The challenge of the new theoretical system of physics in the 21st century to the popular views of physics in the world

Jiang Hua Zhou
P.O. Box 2-3-2403, hai bi tai, Qinhuangdao City, Hebei Province, China 066000. Tel:0086-18003352823  E-mail: boss@21ufo.com

Abstract. This paper is based on the new theoretical system of physics in the 21st century published by the British Physical Society IOP Journal of physics in 2020. It is a challenge to some popular views of physics today! It negates the big bang theory, general relativity, epistemology of gravitational wave existence, and epistemology of antimatter existence. It denies the research method of relying on the electron Collider to find the smallest particle in the material world! It is put forward that "the state of matter light" is the epistemology of the fifth physical state; stars are not composed of hydrogen and helium, nor are they nuclear reactions; the formation reason of Galactic System and the epistemology of cosmic unit. This paper is a summary and deduction of the new theoretical system of physics in the 21st century.

1. Introduction
This paper is based on the new theoretical system of physics in the 21st century published by the British Physical Society IOP Journal of physics in 2020. It is a challenge to some popular views of physics today[1-3]: ① Introduction. ② The negation of the big bang theory. ③ The general relativity is a completely wrong fallacy to explain gravity by the bending of time and space. ④ The electron collider will never be able to find the smallest particle in the material world. ⑤ The negation of antimatter existence. ⑥ It is proposed that "the state of matter light" is the epistemology of the fifth physical state, and that stars are neither composed of hydrogen and helium nor nuclear reaction. ⑦ The summary and deduction of new ideas in the new theoretical system of physics in the 21st century. ⑧ A new epistemology of the universe and the Galactic system. ⑨ Conclusion.

2. The negation of the big bang theory
Review of "the big bang theory": the big bang theory holds that the universe was formed by a dense and hot singularity after a big bang 13.7 billion years ago. In 1927, Belgian astronomer and cosmologist Georges Lemaître put forward the big bang hypothesis for the first time. In 1929, the American astronomer Hubble proposed the Hubble's law that the redshift of galaxies is directly proportional to the distance between galaxies according to the hypothesis, and deduced the cosmic expansion theory that galaxies are far away from each other. No matter from 1922, American astronomer Edwin Hubble began to observe the "redshift phenomenon", the view of "cosmic expansion" began to form. In 1929, Edwin Hubble made a landmark discovery: no matter which direction you look, distant galaxies are rapidly moving away from us. He believes that the lengthening of light waves is due to the expansion of the universe[4].

All the above judgments about galaxies (stars) moving away from us are nothing more than the fact that the starlight appears the phenomenon of attenuation redshift! At present, the reason for the
phenomenon of starlight attenuation and redshift is that people think that stars are moving away from us. No one has ever thought that the attenuation and redshift of starlight emitted by stars is caused by other factors? This is an important thinking about whether the popular view of physics in the world "Big Bang cosmology" is correct! Only by combing the scientific cognition according to the facts can we better walk on the track of natural science truth and make the scientific civilization of human progress continuously.

In February 1902, the "white night effect" which is not conducive to the long-distance propagation of radio waves was found between porthew and ferraderfiea on the American route[4]. It is found that the propagation range of electromagnetic waves at night is more than twice as large as that in the daytime. It can be found that the variation of high and low temperature of "thermal medium" during the day and night is the damping drag which causes the attenuation of electromagnetic radiation in the propagation path Therefore, it can be inferred that "3K space temperature thermal energy" is the real reason for the red shift phenomenon of starlight attenuation, which is the most powerful proof of electromagnetic wave attenuation caused by thermal medium damping in the propagation path. Therefore, this paper holds that the phenomenon of starlight attenuation and redshift caused by stars leaving us is a wrong judgment. The real reason is that the existence of "3K space temperature thermal energy" causes the attenuation redshift phenomenon of starlight in the propagation path, so the attenuation redshift phenomenon of starlight can not represent that the stars are leaving us. At present, it is a wrong judgment to assume that all stars are leaving us just by the phenomenon of starlight attenuation and redshift. According to such a wrong understanding, the theory of the Big Bang is a completely wrong fallacy. No matter which direction you look, distant galaxies are rapidly moving away from us. Is our earth the center of the universe? Is our earth the starting point of the big bang? This theology that all things in the universe are created out of nothing by a singularity explosion is not a materialist scientific attitude. The big bang theory is a wrong fallacy!

In order to introduce the new viewpoint that the current in conductor and electromagnetic radiation in space are the same essential attribute, "heat energy" is the "resistance" on the propagation path of "electromagnetic radiation", please refer to part V: new epistemology of electric field [1] of new theoretical system of physics in the 21st century for details.

3. The explanation of universal gravitation by space-time curvature in general relativity is totally wrong

The so-called space-time bending gravitational effect is a theory made up to explain why planets revolve around stars and why galaxies are planar systems. The space-time bending effect holds that: the mutual attraction between celestial bodies is more like being on a cloth, the massive celestial bodies will bend the surrounding space-time, and the small celestial bodies will fall into this space-time when they are close, and keep relatively stable orbit under the action of centrifugal force. Einstein also explained: if a massive celestial body bends space-time, the light around it will change its path and deflect at a certain angle when it passes by. This is the famous Einstein's theory of space-time bending gravitational effect.

