Research on the Flat Universe and the Core of Galaxy Cluster

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Abstract: Human beings want to know how the universe forms, and what shape the universe is. Studying billions of galaxies, as well as from the solar system to the Milky Way, scientists know they are all rotating and flat. According to the law of rotation, it can be inferred that the entire universe is rotating. Therefore, it can be confirmed that the singularity before the Big Bang was also rotating. According to the formula for centrifugal force of rotation, the centrifugal force is maximum at the location with the largest radius. It can be inferred that the universe is also flat after stabilization. From the perspective of the formation laws of the solar system, the early stages were chaotic, with many planets colliding with each other. For the Milky Way, traces of collisions with other galaxies can be observed. Moreover, there will be collisions with the Andromeda Galaxy in the future. So, the galaxy cluster where the Milky Way is located is still unstable and in its infancy. On the other hand, every galaxy we observe has a core. Therefore, every galaxy cluster also has a core. This core controls the entire galaxy cluster, and it will lead scientists to focus on it.

Keywords: Singularity; Universe; Galaxy Clusters; Two-dimensional; Core

1. Introduction

Through years of observation by scientists, many galaxies are flying away from us [1]. Looking back, all galaxies can converge to a point called a singularity. This singularity formed the current universe through the Big Bang [2]. It is a consensus that the universe was a singularity before the Big Bang. Throughout the current universe, every object is in rotational motion [3], including all galaxies, stars, planets, as well as tiny protons, neutrons, and electrons. It can be confirmed that the singularity before the Big Bang was also constantly rotating. Singularity is the origin of the entire world, possessing the mass of all matter. So, singularity has a huge gravitational force, it compresses all objects into one point, which is also a consensus among everyone. This point goes beyond the concept of black holes, equivalent to countless black holes gathering at one point, which is an incredibly large black hole. This enormous gravity can convert any small particle into energy. The theory cited here is that energy can be converted into matter [4]; Matter can also be converted into energy. So, singularities do not have particles, they are all energy. A singularity is a gathering point of enormous energy, a constantly rotating energy cluster. Put in a small place, each black hole is possibly a constantly rotating energy cluster. From this perspective [5], energy also has mass and gravity. Singularity is a gathering point of super energy, an indescribable and constantly rotating massive energy.

From the perspective of quantum mechanics, some energy generates motion, which exists in a string like manner [6], forming particles. On the other hand, particles are some special moving energy possibly wrapped in a specific membrane, just like bacteria. If the motion of energy exists in different strings [7], different particles are formed. Particles interact with each other to form atoms. Atoms gather to form all things in the world. On the other hand, all things in the world are composed of energy. When all things are subjected to enormous gravity, the outer membrane of particles is broken, and a new mass of energy is formed. In this way, particles become energy. For example, in a neutron star, the gravitational force is not strong enough [8], and the distance between particles is compressed. It is hard to change particles into energy on a neutron star. A larger gravitational force will be needed to break the outer membrane of the particles. When the mass of a planet exceeds the Chandrasekhar limit [9], the planet collapses into a black hole. At this point, the outer protective layer of the particles is broken, and the particles become energy. It can be imagined that a black hole is an energy cluster with a huge gravitational force [10]. When light particles enter the gravitational range of a black hole, the outer membrane of the light particles is broken, and the energy of the light particles is adsorbed to the central energy cluster [11], which is the center point of the black hole.

2. Analysis of the Cause of the Big Bang in the Universe

The Big Bang in the universe indicates that the gravitational force of the singularity cannot constrain the expansion of energy [12], just like an explosion of a bomb. One possibility is that there is material entering the singularity outside the universe, igniting this explosive package, indicating that there is also a universe outside the universe. There is also a possibility, like a supernova explosion, when too much explosive material is attracted and gathers in a very small range in a very short time, it can cause a singularity explosion. This indicates that before the Big Bang, the entire universe rapidly contracted. There is a third possibility, like an internal combustion engine gas explosion. This way is for the universe to slowly contract, with higher temperatures and greater pressures, reaching their limits, and then exploding. This is equivalent to gathering many black holes together and seeing how much they need to gather before it can explode. This explosion point needs to wait for the second Einstein to solve.

