The Observable Universe in the Central Universe

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Abstract

The entire universe is a rotating disk, similar to the Milky Way, with a "galactic disk," a "core," and "spiral arms." The observable universe rotates around the center of the universe and play centrifugal motion, galaxies move away from each other and spread outward and around the periphery. With the Earth as a reference point, galaxies are in recession, and the recession velocity is proportional to their distance from the Earth. The recession velocities of galaxies differ in different directions, the velocities in the horizontal are greater than those in the longitudinal directions, the longitudinal directions are greater than those in the vertical direction. The universe has a zone for the development and growth of stars and galaxies, where stars and galaxies reach maturity. The continuous energy eruptions provide abundant materials for the rapid growth of stars. During this period, they revolve around the center in circular motions or in low-speed centrifugal motions. Galaxies are not moving away from each other, or are moving away from each other at a low speed. Mature galaxies had already come into existence before they accelerated to the Hubble velocity. The universe diffusion outward, the direction point to Ophiuchus, Scutum, Sagittarius and so on. According to the derivation based on the energy density formula, we are 10^{27} meters away from the center of the universe. Additionally, the observable universe might be elliptical in shape.

Keywords: Centrifugal motions, Diffusion, Direction, Galaxies, Revolve ,Universe

In the Central Universe paper, the author contends that the universe is oblique, the energy density distribution of the whole universe is uneven, and anisotropic. The universe has a center, the energy is continuously emitted from this center and diffuses outward in a spherical shape. The density is highest at the center, the density is inversely proportional to the square of the radius of the universe. That is, the farther away from the center, the smaller the density. The universe has an outward direction and a theoretical boundary[1].

The universe rotates around its center[2], formed a disk similar to the Milky Way, with a "galactic disk" a "core" and "spiral arms", the mass is concentrated in the disk (Fig 1). The observable universe is within the disk and is spreading outward. For galaxies and galaxy clusters, the farther they are from the center and the faster the speed, and they are moving away from each other.

The observable universe is a part of the entire universe and shares some of the same properties.

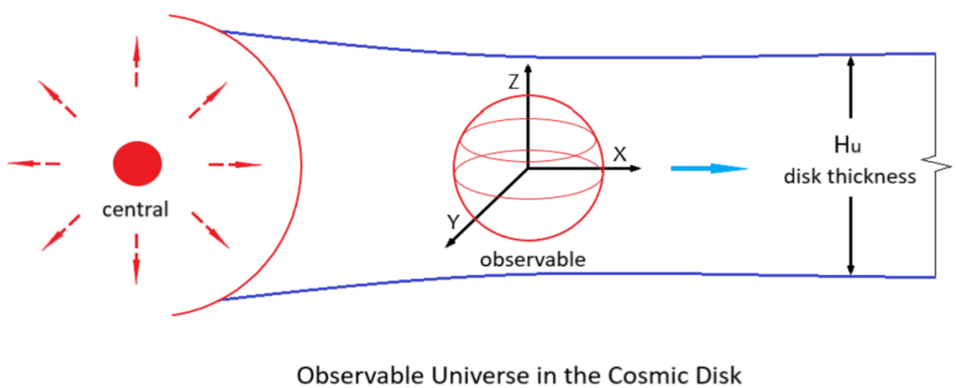


Fig 1. The observable universe in the cosmic disk.

1 Cosmic diffusion

The rotation of the central universe is similar to our making a circular rotation by holding one end of a rope. On the rope, there are many knots, they have the same angular velocity, and the farther they are from the center of the circle, the greater the linear velocity. Because this is a elastic rope, during the rotation process, the radius is constantly increasing($F<mv^2/r$, centrifugal motion), and as a result, the knots are moving away from each other.

This elastic rope represents the gravitational force between galaxies, pulling on each other. The knots represent galaxies and galaxy clusters. It is countless elastic ropes rotating together and forming a disc shape.

What forces drive the rotation and centrifugal motion of galaxies?

(1) The center rotates on its own axis.

(2) The energy that continuously and uninterruptedly erupts from the center is partly transformed into mass to form galaxies, and partly forms kinetic energy to drive the rotation of the universe.