When we use the curvature of space-time to explain the phenomenon of gravity, we can't even answer the simple question why people are attracted by the earth and why the earth's matter condenses in space. The curvature of space-time has no scientific significance to the explanation theory of gravitation. It is just a sophistry to explain why planets revolve around stars! When the "new theoretical system of physics in the 21st century" perfectly reveals the causes of gravitational and repulsive forces in the material world, it is no longer necessary to use the sophistry of space-time bending to explain why planets revolve around stars and why galaxies are planar systems. For detailed discussion, see "new theoretical system of physics in the 21st century", Part II: new basic epistemology of material world, Part III: new epistemology of gravitational repulsive field of material world [1]. The main contents are as follows: According to the new epistemology of "atomic model of particle charge dynamics", it is considered that the absorption and release of heat energy by matter is the source of attraction and repulsion of all matter. According to the new understanding of universal
gravitation, different mass "entities" have different ability to absorb heat energy, resulting in different gravitational effects. As a huge "entity", stars have a huge demand for "heat energy", which is reflected in the absorption of "heat energy" by stars in the space of cosmic super system (such as solar system) to meet the strong demand of stars for "heat energy". Due to the great difference in mass between stars and planets, and the fact that the matter of planets contains heat, the gravitational force formed by the heat absorption of stars controls the planets. At the same time, according to the law of equilibrium distance of gravitational force and repulsive force between "stars" and "stars", planets become the satellites of stars. In the stellar system, due to the mutual dependence of gravitation and repulsion between planets, all planets in the stellar system are in the same plane system structure. The plane system structure of galactic star formation is the same principle.

In a word, the phenomenon of planets rotating around stars and the formation of plane system effect are not the explanation of gravity by the so-called space-time bending theory. This is due to the huge mass difference between stars and planets. Planets are controlled by the strong gravitation formed by the heat absorption of stars. Under the balance distance law of gravitation and repulsion between stars and planets, the planets rotate around the stars. In the stellar system, due to the mutual dependence of gravitation and repulsion between planets, the plane structure effect of planets is formed.

According to the new theory, the "law of equilibrium distance between gravitation and repulsion forces" among stars (between planets) is that because the electromagnetic energy released between stars is large, the equilibrium distance between stars is also large. The balance distance between the planets is relatively small, because the electromagnetic energy released between the planets is relatively small. Under this theoretical framework, the "emission magnetic field strength" (Universal repulsive force) and "absorption thermal energy ability" (Universal Gravitation) of stars in the universe, as well as the distance between stars, follow the "law of balance distance between gravitation and repulsive force" between stars, determine the dynamic equilibrium position of stars in the universe, thus forming the equilibrium state of each star in the whole universe.

The new theoretical system holds that the existence of "law of universal gravitation" depends on the absorption of "heat energy" between matter. In short, the absorption of heat energy by matter is the gravitation of matter. Therefore, gravitation is the inward attraction of matter to absorb heat energy. Stars (planets) which are made up of matter can not emit gravitational waves into outer space. The new viewpoint holds that in the material world, only repulsive waves are released from stars (planets) into outer space, and stars (planets) will never emit gravitational waves into outer space. Because the gravitation of matter is caused by inward heat absorption, there is no outward emission force. The so-called discovery of gravitational waves is a misjudgment that the repulsive waves emitted by stars are regarded as gravitational waves, and it is a wrong understanding on the premise that we do not know the essential principle of the universal gravitation of matter. As for the principle of repulsive wave produced by stars, please refer to the third part of "new theoretical system of physics in the 21st century": the chapter of new epistemology of gravitational repulsive field of material world [1].

In the famous comparative astronomical phenomena of total solar eclipse and no total solar eclipse, it is found that when the total solar eclipse occurs, the stellar light emitted by the background star will shift to the outside of the sun. The new explanation is: when the "total solar eclipse" occurs, the position of the background star will deviate from the sun. This is because the repulsive force between the repulsive wave of starlight emitted by the background star and the repulsive wave of sunlight emitted by the sun produces the effect of mutual repulsive force, which makes the position of the background star light emitted by the star deviate from the sun. Therefore, we can observe the comparative astronomical phenomenon of total solar eclipse and no total solar eclipse, and find that the position of the background constellation deviates from the sun. This effect has nothing to do with Einstein's explanation of gravitation with space-time curvature!
4. The electron collider will never be able to find the smallest particle in the material world

According to the new theoretical system of physics in the 21st century, matter is composed of "entity" and "heat energy". This paper holds that when the "entity" particles are decomposed by continuously increasing the high-voltage electromagnetic "heat energy", the phenomenon of infinite decomposition of "entity" particles will appear. Therefore, we can never find the smallest particles in the material world. It will be a futile road to find the smallest particles in the material world through the electron positron collider. With the continuous improvement of the technology of the Electron Positron Collider to enhance the intensity of high-voltage electromagnetic heat energy, more and more tiny particles will be found. This road to explore the smallest particles in the material world will never end. It is not an effective way to find the smallest particles in the material world and reveal the mystery of the universe with the smallest particles in the material world.

With regard to the topic that high thermal energy acts on the entity and can infinitely decompose the "entity" particles, we should start from the generation of particles in the material world and the "blackbody matter" in the black hole. According to the new theoretical system of physics in the 21st century, matter is the combination of "entity" and "heat energy", and "entity" and "heat energy" have the characteristics of combination. All substances contain "heat energy". A "pure entity" without "heat energy" can not be called "substance", because "pure entity" can not form the structure of atomic force without the participation of "heat energy" (see [1]). The black hole in the universe is composed of a "single entity". The single entity has a strong absorption of heat energy, so the electromagnetic radiation heat light emitted by stars can be swallowed by the black hole. This is the fundamental reason why the black hole in the universe has light absorption characteristics. In this paper, the "black hole" formed by "single entity" is called "entity star". This "single entity" without atomic structural force is called "physical state of entity".