What needs to be studied here is what happens when a singularity rotates and explodes simultaneously [13]. When an explosion occurs, the energy of the singularity expands outward, and the spacetime of the universe also expands outward. As energy expands outward, the pressure and temperature in the universe decrease. As the pressure and temperature of the universe decrease, more and more energy gradually transforms into particles. In this way, as the universe expands in time and space, the energy and particles of the universe also expand outward. Think about it, the universe is full of energy and particles, and there is no dark matter. Energy has both mass and gravity, which affect the development of the universe. So, many people suspect the existence of dark matter. In fact, these invisible energies are what people call dark matter.

With the development of the universe, more energy is converted into matter, which is called elementary particles. Particles also have gravity, many particles attract each other, gather together, and produce basic atoms, such as hydrogen atoms. Basic atoms gather together to form particle clouds. The rotating particle cloud will have frictional force, causing the temperature of the cloud to rise. The clustering of particle clouds also generates pressure. As the pressure increases, the temperature will also increase. In this continuous cycle, larger particle clouds will generate high temperature and pressure, causing nuclear fusion. With nuclear fusion, stars are born, and planets are also born. Some massive particle clouds may directly transform into black holes, driving surrounding stars to rotate around them, thus giving birth to galaxies. In this way, there is still a portion of energy in the universe that drives the development of the universe. While energy is converted into particles, some particles can also be converted into energy. Before the Big Bang, it was believed to be empty and empty. After the Big Bang, the energy of high temperature and pressure pushed the universe outward, pushing galaxies to fly away quickly. So, in the initial development process of the universe, energy played an important role. At present, no evidence of dark matter can be found. It is highly likely that the dark matter referred to is dark energy. Energy also has gravity, and it can also drive the expansion of the universe.

3. Possible Ways of the Big Bang in the Universe

3.1 Explosive Package Explosion

Our universe may have been a gathering of energy before the explosion, and this energy would rotate steadily. Suddenly, matter or energy is sucked in from outside the universe, and this energy cluster can no longer be stable. A violent reaction occurs within the universe, producing higher temperatures and pressures, followed by the Big Bang. This can only be guessed that there is a universe beyond the universe.

3.2 Supernoval Explosions

The internal fuel of a supernova is about to run out, and the outward thrust is lower than the internal gravity, causing the entire supernova to collapse. The entire supernova shrank, causing a sharp reduction in space, resulting in the remaining fuel exploding in a very small amount of space. After the explosion, the entire periphery of the supernova disintegrated and the interior contracted into a black hole. Will our universe also explode like this? External energy is ejected, and there is also a super giant black hole inside? The explosion is just the periphery, forming so many galaxies. We have inferred that our galaxy cluster has a massive core, which could be a massive black hole or a massive energy cluster. Looking at the big universe, it is also possible for the entire universe to be like this. There may be a super giant black hole at the center of the universe; Or a super massive energy cluster. This super giant black hole, or energy cluster, has not yet been discovered. The galaxies we see now are just products of being ejected.

3.3 Explosion of Internal Combustion Engine Type

A diesel engine compresses air, increases its temperature and pressure, and then sprays fuel at a certain point, causing an explosion and pushing the piston to move and do work. The universe may also shrink to a singularity due to its own gravitational pull. This singularity is high-temperature and high-pressure, and rotates at high speed. If there is no universe outside the universe and no external energy enters, it can only be said that this singularity contracts too quickly, causing internal pressure to exceed its own gravity, resulting in an explosion. Another possibility is that the singularity is an energy cluster, and some of the energy is inevitably transformed into a star. Stars emit light and heat, igniting the energy cluster of the singularity, causing the singularity to explode and driving the expansion of the universe. Another possibility is that the singularity rotates at high speed without an explosion occurring. Due to the high temperature and pressure at the singularity, it slowly expands like a balloon. As shown in Figure 1, it is possible to expand uniformly or accelerate the expansion.