(3) When $F=mv^2/r$, that is, when the speed at which a galaxy rotates around the center is in balance with the central gravitational force, it will undergo uniform circular motion. However, there is mass outside the circle, its gravitational force breaks the balance and pulls the galaxy outward, forming centrifugal motion.

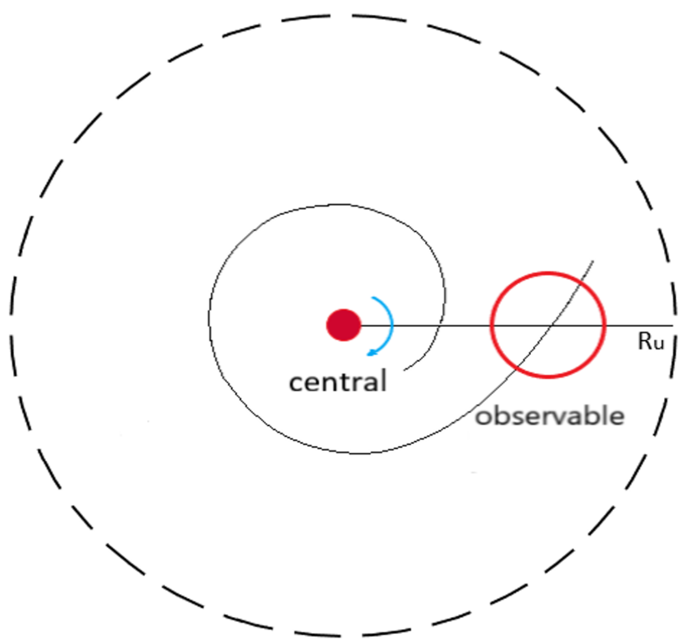


Fig 2. The observable universe does centrifugal motion

The large circle represents the whole universe, the small circle represents the observable universe, galaxies within the observable universe are all undergoing centrifugal motion around the center. The farther away from the center, the greater the speed, galaxies and galaxy clusters move away from each other, spreading outward and to the periphery(Fig 2).

2 The speed of diffusion motion

2.1 Motion in the horizontal direction (x-axis)

The galaxy within the observable universe are in a centrifugal motion, and there is an angle between the direction of motion and the radial direction, the motion in the horizontal direction is its component vector along the x-axis.

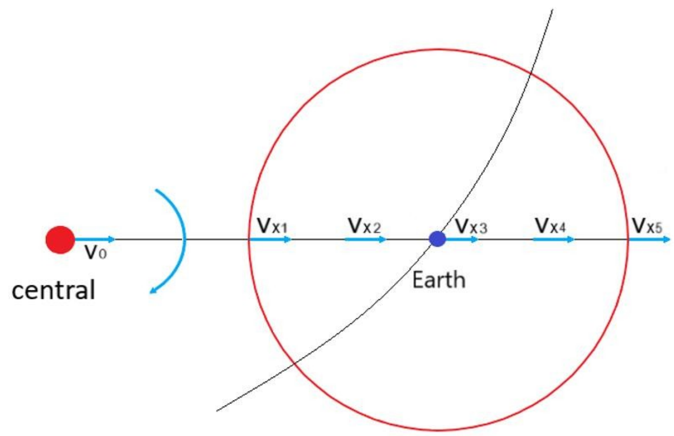


Fig 3. The motion of the observable universe in the x - axis direction

The v represents the velocity of the galaxy, v_x represents the radial velocity of the galaxy on the x-axis, v_o is the velocity of the center. v_{x3} is Earth, v_{x1} and v_{x2} are located on the inner side of the Earth, v_{x4} and v_{x5} are on the outer side, they are equidistant(Fig 3).

When the center is taken as the reference point, the velocity at the center of the universe $v_o = 0$.

$$v_{x5} > v_{x4} > v_{x3} > v_{x2} > v_{x1} > v_0$$
$$v_{x5} - v_{x4} = v_{x4} - v_{x3} = v_{x3} - v_{x2} = v_{x2} - v_{x1}$$
$$v_{x5} - v_{x3} = v_{x3} - v_{x1}$$

At this time, galaxies move away from each other at the same speed, and the universe diffusion.