4.1. The relationship between the size of "entity" particles and the change of physical state of matter can be infinitely decomposed by high thermal energy acting on "entity"

The origin of the phenomenon that "heat energy" decomposes "entity" to produce particles is as follows: The reason why "heat energy" decomposes "entity" and produces "particle" phenomenon is that it is essentially the internal combination law of "heat energy" and "entity" in the material world. When "entity" appears in the form of "particle", it is beneficial for "entity" to absorb "heat energy". The phenomenon that "entity" decomposes "entity" into "particles" under the action of "heat energy" is actually a natural reaction phenomenon which is beneficial for "entity" to absorb "heat energy". With the increase of heat energy, the "particles" formed by the decomposition of "entity" will become smaller, because the smaller the "entity" particles are, the more "heat" they get. Specifically, the larger the "entity" particles are, the "heat energy" can only be combined with the "entity" on the surface of the large particles, but not with the "entity" inside the large particles. Therefore, the miniaturization of particle granulation, a natural reaction phenomenon, can realize more combination of "heat energy" and "entity". This is why there is a law that the size of "heat energy" in the material world is inversely proportional to the size of particles produced by decomposing "entity". This is the real reason why the combination of "heat energy" and "entity" can infinitely decompose the size of "entity" particles and never find the smallest "entity" particles. Note: This is the same as the combination principle of "thermal energy" and "entity" described later, which can only be combined with the "entity" on the outer surface of the black hole "entity Star", but not with the "entity" in the black hole "entity Star". When the "entity" particles are small enough to be "photons," the, the perfect combination of "heat energy" and "entity" can be realized. At this time, the microminiaturization degree of "entity" has been as small as "material light state" which can run synchronously with electromagnetic radiation. Perhaps photon is not particle state but flow state at all (guess), which may be the reason why photoelectron can not find volume boundary. Later, we will introduce the new understanding of "the state of matter light", which is the fifth physical state of matter.

"Heat energy" is the basic composition of the material world. This kind of material property exists in the cosmic space. 3K cosmic temperature heat energy is the direct evidence of its real existence. It
is not "entity", it is "thermal energy", also known as "energy". Thermal energy intensity refers to the amount of thermal energy per unit space-time. When the "heat energy" of different intensities acts on the "entity", the "entity state" appears particle like, thus the physical state with atomic structure appears, and the "single entity state" changes to the "physical state of matter". The effect of "heat energy" on "entity" will change the size of particles, promote the change of "particle" movement speed, and thus affect the change of physical state of matter. According to the law that the size of "heat energy" is inversely proportional to the particle size produced by the decomposition of "entity", when the "entity" of elemental matter is decomposed by different intensity of "heat energy", there will be different physical state phase transition effects. The particle size of substance decreases in the order of solid state, liquid state, gas state, plasma state and material light state. The kinetic energy of the particles increases in turn. In the solid state, the particle is the largest and the kinetic energy is the smallest, while in the state of material light, the particle is the smallest and the kinetic energy is the largest. "Matter light state" refers to the physical state in which particles are small enough to produce kinetic energy of particles moving synchronously with light. Combined with heat energy, it spreads in the form of electromagnetic radiation and becomes "material light state". All material elements can be transformed into "material light state" under the catalysis of a certain amount of heat energy, and propagate in the cosmic space in this way of physical state. This kind of "material light state" is that the thermal energy acts on the stellar material to make the star appear physical state phase change into "material light state", which leads to the big explosion of the star, which is the reason for the big explosion of supernovae.

The above is the understanding of the essential causes of particles in the material world. The strong "heat energy" acts on the "entity" and makes the "entity" decompose into infinitesimal particles, which is the new epistemology that the electron collider can never find the smallest particle in the material world. For the new epistemology of how particles form atoms under the action of heat energy, see the new epistemology of particle charge dynamic atomic model [1].

5. The negation of antimatter existence

Review of antimatter discovery [4]: on August 2, 1932, American physicist Anderson discovered positron in cosmic ray practice. Shortly after that, Blatter of England confirmed the discovery in England. Twenty three years after the discovery of positron, chamberlain of the United States discovered antiproton. Since then, a series of antiparticles have been discovered.

From the discovery and understanding of these antimatter, nothing more than the discovery of positively charged electrons and negatively charged protons. Judging the existence of antimatter according to the positive and negative charge of particles, we should also talk about the epistemology of positive and negative charge.

5.1. Reflection on the fixed mode of definition of positive and negative charges through experimental facts

The experimental fact that the same charge is produced by the friction of the same substance has a direct impact on the theory of gain and loss of electrons [1], so we have to rethink whether the fixed mode of positive and negative charges is on the track of the truth of natural science, which is worthy of our serious consideration.

At present, the fixed mode of definition of positive and negative charges is: people call the electrification of glass rod after rubbing silk with glass rod as positive charge; people call the electrification of rubber rod after rubbing fur with rubber rod as negative charge. This understanding is based on the experimental facts and the principle of "phenomenology", which is an ideological understanding of the fixed pattern of positive and negative charges. Due to the lack of guidance of scientific theory, this kind of ideological understanding of the fixed pattern of positive and negative charges will seriously hinder us to reveal the essence of the positive and negative charges of particles, and make us unable to reveal the positive and negative charges of particles. Therefore, it is not
conducive to reveal the cause of the positive and negative charge of particles, the formation of atomic structure, and the essence of matter gravitation.

From the author's development of E. Edlund's deep understanding of the essence of charge [5], we have a deeper understanding of the material world. From the point of view of the new understanding that the material world is composed of two basic types of material properties: "entity" and "heat energy": When the "heat energy" in the "entity" is excess, the substance shows a positive charge phenomenon. When the "heat energy" in the "entity" is lacking, the matter shows the phenomenon of negative charge. When the "heat energy" in the "entity" is saturated, the matter behaves as a neutral charge phenomenon.