4. The Expansion Calculation of the Universe

The universe rotates continuously from beginning to end, exerting centrifugal force on all matter within the universe. As shown in Figure 1, if point A represents our Milky Way and point B represents another galaxy. After the Big Bang, various galaxies expanded outward under the influence of explosive forces. All objects in the universe are in rotational motion, so it can be confirmed that our universe also rotated during the Big Bang. In this way, each galaxy is also subjected to centrifugal force and rapidly moves away. If two material clouds, A and B, fly away at the same speed and are not subjected to any other force, they will reach points C and D respectively. The initial universe had no matter and no resistance. If there is no force, they have no acceleration. After the same time, they arrived at points E and F at the same speed. In this way, the lengths of AC and CE are equal, such as equation (1). Similarly, BD and DF have equal lengths. Of course, as can be seen from Figure 2, it can also be calculated that the length difference between EF and CD is equal to the length difference between CD and AB, such as equation (2). That is to say, another galaxy is leaving our Milky Way at a constant speed without accelerating. After our observation, it was found that after the Big Bang, various galaxy clusters in the universe accelerated and moved away, indicating that our hypothesis was incorrect. Each galaxy cluster was forced to accelerate and fly. People can imagine that after the Big Bang, energy expands outward, and at the same time, energy drives galaxy clusters to fly outward. This is the force acting on galaxy clusters. The energy is like a heat wave, pushing the galaxy cluster forward. Energy has gravity, and energy can also generate thrust. At present, it is uncertain whether the universe is affected by dark matter. It is possible that dark matter does not exist at all. Dark energy definitely exists, and it affects the entire universe.

The universe can survive for trillions of years, but our universe is only 13.6 billion years old and still in its infancy. So, taking our solar system as an example, in the early days of our solar system, many planets collided with each other, just like many galaxies in today's galaxy clusters collide with each other. To clarify, the expansion of cosmic energy is still in its early stages, and energy still plays a driving role in the flight of galaxies. When the expansion of cosmic energy reaches the end of the crossbow, each galaxy can only rely on inertia to continue flying. Currently, after the Big Bang, a portion of the energy is converted into particles, while another portion continues to expand, pushing galaxies outward. As shown in Figure 1, it can be confirmed that after the same amount of time, the distance traveled by the galaxy will be longer, the CE length must be greater than AC, and the EF distance must be greater than the uniformly expanding length. Therefore, all the galaxies we see are accelerating their flight away. Except for the members of the local galaxy cluster, such as the Milky Way and the Andromeda galaxy, they will collide in the future. This is mainly due to the instability of the local galaxy group, which is still in its infancy, just like the collision of various stars in the early solar system.

