{4,3}^{-2} s_{3,2}^{-2} s_{2,1}^{-2} s_{1,0}^{-2} + |M_G|^6 s_{5,4}^{-2} s_{4,3}^{-2} s_{3,2}^{-2} s_{2,1}^{-2} s_{1,0}^{-2} s_{0,-1}^{-2}$$

Composite information can, in turn spontaneously combine to generate multi-level and multi-order composite information with more complex structures. The cosmic information level is the largest numerical subscript in the information expression. The cosmic information order is the numbers of basic information included in the composite information expression.

▪Unit information is sum of all cosmic information possessed by CST, signed $C_{Iu}(i)$ and quantified as:

$$\left\{ \begin{array}{l} C_{Iu}(i) = \left(1 - \dfrac{i}{1.008\dot{3} \times 10^{93}}\right)|M_G|s_{i,i-1}^{-2} + |M_G|s_{i,i-1}^{-2} \displaystyle\sum_{j=0}^{i-1} |M_G|s_{j,j-1}^{-2}\} \\[2mm] STV[C_{Iu}(i)] = \dfrac{1}{1.008\dot{3} \times 10^{93}} \\[2mm] \text{where, } |M_G|s_{i,i-1}^{-2} - \text{overflow information of } G_{i-1}, \\[2mm] \displaystyle\sum_{j=0}^{i-1} |M_G|s_{j,j-1}^{-2}\} - the\ cosmic\ information\ body. \end{array} \right\} \quad \text{Eq. } 16-3$$

The expression $|M_G|s_{i,i-1}^{-2}$ has two meanings: it represents both overflow information generated by G_{i-1} and the unit information of G_i. Unit information is generated by the overflow information's automatically duplicating all of existing cosmic information

The unit information itself also is a cosmic information. In cases where it is not confused with overflow information, the unit information can also be expressed as

$$\left\{\begin{array}{c} C_{Iu}(i) = |M_G|s_{i,i-1}^{-2} \\ STV[C_{Iu}(i)] = \dfrac{1}{1.008\dot{3} \times 10^{93}} \\ \text{where, } |M_G|s_{i,i-1}^{-2} \text{ said unit informaiton of } C_i. \end{array}\right\} \text{Eq. } 16-4$$

Accordingly CST can also be simplified and expressed as

$$\left\{\begin{array}{c} G_i = U_n \times |M_G|s_{i,i-1}^{-2} \\ STV(G_i) = 1 \\ \text{where, } |M_G|s_{i,i-1}^{-2} - \text{unit information of } C_i, \\ U_n - \text{unit nothingness.} \end{array}\right\} \text{Eq. } 16-5$$

Note: The cosmic body equation just adopts this form of expression for unit information.

16.3, Primary Natures of Cosmic Information

▪Cosmic information are non-materialized existence, it could be turned into materialized existences under the effect of nothingness.

▪ Cosmic information has those inherent natures such as self-replication, automatic upgrading, and spontaneous combination.

▪ Cosmic information transfer at hyperspatial velocity along with the mirror universe.

▪Cosmic information has numerical properties with specific numerical values.

▪Numbers of basic information contained by G_i are equal to 2^i, where i said

the cosmic quantum numbers For example, G_5 has $2^5 = 32$ numbers of basic information, which are expressed as

$$\left(1 - \frac{5}{1.008\dot{3}\times10^{93}}\right)|M_G|^1 s_{5,4}^{-2} + |M_G|^2 s_{5,4}^{-2} s_{0,-1}^{-2}$$

$$+ \left(1 - \frac{1}{1.008\dot{3} \times 10^{93}}\right) |M_G|^2 s_{5,4}^{-2} s_{1,0}^{-2} + |M_G|^3 s_{5,4}^{-2} s_{1,0}^{-2} s_{0,-1}^{-2}$$

$$+ \left(1 - \frac{2}{1.008\dot{3} \times 10^{93}}\right) |M_G|^2 s_{5,4}^{-2} s_{2,1}^{-2} + |M_G|^3 s_{5,4}^{-2} s_{2,1}^{-2} s_{0,-1}^{-2}$$

$$+ \left(1 - \frac{1}{1.008\dot{3} \times 10^{93}}\right) |M_G|^3 s_{5,4}^{-2} s_{2,1}^{-2} s_{1,0}^{-2} + |M_G|^4 s_{5,4}^{-2} s_{2,1}^{-2} s_{1,0}^{-2} s_{0,-1}^{-2}$$

$$+ \left(1 - \frac{3}{1.008\dot{3} \times 10^{93}}\right) |M_G|^2 s_{5,4}^{-2} s_{3,2}^{-2} + |M_G|^3 s_{5,4}^{-2} s_{3,2}^{-2} s_{0,-1}^{-2}$$

$$+ \left(1 - \frac{1}{1.008\dot{3} \times 10^{93}}\right) |M_G|^3 s_{5,4}^{-2} s_{3,2}^{-2} s_{1,0}^{-2} + |M_G|^4 s_{5,4}^{-2} s_{3,2}^{-2} s_{1,0}^{-2} s_{0,-1}^{-2}$$

$$+ \left(1 - \frac{2}{1.008\dot{3} \times 10^{93}}\right) |M_G|^3 s_{5,4}^{-2} s_{3,2}^{-2} s_{2,1}^{-2} + |M_G|^4 s_{5,4}^{-2} s_{3,2}^{-2} s_{2,1}^{-2} s_{0,-1}^{-2}$$

$$+ \left(1 - \frac{1}{1.008\dot{3} \times 10^{93}}\right) |M_G|^4 s_{5,4}^{-2} s_{3,2}^{-2} s_{2,1}^{-2} s_{1,0}^{-2} + |M_G|^5 s_{5,4}^{-2} s_{3,2}^{-2} s_{2,1}^{-2} s_{1,0}^{-2} s_{0,-1}^{-2}$$

$$+ \left(1 - \frac{4}{1.008\dot{3} \times 10^{93}}\right) |M_G|^2 s_{5,4}^{-2} s_{4,3}^{-2} + |M_G|^3 s_{5,4}^{-2} s_{4,3}^{-2} s_{0,-1}^{-2}$$

$$+ \left(1 - \frac{1}{1.008\dot{3} \times 10^{93}}\right) |M_G|^3 s_{5,4}^{-2} s_{4,3}^{-2} s_{1,0}^{-2} + |M_G|^4 s_{5,4}^{-2} s_{4,3}^{-2} s_{1,0}^{-2} s_{0,-1}^{-2}$$

$$+ \left(1 - \frac{2}{1.008\dot{3} \times 10^{93}}\right) |M_G|^3 s_{5,4}^{-2} s_{4,3}^{-2} s_{2,1}^{-2} + |M_G|^4 s_{5,4}^{-2} s_{4,3}^{-2} s_{2,1}^{-2} s_{0,-1}^{-2}$$

$$+ \left(1 - \frac{1}{1.008\dot{3} \times 10^{93}}\right) |M_G|^4 s_{5,4}^{-2} s_{4,3}^{-2} s_{2,1}^{-2} s_{1,0}^{-2} + |M_G|^5 s_{5,4}^{-2} s_{4,3}^{-2} s_{2,1}^{-2} s_{1,0}^{-2} s_{0,-1}^{-2}$$

$$+ \left(1 - \frac{3}{1.008\dot{3} \times 10^{93}}\right) |M_G|^3 s_{5,4}^{-2} s_{4,3}^{-2} s_{3,2}^{-2} + |M_G|^4 s_{5,4}^{-2} s_{4,3}^{-2} s_{3,2}^{-2} s_{0,-1}^{-2}$$

$$+ \left(1 - \frac{1}{1.008\dot{3} \times 10^{93}}\right) |M_G|^4 s_{5,4}^{-2} s_{4,3}^{-2} s_{3,2}^{-2} s_{1,0}^{-2} + |M_G|^5 s_{5,4}^{-2} s_{4,3}^{-2} s_{3,2}^{-2} s_{1,0}^{-2} s_{0,-1}^{-2}$$

$$+ \left(1 - \frac{2}{1.008\dot{3} \times 10^{93}}\right) |M_G|^4 s_{5,4}^{-2} s_{4,3}^{-2} s_{3,2}^{-2} s_{2,1}^{-2} + |M_G|^5 s_{5,4}^{-2} s_{4,3}^{-2} s_{3,2}^{-2} s_{2,1}^{-2} s_{0,-1}^{-2}$$

$$+ \left(1 - \frac{1}{1.008\dot{3} \times 10^{93}}\right) |M_G|^5 s_{5,4}^{-2} s_{4,3}^{-2} s_{3,2}^{-2} s_{2,1}^{-2} s_{1,0}^{-2} + |M_G|^6 s_{5,4}^{-2} s_{4,3}^{-2} s_{3,2}^{-2} s_{2,1}^{-2} s_{1,0}^{-2} s_{0,-1}^{-2}$$

▪Cosmic information possesses chain structure ,which is composed of

sequential product. of series of negative 2th dimensional times with

 different subscripts.

▪ Cosmic information can be coded by $1.008\dot{3} \times 10^{93}$-bit binary encoding.

For example, there exist a basic information in the universe today $|M_G|^7 s_{n,n-1}^{-2} s_{5,4}^{-2} s_{4,3}^{-2} s_{3,2}^{-2} s_{2,1}^{-2} s_{1,0}^{-2} s_{0,-1}^{-2}$, its binary code is

$$0000000000\ldots10000000000\ldots00000000111111$$

$$\downarrow$$

The $(n+1)$th bit

(Total of $1.008\dot{3} \times 10^{93}$ bits)

Section Seventeen

Deduction 04 of N-God's Laws -Holographic Events and

Cosmic Holographic Images

17.1 Holographic Events and Universal Event

$$. \left\{ \begin{array}{c} Basic\ holographic\ event \\ U_n \times \prod_1^q |M_G| s_{j,j-1}^{-2} \\ Composite\ holographic\ event \\ U_n \times \sum_2^p \prod_1^q |M_G| s_{j,j-1}^{-2} \\ Universal\ event \\ U_n \times \left\{ \left(1 - \frac{i}{1.008\dot{3}\times10^{93}}\right) |M_G| s_{i,i-1}^{-2} + |M_G| s_{i,i-1}^{-2} \sum_{j=0}^{i-1} |M_G| s_{j,j-1}^{-2} \right\} \\ where, U_n - unit\ nothingness, \\ \sum_{j=0}^{i-1} |M_G| s_{j,j-1}^{-2} \} - cosmic\ informaiton\ body. \end{array} \right\} \text{Eq. } 17-1$$

Cosmic information is materialized and magnified by $1.008\dot{3} \times 10^{93}$

times to form holographic event, which is a sort of materialized existence.

Holographic events are classified as basic holographic event, compound

holographic event, and universal event

Note: Holographic events are the most basic unit that make up all things

happened, happening and to be happening.

17.2 Cosmic Holographic Image

Cosmic holographic image, signed $C_{HI}(i)$, is squarely the universal event which is comprised of all holographic events generated by G_i.

$$C_{HI}(i) = U_n\{\left(1 - \frac{i}{1.008\dot{3} \times 10^{93}}\right)|M_G|s_{i,i-1}^{-2} + |M_G|s_{i,i-1}^{-2}\sum_{j=0}^{i-1}|M_G|s_{j,j-1}^{-2}\}$$

$$Eq. 17 - 2$$

The cosmic holographic image has but is not limited to the following properties:

▪Cosmic holographic image is not matter, but a materialized existence.

▪$C_{HI}(i)$ is synchronized with production of CST, its frame rate is constantly equal to $0.741619848709 \ldots \times 10^{43} fps$

▪Each frame $C_{HI}(i)$ has same continuity that physically represent by constant time. $t_G = 1.348399724926 \ldots \times 10^{-43}s$

▪Space-time value of $C_{HI}(i)$ is always equal to 1. that is, $STV\{C_{HI}(i)\} \equiv 1$.

▪$C_{HI}(i)$ appears and then immediately condenses into various physical elements in parallel, subsequently all these physical elements are jointly condensed into matter (i numbers of gravitons). The amount of each physical elements is equal to corresponding constant physical quantity or specific amount of the constant physical quantity. The mass of matter condensed by each frame of $C_{HI}(i)$ is same and equal to constant mass $M_G = 0.\dot{5}\dot{4} \times 10^{-7}kg$, and distributed in i numbers of $\underline{G_i^{\blacksquare}}$.

The frame rate of $C_{HI}(i)$ is too high to be observed directly. However, its objectivity can be understood through natural phenomena. Following

virtual dialogue many help readers to understand $C_{HI}(i)$ and experience the cosmic holographic image.

Phy: You are leisurely strolling, taking one step per second. Recording this step with a high-speed camera, then playing it back at normal speed (about 24 frames/second), you'll find that this step is composed of a series of still images with tiny differences. Currently, the highest speed camera can shoot 3.85 trillion frames/second[13] (about $10^{12} fps$) of video images. That is to say, this step you made can be broken down into 3.85×10^{12} frames of still images by this camera, with very slight differences between adjacent still images that are imperceptible to the naked eye.

Phi: I know and understand this principle. So, in natural state, how many frames of still images make up this step? In other words ,how many frames of still frames would the universe decompose this step I took?

Phy: Time (one-dimensional time) is quantized, and its basic share is equal to constant time$t_G = 1.348399724926 ... \times 10^{-43} s$ One second of time contains 7.416198487095662… $\times 10^{42}$ numbers of the constant time, which determines that operation of the universe will inevitably decompose this step into the same number of frames of still images, each of which is a holographic event and has nature of still and holographic. Moreover each of them includes not only your still image of taking this step, but also every

muscle, nerve, blood vessel, cell, and DNA of your leg, ..., down to each still image of each $G_i^{\blacksquare}$ of your leg. This step you take cannot be decomposed infinitely, but is decomposed to $C_{HI}(i)$ belonging to this step, just as matter cannot be infinitely divided, but can only and finally be broken down to graviton and stop there.

Phi: I see. The same principle applies to everything else in the universe as to the step I took. A leaf swaying in the wind, a cell dividing, a pair of positive and negative electrons annihilating, a meteor streaking across the night sky last night, the sun will be rising in the east tomorrow…,. For all of such kinds of things that have happened, are happening, and will happen, their dynamic image lasting one second are also composed of $7.416198487095662\ldots \times 10^{42}$ numbers of frame of still picture. Under same cosmic quantum number, all of holographic events appearing in the universe together form a static picture of the entire universe, and this static picture is squarely the cosmic holographic image.

Section Eighteen

Deduction 05 of N-God's Law: Cosmic Information Equation

The cosmic information equation is a derived form the Taiji equation, unfolding all of CST expressions in it level by level. The cosmic information equation is is as shown in Eq18-1.

The cosmic information equation indicates that the material world also

has another existing state, a state of purely making up all cosmic information relative to nothingness. Philosophical meaning of this conclusion is that essence of the world is cosmic informaiton.

$$
\begin{cases}
C_{Iu}(i) = \left(1 - \dfrac{i}{1.008\dot{3} \times 10^{93}}\right)|M_G|s_{i,i-1}^{-2} + |M_G|s_{i,i-1}^{-2}\displaystyle\sum_{j=0}^{i-1}|M_G|s_{j,j-1}^{-2} \\[2ex]
G_i = U_n \times C_{Iu}(i) = U_n\left\{\left(1 - \dfrac{i}{1.008\dot{3} \times 10^{93}}\right)|M_G|s_{i,i-1}^{-2} + |M_G|s_{i,i-1}^{-2}||\displaystyle\sum_{j=0}^{i-1}|M_G|s_{j,j-1}^{-2}\right\} \\[2ex]
\displaystyle\sum_{j=0}^{i-1}G_j = U_n\sum_{j=0}^{i-1}\left\{\left(1 - \dfrac{j}{1.008\dot{3} \times 10^{93}}\right)|M_G|s_{j,j-1}^{-2} + |M_G|s_{j,j-1}^{-2}\displaystyle\sum_{k=0}^{j-1}|M_G|s_{k,k-1}^{-2}\right\} \\[2ex]
\qquad where, G_i - ith\ \text{CST}, \ C_{Iu}(i) - unit\ informaiton, \\[1ex]
\displaystyle\sum_{j=0}^{i-1}G_j - \text{the cosmic bdy}, \sum_{j=0}^{i-1}|M_G|s_{j,j-1}^{-2} - the\ cosmic\ informaiton\ body, \\[2ex]
\qquad U_n - unit\ nothingness, i - cosmic\ quantum\ number.
\end{cases}
$$

$$\text{Eq. } 18-1$$

Section Nineteen

Deduction 06 of N-God's Law: Mass Theorem

Mass theorem reveals a quantitative relationship between any object and all other objects in the universe. The mass theorem can be obtained according to the Principle of $G_i^{\blacksquare}$ Flow Hyperspatial Radiation and the general solution of total masses, radius and geometric shape of total amounts of three-dimensional space of the universe.

All the $G_i^{\blacksquare}$ Flow hyper-spatially radiating from all matters of the universe converge at a certain spatial region to form specific object or particle, that is, both object and particle are specific QSG occupied states.

Thus mass of objects or particles is formed in this way, described by the Mass Theorem.

19.1 Statement of Mass Theorem

$$\left\{ \begin{array}{c} \textit{Mass of any object } M_\odot \textit{ is originated and equal to sum of} \\ \textit{energies of } G_i^{\blacksquare'} \textit{ flow hyperspatially radiating from} \\ \textit{all matters in the ouniverse to the object devided by } v_G{}^2 \textit{ or } c^2. \\ M_\odot = \dfrac{\sum E_{j,\odot}}{v_G{}^2} = \dfrac{E_{U\odot}}{v_G{}^2} = \dfrac{E_{U\odot}}{c^2} \\ \textit{where }, E_{j,\odot} - G_i^{\blacksquare'} \textit{ flow energy hyperspatially radiating from} \\ \textit{other object } m_j \textit{ to the object } M_\odot, \\ E_{U\odot} - \textit{sum of } G_i^{\blacksquare'} \textit{ flow energies hyperspatially radiating from} \\ \textit{all matters in the universe to the object } M_\odot, \\ M_\odot - \textit{mass of the object}, \\ v_G - \textit{constant speed} , c - \textit{speed of light constant.} \end{array} \right\}$$

$$\text{Eq. } 19 - 1$$

19.2 Proof to Mass Theorem

Supposed mass of an object is $M_\odot$, sum of energies of $G_i^{\blacksquare}$ Flow hyperspatially radiating from all matters in the universe to place of the object is $E_{U,\odot}$. By the $G_i^{\blacksquare}$ Flow equation-I, we have

$$\left\{ \begin{array}{c} E_{U\odot} = \sum E_{j,\odot} = \sum STV\left(\dfrac{M_\odot m_j}{R_{j,\odot}}\right) J_G \\ = STV(M_\odot) J_G \sum STV\left(\dfrac{m_j}{R_{j,\odot}}\right) \\ \textit{where}, R_{j,\odot} - \textit{distance between object } m_j \textit{ and object } M_\odot, \\ m_j - \textit{mass of object } m_j, M_\odot - \textit{mass of object } M_\odot, \\ E_{j,\odot} - G_i^{\blacksquare} \text{ Flow } \textit{energy radiatING from objecty } m_j \textit{ to object } M_\odot, \\ J_G - \textit{constant energy} \end{array} \right\} , \quad \text{Eq. } 19 - 2$$

According to hyperspatial nature of $G_i^{\blacksquare}$ flow and given that geometric shape of total spatial volumes of the universe is always a sphere with radius of the universe as tis spherical radius, thus total energies of $G_i^{\blacksquare}$ flow

radiating from all matters in the universe to the object $M_\odot$ are equivalent

to that of concentrating all the matters and placing it at center of the

sphere. that is,
$$\left\{ \begin{array}{c} E_{U\odot} = \sum E_{j,\odot} = STV(M_\odot)J_G \sum STV\left(\frac{m_j}{R_{j,\odot}}\right) \\ = STV(M_\odot)J_G \times STV\left[\frac{M_U(i)}{R_U(i)}\right] \\ where, M_U(i) - total\ mass\ of\ the\ universe, \\ R_U(i) - radius\ of\ the\ universe. \end{array} \right\} \quad Eq.\ 19-3$$

To make multidimensional space-time structure analysis to Eq.19-3,

and substitute $M_U(i) = iM_G$, $R_U(i) = iL_G$, $J_G = \frac{1}{STV(|G|m^5s^{-4})}|G|m^5s^{-4}$,

$M_\odot = |M_\odot|kg$, $STC(kg) = |G|m^3s^{-2}$, then we get

$E_{U\odot} = \frac{1}{STV(|G|m^5s^{-4})}|G|m^5s^{-4}STV\left(\frac{|M_\odot||G|m^3s^{-2}\times i\times|M_G||G|m^3s^{-2}}{i\times|L_G|m}\right)$
$= |M_\odot|STV\left(\frac{|M_G||G|}{|L_G|}\right)|G|m^5s^{-4}$. While $STV\left(\frac{|M_G||G|}{|L_G|}\right)$

$= STV\left[\frac{(|G|m^3s^{-2})^{-1}|G|}{m^{-1}}\right] = STV(m^{-2}s^2) = |v_G|^2$,

thus $E_{U\odot} = \sum E_{j,\odot} = |M_\odot|(|G|m^3s^{-2})(|v_G|^2m^2s^{-2})$.

Since $|M_\odot|(|G|m^3s^{-2}) = |M_\odot|kg = M_\odot$, $|v_G|^2m^2s^{-2} = v_G{}^2$, so

we have $E_{U\odot} = \sum E_{j,\odot} = M_\odot v_G{}^2$. That is , $M_\odot = \frac{\sum E_{j,\odot}}{v_G{}^2} = \frac{E_{U\odot}}{v_G{}^2} = \frac{E_{U\odot}}{c^2}$.

---Done.

19.3 Inference of Mass Theorem

$$\left\{ \begin{array}{c} Total\ energy\ of\ any\ object\ M_\odot\ is\ equal\ to\ sum\ of\ energies \\ of\ G_i^\blacksquare\ flow\ hyperspatialluy\ radiating\ from\ all\ matters \\ in\ the\ universe\ to\ the\ object. \\ E_\odot = E_{U\odot} \\ where, \quad E_\odot - total\ energy\ of\ any\ object, \\ E_{U\odot} - sum\ of\ energies\ of\ G_i^\blacksquare\ flow\ hyperspatialluy\ radiating \\ from\ all\ matters\ in\ the\ universe\ to\ the\ object. \end{array} \right\}$$

Eq.19-4

Proof: According to mass-energy equation, the total energy of any object

$M_\odot$ is equal to $E_\odot = M_\odot c^2$ or $M_\odot = \frac{E_\odot}{c^2}$. To compare this result with mass theorem, then $E_\odot = E_{U\odot}$ must hold. ---Done.

It should be clear that mass-energy equation can be obtained independent of the relativity. that is, Establishment of the mass-energy equation is not restricted by principle of relativity.

Section Twenty

Deduction 07 of N-God's Law: Physical Mechanism of Universal Repulsion and Universal Gravitation

Universal gravitation，universal repulsion （the absolute force） and mass formation of objects are three physical effects simultaneously produced by hyper-spatially radiating of $G_i^{\blacksquare}$ flow. The gravitation arises from equivalent amounts of radiation of $G_i^{\blacksquare}$ flow between any two objects and dilation of space. that is, Any two objects mutually radiate equivalent amounts of $G_i^{\blacksquare}$ low energies $E_{1,2}(i) = \frac{1}{i} N_{g1} N_{g2} STV(\frac{1}{R}) e_g(i)$, and generate its instant power $W_{1,2}(i) = \frac{dE_{1,2}(i)}{dt} = -||F_{1,2}(i)|| \times v_G$ due to constant growth rate $\frac{dR_U(i)}{dt} \equiv v_G = c$ of one-dimensional space , where $||F_{1,2}(i)|| = STV\left(\frac{M_1 M_2}{R^2}\right) N_G = G \frac{M_1 M_2}{R^2}$ said the absolute force, v_G is constant speed as well as dilation speed of space.

The absolute force is a force generated by one object's hyper-spatially radiating $G_i^{\blacksquare}$ flow on another object which inevitably produces a reaction against this $G_i^{\blacksquare}$ flow. This reaction force is equal in magnitude and

opposite in direction to the absolute force. In relative state of motion, physical manifestation of this reaction force is just the gravitation between these two objects. At the same time, the $G_i^{\blacksquare}$ flow radiated from one object to the other object merges and becomes part of the other object as described by the mass theorem.

$$
\left\{
\begin{aligned}
W_{1,2}(i) &= \frac{dE_{1,2}(i)}{dt} = -STV\left(\frac{M_1 M_2}{R^2}\right) N_G \times v_G \\
&= -\|F_{1,2}(i)\| \times v_G = F_{1,2} \times v_G \\
F_{1,2} &= -\|F_{1,2}(i)\| = -STV\left(\frac{M_1 M_2}{R^2}\right) N_G = -G\frac{M_1 M_2}{R^2} \\
&\text{where, } E_{1,2}(i) - energies\ of\ G_i^{\blacksquare}\ flow\ hyperspatially\ radiating \\
&\qquad between\ any\ two\ objects, \\
&\quad W_{1,2}(i) - instant\ power\ of\ the\ G_i^{\blacksquare}\ flow, \\
&\quad F_{1,2} - gravitation,\qquad \|F_{1,2}(i)\| - absolute\ force, \\
&\qquad\quad G - gravitiional\ constant, \\
&\quad M_1,\ M_2 - masses\ of\ any\ two\ objects, \\
&\quad R - distance\ between\ any\ two\ objects,, \\
&\quad v_G - constant\ speed, N_G - constant\ force.
\end{aligned}
\right\} \quad \text{Eq. } 20-1
$$

Since both universal repulsion and universal gravitation arise from hyper-spatially radiated $G_i^{\blacksquare}$ flow, thus these two fundamental forces are belonging to hyperspatial action. Universal repulsion is used to form action of resultant force norm (see in Section Twenty-three) and contributes to maintaining absolute motion of objects (see in Section Twenty-four). While the universal gravitation causes absolute motion of objects to appear as relative motion and result in this fundamental force to be observable in state of relative motion.

Section Twenty-One

Deduction 08 of N-God's Law: Hyperspatial Nature of Universal Gravitation

Material basis for creation of universal gravitation is $G_i^{\blacksquare}$ flow mutually and hyperspatially radiating between any two objects, this makes universal gravitation as a hyperspatial action with its transmission speed as same as hyperspatial velocity and its maximum acting distance as same as radius of the universe and its acting time as same as the constant time.

$$
\left.\begin{array}{c}
\textit{Transmission speed of universal gravitaiton} \\
v_{ss}(i) = \left\|v_{UP}(i)\right\|(1.008\dot{3} \times 10^{93}) = i \times v_G \\
\textit{and } v_{ss}(n) = n \times v_G = 2.3179 \times 10^{69} ms^{-1} \\
\textit{Maximum acting distance of universal gravitation} \\
R_U(i) = i \times L_G \\
\textit{Acting time of universal gravitation} \\
t_G \\
\textit{where, } v_{ss}(i) - \text{hyperspatial speed, } \left\|v_{UP}(i)\right\| - mirror\ speed, \\
v_G - constant\ time, i - cosmic\ quantum\ number.
\end{array}\right\} \text{Eq. } 21-1
$$

The formula of the Law of Universal Gravitation does not contain a time factor, implying that gravity might be an action-at-a-distance. This greatly puzzled Sir Isaac Newton, the discoverer of gravity. He once lamented: "I have not yet been able to discover the cause of these properties of gravity from phenomena and I feign no hypotheses... It is enough that gravity does really exist and acts according to the laws I have explained, and that it abundantly serves to account for all the motions of celestial bodies. That one body may act upon another at a distance through a vacuum without the mediation of anything else, by and through which their action and force may be conveyed from one another, is to me so great an absurdity

that I believe no man who has in philosophic matters a competent faculty of thinking could ever fall into it."[11]

The Law of Universal Gravitation was formally proposed in 1687, and the enigma of gravity's apparent action-at-a-distance has perplexed humanity for 337 years.

Section Twenty-Two

Deduction 09 of N-God's Law: Quantized Nature of Universal Gravitation

The universal gravitation is quantized, that manifests as its magnitude is composed of discrete units which is basic share of the gravitation and equal to the second $G_i^{\blacksquare}$ force $||F_{g2}(i)|||$.

$$
\left\{
\begin{array}{c}
F_{1,2} = -G\dfrac{M_1 M_2}{R^2} = -\dfrac{N_{g1} N_{g2}}{k^2}||F_{g2}(i)|| \\
where, F_{1,2} - universal\ gravitaion\ between\ any\ two\ objects, \\
M_1 、\ M_2 - masses\ of\ any\ two\ objects, \\
R = kL_G - distance\ between\ the\ two\ objects, \\
N_{g1} 、\ N_{g2} - numbers\ of\ G_i^{\blacksquare}\ contained\ in\ the\ two\ objects, \\
||F_{g2}(i)||| = \dfrac{N_G}{i^2} - the\ second\ G_i^{\blacksquare}, force, \\
N_G - constant\ force, L_G - constant\ length, \\
G - gravitational\ constant, k - positive\ integer \\
i - cosmic\ quantum\ number.
\end{array}
\right\} \quad Eq.\ 22-1
$$

Proof: According to the Defect Theorem, we have

$$F_{1,2} = -G\frac{M_1 M_2}{R^2} = STV\left(-G\frac{M_1 M_2}{R^2}\right)N_G = -N_{g1}N_{g2}STV\left(\frac{M_G M_G}{i^2}\frac{1}{R^2}\right)N_G$$

$$= -\left\{N_{g1}N_{g2}STV\left(\frac{1}{R^2}\right)\right\}\frac{N_G}{i^2} = -\left\{N_{g1}N_{g2}STV\left(\frac{1}{R^2}\right)\right\}||F_{g2}(i)||$$

Since distance R is an physical quantity of one-dimensional space that

is quantized with constant length as basic share, that is $R = kL_G$.

Introducing it into formula the above, we get $F_{1,2} = -\left\{N_{g1}N_{g2}STV\left(\frac{1}{R^2}\right)\right\}||F_{g2}(i)|| = \frac{N_{g1}N_{g2}}{k^2}||F_{g2}(i)||$

Therefore magnitude of universal gravitation is quantize, its basic share is equal to $||F_{g2}(i)||$,(the second $G_i^{\blacksquare}$ force), its quantities of the share are equal to $\frac{N_{g1}N_{g2}}{k^2}$. ---Done.

At present, quantized nature of universal gravitation is expressed as $F_{1,2} = -G\frac{M_1 M_2}{R^2} = -\frac{N_{g1}N_{g2}}{k^2}(0.2032 \times 10^{-77}N)$. ---Done.

Section Twenty-Three

Deduction 10 of N-God's Law : Action of Resultant Force Norm

Algebraic sum of absolute forces exerted on any object by all matter in the universe is defined as action of resultant force norm, simply said as resultant force norm of object. This elementary physical action is described by its dynamic equation and kinematic equation.

23.1 Dynamic Equation of the Action

$$\left\{\begin{array}{c} Resultant\ force\ norm\ of\ any\ object\ is\ euqal\ to\ product\ of \\ numbers\ of\ G_i^{\blacksquare}\ contained\ by\ the\ object\ and\ the\ second\ G_i^{\blacksquare} force. \\ ||F_{rm}(i)|| = \sum ||F_{jm}|| = N_{gm} \times ||F_{g2}(i)|| \\ where, ||F_{rm}(i)|| - resultant\ force\ norm\ of\ any\ object \\ ||F_{jm}|| - absolute\ force\ exerted\ on\ the\ object\ by\ other\ object\ m_j, \\ N_{gm} - numbers\ of\ G_i^{\blacksquare}\ contained\ the\ object, \\ ||F_{g2}(i)|| = \frac{N_G}{i^2} - second\ G_i^{\blacksquare}, force, \quad N_G - constant\ force, \\ cosmic\ quantum\ number\ i = 1,2,3,\dots,n,\dots,1.008\dot{3} \times 10^{93}; \\ n = 7.7266 \times 10^{60} - constant\ of\ the\ universe\ today. \end{array}\right.$$

$$Eq.\,23 - 1$$

Proof: Supposed mass of an object is m, and the algebraic sum of the absolute forces exerted on the object by all matters in the universe on the object is $||F_{rm}(i)||$., and the absolute force exerted on the object by other object m_j is $||F_{jm}||$. By the absolute force formula, we have $||F_{rm}(i)|| = \sum ||F_{jm}|| = \sum STV(\frac{m_j m}{R_{j,m}^2})N_G$, where $R_{j,m}$ said distance between the object and other object..

According to the equal right principle of universe (refer to Section Fifteen), and united solutions to physical quantities of the universe (see in Section Thirty-nine to Fifty-four), mass density is same on a large scale everywhere in the universe, and geometric shape of total spatial volumes of the universe is always a sphere with radius of the universe as its spherical radius. Thus the algebraic sum of absolute forces exerted on any object by all matters in the universe is equivalent to an absolute force exerted by a a matter concentrating all matters in the universe at center of the sphere on the object located at the radius of the universe. So we can get

$$||F_{rm}(i)|| = \sum ||F_{jm}|| = \sum STV(\frac{m_j m}{R_{j,m}^2})N_G = STV\left\{\frac{mM_U(i)}{R_U(i)^2}\right\}N_G$$

$$= STV\left(\frac{N_{gm}\frac{M_G}{i} \times iM_G}{(iL_G)^2}\right)N_G = N_{gm}\frac{N_G}{i^2}$$

that is, $||F_{rm}(i)|| = \sum ||F_{jm}|| = N_{gm}\frac{N_G}{i^2} = N_{gm}||F_{g2}(i)||$, where N_{gm} said numbers of $G_i^{\blacksquare}$ contained in the object m. ---Done.

Inference: Action of resultant force norm exerted by all matters in the universe on $G_i^{\blacksquare}$ is equal to the second $G_i^{\blacksquare}$.force.

Proof; For any $G_i^{\blacksquare}$, since $N_{gm} = 1$. By Eq.23-1, it would be $\left\|F_{rm}(i)\right\| = \left\|F_{g2}(i)\right\| = \frac{N_G}{i^2}$.---Done.

23.2 Kinematic Equation of the Action

$$\left\{ \begin{array}{c} \textit{Any object undergoes and maintain absolute motion} \\ \textit{with constant speed.} \\ \dfrac{\left\|F_{rm}(i)\right\|}{m} \times t_U(i) = a_g(i) \times t_U(i) \equiv v_G \\ \textit{where, } \left\|F_{rm}(i)\right\| - \textit{resultant force norm of object,} \\ m - \textit{mass of object, } t_U(i) - \textit{age of the universe,} \\ t_G - \textit{constant time, } a_g(i) - G_i^{\blacksquare} \textit{ acceleration} \\ v_G - \textit{constant speed} \\ i - \textit{cosmic quantum number.} \end{array} \right\} \quad \text{Eq. } 23-2$$

Under the action of resultant force norm, all objects in the universe undergo absolute motion whose velocity is constantly equal to the constant speed. The absolute motion property of all objects is described by kinematic equation of the action as shown above.

Proof: Since 因 $\dfrac{\left\|F_{rm}(i)\right\|}{m} = \dfrac{N_{gm}\left\|F_{g2}(i)\right\|}{N_{gm}M_g(i)} = \dfrac{N_G/i^2}{M_G/i} = \dfrac{a_G}{i} = a_g(i)$, $t_U(i) = it_G$, so $\dfrac{\left\|F_{rm}(i)\right\|}{m} t_U(i) = a_G t_G = v_G$. Given quantum characteristics of the CST process and reorganization of $G_i^{\blacksquare}$, this absolute motion process can be sustained.---Done.

This kinematic equation shows that age of the universe (the total amount of one-dimensional time of the universe) is a real physical quantity, and all objects have the same acceleration as $a_g(i)$ and $a_g(n) = 2.879 \times 10^{-10} ms^{-2}$.

Given the absolute force (universal repulsion) is a sort of hyperspatial action, so is the action of resultant force norm.

Section Twenty-Four

Deduction 11 of N-God's Law -: Cosmic Background Motion

24.1, Definition of Absolute Motion

Speed of light in vacuum is constant and has nothing to do with selection of frame of references, therefore it does not adhere to the principle of relative motion. This reveals another form of mechanical motion commonly possessed by all objects---absolute motion. The absolute motion of an object is independent of selection of a physical frame of reference, it is s the most significant kinematic feature of absolute motion. Once a physical frame of reference is selected, all motions of observed objects is relative motion rather than absolute motion, unless its relative motion velocity equates its absolute motion velocity.

It is definition of absolute motion that absolute motion of object is mechanical motion which does not depend or is independent of any physical frame of reference and whose motional velocity equates the constant speed.

Note: The meaning of "does not depend on or is independent of the physical frame of reference" in the definition is that absolute motion is unrelated to the selection of physical frame of reference, having nothing to do with motional state of the physical frame of reference and position of an observer in the universe and his relative motion velocity.

24.2, Six Forms of Absolute Motion

$G_i^\blacksquare$ has four forms of absolute motion, respectively as $G_i^\blacksquare$;s translational motion, $G_i^\blacksquare$'s orbital rotation, $G_i^\blacksquare$'s spin, and $G_i^\blacksquare$'s rigid body rotation. All objects have at least two forms of absolute motion, respectively as absolute translational motion and absolute orbital rotation.