This new point of view can explain all the electrostatic effects[1], which is superior to the current theory of electron gain and loss. It can only explain the phenomenon of friction electrification between different substances, but not the experimental fact that the same charge is generated by friction between the same substances. This new idea can not only reveal the charged phenomenon of matter, but also have a clear theoretical understanding of the causes of the charged phenomenon of particles, which is conducive to reveal the causes of particles, the formation of atomic structure and the essential causes of gravity [1]. Along with the new theory of the basic composition of the material world, it will help to reveal many scientific problems in front of us!

5.2. There is no antimatter in the material world
This paper holds that the particles of different sizes, such as electrons, neutrons and protons, It's just the phenomenon of particles of different sizes produced by the decomposition of the interaction between "heat energy" and "entity", and the positive and negative charges of these particles are only the phenomena of positive and negative charges of these particles when the "heat energy" contained in these "entity" particles of different sizes is unbalanced. That is to say, negative electrons are the negative charge characteristics when the "heat energy" in the "entity" of small particles is lacking, while the so-called positron is just the positive charge characteristics when the "heat energy" in the "entity" of small particles is excess. The positive proton is the positive charge characteristic when the "heat energy" in the larger particle "entity" is excess, while the so-called negative proton is the negative charge characteristic when the "heat energy" in the larger particle "entity" is lack, not the phenomenon of antimatter. In this theoretical sense, it is not necessary for us to search for antimatter at present. The understanding of antimatter is only a problem in our understanding of the essence of charge. We blindly seek the existence of antimatter without knowing the cause of the positive and negative charges of particles. Therefore, this paper thinks that any work of looking for antimatter will be meaningless!

In a word, according to the above new understanding that the effect of "heat energy" on "entity" can decompose the size of "entity" particles, and according to the new understanding of the nature of positive and negative charges in the article "new theoretical system of physics in the 21st century", that is, when the "heat energy" of "entity" particles is excessive, they show positive charge characteristics, and when the "entity" particles are lack of heat energy, they show negative charge characteristics Therefore, the so-called antimatter such as positrons and negative protons is just a phenomenon with positive and negative charges when the combination state of "entity" particles of different sizes and "heat" is unbalanced. Therefore, there is no antimatter in the material world, and all the work of searching for antimatter will be meaningless!

6. New theoretical system of physics in the 21st century: new understanding of current important physical viewpoints

6.1. New understanding of the fifth physical state of "state of matter light"
According to the law of conservation of matter, the light state of matter is the fifth physical state of matter. As we all know, the four physical states of the material world: solid state, liquid state, gas state and plasma state can be called the four condensed states of matter. In modern physics research,
the existence of particles in light state has been fully affirmed. From the point of view that matter can neither be created nor lost, a large number of facts about the quality of transferred condensed matter have been recognized. Such as plasma glow torch, fission and fusion reaction, radiation of various cosmic rays, Radiation of radioactive substances and combustion of various substances, we can realize that these light States, including invisible light, have the phenomenon of radiating and transferring condensed matter elements in the form of light state. According to the law of conservation of matter, In this way, It is necessary to clarify whether the phenomenon of condensed matter mass transforming into "the state of matter light" is a state of existence in matter physics.

When all kinds of material elements change into gaseous state, gases can be made into plasma by three kinds of ionization methods (thermal ionization, photoionization and collisional ionization). From the fact of plasma research, there are different critical temperature points when heating all kinds of elemental gases to form plasma by thermal ionization. When heating to more than 20000 K, almost all gases are highly ionized, which is the reason It is a common feature that all material elements form plasma at high temperature.

As we all know, plasma is a state of condensed matter in which electrons and ions are separated. This state is limited by the conditions that can not form a full emission, such as the container conditions, and the effect of the earth's gravity on the plasma existing in the atmospheric space, so that the plasma existing in the atmospheric space can not form a full emission into the cosmic space. This kind of plasma is exactly the confined plasma state, which is the fourth state of condensed plasma matter. But in space, rocket propellant combustion propagates to space in the form of matter light. When the condition of plasma confinement is released, the phenomenon of plasma radiating matter occurs. This state can not be called constrained plasma state. It can be seen that plasma confinement state and plasma non confinement state are two states of matter agglutination state and non condensation state, "Matter light state" refers to the fifth physical state in which electromagnetic heat energy carries "light matter" to synchronously emit and operate in the form of electromagnetic radiation. It should not be attributed to plasma state. This kind of "matter light state" is not a phenomenon that "entity" is transformed into "energy", but a physical state in the form of "matter light", which is the fifth physical state of matter higher than the fourth physical state of confinement plasma. The range of this kind of material light state is from the disintegration of condensed matter to the formation of material light state accompanied by the total emission of electromagnetic radiation until the material light state stops moving.

In a word, solar ray, combustion glow, fission fusion glow, radioactive material ray, all kinds of cosmic rays, all electromagnetic radiation with "entity" existence is the matter light state, and the matter that runs together in electromagnetic radiation is "light matter", which is the fifth physical state of matter existence, and "matter light state" is also the limit state of physical state. The pure electromagnetic radiation without material "entity" can not be called "material light state" physical state. Most of the pure electromagnetic radiation is cold light source. For example, the fluorescence emitted by fireflies is pure electromagnetic radiation without "light state entity", which can not be called the state of matter light. Another example is the state of 1 ton of material light emitted by 1 ton of rocket propellant burning in space. This "material light state" is the fifth kind of material state in which "entity" exists in the form of light state. In a word, there is electromagnetic radiation light with mass characteristics of matter. This "matter light state" is the fifth matter state of matter, which can also be called the fifth physical state of matter. The light without "light state matter" is just pure electromagnetic radiation light. There is no "entity" in this light. Therefore, this kind of pure electromagnetic radiation light is not "the state of matter light", it is not the fifth physical state of matter. In this paper, we think that the current research of quantum mechanics is actually the research of the physical state of the fifth material state "material light state".

