

# **Verification of the Nature of Cosmic Space**

About the author: Donghui Wang

Work address: Donghui Institute of Physics, Zhoushan 316000, Zhejiang, China

## **Abstract:**

Scientists have explained the phenomenon of redshift in the universe by using the viewpoint of cosmic expansion, while the phenomenon of blueshift has perplexed academic circles for a long time. To solve this problem, the author conducted a thought experiment. The focus of the experiment was to let an elevator box at high altitude fall along a track and then compare the results observed by a person inside the box with the phenomena of redshift and blueshift observed by people on Earth. The results show that redshift and blueshift in the universe can be simulated above the Earth, indicating that cosmic space may have the features of a gravitational field. Thus, the author assumed that cosmic space is a gravitational field, analysed the movement pattern of celestial bodies in this context, and gave reasonable explanations for Earth's rotation deceleration, Venus's abnormal auto-rotation and global warming. Based on further association, the author argues that the continuous increase in the Earth's gravity may be the cause for the largest animal on the Earth becoming progressively lighter, and this derivation can be verified by correlated detection.

**Key words:** Cosmic gravitational field; Earth's gravity increase; Abnormal rotation of Venus; global warming

**About the author:** Donghui Wang, born in January 20, 1975, physics amateur; main research focus, E-mail: 13758000004@163.com :

**Chinese library classification no.:** P172.4

## **Introduction**

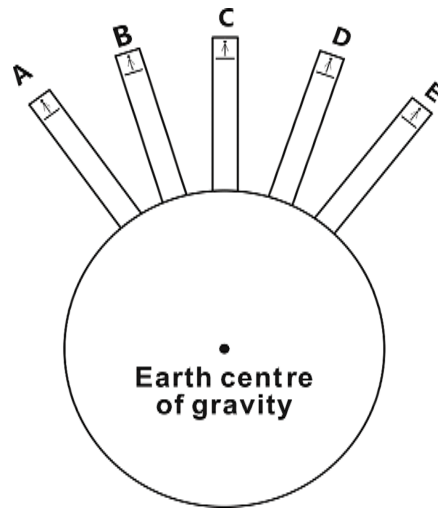
The Big Bang theory has been published for more than half a century and has influenced two generations. However, with the passage of time, people found that many phenomena in the universe could not be reasonably explained by the theory or are even incompatible with it. For example, scientists have recently found that some

stars are older than the previously estimated age of the universe, which is based on the theory of the Big Bang. In addition, the phenomenon of blueshift in the universe also cannot be explained by the viewpoint of cosmic expansion. Therefore, it is urgent to seek a more reasonable guiding ideology on the macro nature of the universe. In this background, although the author is not a cosmologist, it is hoped to contribute some ideas to the academic community for reference.

## **1. The gravity field has necessary conditions for the occurrence of redshift and blueshift**

In 1912, Hubble observed a phenomenon in the universe through a telescope, namely, the spectrum of light emitted by fixed stars far away from us is shifted towards the red end of the electromagnetic spectrum. This phenomenon is called the "Hubble redshift", and it was concluded that the farther a galaxy is from us, the faster it is moving away from us. This discovery astonished the scientific community at that time and was regarded as strong evidence for the idea of cosmic expansion. However, later scientists found that Andromeda in our local group of galaxies is approaching the Milky Way galaxy because the light emitted by Andromeda is shifted to the blue end of the electromagnetic spectrum; this phenomenon is called the "blueshift". Through continuous observation, scientists have found that the blueshift phenomenon is not unusual in the universe, but this phenomenon conflicts with the view of cosmic expansion.

To determine the precise cause of redshift and blueshift in the universe, the author carried out a thought experiment. The experimental results showed that there are necessary conditions for the occurrence of redshift and blueshift above the Earth, that is to say, the object movement mode corresponding to the two phenomena can also be simulated in the sky above the Earth. If there is no error, this discovery will change the understanding of cosmic space. Now, the author describes the experimental process as follows: first, it is assumed that there are transparent elevators with heights of 100 km at five points on the ground, and there is a person in the top of each elevator, as shown in the figure below:



These five elevators are denoted by A, B, C, D and E. Then, suppose that the cars of elevator D and E fall simultaneously, the car of elevator C falls one minute later, then one more minute later, the cars of elevator A and B fall simultaneously. In the falling process, the person in elevator A picks up a telescope to observe that elevator D and E move faster away from him than elevator C. Then, he sees that elevator D and E are drawing near each other.