24.2.1 $G_i^\blacksquare$'s Translational Motion

$G_i^\blacksquare$ conducts translational motion at the constant speed, its momentum norm is expressed by $||L_{gR}(i)||$.

$$\left\{ \begin{array}{c} ||p_g(i)|| = M_g(i)v_G \\ where, ||p_g(i)|| - G_i^\blacksquare\ momentum,\ M_g(i) - G_i^\blacksquare\ mass, \\ v_G - constant\ speed, i - cosmic\ quantum\ number. \end{array} \right\} Eq.\,24-1$$

24.2.2 $G_i^\blacksquare$'s Orbital Rotation

$G_i^\blacksquare$ conducts orbital rotation at the constant speed and with radius of the universe as its rotational radius, its orbital angular moment norm is expressed by $||L_{gR}(i)||$.

$$\left\{ \begin{array}{c} ||L_{gR}(i)|| = M_g(i) \times iL_G \times v_G = M_G L_G v_G \equiv h \\ where, ||L_{gR}(i)|| - G_i^\blacksquare's\ orbital\ angular\ moment, \\ h - Planck\ constant\ , i - cosmic\ quantum\ number. \end{array} \right\} Eq.\,24-2$$

24.2.3 $G_i^\blacksquare$'s Spin

$G_i^\blacksquare$ conducts spin at the constant speed and with constant length as rotational radius, its spin angular moment norm is expressed by $||L_{gS}(i)||$.

$$\left\{ \begin{array}{c} ||L_{gS}(i)|| = M_g(i) \times L_G \times v_G = \dfrac{h}{i} \\ where, ||L_{gS}(i)|| - G_i^\blacksquare's\ spin\ angular\ moment, \\ h - Planck\ constant,\ i - cosmic\ quantum\ number. \end{array} \right\} Eq.\,24-3\ 式$$

24.2.4 $G_i^\blacksquare$'s' Rigid Body Rotation

$G_i^{\blacksquare}$'s rigid bodies conducts rotational motion at the constant speed and with $G_i^{\blacksquare}$ radius as its rotational radius, its angular moment norm is expressed by $||L_{gr}(i)||$.

$$\left. \begin{cases} ||L_{gr}(i)|| = M_g(i) \times R_g(i) \times v_G = \dfrac{h}{i^2} \\ where, \left||L_{gr}(i)\right|| - \text{angular moment norm of } G_i^{\blacksquare\prime}s \ rigid \ body, \\ h - \text{Planck constant}, \qquad i - \text{cosmic quantum number}. \end{cases} \right\} \text{Eq. } 24 - 4$$

Given all objects are essentially composed of $G_i^{\blacksquare}$ and three-dimensional space, thus all objects have at least two forms of absolute motions:

24.2.5 Absolute Translational motion of object

Any object conduct absolute translational motion at the constant speed, its momentum norm is expressed by $\left||p_M(i)\right||$.

$$\left. \begin{cases} \left||p_M(i)\right|| = Mv_G = N_{gM}||p_g(i)|| \\ where, \left||p_M(i)\right|| - momentum \ norm \ of \ any \ object, \\ N_{gM} - numbers \ of \ G_i^{\blacksquare} \ contained \ in \ the \ object, \\ \left||p_g(i)\right|| - G_i^{\blacksquare} \ momentum, M - mass \ of \ the \ object, \\ i - cosmic \ quantum \ number. \end{cases} \right\} \text{Eq. } 24 - 5$$

24.2.6 Absolute Orbital Rotation of Object

Any objects conducts orbital rotation at the constant speed and with radius of the universe as the rotation radius, its angular moment norm is expressed by $||L_{MR}(i)||$.

$$\left. \begin{cases} ||L_{MR}(i)|| = M \times iL_G \times v_G = N_{gM}M_G L_G v_G = N_{gM}h \\ where, ||L_{MR}(i)|| - angular \ moment \ norm \ of \ any \ object, \\ N_{gM} - numbers \ of \ G_i^{\blacksquare} \ contained \ in \ the \ object, \\ M - mass \ of \ the \ object, \qquad h - Planck \ constant \\ i - cosmic \ quantum \ number. \end{cases} \right\} \text{Eq. } 24 - 6$$

24.3 Cosmic Background Motion

$$\left\{ \begin{array}{c} \textit{Ttotal amount of momentum norms of CBM} \\ \|p_U(i)\| = i^2\|p_g(i)\|. \\ \textit{Total amount of orbital angular moment norms of CBM} \\ \|L_{UR}(i)\| = i^2h. \\ \textit{Total amount of spin angular moment of CBM}: \\ \|L_{US}(i)\| = ih. \\ \textit{Total amount of rotational angular moment of} \\ \textit{all } G_i^{\blacksquare}\textit{'s rigid bodies} \\ \sum \|L_{gr}(i)\| = h. \\ \textit{Total amount of angular moment norms of the universe} \\ \|L_U(i)\| = (i^2 + i + 1)h \\ \textit{where, } \|p_g(i)\| - G_i^{\blacksquare} \textit{ momentum}, i^2 - \textit{total numbers of } G_i^{\blacksquare}, \\ h - \textit{Panck constant}, i - \textit{cosmic quantum number.} \end{array} \right\} \quad \text{Eq. } 24-7$$

Absolute motions of all $G_i^{\blacksquare}$ and objects constitute absolute mechanical movements of the universe, called as cosmic background motion (CBM). Total amounts of the CBM are

Total amount of CBM is limit of total amounts of relative mechanical motions of all objects in the universe. With respect to a position arbitrarily selected in the universe, such as the Earth, total amount of momentum norm of relative motions of all objects in the universe are less then $i^2\|p_g(i)\|$. Total amounts of angular moment norms of relative motions of all objects are less then $(i^2 + i + 1)h$. For the universe today, calculation results about CBM are as below:

Total amount of momentum norms of CBM are equal to

$$\|p_U(n)\| = n^2 P_g(n) = (7.7266 \times 10^{60})^2(2.1178 \times 10^{-60} kgms^{-1}) = 1.2643 \times 10^{62} kgms^{-1}.$$

Total amount of orbital angular moment norms of CBM are equal to

$$\|L_{UR}(n)\| = n^2h = (7.7266 \times 10^{60})^2(6.619416831457 \times 10^{-34}Js) = 3.9518 \times 10^{88}Js.$$

Total amount of spin angular moment norms of CBM are equal to

$$\|L_{US}(n)\| = nh = (7.7266 \times 10^{60})(6.619416831457 \times 10^{-34} Js) = 5.1145 \times 10^{26} Js.$$

CBM is driven by combined action of all matters in the universe, that is, the action of resultant force norm. It also determines upper limit for motional speed of matter (object and particles) to be the constant speed $v_G = 3 \times 10^8 ms^{-1}$ as described in the kinematic equation of the action. This is why motional velocity of matter can not surpass the speed of light constant.

24.4 **Relationship Between Absolute Motion and Relative Motion**

Relative motion of an object originates from its absolute motion. Relative to any position in the universe and under the action of universal gravitation, absolute motions of all objects are manifested as all of their relative motions with respect to the position. Absolute motions are original motions of objects, their relative motions are derivative and derived from their absolute motions.

Section Twenty-Five

Deduction 12 of N-God's Law: Physical Mechanism and Nature of Cosmic Expansion

25.1, Physical Mechanisms of Cosmic Expansion

The most fundamental reason for cosmic expansion is that matters are constantly generated in the universe at the constant rate $\sigma_U(i) \equiv \frac{M_G}{t_G}$ and result in total masses of the universe are kept increasing continuously

$M_U(i) = i \times M_G$. From perspective of dynamics, cosmic expansion is a result of combined action on any object by all matters in the universe, that is, driven by the action of resultant force norm $\|F_{rm}(i)\| = \sum \|F_{jm}\| = N_{gm} \times \|F_{g2}(i)\|$. This elementary action makes all objects in the universe conduct absolute motions and depart form each other as well as makes vacuum conducting expansional movements (dilation of space).

Dilation of space is driven by resultant force norm of $G_i^{\blacksquare}$, that is $\|F_{rm}(i)\| = \|F_{g2}(i)\| = \frac{N_G}{i^2}$, it makes all $G_i^{\blacksquare}$ in vacuum have and maintain absolute motion with the constant speed, that is $\frac{\|F_{g2}(i)\|}{M_g(i)} \times t_U(i) = a_g(i) \times t_U(i) \equiv v_G$, and results in entire vacuum conducting expansional movement, which is phenomenally manifested as dilation of space.

Receding movements of celestial bodies (stars or galaxies) are combined result from both action of resultant force norm and universal gravitation, its receding velocity $v_r(i)$ is jointly determined by the cosmic expansion constant $Z_C(i)$ and relative distance D, that is $v_r(i) = Z_C(i) \times D$, where $Z_C(i) = \frac{2.2884 \times 10^{62}}{i} kms^{-1}Mpc^{-1}$ said cosmic expansion constant, and $Z_C(n) = 29.617 kms^{-1}Mpc^{-1}$(see in Section Forty-nine).

25.2 Cosmic Expansion Phenomena and Properties

▪Dilation of space is an apparent phenomenon，it is actually expansional movement of vacuum. Vacuum is a sort of matter with the smallest mass density, which is composed of $G_i^{\blacksquare}$ and three dimensional space. The expansional movement of vacuum is kept going continuously due to production of matters in the universe and driven by resultant force norm of

$G_i^{\blacksquare}$. This kind of expansional movement is physically featured in two forms of absolute motions that vacuum moves in translational motion at the constant speed, and moves in orbital rotation with the constant speed and rotating radius being equal to radius of the universe. These two absolute motions bring a result of spiral movement of vacuum, which apparently looks as if cosmic space is conducting spiral movement.

▪Dilation of cosmic space occurs everywhere in the universe and proceeds in all directions. At every point of cosmic space, there would be $\frac{dR_U(i)}{dt} \equiv v_G = c$, where $R_U(i)$ said radius of the universe. that is, that is, expansional speed of cosmic space is constant and constantly equal to the speed of light constant.

▪One of the physical effects of dilation of cosmic space is the cosmological redshift.

▪Dilation of cosmic space and hyperspatial radiation of $G_i^{\blacksquare}$ flow together create effects of universal gravitation and universal repulsion.

▪Arbitrarily selecting a position in the universe to observe, under action of universal gravitation, absolute motions of all objects in the universe exhibit as their relative motions with respect to the position, which are vary with difference of the observed position. The further away a celestial body lies from the position, the more action of resultant force norm plays a dominant role and the more absolute motion characteristics of the celestial body

shows, even manifests some of its motional phenomena that can not be explained by universal gravitation only. When the relative distance equates radius of the universe, the celestial body manifest perfect characteristic of absolute motion, exhibiting either translational or spiral movement at the constant speed. On the contrary, the closer an celestial body lies to the observed position, the more significant its relative motion feature shows, the more dominant role the universal gravitation plays.

▪Speed of cosmic expansion is less than or equal to the constant speed. Dilation speed of cosmic space is equal to the constant speed; Receding velocity of celestial bodies are less than the constant speed, or equal to the constant speed to be occurred as distance between observer and celestial bodies equates radius of the universe exactly.

▪Today's cosmic expansion constant $Z_C(n)$ is slowly tending to be smaller with changing rate $\frac{\triangle Z_C(n)}{year} = -8.9 \times \frac{10^{-10} kms^{-1} Mpc^{-1}}{year}$, indicating that receding speed of celestial bodies will become smaller and slower along with evolution of the universe.

Section Twenty-Six

Deduction 13 of N-God's Law: Formation and Basic Properties of Cosmic Background Radiation

Modern cosmology explains the Cosmic Microwave Background radiation (CMB) based on the Big Bang Theory, which had predicted the

CMB in the 1940s, considering it to be residual thermal radiation field formed by the Big Bang in the early universe. In modern cosmological theory, terms "Cosmic Background Radiation" and "Cosmic Microwave Background Radiation" have same cosmological meaning and are abbreviated as CMB. They both refer to a type of electromagnetic radiation with blackbody radiation properties, its temperature now is about 2.725K[3][5][12][15][17]. In the CST model, "Cosmic Background Radiation" and "Cosmic Microwave Background Radiation" are two concepts that are related but not identical and their cosmological meanings are different necessary to be distinguished. Cosmic Background Radiation is abbreviated as CBR, while Cosmic Microwave Background Radiation retains the abbreviation of CMB. This distinction is made because CBR continuously evolves as the universe evolves, while CMB is simply current state of CBR. that is, CMB is current evolutionary state of CBR.

CMB is a kind of blackbody radiation. Although the Planck's law of blackbody radiation can provide precise description of the CMB's physical properties, it cannot effectively analyze CBR formation mechanism and evolutionary laws. Based on the CST process, the unified solutions to physical quantities of the universe, the Mirror Universe, and the ten-dimensional space-time properties of the universe, the CST model provides following description for the basic physical properties, formation

mechanisms, and evolutionary laws for both CBR and CMB.

26.1 Mechanism of CBR Formation

The Mirror Universe defines and stipulates all properties of the materialized universe, including physical properties associated with blackbody radiation. The Mirror Universe, with its holographic nature $|M_G|\sum_{j=0}^{i-1}s_{j,j-1}^{-2}$ and hyperspatial velocity $v_{ss}(i) = i \times v_G$, traverses the materialized universe and uses its identical operation to make all $G_i^{\blacksquare}$ all-identical, and at the same time materializes its blackbody radiation characteristics by using physical properties of $\dfrac{i^2}{1.008\dot{3}\times 10^{93}}$ numbers of $G_i^{\blacksquare}$ as basic physical features for this radiation., thereby forming the Cosmic Background Radiation (CBR). Cosmic temperature is that of the mirror universe $\underline{T_{UP}(i) = STV\left(\sum_{j=0}^{n-1}|M_G|s_{j,j-1}^{-2}\right)T_G} = \dfrac{i\times T_G}{1.008\dot{3}\times 10^{93}}$. In condition of $i \geq \sqrt{1.008\dot{3}\times 10^{93}} = 3.1754 \times 10^{46}$, the mirror temperature tuns into CBR temperature. that is, cosmic temperature equates CBR's temperature.

26.2 Initial State of CBR

The time when CBR firstly appeared can be determined based on the condition of $i \geq \sqrt{1.008\dot{3}\times 10^{93}} = 3.1754 \times 10^{46}$. This cosmic quantum number was corresponding to CBR's initially emerged. By formula of age of the universe (refer to Section Forty-two), we get

$$t_U(3.1754 \times 10^{46}) = (3.1754 \times 10^{46})t_G = 4.2817 \times 10^3 s$$

This result indicates that CBR was produced in very early stage of the

universe, specifically at the age of the universe approximately 1 hour and 11 minutes.

According to united solution to physical quantities of the universe, values for three physical characteristics (temperature, spectral peak frequency, average energy of photons) corresponding to the initial state of CBR can be calculated as:

$$T_{CBR}(3.1754 \times 10^{46}) = \frac{(3.1754 \times 10^{46})T_G}{1.008\dot{3} \times 10^{93}} = 1.12 \times 10^{-14} K$$

$$f_{CBR}(3.1754 \times 10^{46}) = \alpha \frac{(3.1754 \times 10^{46})f_G}{1.008\dot{3} \times 10^{93}} = 6.59 \times 10^{-4} Hz$$

$$e_{CBR}(3.1754 \times 10^{46}) = \frac{10}{2} \frac{(3.1754 \times 10^{46})J_G}{1.008\dot{3} \times 10^{93}} = 7.73 \times 10^{-37} J$$

26.3 Elementary Physical Properties of CBR and CMB

Elementary physical properties of CBR include CBR temperature, CBR spectral peak frequency, CBR average photon energy, CBR spectral peak wavelength, and CBR energy density. These five physical indicators are belong to the united solution to physical quantities of the universe. The general solution and Today's solutions for these five indicators of CBR and CMB are summarized as shown in Eq.26-1.

26.4 The Mirror Universe is Source of CBR and CMB

Based on Planck's blackbody radiation law, theoretical values of main parameters of blackbody radiation at a temperature of 2.725K can be calculated, and these theoretical values are in perfect match with observed data of CMB. On the other hand, by the mirror universe equation, relevant

physical characteristics of the mirror universe today can be calculated.

Comparison of these two results are listed in Table-7.

$$\blacktriangle T_{CBR}(i) = T_{UP}(i) = STV\left(\sum_{j=0}^{i-1}|M_G|s_{j,j-1}^{-2}\right)T_G = \frac{i \times T_G}{N} = \frac{i^2 T_g(i)}{N}$$
$$T_{CBR}(n) = 2.7250K;$$

$$\blacktriangle f_{CBR}(i) = \alpha f_{UP}(i) = \alpha STV\left(\sum_{j=0}^{i-1}|M_G|s_{j,j-1}^{-2}\right)f_G = \alpha\frac{if_G}{N} = \alpha\frac{i^2 f_g(i)}{N} = \alpha\frac{k_B T_{CBR}(i)}{h}$$
$$f_{CBR}(n) = 1.6034 \times 10^{11} Hz;$$

$$\blacktriangle \overline{e_{CBR}(i)} = \frac{10}{2}E_{UP}(i) = \frac{10}{2}STV\left(\sum_{j=0}^{i-1}|M_G|s_{j,j-1}^{-2}\right)J_G = \frac{10}{2}\frac{iJ_G}{N} = \frac{10}{2}\frac{i^2 e_g(i)}{N} = \frac{10}{2}k_B T_{CBR}(i)$$
$$\overline{e_{CBR}(n)} = 1.8808 \times 10^{-22}J(约\ 1.1739 \times 10^{-3}eV);$$

$$\blacktriangle \lambda_{CBR}(i) = \frac{\lambda_{UP}(i)}{5} = \frac{c}{5f_{UP}(i)} = \frac{ch}{5k_B T_{CBR}(i)}$$
$$\lambda_{CBR}(n) = 1.0558 \times 10^{-3}m;$$

$$\blacktriangle U_{CBR}(i) = N(T)\overline{e_{CBR}(i)} = N(T)\frac{10}{2}\frac{iJ_G}{N} = N(T)\frac{10}{2}\frac{i^2 e_g(i)}{N} = 96.16\pi\frac{\{k_B\ T_{CBR}(i)\}^4}{(hc)^3}$$
$$U_{CBR}(n) = 7.72 \times 10^{-14}Jm^{-3}。$$

$where,\ T_{CBR}(i), f_{CBR}(i),\ e_{CBR}(i)\ respectively\ said\ temperature,$
$spectral\ peak\ frequeny,, photon's\ average\ energy\ of\ CBR.$
$T_{UP}(i), f_{UP}(i), E_{UP}(i)\ , T_g(i), f_g(i), e_g(i)\ espectively\ said$
$temperature, frequency, energy\ of\ the\ mirror\ universe\ and\ \ G_i^{\blacksquare}.$
$\lambda_{CBR}(i) - spectral\ wavelength\ of\ CBR, \lambda_{UP}(i) = \frac{c}{f_{UP}(i)} - mirror\ wavelength,$
$N(T) - numbers\ of\ photons\ in\ CBR,\ \ \ \ \ U(T) - energy\ density\ of\ CBR,$
$\sum_{j=0}^{i-1}|M_G|s_{j,j-1}^{-2} - the\ mirror\ universe, \alpha = 2.821489,\ \ N = 1.008\dot{3} \times 10^{93},$
$h - Planck\ constant, k_B - Boltzmann\ constant, c - speed\ of\ light\ constant,$
$i = 3.1754 \times 10^{46}, \dots, n, \dots, 1.008\dot{3} \times 10^{93}.$
$n = 7.7266 \times 10^{60} - constant\ of\ the\ universe\ today.$

Eq.26-1

Table-7 Comparison of Properties of the Mirror Universe and CMB

	Physical Values of the mirror universe today	CMB's theoretical values or observed datum
Velocity	$v_{ss}(n) = 2.3179 \times 10^{69}ms^{-1}$	CMB exists throughout the universe
Temperature	$T_{UP}(n) = 2.7250K$	$T = 2.72548K)$

Spectral peak frequency	$\alpha\, f_{UP}(n) = 1.6034 \times 10^{11} Hz$	$1.6020 \times 10^{11} Hz$)
Average energy of photons	$\dfrac{10}{2} E_{UP}(n) = 1.8808 \times 10^{-22} J$	$1.0163 \times 10^{-22} J$)
Spectral wavelength	$\dfrac{\lambda_{UP}(n)}{5} = 1.0558 mm$	$1.06 mm$
Energy density	$N(T)\dfrac{10}{2} E_{UP}(n)$ $= 7.72 \times 10^{-14} J m^{-3}$	$4.17 \times 10^{-14} J m^{-3}$

Note: Based on the blackbody radiation law, three formulas can be derived respectively for spectral peak frequency f_{max}, average energy of photons $\overline{E(T)}$, and photon numbers $N(T)$.[16]

$f_{max} = \alpha \dfrac{k_B \times T}{h}$。 *When* $T = 2.725K$， $f_{max} =$

$2.821489 \dfrac{(1.380658 \times 10^{-23} JK^{-1})(2.725K)}{6.626075 \times 10^{-34} Js} = 1.6020 \times 10^{11} Hz;$

$\overline{E(T)} = \dfrac{\pi^4}{36.060} k_B T$。 *when* $T = 2.725K$，

$\overline{E(2.725K)} = \dfrac{(3.14159)^4 (1.380658 \times 10^{-23} JK^{-1})(2.725K)}{36.060} = 1.0163 \times 10^{-22} J;$

$N(T) = 19.232\pi \left(\dfrac{k_B T}{hc}\right)^3$。 *When* $T = 2.725K$， $N(2.725K) =$

$19.232\pi \left\{ \dfrac{(1.380658 \times 10^{-23} JK^{-1})(2.725K)}{(6.626075 \times 10^{-34} Js)(2.99792458 \times 10^8 ms^{-1})} \right\}^3 =$

$19.232\pi \left(\dfrac{0.189398 \times 10^3}{m}\right)^3 = 4.1048 \times 10^8 m^{-3}.$

All those results shown in equation 36-1 and Table-7 confirm that the mirror universe has blackbody radiation characteristics and is source of CBR and CMB . that is, the mirror universe, with its holographic nature

and hyperspatial velocity, traverses the materialized universe and forms the Cosmic Background Radiation.

Section Twenty-Seven

Deduction 14 of N-God's Law: Evolutionary Laws of

Cosmic Background Radiation

From Eq.26-1, we can get evolutionary laws about CBR as follows.

27.1 Evolutionary Law of CBR's Temperature

▪Value of CBR temperature is a linear function directly proportional to the cosmic quantum number, proportional constant is equal to mirror temperature quantum (absolute zero).

$$\ddot{T_G} = \frac{T_G}{1.008\dot{3} \times 10^{93}} = \frac{0.3556171686496934 \times 10^{33} K}{1.008\dot{3} \times 10^{93}}$$
$$= 0.3526781837848199 \times 10^{-60} K 。$$

▪Temperature of CBR increases slowly along with evolutionary process of the universe with an constant incremental rate of $0.8248K$ per 10 billion years.

$$\Delta T_{CBR}(i) = \frac{\triangle i \times T_G}{1.008\dot{3} \times 10^{93}}$$
$$= \frac{(2.3387723548904879 \times 10^{60})(0.3556171686496934 \times 10^{33} K)}{1.008\dot{3} \times 10^{93} \times 10^{10} \text{years}}$$
$$= \frac{0.8248K}{10^{10} \text{years}} \qquad \text{Eq. } 27-1$$

Note: The cosmic quantum number increment corresponding to one year is equal to $2.3387723548904879 \times 10^{50}$.

27.2 Evolutionary Law of CBR's Spectral Peak Frequency

▪Value of CBR's spectral peak frequency is a linear function directly proportional to the cosmic quantum number, proportional constant is 2.821589 times the mirror frequency quantum.

$$\frac{\alpha \times f_G}{1.008\dot{3} \times 10^{93}} = \frac{(2.821489)(0.741619848709 \times 10^{43} Hz)}{1.008\dot{3} \times 10^{93}}$$

$$= 2.07517908 \times 10^{-50} Hz 。$$

▪CBR's spectral peak frequency increases linearly along with evolutionary process of the universe and shifts towards the high-frequency end of electromagnetic spectrum, with a shift of +4.89 Hz per year or +48.9 Hz/10 years.

$$\Delta f_{CBR}(i) = \alpha \frac{\triangle i \times f_G}{1.008\dot{3} \times 10^{93}}$$

$$= 2.821489 \frac{(2.3387723548904879 \times 10^{50})(0.741619848709 \times 10^{43} Hz)}{1.008\dot{3} \times 10^{93} \times year}$$

$$= \frac{4.89 Hz}{year} = \frac{48.9 Hz}{10\ years} \qquad\qquad Eq.\ 27-2$$

27.3 Evolutionary Law of CBR's Photon Average Energy

▪Value of CBR;s photon mean energy value is a linear function directly proportional to the cosmic quantum number, proportional constant is 5 times the mirror energy quantum

$$\frac{10}{2} \frac{J_G}{1.008\dot{3} \times 10^{93}} = \frac{10}{2} \frac{0.4\dot{9}\dot{0} \times 10^{10} J}{1.008\dot{3} \times 10^{93}} = 2.4342 \times 10^{-83} J$$

▪CBR's photon average energy increases linearly with evolutionary

process of the universe, with an incremental rate of 1.1386×10^{-23} J per 10 billion years.

$$\Delta e_{CBR}(i) = \frac{\triangle i \times J_G}{1.008\dot{3} \times 10^{93}} = \left(\frac{2.3387 \times 10^{60}}{10^{10} year}\right)(2.4342 \times 10^{-83}J)$$

$$= \frac{5.6928 \times 10^{-23}J}{10^{10} years} \qquad \text{Eq. } 27-3$$

27.4 Relations of CBR's Characteristics and $G_i^{\blacksquare}$

As shown in Eq.36-1, CBR's characteristics have close relation with $T_g(i)$, $f_g(i)$, $e_g(i)$, $\lambda_g(i)$ of $G_i^{\blacksquare}$. Illustrated as follows.

▪CBR's Temperature

$$T_{CBR}(i) = STV\left(\sum_{j=0}^{i-1}|M_G|s_{j,j-1}^{-2}\right)T_G = \frac{i^2}{1.008\dot{3} \times 10^{93}}T_g(i)$$

▪CBR's Spectral Peak Frequency

$$f_{CBR}(i) = \alpha STV\left(\sum_{j=0}^{i-1}|M_G|s_{j,j-1}^{-2}\right)f_G = \alpha\frac{i^2}{1.008\dot{3} \times 10^{93}}f_g(i)$$

▪CBR's Photon's Average Energy

$$\overline{e_{CBR}(i)} = \frac{10}{2}STV\left(\sum_{j=0}^{i-1}|M_G|s_{j,j-1}^{-2}\right)J_G = \frac{10}{2}\frac{i^2}{1.008\dot{3} \times 10^{93}}e_g(i)$$

▪CBR's Spectral Wavelength

$$\lambda_{CBR}(i) = \frac{\lambda_{UP}(i)}{5} = \frac{c}{5f_{UP}(i)} = \frac{1}{5} \times \frac{\lambda_g(i)}{i^2/1.008\dot{3} \times 10^{93}}$$

Section Twenty-Eight

Deduction 15 of N-God's Law: Visible Light Window of

Cosmic Background Radiation

Energies of CMB is mainly concentrated in the microwave band, causing the current cosmic background to be black (the reason why outer space is dark). Along with evolution of the universe, CMB's color will also change, and cosmic background will appear a visible light window period, which will fall between approximately 88 trillion years and 154 trillion years. During this period, colors of cosmic background will gradually change to red and then successively undergo color changes of "red, orange, yellow, green, cyan, blue, and violet", accordingly CBR's temperature will be between 7,200 Kelvin and 12,700 Kelvin, and the cosmic background will become exceptionally vivid, bright, and hot. Followings give calculation results about temperatures and age of the universe when cosmic background color respectively is red, green, and blue.

■ Using 700nm as wavelength for red, its frequency is $0.4285 \times 10^{15} Hz$，. Substituting this into the formula for the CBR's spectral peak frequency, we get $0.4285 \times 10^{15} Hz = i(2.07517908 \times 10^{-50} Hz)$. By this frequency we can calculate the corresponding cosmic quantum number

$$i = \frac{0.4285 \times 10^{15} Hz}{2.07517908 \times 10^{-50} Hz} = 2.065 \times 10^{64}$$

Based on formulas about CBR's temperature and age of the universe, then we can get

▪Age of the universe; $t_U(2.065 \times 10^{64}) = (2.065 \times 10^{64})(1.3483 \times 10^{-43} s) = 2.7842 \times 10^{21} s = 0.8828 \times 10^{14}$ years (abt. 88 trillion years)

▪Cosmic temperature $T_{CBR}(2.065 \times 10^{64})$

$$= \frac{(2.065 \times 10^{64})(0.3556171686496934 \times 10^{33}K)}{1.008\dot{3} \times 10^{93}} = 7.282 \times 10^3$$

■ Using $51510nm$ as wavelength for green, its frequency is $0.5882 \times 10^{15}Hz$, Substituting this into the formula for the CBR's spectral peak frequency, we get $0.5882 \times 10^{15}Hz = i \times 2.07517908 \times 10^{-50}Hz$. By this frequency, we can calculate corresponding cosmic quantum number

$$i = \frac{0.5882 \times 10^{15}Hz}{2.07517908 \times 10^{-50}Hz} = 2.8344 \times 10^{64}$$

Based on formulas about CBR's temperature and age of the universe, then we can get

▪Age of the universe; years $t_U(2.8344 \times 10^{64}) = (2.8344 \times 10^{64})$ $(1.3483 \times 10^{-43}s) = 3.8216 \times 10^{21}s = 1.2118 \times 10^{14}$ years （abt. 121 trillion years）

▪Cosmic temperature $T_{CBR}(2.8344 \times 10^{64})$

$$= \frac{(2.8344 \times 10^{64})(0.3556171686496934 \times 10^{33}K)}{1.008\dot{3} \times 10^{93}} = 9.940 \times 10^3 K$$

■ Using $400nm$ as wavelength for blue, its frequency is $0.75 \times 10^{15}Hz$. Substituting this into the formula for the CBR's spectral peak frequency, we get $0.75 \times 10^{15}Hz = i \times 2.07517908 \times 10^{-50}Hz$. By this frequency, we can calculate the corresponding cosmic quantum number

$$i = \frac{0.75 \times 10^{15}Hz}{2.07517908 \times 10^{-50}Hz} = 3.614 \times 10^{64}$$

Based on formulas about CBR temperature and age of the universe, then we can get

▪Age of the universe $t_U(3.614 \times 10^{64}) = (3.614 \times 10^{64})(1.3483 \times 10^{-43}s)$

$$= 4.872 \times 10^{21} s = 1.544 \times 10^{14} \text{ years} \quad (\text{abt. 154 trillion years})$$

▪Cosmic temperature $T_{CBR}(3.614 \times 10^{64})$

$$= \frac{(3.614 \times 10^{64})(0.3556171686496934 \times 10^{33} K)}{1.008\dot{3} \times 10^{93}} = 1.2745 \times 10^{4} K$$

Section Twenty-Nine

Deduction 16 of N-God's Law: Definition and Classification of Matter

Physics is a science dedicated to studying matter and its laws of change, yet it hasn't been able to provide a physical definition of matter, only listing examples. Physicists generally believe that the definition of matter is a philosophical problem rather than a valid problem in physics. However long-time lack of a definition of matter has implicitly influenced physicists' thinking on the material world and establishment of theories, even directly leading to directional deviations in some physical theories. Ideological source of such cognitive situation is resulted from logical juxtaposition of matter and energy, and confusion in concepts of matter and mass. For example, seemingly correct and widespread understanding that "energy creates matter." or, incorrect understanding that "mass is converted into energy, therefore matter disappears." which confuses the concepts of mass and matter. Furthermore, the back-to-front misconception that "the essence of matter is energy."

As far as the physical reality of matter is concerned, matter and energy, matter and mass, are logically subordinate rather than parallel/ Energy and

mass are subordinate to matter, while energy and mass have a logically parallel relationship. This is logical relationship between these three basic physical concepts of matter, energy, and mass. Not only mass and energy, but spatial and temporal physical elements also belong to matter and have logically parallel relationship with mass and energy,. So mass, energy, space, and time are logically equal and are all physical elements that constitute matter, although they play different physical roles in matter and its movements.

29.1 Intrinsic Definition of Matter

Matter is a physical reality formed by condensation of all kinds of physical elements.

Physical elements (refer to Appendix Ⅰ) are not chemical elements, chemical elements themselves are matter. While physical elements are physical components that make up matter. Physical elements are physically represented by corresponding physical quantities, including, but not limited to: mass element, energy element, space element, time element, momentum element, angular momentum element, current intensity element, magnetic flux element, magnetic moment element, temperature element, magnetic field intensity element, velocity element, acceleration element, power elements, force element, and so on. The intrinsic definition of matter has a role in physical theories helping researchers to define

subordinate relationship between matter and physical elements, and also helping to define logical parity relationship between all physical elements.

29.2 Extrinsic Definition of Matter

This definition of matter needs to rely on a new concept of graviton density which is defined as numbers of $G_i^{\blacksquare}$ per unit volume, and signed $\rho_{gN}(i)$, its unit is numbers/m^3. Gravitons are the most basic unit of matter, so we can make use of graviton and graviton density to define matter.

$$
\left\{
\begin{array}{c}
To\ define\ G_i^{\blacksquare}\ and\ physical\ realities\ whose\ G_i^{\blacksquare}density\ are \\
equal\ to\ or\ \ larger\ than\ critical\ \ G_i^{\blacksquare}density\ \rho_{gC}(i)\ as\ matter. \\
where, \rho_{gC}(i) = \dfrac{93.\dot{8}}{100}\dfrac{\rho_U(i)}{M_g(i)} - the\ critical\ \ G_i^{\blacksquare}\ density, \\
M_g(i) - G_i^{\blacksquare}\prime mass, \rho_G - constant\ mass\ density, \\
\rho_U(i) = \dfrac{3}{4\pi}i^{-2}\rho_G - average\ mass\ density\ of\ the\ universe, \\
i - cosmic\ quantum\ number.
\end{array}
\right\} \quad Eq.\,29-1
$$

Note: The average mass density of the universe is one of sub-solution of the united solution to physical quantities of the universe (see in Section Forty-four) .

This definition in form of extension covers all kinds of matters without any omission. In this definition, percentage $\dfrac{93.\dot{8}}{100}$ is the proportion of all vacuum accounting for total matter in the universe (see in Section Thirty-seven).

For the universe today, the critical $G_i^{\blacksquare}$ density is equal to

$$
\rho_{gC}(n) = \frac{93.\dot{8}}{100}\frac{\rho_U(n)}{M_g(n)} = \frac{93.\dot{8}}{100}\frac{3.2951\times10^{-27}kgm^{-3}}{0.7059\times10^{-68}kg} = 4.3826\times10^{41}/m^3\ .
$$

29.3 Classification of Matter

According to the extrinsic definition of matter, matters are classified into three categories, that is, point-like matter, clumpy matter, and vacuum.

▪Point-like matter is the graviton ($G_i^{\blacksquare}$).

▪Clumpy matter is a class of matters whose' density is larger than the critical $G_i^{\blacksquare}$ density, ranging from photons to celestial bodies. All objects and elementary particles belong to lumpy matter, which are essentially composed of $G_i^{\blacksquare}$ and three-dimensional space, and the numbers of $G_i^{\blacksquare}$ contained by the lumpy matter are equal to

$$
\left.\begin{cases}
\qquad N_g(i) = \dfrac{M}{M_g(i)} = \dfrac{E}{e_g(i)} = \dfrac{f}{f_g(i)} \\
\text{where, } N_g(i) - \text{numbers of } G_i^{\blacksquare} \text{ contained in objects or particles} \\
\qquad M - \text{mass of object,} \qquad M_g(i) - G_i^{\blacksquare} mass, \\
\qquad E - \text{total energies of particle,} \qquad e_g(i) - G_i^{\blacksquare} energy, \\
\quad f - vibration\ frequeny\ of\ particle, f_g(i) - G_i^{\blacksquare} frequency.
\end{cases}\right\} \text{Eq. } 29-2
$$

▪Vacuum is a sort of matter with the smallest mass density, whose $G_i^{\blacksquare}$ density is exactly equal to the critical $G_i^{\blacksquare}$ density, and is composed of $G_i^{\blacksquare}$ and three-dimensional space. All of $G_i^{\blacksquare}$ contained in vacuum are evenly distributed.

As per prominent characteristics of matter, matter can also be divided into different types that include but are not limited to:

(1) Mass-type matter: Matters with mass as its prominent physical characteristic. Such as various objects, protons, neutrons, electrons, etc..

(2) Energy-type matter: Matters with energy as its prominent physical characteristic. Such as photons.

(3) Space-type matter: Matter with space as its prominent physical characteristic. Such as vacuum.

(4) Field-type matter: Matters prominently characterized by spatial and temporal distribution of an certain physical quantity. Such as electromagnetic fields.

(5) Intelligence-type matter: Matters with different levels of intelligence as its prominent characteristic. Such as humans, animals, plants, bacteria, AI-objects (such as AlphaGo, ChatGPT, Dou Bao, DeepSeek, etc.).

[6] Antimatter: Physical experiments have shown that every fermion has its antiparticle. Such as anti-electrons (positrons), anti-muons, anti-quarks, etc. Since particles and antiparticles annihilate when they meet and turn onto photons, so antimatter cannot exist alone in nature.

Section Thirty

Deduction 17 of N-God's Law: Material Structure and

Mass Density of Vacuum

30.1 Mass Density of Vacuum

Vacuum apparently appears as three-dimensional space, this is due to two reasons. Firstly, mass density of vacuum is the smallest ones among all types of matters. Secondly, the volumes occupied by all $G_i^{\blacksquare}$ contained in unit volume of vacuum only account for much smaller portion of unit volume.