6.2. Stars are not made of hydrogen and helium, nor are they nuclear reactions
New theoretical system of physics in the 21st century [1] holds that the formation of liquid or gaseous phase transition of stars is not caused by nuclear reaction, but by the gravitational effect of massive
stars, which condenses "heat" from outer space to the center, heating the stars into liquid or gas, which is also the cause of high temperature phase transition effect in the earth's core. The light state of matter is the physical state that a star needs to reach when it disintegrates in space. When a star heats its material to a temperature higher than the critical temperature of "material light state", it will explode in space, which is the reason of supernova explosion. After the explosion, the stellar material will spread to the space in the form of "material light state". "Black hole entity star" can be called the ultimate fire extinguisher to stop the chain reaction in space after supernova explosion. The existence of the "black hole entity star" in the universe makes the balance and harmony among the galaxies and stars appear in our whole universe [6-7]!

This paper holds that stars, like our earth, are made up of many elements. Our present theory holds that all stars are nuclear reactions and are made up of hydrogen and helium. This is a wrong epistemology. The real reason is that because of the huge mass of stars, heat energy condenses centripetally from outer space, and gravitational effect heats the stars into liquid or gas state, which makes them become liquid or gas stars. The reason for the theory that all stars are composed of hydrogen and helium is the misjudgment of stellar spectrum. As we all know, every element has characteristic spectral lines. Because hydrogen and helium are the first and second elements in the front of the periodic table of elements, when various element phases become "material state light", the critical temperature point of hydrogen and helium phase transition to "material state light" is the lowest, so the characteristic spectral lines are also the strongest. When we analyze the composition of stellar elements, we can get that stars are composed of hydrogen and helium according to the spectral analysis of hydrogen and helium. For this kind of wrong judgment, I use a popular analogy to make you understand: according to the above understanding of the "state of matter light", according to the order of the periodic table of elements from front to back, the critical temperature point of the glow of each element when it changes to the "state of matter light" increases in turn, because the critical temperature point of the glow of hydrogen and helium when it changes to the "state of matter light" is the lowest, because When a star composed of 99% iron and 1% hydrogen and helium heats itself to 1000 degrees, iron: melting point is 1538 ℃, because 99% iron in the star is still in a solid state, iron does not emit the spectrum of "material light", while the star composed of only 1% hydrogen and helium has already released strong starlight with hydrogen and helium Spectrum. At this time, when we use the spectrum of the star to analyze the element composition of the star, we will get the wrong judgment that the star is composed of 100% hydrogen and helium. The star, which is really composed of 99% iron, is still in a solid state when it is heated to 1000 degrees, so there is no "material light state" star spectrum of iron, which leads to our misunderstanding that the star is composed of hydrogen and helium according to the star spectrum analysis.

In a word, the new theoretical system holds that all stars are composed of multiple elements, not just hydrogen and helium, just like our earth. The reason why we observe the spectrum of stars shows that all stars are composed of hydrogen and helium is that according to the understanding of "the state of matter light" in this paper, all matter elements can become "the state of matter light" under certain temperature conditions. Because hydrogen and helium are arranged in the first and second places of the periodic table, the critical temperature point of hydrogen and helium when it becomes "the state of matter light" is the lowest, so that the strongest spectrum of all stars is hydrogen and helium spectrum, which leads us to mistake stars for hydrogen and helium. The liquid or gaseous structure of a star is not a nuclear reaction, because of its huge mass, it absorbs more heat energy from outer space and heats itself into liquid or gas state, making stars into liquid or gas stars[1]. Note: see [1] for the causes of high temperature heat energy of heavy elements.

7. The summary and deduction of new ideas in the new theoretical system of physics in the 21st century
At present, the understanding of the composition of the material world is that the material world is composed of particles, and the difference of different superposition numbers of particles in atoms constitutes various material elements of the material world, such as hydrogen. There is only one proton
in the nucleus and only one electron outside the nucleus. The other elements are just the difference in the number of electrons and protons. According to the current theoretical understanding: as long as we can master the technology of injecting different numbers of protons into the nucleus and different numbers of electrons outside the nucleus, all the material elements in the world can be produced. Under this theoretical framework: all material elements are only different in the number of particles, and this theory is, in the final analysis, a constitution theory of things. This method of understanding the material world on the basis of particles can not reveal the causes of the formation of particles and atomic structure in the material world. The material world is composed of two basic types of "heat energy" and "entity", which will be able to reveal the reasons for the formation of particles and atomic structure in the material world[7]. According to the viewpoint that each element represents different "entity", the theory of single constitution of material world is avoided. For the epistemology that each element represents a different "entity", see the second part of the new theoretical system of physics in the 21st century: the new basic epistemology of the material world [1].

The "material world" we now realize is the "material world" composed of the basic unit "atom". Therefore, since the new theoretical system puts forward the combination of "entity" and "heat energy" to form the material world, it is necessary to answer the question of how "entity" and "heat energy" interact to produce the basic unit "atom" of the material world. For the answer to the important question of how to produce "atom", the basic unit of "material world", see the "dynamic atomic model of particle charge" in the second part of the article "new theoretical system of physics in the 21st century"[1]. This "dynamic atomic model of particle charge" describes the formation process of "atom" produced by the interaction between "entity" and "heat energy", which reveals It shows the real reason for the interaction between "entity" and "heat energy" to produce "atom". This new "particle charge dynamic atomic model" answers the reason why the basic unit "atom" of "material world" is produced and formed. According to the new viewpoint of "dynamic atomic model of particle charge", the atomic structure of various material elements should be expressed in terms of the frequency of electrons overflowing from the nucleus and the number of electron groups, rather than in terms of the number of several protons and electrons. The introduction of the new expression is detailed in new horizons of physics research in the 21st century [7].