When the Earth is taken as the reference point, the speed of the Earth $v_{x3} = 0$.

$$v_{x5} > v_{x4} > v_{x3};\quad v_{x1} > v_{x2} > v_{x3}$$
$$v_{x5} - v_{x4} = v_{x4} - v_{x3} = v_{x1} - v_{x2} = v_{x2} - v_{x3}$$
$$v_{x5} - v_{x3} = v_{x1} - v_{x3}$$

At this time, what we observe is the recession of galaxies, and the recession velocity is proportional to their distance from the Earth.

2.2 Motion in the longitudinal direction (y - axis)

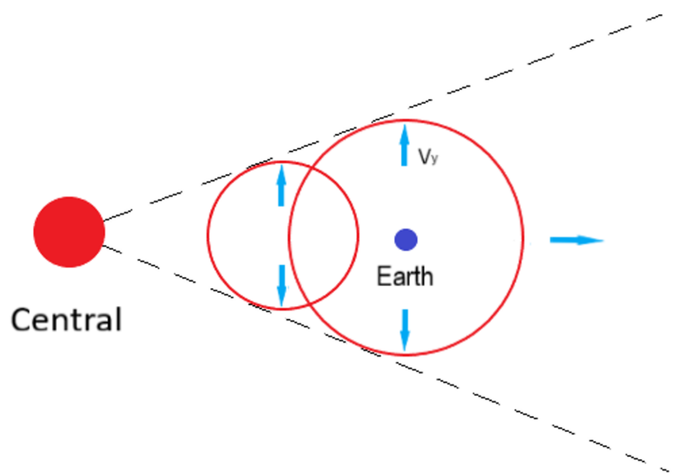


Fig 4. The observable universe is diffusion towards both sides.

When the observable universe diffusion outward, it is aiso diffusion to both sides. With the Earth as a reference point, galaxies are in recession(Fig 4).

2.3 Motion perpendicular (along the z - axis)

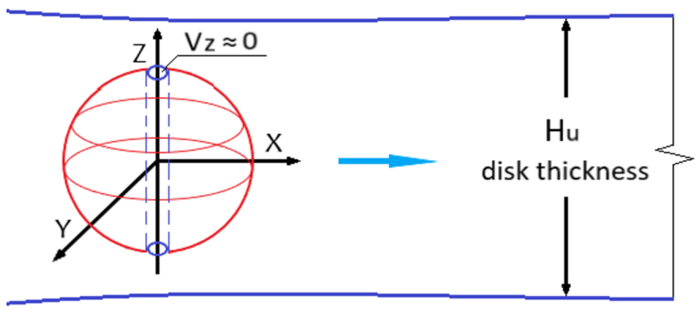


Fig 5. The diffusion of the observable universe in the vertical axis direction

The upper and lower disks of the cosmic disk do not diffusion, Hu is approximately a fixed value. There is a small area along the Z-axis where the radial velocity is close to zero, that is, Vz≈0(Fig 5). There is radial velocity in other regions.

2.4 Conclusion

The observable universe rotates around the center of the universe and play centrifugal motion, galaxies move away from each other and spread outward and around the periphery. With the Earth as a reference point, galaxies are in recession, and the recession velocity is proportional to their distance from the Earth. The recession velocities of galaxies differ in different directions, the velocities in the horizontal are greater than those in the longitudinal directions, the longitudinal directions are greater than those in the vertical direction. At the same radius, the speed between different directions gradually changes.

Galaxies are move away from each other, and their gravitational forces are gradually decrease. As a result, their speeds are gradually increasing, and the universe diffusion accelerate[3].

3 Cosmic age

Currently, the most widely accepted age of the universe is 13.8 billion years, also considered the age of the observable universe. In the central universe, the age of the universe is not equal to the age of the observable universe[4].

After the energy in the center of the universe exploded, it spread outward and gradually cooled, energy is converted into matter, and matter began to gather to form stars and galaxies. When matter aggregates, its mass increases while its motion velocity decreases significantly. Simultaneously, under the influence of gravity, the diffusion rate is substantially reduced.

The universe has a zone for the development and growth of stars and galaxies, where stars and galaxies reach maturity. The continuous energy eruptions provide abundant materials for the rapid growth of stars. During this period, they revolve around the center in circular motions or in low-speed centrifugal motions. Galaxies are not moving away from each other, or are moving away from each other at a low speed(Fig 6). Mature galaxies had already come into existence before they accelerated to the Hubble velocity. Therefore, the age of the observable universe exceeds 13.8 billion years, and it is predicted that we can find mature stars and galaxies that are older than 13.8 billion years[4].