Formula to mass density of vacuum is expressed as

$$\begin{cases} \rho_{vac}(i) = \dfrac{93.\dot{8}}{100}\rho_U(i) = \dfrac{93.\dot{8}}{100}\dfrac{3}{4\pi}i^{-2}\rho_G = \dfrac{93.\dot{8}}{100}\dfrac{3}{4\pi}i^{-1}\rho_g(i) \\ where, \rho_{vac}(i) - mass\ density\ of\ vacuum, \\ \rho_U(i) - Average\ mass\ density\ of\ the\ universe, \\ \rho_G - constant\ mass\ density, \rho_g(i) - G_i^{\blacksquare}\ mass\ density, \\ i - cosmic\ quantum\ number. \end{cases} \quad Eq.\ 30-1$$

Proof: Since $G_i^{\blacksquare}$ density of vacuum is exactly equal to critical $G_i^{\blacksquare}$ density,

then $\rho_{vac}(i) = \rho_{gc}(i)M_g(i) = \dfrac{93.\dot{8}}{100}\dfrac{\rho_U(i)}{M_g(i)}M_g(i) = \dfrac{93.\dot{8}}{100}\rho_U(i)$. Substituting

$\rho_U(i) = \dfrac{3}{4\pi}i^{-2}\rho_G$ into it, we get $\rho_{vac}(i) = \dfrac{93.\dot{8}}{100}\dfrac{3}{4\pi}i^{-2}\rho_G$. Given $\rho_g(i) =$

$\dfrac{\rho_G}{i}$, so $\rho_{vac}(i) = \dfrac{93.8}{100}\dfrac{3}{4\pi}i^{-1}\rho_g(i)$.---Done.

By Eq.30-1, it is easy to calculate mass density of vacuum at present,

$\rho_{vac.}(n) = \dfrac{93.8}{100}\rho_U(n) = \dfrac{93.8}{100} \times 3.2951 \times 10^{-27}kgm^{-3}$

$= 3.0937 \times 10^{-27}kgm^{-3}$

Vacuum apparently looks like space., now to demonstrate this viewpoint by taking vacuum today as example, $G_i^{\blacksquare}$ volume is constantly equal to the constant volume $V_G = 0.661941683145 \times 10^{-103}m^3$, volumes of all $G_i^{\blacksquare}$ contained in unit volume of vacuum are equal to $(4.3826 \times 10^{41})(0.661941683145 \times 10^{-103}m^3) = 2.9010 \times 10^{-62}m^3$, only accounting for about $\dfrac{3}{10^{62}}$ of unit volume. So volume of vacuum is almost equal to its spatial volume with very high accuracy, and make it apparently look like space.

Additionally, $G_i^{\blacksquare}$ density of all lumpy matters are larger than the critical $G_i^{\blacksquare}$ density, therefore vacuum must be a kind of matter with the smallest mass density. Furthermore energy density is another important physical characteristic of vacuum, as of today it is equal to $\rho_E(n) = \rho_{gc}(n)e_g(n)$

$= (4.3826 \times 10^{41}m^{-3})(0.6353 \times 10^{-51}J) = 2.7842 \times 10^{-10}Jm^{-3}$.

30.2 Material structure of Vacuum

Vacuum is made up of $G_i^{\blacksquare}$ and three-dimensional space. Movements of matter in the vacuum generally follows the law of conservation of momentum (space translation invariance), the law of conservation of angular momentum (space rotation invariance), and the law of conservation of energy (temporal translation invariance). These three invariances indicate that all $G_i^{\blacksquare}$ in vacuum are evenly distributed Based on this conclusion, the distance between any two adjacent $G_i^{\blacksquare}$ in vacuum can be calculated by a formula as

$$r_0(i) = \frac{1}{\sqrt[3]{\rho_{gc}(i)}} \qquad \text{Eq. } 30-2$$

Distance between any two adjacent $G_n^{\blacksquare}$ in today's vacuum would be

$$r_0(n) = \frac{1}{\sqrt[3]{\rho_{gc}(n)}} = \frac{1}{\sqrt[3]{4.3826 \times \dfrac{10^{41}}{m^3}}} = 1.3165 \times 10^{-14} m$$

$$\text{Eq. } 30-3$$

Based on discussions the above, it is known that: unit volume of vacuum today is an object that is composed of $4.3826 \times 10^{41}/m^3$ numbers of $G_n^{\blacksquare}$ and the distance between any two adjacent $G_n^{\blacksquare}$ in the vacuum are equal and approximately the scale of atomic nucleus.

Section Thirty-One

Deduction 18 of N-God's Law: Principle of Spatial Quantization

31.1 Definition of Spatial Quantum

To define a cube-shaped space with its sides equating to the constant

length as a spatial quantum, abbreviated as QSG.

31.2 Principle of Spatial Quantization

Three-dimensional spaces of the universe are quantized and composed of QSGs. Volume of QSG is equal to $G_i^{\blacksquare}$ volume equating the constant volume $V_G = 0.66194168 \ldots \times 10^{-103} m^3$. It is virtual space quantum that links QSGs, which is quantity of three dimensional space stipulated by unit information, that is, $\frac{V_G}{1.008\dot{3} \times 10^{93}}$. Every QSG can and can only be occupied by one $G_i^{\blacksquare}$. Any object's geometric shape of three dimensional space is consists of QSGs. Straight-line distance between any two points in three-dimensional spaces belongs to part of radius of the universe which is in all directions, the distance is quantized and its basic share is the constant length L_G.

$$\left\{ \begin{array}{c} R = kL_G \\ where, R - Straight\ line\ distance\ between\ any\ two\ points \\ in\ three\ dimensional\ spaces\ of\ the\ universe \\ L_G - constant\ length, \quad k - positive\ integer. \end{array} \right\} \text{Eq. } 31-1$$

31.3 Explanation to the principle:

Three-dimensional space is one of the physical elements that making up matter. $G_i^{\blacksquare}$ is the most basic unit of matter as well as substance basis of QSG.

QSGs are results of being materialized and magnified from the virtual space quantum which is not space but a regulation about quantity of space of space $\frac{V_G}{1.008\dot{3} \times 10^{93}}$ stipulated by unit information. Thus QSGs links each

other by the virtual space quantum.

$G_i^{\blacksquare}$ volume is not decided by $G_i^{\blacksquare}$'radius, instead of local moving range of $G_i^{\blacksquare}$'rigid body, strictly confined to scope of the constant volume. This can be demonstrated by $G_i^{\blacksquare}$'mass and $G_i^{\blacksquare}$'mass density. $G_i^{\blacksquare}$'mass$M_g(i) = \frac{M_G}{i}$, $G_i^{\blacksquare}$'mass density $\rho_g(i) = \frac{\rho_G}{i}$, thus $G_i^{\blacksquare}$'volume would be $V_g(i) = \frac{M_{g(i)}}{\rho_g(i)} = \frac{M_G}{\rho_G} = V_G$. that is ,QSG has nothing to do with cosmic quantum number, its volume is constant.

All objects and particles are essentially specific QSG occupied state, while each QSG can and can only be occupied by one $G_i^{\blacksquare}$, therefore any object's geometric shape of three dimensional space must be made up by QSGs.

Radius of the universe is in all direction, and straight-line distance between any two points in three-dimensional spaces of the universe is belonging to part of radius of the universe, while radius of the universe is quantized with basic share of the constant length, so the distance as well would be quantized with basic share of the constant length L_G.

Section Thirty-Two

Deduction 19 of N-God' Law: QSG Occupied State

32.1 QSG Occupied State

Occupied status by $G_i^{\blacksquare}$ to QSGs in certain amount of three-dimensional space is referred to as QSG occupied state. The QSG occupied state are divided into QSG fully-occupied state, QSG uniform occupied state, QSG

discrete occupied state and so on.

The QSG fully-occupied state is a kind of $G_i^{\blacksquare}$ distribution status fully occupying all QSGs in certain amount of three dimensional spaces. The QSG uniform occupied state is a kind of $G_i^{\blacksquare}$ distribution status not fully but evenly occupying some of QSGs in certain amount of three dimensional spaces. The QSG discrete occupied state is a kind of $G_i^{\blacksquare}$ distribution status orderly but unevenly occupying some of QSGs in certain amount of three dimensional spaces.

Since objects and particles are essentially composed of $G_i^{\blacksquare}$ and three-dimensional spaces, therefore an object or a particle are essentially is a specific QSG occupied state. Given $G_i^{\blacksquare}$ flow radiation has nature of instantaneity , it make QSG occupied state to be hyperspatial action.

32.2 Particle of Fully-Occupied State

The particle formed by the QSG fully-occupied state is defined as particle of fully occupied state, which has but is not limited to following properties:

▪ The particle are composed of $G_i^{\blacksquare}$ only, and is a kind of absolute
 rigid substance.

▪ Mass of the particle is equal to sum of masses of $G_i^{\blacksquare}$ contained in it. that is, $M = N_g(i) \times M_g(i)$, where M said mass of the particle, $N_g(i)$ said numbers of $G_i^{\blacksquare}$ contained in the particle, $M_g(i)$ said $G_i^{\blacksquare}$'mass.

▪ Vibration frequency of the particle is equal to sum of frequency of $G_i^{\blacksquare}$

contained in it. that is, $f = N_g(i) \times f_g(i)$, where f said vibration frequency of the particle, $N_g(i)$ said numbers of $G_i^{\blacksquare}$ contained in the particle, $f_g(i)$ said $G_i^{\blacksquare}$'frequecny.

▪ Relative velocity of the particle is equal to its absolute velocity and is equal to the constant speed $v_G = 3 \times 10^8 ms^{-1}$.

▪ Mass density of the particle is equal to $G_i^{\blacksquare}$mass density, that is, $\rho_g(i) = \frac{\rho_G}{i}$, and $\rho_g(n) = \frac{\rho_G}{n} = 1.0664 \times 10^{35} kgm^{-3}$.

▪ Momentum norm of the particle is equal to sum of momentum of $G_i^{\blacksquare}$ contained in it, that is, $\|p\| = N_g(i) \times \|p_g(i)\|$, where $\|p\|$ said momentum norm of the particle, $N_g(i)$ said numbers of $G_i^{\blacksquare}$contained in the particle, $\|p_g(i)\|$ said $G_i^{\blacksquare}$'momentum.

▪ Orbital angular moment norm of the particle is equal to sum of orbital angular moment of $G_i^{\blacksquare}$ contains in it. that is, $\|L\| = N_g(i) \times h$, where $\|L\|$ said orbital angular moment norm of the particle, $N_g(i)$ said numbers of $G_i^{\blacksquare}$contained in the particle, h said $G_i^{\blacksquare}$' orbital angular moment (Planck constant).'

▪ Rest mass of the particle is exactly equal to zero.

▪Radius of the particle is approximately equal to 1/2 of side length of a cube composed of all the $G_i^{\blacksquare}$ it contains.

$$\left. \begin{array}{c} r_{fo}(i) \approx \dfrac{\sqrt[3]{N_g(i)} \times L_G}{2} \\ where, r_{fo}(i) - radious\ of\ particle\ of\ QSG\ fully\ occupied\ state, \\ N_g(i) - numbers\ of\ G_i^{\blacksquare}\ contained\ in\ the\ particle, \\ L_G - constant\ length. \end{array} \right\} \text{Eq. } 32-1$$

By this formula, radius distribution for some of such particles can be estimated as follows:

Particles of QSG fully occupied state with vibration frequencies in range of $10^{-4}Hz\sim10^{0}Hz$ have their radius $10^{-30}m\sim10^{-28}m$ in between.

Particles of QSG fully occupied state with vibration frequencies in range of $10^{0}Hz\sim10^{10}Hz$ have their radius in $10^{-28}m\sim10^{-25}m$ between.

Particles of QSG fully occupied state with vibration frequencies in range of $10^{10}Hz\sim10^{14}Hz$ have their radius $10^{-25}m\sim10^{-24}m$ in between.

Particles of QSG fully occupied state with vibration frequencies in range of $10^{14}Hz\sim10^{16}Hz$ have their radius i $10^{-24}m\sim10^{-23}m$ in between.

Particles of QSG fully occupied state with vibration frequencies in range of $10^{16}Hz\sim10^{26}Hz$ have their radius $10^{-23}m\sim10^{-18}m$ in between.

32.3 Photon Is Particle of Fully-Occupied State

As mentioned in Section Twenty-four, all objects simultaneously possess absolute motion and relative motion, and absolute motion is their original movements. Arbitrarily selecting a position in the universe to observe, the absolute motion of all objects then present as their relative motions relative to the location. The same is true for photons, only that relative velocity of photons is equal to its absolute velocity, and is equal to the constant speed $c = v_G = 3 \times 10^8 ms^{-1}$, this is simply because photons are the particles of fully occupied state.

Theoretical value of speed of light in a vacuum is exactly equal to

$c = 3 \times 10^8 ms^{-1}$, its observed data is about $c = 2.99792458 \times 10^8 ms^{-1}$. Based on this fact, some scholars consider that photons have rest mass albeit very small.

Through analysis, it is found that this view is incorrect. If the relative speed of photon is equal to $c = 2.99792458 \times 10^8 ms^{-1}$, then according to the mass-velocity formula[4], rest mass of photons should be $m = M\sqrt{1 - \frac{c^2}{v_G^2}}$, where M said dynamic mass of photons. Substituting $v_G = 3 \times 10^8 ms^{-1}$, $c = 2.99792458 \times 10^8 ms^{-1}$, it should be

$$m = M\sqrt{1 - \frac{c^2}{v_G^2}} = \frac{3.7190}{100} M = \frac{3.7190}{100} \frac{hf}{v_G^2}$$

$$= \frac{3.7190}{100}(|f|)(0.7355 \times 10^{-50} kg) = |f|(2.7353 \times 10^{-48} kg),$$ where $|f|$ said modulus of frequency of photons.

Nevertheless, this calculation result brings two mistakes, that rest mass of photons equate $\frac{3.7190}{100}$ of their dynamic mass, and that rest mass of photons increase as their frequency increasing. For example, a photon with its frequency of $10^{10} Hz$, its rest mass should be $2.7353 \times 10^{-38} kg$, a photon with its frequency of $10^{20} Hz$, its rest mass should be $2.7353 \times 10^{-28} kg$. Obviously these two calculation results are seriously inconsistent with observed facts. In fact, existing physical experimental results do not support photons having a rest mass.

Therefore it is reasonable to think that relative motion velocity of

photons are strictly equal to its absolute motion velocity $c = v_G = 3 \times 10^8 ms^{-1}$, so rest mass of photons are strictly equal to zero, that is, $m = 0$。 As for the phenomenon that measured value of relative velocity of photons are slightly less than the theoretical value of speed of light in a vacuum, it can be explained by inevitable interference of measurement on physical quantity to be observed.

By the above reasons, we could believe that photons are the particles of fully occupied state, and radius of photon is as same as that of the particle of fully occupied state. According to Eq.32-1, we know that magnitude of photon's radius distribute in range of $10^{-30}m \sim 10^{-18}m$.

Frequencies of photons are widely distributed from $10^{-4}Hz$ to $10^{26}Hz$, and their dynamic masses differ by 30 orders of magnitudes, but their relative speed in vacuum are the same and equal to the constant speed. This is also because all photons belong to the particles of fully occupied state.

Lower limit of frequency of photons is about $10^{-4}Hz$, theoretical basis for this judgement is that photons was not produced at the moment of cosmic genesis, but appeared at same time when CBR was initially emerged, and its initial appearance time was about 1 hour and 11 minutes after cosmic genesis. The temperature of CBR at that time was $1.12 \times 10^{-14}K$, and its spectral peak frequency was $6.59 \times 10^{-4}Hz$, this was the first light that appeared in the universe (see more in details at Section Twenty-six).

The space quantization principle is consistent with the fact that matter is not infinitely divisible. $G_i^{\blacksquare}$ is the most basic unit that makes up vacuum and all lumpy matter, and it is the smallest matter in the universe which cannot be divided further. This is consistent with the fact that the space quantum is the basic unit of three-dimensional space, because the volume of the space quantum is equal to that of $G_i^{\blacksquare}$ and is equal to the constant volume.

"Is matter infinitely divisible?" This is a very old and fundamental problem in philosophy that has been debated for thousand years. Philosophy's understanding about the world also relies on latest scientific achievements to get enriched and developed. UPHY's understandings on $G_i^{\blacksquare}$ and space quantization makes this ancient philosophical debate come to the end and get an ultimate conclusion that matter is not infinitely divisible but can only be divided into $G_i^{\blacksquare}$ at last and stop there.

Section Thirty-Three

Deduction 20 of N-God's Law: Cosmic ABC Dialectical Logic

Supposed that

- A represents any object in the universe.
- B represents all other matters in the universe;.
- C represents all matters in the universe.

Then, we have proposition 1:

$$A + B = C, \text{ and } A \neq C, B \neq C.$$

By the principle of hyperspatial radiation of $G_i^{\blacksquare}$-flow and the mass theorem, any object (A) is formed by $G_i^{\blacksquare}$-flow (matter) hyper-spatially radiated from all other matters in the universe (B) to the location of the object A. that is, A is part of B. Therefore, we also have proposition 2:

$$A + B = C, \text{ and } A \text{ is a part of } B, \text{ thus } B = C.$$

If A and B are considered two isolated parts with no material connection, then Proposition 1 is true, Proposition 2 is not fully true because A does not belong to B, and B is not equal to C.

If A and B are regarded as a unified body with hyperspatial material connection, then Proposition 2 is true, and Proposition 1 is not fully true because "$B \neq C$." in Proposition 1 is not true.

These two propositions seemingly contradict logically but both are true in logic under different conditions. These two propositions are called as Cosmic ABC Dialectical Logic.

The Mass Theorem and its corollary specifically express physical meaning of Proposition 2 in the ABC dialectical logic, that is, any object (A) originates from $G_i^{\blacksquare}$ flow hyper-spatially radiated from all matters in the universe (C) to the location where object A resides. Although proposition 1 in the ABC dialectical logic is logically valid, but it lacks objective truth , because it does not reflect hyperspatial material connection

between A and B. The universe is a whole, in which all parts are not isolated but universally have hyperspatial connections with $G_i^{\blacksquare}$-flow as material mediums.

The cosmic ABC dialectical logic is universally applicable to any material existence in the universe, so is every individual ("I"). By the ABC dialectical logic, people can better understand themselves.

Who am I? I am the self; I am the non-self;

the non-self is others, and others are the self.

where "others" means all material existences in the universe except for "I".

Section Thirty-Four

Deduction 21 of N-God's Law: Equivalent Mass

"Equivalent mass" is a term in mechanical engineering that refers to a hypothetical mass concentrated at a single point on an equivalent component, used to represent mass of all components in a mechanism under conditions of equal kinetic energy. The equivalent mass of the mechanism is equal to the sum of masses of all its components. Nevertheless the equivalent mass proposed by UPHY has totally different physical meanings

34.1 Definition of Equivalent Mass

If two or more multidimensional space-time structures undergo space-time transformation to form an certain amount of multidimensional space-

time structure of mass element, then this transformed multidimensional space-time structure is defined as equivalent mass.

34.2 Properties and Basic Types of Equivalent Masses

Equivalent mass produces same force effect as mass does, but it is not mass and differs from mass; it can possess direction and polarity which essentially differentiate from mass. Basic types of equivalent masses include but are not limited to:

▪Acceleration Equivalent Mass M_a

The multidimensional space-time structure of unit acceleration $m^1 s^{-2}$ and an constant physical quantity $\frac{|G|m^2 s^0}{STV(|G|m^2 s^0)}$ can form acceleration equivalent mass M_a via space-time transformation. that is,

$$M_a = -\left\{\frac{|G|m^2 s^0}{STV(|G|m^2 s^0)}\right\}\{m^1 s^{-2}\} = -\frac{|G|m^3 s^{-2}}{STV(|G|m^2 s^0)} = -\frac{kg}{STV(|G|m^2 s^0)} =$$
$$-0.245163586350 \times 10^{-58} kg.$$

The negative sign indicates that direction of this equivalent mass is opposite to the direction of acceleration.

$$\left\{\begin{array}{c} M_a = -\dfrac{kg}{STV(|G|m^2 s^0)} = -0.245163586350 \times 10^{-58} kg \\ where, M_a - equivalent\ mass\ of\ acceleration, \\ "-"said\ direction\ of\ the\ mass\ is\ apposite\ to\ that\ of\ acceration. \end{array}\right\}$$

$$Eq.\ 34-1$$

▪Reduced Acceleration Equivalent Mass $\widetilde{M}_a$

When an object is acted upon by an external force, it makes the object generates acceleration $a = |a|ms^{-2}$), that in turn simultaneously forms

an equivalent mass , called as reduced equivalent mass of acceleration, expressed as $\widetilde{M}_a = |a|M_a$.

▪Equivalent Mass of Coulomb M_C

The multidimensional space-time structure of electric charge of unit Coulomb$\pm\sqrt{|G|}\mathrm{m}^3\mathrm{s}^{-2}$ and an constant value $\frac{\sqrt{|G|}\mathrm{m}^0\mathrm{s}^0}{STV(\sqrt{|G|}\mathrm{m}^0\mathrm{s}^0)}$ can form Coulomb equivalent mass M_C via space-time transformation. that is,

$$M_C = \left\{\frac{\sqrt{|G|}\mathrm{m}^0\mathrm{s}^0}{STV(\sqrt{|G|}\mathrm{m}^0\mathrm{s}^0)}\right\}\left\{\pm\sqrt{|G|}\mathrm{m}^3\mathrm{s}^{-2}\right\} = \pm\frac{|G|m^3s^{-2}}{\sqrt{|G|}} = \pm\frac{kg}{\sqrt{|G|}} =$$

$$\pm\frac{kg}{0.8169809445994500\times10^{-5}} = \pm1.224018756631 \times 10^5 kg.$$

The polarity of the equivalent mass is same as that of electric charges involved.

$$\left.\begin{array}{c} M_C = \pm\dfrac{kg}{\sqrt{|G|}} = \pm1.224018756631 \times 10^5 kg \\ where, M_C - equivalent\ mass\ of\ Coulomb, \\ Polarity\ of\ the\ mass\ is\ same\ as\ that\ of\ electric\ charges. \end{array}\right\} \text{Eq.}\,34-2$$

▪ Reduced Equivalent Mass of Coulomb $\widetilde{M}_c$

Any charged body with electric charge quantities of $N_e \times e$ has its equivalent mass called as reduced equivalent mass of Coulomb. that is,

$$\left.\begin{array}{c} \widetilde{M}_c = \pm\dfrac{N_e|e|}{\sqrt{4\pi|\epsilon_0|}}M_C \\ where, \widetilde{M}_c - reduced\ equivalent\ mass\ of\ Coulomb, \\ M_C - equivalent\ mass\ of\ Coulomb, \\ N_e - numbers\ of\ elementary\ charge\ in\ the\ charged\ body, \\ e - elementary\ charge, \epsilon_0 - vacuum\ permittivity, \\ polarity\ of\ this\ mass\ is\ same\ as\ that\ of\ elemenary\ charges. \end{array}\right\} Eq.\,34-3$$

▪Equivalent Mass of Elementary Charge M_e

Based on equivalent mass of Coulomb, it is known that equivalent mass of the elementary charge would be $M_e = |e|M_C$

$= (1.60217733 \times 10^{-19})(\pm 1.2224018756631 \times 10^5 kg)$

$= \pm 1.958504573336 \times 10^{-14} kg$

▪Equivalent Mass of Magnetic Moment - Magnetic Flux $M_{\mu/\varphi}$

Multidimensional space-time structure of unit magnetic moment $\sqrt{|G|}m^5 s^{-3}$, unit magnetic flux $\sqrt{|G|}m^2 s^{-1}$ and an constant value $\dfrac{\sqrt{|G|}m^0 s^0}{STV\left(\sqrt{|G|}m^0 s^0\right)}$ can form an equivalent mass of magnetic moment -magnetic flux, that is,

$$M_{\frac{\mu}{\varphi}} = \left\{ \frac{\sqrt{|G|}m^0 s^0}{STV\left(\sqrt{|G|}m^0 s^0\right)} \right\} \left\{ \frac{\sqrt{|G|}m^5 s^{-3}}{\sqrt{|G|}m^2 s^{-1}} \right\} = \frac{|G|m^3 s^{-2}}{|G|}$$

$$= \frac{kg}{6.6745786383860966 \times 10^{-11}} = 1.498221916584 \times 10^{10} kg.$$

$$\left\{ \begin{array}{l} M_{\mu/\varphi} = \dfrac{kg}{|G|} = 1.498221916584 \times 10^{10} kg \\ where, M_{\mu/\varphi} - Equivalent\ Mass\ of\ Mag.moment\ -\ mag.flux, \\ Direction\ of\ the\ mass\ is\ same\ as\ that\ of\ the\ magnetic\ moment\ . \end{array} \right\}$$

Eq. $34 - 4$

Section Thirty-Five

Deduction 22 of N-God's Law : Physical Reality of The Inertial Force

Physics considers that Newton's laws of motion do not hold in non-inertial frames of reference. For purpose of to use Newton's laws in non-inertial frames, it is necessary to artificially introduce a hypothetical force—the inertial force, and it is believed that the inertial force is not a real force, it does not actually exist, and is not an physical reality.[6][7][8][9][10] Such understanding on inertial forces gives rise to some

questions, such as:

Could a hypothetical and actually non-existent force produce real physical effects?

Could a hypothetical and actually non-existent force counteract real gravity?

If there is acceleration, there must be a force. Could a hypothetical and actually non-existent force cause an object in non-inertial frame of reference to get a real reverse acceleration?

Obviously, neither could, It seems to be a flaw in physics' understanding about nature of the inertial forces.

UPHY put forward a new viewpoint on the inertial forces and points out that an object generates acceleration under action of external forces, which follows the Newton's second law $F = Ma$. Meanwhile a reduced equivalent mass of the acceleration is generated, which interacts with mass of the object to creates a force so called the first initial force F_a causing the object to get a reverse acceleration in non-inertial frame of reference, that trends to to maintain the object's original state of motion. This inertial force F_a is equal in magnitude and opposite in direction to the acting force F, and they are a pair of action and reaction forces. The first inertial force is not an acting force between objects but generated from action of the reduced equivalent mass of acceleration and mass of an object, it is a real

force and an physical reality. The first inertial force exits in all objects, being generated along with acceleration of objects, and it is of universality.

$$\begin{cases} F_a = STV\left(\dfrac{M\widetilde{M}_a}{\widetilde{R_a}^2}\right)N_G = G\dfrac{M\widetilde{M}_a}{\widetilde{R_a}^2} = -Ma \\ where, F_a - the\ first\ initial\ force, M - mass\ of\ object, \\ \qquad a - accelertion\ of\ the\ object, \\ \widetilde{M}_a = |a|M_a - reduced\ equivalent\ mass\ of\ acceleration, \\ \widetilde{R_a} - reduced\ radius\ of\ the\ acceleration\ and\ \widetilde{R_a} = L_G, \\ direction\ of\ F_a\ is\ opposite\ to\ that\ of\ the\ acceleration. \end{cases} \quad \text{Eq. } 35-1$$

Proof: : $F_a = G\dfrac{M\widetilde{M}_a}{\widetilde{R_a}^2} = -|G|m^3kg^{-1}s^{-2}\dfrac{|M|kg|a|kg}{|L_G|^2m^2STV(|G|m^2s^0)}$

$= -\dfrac{|a|ms^{-2}|M|kg}{STV(m^{-1})^2STV(m^2)} = -|M|kg|a|ms^{-2} = -Ma$

Note: The reduced radius of acceleration is distance between mass center of object and that of .the equivalent mass of acceleration.

Section Thirty-Six

Deduction 23 of N-God's Law: Origin of Inertia

Inertia is a sort of physical property possessed by all objects. Definition of inertia in physics is that the property of object to remain at rest or in uniform motion is called as inertia of object. UPHY refers it as the first definition of inertia. This kind of understanding on inertia was first proposed by the Italian physicist Galileo Galilei (1564-1642) and later summarized by the English physicist Isaac Newton (1643-1727) into Newton's First Law (the Law of Inertia) which says that every object persists in a state of rest or uniform motion in a straight line unless it is

compelled to change the state by external forces acting on it.

Regarding origin of inertia, the Austrian philosopher and physicist Ernst Mach (1838-1916) once gave a philosophical understanding that inertia of any object is caused by combined action of all other matters in the universe on the object. This philosophical idea is called Mach's conjecture. The Mach's conjecture has remained in stage of philosophical speculation and has not developed into understanding in physics, because neither Mach himself nor subsequent physicists have provided rigorous proof to Mach's Conjecture, although the conjecture is generally correct. The origin of inertia or the essence of inertia is a legacy problem of relativity as well as a frontal subject that modern physics has not yet solved.

The origin of inertia is closely related to formation of object mass and origin of motions. Recognition of origin of inertia and accurate definition of inertia rely upon or depends on physical understanding about formation of mass and motions of objects. Based on the principle of hyperspatial radiation of , $G_i^{\blacksquare}$-flow and the mass theorem, the mechanism of gravitation formation, the action of resultant force norm, and absolute motions, UPHY gives following understanding of inertia and the origin of inertia:

36.1 The Second Definition of Inertia

The property that all object possess and maintain absolute motion is

defined as inertia of objects.

36.2 Origin of Inertia

Inertia of objects stem from the action of resultant force norm of objects exerted by all matters in the universe.

To strictly express this viewpoint by an equation as shown in Eq.36-1.

The action of resultant force norm is algebraic sum of absolute forces acting on an object by all matters in the universe, and equate resultant force norm of the object. Resultant force norm of any object is equal to product of the second $G_i^{\blacksquare}$'force and numbers of $G_i^{\blacksquare}$ contained in the object. that is,

$$||F_{rm}(i)|| = \sum ||F_{jm}|| = N_{gm} \times ||F_{g2}(i)||$$

where, $||F_{rm}(i)||$ said resultant force norm of an object, $||F_{jm}||$ said absolute force exerted on the object by any other object in the universe, N_{gm} said numbers of $G_i^{\blacksquare}$ contained in the object, $||F_{g2}(i)||$ said the second $G_i^{\blacksquare}$'force and $||F_{g2}(i)|| = \frac{N_G}{i^2}$.

In state of absolute motion, all objects have the same acceleration as $G_i^{\blacksquare}$'acceleration $a_g(i)$. Age of the universe $t_U(i)$ is physically total amounts of one dimensional times of the universe, and $t_U(i) = i \times t_G$.

$$
\left\{
\begin{array}{c}
Under\ action\ of\ resultant\ force\ norm, all\ \ objects\ generate \\
absolute\ motions\ and\ maintain\ their\ velocity \\
as\ the\ constant\ speed \\
\dfrac{||F_{rm}(i)||}{m} \times t_U(i) = a_g(i) \times t_U(i) \equiv v_G = c \\
where, ||F_{rm}(i)|| - resultant\ force\ norm\ of\ object \\
m - mass\ of\ object, a_g(i) - G_i^{\blacksquare} acceleration, \\
t_U(i) - age\ of\ the\ universe\ , v_G - constant\ speed, \\
c - speed\ of\ light\ constant, \quad i - cosmic\ quantum\ number.
\end{array}
\right\}
$$

Eq.36-1

Section Thirty-Seven

Deduction 24 of N-God's Law: Proportion of Vacuum

The vast spaces of the universe is actually vacuums. Since volume of vacuum is approximately equal to its volume of three dimensional spaces, with very high precision, thus total volumes of all vacuums in the universe are equal to total volumes of three dimensional space of the universe which is $V_U(i) = \frac{4\pi}{3} i^3 V_G$ (see in Section Forty-Seven).

Based on mass density of vacuum $\rho_{vac}(i)$ and total spatial volumes of the universe $V_U(i)$, general solution to total masses of vacuums can be obtained.

$$\left\{ \begin{array}{c} M_{vac}(i) = V_U(i) \times \rho_{vac}(i) = \frac{93.\dot{8}}{100} M_U(i) \\ where, M_{vac}(i) - total\ masses\ of\ vacuum, \\ M_U(i) - total\ masses\ of\ the\ universe, \\ V_U(i) = \frac{4\pi}{3} i^3 V_G - total\ spatial\ volumes\ of\ the\ universe, \\ \rho_{vac}(i) - mass\ density\ of\ vacuum, i - cosmic\ quantum\ number. \end{array} \right\} \quad \text{Eq. } 37-1$$

Proof : Since $\rho_{vac}(i) = \frac{93.\dot{8}}{100} \frac{3}{4\pi} i^{-2} \rho_G$, and $V_U(i) = \frac{4\pi}{3} i^3 V_G$., so total masses of vacuum would be $M_{vac}(i) = \rho_{vac}(i) \times V_U(i) = (\frac{93.\dot{8}}{100} \frac{3}{4\pi} i^{-2} \rho_G)(\frac{4\pi}{3} i^3 V_G) = \frac{93.\dot{8}}{100} i \rho_G V_G = \frac{93.\dot{8}}{100} i M_G = \frac{93.\dot{8}}{100} M_U(i)$.

---Done.

The Eq.37-1 indicates that total masses of vacuum account for $\frac{93.\dot{8}}{100}$ of total masses of the universe.

The percentage $\frac{93.\dot{8}}{100}$ shown in Eq.29-1, Eq.30-3 and Eq.37-1is a theoretical result obtained through analysis to multidimensional space-time structures of total momentum norms and total masses of the universe.

The analysis process is given as follows.

According to the united solutions to physical quantities of the universe, it is known that total momentum norms of the universe $||p_U(i)|| = i \times p_G$, total masses of the universe $M_U(i) = i \times M_G$,. To take ratio of space-time values fo them, we have $STV(\frac{||p_u(i)||}{M_U(i)}) = STV\left(\frac{i|p_G|kgms^{-1}}{i|M_G|kg}\right) = 1$, then $STV\{||p_U(i)||\} = STV(i|p_G|kgms^{-1}) = STV[M_U(i)]$.

On the other hand, $STV(i|p_G|kg)STV(ms^{-1}) = \frac{i}{|v_G|}STV(|p_G|kg)$.

To Compare these two results, we get $STV[M_U(i)] = \frac{i}{|v_G|}STV(|p_G|kg) = \frac{i}{|v_G|}STV(kg)|p_G|$. To remove STV sign from both sides of the equation and let $M_{\text{clum.}}(i) = \frac{i}{|v_G|}kg$, thus $M_U(i) = |p_G|M_{clum.}(i) = 16.\dot{3}\dot{6}M_{clum.}(i)$. that is,

$$M_{clum.}(i) = \frac{M_U^{\cdot}(i)}{16.\dot{3}\dot{6}} = 0.06\dot{1}M_U(i) = \frac{6.\dot{1}}{100}M_U(i)$$

According to the classification of matter, matters are divided into dot-like matter, clumpy matter, and vacuum. Clumpy matter and vacuum are composed of gravitons and three-dimensional space. Therefore, in combination with the astronomical estimate that observable matter accounts for approximately 4.9% of the total mass of the universe, then it can be confirmed that $M_{\text{clum.}}(i)$ is the total masses of clumpy matters in the universe, and the total mass of vacuums in the universe would be equal to $M_{vac.}(i) = M_U(i) - M_{clum.}(i) = \left(1 - \frac{6.\dot{1}}{100}\right)M_U(i) = \frac{93.\dot{8}}{100}M_U(i)$. that is, $M_{vac..}(i) = \frac{93.\dot{8}}{100}M_U(i)$.

Based on the above analysis, it conclude that proportion of all vacuum'

masses account for $\frac{93.\dot{8}}{100}$ of total masses of the universe. Proportion of all clumpy matters account for $\frac{6.\dot{1}}{100}$. of total masses of the universe. These two proportions are independent of the cosmic quantum number, so the proportions are constant and do not change as the universe evolves.

Section Thirty-Eight

Deduction 25 of N-God's Law: Proportion of Clumpy Matter

From analysis results acquired in Section Thirty-seven, it is known that proportion of all clumpy matters account for $\frac{6.\dot{1}}{100}$. of total masses of the universe. As stated in Section Twenty-nine, clumpy matters include all observable matters in the universe..

$$\left\{ \begin{array}{c} M_{clum.}(i) = \ (1 - \frac{93.\dot{8}}{100})\ M_U(i) = \frac{6.\dot{1}}{100} M_U(i) \\ where, M_{clum.}(i) - total\ masses\ of\ clumpy\ matters, \\ M_{vac}(i) - total\ masses\ of\ vacuum, \\ M_U(i) - total\ masses\ of\ the\ universe. \end{array} \right\} Eq.\ 38-1$$

It is necessary to point out that dark matter and dark energy are hypothetical concepts put forward by physicists in attempt to explain some astronomical phenomena. However there are no any direct evidences to verify them so far. UPHY does not support these two initiatives, considering that cosmic expansion is powered by the action of resultant force norm (see in Section Twenty-three and Twenty-five), having nothing to do with dark energies. Those observed abnormal motions of celestial bodies are contributed to absolute motions themselves (see in Section Twenty-four), having nothing to do with dark matter. Moreover the two proportions of vacuum and clump matters strength such viewpoints from UPHY.

United Solution to Physical Quantities of the Universe

By N-God's Third Equation (UPHY' Second Law) , united solution to physical quantities of the universe can be obtained, which are presented in Section Thirty-nine to Section Fifty-three. This unified solution constitutes examinations to objectivity and reality of the Natural God, featured as follows.