According to the new theoretical system of physics in the 21st century, the material world is composed of two basic types of material property "entity" and material property "heat energy": "material property" refers to the component of material, and the single existence of "material property" can not be called material. Material is the product of the combination of "entity" and "heat energy", and all "materials" contain heat energy, without "heat energy" "The existing "single entity" can not be called "matter". The "single entity" in black hole is a physical "entity state" without atomic structure, which is called "black hole entity star" in this paper. The "heat energy" of 3K cosmic temperature distributed in space is the "single heat energy" existing independently in space. The independent 3K "heat energy" in space is the damping resistance of starlight propagation in space, which is the reason for the attenuation of starlight propagation in long distance. When the state of combination of "heat energy" and "entity" is unbalanced, matter appears to have different positive and negative charges. When the combination of "heat energy" and "entity" increases with the gradual increase of thermal energy, the degree of particle micromation of "entity" will be increased continuously, so that the degree of particle micromation can be infinitely small, thus changing the physical state of the substance to change phase transition, and its order is: entity state, solid state, liquid, gas state, plasma state, "The light state of matter", When the "The light state of matter" enters the "single entity", it can make the "entity state" phase change into "solid state", and then enter the next cycle of the physical state of matter [7]. The above: (1) entity state; (2) Solid state; (3) Liquid state; (4) Gas state; (5) Plasma state; (6) “The light state of matter”.The corresponding relationship between the "six physical states" and "stars" is shown in Chart 1.
This paper holds that the attempt to reveal the mystery of the constitution of the material world by searching for the smallest unit particle of the material world is a set of methods for understanding the constitution of the material world developed along the principle of phenomenology, which is a mistake of methodology and direction. In the future, with the continuous improvement of human technology to enhance high voltage and strong thermal energy, the trend of thermal energy decomposition into particles will never end, not only the mesons, hadrons, gluons, STRATONS, leptons and more than 100 kinds of strange particles that we now know. We will find more tiny particles. We will never find the smallest particle in the material world. Therefore, this paper holds that all efforts to explore the smallest particles in the material world will be futile. If we continue to use these particles with different masses, adopt the idea of defining fixed patterns, and explain many particles with various methods, such as "meson, hadron, gluon, STRATON, lepton", and countless "n-son" and "x-son" to be named in the future, which are used to explain various particles in the nucleus, it will inevitably lead to the recognition of many particles in the nucleus structure It's a mess. According to the new theoretical viewpoint of the new theoretical system of physics in the 21st century, according to the law that the size of "heat energy" is inversely proportional to the size of particles produced by decomposing "entity", and the new understanding of the causes of positive and negative charges, we will have a simple and clear understanding of more than 100 kinds of strange particles of different sizes and their charges [7]. Human beings will never be at a loss for a large number of strange particles any more!

To sum up, the new theory is based on the fact that there are two kinds of "entities" and "heat energy" with different physical properties in the material world. It is a new understanding of the material world from the perspective of the interaction between two different basic types of "material properties". This new epistemology can reveal the causes of the formation of particles, the formation of atomic structure and the gravitational force of matter, and the repulsive force of matter. In the new theoretical system, the new understanding of the existence of multi element "entities" in the periodic table of elements is the theory of multi entity constitution of matter. It is not a simple element constitution theory of superposition of the number of particles. The understanding of elements in the new theoretical system is that the physical and chemical properties of uranium protons cannot be changed even if they are put into iron atoms! The solid particles of each element have their own physical and chemical properties. Under this theoretical framework, the particles in the atoms of various elements are composed of "entity" particles with different physical and chemical properties. Under this theoretical framework, "entity in matter" stands for "mass of matter" and "heat energy in matter" stands for "energy of matter".

8. A new epistemology of the universe and the Galactic system

8.1. reasons for the existence of supermassive black holes in the universe
According to the above understanding that "the state of matter light" is the physical state of the big bang of stars, because black holes are composed of "single entity". Although it is not the "solid" atomic physical state of matter, it is a more stable physical state than the "solid" atomic physical state. This physical state can not directly form the "material light state", and there will not be the problem of big bang disintegration caused by the stellar phase becoming the "material light state". Therefore, the
The mass of the "black hole entity star" can be infinitely increased, so that it can be in the cosmic space. This is the reason for the existence of supermaximal "black holes" in the universe, that is, the existence of supermaximal "black hole entity Star" phenomenon in the universe.

8.2. The reason why the galaxy "black hole entity star" has strong cohesive gravity
At the center of the Galactic architecture is a supermassive "black hole entity star". According to the new theoretical system, matter is the product of the combination of "entity" and "heat energy". "Entity" and "heat energy" have the characteristics of combination. Therefore, the "black hole entity star" composed of "single entity" has a strong "thermal energy" absorption characteristics. Because the composition of "matter stars" contains heat energy, the super large "black hole entity star" located in the center of the galaxy absorbs the heat energy of the super large system space of the universe, thus forming a centripetal condensation gravitational effect on all “matter stars” celestial bodies in the galaxy. Therefore, the galaxy relies on the "black hole entity star" to condense all matter stars and celestial bodies into an independent galactic system structure.