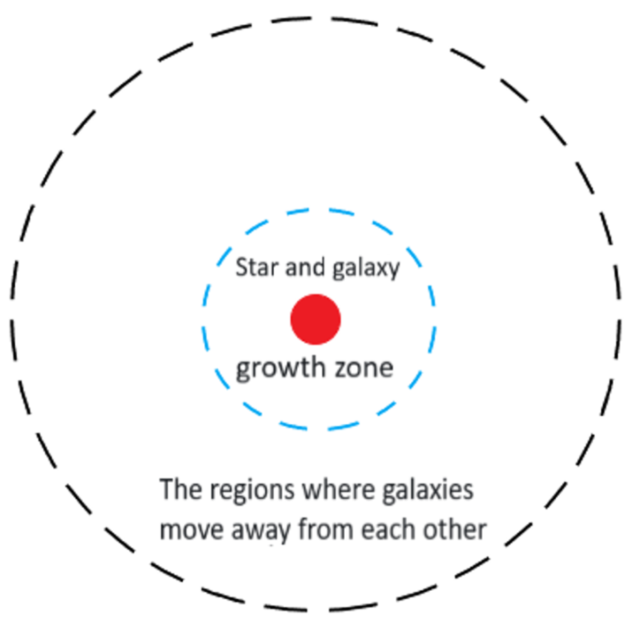


Fig 6.   Image：vixra.org/pdf/2309.0001v3

The universe is fluid, and the age of the observable universe does not represent the age of the universe as a whole.

The whole universe is a river, the river of time. There are innumerable leaves in the river, and our observable universe is one of them, it flows from upstream to downstream and enters the ocean, and then its journey is over. However, this river is still flowing.

3 The direction

The universe diffusion outward. So, where does the direction point to?

Some scholars have found that the expansion rates of the universe are not the same in all directions. The research on the isotropy in the late universe[5] has provided us with a basis. The regions with faster expansion rates are the directions outward (Fig 7).

The outward direction: Ophiuchus, Scutum, Sagittarius, Aquila, Hercules, Scorpio, Sagitta, etc.

We set on the upper disk as: Andromeda, Cepheus, Cassiopeia, Cygnus, Lacerta.

The lower disk: Vela, Dorado, Hydra, Volans, Antlia, Centaurus, Carina, Chamaeleon, Crux, Musca, Mensa, Hydrus, Apus.

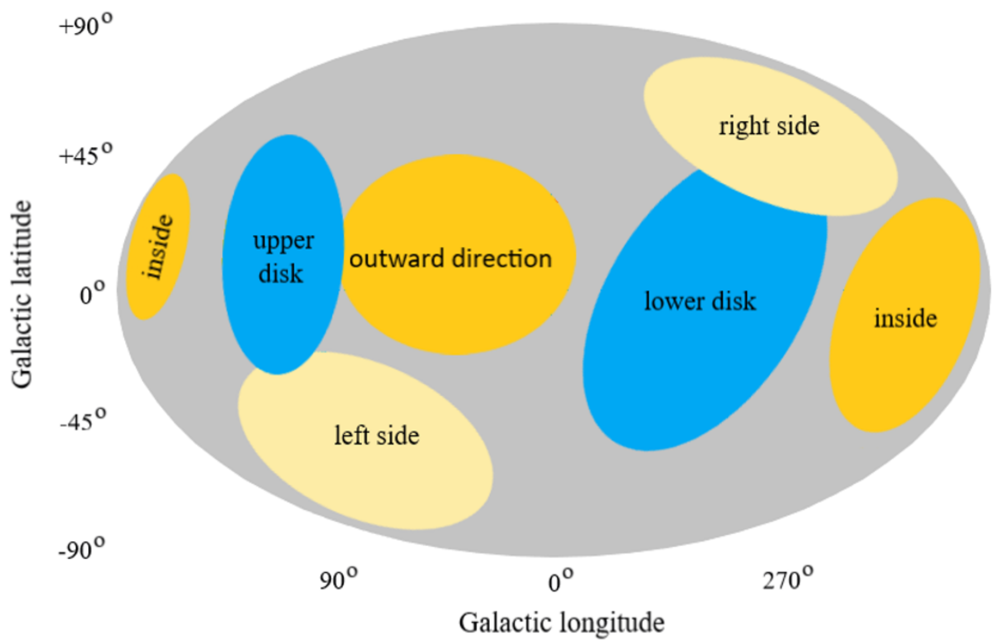
The left side: Pegasus, Pisces, Aquarius, Cetus, Sculptor, Piscis Austrinus.