At this time, the person in elevator D also lifts a telescope to observe that elevators A and B are moving faster away from her than elevator C and that elevators A and B are approaching each other.

The above experiments show that the phenomena of redshift and blueshift in universe can also be simulated above the Earth; hence, from this perspective, the cosmic space may have the nature of a gravity field.

In addition, the cosmonauts in the space station observed that after a drop of water would fall, it would float in the capsule and present a spherical shape. This is also the case of the flame in outer space. In addition, when a drop of water falls above the Earth and a lighted candle put inside a box falls in air, the water drop and flame also present a spherical shape. These phenomena are also able to show that cosmic space has the nature of a gravity field. The reason why the cosmonauts cannot feel the water drop falling may be that they are simultaneously falling with the water drop and all the reference systems.

## **2. The correspondence of movement features of celestial bodies in a gravity field**

It is known that according to the Big Bang theory, the accelerated movement of galaxies or celestial bodies is the result of the accelerated expansion of the universe, and the reason for cosmic accelerated expansion is the Big Bang at the singular point. However, the author believes that if the movement of celestial bodies is truly driven by the shock wave of the big bang, then all the driven celestial bodies should manifest rotational movement. However, the Earth is not only exhibiting rotational

(auto-rotation) movement but also rotating around the Sun, which is obviously inconsistent with the theory of the shock wave of the Big Bang driving objects. Hence, in this way, the Big Bang theory is incompatible with objective facts.

Then, are the auto-rotation and revolution of celestial bodies isolated and independent? The answer is no. It is known that in the Earth's gravity field, when an object falls from a high altitude, it will perform rotational movement. For example, the reader can refer to the video of an Austrian cosmonaut jumping from an altitude of 39,000 m in 2012. The video shows that more than ten seconds after the cosmonaut jumped off the aircraft, his body began to rotate while falling. Additionally, the example of microscopic matter moving in the gravity field can be cited here, such as the spinning of particles, which is similar to the auto-rotation of planets. In addition, electrons rotate around atoms in a similar mode to planets rotating around the Sun. The above examples show that the correspondence of auto-rotation and revolution of celestial bodies in universe can be found in the gravity field, which further suggests that cosmic space has the nature of a gravity field.

### **3. Analysis of the causes of speed reduction of the Earth's rotation**

Scientists believe that the Earth's auto-rotation is slowing down, and the evolution trend is approximately as follows: by counting the number of carbon-calcium stripes growing on coral shells, it was found that in the Cambrian, which was 570 million years ago, it took 20.47 hours for the Earth to rotate around its axis; in the early Ordovician, which was 500 million years ago, it took 21.4 hours for the Earth to rotate around its axis; in the mid-Devonian, which was 370 million years ago, it took 22 hours for the Earth to rotate around its axis; in modern times, the Earth takes 23 hours and 56 minutes to rotate around its axis.

It can be seen from the above data that the Earth's auto-rotation is indeed gradually slowing down. How do scientists explain the causes of this phenomenon? They propose that this is because of the friction of the Earth-Moon tidal relationship. The author does not make an evaluation of this point of view, but he argues that the possible causes of the slowing rotation of the Earth can be explained from another perspective.

As analysed above, if cosmic space is a gravity field, then the fall of the Sun will be inevitably accelerated. If the speed of the fall is directly proportional to the speed of the rotation, then the Sun's rotation (auto-rotation) will be accelerated as well. This will inevitably lead to accelerated rotation of planets around the orbit of the Sun. Affected by this, the time of the Earth's yearly revolution around the Sun will also be shortened. What does this have to do with the slowing auto-rotation of the Earth? The answer may be found from an experiment conducted by the author. The experiment is as follows: first, a container filled with water was prepared; then, a vortex was created in the container, and a wood ball was placed beside the vortex. At

this time, it could be observed that the wood ball revolved around the vortex and simultaneously performed auto-rotation. Next, the vortex was accelerated, and it was observed that the wood ball accelerated its revolution, while its auto-rotation slowed down. The author believes that the increased kinetic energy from the revolution of the wood ball offsets some of the kinetic energy from the auto-rotation of the ball.