8.3. Formation mechanism of "black hole single entity star" phase transition into matter state
Black hole is a "single entity star". Although this "single entity physical state" can not directly form the "state of matter light" and cause the big bang problem, because the "black hole entity star" has the characteristics of absorbing heat energy, it will cause the "black hole entity star" outer surface to change to the "solid" physical state due to the continuous increase of "heat energy", which makes the "black hole entity star" There are many states of matter on the surface of black hole. In this way, when the amount of material continuously generated on the outer surface of the "single entity" black hole is large, the material body will be separated from the surface of the "single entity" black hole (the specific reason for the separation of the material body will be discussed later), and according to the escape mass, different mass objects will be produced: stars, planets, asteroids, comets and other known celestial bodies. With the increase of the number of "stars" and other celestial bodies escaping from the "black hole entity star", the Galactic celestial structure around the "black hole entity star" is formed. In fact, "black hole entity star" is a process of continuously heating its own "entity" to form galactic matter by absorbing the heat energy of the super system space of the universe, until the "black hole entity star" gradually shrinks and disappears, that is, when most of the "black hole entity star" in the center of the galaxy becomes the physical state of atomic matter, and is separated from the "black hole entity star". After that, the gravity of the "black hole entity star" in the center of the galaxy will gradually decline until it disappears, leading to the disintegration of the galaxy. After the disintegration, all the “material star” in the galaxy will spread to the larger space of the universe, resulting in material turbulence in this space-time.

8.4. The mechanism of "black hole entity star" in the center of the galaxy releasing "star" containing thermal energy
For the above point of view, some people will question, since the "black hole entity star" huge endothermic gravity, How can it send out "star, star"? This paper argues that if the black hole "single entity" only has a strong endothermic gravity, then all stars in the galaxy, including our earth, have long been swallowed up by the "black hole entity star" in the center of the galaxy. Therefore, I think that while the black hole absorbs heat to form a strong gravity, it also has a mechanism to release heat. Atomic stars (stars, planets) rely on the release of electromagnetic heat energy through protons, thus forming the balance mechanism of stars (planets) in and out of heat energy [1]. The black hole is composed of "single entity" and has no proton, so it can't release heat energy through proton releasing electromagnetic radiation. Therefore, this paper holds that the release of heat energy from the "black hole entity star" is accomplished by releasing the "matter star" containing heat energy. Thus, all kinds of "matter star" containing heat energy are released from the outer surface of the "black hole entity star", which makes the "black hole entity star" keep the balance of heat energy entering and releasing.
8.5. Each spiral arm of the galaxy is formed by "black hole entity star" continuously releasing all kinds of "Star" along this path

Because "black hole entity star" is composed of "single entity", it has a strong ability to absorb heat. When a large amount of heat energy enters the "single entity" of the "black hole entity star", the "matter" with atomic structural force will appear on the outer surface, which will revive the outer surface of the "black hole entity star" into solid matter. With the increase of heat energy collection, a large number of materials will appear on the outer surface. Because the "black hole entity star" is a "single entity" without kinetic energy, when a large number of matter bodies with kinetic energy and heat energy appear on the outer surface, due to the "interaction law of gravitational and repulsive forces between matter bodies", there will be a strong repulsive force between larger matter bodies. For example, when the repulsive force between the mass of a star and the material on the surface of the "black hole entity star" occurs, the "black hole entity star" will repel the "Star" from the outer surface of the "black hole entity star", so that the "Star" will become a new star of the birth of the "black hole ". The "entity mass" escaping from the outer surface of the "black hole entity star" is related to the amount of "matter" produced by the heat energy absorbed by the "black hole entity star" from the universe. Therefore, according to the size of escape mass, "black hole entity star" give birth to the phenomenon of stars, planets, asteroids, comets and All kinds of "matter star" phenomenon. Because there are many new born "star" near the "black hole entity star", the density of "star" in the center of the galaxy is very high.

Every body of matter that has just separated from the surface of the "black hole entity star" is a new star. Due to the existence of the "law of gravitational repulsion balance distance" among the born stars, one star pushes another star, and each star leads its own star group to leave the "black hole entity star", one after another, continuously and vastly, which forms the effect of the giant galactic spiral arm belt. The four giant spiral arms of the Milky Way Galaxy (see Chart 2) are the paths of stars separated from the surface of the "black hole entity" in sequence, one following the other. That is to say, the spiral arm band is in the order of launching from the parent star. One star pushes another star, so the effect of the giant spiral arm band is formed. The "stars" on the spiral arm band follow the law of gravitational repulsion balance spacing, and revolve around the "black hole entity star"! Thus, a spectacular spiral arm structure of the Milky Way galaxy is formed.

Chart 2. Four giant spiral arms of the Milky way Sketch Map

In this theoretical framework, the composition of the "Star" elements at the end of the spiral arm band of the galaxy is the composition of the "entity" elements in the outermost layer at the initial state of the "black hole entity star". The stars near the origin of the "black hole entity star" in the Milky way are the newly born stars of the "black hole entity star", while the stars near the edge of the Milky way are the ancient stars that emerged earlier from the "black hole entity star". Assuming that this view is on the orbit of natural science truth, then the solar star at the end of a spiral arm and on the edge of the galaxy is an ancient star born in the early stage of the galactic center. All the satellites of the solar system were separated from the "black hole entity " with the sun at about the same time.
8.6. The formation mechanism and destination of the Milky way

The formation mechanism of the Milky Way Galaxy: the initial state of the Milky Way galaxy is just a "black hole entity star" without satellite super mass. This massive "black hole entity star" gradually absorbs heat energy from cosmic space, transforms "black hole single entity" into "matter" through continuous heating phase, gradually reduces "black hole single entity" and transforms "black hole entity" into matter, forming a matter state "star" ball around the silver nucleus, thus generating the Galactic galaxy system structure.