The right side: Leo, Sextans, Coma Berenices, Virgo, Corvus, Crater, Leo Minor.

The inside: Auriga, Camelopardalis, lynx, Perseus, Taurus,Gemini, Canis Minor, Orion, Monoceros, Cancer,

The outward direction and the inner side, the upper plane and the lower plane, the left side and the right side are separated by 180 degrees from each other.

Overall, galaxies are in centrifugal motion and the universe is diffusion outward. The structure and motion of the universe are extremely complex, there is no unified standard for the distribution and motion of galaxies. Although all of them are in centrifugal motion, they are randomly distributed, and their speeds and directions are not exactly the same. That is to say, there is individuality within commonality.



The orientation of the observable universe

Fig 7

4 Density

The distribution of matter density is greatest at the center and decreases with increasing distance from the center, being inversely proportional to the square of the radius. The radius Ru→∞, the density ρ→1/∞. As can be seen from the formula curve, the boundary is not a cliff - like one, but a gentle one that gradually tends towards zero. There is a theoretical boundary here with a radius of 10^{35} meters, beyond this, the average density is less than1.12 $\times 10^{-43}$kg/m³, which means there is one electron per 10^{8} m³ of space, this is meaningless.

Formula for cosmic energy density[4]:

$$\rho_r = \frac{k\, m_P}{4\pi\, \ell_P\, R_u^{2}} \qquad (\ell_P/2 < R_u \leqslant 1/2\ell_P) \qquad (1)$$

5 location

In formula (1), K is the adjustment factor:

$$k = \frac{b\,c}{v} \qquad (2)$$

$$b = b_1 \times b_2 \qquad (3)$$

b_1 is the degree of aggregation of the cosmic disk height H. b_2 is the spiral arm the degree of aggregation.

$$b_1 = \frac{\pi R_u}{H} \qquad (4)$$

The c/v is the ratio of the speed of light to the velocity of matter (or galaxies).

According to equation (1)~(4) derives:

$$R_u = \frac{b_2 m_P c}{4H L_P v\rho_r} \tag{5}$$

The mp is the Planck mass, lP is the Planck length, ρ_r take the density of ordinary matter 4.08×10^{-28} kg/m^3.

Hypothesis, b_2 is 400%，H is 93 billion light-years, c/v=1. Calculation results, Ru = 3.75 $\times10^{27}$ m. This is our distance from the center of the universe.

6 Other

6.1 Regarding the shape of the observable universe, the velocity of motion in the horizontal direction (x-axis) is higher compared to the other two directions, suggesting that it may be elliptical.

6.2 The entire universe is a rotating disk, as centrifugal motion causes an uneven distribution of galaxy clusters. The farther from the center, the greater the velocity, and since velocities differ, galaxy clusters move away from each other, creating local voids. If it is a hole that penetrates, it is because there are fewer galaxies in the vertical direction (z-axis), leaving gaps that are not fully covered. These gaps extend outside the disk, allowing us to see beyond the universe.

7 Summary

The entire universe is a rotating disk, similar to the Milky Way, with a "galactic disk," a "core," and "spiral arms." The observable universe rotates around the center of the universe and play centrifugal motion, galaxies move away from each other and spread outward and around the periphery.

With the Earth as a reference point, galaxies are in recession, and the recession velocity is proportional to their distance from the Earth. The recession velocities of galaxies differ in different directions, the velocities in the horizontal are greater than those in the longitudinal directions, the longitudinal directions are greater than those in the vertical direction. The universe has a zone for the development and growth of stars and galaxies, where stars and galaxies reach maturity, there were already mature galaxies in the early universe.

The universe diffusion outward, the direction point to Ophiuchus, Scutum, Sagittarius and so on. we are 10^{27} meters away from the center of the universe.

Reference

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