▪All sub-solutions of the unified solution are derived from same equation, and consistently compatible and mutually corroborative.

▪Correctness of general solutions of each sub-solutions is guaranteed by verifiability of Today' solution of the sub-solution, since both the general solutions and Today' solutions are obtained from same equation, the only difference is cosmic quantum number. If Today' solutions are true, those corresponding general solutions must be true as well.

▪All of Today' solutions of the united solution have the same precision as the CMB temperature (2.7250K), because the constant of the universe today is acquired from both the mirror universe equation and this temperature. Therefore precision of all Today' solutions are consistent with that of the CMB temperature, and eliminate uncertainties in corresponding observed data about the universe today.

Section Thirty-Nine

Deduction 26 of N-God's Law: Initial Physical State of the Universe

The 0th frame of the cosmic holographic image appeared and then immediately condensed into various of physical elements in parallel that

physically represented by corresponding physical quantities. All these physical elements condensed and to generate the first matter of the universe, thereby forming initial physical state of the universe, which marked birth of the materialized universe.

$$\left\{\begin{array}{c} Initial\ mass \\ M_U(1) = M_G = 0.\check{5}\dot{4} \times 10^{-7} kg \\ initial\ energy \\ E_U(1) = J_G = 0.4\dot{9}\dot{0} \times 10^{10} J \\ initial\ mass\ density \\ \rho_U(1) = \frac{3}{4\pi}\rho_G = 1.9672\ldots \times 10^{95} kgm^{-3} \\ initial\ time \\ t_U(1) = t_G = 1.3483\ldots \times 10^{-43} s \\ initial\ radius \\ R_U(1) = L_G = 0.4045\ldots \times 10^{-34} m \\ initial\ spatial\ volume \\ V_U(1) = \frac{4\pi}{3}V_G = 2.7727\ldots \times 10^{-103} m^3 \\ intial\ temperature \\ T_{UP}(1) = \frac{T_G}{1.008\dot{3} \times 10^{93}} = 0.3526\ldots \times 10^{-60} K (absolute\ zero) \\ initial\ orbital\ angular\ moment\ norm \\ ||L_U(1)|| = h = 6.6194\ldots \times 10^{-34}\ kgm^2 s^{-1} \\ initial\ momentum\ norm \\ ||p_U(1)|| = p_G = 16.\dot{3}\dot{6} kgms^{-1} \\ \ldots\ldots \end{array}\right\} \quad \text{Eq. } 39-1$$

This set of calculation results are solutions acquired from the general equation of the universe at $i = 1$. From which it is known that the initial temperature of the universe is equal to absolute zero., this is a natural and reasonable conclusion, simply because In the initial state of the universe, the universe has the least amount of matter which were physically manifested in its the minimum values of initial mass, initial energy, initial momentum, initial angular momentum and so on, therefore cosmic initial temperature must also be at lowest.

Section Forty

Deduction 27 of N-God's Law: General Solution and

Today's Solution to Total Masses of the Universe and $G_i^{\blacksquare}$ Mass

Since $STC(kg) = |G|m^3 s^{-2}$, so there is $a - b = 3 - 2 = 1$.

According to rules for values of d and β_A , to take $d = 1$ or -1 and take

$\beta_A = 1$. By the general equation of the universe $A_U(i) = \beta_A i^d A_G$ and the

nothingness action equation $A_U(i) = \left(1.008\dot{3} \times 10^{93} \right) A_{UP}(i)$, we can get

general solution and Today' solution to total masses of the universe and

$G_i^{\blacksquare}$'mass.

$$\left.\begin{array}{c} M_U(i) = \left(1.008\dot{3} \times 10^{93} \right) M_{UP}(i) = iM_G = i^2 M_g(i) \\ M_U(n) = 4.2145 \times 10^{53} kg \\ M_g(i) = \dfrac{M_G}{i} \\ M_g(n) = 0.7059 \times 10^{-68} kg \\ where, \quad M_U(i) - total\ masses\ of\ the\ universe \\ M_{UP}(i) - mirror\ mass, \quad M_g(i) - G_i^{\blacksquare} mass \\ cosmic\ quantum\ number\ i = 1,2,3, \dots, n, \dots, 1.008\dot{3} \times 10^{93} \\ n = 7.7266 \times 10^{60} - the\ constant\ of\ the\ universe\ today \end{array}\right\} \text{Eq.}\,40 - 1$$

Note: $M_U(n) = nM_G = (7.7266 \times 10^{60})(0.5454 \times 10^{-7} kg)$

$= 4.2145 \times 10^{53} kg.$ $M_g(n) = \frac{0.54545454 \times 10^{-7} kg}{7.7266 \times 10^{60}} = 0.7059 \times 10^{-68} kg.$

By the solutions, it is known that total masses of the universe is equal

to $1.008\dot{3} \times 10^{93}$ times of the mirror mass, and also equal to product of

cosmic quantum number and the constant mass, and more equal to product

of total numbers of $G_i^{\blacksquare}$ possessed by the universe and $G_i^{\blacksquare}$ mass. The

$G_i^{\blacksquare}$ mass is equal to ratio of the constant mass to the cosmic quantum

number. Total masses of the universe today are equal to $4.2145 \times 10^{53} kg$, while Today' graviton mass $M_g(n)$ is equal to $0.7059 \times 10^{-68} kg$. Total masses of the universe are kept increasing linearly along with evolutionary process of the universe, its magnitude is a first power proportional function of the cosmic quantum number, proportional constant is the constant mass. While $G_i^{\blacksquare}$ mass is inversely proportional to the cosmic quantum number and kept decreasing and tends to become smaller and smaller during the course of cosmic evolution.

Section Forty-One

Deduction 28 of N-God's Law: General Solution and Today's

Solution to Radius of the Universe and $G_i^{\blacksquare}$ Radius

$$\left\{\begin{array}{c} R_U(i) = \left(1.008\dot{3} \times 10^{93}\right)R_{UP}(i) = iL_G = i^2 R_g(i) \\ R_U(n) = 3.1254 \times 10^{26} m \\ R_g(i) = \dfrac{L_G}{i} \\ R_g(n) = 0.5235 \times 10^{-95} m \\ where, R_U(i) - radius\ of\ the\ universe \\ R_{UP}(i) - mirror\ radius,\ R_g(i) - G_i^{\blacksquare} radius \\ cosmic\ quantum\ number\ i = 1,2,3,\dots,n,\dots,1.008\dot{3} \times 10^{93} \\ n = 7.7266 \times 10^{60} - the\ constant\ of\ the\ universe\ today \end{array}\right\} \text{Eq. } 41-1$$

Note: $R_U(n) = nL_G = (7.7266 \times 10^{60})(0.4045 \times 10^{-34} m)$

$= 3.1254 \times 10^{26} m.\ R_g(n) = \dfrac{0.40451991 \times 10^{-34} m}{7.7266 \times 10^{60}} = 0.5235 \times 10^{-95} m$

Since $STC(m) = m^1 s^0$, so there is $a - b = 1 - 0 = 1$ According to rules for values of d and β_A, to take $d = 1$ or -1 and take $\beta_A = 1$. By the general equation of the universe $A_U(i) = \beta_A i^d A_G$ and the nothingness

action equation $A_U(i) = (1.008\dot{3} \times 10^{93})A_{UP}(i)$, we can get general solution and Today' solution to radius of the universe and $G_i^{\blacksquare}$ radius.

By the solutions, it is known that radius of the universe is equal to $1.008\dot{3} \times 10^{93}$ times of the mirror radius, and also equal to product of cosmic quantum number and the constant length, and more equal to product of total numbers of $G_i^{\blacksquare}$ possessed by the universe and $G_i^{\blacksquare}$ radius. The $G_i^{\blacksquare}$'radius is equal to ratio of the constant length to cosmic quantum number. Radius of the universe today is equal to $3.1254 \times 10^{26}m$. while Today' graviton radius $R_g(n)$ is equal to $0.5235 \times 10^{-95}m$. Radius of the universe is kept increasing linearly along with evolutionary process of the universe, its magnitude is a first power proportional function of the cosmic quantum number, proportional constant is the constant length. While $G_i^{\blacksquare}$'radius is inversely proportional to the cosmic quantum number and kept decreasing and tends to become smaller and smaller during the course of cosmic evolution.

Section Forty-Two

Deduction 29 of N-God's Law: General Solution and Today's Solution to Age of the Universe and $G_i^{\blacksquare}$ Time

Since $STC(s) = m^0 s^1$, so there is $a - b = 0 - (-1) = 1$ According to rules for values of d and β_A , to take $d = 1$ or -1 and take $\beta_A = 1$. By the general equation of the universe $A_U(i) = \beta_A i^d A_G$ and the nothingness

action equation $A_U(i) = (1.008\dot{3} \times 10^{93})A_{UP}(i)$, we can get general solution and Today' solution to age of the universe and $G_i^{\blacksquare}$tim.

$$\left\{\begin{array}{c} t_U(i) = (1.008\dot{3} \times 10^{93})t_{UP}(i) = it_G = i^2 t_g(i) \\ t_U(n) = 10.4186 \times 10^{17}s = 3.3036 \times 10^{10} \text{ years} \\ t_g(i) = \dfrac{t_G}{i} \\ t_g(n) = 0.1745 \times 10^{-103}s \\ where, t_U(i) - age\ of\ the\ universe \\ t_{UP}(i) - mirror\ time, \ t_g(i) - G_i^{\blacksquare}'time \\ cosmic\ quantum\ number\ i = 1,2,3,\dots,n,\dots,1.008\dot{3} \times 10^{93} \\ n = 7.7266 \times 10^{60} - the\ constant\ of\ the\ universe\ today \end{array}\right\} Eq.42-1$$

Note: $t_U(n) = \beta_A n^d t_G = nt_G = (7.7266 \times 10^{60})(1.34839972 \times 10^{-43}s) = 10.4186 \times 10^{17}s = 3.3036 \times 10^{10} years$ (abt. 33 billion years). $t_g(n) = \dfrac{1.34839972 \times 10^{43}s}{7.7266 \times 10^{60}} = 0.1745 \times 10^{-103}s$ 。

By the solutions, it is known that age of the universe is equal to $1.008\dot{3} \times 10^{93}$ times of the mirror time, and also equal to product of cosmic quantum number and the constant time, and more equal to product of total numbers of $G_i^{\blacksquare}$ possessed by the universe and $G_i^{\blacksquare}$ time. The $G_i^{\blacksquare}$ time is equal to ratio of the constant time to cosmic quantum number. Age of the universe today is equal to. $1.04186 \times 10^{18}s = 3.3036 \times 10^{10}$ years, while Today' graviton time $R_g(n)$ is equal to $0.1745 \times 10^{-103}s$. Age of the universe is kept increasing linearly along with evolutionary process of the universe, its magnitude is a first power proportional function of the cosmic quantum number, proportional constant is the constant time. While $G_i^{\blacksquare}$ time is inversely proportional to the cosmic quantum number and kept decreasing and tends to become

smaller and smaller during the course of cosmic evolution.

Section Forty-Three

Deduction 30 of N-God's Law: General Solution and Today's

Solution to Total Energies of the Universe and $G_i^{\blacksquare}$ Energy

$$\left.\begin{cases} E_U(i) = \left(1.008\dot{3} \times 10^{93}\right)E_{UP}(i) = iJ_G = i^2 e_g(i) \\ E_U(n) = 3.7929 \times 10^{70}J \\ e_g(i) = \dfrac{J_G}{i} \\ e_g(n) = 0.6353 \times 10^{-51}J \\ where, E_U(i) - total\ energies\ of\ the\ universe \\ E_{UP}(i) - mirror\ energy, \ e_g(i) - G_i^{\blacksquare}{}'energy \\ cosmic\ quantum\ number\ i = 1,2,3,\dots,n,\dots,1.008\dot{3} \times 10^{93} \\ n = 7.7266 \times 10^{60} - the\ constant\ of\ the\ universe\ today \end{cases}\right\} Eq.\,43-1$$

Note: $E_U(n) = nJ_G = (7.7266 \times 10^{60})(0.49090 \times 10^{10}J)$

$= 3.7929 \times 10^{70}J.\ e_g(n) = \frac{0.49090 \times 10^{10}J}{7.7266 \times 10^{60}} = 0.6353 \times 10^{-51}J.$

Since $STC(J) = |G|m^5 s^{-4}$, so there is $a - b = 5 - 4 = 1$ According to rules for values of d and β_A , to take $d = 1\ or - 1$ and take $\beta_A = 1$. By the general equation of the universe $A_U(i) = \beta_A i^d A_G$ and the nothingness action equation $A_U(i) = \left(1.008\dot{3} \times 10^{93}\right)A_{UP}(i)$, we can get general solution and Today' solution to total energies of the universe and $G_i^{\blacksquare}$ energy/

By the solutions, it is known that total energies of the universe are equal to $1.008\dot{3} \times 10^{93}$ times of the mirror energy, and also equal to product of cosmic quantum number and the constant energy, and more equal to product of total numbers of $G_i^{\blacksquare}$ possessed by the universe and $G_i^{\blacksquare}$ energy. The $G_i^{\blacksquare}$ energy is equal to ratio of the constant energy to cosmic quantum

number. Total energies of the universe today are equal to $3.7929 \times 10^{70} J$. while Today' graviton energy $e_g(n)$ is equal to. $0.6353 \times 10^{-51} J$ Total energies of the universe is kept increasing linearly along with evolutionary process of the universe, its magnitude is a first power proportional function of the cosmic quantum number, proportional constant is the constant energy. While $G_i^{\blacksquare}$ energy is inversely proportional to the cosmic quantum number and kept decreasing and tends to become smaller and samller during the course of cosmic evolution.

Section Forty-Four

Deduction 31 of N-God's Law: General Solution and Today's

Solution to Average Mass Density of the Universe

$$\left.\begin{cases}\rho_U(i) = (1.008\dot{3} \times 10^{93})\rho_{UP}(i) = \dfrac{3}{4\pi}i^{-2}\rho_G = \dfrac{3}{4\pi}i^{-1}\rho_g(i) \\ \rho_U(n) = 3.2951 \times 10^{-27} kgm^{-3} \\ \rho_g(i) = \dfrac{\rho_G}{i} \\ \rho_g(n) = \dfrac{\rho_G}{n} = 1.0664 \times 10^{35} kgm^{-3} \\ where, \rho_U(i) - average\ mass\ density\ of\ the\ universe \\ \rho_{UP}(i) - mirror\ mass\ density, \quad \rho_g(i) - G_i^{\blacksquare} mass\ density \\ cosmic\ quantum\ number\ i = 1,2,3,\dots,n,\dots,1.008\dot{3} \times 10^{93} \\ n = 7.7266 \times 10^{60} - the\ constant\ of\ the\ universe\ today \end{cases}\right\} Eq.\,44-1$$

Note: $\rho_U(n) = \frac{3}{4\pi}n^{-2}\rho_G = \left(\frac{3}{4\pi}\right)(7.7266 \times 10^{60})^{-2}(8.2402205 \times 10^{95} kgm^{-3}) =$
$3.2951 \times 10^{-27} kgm^{-3}$. *The solution to* $G_i^{\blacksquare} mass\ density\ \rho_g(i) = \frac{\rho_G}{i}$ *is acquired*

directly from Eq.9-5 and $\rho_g(n) = \frac{8.24022054 \times 10^{95} kgm^{-3}}{7.7266 \times 10^{60}} = 1.0664 \times 10^{35} kgm^{-3}$.

Since $STC(kgm^{-3}) = |G|m^0 s^{-2}$, so there is $a - b = 0 - 2 = -2$ According to rules for values of d, to take $d = -2$. Given geometric

shape of total spatial volumes of the universe is sphere with radius of the universe as its spherical radius, thus to take $\beta_A = \dfrac{3}{4\pi}$. By the general equation of the universe $A_U(i) = \beta_A i^d A_G$ and the nothingness action equation $A_U(i) = (1.008\dot{3} \times 10^{93}) A_{UP}(i)$, we can get general solution and Today' solution to average mass density of the universe.

By the solutions, it is known that average mass density of the universe is equal to $1.008\dot{3} \times 10^{93}$ times of the mirror mass density, and its magnitude is inverse square function of the cosmic quantum number, or inverse function of the cosmic quantum number relative to $G_i^{\blacksquare}$ mass density. Average mass density of the universe today is equal to. $3.2951 \times 10^{-27} kgm^{-3}$. while Today' graviton mass density $\rho_g(n)$ is equal to $1.0664 \times 10^{35} kgm^{-3}$. Average mass density of the universe is kept decreasing rapidly along with evolutionary process of the universe, while $G_i^{\blacksquare}$ mass density is inversely proportional to the cosmic quantum number and kept decreasing and tends to become smaller and smaller during the course of cosmic evolution.

Section Forty-Five

Deduction 32 of N-God's Law: General and Today's Solutions to

Total Momentum Norms of the Universe and $G_i^{\blacksquare}$ Momentum

Since $STC(p) = |G|m^4 s^{-3}$, so there is $a - b = 4 - 3 = 1$. According to rules for values of d and β_A , to take $d = 1 \ or -1$ and take

$\beta_A = 1$. By the general equation of the universe $A_U(i) = \beta_A i^d A_G$ and the nothingness action equation $A_U(i) = (1.008\dot{3} \times 10^{93})A_{UP}(i)$, we can get general and Today' solutions to total momentum norms of the verge and $G_i^{\blacksquare}$ momentum.

$$\left\{ \begin{array}{c} \|\rho_U(i)\| = (1.008\dot{3} \times 10^{93})p_{UP}(i) = ip_G = i^2\|p_g(i)\|, \\ \|p_U(n)\| = 1.2643 \times 10^{62}kgms^{-1} \\ \|p_g(i)\| = \dfrac{p_G}{i} \\ \|p_g(i)\| = 2.1178 \times 10^{-60}kgms^{-1} \\ where, \|p_U(i)\| - total\ momentum\ norms\ of\ the\ universe, \\ \|p_{UP}(i)\| - mirror\ momentum, \|p_g(i)\| - G_i^{\blacksquare}\text{'}momentum, \\ cosmic\ quantum\ number\ i = 1,2,3,\dots,n,\dots,1.008\dot{3} \times 10^{93}, \\ n = 7.7266 \times 10^{60} - the\ constant\ of\ the\ universe\ today. \end{array} \right\} Eq.\,45-1$$

Note: $\|p_U(n)\| = np_G = (7.7266 \times 10^{60})(16.3\dot{6}kgms^{-1})$

$= 1.2643 \times 10^{62}kgms^{-1}.$

$p_g(n) = \dfrac{16.3636kgms^{-1}}{7.7266 \times 10^{60}} = 2.1178 \times 10^{-60}kgms^{-1}$

By the solutions, it is known that total momentum norms of the universe is equal to $1.008\dot{3} \times 10^{93}$ times of the mirror momentum, and also equal to product of cosmic quantum number and the constant momentum and more equal to product of total numbers of $G_i^{\blacksquare}$ possessed by the universe and $G_i^{\blacksquare}$ momentum. The $G_i^{\blacksquare}$ momentum is equal to ratio of the constant momentum to the cosmic quantum number. Total momentum norms of the universe today is equal to $1.2643 \times 10^{62}kgms^{-1}$, while $G_n^{\blacksquare}$ momentum $\|p_g(i)\|$ is equal to $2.1178 \times 10^{-60}kgms^{-1}$ .Total momentum norms of the universe is kept increasing linearly along with

evolutionary process of the universe, its magnitude is a first power proportional function of the cosmic quantum number, proportional constant is the constant momentum. While $G_i^{\blacksquare}$ momentum is inversely proportional to the cosmic quantum number and kept decreasing and tends to become smaller and smaller during the course of cosmic evolution.

Section Forty-Six

Deduction 33 of N-God's Law: General and Today's Solutions to

Total Orbital Angular Moment Norms of the Universe

Since $STC(L) = |G|m^5s^{-3}$, so there is $a - b = 5 - 3 = 2$. According to rules for values of d and β_A, to take $d = 2$ and take $\beta_A = 1$. By the general equation of the universe $A_U(i) = \beta_A i^d A_G$ and the nothingness action equation $A_U(i) = (1.008\dot{3} \times 10^{93})A_{UP}(i)$, we can get general and Today' solutions to total orbital angular moment norms of the universe.

$$\left.\begin{cases} \|L_{UR}(i)\| = (1.008\dot{3} \times 10^{93})\|L_{UP}(i)\| = i^2h \\ \|L_{UR}(n)\| = 3.9518 \times 10^{88}Js \\ \left\|L_{gR}(i)\right\| = M_g(i)v_G R_U(i) \equiv h \\ where, \|L_{UR}(i)\| - total\ orbital\ angular\ moment\ norms\,, \\ \|L_{UR}(i)\| - mirror\ moment, \|L_{gR}(i)\| - G_i^{\blacksquare'}moment, \\ h - Planck\ constant, \\ cosmic\ quantum\ number\ i = 1,2,3,\dots,n,\dots,1.008\dot{3} \times 10^{93}, \\ n = 7.7266 \times 10^{60} - the\ constant\ of\ the\ universe\ today. \end{cases}\right\} Eq.46-1$$

Note: $\|L_{UR}(n)\| = n^2h = (7.7266 \times 10^{60})^2(6.61941683 \times 10^{-34}Js) = 3.9518 \times 10^{88}Js$. The solution to $G_i^{\blacksquare'}$ moment $\|L_{gR}(i)\| = M_g(i)v_G R_U(i) \equiv h$ is acquired directly from Eq.9-5.

By the solutions, it is known that total orbital angular moment norms of the universe is equal to $1.008\dot{3} \times 10^{93}$ times of the mirror angular moment, and also equal to product of total numbers of $G_i^{\blacksquare}$ possessed by the universe and $G_i^{\blacksquare}$ angular moment. The $G_i^{\blacksquare}$ angular moment is constantly equal to Planck constant. Total orbital angular moment norms of the universe today is equal to $3.9518 \times 10^{88} Js$. Total orbital angular moment norms of the universe are kept increasing , its magnitude is a direct square function of the cosmic quantum number. While $G_i^{\blacksquare}$ angular moment remains unchanged and is constantly equal to Planck constant.

Section Forty-Seven

Deduction 34 of N-God's Law: General Solution and Today's

Solution to Total Spatial Volumes of the Universe

$$\left\{ \begin{array}{c} V_U(i) = \left(1.008\dot{3} \times 10^{93}\right) V_{UP}(i) = \frac{4\pi}{3} i^3 V_G \\ V_U(n) = 1.2789 \times 10^{80} m^3 \\ V_g(i) \equiv V_G = 0.661941683 \times 10^{-103} m^3 \\ where, V_U(i) - total\ spatial\ volmues\ of\ the\ universe \\ V_{UP}(i) - mirror\ volume, \quad V_g(i) - G_i^{\blacksquare} volume \\ cosmic\ quantum\ number\ i = 1,2,3, \dots, n, \dots, 1.008\dot{3} \times 10^{93} \\ n = 7.7266 \times 10^{60} - the\ constant\ of\ the\ universe\ today \end{array} \right\} Eq.\ 47-1$$

Note: $V_U(n) = \frac{4\pi}{3} n^3 V_G = \frac{4\pi}{3} (7.7266 \times 10^{60})^3 (0.661941683 \times 10^{-103} m^3) = 1.2789 \times 10^{80} m^3$. *The solution to $G_i^{\blacksquare}$ volume $V_g(i) \equiv V_G$ is acquired directly from Eq.9-5.*

Since $STC(m^3) = |G| m^3 s^0$ so there is $a - b = 3 - 0 = 3$. According to rules for values of d , to take $d = 3$. Given geometric shape

of total spatial volumes of the universe is sphere with radius of the universe as its spherical radius, thus to take $\beta_A = \frac{4\pi}{3}$. By the general equation of the universe $A_U(i) = \beta_A i^d A_G$ and the nothingness action equation $A_U(i) = \left(1.008\dot{3} \times 10^{93} \right) A_{UP}(i)$, we can get general solution and Today' solution to total spatial volumes of the universe.

By the solutions, it is known that total spatial volumes of the universe are equal to $1.008\dot{3} \times 10^{93}$ times of the mirror volume,. and its magnitude is a cubic proportional function of the cosmic quantum number. Total spatial volumes of of the universe today is equal to. $1.2789 \times 10^{80} m^3$. Total spatial volumes of the universe are kept increasing rapidly along with evolutionary process of the universe, while $G_i^{\blacksquare}$ volume remain unchanged and is constantly equal to the constant volume.

Section Forty-Eight

Deduction 35 f N-God's Law: General and Today's Solutions to

Vibration/Operation Frequencies of the Universe and $G_i^{\blacksquare}$ 'Frequency

Since $STC(Hz) = m^0 s^{-1}$ so there is $a - b = 0 - 1 = -1$, According to rules for values of d and β_A , to take $d = 1, 0, -1$ respectively, to take $\beta_A = 1$. By the universe $A_U(i) = \beta_A i^d A_G$ and the nothingness action equation $A_U(i) = \left(1.008\dot{3} \times 10^{93} \right) A_{UP}(i)$, we can get general and Today' solutions to vibration frequency of the universe $f_U(i)$, operational frequency of the universe $f_O(i)$ and $G_i^{\blacksquare}$ 'Frequency $f_g(i)$.

$$\left\{\begin{array}{c} f_U(i) = \left(1.008\dot{3} \times 10^{93}\right) f_{UP}(i) = i f_G = i^2 f_g(i) \\ f_U(n) = 5.7302 \times 10^{103}\, Hz \\ f_O(i) \equiv f_G = 7.4161984 \times 10^{42}\, Hz \\ f_g(i) = \dfrac{f_G}{i} \\ f_g(n) = 0.9598 \times 10^{-18}\, Hz \\ where,\, f_U(i)v - vibration\ frequency\ of\ the\ cosmic\ body, \\ f_O(i) - operational\ frequency\ of\ the\ universe, \\ \|L_{UR}(i)\| - mirror\ moment, \|L_{gR}(i)\| - G_i^{\blacksquare}{}'moment, \\ h - Planck\ constant, \\ cosmic\ quantum\ number\ i = 1,2,3,\ldots,n,\ldots,1.008\dot{3} \times 10^{93}, \\ n = 7.7266 \times 10^{60} - the\ constant\ of\ the\ universe\ today. \end{array}\right\} Eq.\,48-1$$

Note: $f_U(n) = n f_G = (7.7266 \times 10^{60})(0.74161984 \times 10^{43}\, Hz)$

$= 5.7302 \times 10^{103}\, Hz.\ f_g(n) = \dfrac{0.74161984 \times 10^{43}\, Hz}{7.7266 \times 10^{60}} = 0.9598 \times 10^{-18}\, Hz.$

By the solutions, it is known that vibration frequency of the cosmic body is equal to $1.008\dot{3} \times 10^{93}$ times of the mirror frequency, and also equal to product of the cosmic quantum number and the constant frequency, and mor equal to total numbers of $G_i^{\blacksquare}$ possessed by the universe and $G_i^{\blacksquare}$ frequency. Operational frequency of the universe is constantly equal to the constant frequency f_G, which physically represents production rate of CST. The $G_i^{\blacksquare}$ frequency is equal to ratio of the constant frequency to the cosmic quantum number, with value of $0.9598 \times 10^{-18}\, Hz$ at present. Vibration frequency of the cosmic body today is equal to $5.7302 \times 10^{103}\, Hz$. The Vibration frequency of the cosmic body is kept increasing , its magnitude is one power proportional function of the cosmic quantum number, while $G_i^{\blacksquare}$ frequency is kept decreasing and tends to become smaller and smaller along with the course of cosmic evolution.

Section Forty-Nine

Deduction 36 f N-God's Law: General and Today's Solutions to Cosmic Expansion Constant

Physical meaning of the cosmic expansion constant is the same as that of the Hubble constant, but difference is their values. Based on verifiability of the unified solution to physical quantities of the universe, it can be confirmed that accuracy of the cosmic expansion constant at present is the same as the that of CMB'S temperature. The general solution to the cosmic expansion constant shows that the cosmic expansion constant decreases slowly as the universe evolves. The general and Today' solution to the cosmic expansion constant are expressed as:

$$
\left.
\begin{array}{c}
Z_C(i) = \dfrac{2.2884 \times 10^{62}}{i} kms^{-1}Mpc^{-1} \\
t_U(i) = \dfrac{1}{Z_C(i)} \\
Z_C(n) = \dfrac{2.2884 \times 10^{62}}{n} kms^{-1}Mpc^{-1} = 29.617 kms^{-1}Mpc^{-1} \\
\text{where}, Z_C(i) - \text{cosmic expansion constant}, \\
Z_C(n) - \text{cosmic expansion constan today}, \\
t_U(i) - \text{age of the universe}, \\
cosmic\ quantum\ number\ i = 7.628 \times 10^{56}, \dots, n, \dots, 1.0083 \times 10^{93}, \\
n = 7.7266 \times 10^{60} - \text{the constant of rthe universe today}.
\end{array}
\right\} \text{Eq. } 49-1
$$

Proof: Since physical unit of $kms^{-1}Mpc^{-1}$ is actually physical unit of s^{-1}, thus $STC(kms^{-1}Mpc^{-1}) = m^0 s^{-1}.$, then there is $a - b = 0 - 1 = -1$. According rule for values of d and β_A, to take $d = -1, \beta_A = 1$. The constant physical quantity of $(kms^{-1}Mpc^{-1})_G = \dfrac{1}{STV(kms^{-1}Mpc^{-1})} kms^{-1}Mpc^{-1} = \dfrac{STV(s)STV(Mpc)}{STV(km)} kms^{-1}Mpc^{-1}$

$$= \frac{STV(0.74161984 \times 10^{43})(10^6 \times 3.08567758 \times 10^{16})}{10^3} kms^{-1}Mpc^{-1}$$

$$= 2.2884 \times 10^{62} kms^{-1}Mpc^{-1}.$$

By the general equation of the universe $A_U(i) = \beta_A i^d A_G$, we can get general solution to cosmic expansion constant

$$Z_C(i) = \beta_A i^d (kms^{-1}Mpc^{-1})_G = i^{-1}(kms^{-1}Mpc^{-1})_G$$

$$= i^{-1}STV(kms^{-1}Mpc^{-1})^{-1}kms^{-1}Mpc^{-1}$$

$$= \frac{2.2884 \times 10^{62}}{i} kms^{-1}Mpc^{-1}. \text{ Since } (kms^{-1}Mpc^{-1})_G = (s^{-1})_G, Z_C(i) =$$

$$\frac{1}{i}(kms^{-1}Mpc^{-1})_G = \frac{1}{i}(s^{-1})_G = \frac{1}{i}\frac{1}{t_G} = \frac{1}{it_G} = \frac{1}{t_U(i)}. \text{ That is, } Z_C(i) = \frac{1}{t_U(i)}.$$

Substituting $n = 7.7266 \times 10^{60}$ into it, then we get Today' solution to the cosmic expansion constant

$$Z_C(n) = \frac{2.2884 \times 10^{62}}{7.7266 \times 10^{60}} kms^{-1}Mpc^{-1} = 29.617 kms^{-1}Mpc^{-1}。 \text{ ---Done.}$$

Physical Meaning of the Cosmic Expansion Constant:

▪Relative to any position in the universe, recessional velocity of celestial bodies increases by $\frac{2.2884 \times 10^{62}}{i} kms^{-1}$ per megaparsec (parsec is equal to $3.0857 \times 10^{22}m$). For the universe today, recessional velocities of celestial bodies increases by $29.617 kms^{-1}$ per megaparsec.

▪The cosmic expansion constant at present changes very slowly with an annual change of $-8.9 \times 10^{-10} kms^{-1}Mpc^{-1}$.

This result is calculated as $\Delta Z_C(n) = \frac{-\Delta n}{n(n+\Delta n)} 2.2884 \times$

$10^{62} kms^{-1}Mpc^{-1} \approx -\frac{2.33877232 \times 10^{50}}{5.97 \times 10^{121}} 2.2884 \times 10^{62} kms^{-1}Mpc^{-1}$

$= -8.9 \times 10^{-10} kms^{-1}Mpc^{-1}.$

Such amount of change is too small to detect.

▪Age of the Universe is equal to reciprocal of the cosmic expansion constant, and age of the universe age today is equal to the reciprocal of the cosmic expansion constant today. that is,

$$t_U(n) = \frac{1}{Z_C(n)} = \frac{1}{29.617 kms^{-1} Mpc^{-1}} = \frac{3.0857 \times 10^{22} m}{29.617 \times 10^3 m} s = 1.0418 \times 10^{18} s$$

(approximately 33 billion years).

Section Fifty

Deduction 37 f N-God's Law: General and Today's Solutions to Cosmic Background Radiation

The solutions are same as shown in Eq.26-1. Omitted herein.

Section Fifty-One

Deduction 38 f N-God's Law: General and Today's Solutions to Hyperspatial Velocity

Hyperspatial velocity is a real velocity generated from the mirror velocity under the nothingness action, which physically represents velocities of both the mirror universe and transmission of cosmic information. With this velocity, the mirror universe can traverses and reaches any place in the cosmic body at one constant time, even if the place is located at radius of the universe.

Since $STC(ms^{-1}) = m^0 s^{-1}$ so there is $a - b = 0 - 1 = -1$, according to rules for values of d and β_A, to take $d = 1$ and $\beta_A = 1$. By the universe $A_U(i) = \beta_A i^d A_G$ and the nothingness action equation $A_U(i) =$

$(1.008\dot{3} \times 10^{93})A_{UP}(i)$, we can get general and Today' solutions to hyperspatial velocity $v_{ss}(i) = i \times v_G$, and $v_{ss}(n) = n \times v_G$.

$$\left.\begin{cases} v_{ss}(i) = v_{UP}(i) \times 1.008\dot{3} \times 10^{93} = i \times v_G \\ v_{ss}(n) = n \times v_G = 2.3179 \times 10^{69}ms^{-1} \\ where, v_{ss}(i) - hyperspatial\ velocity, \\ v_{UP}(i) - mirror\ speed, v_G - constant\ speed, \\ cosmic\ quantum\ numbers\ i = 1,2,3,\dots,n,\dots,1.008\dot{3} \times 10^{93} \\ n = 7.7266 \times 10^{60} - constant\ of\ the\ universe\ today. \end{cases}\right\} Eq.\,51-1$$

Note: The hyperspace velocity is neither motional velocity of any objects nor transmission speed of the carrier information.

Section Fifty-Two

Deduction 39 f N-God's Law: General and Today's Solutions to Elementary Charge and Electromagnetic Coexistence State

52.1 Physical Mechanism of Elementary Charge Formation

In conditions of the constant charge and the constant magnetic flux, the mirror universe today generates a sort of physical quantity called as original square charge $e_c^2(n)$, and

$$e_c^2(n) = \frac{C_G}{W_{bG}} STV\left(\sum_{j=0}^{n-1}|M_G|s_{j,j-1}^{-2}\right)C_G$$

$$= \frac{(4.456259697815 \times 10^{-13}C)^2(7.6627 \times 10^{-33})}{1.485419899271 \times 10^{-21}W_b}$$

$$= \frac{102.440943559 \times 10^{-38}C^2}{W_b}$$

$$Eq.\,52-1$$

The $e_c^2(n)$ is evenly distributes on 10 dimensions of the 10 dimensional space-time, there are 4 same charges on each dimension, this kind of charges are the elementary charges. that is, every dimension of 5 spatial dimensions is distributed 4 negative or or positive elementary charges,

every dimension of 5 temporal dimensions is distributed 4 positive or negative elementary charges. There are in total of 40 elementary charges distributing on 10 dimensions of the 10-dimensional space-time.

$$
\left\{
\begin{aligned}
&\frac{e_c^2(n)}{per\ dimension.} = \frac{10.2440943559 \times 10^{-38}C^2}{W_b} \\
&= \frac{\{(+e)+(+e)\}\{(+e)+(+e)\}}{W_b} = \frac{(+2e)^2}{W_b} \\
&\qquad\qquad or, \\
&\frac{e_c^2(n)}{per\ dimension.} = \frac{10.2440943559 \times 10^{-38}C^2}{W_b} \\
&= \frac{\{(-e)+(-e)\}\{(-e)+(-e)\}}{W_b} = \frac{(-2e)^2}{W_b} \\
&where, e\ -\ the\ elementary\ charge, \\
&W_b\ -\ unit\ of\ magnetic\ flux, e_c^2(n)\ -\ origianl\ square\ charge.
\end{aligned}
\right\}
$$

$$\mathrm{Eq.}\,52-2$$

52.2 General Solution to the Elementary Charge

$$
e(i) = \pm\sqrt{\frac{i}{3.016979564954 \times 10^{98}}}\,C \qquad\qquad \mathrm{Eq.}\,52-3
$$

Proof:

$$
since\ \frac{C_G}{W_{bG}}STV\left(\sum_{j=0}^{n-1}|M_G|s_{j,j-1}^{-2}\right)C_G = 10 \times \frac{\{\pm2e(i)\}^2}{W_b}
$$

$$
thus,\ e(i) = \pm\sqrt{\frac{i \times (|C_G|C)^2}{40\left(1.008\dot{3} \times\times 10^{93}\right)|W_{bG}|}}
$$

$$
= \pm\sqrt{\frac{i \times (4.456259697815 \times 10^{-13})^2}{40\left(1.008\dot{3} \times\times 10^{93}\right)(1.485419899271 \times 10^{-21})}}\,C
$$

$$
= \pm\sqrt{\frac{i}{3.016979564954 \times 10^{98}}}\,C \qquad Done.
$$

52.3 Today' Solution to the Elementary Charge

$$
e(n) = e = \pm\sqrt{\frac{7.7266 \times 10^{60}}{3.016979564954 \times 10^{98}}}\,C
$$

$$= \pm 1.6003244134 \times 10^{-19}C.$$

Observed data: $e = \pm 1.60217662 \times 10^{-19}C.$

52.4 Evolution of the Elementary Charge

The elementary charge is relative stable but does change in its magnitude along with evolutionary process of the universe. In the next one million years, its magnitude will be increased by

$$\Delta e(n) = \sqrt{\frac{n+\Delta n}{3.016979564954 \times 10^{98}}}C - \sqrt{\frac{n}{3.016979564954 \times 10^{98}}}C$$

$$= 2.4 \times 10^{-24}C.$$

Note: increment of cosmic quantum number corresponding to one million years is equal to $2.3387723548904879 \times 10^{56}$.