If we put this experiment into the solar system to find a corresponding one, then the Earth will be like the wooden ball in the experiment, and the Sun's rotation will be like the kinetic energy driving the vortex. Therefore, when the Sun's rotation accelerates, the Earth's revolution will accelerate, while its rotation will decelerate. According to this principle, we can also deduce that as the Earth's rotation slows down gradually, the speed of the Moon around the Earth will slow down gradually, but its rotation will accelerate.

#### **4. The relationship between the increase in Earth's gravity and global warming**

Global warming is a high-profile issue. Scientists believe that from the early 20th century to approximately 2015, the average temperature on the Earth's surface has increased by approximately 0.6 °C. Over the past 40 years, the average temperature has risen by approximately 0.2-0.3 °C. According to the analysis of previous data, the temperature of the Earth is rising at an increasing rate. What is the cause? There are a number of views on this issue; the most important one is that since mankind entered the industrial revolution, carbon dioxide emissions have been increasing year by year to enhance the greenhouse effect over the Earth, making the temperature rise constantly. The author does not comment on this point of view but admits that climate warming may be caused by a number of factors, including reversible factors, such as carbon dioxide emissions, and irreversible factors, such as the continuous increase of Earth's gravity. Then, why does Earth's gravity continue to increase, and how does the increase in Earth's gravity cause the rise in global temperature? The analysis is as follows.

As analysed above, cosmic space may be a gravity field. If this speculation is established, then it can be further speculated that all the celestial bodies in the universe are speeding up while falling and that their momentum inevitably continues to increase. Of course, the Earth is no exception. According to the latest explanation of gravity theory, "The momentum of an object is directly proportional to its gravity". If this view is correct, then the Earth's gravity is increasing similarly. Since gravity is a spacetime curvature effect, the continuous increase in the Earth's gravity means that the space above the Earth is becoming increasingly warped. As the motion path of light is along the spatial structure, if the space becomes increasingly curved, the path of light will become increasingly curved as well. In this way, it will take light progressively longer to pass through a space with a given dimension, which is equivalent to that light remaining in the space for an increasingly long time. Hence, if the application time, intensity and other factors of light from the Sun remain

unchanged, then the more curved the space around the Earth, the higher the temperature of the space will be, which may be an irreversible factor of continuous global warming.

## **5. The position of the Earth in the universe and a guess for the reason for reaching the universe**

If someone asks about the position of the Earth in the universe and where the Earth came from, first the author would like to ask, is the vacuum recognized at present truly a complete vacuum? The answer may be obtained from the progress of science. Recent scientific research has shown that light can fluctuate mildly when propagating in a vacuum. According to the derivation of the general theory of relativity, the fluctuation of light is likely to be the embodiment of space curvature, and the latter is the cause of gravity. Therefore, the author believes that the so-called vacuum is not absolute vacuum but a space with microgravity. If this conclusion is correct, then cosmic space is indeed a gravity field. When considering the degree of space curvature, it should be said that the Earth is far from the gravity centre of the universe. That is, the outer space of the Earth is probably that of the universe (refer to matter here). To strengthen this concept, a scene can be simulated to facilitate understanding: suppose that there is a micro Earth in the space station, where lives a group of intelligent creatures. One day the creatures fly off the atmospheric layer of the micro Earth; they may think that they have reached a vacuum space, but in fact they are located in the Earth's gravity field, that is, the micro Earth's outer space is actually the outer space of the Earth.

After that, the author puts forward the next proposition, namely, where does the Earth come from? As a guess, the author believes that there may be a universe outside the present universe, or the present universe is inside a larger universe, just as the Earth is in the solar system. Hence, the Earth is likely to come from an unknown cosmic space. It may be the debris from the explosion of some huge object that has burst into the present universe, or it may have entered the present universe for some other reasons.