The final destination of the Galaxy: through the "black hole entity star" continuously absorbing heat energy, continuously releasing matter stars along the spiral arm path, finally forming the spiral arm structure of the galaxy. Therefore, the Milky way is the expansion process after the "black hole entity star" in the center of the Milky way transforms into a material star. All stars and celestial bodies in the galaxy are separated from the surface of the black hole entity. This process is that the "black hole entity star" absorbs heat energy from outer space and generates matter on the outer surface of the "black hole entity star". The more heat energy the "black hole entity star" absorbs, the faster the "entity" on the outer surface of the "black hole entity star" is separated to form matter, until the "black hole entity star" continuously absorbs heat energy in outer space, and finally the "single entity" is separated "All of them are transformed into "material state". At this time, the galaxy's condensed gravity drops, and the galaxy will disintegrate. After the disintegration, all the material stars and celestial bodies in the galaxy will spread to the universe, resulting in material turbulence in this space-time. This is the end result of the galaxy.

In a word, the formation mechanism of galaxies is the evolution process of supermassive "black hole entity star" absorbing cosmic thermal energy through "single entity state" to form "matter star" system. The total mass of the "black hole entity star" in its initial state is equal to the sum of the total mass of all the celestial bodies after the material galaxy has been completely formed. The formation mechanism of galaxy is the process of "single entity state" changing into "matter state".

8.7. The conjecture that the visible universe is composed of every "material space-time unit" of the universe

From the above point of view, the smaller the "black hole entity star" in the center of the galaxy, the easier the galaxy is to disintegrate. When there is a large "black hole entity stars" in the center of a galaxy, it is a stable galaxy, or the initial state of galaxy formation. Maybe there are countless invisible "black hole entity stars" in our universe. This paper holds that "heat energy" is "energy", "single heat energy" is called "positive energy state" and "single entity" is called "negative energy state". The huge "black hole entity stars" are all "single entity" negative energy states that plunder "heat energy", so the "black hole entity stars" have the characteristics of plundering "heat energy" each other, which results in the mutual avoidance effect of repulsive force between "black hole entity stars", which is equivalent to the repulsive effect between negative charges [1]. It is precisely because of the repulsive force between the giant "black hole entity stars" in the universe that the "black hole entity stars" divide the space of "entity" in the universe! Each "black hole entity star" represents an independent unit dividing the "entity" space of the universe, which can be called "cosmic entity space-time unit". The universe is made up of independent units of this kind of "entity" space. Because "black hole entity star" can evolve into matter star system, the future of "cosmic entity space-time unit" can also be called "cosmic matter space-time unit". Therefore, the universe can also be said to be composed of every "space-time unit of cosmic matter". This is the new understanding of this paper, the conjecture that the visible universe is composed of every "material space-time unit" of the universe.

In a word, the "space-time units of cosmic entities" formed by each "black hole entity star" be "cosmic units", and the universe is composed of such countless "space-time units of cosmic entities". Because "black hole entity star" is a "single entity" with no heat and negative energy state of "no light", how many invisible initial "black hole entity star" exist in the universe? Because we can't observe the number of "cosmic entity space-time units", we can't observe the size of the universe through visibility. In the invisible universe, the number of "black hole entity stars" in the initial state of "cosmic entity
"space-time unit" will be an eternal mystery of materialism. We can only say that we can observe the "cosmic material space-time unit". This is a universe that has evolved into a visible "matter star" system. The "space-time unit of cosmic matter" is the size of the universe we can see. This is the new understanding of this paper, the conjecture that the visible universe is composed of every "material space-time unit" of the universe.

9. Conclusion
Although this paper can't answer how the "entity" and "heat energy" are produced, or how much "heat energy" and "entity" there are in the universe, or how big our universe is. But it's a step further than understanding the physical world from the point of view of particles. This "new theoretical system" is based on the "material properties" of two different basic types of "entity" and "heat energy" in the material world. It is an in-depth understanding of the material world from the perspective of the interaction between the two basic types of "material properties". This new epistemology can reveal the reasons for the formation of particles. The reason for the formation of atomic structure and the reason for the formation of gravitation and repulsion of matter. It will be able to reveal more scientific problems that are difficult to explain by current theories [1]-[7].

This paper is a summary and deduction of the new theoretical system of physics in the 21st century. It is a new epistemology about the formation of galactic structure and the components of the universe. For more new ideas about the new theoretical system of physics in the 21st century, please refer to literature [1-3,6-7].

References
[1] Jiang Hua Zhou. New theoretical system of physics in the 21st century. 2020 J. Phys.: Conf. Ser. 1634 012103. IOP Publishing.DOI: https://doi.org/10.1088/1742-6596/1634/1/012103
[2] Jiang Hua Zhou. Reveal the cause of the formation of gravity. The sixth Chinese Symposium on new photoelectric detection technology and its application. Beijing. December 3-5, 2019. © (2020) COPYRIGHT Society of Photo-Optical Instrumentation Engineers (SPIE).DOI: https://doi.org/10.1117/12.2564978
[3] Jiang Hua Zhou. Revolution in basic research of Physics Will usher in a new era in the study of interstellar space vehicles. London(ICIEI 2020): Proceedings of the 5th International Conference on Information and Education Innovations July 2020 .Pages, P:89–95. Publisher: Association for Computing MachineryNew YorkNYUnited States.DOI: https://doi.org/10.1145/3411681.3411687
[4] Edited by Shen Xianjia, Zhang Xixin and Qi Youlong. A brief history of physics. Shandong Education Association of China. 1985.
[5] Translated by song Yusheng, Li Xinzhang, Hui exing and Wang Kangmao. Lectures by Nobel laureates, physics (Volume I). China Science Press, 1985.
[6] Jiang Hua Zhou. Is the existence of matter light state the fifth physical state? Potential science. 1990 (5): 7-13.
[7] Jiang Hua Zhou. a new vision of physics research in the 21st century. Jilin, China: Science and Technology Press, 2005: 1-241.