52.5 Electromagnetic Coexistence State

$$\frac{C_G}{W_{bG}} STV \left(|M_G| \sum_{j=0}^{i-1} s_{j,j-1}^{-2} \right) C_G = 10 \times \frac{\{\pm 2e(i)\}^2}{W_b} \qquad \text{Eq. } 52-4$$

This equation reveals electromagnetic coexisting state of the mirror universe, which indicates that the elementary charges and its internal magnetic flux are generated at same time form the mirror universe under condition of the constant charge and the constant magnetic flux.

Section Fifty-Three

Deduction 40 f N-God's Law: General and Today's Solutions to

Vacuum Current

The mirror universe has electric current property as well , it generates mirror current, called as vacuum current. By equation of mirror universe, the vacuum current can be calculated and expressed as

The mirror current apparently flows out of vacuum, so to call it as vacuum current. In condition of low temperature environment, the vacuum

current can be detected.

This is a theoretical prediction to be verified by experiment.

$$\begin{cases} I_{UP}(i) = STV\left(\sum_{j=0}^{n-1} |M_G| s_{j,j-1}^{-2}\right) I_G = \dfrac{i \times I_G}{1.008\dot{3} \times 10^{93}} \\[3mm] I_{UP}(n) = 25.32 \times 10^{-3} A \quad (abt.\,25\ milliampere) \\[2mm] where, \sum_{j=0}^{i-1} |M_G| s_{j,j-1}^{-2} - the\ mirror\ universe, \\[2mm] I_{UP}(i) - Vacuum\ current, \\ I_G - the\ constant\ current, i - cosmic\ quantum\ number. \end{cases} \quad Eq.\,53-1$$

$Note: \dfrac{n \times I_G}{1.008\dot{3} \times 10^{93}} = \dfrac{(7.7266 \times \times 10^{60})(3.3048 \times \times 10^{30}A)}{1.008\dot{3} \times 10^{93}} 25.32 \times 10^{-3}$

Section Fifty-Four

Deduction 41 f N-God's Law: General and Today's Solutions to

Mirror Force and Mirror Work

54.1 Mirror Force and Its Expression

The mirror universe generates a force so called 阿是 mirror force, which is one of the physical properties of the mirror universe also is an physical reality. Under specific physical conditions, the mirror force can do work on an object that is called as mirror work which is a potential and yet-to-be-developed source of energy. The mirror force is an important theoretical discovery of UPHY that provides theoretical support for a potentially epoch-making technology. According to the mirror universe equation, it can be calculate that value of the mirror force at present is about 13,000 times bigger than thrust of the largest rocket in the world. General solution and Today' solution to the mirror force are expressed as

$$\begin{cases} \|F_{UP}(i)\| = STV\left(\sum_{j=0}^{n-1}|M_G|s_{j,j-1}^{-2}\right)N_G = \dfrac{i \times N_G}{1.008\dot{3} \times 10^{93}} \\ \|F_{UP}(n)\| = 9.2991 \times 10^{11}N \\ where, \sum_{j=0}^{i-1}|M_G|s_{j,j-1}^{-2} - \text{the mirror universe,} \\ N_G - \text{the constant force, } \|F_{UP}(i)\| - \text{the mirror force,} \\ i - \text{cosmic quantum number.} \end{cases} \quad \text{Eq. } 54-1$$

Note: $\|F_{UP}(n)\| = \dfrac{(7.7266\times10^{60})(1.21355976\times10^{44}N)}{1.008\dot{3}\times10^{93}} = 9.2991 \times 10^{11}N.$

54.2 Primary Properties of the Mirror Force

▪The mirror force is not an physical action between objects but generated by the mirror force...

▪The mirror force naturally is in confined state to any objects.

▪Today' mirror force $\|F_{UP}(n)\| = 9.2991 \times 10^{11}N$ can remain unchanged within next 467,000years, it has same valid period as that of the constant of the universe today $n = 7.7266 \times 10^{60}$.

54.3 Mirror Work

Under specific condition, the mirror force can do work on any object. To call such mechanical work as mirror work, signed W_{MU}, and

$$\begin{cases} W_{MU} = \|F_{UP}(n)\| \times L \\ where, W_{MU} - \text{the mirror work, } \|F_{UP}(n)\| - \text{Today'mirror force,} \\ L - \text{displacement or rotating radius of object.} \end{cases} \quad \text{Eq. } 54-2$$

In the natural state, today's mirror force is in confined state without observable effects. Under specific physical conditions (key technologies), the confinement state of today's mirror force could be lifted, which will induces and generate the mirror work. This key technology is currently a technology blueprint and has not yet been implemented.

Technical application prospects of this key technology is quite tempt-

ing and amazing. Once it is verified by physical experiments, today's mirror force could be made use of technically exploiting new source of energy---the mirror work through a technical device powered by the mirror force. Such kind of technical device is called as mirror work engine (MUW-Drive), whose driving force F_{MUW} is controllable between $0N \sim ||F_{UP}(n)||$, driving direction is controllable, with features of zero conventional energy consumption, 100% clean and safe, all time-domain effective, great and sustained power.

Mirror work vehicles (MUW-DV) configured with MUW-Drive could also emerge. Given MUW-Drive' high-quality and superior dynamic characteristics, MUW-DV could inevitably replace traditional means of transportation such as airplanes, ships, railcars, automobiles, launch vehicles, etc., and will enable the mankind to enter era of cosmic power.

Note; The so-called conventional energy refers to fossil energy (petroleum, natural gas, coal), natural energy (hydropower, wind power, tidal energy, geothermal energy, solar energy), various chemical energy, nuclear energy, etc.

Section Fifty-Five

Deduction 42 of N-God's Law: the First Crucial Experiment

On CMB

Evolutionary process of the cosmic microwave background radiation is

going on extremely slow, this makes experimental verification to changes in CMB temperature (abt. increase of $0.8248K$ every 10 billion years) to be technically unfeasible. Fortunately, experimental verification to other two physical characteristics of the CMB are technically feasible, which are the annual increase in CMB's spectral peak frequency and unshieldability of CMB.

The first crucial experiment on CMB is designed to verify changing tendency in spectral peak frequency of CMB. This experiment is technically feasible.

(1) Purpose of the Experiment

To verify CMB' temperature is kept increasing as time goes, incremental rate is equal to $\dfrac{0.8248K}{10\ billion\ years}$

(2) Experimental Index

Spectral peak frequency of CMB moves towards to high frequency end of electromagnetic spectrum with an constant shift

$$\frac{+4.89Hz}{per\ year}\ or\ \frac{+48.9Hz}{10\ years}$$

(3) Theoretical Basis

As discussed in Section Twenty-seven, magnitudes of CBR' temperature and CBR' spectral peak frequency are both linear functions proportional to the first power of cosmic quantum number. Increasing rate of CBR' temperature is $.8248K$ per 10 billion years, and this variation corresponds to an annual incremental of +4.89Hz in the CMB' spectral peak frequency.

(4) Technical Feasibility

The first crucial experiment is technically operable, since technical index of current highest-speed camera has reached 3.85 trillion frames per second, and the technology has achieved time resolution at attosecond (10^{-18} s) level. Therefore, existing technology can resolve changes in frequency of $10^{-12} Hz$, it can meet technical requirements of the first crucial experiment.

(5) Significance of the Experiment

Once the index of the first crucial experiment is confirmed, it will become direct evidence to objectivity of the mirror universe, while negating theoretical claim of the Big Bang Theory that the cosmic temperature tends to decrease with cosmic evolution.

Section Fifty-Six

Deduction 43 of N-God's Law: the Second Crucial Experiment

On CMB

This is an physical experiment design to determine the physical source of cosmic background radiation. This experiment is technically feasible.

(1) Purpose of the Experiment:

To verify the mirror universe to be physical source of CBR.

(2] Experimental Index

Unshieldability of CMB. that is, CMB can still be detected in a sealed metal container, and CMB spectrum diagram similar to COBE can be

drawn based on data of the detection.

[3] Theoretical basis

As discussed in Section Twenty-six, the mirror universe traverses throughout the universe with its holographic and hyper-spatial velocity to form CBR,. Given any substance cannot shield the mirror universe, therefore unshieldability of CMB can be confirmed by such CMB detection in a sealed metal container.

(4) Technical Feasibility

The second crucial experiment has low requirements for experimental equipment, a set of high-sensitive CMB detecting device can meet experimental requirements. It is best to place the device at space station

(5) Significance of the Experiment

Once experimental index of the second crucial experiment is confirmed, it will directly verify existence of the mirror universe, and will also deny theoretical argument of the Big Bang theory that CMB is the residual thermal radiation field from the Big Bang.

All in all, scientific significance of these two experiments are so great and important, thereby I anticipate that the scientific community will implement them promptly.

Section Fifty-Seven

Deduction 44 of N-God's Law: A Formula Amended to Hubble's Law

Hubble's Law is an experimental law, formally proposed in 1929 by the American astronomer Edwin Hubble (1889-1953) , which was established based on numerous astronomical observations. Hubble's Law is expressed as $v = H_0 \times D$, where v said radial recessional velocity of an observed galaxy relative to Earth, D said distance between observed galaxy and the Earth, and H_o is Hubble's constant. This law reflects the direct proportional relationship between the recessional velocity of distant galaxies and their distance from the Earth. This proportional relationship has been confirmed by numerous observations. However to determine the distance of remote galaxies is a complex issue, which leads to continual correction to value of the Hubble constant from initial $500kms^{-1}Mpc^{-1}$ to the current $H_0 = 48\sim71kms^{-1}Mpc^{-1}$. The Hubble constant is not a direct observational result, but rather a theoretical analysis ones based on astronomical observation data. There exists a theoretical analysis link between the Hubble constant and observation data, this link's correctness and accuracy is directly related to reliability and accuracy of determination to H_o .

Through simple calculations by the Hubble's Law, it is easily known that recessional velocity of galaxies situated at radius of the universe could be larger than the speed of light constant, which are obviously absurd. For instance, if taking $H_0 = 48kms^{-1}Mpc^{-1}$, considering radius of the universe today $R_U(n) = n \times L_G = 3.1254 \times 10^{26}m$,, then by the Hubble

law, it would be $v = H_0 \times D = (48kms^{-1})(3.0857 \times 10^{22}m)^{-1}$ ($3.1254 \times 10^{26}m$)$= 4.86 \times 10^8 ms^{-1}$. If taking $H_0 = 71kms^{-1}Mpc^{-1}$, then recessional velocity $v = 7.19 \times 10^8 ms^{-1}$. These two calculated results are larger than the light speed constant c . Thus it's inferred that with Hubble's constant $H_0 = 48 \sim 71kms^{-1}Mpc^{-1}$ and the Hubble's Law, it would lead to theoretical result of galaxies' receding faster than light speed. General relativity is one of the basic physical theories behind modern cosmology., one of its fundamental views is that the velocity of any object can't exceed the light speed c . However, modern cosmology's confirmation result of Hubble's constant leads to the galaxies moving faster than light speed. This contradictory result is somewhat embarrassing, and should be questioned, because such theoretical results has neither reliable theory nor repeatedly experimental verification. Therefore it's confirmed that Hubble's constant $H_0 = 48 \sim 71kms^{-1}Mpc^{-1}$ should be questioned, theoretical result in modern cosmological theory about the Hubble constant must have problem.

Today's cosmic expansion constant $Z_C(n)$ is a sub-solution of the united solution to physical quantities of the universe, it is logically self-consistent, mutually compatible, and mutually confirmatory with all other sub-solutions of the unified solution. Observational foundation of $Z_C(n)$ is the CMB temperature 2.7250K, which is not only precise and also clear in

its cosmological meaning to physically represent CMB's temperature without any cosmological ambiguity.

Based on those analysis the above and the general solution to cosmic expansion constant, the Hubble's Law should be modified and expressed as a amended formula as shown in Eq.57-1.

Based on the formula, the cosmic expansion constant , the action of resultant force norm and its kinematic equation, following inferences can be obtained.

$$
\left\{
\begin{array}{c}
v_r(i) = Z_C(i) \times D \\
v_r(n) = Z_C(n) \times D = (29.6171 kms^{-1} Mpc^{-1})D \\
v_r(i) \leq c \\
where, v_r(i) - radial\ recessional\ volocity\ of\ celestial\ bodies, \\
D - distance\ bwteeen\ celetial\ bodies\ and\ observer, \\
Z_C(i) - cosmic\ expansion\ constant, c -\ light\ speed\ constant, \\
Z_C(n) - Today'cosmic\ expansion\ constant, \\
cosmic\ quantum\ number\ \ i = 7.628 \times 10^{56}, \dots, n, \dots, 1.008\dot{3} \times 10^{93}, \\
n = 7.7266 \times 10^{60} - the\ constant\ of\ the\ universe\ today.
\end{array}
\right\}
$$

$$
Eq.\ 57 - 1
$$

▪The maximum recessional velocity of celestial bodies is equal to light speed constant, that take place at radius of the universe. Since

$$
v_r(i) = Z_C(i) \times D = \frac{1}{t_U(i)} \times R_U(i) = \frac{iL_G}{it_G} = \frac{L_G}{t_G} = v_G = c.
$$

▪Expansional velocity of the universe is not larger then light speed constant. Since expansion of the universe includes cosmic space dilation and recessional motions of celestial bodies, the dilation speed of cosmic space is constantly equal to light speed constant , and recessional velocities of celestial bodies are less then or equal to light speed constant without

exception.

▪Any object cannot moves faster than light speed constant. According the kinematic equation of the action of resultant force norm, it is known that absolute motion velocity of any object or particle is equal to the light speed constant, which is determined by collective actions of all matter in the universe (the action of resultant force norm). While relative motion of any object or particle originates from their absolute motion, thus their s relative motion velocity must be less than or equal to the constant speed (light speed constant c). Thus, the action of resultant force norm does not permit any object or particle to move faster than light speed constant. As previously stated, the motion velocity of gravitons equates constant velocity, and the hyperspatial nature of $G_i^{\blacksquare}$ flow stem from the all-identity operation of the mirror universe, having nothing to do with $G_i^{\blacksquare}$ speed itself.

Besides, theoretical calculations and analytical conclusions of the CST model regarding cosmic expansion are deductive results with logical self-consistency, not requiring additional theoretical hypotheses. "Entities should not be multiplied unnecessarily"—as stated by Occam's Razor.

Section Fifty-Eight

Deduction 45 of N-God's Law: A Formula for

Average Radius of Galaxies

To treat geometric shape of any galaxy as sphere, then radius of the sphere is called as average radius of the galaxy. Average radius of any

galaxy is a result of balancing two forces, which are the galaxy's total gravitational force exerted on any celestial body at edge of the galaxy and the resultant force norm of the celestial body.

$$
\begin{cases}
R_{CS}(i) = \sqrt{\dfrac{GM}{a_g(i)}} \\[2em]
R_{CS}(n) = \sqrt{\dfrac{GM}{a_g(n)}} = \left(\sqrt{0.2318|M|}\right)m \\[1em]
where, R_{CS} - average\ radius\ of\ any\ galaxy \\
a_g(i) - G_i^{\blacksquare'}\ acceleratioin, \\
G - gravitational\ constant, M - mass\ of\ the\ galaxy, \\
|M| - modulus\ of\ the\ galaxy's\ mass\ .
\end{cases} \quad \text{Eq. } 58-1
$$

Proof: Supposed an celestial body m at edge of a galaxy, mass of the galaxy is M, average radius of the galaxy is R_{cs}. By the equation of resultant force norm, this celestial body's resultant fore norm is equal to $\left\|F_{rm}(i)\right\| = N_{gm} \times \left\|F_{g2}(i)\right\|$, where N_{gm} said numbers of $G_i^{\blacksquare}$ contained in the celestial body, $\left\|F_{g2}(i)\right\| = \dfrac{N_G}{i^2}$ said the second $G_i^{\blacksquare'}$force.

When $\left\|F_{rm}(i)\right\|$ and $F_{sum} = -G\dfrac{Mm}{R_{cs}^2}$ reach equilibrium, where $F_{sum} = -G\dfrac{Mm}{R_{cs}^2}$ said the galaxy's total gravitational force exerted on the celestial body, then it will be $-G\dfrac{Mm}{R_{CS}(i)^2} + N_{gm} \times \left\|F_{g2}(i)\right\| = 0$

Substituting $m = N_{gm}M_g(i)$ into it , we get $G\dfrac{MN_{gm}M_g(i)}{R_{CS}(i)^2} = N_{gm} \times \left\|F_{g2}(i)\right\|$, that is $R_{CS}(i)^2 = G\dfrac{MN_{gm}\frac{M_G}{i}}{N_{gm}\times\frac{N_G}{i^2}} = \dfrac{GM}{\frac{a_G}{i}}$, therefore we have $R_{CS}(i) = \sqrt{\dfrac{GM}{a_g(i)}}$. Substituting $G = 6.6745 \times 10^{-11}m^3kg^{-1}s^{-2}$,

$a_g(n) = 0.2879 \times 10^{-9} ms^{-2}$ into $R_{CS}(i) = \sqrt{\dfrac{GM}{a_g(i)}}$, again we have

$$R_{CS}(n) = \sqrt{\frac{GM}{a_g(n)}} = \sqrt{\frac{(6.6745 \times 10^{-11} m^3 kg^{-1} s^{-2})|M|kg}{0.2879 \times 10^{-9} ms^{-2}}} = \sqrt{0.2318|M|}m.$$

---Done.

To exam this formula in following three cases.

▪Average Radius of the Solar System

Mass of the solar system is about $2 \times 10^{30} kg$, so average radius of the solar system can be calculated out by Eq.58-1.

$$R_{CS} == \sqrt{0.2318 \times 2 \times 10^{30}} m = 6.8088 \times 10^{14} m$$

Astronomical observations have provided three reference results

ranging from $4.504 \times 10^{12} m \sim 1.496 \times 10^{16} m$. If Neptune is treated

as the boundary, the solar system radius is approximately $4.504 \times 10^{12} m$.

If the heliosphere is treated as the boundary, the solar system radius is

approximately 150 AU, equivalent to $2.244 \times 10^{13} m$. If the Oort cloud is

treated as the boundary, the solar system radius is approximately 10^5 AU,

equivalent to $1.496 \times 10^{16} m$.

Note: AU $= 1.496 \times 10^{11} m$. One light year$=9.4608 \times 10^{15} m$.

▪ Average Radius of the Milky Way Galaxy

Total mass of the Milky way galaxy is about $2.98 \times 10^{42} kg$, by Eq.58-1 we get average radius of the galaxy is equal to

$$R_{CS} = \sqrt{0.2318 \times 2.98 \times 10^{42}} m = 8.311 \times 10^{20} m$$

Observed data: radius of the Milky way galaxy is about 100,000 light years, equivalent to $9.46 \times 10^{20} m$.

▪ Average Radius of the Metagalaxy

The metagalaxy is sum of all galaxies in the universe, whose mass is equal to total mass of the universe $M_U(i) = i \times M_G$, including those masses of all vacuums in the universe. By Eq.58-1, we can get average radius of the metagalaxy is equal to

$$R_{CS} = \sqrt{\frac{GM}{a_g(i)}} = STV\left(\sqrt{\frac{G \times i \times M_G}{\frac{a_G}{i}}}\right) L_G = \sqrt{i^2} \times L_G$$

$$= i \times L_G = R_U(i)$$

that is, average radius of the metagalaxy is equal to radius of the universe. At present, average radius of the metagalaxy is equal to $(7.7266 \times 10^{60})(0.4045 \times 10^{-34}m) = 3.1254 \times 10^{26}m$, about 33 billioin light years.

Section Fifty-Nine

Deduction 46 of N-God's Law: Original Action Principle

Physics has already discovered four elementary interactions, which are gravitational interaction, electromagnetic interaction, weak interaction, and strong interaction, physically represented corresponding elementary forces. UPHY has discovered that there are at least other six elementary forces in the universe, namely, the first inertial force, the second inertial force (absolute force), the first $G_i^{\blacksquare}$'force, the second $G_i^{\blacksquare}$'force, the action of resultant force norm and the first thrust of the universe. These six elementary forces, together with gravitational force and electrostatic force obey a law so called Original Action Principle.

The principle is a s hypothetical principle put forward by UPHY in attempt to unity of all elementary forces., It states that all elementary forces

are specific manifestations of original action and have same mathematical form. All elementary forces are either interactions between mass and mass, or mass and equivalent mass, or equivalent mass and equivalent mass of two acting bodies. This principle is mathematically expressed as:

$$\begin{cases} F_\xi = \pm STV\left(\frac{\xi_1\xi_2}{R^2}\right)N_G = \pm G\frac{\xi_1\xi_2}{R^2} \\ where, \ , \ F_\xi - original\ force, G - gravitatioanl\ constant\ , \\ N_G - the\ constant\ force, STV - space\ time\ value, \\ \xi_1 \text{、} \xi_2 - mass\ or\ equivalent\ mass\ of\ two\ acting\ bodies, \\ R - distance\ or\ reduced\ radius\ of\ the\ acting\ bodies, \\ \pm\ said\ direction\ of\ force\ are\ same\ as\ or\ opposite\ to\ that\ of\ R. \end{cases}$$

$$Eq.\,59-1$$

Section Sixty

Deduction 47 of N-God's Law: United Solution to

Eight Elementary Forces

Eight elementary forces can be demonstrated to obey the original action principle, which are the first inertial force, the second inertial force (absolute force), the first $G_i^\blacksquare$'force, the second $G_i^\blacksquare$'force, the action of resultant force norm the first thrust of the universe, the universal gravitation and the electrostatic force.

All these eight elementary interactions are uniformly expressed in same mathematical form as that of the original action.

60.1 Universal Gravitation

The gravitation is one of physical manifestation of the original action under condition of masses of any two objects.

$$\begin{cases} F_g = -STV\left(\dfrac{M_1 M_2}{R^2}\right) N_G = -G\dfrac{M_1 M_2}{R^2} \\ where, F_g - gravitation, M_1 \text{、} M_2 - mass\ of\ two\ objects, \\ \quad R - distance\ between\ the\ two\ objets, \\ \quad direction\ of\ F_g\ is\ opposite\ to\ that\ of\ vector\ of\ R, \\ \quad G - gravitational\ constant, N_G - the\ constant\ force. \end{cases} \text{Eq. } 60-1$$

Proof: See in Section Twenty. Additionally the constant force N_G and gravitational constant are all belonging to constant physical quantity. Considering consistency of physical units at two sides of equation to restore symbols of physical quantities for $F_g = -STV\left(\dfrac{M_1 M_2}{R^2}\right) N_G$, then it turns to $F_g = -G\dfrac{M_1 M_2}{R^2}$. ---Done.

60.2 The First Inertial Force

$$\begin{cases} F_a = STV\left(\dfrac{M\widetilde{M}_a}{\widetilde{R_a}^2}\right) N_G = G\dfrac{M\widetilde{M}_a}{\widetilde{R_a}^2} = -Ma \\ where, F_a - the\ first\ inertial\ force, \\ M - mass\ of\ any\ object, a - acceleration\ of\ the\ object, \\ \widetilde{M}_a = |a|M_a - reduced\ acceleration\ equivalent\ mass, \\ \widetilde{R_a} - reduced\ radius\ of\ accelerationand\ \widetilde{R_a} = L_G, \\ direction\ of\ F_a\ is\ opposite\ to\ that\ of\ acceleration. \end{cases} \text{Eq. } 60-2$$

The first inertial force is one of physical manifestation of the original action under condition of mass and reduced acceleration equivalent mass of any object in state of acceleration.

Any object get acceleration under action of external force and follow the Newton' second law $F = Ma$, meanwhile the object generates reduced acceleration equivalent mass $|a|M_a$ which interacts with mass of the object to produce the first inertial force F_a. This inertial force is equivalent in magnitude but opposite in direction to the external force F, these tow forces are a pair of action and reaction forces. The first inertial force is an physical reality , a real force generated by interaction between mass and reduced acceleration equivalent mass of the object, which exists in all

objects and is generated along with the accelerated motion of objects. It has nature of universality .

Proof: $F_a = G \frac{M \widetilde{M}_a}{\widetilde{R_a}^2} = -|G| m^3 kg^{-1} s^{-2} \frac{|M|kg|a|kg}{|L_G|^2 m^2 STV(|G|m^2 s^0)}$

$= -\frac{|a|ms^{-2}|M|kg}{STV(m^{-1})^2 STV(m^2)} = -|M|kg|a|ms^{-2} = -Ma$

It means that the first inertial force F_a acts on any object M being with acceleration a to generate an opposite acceleration $-a$. ---Done.

60.3 The Second Inertial Force

The second inertial force, namely universal repulsion, is one of physical manifestation of the original action under condition of mases of any two object, which is a repulsive force being equivalent in magnitude but opposite in direction to the gravitational force of these two objects. Universal repulsion and universal gravitation is a pair of action and reaction. The second initial force is contributed to maintain absolute motion of object and has nature of universality.

$$\left.\begin{cases} ||F_{1,2}|| = STV\left(\frac{M_1 M_2}{R^2}\right) N_G = G \frac{M_1 M_2}{R^2} \\ where, ||F_{1,2}|| - the\ second\ inertial\ force, \\ M_1 、 M_2 - masses\ of\ nay\ two\ objects, \\ R - distance\ between\ these\ two\ objects, \\ G - gravitational\ constant, N_G - the\ constant\ force, \\ direction\ of\ ||F_{1,2}||\ is\ same\ as\ that\ of\ vector\ of\ R. \end{cases}\right\} \text{Eq. } 60 - 3$$

Proof: See in Section twenty. Additionally the constant force N_G and gravitational constant are all belonging to constant physical quantity. Considering consistency of physical units at two sides of equation to restore symbols of physical quantities for $F_g = -STV\left(\frac{M_1 M_2}{R^2}\right) N_G$, then it turns to $F_g = -G \frac{M_1 M_2}{R^2}$. ---Done.

60.4 The first $G_i^{\blacksquare}$ Force

The first $G_i^{\blacksquare}$ force, as expressed in Equ.60-4, is one of physical

manifestation of the original action under condition of mirror mass and $G_i^{\blacksquare}$mass., which is an interaction between the mirror universe and graviton. The first$G_i^{\blacksquare}$force is repulsive force and has nature of universality.

$$
\left\{
\begin{array}{c}
\left\|F_{g1}(i)\right\| = STV\left(\dfrac{M_{UP}(i)\times M_g(i)}{\widetilde{R_{UP}}^2}\right)N_G \\[2mm]
= G\,\dfrac{M_{UP}(i)\times M_g(i)}{\widetilde{R_{UP}}^2} = \dfrac{N_G}{i} \\[4mm]
\text{where, } F_{g1}(i) - \text{the first } G_i^{\blacksquare}\text{force, } M_{UP}(i) - \text{mirror mass,} \\
M_g(i) - G_i^{\blacksquare}\text{mass, } G - \text{gravitational constant,} \\
\widetilde{R_{UP}} - \text{reduced radius of the mirror universe, and} \\
\widetilde{R_{UP}} = \sqrt{\dfrac{i}{1.0083\times 10^{93}}}\,L_G, \\
\text{direction of } \left\|F_{g1}(i)\right\| \text{ is same as that of } \widetilde{R_{UP}}, \\
\text{cosmic quantum number } i = 1,2,3,\dots,n,\dots,1.008\dot{3}\times 10^{93}, \\
n = 7.7266\times - \text{the constant of the universe today.}
\end{array}
\right\}
\quad \text{Eq. } 60-4
$$

Proof: $\|F_{g1}(i)\| = G\,\dfrac{M_{UP}(i)\times M_g(i)}{\widetilde{R_{UP}}^2}$

$$
= |G|m^3 kg^{-1}s^{-2}\,\frac{\left(\dfrac{i}{1.0083\times 10^{93}}\right)M_G \times \dfrac{M_G}{i}}{\left(\dfrac{i}{1.0083\times 10^{93}}\right)L_G{}^2} = \frac{1}{i}\frac{|G||M_G|^2}{|L_G|^2}\,kgms^{-2}
$$

Since $STV\left(\dfrac{|G||M_G|^2}{|L_G|^2}\right) = STV\left(\dfrac{|G|(|G|^{-1}m^{-3}s^2)^2}{(m^{-1})^2}\right) = STV\left(\dfrac{1}{|G|m^4 s^{-4}}\right) = |N_G|$.

Thus $\|F_{g1}(i)\| = G\,\dfrac{M_{UP}(i)\times M_g(i)}{\widetilde{R_{UP}}^2} = \dfrac{|N_G|N}{i} = \dfrac{N_G}{i}$. This result is same as

definition of the first $G_i^{\blacksquare}$'force shown in Eq.9-5. ---Done.

60.5 The second $G_i^{\blacksquare}$ Force

The second $G_i^{\blacksquare}$force is one of physical manifestation of the original action under condition of masses of any two gravitons being apart L_G from each other. It is repulsive force between two gravitons and has nature of universality.

$$\left\{ \begin{array}{c} \|F_{g2}(i)\| = STV)\left(\dfrac{M_g(i) \times M_g(i)}{R^2}\right)N_G \\[2mm] = G\dfrac{M_g(i) \times M_g(i)}{R^2} = \dfrac{N_G}{i^2} \\[2mm] where, \quad \|F_{g2}(i)\| - the\ second\ G_i^{\blacksquare}force, \\[2mm] M_g(i) - G_i^{\blacksquare}mass, R = L_G \\[2mm] G - gravitational\ constant\ , N_G - the\ constant\ force, \\[2mm] directiokn\ of\ \|F_{g2}(i)\|\ is\ same\ as\ that\ of\ of\ R, \\[2mm] cosmic\ quantum\ number\ i = 1,2,3,\dots,n,\dots,1.008\dot{3} \times 10^{93} \\[2mm] n = 7.7266 \times -the\ constant\ of\ the\ universe\ today. \end{array} \right\} \text{Eq. } 60-5$$

Proof: $\colon F_{g2}(i) = G\dfrac{M_g(i) \times M_g(i)}{R^2} = |G|m^3 kg^{-1}s^{-2}\dfrac{|M_G|^2 kg^2}{i^2|L_G|^2 m^2}$

$=\dfrac{N}{i^2}\dfrac{|G||M_G|^2}{|L_G|^2}=\dfrac{N}{i^2}|N_G|=\dfrac{N_G}{i^2}$. This result is same as definition to the second

$G_i^{\blacksquare}$'force shown in Eq.9-5. ---Done.

60.6 Electrostatic Force

The electrostatic force is one of physical manifestation of the original action under condition of two reduced Coulomb equivalent masses, it is not interaction between two objects but effect of force created by two reduced Coulomb equivalent masses.

$$\left\{ \begin{array}{c} F_C = \pm N_{e1}N_{e2}STV\left(\dfrac{\widetilde{M}_c\widetilde{M}_c}{R^2}\right)N_G = \pm N_{e1}N_{e2}\left(G\dfrac{\widetilde{M}_c\widetilde{M}_c}{R^2}\right) \\[2mm] = \pm N_{e1}N_{e2}\dfrac{|e|^2}{4\pi|\epsilon_0|\|R|^2}N \\[2mm] where, F_C - eletrosatic\ force\ between\ any\ two\ charged\ bodies, \\[2mm] ,\ \widetilde{M}_c = \dfrac{|e|}{\sqrt{4\pi|\epsilon_0|}}M_c - reduced\ Coulomb\ equivalent\ mass, \\[2mm] ,\ M_c - Coulomb\ equivalent\ mass,, \\[2mm] R - distance\ between\ these\ two\ charged\ bodies, \\[2mm] ,\ N_{e1}、\ N_{e2} - numbers\ of\ e\ contained\ by\ these\ two\ charged\ bodies, \\[2mm] ,\ G - gravitational\ constant, N_G -\ the\ constant\ force, \\[2mm] \epsilon_0 - vacuum\ permittivity, |e| - modulus\ of\ e, \\[2mm] direction\ of\ F_C\ is\ determined\ by\ polarities\ of\ the\ charged\ bodies. \end{array} \right\}$$
$$\text{Eq. } 60-6$$

Proof: $F_C = \pm N_{e1}N_{e2}\left(G\dfrac{\widetilde{M}_c\widetilde{M}_c}{R^2}\right)$

$$= \pm N_{e1} N_{e2} \frac{|e|^2}{4\pi|\epsilon_0||R|^2} |G| m^3 kg^{-1} s^{-2} \frac{M_C{}^2}{m^2}$$

$$= \pm N_{e1} N_{e2} \frac{|e|^2}{4\pi|\epsilon_0||R|^2} |G| m^3 kg^{-1} s^{-2} \frac{kg^2}{|G| m^2}$$

$= \pm N_{e1} N_{e2} \frac{|e|^2}{4\pi|\epsilon_0||R|^2}$. This result is same as the ones calculated by

Coulomb's Law. ---Done.

60.7 Action of Resultant Force Norm

$$\left\{ \begin{array}{c} ||F_{rM}(i)|| = STV\left(\frac{M_U(i) \times M}{R_U(i)^2}\right) N_G \\ = G\frac{M_U(i) \times M}{R_U(i)^2} = N_{gM} \times \left||F_{g2}(i)\right|| . \\ where, ||F_{rM}(i)|| - resultant\ force\ norm\ of\ any\ object \\ M_U(i) - total\ masses\ of\ the\ universe, \quad M - mass\ of\ the\ object,, \\ R_U(i) - radius\ of\ the\ universe, \\ ,\ G - gravitational\ constant, \quad N_G - the\ constant\ force, \\ i - cosmic\ quantum\ number \\ direction\ of\ ||F_{rM}(i)||i\ as\ sam\ as\ that\ of\ R_U(i). \end{array} \right\}$$

$$Eq.\ 60 - 7$$

The action of resultant force norm is one of physical manifestation of the original action under condition of total masses of the universe and mass of any object. It is a repulsive force to makes all objects conduct absolute motions and the universe expands.

The action of resultant force norm is of universality, it acts on any object in the universe.

Proof: $||F_{rM}(i)|| = G\frac{M_U(i) \times M}{R_U(i)^2} = |G| m^3 kg^{-1} s^{-2} \frac{i|M_G|kg \times N_{gM}\frac{|M_G|kg}{i}}{i^2|L_G|^2 m^2}$

$= \frac{N_{gM}}{i^2} N \frac{|G||M_G|^2}{|L_G|^2} = N_{gM} \frac{N_G}{i^2} = N_{gM} \times ||F_{g2}(i)||.$

This result is same as the ones shown in Eq.23-1. ---Done.

60.8 The First Thrust of the Universe

The first thrust of the universe is a physical manifestation of the

original action under condition of the mirror mass and the total masses of the universe, which is driving force exerted by the mirror universe to make the entire cosmic body perform absolute motion at the constant speed. This force is unique and expressed in Eq.60-8.

$$
\left\{
\begin{array}{c}
||F_U(i)|| = STV\left(\dfrac{M_{UP}(i) \times M_U(i)}{\widetilde{R_{UP}}^2}\right) N_G \\[4mm]
= G\dfrac{M_{UP}(i) \times M_U(i)}{\widetilde{R_{UP}}^2} = i \times N_G = i^2 \times ||F_{g1}(i)|| \\[3mm]
where, ||F_U(i)|| - \ the\ first\ thrust\ of\ the\ universe, \\
M_{UP}(i) - mirror\ mass, M_U(i) - total\ masses\ of\ the\ universe, \\
\widetilde{R_{UP}} - reduced\ radius\ of\ the\ mirror\ universe, and \\[3mm]
\widetilde{R_{UP}} = \sqrt{\dfrac{i}{1.0083 \times 10^{93}}} L_G\,, \\[3mm]
G - gravitatioal\ constant, \qquad N_G - the\ constant\ force, \\
cosmic\ quantum\ number\ i = 1,2,3,\dots,n,\dots,1.008\dot{3} \times 10^{93}, \\
n = 7.7266 \times 10^{60} - the\ constant\ of\ the\ universe\ today.
\end{array}
\right\}
$$

$$Eq.\,60-8$$

The action of resultant force norm makes all objects to perform absolute motion within the cosmic body, while the first thrust of the universe drives the entire cosmic body to move absolutely. Thus, it can be seen that the First cosmic Impetus is by no means the work of God, but caused by the mirror universe.

Proof: $\because ||F_U(i)|| = G\dfrac{M_{UP}(i) \times M_U(i)}{\widetilde{R_{UP}}^2}$

$$= |G|m^3 kg^{-1}s^{-2}\dfrac{\left(\dfrac{i}{1.0083 \times 10^{93}}\right)M_G \times iM_G}{\left(\dfrac{i}{1.0083 \times 10^{93}}\right)L_G^2} = iN\dfrac{|G||M_G|^2}{|L_G|^2}$$

$= iN|N_G| = iN_G$. Since $||F_{g1}(i) = \dfrac{N_G}{i}$, thus $||F_U(i)|| = i \times N_G = i^2 \times ||F_{g1}(i)||$. ---Done.