## **6. Analysis of the causes of Venus' abnormal auto-rotation**

Before explaining the phenomenon of Venus' abnormal auto-rotation, first consider the possibility that the substances in the present cosmic space may come from outside the universe and that these substances may be the debris from the explosion of some huge object. On this basis, the author analyses and concludes that the rotation direction of these debris is related to the position of the explosive shock wave acting on them. Taking Venus as an example, if Venus is a fragment of some huge object after explosion, when the shock wave acts on the left side of Venus or the force applied on the left side is larger than that on the right side, Venus will rotate from left to right; otherwise, it will rotate from right to left. This can explain why

some celestial bodies in the universe rotate from left to right, while others do the opposite. In addition, the various magnitudes and positions of the explosive force acting on the debris can affect the rotate speed of the celestial bodies. Then, why are the fragments from the explosion spherical? This is because these fragments flipped regularly in a weightless environment after the kinetic energy of the explosive shock wave was exhausted, and the rotational movement in the weightless environment can make the fluid spherical. With regard to this, the shapes of water droplets and flames in outer space can serve as a reference. That is, the current celestial bodies may be originally semi-fluids of extremely high temperature, rather than hard debris, but after a long time of cooling and rotation, they assume their present appearance.

## **7. The relationship between the increase in Earth's gravity and the change in animal body types**

Palaeontologists suggest that the weight of the largest animals on Earth is becoming progressively lighter, and the evidence is as follows: in the Jurassic Period, which was approximately 208 million to 144 million years ago, there was a kind of dinosaur called *Amphicoelias fragillimus* in the Western Hemisphere, and its body weight was estimated to be 130 to 220 tons. Approximately 145.5 million years ago and in the Cretaceous Period, *Bruhathkayosaurus* was the largest land animal that lived in India, and its body weight was approximately 130 tons. Mammoths lived 15 million to 5 million years ago, and their body weight was approximately 30 tons. However, ten thousand years ago, the body weight of mammoth dropped to 12 tons or so. At present, the largest animal on land is the African elephant, with an adult weight of approximately 8 tons.

Why does this trend appear? Palaeontologists believe that this is caused by the change in the oxygen content on the Earth. They think that the oxygen content on the Earth in ancient times was much higher than today, so the animals then were taller than now. However, the author thinks that the following reason cannot be ruled out, that is, the Earth's gravity in ancient times was much smaller than today. In fact, the relationship between gravity and body height has long been studied. Some records show that the heights of cosmonauts increased to various degrees after they returned to the Earth from a space station, but gradually, their height returned to the original one. Suppose the cosmonaut is a child; then, can the space environment truly promote the child to grow taller and heavier faster? This idea needs to be evaluated by future experiments.

Furthermore, scientific research has proved that the greater the gravity in an environment, the more difficult it is for the human heart to supply blood to the brain. According to this principle, if the Earth's gravity continues to increase and the heights and weights of animals remain unchanged, undoubtedly the burden on animals' hearts will increase, which will lead to their premature senility and death. Therefore, from the perspective of survival, with the continuous increase in Earth's gravity, the size of animals has to decrease to adapt to this change. This may be one

of the primary reasons why the largest animals on the Earth are getting smaller and lighter.

Then, why did many large animals become extinct? The author guesses that one of the reasons is that the animals' body size would reach the limit when evolving to be smaller, that is to say, when their body evolved to a certain extent, it could no longer decrease. In this context, if the Earth's gravity continues to increase, the animals' life span will become shorter and shorter, becoming unable to live to the age of reproduction and driving extinction.

The credibility of the above arguments can be evaluated by some tests. For example, the bone density of dinosaurs and the strength and toughness of their leg joints can be tested to determine whether the dinosaurs could bear a weight of 1,200 tons and run at a certain speed. If the results cannot meet this requirement, it means that the Earth's gravity in ancient times was smaller than that today because the weights of these ancient animals are estimated according to the gravity of the present Earth, and these animals may not have borne those weights in ancient times.

## **8. Conclusions:**

In this paper, it is proved in multiple ways that the present universe has the nature of gravity field, but this does not mean that these views are absolutely correct; the author simply hopes to provide researchers with a different perspective. Of course, the author hopes that these views will be supported by more observations and experiments, which will require the efforts of many people. Finally, thank you very much for reading this paper.

## **References:**

Shi Shengyu, [www.wenku1.com](http://www.wenku1.com): A Mechanical Analysis of the Decrease in the Rotational Angular Velocity of the Earth. 2002-2017