$$AC = CE \tag{1}$$

$$EF - CD = CD - AB \tag{2}$$

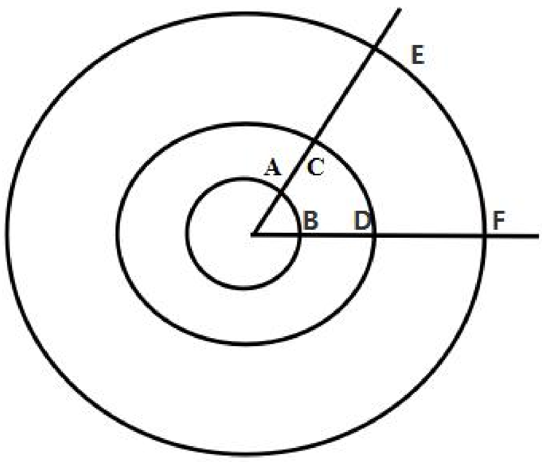

Figure 1. Galaxies Fly Away under Centrifugal Force

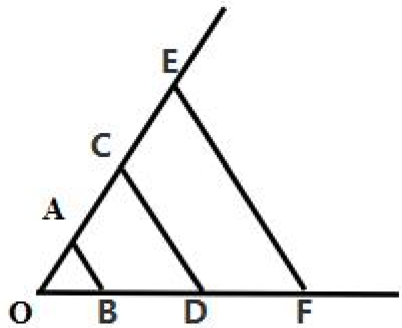

Figure 2. Galaxies Fly Away Calculation

5. The Core of a Galaxy Cluster

In the early stages of the solar system, the orbits of various planets were still unstable, and many planets collided with each other. Observing our Milky Way, there are traces of collisions with other galaxies. Looking at the Andromeda Galaxy, it is running towards our Milky Way and will definitely collide with it in the future. It indicates that the galaxy cluster we are in is still in its early stages, and the orbits of each galaxy are not yet stable. As mentioned earlier, the Big Bang caused galaxies to move away from each other. Why does our Milky Way galaxy meet the Andromeda galaxy? After observation by scientists, our Milky Way and the Andromeda Galaxy belong to the same galaxy group, which forms a unit of galaxies. For example, the solar system is a level unit belonging to the Milky Way; A unit of the Milky Way, belonging to a group of galaxies. This galaxy group is relatively independent of other galaxy groups, so after the Big Bang, many small units of galaxy groups formed in the universe, and each galaxy group flew away relatively. The galaxy cluster contains many galaxies, such as our Milky Way and the Andromeda Galaxy. The interior of a galaxy contains many star systems, such as the Milky Way which includes the solar system.

The solar system has a Sun as its core, controlling the entire solar system. Similarly, the Milky Way also has a core, which is a massive black hole that is the center of the Milky Way. This black hole is 4 million times larger than the Sun, and its gravity controls the entire Milky Way galaxy. Observing all galaxies again, they all have a core controlling the entire galaxy. It can be inferred that our galaxy cluster also has a core that controls the entire galaxy cluster. The core of a galaxy cluster has not yet been discussed in the scientific community. The core of the entire galaxy cluster is estimated to be hundreds of millions or billions of times the mass of the Sun. This core could be a huge black hole or a massive energy cluster, what we call dark energy. This is just an inference and needs further confirmation from the scientific community.

6. The Possibility of a Flat Universe

According to the formula for centrifugal force, centrifugal force is equal to mass*radius*square of angular velocity. So, for a rotating sphere, the centrifugal force is at its maximum circumference position.

Relatively speaking, the centrifugal force acting on the entire circular surface is the greatest. So, most of the material in the solar system and various galaxies is located on the largest circular plane. It can be inferred that most of the entire universe is located on an approximately circular surface. This is the possibility of a flat universe.

When the Big Bang occurred in the universe, the explosive force was greater than the centrifugal force, and the entire universe disintegrated in all directions. When the explosive force disappears and the universe stabilizes, it is mainly the centrifugal force of the universe that controls the entire universe. The universe gradually becomes a plane, for example, each galaxy is equivalent to a plane. The universe is only 13.6 billion years old, still in its infancy, and is still affected by energy expansion. It is possible that the Big Bang did not occur, and the energy cluster at the singularity of the universe rotates at high speed, generating high temperature and pressure. At a certain point in time, it reaches its limit and begins to rapidly expand. Coupled with centrifugal force, the universe transforms from a singularity into a plane.

7. Conclusion

Many scientists say that the universe experienced a Big Bang. After the Big Bang, the universe will slowly become an approximate plane under the action of centrifugal force. However, it is possible that the universe did not experience a Big Bang, but instead rapidly expanded under the influence of centrifugal force. A massive amount of energy rapidly develops outward under the action of centrifugal force. According to the formula of centrifugal force, the centrifugal force on the maximum revolution surface is the maximum. In this way, the universe gradually becomes a plane under the action of centrifugal force. This is the possibility of a flat universe. The universe is rapidly expanding, with some energy gradually becoming particles, which then form many cloud clusters that gradually turn into stars, as well as galaxies and galaxy clusters. The universe is inherently an energy cluster. As the universe expands, energy expands outward, driving galaxies and galaxy clusters to fly outward. The dark matter scientists are talking about may not even exist, and dark matter is what scientists call dark energy.

People all see some planets rotating around stars, forming star systems. Some stellar systems rotate around a large black hole, forming a galaxy, such as our Milky Way. Some galaxies form a galaxy cluster and should also rotate around a core. This core definitely exists, but we haven't found the core of the galaxy cluster yet. This is what scientists need to study. For example, Milky Way is located in a young galaxy cluster and will collide with the nearby Andromeda galaxy in the future. After years of observation by scientists, many galaxies have flown away from the earth. However, two galaxies still need to collide. This indicates that our galaxy cluster must have a core that influences the entire cluster. Scientists need to work hard to uncover this mysterious veil.

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