Based on the original action principle and the unified description of eight fundamental forces the above, a hypothesis to be proven is proposed that the weak force and strong force also obey the original action principle.

Unified theory of physics should have a broader perspective, not only in achieving unified description of the known four elementary physical interactions, but also providing a unified physical description for a wider range of elementary interactions, as well as unified physical solutions for physical quantities of the universe and cosmic phenomena.

Section Sixty-One

Deduction 48 of N-God's Law: Physical Reality of Time

Time (one dimensional time) is a physical reality physically representing duration of all processes. Time is one of the physical elements that make up matter. Time is generated by the CST process and condensed from the cosmic holographic image.

Compared to space, time is more abstract and obscure to understand. People can easily understand and accept physical reality of space, but they find it difficult to understand or even deny physical reality of time. Space physically represents extensiveness of matter, time physically represents duration of matter's change and matter's motion processes, while the duration of matter's change and matter's motional processes also needs to be physically represented by an reality, and this kind of physical reality is

just one-dimensional time, the time.

61.1 Unit Time

Total amounts of one-dimensional times generated by $7.416198487095662 \dots \times 10^{42}$ number of CSTs is defined as one second, signed s. Physical meaning of one second is that it physically represents duration of the process generating $7.416198487095662 \dots \times 10^{42}$ number of CSTs.

61.2 Cosmic Moment

Time generated by one CST is defined as cosmic moment, physically representing the duration of a single CST . Cosmic moment is also called as instant, and is equal to the constant time $t_G = 1.348399724926 \dots \times 10^{-43} s.$

61.3 Absolute Time

Absolute time is age of the universe and same as the total amounts of one dimensional times of the universe, which physically represents duration of cosmic evolution process. Absolute time is quantized with the constant time as its basic share, numbers of the share are equal to cosmic quantum number.

$$\left.\begin{array}{c} t_U(i) = i \times t_G \\ where, t_U(i) - age\ of\ the\ universe, t_G - the\ constant\ time \\ cosmic\ quantum\ number\ i = 1,2,3, \dots, n, \dots, 1.0083 \times 10^{93} \\ n = 7.7266 \times 10^{60} - the\ constant\ of\ the\ universe\ today. \end{array}\right\} Eq.\ 61-1$$

60.4 Inherent Time

Inherent time physically represents duration of any specific process, it

is equal to increment of the absolute time. Inherent time is also quantized with the constant time as its basic share.

$$\left\{ \begin{array}{c} \Delta t_U(i) = \Delta i \times t_G \\ where, \Delta t_U(i) - inherent\ time, t_G - \ the\ constant\ time, \\ \Delta i - increament\ of\ cosmic\ quantum\ number. \end{array} \right\} Eq.\ 61-2$$

61.5 Relative Time

Relative time is measurement result to the inherent time by an observational system or observer, it is not inherent time itself. Measurement result varies depending on the observer's physical frame of reference and its state of motion, resulting in relative time having relativity and relativity of simultaneity. At present, the measurement benchmark of relative time is the definition of second in SI units of system, which stipulate that "The second is the duration of 9192631770 periods of the radiation corresponding to the transition between the two hyperfine levels of the ground state of the cesium 133 atom, represented by the physical unit symbol s."[1]

61.6 Primary Properties of Time

▪For a specific universe, absolute time has a beginning and end. The starting point of absolute time is the constant time $t_G = 1.348399724926 \ldots \times 10^{-43} s$ and its final point will be $\left(1.008\dot{3} \times 10^{93}\right) \times t_G = 1.3595 \ldots \times 10^{50} s,$

▪Absolute time is the same everywhere in the universe and is equal to the age of the universe. Inherent time is the same everywhere in the universe

and is equal to increment of absolute time. Both absolute time and inherent time have absolute simultaneity.

▪Inherent time is a physical quantity independent of any measurement system or observer. For a given increment of the cosmic quantum number, the inherent time has only one definite value, independent of observer's position in the universe and state of motion of their physical frame of reference.

▪Regardless of the measurement method used, the measurement result of inherent time are all belonging to relative time. Since relative time has relativity of simultaneity, thus measurement results for the same inherent time vary depending on the observer's physical frame of reference and its state of motion. Accuracy of relative time depends on the time measurement benchmark, and is about $\frac{1}{9192631770} s \approx 10^{-10} s$ based on current measurement benchmark for unit time (the second), while accuracy of one second in inherent time is as high as $1.348399724926\ldots \times 10^{-43} s$. Along with development of technology, measurement benchmarks for time will also be updated and improved, it will certainly to achieve measurements result to the inherent time with even higher accuracy, although never as high as the objective accuracy of absolute time and inherent time---the constant time.

61.7 Cosmic Clock

The evolution of the universe is a finite process in the infinite CST process, the universe has at most, and eventually $1.008\dot{3} \times 10^{93}$ number of CSTs. With regard to duration, we can compare this finite process to a cosmic clock".

▪The "second hand" of the cosmic clock corresponds to the cosmic moment, ticking once for each cosmic moment $t_G = 1.348399724926 \ldots \times 10^{-43} s$.

▪The "minute hand" of the cosmic clock has $3.1536 \ldots \times 10^7$ tick marks, each tick mark corresponds to one second. For every $7.416198487095662 \ldots \times 10^{42}$ ticks of the cosmic clock's second hand, the cosmic clock's minute hand goes one tick mark.

▪The "hour hand" of the cosmic clock has $4.3113 \ldots \times 10^{42}$ tick marks, each tick mark corresponds to one Earth year. For every circle of the cosmic clock's minute hand, the hour hand goes one tick mark. The hour hand of the cosmic clock goes over one circle, it corresponds to the end of the universe's evolution;

▪The current time on the cosmic clock is thirty-three billion and thirty-six million Earth years; the hour hand is pointing to the $3.3036 \ldots \times 10^{10}$ tick mark. The hour hand of the cosmic clock has moved approximately $\frac{1}{10^{32}}$ of one circle, so the universe we are live in is still a cosmic infant.

61.8   Information Regulations to Time and Ultra-micro Time

61.8.1 Durations of the CST process and matter's creation and accumulation process

Duration of generating one CST is physically represented by the constant time t_G, duration of generating i number of CSTs is physically reprented by the absolute time $i \times t_G = t_U(i)$. During this process, i^2 numbers of $G_i^{\blacksquare}$ are created, and average time for each $G_i^{\blacksquare}$ creation is equal to $G_i^{\blacksquare}$ time $t_g(i) = \frac{t_G}{i}$. Therefore, the time required for producing i^2 numbers of $G_i^{\blacksquare}$ is equal to $i^2 \times \frac{t_G}{i} = i \times t_G$. The age of the universe not only physically represents duration of the CST process, but also duration of process of matter creation and accumulation. Thus age of the universe is a real physical quantity and an physical reality as well.

61.8.2 Durations of process of information being materialized

Duration of the process in which the information body is materialized into the materialized universe under the nothingness action is physically represented by the constant time t_G. Unit information is materialized into the cosmic holographic image that appears and then condenses into i numbers of $G_i^{\blacksquare}$, this process last the constant time t_G. All-Identical operation of the mirror universe reform all existing gravitons into $i^2 - i$ numbers of $G_i^{\blacksquare}$ and make total i^2 numbers of $G_i^{\blacksquare}$ to be all-identical, this process also last the constant time t_G.

61.8.3 Stipulations to t_G and $i \times t_G$ by cosmic information

Time stipulated buy unit information is equal to the virtual time

quantum $\dfrac{t_G}{1.008\dot{3}\times10^{93}}$, under the nothingness action, it is materialized and amplified $1.008\dot{3}\times10^{93}$ times into the constant time t_G. The information body has i numbers of unit information and stipulates time quantity of $\dfrac{i\times t_G}{1.008\dot{3}\times10^{93}}$, under the nothingness action, this information stipulation is materialized and amplified $1.008\dot{3}\times10^{93}$ times into total amounts of one dimensional times $t_U(i) = i \times t_G$ (age of the universe). that is, the information body stipulates durations for both cosmic revolutionary process and matter's creation and accumulation process.

61.8.4 Ultra-micro Time

▪ Constant time $t_G = 1.3483\ldots\times10^{-43}s$

▪ $G_i^{\blacksquare}$ time $t_g(i) = \dfrac{t_G}{i}$ and $t_g(n) = \dfrac{t_G}{n} = 0.1745\ldots\times10^{-103}s$

▪ Virtual time quantum $\boxed{\dddot{t_G}} = \dfrac{t_G}{1.008\dot{3}\times10^{93}} = 1.331\ldots\times10^{-136}s$

▪ Mirror time quantum $\dddot{t}_G = \dfrac{t_G}{1.008\dot{3}\times10^{93}} = 1.3371\ldots\times10^{-136}s$

▪ Mirror time $t_{UP}(i) = \dfrac{i\times t_G}{1.008\dot{3}\times10^{93}}$ and $t_{UP}(n) = \dfrac{n\times t_G}{1.008\dot{3}\times10^{93}}$

$= 1.0331\ldots\times10^{-75}s$.

Section Sixty-Two

Deduction 49 of N-God's Law: Ten Physical Meanings of

Planck Constant

Planck constant signed h is a fundamental physical constant firstly discovered in theory by German physicist Max Planck in 1900 during his establishment of the blackbody radiation law, and subsequently confirmed by physical experiments measuring $h = 6.62607015 \times 10^{-34} Js$[14]

Quantum mechanics has discovered four direct physical meanings of the constant, reflecting its role played in microscopic physical field. Furthermore UPHY has discovered another six direct physical meanings of Planck constant, reflecting its important role played in much broader range of physical field.

62.1 Four Physic al Meanings Recognized by Modern Physics

(1) Ratio of a particle's total energy to its vibration frequency is constantly equal to Planck constant.

$$\left. \begin{array}{c} \dfrac{E}{v} = h \\ where, E - total\ energies\ of\ particle, \\ v - viration\ frequency\ of\ particle, \\ h - Planck\ constant. \end{array} \right\} \text{Eq.}\,62-1$$

(2) Product of a particle's momentum and vibration wavelength is constantly equal to Planck constant.

$$\left. \begin{array}{c} p \times \lambda = h \\ where, p - momentu\ of\ particle, \\ \lambda - waelength\ of\ particle, \\ h - Planck\ constant. \end{array} \right\} Eq.\,62-2$$

(3) Basic share of particle's angular moment (quantum of angular moment) is equal to Planck constant.

$$\left. \begin{array}{c} \hbar = \dfrac{h}{2\pi} \\ where, \hbar - reduced\ Planck\ constant \\ h - Planck\ constant. \end{array} \right\} Eq.\,62-3$$

(4) There is measurement uncertainty between a particle's position and momentum, which is described by Heisenberg's uncertainty principle which states that product of uncertainty in particle's position and

uncertainty in its momentum is greater than or equal to Planck constant divided by 4π.

$$\begin{cases} \Delta x \Delta p \geq \dfrac{h}{4\pi} \\ where, \Delta x - uncertainty\ in\ particle's postion, \\ \Delta p - uncertainty\ in\ particle's\ momentum, \\ h - Planc\ constant. \end{cases} \quad 62-4$$

62.2 Six Physic al Meanings Recognized by UPHY

▪Method for Calculating Planck Constant:

According to the Completable Physical Constant Theorem, all elementary physical constants belonging to completable physical constants, such as Planck's constant, gravitational constant, Boltzmann constant, speed of light constant, Avogadro's constant, molar gas constant, the constant length, the constant time, the constant mass, the constant current intensity, the constant temperature, etc., can be uniformly calculated.

▪Theoretical Value of Planck's Constant:

By the completable physical constant theorem, theoretical value of Planck constant is $h = 6.6194168314572867 \times 10^{-34} Js$ (see in Section Seven).

▪Another Six Direct Physical Meanings of Planck Constant:

According to the 21 items of physical correlations of $G_i^{\blacksquare}$ and the united solution to physical quantities of the universe, another six physical meanings about Planck constant are discovered by UPHY.

(5) Orbital angular moment of $G_i^{\blacksquare}$ is constantly equal to Planck constant.

$$\left\{\begin{array}{c} \left\|L_{gR}(i)\right\| \equiv h \\ where, \left\|L_{gR}(i)\right\| - Orbital\ angular\ moment\ of\ G_i^{\blacksquare} \\ i - consmic\ quantum\ number, h - Planck\ constant. \end{array}\right\} Eq.\ 62-5$$

(6) Product of $G_i^{\blacksquare}$ energy and age of the universe is constantly equal to Planck constant.

$$\left\{\begin{array}{c} e_g(i) \times t_U(i) \equiv h \\ where, e_g(i) - G_i^{\blacksquare}'energ,\ \ t_U(i) - age\ of\ the\ universe, \\ h - Planck\ constant. \end{array}\right\} Eq.\ 62-6$$

(7) Ratio of $G_i^{\blacksquare}$ energy to the cosmic expansion constant is constantly equal to Planck constant.

$$\left\{\begin{array}{c} \dfrac{e_g(i)}{Z_c(i)} \equiv h \\ where, e_g(i) - G_i^{\blacksquare}energy, Z_c(i) - the\ cosmic\ expansion\ constant, \\ h - Planck\ constant. \end{array}\right\}$$

$$Eq.\ 62-7$$

(8) Ratio of $G_i^{\blacksquare}$ energy to the $G_i^{\blacksquare}$ frequency is constantly equal to Planck constant.

$$\left\{\begin{array}{c} \dfrac{e_g(i)}{f_g(i)} \equiv h \\ where, e_g(i) - G_i^{\blacksquare}energy, f_g(i) - G_i^{\blacksquare}frequency, \\ h - Planck\ constant. \end{array}\right\} Eq.\ 62-8$$

(9) Sum of rotating angular moment of all $G_i^{\blacksquare}$'rigid body is constantly equal to Planck constant.

$$\left\{\begin{array}{c} i^2 \times \left\|L_{gr}(i)\right\| \equiv h \\ where, \left\|L_{gr}(i)\right\| - rotating\ angular\ moment\ of\ G_i^{\blacksquare}'rigid\ body, \\ i^2 - total\ numbers\ of\ G_i^{\blacksquare}\ in\ the\ universe, \\ h - Planck\ constant, i - cosmic\ quantum\ number. \end{array}\right\}$$

$$Eq.\ 62-9$$

(10) Total orbital angular moment norms of the universe is equal to i^2 numbers of Planck constant.

$$\left\{ \begin{array}{c} ||L_{UR}(i)|| = i^2 h \\ wher, ||L_{UR}(i)|| - total\ orbital\ angular\ moment\ norms, \\ i^2 - total\ numbers\ of\ G_i^{\blacksquare} in\ the\ universe, \\ h - Planck\ constant., i - cosmic\ quantum\ number. \end{array} \right\} \text{Eq. } 62 - 10$$

From discussion in this section, it is known that the Planck constant is an universally applied physical quantity that spans the ultra-microscopic, microscopic, and macroscopic physical fields , and has the most widely and richly physical meanings.

Section Sixty-Three

Deduction 50 of N-God's Law: Applicability of

Matter Conservation Law

The matter conservation law has its applicable range manifested as:

(1) The matter conservation law applies to all specific processes. For any specific process in the universe, this law holds specifically manifesting as conservation of mass, conservation of energy, conservation of momentum, conservation of angular moment, and described by corresponding conservation laws in physics.

(2) The matter conservation law does not apply to the universe as a whole, since matter is generated and accumulated through the CST process at a constant rate of $0.4045 ... \times 10^{36} kgs^{-1}$, resulting in continuous increases

in terms of total masses, total energies, total momentum norms and total

angular moment norms of the universe. that is-

$$\left\{ \begin{array}{c} M_U(i) = iM_G \\ E_U(i) = iJ_G \\ ||\rho_U(i)|| = ip_G \\ ||L_{UR}(i)|| = i^2h \\ \text{where, } M_G - \text{the constant mass, } J_G - \text{the constant energy,} \\ p_G - \text{the constant momentum, } h - \text{Planck constant,} \\ cosmic\ quantum\ number\ i = 1,2,3,\dots,n,\dots,1.008\dot{3} \times 10^{93} \\ n = 7.7266 \times 10^{60} - the\ constant\ of\ the\ universe\ today \end{array} \right\} Eq.\,63-1$$

(3) The said (1) and (2) above hold true at same time, since continuous

increase of matters in the universe inevitably leads to increase in total

number of specific processes inside the universe, thus every specific

process within the universe may still follows the matter conservation law

although the universe as a whole does not.

Section Sixty-Four

Deduction 51 of N-God's Law: Boundary of the Universe

64.1 Definition of Boundary of the Universe

The most recently generated cosmic holographic image is boundary of

the universe.

Explanation to the definition: As the CST process constantly proceeds,

the materialized universe continuously expands and the amount of

remained nothingness continuously decreases. According to the principle

of information being materialized, the most recently generated frame of

cosmic holographic image specifies and condenses into the latest material

changes of the cosmic body. This frame of cosmic holographic image is a holographic and spherical   envelope with thick of the constant length constituting boundary of the cosmic body, which is also the boundary of the universe. Beyond the boundary of the universe, there are   infinite amount of nothingness. that is, outside the boundary of the universe, there exist nothing except for the nothingness. (Refer to following diagram)

图4：宇宙边界示意图
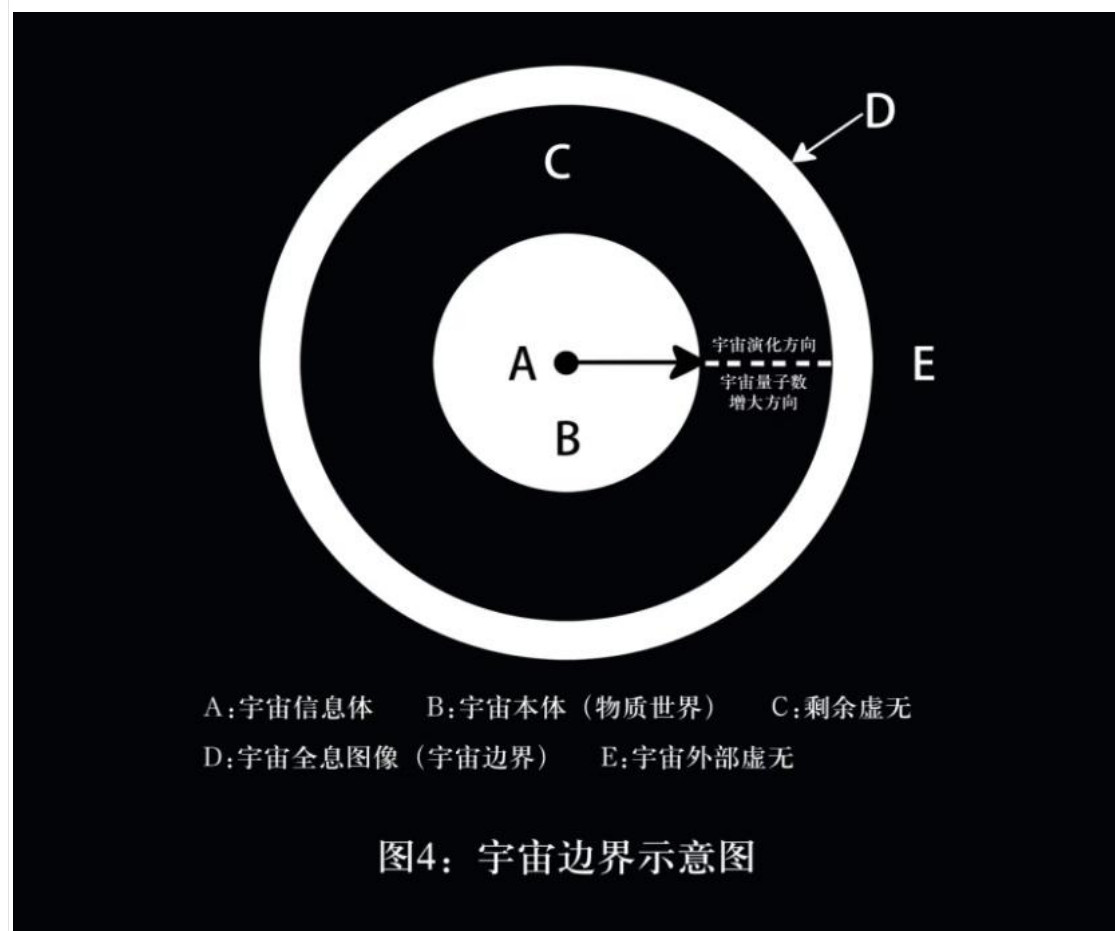
where, A-the cosmic information body, B-the cosmic body, C-the remained nothingness of the universe, D-the boundary of the universe (the most recently generated cosmic holographic image), E-infinite nothingness outside of the universe. Direction of the arrow points to direction of

evolution of the universe as well as that of increment of the cosmic quantum number.

This definition is consistent with the cosmic equal rights principle, in which it states that for any position A in the universe, there always exists another position B, with respect to position B, position A is located at the radius of the universe. This indicates that all positions in the universe are located at the radius of the universe and simultaneously maintain their positional relationship in three dimensional space. As stated in Section Fifteen, this kind of cosmic equal right is caused by the all-identical operation of the mirror universe and 10-dimensional space-time attributes of the cosmic body.

64.2 Inference

All things happening are located at the boundary of the universe.

Note: The holographic event is the most basic physical unit that makes up all things happened, , happening , to happen.

Section Sixty-Five

Deduction 52 of N-God's Law: Ultimate Results and Purpose of Cosmic Evolution

At $i = N = 1.008\dot{3} \times 10^{93}$ th quantum state, the remained nothingness of the universe will exhaust ($U_n = 0$), subsequently cosmic evolution will come to end and bring three ultimate results.

By the cosmic body equation,

$$\sum_{j=0}^{i-1} G_j = U_n \times \sum_{j=0}^{i-1} |M_G| s_{j,j-1}^{-2}$$

At $i = N = 1.008\dot{3} \times 10^{93}$th quantum state, it will be

$$\sum_{j=0}^{N-1} G_j = 0 \times \sum_{j=0}^{N-1} |M_G| s_{j,j-1}^{-2} = 0, that\ is, \sum_{j=0}^{N-1} G_j = 0$$

It means that at the last quantized state, the cosmic body (material world) will vanish entirely due to exhaustion of remained nothingness of the universe (the ultimate result 1). Meanwhile the cosmic information will evolve into an completable information world (the ultimate result 2)

$$\left\{ \begin{array}{c} \boxed{O_U(N)} = \Sigma_{j=0}^{N-1} |M_G| s_{j,j-1}^{-2} \\ STV(\boxed{O_U(N)}) = \dfrac{N}{\frac{1.008\dot{3}\times10^{93}}{w}} = 1 \\ Where,\ \boxed{O_U(N)} - the\ completable\ information\ world, \\ N = 1.008\dot{3} \times 10^{93}. \end{array} \right\} \text{Eq.65-1}$$

By the Taiji equation,

$$G_i = \left(1 - \frac{i}{1.008\dot{3} \times 10^{93}} \right) U_n + \sum_{j=0}^{i-1} G_j \} |M_G| s_{i,i-1}^{-2}$$

At $i = N = 1.008\dot{3} \times 10^{93}$th quantum state, it will be

$G_N \to \{(1-1)0 + 0\} |M_G| s_{N,N-1}^{-2}$. that is, $G_N \to |M_G| s_{N,N-1}^{-2}$.

It means that $1.008\dot{3} \times 10^{93}$th CST will burst and overflow a cosmic information $|M_G| s_{N,N-1}^{-2}$ which will become origin of subsequent universe (the ultimate result 3).

The universe we inhabit began with an initial information and one unit of nothingness. Along with constantly proceeding of the CST process, the unit nothingness is continuously and gradually consumed and will finally use up. While the cosmic information body is kept evolving and growing, and will finally evolve into an information

body with $1.008\dot{3} \times 10^{93}$ numbers of unit information, which will totally isolate from external nothingness and exists eternally in the objective realm. This is precisely the purpose of cosmic evolution.

Section Sixty-Six

Deduction 53 of N-God's Law: Evolution of the Natural God

Natural God constantly evolves through the CST process designed by itself, physically manifested as constantly increasing of number of unit information it contains, continuously enrichment of its contents of information, and unidirectional increasing of its space-time value.

▪Natural God's Initial Quantum State –

$$\left\{ \begin{array}{l} \boxed{O_U(1)} = \sum_{j=0}^{1-1}|M_G|s_{j,j-1}^{-2} = |M_G|s_{0,-1}^{-2} \\ STV\left(\boxed{O_U(1)}\right) = \frac{1}{1.008\dot{3}\times10^{93}} = 0.99173\ldots \times 10^{-93} \\ where, |M_G|s_{0,-1}^{-2} - the\ initial\ information \end{array} \right\} Eq.66\text{-}1\text{--}$$

▪Natural God's Any Quantum State –

$$\left\{ \begin{array}{l} \boxed{O_U(i)} = \sum_{j=0}^{i-1}|M_G|s_{j,j-1}^{-2} \\ STV\left(\boxed{O_U(i)}\right) = \frac{i}{1.008\dot{3}\times10^{93}} \\ where, |M_G|s_{j,j-1}^{-2} - unit\ information\ of\ jth\ CST, \\ cosmic\ quantum\ number\ i = 1,2,3,\ldots,n,\ldots,1.008\dot{3} \times 10^{93}. \end{array} \right\} Eq.66\text{-}2$$

▪Natural God's Today Quantum State –

$$\left\{ \begin{array}{l} \boxed{O_U(n)} = \sum_{j=0}^{n-1}|M_G|s_{j,j-1}^{-2} \\ STV\left(\boxed{O_U(n)}\right) = \frac{n}{1.008\dot{3}\times10^{93}} = 7.6627 \times 10^{-33} \\ where, |M_G|s_{j,j-1}^{-2} - unit\ information\ of\ jth\ CST, \\ n = 7.7266 \times 10^{60} - the\ constant\ of\ the\ universe\ today. \end{array} \right\} Eq.66\text{-}3$$

▪Natural God's Ultimate Quantum State –

$$\begin{cases} \boxed{O_U(N)} = \sum_{j=0}^{N-1} |M_G|s_{j,j-1}^{-2} \\ STV\left(\boxed{O_U(N)}\right) = \dfrac{N}{1.008\dot{3}\times10^{93}} = 1 \\ where, \ |M_G|s_{j,j-1}^{-2} - unit\ information\ of\ jth\ CST, \\ N - the\ maximum\ cosmic\ quantum\ number\ and \\ N = 1.008\dot{3} \times 10^{93}. \end{cases} \quad \text{Eq.66-4}$$

The evolutionary process of Natural God determines evolutionary process of the universe,. In other words, evolutionary process of the universe is process of materialization of information provisions stipulated by the Natural God. With help of cosmic evolutionary process, the Natural God evolves from its very beginning initial information all the way ultimately up to the completable information world with $1.008\dot{3} \times 10^{93}$ numbers of unit information.

Appendix Ⅰ

Periodic Table of Physical Elements

1, Introduction to the Table

The periodic table of physical elements is distinct from the chemical periodic table, and physical elements are not chemical elements. Chemical elements are substances themselves, while physical elements are physical components comprising matter. Based on the multidimensional spacetime structure of physical quantities, using the dimensions of space and time as periodic variables, a statistical compilation of all known and unknown physical elements forms the table, which includes more than 460 physical elements. The table is consists of thirteen sub-tables among which twelve

are regular coefficient periodic tables, and the thirteenth is an irregular coefficient periodic table divided into two part A and part B.

In the table, all physical elements follow an unified description format

$$\left\{\begin{array}{c} serial\ No.\ of\ physical\ element \\ STC(DimA) = Bm^a s^{-b} \\ STV(DimA) \\ A_G = \dfrac{1}{STV(DimA)}\, DimA \\ Name\ of\ physical\ element \\ Symbol\ of\ physcial\ unit\ DimA \end{array}\right\} \quad Such\ as \quad \left\{\begin{array}{c} No.\ 16 \\ |G| m^3 s^{-2} \\ 1.8\dot{3} \times 10^7 \\ 0.\dot{5}\dot{4} \times 10^{-7} kg \\ mass \\ kg \end{array}\right\}$$

There are a large number of unknown elements appearing in the periodic table, the reasons are possibly that firstly, it is due to the author's statistical omission to some known physical elements. Secondly some unknown elements belong to physical elements that have not yet been discovered by physics, and this possibility is relatively high. Thirdly most unknown elements are physical elements that have not yet been generated in the universe and will be successively generated.

The periodic table of physical elements visually demonstrates physical relationships of all elements, such as adjacent relationship between all known physical elements as well as known and unknown ones. These adjacent relationships enable us to predict new physical elements and facilitate discovery of physical connections between known elements. Since matter is a materialized existence commonly formed by various of physical elements, so the periodic table of physical elements reveals more and richer physical connotations of matter.

By the table, it is known that same multidimensional space-time structure may possess dual or multiple physical properties. For instance, No.362 element and No.290 element respectively possess physical characteristics of capacitance and the 1st dimension of space, which have same multidimensional space-time structure of $\left\{\begin{array}{c} m^1 s^0 \\ 2.4720\ldots\times10^{34} \\ 0.4045\ldots\times10^{-34}m \end{array}\right\}$.

2, Contants of Periodic Table of Physical Elements

$|G|m^a s^{-b}$ .....$a = 0,1,2,3,4,5$; $b = 0,1,2,3,4,5$; $B = |G|$.........

	m^0	m^1	m^2	m^3	m^4	m^5
s^0	No.1 $\lvert G\rvert m^0 s^0$ 6.6745×10⁻¹¹ Value $\lvert G\rvert$	No.2 $\lvert G\rvert m^1 s^0$ 1.6499×10²⁴ 0.6060×10⁻²⁴S_{Nn} Natrual entropy S_{Nn}	No.3 $\lvert G\rvert m^2 s^0$ 4.0789×10⁵⁸ 0.2452×10⁻⁵⁸DimA Unknown DimA	No.4 $\lvert G\rvert m^3 s^0$ 1.0083×10⁹³ 0.9917×10⁻⁹³U_n Unit nothingness U_n	No.5 $\lvert G\rvert m^4 s^0$ 2.4927×10¹²⁷ 0.4012×10⁻¹²⁷DimA Unknown DimA	No.6 $\lvert G\rvert m^5 s^0$ 6.1620×10¹⁶¹ 0.1623×10⁻¹⁶¹DimA Unknown DimA
s^{-1}	No.7 $\lvert G\rvert m^0 s^{-1}$ 8.9999×10⁻⁵⁴ 0.1111×10⁵⁴k_N Natrual thermal conductivity k_N	No.8 $\lvert G\rvert m^1 s^{-1}$ 2.2249×10¹⁵ 0.4495×10⁻¹⁵DimA Unknown DimA	No.9 $\lvert G\rvert m^2 s^{-1}$ 5.5000×10¹⁵ 0.1818×10⁻¹⁵DimA Unknown DimA	No.10 $\lvert G\rvert m^3 s^{-1}$ 1.3596×10⁵⁰ 0.7355×10⁻⁵⁰DimA Unknown DimA	No.11 $\lvert G\rvert m^4 s^{-1}$ 3.3611×10⁸⁴ 0.2975×10⁻⁸⁴DimA Unknown DimA	No.12 $\lvert G\rvert m^5 s^{-1}$ 8.3089×10¹¹⁸ 0.1204×10⁻¹¹⁸DimA Unknown DimA
s^{-2}	No.13 $\lvert G\rvert m^0 s^{-2}$ 0.1214×10⁻⁹⁵ 8.2402×10⁹⁵·kgm^{-3} Mass density ρ	No.14 $\lvert G\rvert m^1 s^{-2}$ 3.0000×10⁻⁶² 0.3333×10⁶²DimA Unknown DimA	No.15 $\lvert G\rvert m^2 s^{-2}$ 7.4162×10⁻²⁸ 0.1348×10²⁸DimA Unknown DimA	No.16 $\lvert G\rvert m^3 s^{-2}$ 1.8333×10⁷ 0.5454×10⁻⁷kg Mass kg	No.17 $\lvert G\rvert m^4 s^{-2}$ 4.5321×10⁴¹ 0.2206×10⁻⁴¹DimA Unknown DimA	No.18 $\lvert G\rvert m^5 s^{-2}$ 1.1203×10⁷⁶ 0.8926×10⁻⁷⁶DimA Unknown DimA
s^{-3}	No.19 $\lvert G\rvert m^0 s^{-3}$ 1.6363×10⁻¹³⁰ 0.6111×10¹³⁰DimA Unknown DimA	No.20 $\lvert G\rvert m^1 s^{-3}$ 4.0452×10⁻¹⁰⁵ 0.2472×10¹⁰⁵DimA Unknown DimA	No.21 $\lvert G\rvert m^2 s^{-3}$ 0.9999×10⁻⁷⁰ 1.0000×10⁷⁰$kgm^{-1}s^{-1}$ Dynamic viscosity μ	No.22 $\lvert G\rvert m^3 s^{-3}$ 2.4721×10⁻³⁶ 0.4045×10³⁶E_{Nm} Natrual mol energy E_{Nm}	No.23 $\lvert G\rvert m^4 s^{-3}$ 0.0611×10⁰ 16.3666×10⁰$kgms^{-1}$ Momentum p	No.24 $\lvert G\rvert m^5 s^{-3}$ 0.1510×10³⁴ 6.6194×10⁻³⁴kgm^2s^{-1} Angualr moment L
s^{-4}	No.25 $\lvert G\rvert m^0 s^{-4}$ 2.2065×10⁻¹⁰² 0.4532×10¹⁰²DimA Unknown DimA	No.26 $\lvert G\rvert m^1 s^{-4}$ 5.4545×10⁻¹⁴⁰ 0.1833×10¹⁴⁰DimA Unknown DimA	No.27 $\lvert G\rvert m^2 s^{-4}$ 1.3484×10⁻¹¹³ 0.7416×10¹¹³Nm^{-2} Pressure P_a	No.28 $\lvert G\rvert m^3 s^{-4}$ 0.3333×10⁻⁷⁸ 3.0000×10⁷⁸Nm^{-1} Surface tension σ	No.29 $\lvert G\rvert m^4 s^{-4}$ 0.8240×10⁻⁴⁴ 1.2135×10⁴⁴N Force F	No.30 $\lvert G\rvert m^5 s^{-4}$ 2.0370×10⁻¹⁰ 0.4909×10¹⁰J Energy E
s^{-5}	No.31 $\lvert G\rvert m^0 s^{-5}$ 2.9752×10⁻²²⁵ 0.3361×10²²⁵DimA Unknown DimA	No.32 $\lvert G\rvert m^1 s^{-5}$ 7.3549×10⁻¹⁹¹ 0.1359×10¹⁹¹DimA Unknown DimA	No.33 $\lvert G\rvert m^2 s^{-5}$ 0.18182×10⁻¹²⁵ 0.5500×10¹²⁵M_{eA} Emissvity M_{eA}	No.34 $\lvert G\rvert m^3 s^{-5}$ 0.4494×10⁻¹²¹ 2.2248×10¹²¹Wm^{-2} Radiant flux density E	No.35 $\lvert G\rvert m^4 s^{-5}$ 1.1111×10⁻⁸⁷ 0.9000×10⁸⁷Φ_{eA} Specific power Φ_{eA}	No.36 $\lvert G\rvert m^5 s^{-5}$ 0.2746×10⁻⁵² 3.6406×10⁵²W Power P_a

$|G|\,m^a s^{-b}$ .... $a = 0,-1,-2,-3,-4,-5$; $b = 0,1,2,3,4,5$; $B = |G|$

	m^0	m^{-1}	m^{-2}	m^{-3}	m^{-4}	m^{-5}
s^0	No.37 $\lvert G\rvert\,m^0 s^0$ 6.6745×10^{-11} Value $\lvert G\rvert$	No.38 $\lvert G\rvert\,m^{-1}s^0$ 2.7000×10^{-45} 0.3704×10^{45}DimA Unknown DimA	No.39 $\lvert G\rvert\,m^{-2}s^0$ 1.0922×10^{-79} 0.9155×10^{79}DimA Unknown DimA	No.40 $\lvert G\rvert\,m^{-2}s^0$ 0.4418×10^{-113} 2.2634×10^{113}DimA Unknown DimA	No.41 $\lvert G\rvert\,m^{-4}s^0$ 0.1787×10^{-147} 5.5960×10^{147}DimA Unknown DimA	No.42 $\lvert G\rvert\,m^{-5}s^0$ 0.7230×10^{-182} 1.3831×10^{182}DimA Unknown DimA
s^{-1}	No.43 $\lvert G\rvert\,m^0 s^{-1}$ 8.9999×10^{-54} $0.1111\times10^{54}k_N$ Natrual thermal conductivity k_N	No.44 $\lvert G\rvert\,m^{-1}s^{-1}$ 3.6405×10^{-88} 0.2747×10^{88}DimA Unknown DimA	No.45 $\lvert G\rvert\,m^{-2}s^{-1}$ 1.4727×10^{-122} 0.6790×10^{122}DimA Unknown DimA	No.46 $\lvert G\rvert\,m^{-3}s^{-1}$ 0.5957×10^{-156} 1.6786×10^{156}DimA Unknown DimA	No.47 $\lvert G\rvert\,m^{-4}s^{-1}$ 0.2410×10^{-190} 4.1493×10^{190}DimA Unknown DimA	No.48 $\lvert G\rvert\,m^{-5}s^{-1}$ 0.9748×10^{-225} 1.0259×10^{225}DimA Unknown DimA
s^{-2}	No.49 $\lvert G\rvert\,m^0 s^{-2}$ 0.1214×10^{-91} $8.2402\times10^{90}kgm^{-3}$ Mass density ρ	No.50 $\lvert G\rvert\,m^{-1}s^{-2}$ 0.4909×10^{-130} 2.0371×10^{130}DimA Unknown DimA	No.51 $\lvert G\rvert\,m^{-2}s^{-2}$ $0.1986\times$ 10^{-164} 5.0352×10^{164}DimA Unknown DimA	No.52 $\lvert G\rvert\,m^{-3}s^{-2}$ 0.8033×10^{-199} 1.2448×10^{199}DimA Unknown DimA	No.53 $\lvert G\rvert\,m^{-4}s^{-2}$ 0.3250×10^{-233} 3.0769×10^{233}DimA Unknown DimA	No.54 $\lvert G\rvert\,m^{-5}s^{-2}$ 0.1315×10^{-267} 7.6046×10^{267}DimA Unknown DimA
s^{-3}	No.55 $\lvert G\rvert\,m^0 s^{-3}$ 1.6363×10^{-129} 0.6111×10^{129}DimA Unknown DimA	No.56 $\lvert G\rvert\,m^{-1}s^{-3}$ 0.6619×10^{-173} 1.5108×10^{173}DimA Unknown DimA	No.57 $\lvert G\rvert\,m^{-2}s^{-3}$ 0.2678×10^{-207} 3.7341×10^{207}DimA Unknown DimA	No.58 $\lvert G\rvert\,m^{-3}s^{-3}$ 0.1083×10^{-241} 9.2336×10^{241}DimA Unknown DimA	No.59 $\lvert G\rvert\,m^{-4}s^{-3}$ 0.4381×10^{-276} 2.2826×10^{276}DimA Unknown DimA	No.60 $\lvert G\rvert\,m^{-5}s^{-3}$ 0.1772×10^{-310} 5.6433×10^{310}DimA Unknown DimA
s^{-4}	No.61 $\lvert G\rvert\,m^0 s^{-4}$ 2.2065×10^{-182} 0.4532×10^{182}DimA Unknown DimA	No.62 $\lvert G\rvert\,m^{-1}s^{-4}$ 0.8926×10^{-216} 1.1203×10^{216}DimA Unknown DimA	No.63 $\lvert G\rvert\,m^{-2}s^{-4}$ 0.3611×10^{-250} 2.7693×10^{250}DimA Unknown DimA	No.64 $\lvert G\rvert\,m^{-3}s^{-4}$ 0.1461×10^{-284} 6.8446×10^{284}DimA Unknown DimA	No.65 $\lvert G\rvert\,m^{-4}s^{-4}$ 0.5908×10^{-319} 1.6926×10^{319}DimA Unknown DimA	No.66 $\lvert G\rvert\,m^{-5}s^{-4}$ 0.2390×10^{-353} 4.1841×10^{353}DimA Unknown DimA
s^{-5}	No.67 $\lvert G\rvert\,m^0 s^{-5}$ 2.9752×10^{-225} 0.3361×10^{225}DimA Unknown DimA	No.68 $\lvert G\rvert\,m^{-1}s^{-5}$ 1.2035×10^{-259} 0.8309×10^{259}DimA Unknown DimA	No.69 $\lvert G\rvert\,m^{-2}s^{-5}$ 0.4869×10^{-293} 2.0538×10^{293}DimA Unknown DimA	No.70 $\lvert G\rvert\,m^{-3}s^{-5}$ 0.1969×10^{-327} 5.0787×10^{327}DimA Unknown DimA	No.71 $\lvert G\rvert\,m^{-4}s^{-5}$ 0.7967×10^{-362} 1.2552×10^{362}DimA Unknown DimA	No.72 $\lvert G\rvert\,m^{-5}s^{-5}$ 0.3223×10^{-396} 3.1030×10^{396}DimA Unknown DimA

$$|G|m^a s^{-b} \quad a=0,1,2,3,4,5 \;\because\; b=0,-1,-2,-3,-4,-5 \;\because\; B=|G|\ldots\ldots$$

	m^0	m^1	m^2	m^3	m^4	m^5
s^0	No73 $\lvert G\rvert m^0 s^0$ 6.6745×10^{-11} Value $\lvert G\rvert$	No74 $\lvert G\rvert m^1 s^0$ 1.6499×10^{24} $0.6060\times10^{-24}S_{Nn}$ Natrual entropy S_{Nn}	No75 $\lvert G\rvert m^2 s^0$ 4.0789×10^{58} $0.2452\times10^{-58}\mathrm{DimA}$ Unkown DimA	No76 $\lvert G\rvert m^3 s^0$ 1.0783×10^{93} $0.9918\times10^{-93}U_n$ Unit nothingness U_n	No77 $\lvert G\rvert m^4 s^0$ 2.4927×10^{127} $0.4012\times10^{-127}\mathrm{DimA}$ Unkown DimA	No78 $\lvert G\rvert m^5 s^0$ 6.1620×10^{161} $0.1623\times10^{-161}\mathrm{DimA}$ Unkown DimA
s^1	No79 $\lvert G\rvert m^0 s^1$ 4.9500×10^{32} $0.2020\times10^{-32}\mathrm{DimA}$ Unkown DimA	No80 $\lvert G\rvert m^1 s^1$ 1.2236×10^{67} $0.8172\times10^{-67}\mathrm{DimA}$ Unkown DimA	No81 $\lvert G\rvert m^2 s^1$ 3.0247×10^{101} $0.3306\times10^{-101}\mathrm{DimA}$ Unkown DimA	No82 $\lvert G\rvert m^3 s^1$ 7.4770×10^{135} $0.1337\times10^{-135}\mathrm{DimA}$ Unkown DimA	No83 $\lvert G\rvert m^4 s^1$ 1.8483×10^{170} $0.5410\times10^{-170}\mathrm{DimA}$ Unkown DimA	No84 $\lvert G\rvert m^5 s^1$ 4.5689×10^{204} $0.2188\times10^{-204}\mathrm{DimA}$ Unkown DimA
s^2	No85 $\lvert G\rvert m^0 s^2$ 3.6710×10^{75} $0.2724\times10^{-75}\mathrm{DimA}$ Unkown DimA	No86 $\lvert G\rvert m^1 s^2$ 9.0747×10^{109} $0.1101\times10^{-109}\mathrm{DimA}$ Unkown DimA	No87 $\lvert G\rvert m^2 s^2$ 2.2432×10^{144} $0.4457\times10^{-144}\mathrm{DimA}$ Unkown DimA	No88 $\lvert G\rvert m^3 s^2$ 5.5451×10^{178} $0.1803\times10^{-178}\mathrm{DimA}$ Unkown DimA	No89 $\lvert G\rvert m^4 s^2$ 1.3707×10^{213} $0.7295\times10^{-213}\mathrm{DimA}$ Unkown DimA	No90 $\lvert G\rvert m^5 s^2$ 3.3883×10^{247} $0.2951\times10^{-247}\mathrm{DimA}$ Unkown DimA
s^3	No91 $\lvert G\rvert m^0 s^3$ 2.7225×10^{118} $0.3673\times10^{-118}\mathrm{DimA}$ Unkown DimA	No92 $\lvert G\rvert m^1 s^3$ 6.7300×10^{152} $0.1485\times10^{-152}\mathrm{DimA}$ Unkown DimA	No93 $\lvert G\rvert m^2 s^3$ 1.6636×10^{186} $0.6011\times10^{-186}\mathrm{DimA}$ Unkown DimA	No94 $\lvert G\rvert m^3 s^3$ 4.1124×10^{220} $0.2431\times10^{-220}\mathrm{DimA}$ Unkown DimA	No95 $\lvert G\rvert m^4 s^3$ 1.0165×10^{255} $0.9836\times10^{-255}\mathrm{DimA}$ Unkown DimA	No96 $\lvert G\rvert m^5 s^3$ 2.5127×10^{289} $0.3979\times10^{-289}\mathrm{DimA}$ Unkown DimA
s^4	No97 $\lvert G\rvert m^0 s^4$ 2.0191×10^{161} $0.4953\times10^{-161}\mathrm{DimA}$ Unkown DimA	No98 $\lvert G\rvert m^1 s^4$ 4.9912×10^{195} $0.2203\times10^{-195}\mathrm{DimA}$ Unkown DimA	No99 $\lvert G\rvert m^2 s^4$ 1.2338×10^{230} $0.8171\times10^{-230}\mathrm{DimA}$ Unkown DimA	No100 $\lvert G\rvert m^3 s^4$ 3.0499×10^{264} $0.3278\times10^{-264}\mathrm{DimA}$ Unkown DimA	No101 $\lvert G\rvert m^4 s^4$ 7.5393×10^{298} $0.1326\times10^{-298}\mathrm{DimA}$ Unkown DimA	No102 $\lvert G\rvert m^5 s^4$ 1.8637×1^{333} $0.5365\times10^{-333}\mathrm{DimA}$ Unkown DimA
s^5	No103 $\lvert G\rvert m^0 s^5$ 1.4974×10^{204} $0.6678\times10^{-204}\mathrm{DimA}$ Unkown DimA	No104 $\lvert G\rvert m^1 s^5$ 3.7015×10^{238} $0.2701\times10^{-238}\mathrm{DimA}$ Unkown DimA	No105 $\lvert G\rvert m^2 s^5$ 9.1501×10^{272} $0.1092\times10^{-272}\mathrm{DimA}$ Unkown DimA	No106 $\lvert G\rvert m^3 s^5$ 2.2619×10^{307} $0.4421\times10^{-307}\mathrm{DimA}$ Unkown DimA	No107 $\lvert G\rvert m^4 s^5$ 5.5914×10^{341} $0.1788\times10^{-341}\mathrm{DimA}$ Unkown DimA	No108 $\lvert G\rvert m^5 s^5$ 1.3822×10^{375} $0.7234\times10^{-375}\mathrm{DimA}$ Unkown DimA

The Fourth PeriodicTable of Physical Elements · PTPE-Ⅳ ········· Nα109~ Nα144

$|G|m^a s^{-b}$ a = 0,−1,−2,−3,−4,−5 ; b = 0,−1,−2,−3,−4,−5 ; B=|G|

	m^0	m^{-1}	m^{-2}	m^{-3}	m^{-4}	m^{-5}
s^0	Nα109 $|G|m^0 s^0$ 6.6745×10⁻¹¹ Value $|G|$	Nα110 $|G|m^{-1}s^0$ 2.7000×10⁻⁴⁵ 0.3703×10⁴⁵DimA Unkown DimA	Nα111 $|G|m^{-2}s^0$ 1.0922×10⁻⁷⁹ 0.9155×10⁷⁹DimA Unkown DimA	Nα112 $|G|m^{-3}s^0$ 0.4418×10⁻¹¹³ 2.2635×10¹¹³DimA Unkown DimA	Nα113 $|G|m^{-4}s^0$ 0.1787×10⁻¹⁴⁷ 5.5960×10¹⁴⁷DimA Unkown DimA	Nα114 $|G|m^{-5}s^0$ 0.7228×10⁻¹⁸² 1.3835×10¹⁸²·DimA Unkown DimA
s^1	Nα115 $|G|m^0 s^1$ 4.9500×10³² 0.2020×10⁻³²DimA Unkown DimA	Nα116 $|G|m^{-1}s^1$ 2.0022×10⁻² 0.4994×10²S_{Nm} Netrual mol entropy S_{Nm}	Nα117 $|G|m^{-2}s^1$ 0.8100×10⁻³⁶ 1..2346×10³⁶DimA Unkown DimA	Nα118 $|G|m^{-3}s^1$ 0.3277×10⁻⁷⁰ 3.0516×10⁷⁰DimA Unkown DimA	Nα119 $|G|m^{-4}s^1$ 0.1325×10⁻¹⁰⁴ 7.5472×10¹⁰⁴DimA Unkown DimA	Nα120 $|G|m^{-5}s^1$ 0.5359×10⁻¹³⁹ 1.8650×10¹³⁹DimA Unkown DimA
s^2	Nα121 $|G|m^0 s^2$ 3.6710×10⁷⁵ 0.2724×10⁻⁷⁵·DimA Unkown DimA	Nα122 $|G|m^{-1}s^2$ 1.4850×10⁴¹ 0.6734×10⁻⁴¹DimA Unkown DimA	Nα123 $|G|m^{-2}s^2$ 0.60077×10⁷ 1.6647×10⁻⁷DimA Unkown DimA	Nα124 $|G|m^{-3}s^2$ 0.2430×10⁻²⁷ 4.1152×10²⁷DimA Unkown DimA	Nα125 $|G|m^{-4}s^2$ 0.9830×10⁻⁶² 1.0173×10⁶²DimA Unkown DimA	Nα126 $|G|m^{-5}s^2$ 0.3976×10⁻⁹⁶ 2.5151×10⁹⁶imA Unkown DimA
s^3	Nα127 $|G|m^0 s^3$ 2.7225×10¹¹⁸ 0.3673×10⁻¹¹⁸DimA Unkown DimA	Nα128 $|G|m^{-1}s^3$ 1.1013×10⁸⁴ 0.9080×10⁻⁸⁴DimA Unkown DimA	Nα129 $|G|m^{-2}s^3$ 0.4455×10⁵⁰ 2.2447×10⁻⁵⁰DimA Unkown DimA	Nα130 $|G|m^{-3}s^3$ 0.1802×10⁶ 5.5494×10⁻¹⁶DimA Unkown DimA	Nα131 $|G|m^{-4}s^3$ 0.7290×10⁻¹⁹ 1.3717×10¹⁹DimA Unkown DimA	Nα132 $|G|m^{-5}s^3$ 0.2949×10⁻⁵³ 3.3910×10⁵³DimA Unkown DimA
s^4	Nα133 $|G|m^0 s^4$ 2.0191×10¹⁶¹ 0.4953×10⁻¹⁶¹DimA Unkown DimA	Nα134 $|G|m^{-1}s^4$ 0.8167×10¹²⁷ 1.2244×10⁻¹²⁷DimA Unkown DimA	Nα135 $|G|m^{-2}s^4$ 0.3304×10⁹³ 3.0266×10⁻⁹³·DimA Unkown DimA	Nα136 $|G|m^{-3}s^4$ 0.1336×10⁵⁹ 7.4850×10⁻⁵⁹DimA Unkown DimA	Nα137 $|G|m^{-4}s^4$ 0.5404×10²⁶ 1.8498×10⁻²⁶DimA Unkown DimA	Nα138 $|G|m^{-5}s^4$ 0.2186×10⁻⁸ 4.5725×10⁸DimA Unkown DimA
s^5	Nα139 $|G|m^0 s^5$ 1.4974×10²⁰⁴ 0.6678×10⁻²⁰⁴DimA Unkown DimA	Nα140 $|G|m^{-1}s^5$ 0.6057×10¹⁷⁰ 1.6510×10⁻¹⁷⁰DimA Unkown DimA	Nα141 $|G|m^{-2}s^5$ 0.2450×10¹³⁶ 4.0816×10⁻¹³⁶DimA Unkown DimA	Nα142 $|G|m^{-3}s^5$ 0.9910×10¹⁰¹ 1.0089×10⁻¹⁰¹DimA Unkown DimA	Nα143 $|G|m^{-4}s^5$ 0.4008×10⁶⁷ 2.4938×10⁻⁶⁷DimA Unkown DimA	Nα144 $|G|m^{-5}s^5$ 0.1621×10³³ 6.1652×10⁻³³DimA Unkown DimA

The Fifth Periodic Table of Physical Elements · PTPE-V · · · No.145 ～ No.180

$$\sqrt{G}\,m^a s^{-b}\cdots a=0,1,2,3,4,5;\; b=0,1,2,3,4,5;\; B=\sqrt{G}$$

	m^0	m^1	m^2	m^3	m^4	m^5
s^0	No145 $\sqrt{G}\,m^0 s^0$ 0.8169×10^{-5} value $\sqrt{G}$	No146 $\sqrt{G}\,m^1 s^0$ 2.0196×10^{29} 0.4951×10^{-29}DimA Unknown DimA	No147 $\sqrt{G}\,m^2 s^0$ 4.9924×10^{63} 0.2003×10^{-63}DimA Unknown DimA	No148 $\sqrt{G}\,m^3 s^0$ 1.2341×10^{98} 0.8103×10^{-98}DimA Unknown DimA	No149 $\sqrt{G}\,m^4 s^0$ 3.0506×10^{132} 0.3278×10^{-132}DimA Unknown DimA	No150 $\sqrt{G}\,m^5 s^0$ 7.5410×10^{166} 0.1326×10^{-166}DimA Unknown DimA
s^{-1}	No151 $\sqrt{G}\,m^0 s^{-1}$ 0.1101×10^{-47} 9.0775×10^{47}T Mag. Flux density B	No152 $\sqrt{G}\,m^1 s^{-1}$ 2.7233×10^{-14} 0.3672×10^{14}DimA Unknown DimA	No153 $\sqrt{G}\,m^2 s^{-1}$ 0.6732×10^{21} 1.4854×10$^{-21}W_b$ Mag. flux φ	No154 $\sqrt{G}\,m^3 s^{-1}$ 1.6642×10^{55} 0.6009×10^{-55}DimA Unknown DimA	No155 $\sqrt{G}\,m^4 s^{-1}$ 4.1141×10^{89} 0.2431×10^{-89} DimA Unknown DimA	No156 $\sqrt{G}\,m^5 s^{-1}$ 1.0170×10^{124} 0.9833×10^{-124}DimA Unknown DimA
s^{-2}	No157 $\sqrt{G}\,m^0 s^{-2}$ 1.4854×10^{-91} 0.6732×10$^{91}Cm^{-3}$ Charge denstiy ρ_0	No158 $\sqrt{G}\,m^1 s^{-2}$ 0.3672×10^{-56} 2.7233×10$^{56}Vm^{-1}$ Elec. Field strength E	No159 $\sqrt{G}\,m^2 s^{-2}$ 0.9077×10^{-22} 1.1016×10^{22}V Voltage V	No160 $\sqrt{G}\,m^3 s^{-2}$ 0.2244×10^{13} 4.4562×10^{-13}C Charge Q	No161 $\sqrt{G}\,m^4 s^{-2}$ 0.5547×10^{47} 1.8028×10^{-47}DimA Unknown DimA	No162 $\sqrt{G}\,m^5 s^{-2}$ 1.3714×10^{81} 0.7292×10^{-81}DimA Unknown DimA
s^{-3}	No163 $\sqrt{G}\,m^0 s^{-3}$ 2.0029×10^{-134} 0.4993×10^{134}DimA Unknown DimA	No164 $\sqrt{G}\,m^1 s^{-3}$ 0.4951×10^{-99} 2.0196×10$^{99}Am^{-2}$ Current density J	No165 $\sqrt{G}\,m^2 s^{-3}$ 0.1224×10^{-64} 8.1698×10$^{64}Am^{-1}$ Mag. Field strength H	No166 $\sqrt{G}\,m^3 s^{-3}$ 0.3025×10^{-30} 3.3048×10^{30}A Current intensity A	No167 $\sqrt{G}\,m^4 s^{-3}$ 7.4801×10^{3} 0.1337×10^{-3}DimA Unknown DimA	No168 $\sqrt{G}\,m^5 s^{-3}$ 0.1849×10^{39} 5.4079×10$^{-39}JT^{-1}$ Mag moment m
s^{-4}	No169 $\sqrt{G}\,m^0 s^{-4}$ 2.7008×10^{-177} 0.3703×10^{177}DimA Unknown DimA	No170 $\sqrt{G}\,m^1 s^{-4}$ 6.6765×10^{-143} 0.1498×10^{143}imA Unknown DimA	No171 $\sqrt{G}\,m^2 s^{-4}$ 1.6505×10^{-108} 0.6059×10^{108}DimA Unknown DimA	No172 $\sqrt{G}\,m^3 s^{-4}$ 4.0801×10^{-74} 0.2451×10^{74}DimA Unknown DimA	No173 $\sqrt{G}\,m^4 s^{-4}$ 1.0086×10^{-39} 0.9915×10^{39}DimA Unknown DimA	No174 $\sqrt{G}\,m^5 s^{-4}$ 2.4934×10^{-5} 0.4011×10^{5}DimA Unknown DimA
s^{-5}	No175 $\sqrt{G}\,m^0 s^{-5}$ 3.6417×10^{-220} 0.2746×10^{220}DimA Unknown DimA	No176 $\sqrt{G}\,m^1 s^{-5}$ 9.0025×10^{-186} 0.1111×10^{186}DimA Unknown DimA	No177 $\sqrt{G}\,m^2 s^{-5}$ 2.2255×10^{-151} 0.4493×10^{151}DimA Unknown DimA	No178 $\sqrt{G}\,m^3 s^{-5}$ 5.5016×10^{-117} 0.1818×10^{117}DimA Unknown DimA	No179 $\sqrt{G}\,m^4 s^{-5}$ 1.3600×10^{-82} 0.7353×10n^{82}DimA Unknown DimA	No180 $\sqrt{G}\,m^5 s^{-5}$ 3.3621×10^{-49} 0.2974×10^{48}DimA Unknown DimA

$$\sqrt{G}\,|m^a s^{-b} \quad a=0,-1,-2,-3,-4,-5\ ;\ b=0,1,2,3,4,5\ ;\ B=\sqrt{|G|}$$

	m^{0}	m^{-1}	m^{-2}	m^{-3}	m^{-4}	m^{-5}
s^{0}	№181 $\sqrt{G}\,|m^0 s^0$ 0.8169×10^{-5} Value $\sqrt{|G|}$	№182 $\sqrt{G}\,|m^{-1}s^0$ 0.3305×10^{-39} 3.0257×10^{39}DimA Unkown DimA	№183 $\sqrt{G}\,|m^{-2}s^0$ 0.1337×10^{-73} 7.4794×10^{73}DimA Unkown DimA	№184 $\sqrt{G}\,|m^{-3}s^0$ 0.5408×10^{-108} 1.8491×10^{108}DimA Unkown DimA	№185 $\sqrt{G}\,|m^{-4}s^0$ 0.2187×10^{-142} 4.5725×10^{142}DimA Unkown DimA	№186 $\sqrt{G}\,|m^{-5}s^0$ 0.8849×10^{-177} 1.1301×10^{177}DimA Unkown DimA
s^{-1}	№187 $\sqrt{G}\,|m^0 s^{-1}$ 0.1101×10^{-47} 9.0775×10^{47}T Mag flux density T	№188 $\sqrt{G}\,|m^{-1}s^{-1}$ 0.4456×10^{-82} 2.2441×10^{82}DimA Unkown DimA	№189 $\sqrt{G}\,|m^{-2}s^{-1}$ 0.1803×10^{-116} 5.5463×10^{116}DimA Unkown DimA	№190 $\sqrt{G}\,|m^{-3}s^{-1}$ 0.7292×10^{-151} 1.3714×10^{151}DimA Unkown DimA	№191 $\sqrt{G}\,|m^{-4}s^{-1}$ 0.2950×10^{-185} 3.3898×10^{185}DimA Unkown DimA	№192 $\sqrt{G}\,|m^{-5}s^{-1}$ 0.1193×10^{-219} 8.3822×10^{219}DimA Unkown DimA
s^{-2}	№193 $\sqrt{G}\,|m^0 s^{-2}$ 1.4854×10^{-91} $0.6732\times10^{91}Cm^{-3}$ Charge density ρ_0	№194 $\sqrt{G}\,|m^{-1}s^{-2}$ 0.6010×10^{-125} 0.3305×10^{125}DimA Unkown DimA	№195 $\sqrt{G}\,|m^{-2}s^{-2}$ 0.2431×10^{-159} 4.1135×10^{159}DimA Unkown DimA	№196 $\sqrt{G}\,|m^{-3}s^{-2}$ 0.9833×10^{-194} 1.0170×10^{194}DimA Unkown DimA	№197 $\sqrt{G}\,|m^{-4}s^{-2}$ 0.3977×10^{-228} 2.5144×10^{228}DimA Unkown DimA	№198 $\sqrt{G}\,|m^{-5}s^{-2}$ 0.1609×10^{-262} 6.2150×10^{262}DimA Unkown DimA
s^{-3}	№199 $\sqrt{G}\,|m^0 s^{-3}$ 2.0029×10^{-134} 0.4993×10^{134}DimA Unkown DimA	№200 $\sqrt{G}\,|m^{-1}s^{-3}$ 0.8102×10^{-168} 1.2343×10^{168}DimA Unkown DimA	№201 $\sqrt{G}\,|m^{-2}s^{-3}$ 0.3278×10^{-202} 3.0506×10^{202}DimA Unkown DimA	№202 $\sqrt{G}\,|m^{-3}s^{-3}$ 0.1326×10^{-236} 7.5415×10^{236}DimA Unkown DimA	№203 $\sqrt{G}\,|m^{-4}s^{-3}$ 0.5363×10^{-271} 1.8646×10^{271}DimA Unkown DimA	№204 $\sqrt{G}\,|m^{-5}s^{-3}$ 0.2170×10^{-305} 4.6083×10^{305}DimA Unkown DimA
s^{-4}	№205 $\sqrt{G}\,|m^0 s^{-4}$ 2.7008×10^{-177} 0.3703×10^{177}DimA Unkown DimA	№206 $\sqrt{G}\,|m^{-1}s^{-4}$ 1.0925×10^{-211} 0.9153×10^{211}DimA Unkown DimA	№207 $\sqrt{G}\,|m^{-2}s^{-4}$ 0.4419×10^{-245} 2.4278×10^{245}DimA Unkown DimA	№208 $\sqrt{G}\,|m^{-3}s^{-4}$ 0.1788×10^{-279} 5.5928×10^{279}DimA Unkown DimA	№209 $\sqrt{G}\,|m^{-4}s^{-4}$ 0.7232×10^{-314} 1.3827×10^{314}DimA Unkown DimA	№210 $\sqrt{G}\,|m^{-5}s^{-4}$ 0.2925×10^{-348} 3.4188×10^{348}DimA Unkown DimA
s^{-5}	№211 $\sqrt{G}\,|m^0 s^{-5}$ 3.6417×10^{-220} 0.2746×10^{220}DimA Unkown DimA	№212 $\sqrt{G}\,|m^{-1}s^{-5}$ 1.4731×10^{-254} 0.6788×10^{254}DimA Unkown DimA	№213 $\sqrt{G}\,|m^{-2}s^{-5}$ 0.5959×10^{-288} 1.6784×10^{288}DimA Unkown DimA	№214 $\sqrt{G}\,|m^{-3}s^{-5}$ 0.2411×10^{-322} 4.1477×10^{322}DimA Unkown DimA	№215 $\sqrt{G}\,|m^{-4}s^{-5}$ 0.9752×10^{-357} 1.0255×10^{357}DimA Unkown DimA	№216 $\sqrt{G}\,|m^{-5}s^{-5}$ 0.3945×10^{-391} 2.5349×10^{391}DimA Unkown DimA

The Seventh Periodic Table of Physical Elements ·· PTPE-VII ···· No.217 ～ No.252

$$\sqrt{|G|}\,m^a s^{-b} \quad\dots\quad a=0,1,2,3,4,5 :\cdot\ b=0,-1,-2,-3,-4,-5 \ \cdot:\cdot\ B=\sqrt{|G|}\,\cdots$$

	m^0	m^1	m^2	m^3	m^4	m^5
s^0	No.217 $\sqrt{|G|}m^0 s^0$ 0.8169×10^{-5} Value $\sqrt{|G|}$	No.218 $\sqrt{|G|}m^1 s^0$ 2.0196×10^{29} 0.4951×10^{-29}DimA Unkown DimA	No.219 $\sqrt{|G|}m^2 s^0$ 4.9924×10^{63} 0.2003×10^{-63}DimA Unkown DimA	No.220 $\sqrt{|G|}m^3 s^0$ 1.2341×10^{98} 0.8103×10^{-98}DimA Unkown DimA	No.221 $\sqrt{|G|}m^4 s^0$ 3.0506×10^{132} 0.3278×10^{-132}DimA Unkown DimA	No.222 $\sqrt{|G|}m^5 s^0$ 7.5410×10^{166} 0.1326×10^{-166}DimA Unkown DimA
s^1	No.223 $\sqrt{|G|}m^0 s^1$ 0.6059×10^{38} 1.6504×10^{-38}DimA Unkown DimA	No.224 $\sqrt{|G|}m^1 s^1$ 0.1498×10^{73} 6.6756×10^{-73}DimA Unkown DimA	No.225 $\sqrt{|G|}m^2 s^1$ 0.3704×10^{107} 2.6998×10^{-107}DimA Unkown DimA	No.226 $\sqrt{|G|}m^3 s^1$ 0.9156×10^{141} 1.0921×10^{-141}DimA Unkown DimA	No.227 $\sqrt{|G|}m^4 s^1$ 0.2263×10^{176} 4.4189×10^{-176}DimA Unkown DimA	No.228 $\sqrt{|G|}m^5 s^1$ 0.5594×10^{210} 1.7876×10^{-210}DimA Unkown DimA
s^2	No.229 $\sqrt{|G|}m^0 s^2$ 0.4493×10^{81} 2.2257×10^{-81}DimA Unkown DimA	No.230 $\sqrt{|G|}m^1 s^2$ 1.1106×10^{115} 0.9004×10^{-115}DimA Unkown DimA	No.231 $\sqrt{|G|}m^2 s^2$ 2.7454×10^{149} 0.3642×10^{-149}DimA Unkown DimA	No.232 $\sqrt{|G|}m^3 s^2$ 6.7866×10^{183} 0.1473×10^{-183}DimA Unkown DimA	No.233 $\sqrt{|G|}m^4 s^2$ 1.6776×10^{218} 0.5959×10^{-218}DimA Unkown DimA	No.234 $\sqrt{|G|}m^5 s^2$ 4.1470×10^{252} 0.2411×10^{-252}DimA Unkown DimA
s^3	No.235 $\sqrt{|G|}m^0 s^3$ 0.3332×10^{124} 3.0012×10^{-124}DimA Unkown DimA	No.236 $\sqrt{|G|}m^1 s^3$ 0.8236×10^{158} 1.2141×10^{-158}DimA Unkown DimA	No.237 $\sqrt{|G|}m^2 s^3$ 2.0360×10^{192} 0.4911×10^{-192}DimA Unkown DimA	No.238 $\sqrt{|G|}m^3 s^3$ 5.0330×10^{226} 0.1986×10^{-226}DimA Unkown DimA	No.239 $\sqrt{|G|}m^4 s^3$ 1.2441×10^{261} 0.8038×10^{-261}DimA Unkown DimA	No.240 $\sqrt{|G|}m^5 s^3$ 3.0754×10^{296} 0.3251×10^{-296}DimA Unkown DimA
s^4	No.241 $\sqrt{|G|}m^0 s^4$ 0.2471×10^{167} 4.0469×10^{-167}DimA Unkown DimA	No.242 $\sqrt{|G|}m^1 s^4$ 0.6109×10^{201} 1.6369×10^{-201}DimA Unkown DimA	No.243 $\sqrt{|G|}m^2 s^4$ 1.5101×10^{235} 0.6622×10^{-235}DimA Unkown DimA	No.244 $\sqrt{|G|}m^3 s^4$ 3.7339×10^{269} 0.2678×10^{-269}DimA Unkown DimA	No.245 $\sqrt{|G|}m^4 s^4$ 9.2302×10^{303} 0.1083×10^{-303}DimA Unkown DimA	No.246 $\sqrt{|G|}m^5 s^4$ 2.2817×10^{338} 0.4383×10^{-338}DimA Unkown DimA
s^5	No.247 $\sqrt{|G|}m^0 s^5$ 0.1833×10^{210} 5.4555×10^{-210}DimA Unkown DimA	No.248 $\sqrt{|G|}m^1 s^5$ 0.4531×10^{244} 2.2070×10^{-244}DimA Unkown DimA	No.249 $\sqrt{|G|}m^2 s^5$ 1.1201×10^{278} 0.8928×10^{-278}DimA Unkown DimA	No.250 $\sqrt{|G|}m^3 s^5$ 2.7688×10^{312} 0.3612×10^{-312}DimA Unkown DimA	No.251 $\sqrt{|G|}m^4 s^5$ 6.8444×10^{346} 0.1461×10^{-346}DimA Unkown DimA	No.252 $\sqrt{|G|}m^5 s^5$ 1.6919×10^{381} 0.5910×10^{-381}DimA Unkown DimA

$\sqrt{|G|}\,m^{a}s^{-b}$ ··· $a = 0,-1,-2,-3,-4,-5$ ∴ $b = 0,-1,-2,-3,-4,-5$ ∴ $B = \sqrt{|G|}$ ·

	m^{0}	m^{-1}	m^{-2}	m^{-3}	m^{-4}	m^{-5}
S^{0}	No.253 $\sqrt{|G|}m^{0}s^{0}$ 0.8169×10^{-5} Value $\sqrt{|G|}$	No.254 $\sqrt{|G|}m^{-1}s^{0}$ 0.3305×10^{-39} 3.0257×10^{39}DimA Unkown DimA	No.255 $\sqrt{|G|}m^{-2}s^{0}$ 0.1337×10^{-73} 7.4794×10^{73}DimA Unkown DimA	No.256 $\sqrt{|G|}m^{-3}s^{0}$ 0.5408×10^{-108} 1.8491×10^{108}DimA Unkown DimA	No.257 $\sqrt{|G|}m^{-4}s^{0}$ 0.2187×10^{-142} 4.5725×10^{142}DimA Unkown DimA	No.258 $\sqrt{|G|}m^{-5}s^{0}$ 0.8849×10^{-177} 1.1301×10^{177}DimA Unkown DimA
S^{1}	No.259 $\sqrt{|G|}m^{0}s^{1}$ 0.6059×10^{31} 1.6504×10^{-31}DimA Unkown DimA	No.260 $\sqrt{|G|}m^{-1}s^{1}$ 0.2451×10^{4} 4.0800×10^{-4}DimA Unkown DimA	No.261 $\sqrt{|G|}m^{-2}s^{1}$ 0.9915×10^{-31} 1.0086×10^{31}DimA Unkown DimA	No.262 $\sqrt{|G|}m^{-3}s^{1}$ 0.4011×10^{-65} 2.4931×10^{65}DimA Unkown DimA	No.263 $\sqrt{|G|}m^{-4}s^{1}$ 0.1622×10^{-99} 6.1652×10^{99}DimA Unkown DimA	No.264 $\sqrt{|G|}m^{-5}s^{1}$ 0.6561×10^{-134} 1.5237×10^{134}DimA Unkown DimA
S^{2}	No.265 $\sqrt{|G|}m^{0}s^{2}$ 0.4493×10^{81} 2.2257×10^{-81}DimA Unkown DimA	No.266 $\sqrt{|G|}m^{-1}s^{2}$ 0.1818×10^{47} 5.5006×10^{-47}DimA Unkown DimA	No.267 $\sqrt{|G|}m^{-2}s^{2}$ 0.7353×10^{12} 1.3600×10^{-12}DimA Unkown DimA	No.268 $\sqrt{|G|}m^{-3}s^{2}$ 0.2974×10^{-22} 3.3933×10^{22}DimA Unkown DimA	No.269 $\sqrt{|G|}m^{-4}s^{2}$ 0.1203×10^{-56} 8.3126×10^{56}DimA Unkown DimA	No.270 $\sqrt{|G|}m^{-5}s^{2}$ 0.4867×10^{-91} 2.0547×10^{91}DimA Unkown DimA
S^{3}	No.271 $\sqrt{|G|}m^{0}s^{3}$ 0.3332×10^{124} 3.0012×10^{-124}DimA Unkown DimA	No.272 $\sqrt{|G|}m^{-1}s^{3}$ 0.1348×10^{90} 7.4184×10^{-90}DimA Unkown DimA	No.273 $\sqrt{|G|}m^{-2}s^{3}$ 0.5453×10^{55} 1.8339×10^{-55}DimA Unkown DimA	No.274 $\sqrt{|G|}m^{-3}s^{3}$ 0.2206×10^{21} 4.5331×10^{-21}DimA Unkown DimA	No.275 $\sqrt{|G|}m^{-4}s^{3}$ 0.8923×10^{-14} 1.1207×10^{14}DimA Unkown DimA	No.276 $\sqrt{|G|}m^{-5}s^{3}$ 0.3610×10^{-48} 2.7701×10^{48}DimA Unkown DimA
S^{4}	No.277 $\sqrt{|G|}m^{0}s^{4}$ 0.2471×10^{167} 4.0469×10^{-167}DimA Unkown DimA	No.278 $\sqrt{|G|}m^{-1}s^{4}$ 0.9995×10^{132} 1.0005×10^{-132}DimA Unkown DimA	No.279 $\sqrt{|G|}m^{-2}s^{4}$ 0.4043×10^{98} 2.4728×10^{-98}DimA Unkown DimA	No.280 $\sqrt{|G|}m^{-3}s^{4}$ 0.1636×10^{64} 6.1125×10^{-64}DimA Unkown DimA	No.281 $\sqrt{|G|}m^{-4}s^{4}$ 0.6618×10^{29} 1.5110×10^{-29}DimA Unkown DimA	No.282 $\sqrt{|G|}m^{-5}s^{4}$ 0.2677×10^{-5} 3.7355×10^{5}DimA Unkown DimA
S^{5}	No.283 $\sqrt{|G|}m^{0}s^{5}$ 0.1833×10^{210} 5.4555×10^{-210}DimA Unkown DimA	No.284 $\sqrt{|G|}m^{-1}s^{5}$ 0.7414×10^{175} 1.3488×10^{-175}DimA Unkown DimA	No.285 $\sqrt{|G|}m^{-2}s^{5}$ 0.2999×10^{141} 3.3344×10^{-141}DimA Unkown DimA	No.286 $\sqrt{|G|}m^{-3}s^{5}$ 0.1213×10^{107} 8.2440×10^{-107}DimA Unkown DimA	No.287 $\sqrt{|G|}m^{-4}s^{5}$ 0.4906×10^{72} 2.0383×10^{-72}DimA Unkown DimA	No.288 $\sqrt{|G|}m^{-5}s^{5}$ 0.1985×10^{38} 5.0378×10^{-38}DimA Unkown DimA

The Ninth Periodic Table of Elements··· PTPE—IX ·········· No.289 ~ No.324

$m^a s^{-b}$ .... $a = 0,1,2,3,4,5$; $b = 0,1,2,3,4,5$; $B = 1$ ·······

	m^0	m^1	m^2	m^3	m^4	m^5
s^0	No.289 $m^0 s^0$ 1.0000×10^0 Value 1	No.290 $m^1 s^0$ 2.4721×10^34 0.4045×10^-34 m 1st dimension of space m	No.291 $m^2 s^0$ 6.1111×10^68 0.1636×10^-68 m^2 2nd dimension of space m^2	No.292 $m^3 s^0$ 1.5107×10^103 0.6619×10^-103 m^3 3rd dimension of space m^3	No.293 $m^4 s^0$ 3.7346×10^137 0.2678×10^-137 m^4 4th dimension of space m^4	No.294 $m^5 s^0$ 9.2321×10^171 0.1083×10^-171 m^5 5th dimension of space m^5
s^{-1}	No.295 $m^0 s^{-1}$ 1.3483×10^-43 0.7416×10^43 Hz Frequency f	No.296 $m^1 s^{-1}$ 0.3333×10^-8 3×10^8 ms^-1 Velocty, Conductance v, S	No.297 $m^2 s^{-1}$ 0.8240×10^26 1.2136×10^-26 m^2 s^-1 Kinematic vescosity v	No.298 $m^3 s^{-1}$ 2.0370×10^60 0.4909×10^-60 m^3 s^-1 Flow rate Q	No.299 $m^4 s^{-1}$ 5.0357×10^94 0.1986×10^-94 DimA Unknown DimA	No.300 $m^5 s^{-1}$ 1.2448×10^129 0.8033×10^-129 DimA Unknown DimA
s^{-2}	No.301 s^{-2} $m^0 s^{-2}$ 1.8181×10^-86 0.5500×10^86 Negtive 2nd dimension of time s^{-2}	No.302 $m^1 s^{-2}$ 0.4494×10^-51 2.2252×10^51 ms^-2 Acceleration a	No.303 $m^2 s^{-2}$ 0.1111×10^-16 9×10^16 Jkg^-1 Specific energy Jkg^{-1}	No.304 $m^3 s^{-2}$ 2.7467×10^17 0.4038×10^-17 DimA Unknown DimA	No.305 $m^4 s^{-2}$ 6.7901×10^51 0.1473×10^-51 DimA Unknown DimA	No.306 $m^5 s^{-2}$ 1.6785×10^86 0.5957×10^-86 DimA Unknown DimA
s^{-3}	No.307 s^{-3} $m^0 s^{-3}$ 2.4516×10^-129 0.4079×10^129 Negative 3rd dimension of time s^{-3}	No.308 $m^1 s^{-3}$ 6.0606×10^-95 0.1650×10^95 DimA Unknown DimA	No.309 $m^2 s^{-3}$ 1.4982×10^-60 0.6675×10^60 m^2 s^-3 Absorbed dose rate Gys^{-1}	No.310 $m^3 s^{-3}$ 3.7037×10^-26 0.2700×10^26 DimA Unknown DimA	No.311 $m^4 s^{-3}$ 9.1558×10^8 0.1092×10^-8 DimA Unknown DimA	No.312 $m^5 s^{-3}$ 2.2633×10^43 0.4418×10^-43 DimA Unknown DimA
s^{-4}	No.313 s^{-4} $m^0 s^{-4}$ 3.3057×10^-172 0.3025×10^172 Negative 4th dimension of time s^{-4}	No.314 $m^1 s^{-4}$ 8.1721×10^-138 0.1224×10^138 DimA Unknown DimA	No.315 $m^2 s^{-4}$ 2.0202×10^-103 0.4950×10^103 DimA Unknown DimA	No.316 $m^3 s^{-4}$ 4.9941×10^-69 0.2002×10^69 DimA Unknown DimA	No.317 $m^4 s^{-4}$ 1.2346×10^-34 0.8100×10^34 DimA Unknown DimA	No.318 $m^5 s^{-4}$ 3.0519×10^0 0.3277×10^0 DimA Unknown DimA
s^{-5}	No.319 s^{-5} $m^0 s^{-5}$ 4.4575×10^-215 0.2243×10^215 Negative 5th dimension of time s^{-5}	No.320 $m^1 s^{-5}$ 1.1019×10^-180 0.9075×10^180 DimA 未知元素 DimA	No.321 $m^2 s^{-5}$ 2.7240×10^-146 0.3671×10^146 DimA 未知元素 DimA	No.322 $m^3 s^{-5}$ 6.7340×10^-112 0.1485×10^112 DimA 未知元素 DimA	No.323 $m^4 s^{-5}$ 1.6646×10^-77 0.6007×10^77 DimA 未知元素 DimA	No.324 $m^5 s^{-5}$ 4.1149×10^-43 0.2430×10^43 DimA 未知元素 DimA

<p align="center">The Tenth Periodic Table of Physical Elements · PTPE-X · · · · No.325 ~ No.360</p>

<p align="center">$m^a s^{-b}$ ..... $a = 0,-1,-2,-3,-4,-5$; $b = 0,1,2,3,4,5$; $B = 1$ · ·</p>

	m^{0}	m^{-1}	m^{-2}	m^{-3}	m^{-4}	m^{-5}
s^{0}	No.325 $m^{0}s^{0}$ 1.0000×10^{0} Value 1	No.326 $m^{-1}s^{0}$ 0.4045×10^{-34} $2.4722\times10^{34}m^{-1}$ Number of wave k	No.327 $m^{-2}s^{0}$ 0.1636×10^{-68} $6.1111\times10^{68}m^{-2}$ Nagetive 2nd dim. space m^{-2}	No.328 $m^{-3}s^{0}$ 0.6619×10^{-103} $1.5107\times10^{103}m^{-3}$ Nagetive 3rd dim. space m^{-3}	No.329 $m^{-4}s^{0}$ 0.2677×10^{-137} $3.7346\times10^{137}m^{-4}$ Nagetive 4th dim. space m^{-4}	No.330 $m^{-5}s^{0}$ 0.1083×10^{-171} $9.2321\times10^{171}m^{-5}$ Nagetive 5th dim. space m^{-5}
s^{-1}	No.331 $m^{0}s^{-1}$ 1.3483×10^{-43} $0.7416\times10^{43}H_z$ Freuency Hz	No.332 $m^{-1}s^{-1}$ 0.5454×10^{-77} 1.8335×10^{77}DimA Unkown DimA	No.333 $m^{-2}s^{-1}$ 0.2206×10^{-111} 4.5331×10^{111}DimA Unkown DimA	No.334 $m^{-3}s^{-1}$ 0.8926×10^{-146} 1.1158×10^{146}DimA Unkown DimA	No.335 $m^{-4}s^{-1}$ 0.3610×10^{-180} 2.7701×10^{180}DimA Unkown DimA	No.336 $m^{-5}s^{-1}$ 0.1460×10^{-214} 6.8493×10^{214}DimA Unkown DimA
s^{-2}	No.337 s^{-2} $m^{0}s^{-2}$ 1.8181×10^{-96} $0.5500\times10^{96}s^{-2}$ Negative 2nd dim. time s^{-2}	No.338 $m^{-1}s^{-2}$ 0.7354×10^{-120} 1.3417×10^{120}DimA Unkown DimA	No.339 $m^{-2}s^{-2}$ 0.2975×10^{-154} 3.3613×10^{154}DimA Unkown DimA	No.340 $m^{-3}s^{-2}$ 0.1204×10^{-188} 8.3056×10^{188}DimA Unkown DimA	No.341 $m^{-4}s^{-2}$ 0.4870×10^{-223} 2.0533×10^{223}DimA Unkown DimA	No.342 $m^{-5}s^{-2}$ 0.1970×10^{-257} 5.0787×10^{257}DimA Unkown DimA
s^{-3}	No.343 s^{-3} $m^{0}s^{-3}$ 2.4516×10^{-129} $0.4079\times10^{129}s^{-3}$ Negative 3rd dim. time s^{-3}	No.344 $m^{-1}s^{-3}$ 0.9917×10^{-163} 1.0084×10^{163}DimA Unkown DimA	No.345 $m^{-2}s^{-3}$ 0.4011×10^{-197} 2.4931×10^{197}DimA Unkown DimA	No.346 $m^{-3}s^{-3}$ 0.1623×10^{-231} 6.1614×10^{231}DimA Unkown DimA	No.347 $m^{-4}s^{-3}$ 0.6565×10^{-266} 1.5232×10^{266}DimA Unkown DimA	No.348 $m^{-5}s^{-3}$ 0.2655×10^{-300} 3.7665×10^{300}DimA Unkown DimA
s^{-4}	No.349 s^{-4} $m^{0}s^{-4}$ 3.3057×10^{-172} $0.3025\times10^{172}s^{-4}$ Negative 4th dim. time s^{-4}	No.350 $m^{-1}s^{-4}$ 1.3372×10^{-206} 0.7478×10^{206}DimA Unkown DimA	No.351 $m^{-2}s^{-4}$ 0.5409×10^{-240} 1.8488×10^{240}DimA Unkown DimA	No.352 $m^{-3}s^{-4}$ 0.2188×10^{-274} 4.5704×10^{274}DimA Unkown DimA	No.353 $m^{-4}s^{-4}$ 0.8851×10^{-309} 1.1298×10^{309}DimA Unkown DimA	No.354 $m^{-5}s^{-4}$ 0.3580×10^{-343} 2.7933×10^{343}DimA Unkown DimA
s^{-5}	No.355 s^{-5} $m^{0}s^{-5}$ 4.4575×10^{-215} $0.2243\times10^{215}s^{-5}$ Negative 5th dim. time s^{-5}	No.356 $m^{-1}s^{-5}$ 1.8031×10^{-249} 0.5546×10^{249}DimA Unkown DimA	No.357 $m^{-2}s^{-5}$ 0.7294×10^{-283} 1.3710×10^{283}DimA Unkown DimA	No.358 $m^{-3}s^{-5}$ 0.2951×10^{-317} 3.3887×10^{317}DimA Unkown DimA	No.359 $m^{-4}s^{-5}$ 0.1194×10^{-351} 8.3752×10^{351}DimA Unkown DimA	No.360 $m^{-5}s^{-5}$ 0.4829×10^{-386} 2.0708×10^{386}DimA Unkown DimA

The Eleventh Periodic Table of Physical Elements · PTPE-XI ····· No.361 ~ No.396

$$m^a s^{-b} \quad a = 0,1,2,3,4,5 \ ; \ b = 0,-1,-2,-3,-4,-5 \ ; \ B = 1 \cdots$$

	m^0	m^1	m^2	m^3	m^4	m^5
s^0	No.361 $m^0 s^0$ 1.0000×10^0 Value 1	No.362 $m^1 s^0$ 2.4720×10^{34} $0.4045\times10^{-34}F$ Capacitance F	No.363 $m^2 s^0$ 6.1111×10^{68} $0.1636\times10^{-68}m^2$ 2nd dim. space m^2	No.364 $m^3 s^0$ 1.5107×10^{103} $0.6619\times10^{-103}m^3$ 3rd dim. space m^3	No.365 $m^4 s^0$ 3.7345×10^{137} $0.2678\times10^{-137}m^4$ 4th dim. space m^4	No.366 $m^5 s^0$ 9.2321×10^{171} $0.1083\times10^{-171}m^5$ 5th dim. space m^5
s^1	No.367 $m^0 s^1$ 0.7416×10^{43} $1.3483\times10^{-43}s$ 1st dim. time s	No.368 $m^1 s^1$ 1.8333×10^{77} 0.5455×10^{-77}DimA Unknown DimA	No.369 $m^2 s^1$ 4.5321×10^{111} 0.2202×10^{-111}DimA Unknown DimA	No.370 $m^3 s^1$ 1.1203×10^{146} 0.8926×10^{-146}DimA Unknow DimA	No.371 $m^4 s^1$ 2.7693×10^{180} 0.3611×10^{-180}DimA Unknow DimA	No.372 $m^5 s^1$ 6.8467×10^{214} 0.1461×10^{-214}DimA Unknow DimA
s^2	No.373 $m^0 s^2$ 0.5500×10^{86} $1.8182\times10^{-86}s^2$ 2nd dim. time s^2	No.374 $m^1 s^2$ 1.3596×10^{120} 0.7355×10^{-120}DimA Unknow DimA	No.375 $m^2 s^2$ 3.3611×10^{154} 0.2975×10^{-154}DimA Unknow DimA	No.376 $m^3 s^2$ 8.3088×10^{188} 0.1204×10^{-188}DimA Unknow DimA	No.377 $m^4 s^2$ 2.0540×10^{223} 0.4869×10^{-223}DimA Unknow DimA	No.378 $m^5 s^2$ 5.0776×10^{257} 0.1969×10^{-257}DimA Unknow DimA
s^3	No.379 $m^0 s^3$ 0.4079×10^{129} $2.4516\times10^{-129}s^3$ 3rd dim. time s^3	No.380 $m^1 s^3$ 1.0083×10^{163} 0.9918×10^{-163}DimA Unknow DimA	No.381 $m^2 s^3$ 2.4926×10^{197} 0.4006×10^{-197}DimA Unknow DimA	No.382 $m^3 s^3$ 6.1617×10^{231} 0.1623×10^{-231}DimA Unknow DimA	No.383 $m^4 s^3$ 1.5232×10^{266} 0.6565×10^{-266}DimA Unknow DimA	No.384 $m^5 s^3$ 3.7656×10^{300} 0.2656×10^{-300}DimA Unknow DimA
s^4	No.385 $m^0 s^4$ 0.3025×10^{172} $3.3058\times10^{-172}s^4$ 4th dim time s^4	No.386 $m^1 s^4$ 0.7478×10^{206} 1.3373×10^{-206}imA Unknow DimA	No.387 $m^2 s^4$ 1.8486×10^{240} 0.5409×10^{-240}DimA Unknow DimA	No.388 $m^3 s^4$ 4.5698×10^{274} 0.2188×10^{-274}DimA Unknow DimA	No.389 $m^4 s^4$ 1.1297×10^{309} 0.8852×10^{-309}DimA Unknow DimA	No.390 $m^5 s^4$ 2.7927×10^{343} 0.3581×10^{-343}DimA Unknow DimA
s^5	No.391 $m^0 s^5$ 0.2243×10^{215} $4.4575\times10^{-215}s^5$ 5th dim. time s^5	No.392 $m^1 s^5$ 0.5545×10^{249} 1.8034×10^{-249}DimA Unknow DimA	No.393 $m^2 s^5$ 1.3709×10^{283} 0.7294×10^{-283}DimA Unknow DimA	No.394 $m^3 s^5$ 3.3888×10^{317} 0.2951×10^{-317}DimA Unknow DimA	No.395 $m^4 s^5$ 8.3771×10^{351} 0.1193×10^{-351}DimA Unknow DimA	No.396 $m^5 s^5$ 2.0708×10^{386} 0.4829×10^{-386}DimA Unknow DimA

$$m^a s^{-b} \ldots\ a=0,-1,-2,-3,-4,-5\ ;\ b=0,-1,-2,-3,-4,-5\ ;\ B=1\ \cdots$$

	m^0	m^{-1}	m^{-2}	m^{-3}	m^{-4}	m^{-5}
S^0	No.397 $m^0 s^0$ 1×10^0 $1\times 10^0 C^2 N^{-1} m^{-2}$ Permittivity ϵ	No.398 $m^{-1} s^0$ 0.4045×10^{-34} $2.4722\times 10^{34} m^{-1}$ Number of waves k	No.399 $m^{-2} s^0$ 0.1636×10^{-68} $6.1125\times 10^{68} m^{-2}$ Negative 2nd dim. space m^{-2}	No.400 $m^{-3} s^0$ 0.6619×10^{-103} $1.5108\times 10^{103} m^{-3}$ Negative 3rd dim. space m^{-3}	No.401 $m^{-4} s^0$ 0.2677×10^{-137} $3.7341\times 10^{137} m^{-4}$ Negative 4th dim. space m^{-4}	No.402 $m^{-5} s^0$ 0.1083×10^{-171} $9.2336\times 10^{171} m^{-5}$ Negative 5th dim. space m^{-5}
S^1	No.403 $m^0 s^1$ 0.7416×10^{43} $1.3483\times 10^{-43} s$ 1st dim. time s	No.404 $m^{-1} s^1$ 3×10^8 $0.3333\times 10^{-8}\Omega$ Resistance Ω	No.405 $m^{-2} s^1$ 1.2136×10^{-26} $0.8240\times 10^{26} DimA$ Unknown $DimA$	No.406 $m^{-3} s^1$ 0.4909×10^{-60} $2.0370\times 10^{60} DimA$ Unknown Dim	No.407 $m^{-4} s^1$ 0.1986×10^{-94} $5.0352\times 10^{94} DimA$ Unknown $DimA$	No.408 $m^{-5} s^1$ 0.8033×10^{-129} $1.2449\times 10^{129} DimA$ Unknown $DimA$
S^2	No.409 $m^0 s^2$ 0.5500×10^{86} $1.8182\times 10^{-86} s^2$ 2nd dim. time s^2	No.410 $m^{-1} s^2$ 0.2224×10^{52} $4.4946\times 10^{-52} VsA^{-1}$ Inductance H	No.411 $m^{-2} s^2$ 9×10^{16} $0.1111\times 10^{-16} m^{-2} s^2$ Permeability μ	No.412 $m^{-3} s^2$ 3.6407×10^{-18} $0.2747\times 10^{18} DimA$ Unknown $DimA$	No.413 $m^{-4} s^2$ 1.4727×10^{-52} $0.6790\times 10^{52} DimA$ Unknown $DimA$	No.414 $m^{-5} s^2$ 0.5957×10^{-86} $1.6787\times 10^{86} DimA$ Unknown $DimA$
S^3	No.415 $m^0 s^3$ 0.4079×10^{129} $2.4516\times 10^{-129} s^3$ 3rd dim. time s^3	No.416 $m^{-1} s^3$ 1.6499×10^{94} $0.6061\times 10^{-94} DimA$ Unknown $DimA$	No.417 $m^{-2} s^3$ 0.6675×10^{60} $1.4981\times 10^{-60} DimA$ Unknown $DimA$	No.418 $m^{-3} s^3$ 0.2700×10^{26} $3.7038\times 10^{-26} DimA$ Unknown $DimA$	No.419 $m^{-4} s^3$ 0.1092×10^{-8} $9.1575\times 10^{8} DimA$ Unknown $DimA$	No.420 $m^{-5} s^3$ 0.4418×10^{-43} $2.2635\times 10^{43} DimA$ Unknown $DimA$
S^4	No.421 $m^0 s^4$ 0.3025×10^{172} $3.3058\times 10^{-172} s^4$ 4th dim. time s^4	No.422 $m^{-1} s^4$ 0.1223×10^{138} $8.1766\times 10^{-138} DimA$ Unknown $DimA$	No.423 $m^{-2} s^4$ 0.4947×10^{103} $2.0202\times 10^{-103} DimA$ Unknown $DimA$	No.424 $m^{-3} s^4$ 0.2002×10^{69} $4.9950\times 10^{-69} DimA$ Unknown $DimA$	No.425 $m^{-4} s^4$ 0.8100×10^{34} $1.2345\times 10^{-34} DimA$ Unknown $DimA$	No.426 $m^{-5} s^4$ 0.3277×10^{0} $3.0516\times 10^{0} DimA$ Unknown $DimA$
S^5	No.427 $m^0 s^5$ 0.2243×10^{215} $4.4583\times 10^{-215} s^5$ 5th dim. time s^5	No.428 $m^{-1} s^5$ 0.9074×10^{180} $1.1020\times 10^{-180} DimA$ Unknown $DimA$	No.429 $m^{-2} s^5$ 0.3671×10^{146} $2.7241\times 10^{-146} DimA$ Unknown $DimA$	No.430 $m^{-3} s^5$ 0.1485×10^{112} $6.7340\times 10^{-112} DimA$ Unknown $DimA$	No.431 $m^{-4} s^5$ 0.6007×10^{77} $1.6647\times 10^{-77} DimA$ Unknown $DimA$	No.432 $m^{-5} s^5$ 0.2430×10^{43} $4.1152\times 10^{-43} DimA$ Unknown $DimA$

The Thirteenth Periodic Table of Physical Elements （A） · PTPE- XIII-A · · $No.433 \sim No.444$

···· $Bm^a s^{-b}$ ······ $a = 0,\pm1,\pm2,\pm3,\pm4,\pm5$ ···· $b = 0,\pm1,\pm2,\pm3,\pm4,\pm5$

$|G|$	$m^{\pm3}$	$m^{\pm1}$	$m^{\pm2}$	$m^{\pm3}$	$m^{\pm4}$	$m^{\pm5}$
S^0	No.433 $Bm^0 s^0$ Value $B \geq |G|$ No.433-1 $|G|^{-1}m^0 s^0$ 0.1498×10^{11} $6.6745\times10^{-11}m^3 kg^{-1}s^{-2}$ Modulus of G C_g	No.434-1↓ $\frac{1}{\beta}|G|m^1 s^0$ 0.7242×10^{23} $1.3804\times10^{-23}JK^{-1}$ Entropy S No.434-2 $a^{-1}m^1 s^0$ 0.3386×10^{36} $2.9527\times10^{-36}kg^{-1}mol^{-1}$ $\times s^3 A^2$ mol conductivity Λ_m	No.435 $Bm^0 s^{\pm2}\&STV(Bm^0 s^{\pm2})$ Unknown DimA	No.436 $Bm^0 s^{\pm3}\&STV(Bm^0 s^{\pm3})$ Unknown DimA	No.43 4K $Bm^0 s^{\pm4}\&STV(Bm^0 s^{\pm4})$ Unknown DimA	No.438 $Bm^0 s^{\pm5}\&STV(Bm^0 s^{\pm5})$ Unknown DimA
$S^{\pm1}$	No.439-1 $\frac{1}{\beta}|G|m^0 s^{-1}$ 0.3950×10^{-54} $2.5312\times10^{54}Wm^{-1}K^{-1}$ Thermal conductivity k	No.440-1 $\frac{a^{-1}}{\beta}|G|m^{-1}s^1$ 0.1204×10^0 $8.3043JK^{-1}mol^{-1}$ Mol entropy S_m No.440-2 $a^{-1}m^1 s^1$ 2.5117×10^{79} $0.3981\times10^{-79}m^3 mol^{-1}$ Mol volume $m^3 mol^{-1}$ No.440-3 $am^{-1}s^{-1}$ 0.3981×10^{-79} $2.5117\times10^{79}molm^{-3}$ Mol density $molm^{-3}$	No.441 $am^2 s^{-1}$ 6.0147×10^{23} $0.1662\times10^{-23}mol$ molar mol	No.442 $Bm^0 s^{\pm2}\&STV(Bm^{\pm1}s^{\pm3})$ Unknown DimA	No.443 $Bm^0 s^{\pm2}\&STV(Bm^{\pm1}s^{\pm4})$ K·R·I·M	No.444 $Bm^{\pm2}s^{\pm2}\&STV(Bm^{\pm1}s^{\pm5})$ Unknown DimA

No.445 ～ No.468

$a = 0,\pm1,\pm2,\pm3,\pm4,\pm5 \cdots \cdots b = 0,\pm1,\pm2,\pm3,\pm4,\pm5$

$S^{\pm1}$	No.445−1 $\|M_G\|s^{-2}_{i,j-1}$ 0.9917× 10⁻⁹³ 1.0083× 10⁹³$\|M_G\|s^{-2}$ Unit information $C_m(i)$ No.445−2 $\|G\|^{-1}m^0s^2$ 0.8240× 10⁹⁶ 1.2136 × 10⁻⁹⁶m^3kg^{-1} Specific volume V	No.446 $Bm^{\pm2}s^{\pm2}\&STV(Bm^{\pm}s^{\pm2})$ Unknown DimA	No.447 $\frac{1}{\beta}m^{-2}s^2$ 0.3951× 10¹⁶ 2.5310 × 10⁻¹⁶$Jkg^{-1}K^{-1}$ Specific entropy S_x	No.448 $Bm^{\pm1}s^{\pm2}$ $STV(Bm^{\pm1}s^{\pm2})$ Unknown DimA	No.449 $Bm^{\pm1}s^{\pm2}$ $STV(Bm^{\pm1}s^{\pm2})$ Unknown DimA	No.450 $Bm^{\pm1}s^{\pm2}\&STV(Bm^{\pm}s^{\pm2})$ Unknown DimA
$S^{\pm1}$	No.451 $Bm^0s^{\pm1}$ $STV(Bm^0s^{\pm1})$ Unknown DimA	No.452 $Bm^{\pm1}s^{\pm2}\&STV(Bm^{\pm1}s^{\pm2})$ Unknown DimA	No.453 $Bm^{\pm2}s^{\pm3}$ $STV(Bm^{\pm2}s^{\pm3})$ Unknown DimA	No.454 $a^{-1}\|G\|m^3s^{-3}$ 3.3867× 10⁻³⁴ 0.2952× 10³⁴ $J\cdot mol^{-1}$ Mol energy E_{nm}	No.455 $Bm^{\pm4}s^{\pm3}$ $STV(Bm^{\pm4}s^{\pm3})$ Unknown DimA	No.456 $Bm^{\pm2}s^{\pm3}\&STV(Bm^{\pm}s^{\pm3})$ Unknown DimA
$S^{\pm1}$	No.457 $Bm^0s^{\pm4}$ $STV(Bm^0s^{\pm4})$ Unknown DimA	No.458 $Bm^{\pm1}s^{\pm4}\&STV(Bm^{\pm1}s^{\pm4})$ Unknown DimA	No.459 $Bm^{\pm2}s^{\pm4}$ $STV(Bm^{\pm2}s^{\pm4})$ Unknown DimA	No.460 $Bm^{\pm1}s^{\pm4}$ $STV(Bm^{\pm1}s^{\pm4})$ Unknown DimA	No.461 βm^4s^{-4} 2.8120× 10⁻³³ 0.3556 × 10³³K Thermodynamic temperature K	No.462 $Bm^{\pm1}s^{\pm4}\&STV(Bm^{\pm1}s^{\pm4})$ Unknown DimA
$S^{\pm1}$	No.463 $Bm^0s^{\pm5}$ $STV(Bm^0s^{\pm5})$ Unknown DimA	No.464 $Bm^{\pm1}s^{\pm5}\&STV(Bm^{\pm1}s^{\pm5})$ Unknown DimA	No.465 $Bm^{\pm2}s^{\pm5}$ $STV(Bm^{\pm2}s^{\pm5})$ Unknown DimA	No.466 $Bm^{\pm3}s^{\pm5}$ $STV(Bm^{\pm3}s^{\pm5})$ Unknown DimA	No.467 $Bm^{\pm4}s^{\pm5}$ $STV(Bm^{\pm4}s^{\pm5})$ Unknown DimA	No.468 $Bm^{\pm1}s^{\pm5}\&STV(Bm^{\pm}s^{\pm5})$ Unknown DimA

Notice: $\beta = \frac{a^{-1}}{\|N_A\|\times10^{-23}} = 22.780856999999$, $a = 1/137$

$\|N_A\| = 6.014759519136 \times 10^{23}$, $\|G\| = 6.6745786383860966 \times 10^{-11}$

$\sqrt{\|G\|} = 0.8169809445933299 \times 10^{-5}$

It should be specially pointed out that Element No.4 and Element No.76 are both unit nothingness, and No. 445-1 is unit information. They are not actually physical elements since physical interpretation to the rule of space-time configuration does not apply to them. They are included in the table simply because their expressions also conform to the rule of space-time configuration and the rule of space-time value.

3, Adjacent Relationship of Physical Elements

The Periodic Table of Physical Elements visually displays the physical relationships between adjacent physical elements, namely adjacent relationships of physical elements. There are four sorts of such adjacent relationships, m^+ adjacent relationship, m^- adjacent relationship, s^+ adjacent relationship, and s^- adjacent relationship.

▪ m^+ Adjacent relationship

An physical element increases by one spatial dimension compared to its adjacent physical elements. that is, the physical element interacts with an unit of one-dimensional space to generate another physical element. Such as (refer to the 1st periodic table and 5th periodic table).

*No.*23 momentum element $|G|m^4s^{-3}$ interacts with one dimensional space to generate *No.*24 angular moment element $|G|m^5s^{-3}$.

*No.*157 charge density element $\sqrt{|G|}m^0s^{-2}$ interacts with one dimensional space to generate *No.*158 electric field strength $\sqrt{|G|}m^1s^{-2}$.

*No.*16 mass element $|G|m^3s^{-2}$ interacts with one dimensional space to generate an *No.*17 unknown element $|G|m^4s^{-2}$.

*No.*151 magnetic flux density element $\sqrt{|G|}m^0s^{-1}$ interacts with one dimensional space to generate *No.*152 unknown element $\sqrt{|G|}m^1s^{-1}$.

▪ m^- Adjacent relationship

An physical element decreases by one spatial dimension compared to its adjacent physical elements. that is, the change rate of one-dimensional space to the physical element generates another physical element. Such as,

Change rate of one dimensional space to No.28 surface tension element $|G|m^3s^{-4}$ generates *No.*27 pressure element $|G|m^2s^{-4}$.

Change rate of one dimensional space to *No.*159 voltage element

$\sqrt{|G|}m^2s^{-2}$ generates $No.158$ electric field strength element. $\sqrt{|G|}m^1s^{-2}$.

Change rate of one dimensional space to $No.16$ mass element $|G|m^3s^{-2}$ generates $No.15$ unknown element $|G|m^2s^{-2}$.

Change rate of one dimensional space to $No.153$ magnetic flux element $\sqrt{|G|}m^2s^{-1}$ generates $No.152$ unknown element $\sqrt{|G|}m^1s^{-1}$.

▪ s^+ Adjacent relationship

An physical element decreases by one temporal dimension compared to its adjacent physical elements. that is, the physical element interacts with an unit of one-dimensional time to generate another physical element. Such as,

$No.29$ force element $|G|m^4s^{-4}$ interacts with an unit of one dimensional time to generates $No.23$ momentum element $|G|m^4s^{-3}$.

$No.157$ charge density element $\sqrt{|G|}m^0s^{-2}$ interacts with an unit of one dimensional time to generates $No.151$ magnetic flux density element $\sqrt{|G|}m^0s^{-1}$.

$No.16$ mass element $|G|m^3s^{-2}$ interacts with an unit of one dimensional time to generates $No.10$ unknown element $|G|m^3s^{-1}$.

$No.158$ electric field element $\sqrt{|G|}m^1s^{-2}$ interacts with an unit of one dimensional time to generates $No.152$ unknown element $\sqrt{|G|}m^1s^{-1}$.

▪ s^- Adjacent relationship

An physical element increases by one temporal dimension compared to its adjacent physical elements. that is, the change rate of one-dimensional time to the physical element generates another physical element. Such as,

Change rate of one dimensional time to No.16 mass element $|G|m^3s^{-2}$ generates $No.22$ natural molar energy $|G|m^3s^{-3}$.

Change rate of one dimensional time to No.158 electric field strength

$\sqrt{|G|}m^1 s^{-2}$ generates $No.164$ current density $\sqrt{|G|}m^1 s^{-3}$.

Change rate of one dimensional time to No.13 mass density element $|G|m^0 s^{-2}$ generates $No.19$ unknown element $|G|m^0 s^{-3}$.

Change rate of one dimensional time to No.165 magnetic field element $\sqrt{|G|}m^2 s^{-3}$ generates $No.171$ unknown element $\sqrt{|G|}m^2 s^{-4}$.

Appendix Ⅱ

Derivation of the 3ʳᵈ Equation of N-God

By the cosmic body equation,

$$\sum_{j=0}^{i-1} G_j = U_n \times \sum_{j=0}^{i-1} |M_G| s_{j,j-1}^{-2} \ \ and \ STV\left(\sum_{j=0}^{i-1} G_j\right) = i$$

$$STV\{\sum_{j=0}^{i-1} |M_G| s_{j,j-1}^{-2}\} = \left(\frac{i}{STV(U_n)}\right),$$

To substitute them in the 2ⁿᵈ equation of Natural God , we have

$$A_{UP}(i) = \beta_A i^{d-1} STV\left(\sum_{j=0}^{i-1} |M_G| s_{j,j-1}^{-2}\right) A_G = \beta_A i^{d-1}\left(\frac{i}{STV(U_n)}\right) A_G. \ 。$$

let $A_U(i) = STV(U_n)A_{UP}(i),$ then we get $A_U(i) = \beta_A i^d A_G.$

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Postscript

Understanding in physics to the Natural God is helpful in unification of philosophical theories. Philosophy should set aside long-standing

confrontation between materialism and idealism, and turn to seek their unity in the Natural God.

It has been more than one hundred years since the establishment of the theory of relativity and quantum mechanics. During this period, there has been no substantial and revolutionary progress in fundamental theories of physics. One of important reasons is that logical depth of the basic physical concepts on which existing physical theories rely significantly restricts breakthrough in fundamental theories. The logical depth of basic concepts of theoretical system essentially limits the maximum scope of the universe that can be understood by theories of physics, while the SI units definition system lacks understanding of common attributes of physical quantities. This logical defect prevents all existing theories of physics from reaching deeper and more essential physical reality of the universe, resulting in stagnation of fundamental theories of physics.

Further development of fundamental theories of physics firstly require to realize completable construction of the SI units of system, which is precisely significance of the Meter - Second System (MS system) innovatively developed by UPHY.

Physics is a quantitative and empirical science, as well as an open - ended theoretical system. It always welcomes addition of any innovative theory, but the threshold is high. Whether an innovative theory in physics

is true or not, it is not judged by any existing theory, nor by philosophical doctrines and theoretical viewpoints held by any reviewers. Otherwise, innovative development of physics would be impossible. An innovative theory in physics only needs to meet three requirements at same time which are logical self - consistency, compatibility, and empirical verification of conclusions. Self - consistency means that the innovative theory can be self – explained and its internal logic is not contradictory. Compatibility refers to the fact that the innovative theory is compatible to the basic laws of physics and cannot be deduced from these basic laws, and all its conclusions are compatible and mutually corroborative. Empirical verification of conclusions means that the conclusions described in the innovative theory are in accordance with existing experimental results and astronomical observations, and even can provide theoretical predictions for experiments and astronomical observations to verify.

Mathematics holds an important position in theoretical physics and has two major functions, that are quantitatively expressing physical ideas and logically exploring the connotations of physical ideas. However, mathematics is not soul of theoretical physics, the soul of theoretical physics is advanced and correct original physical ideas. Without this soul, theoretical physics would regress to pure mathematical deduction.

Huge mathematical lineup of theoretical physics and its past great

successes have led to an academic trend in the scientific community that take mathematics as the leading factor to guide development of theoretical physics and advocate to mathematizes theoretical physics. As a result, an extreme view has emerged which said that the solution of frontier topics in theoretical physics must be equipped with advanced mathematics such as partial differential equations, differential geometry, and topology. It is unimaginable and useless to use elementary mathematics as a descriptive tool for theories in theoretical physics theories.

This viewpoint takes the level of mathematical form as the criterion for judging effectiveness and truth of theories physics, obviously it is prejudice and wrong. Regarding relationship between physical principles and mathematics, the famous theoretical physicist Professor Planck once made a judgment that the more universal a physical principle is, the simpler its mathematical expression is. Theoretical exploration and practice of UPHY have once again proven this correct judgment.

Advanced, correct, noble, and divinely - inspired original physical ideas only require appropriate mathematical configuration, which may be advanced mathematics, elementary mathematics, or both, advanced mathematics is by no means the only option. We should not judge scientific value of an innovative theory in physics by the level of its mathematical form. Instead, we should first check whether the physical weight of its

original ideas is substantial enough, then check whether the mathematical description of this physical idea is self - consistent and correct, whether the conclusions are in consistent agreement with physical experiments and astronomical observations, and even whether it can provide theoretical predictions for physical experiments and astronomical observations to verify. If so, such innovative theory is cream of the crop of theoretical physics.

Over the past nearly four hundred years, modern natural science and contemporary natural science created by Westerners have greatly promoted progress and development of human civilization. This is the pride of Westerners and also pride of all mankind. Physicists should have a broader philosophical perspective to grasp greater pattern of development of physics. The unified theory of physics not only aims to achieve a unified description to the four known elementary interactions, but also needs to obtain a unified solution to various physical quantities of the universe, more fundamental physical interactions, more extensive universal phenomena, and the origin of the universe.

Spring is the season when flowers bloom. An innovative theory of physics like a primrose which will surely lead to hundreds of flowers blooming in the spring of science. A new spring of physics has arrived. Autumn is the season of harvest, where spring flowers bear autumn fruits.

Innovative theories of physics, like physical experiments, lead continuous development of physics and will surely bring rich fruits of new discoveries.

-----Full text ends.

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