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New Development of the Big Bang Theory

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Abstract: The Big Bang is an explanation based on observation and physical theory. One hundred years later, this theory has been further improved and explained. Since the universe came out of the big bang, will there be a small explosion after the big bang? The answer is yes. We can never see the big bang, but we can see the small one every day. According to the small explosion to deduce the scene of the big explosion, we can further improve the theory of the big explosion. Conclusion: the big bang of the universe is also accompanied by the annihilation of matter, which is a coexistence of two kinds of big bang.

Key words: Big Bang Theory; Hubble's law; Redshift; Dark Energy; Active Galaxies

1. Preface

The most influential theory of modern cosmology is big bang cosmology. According to big bang cosmology, the temperature of the early universe was extremely high (above 10 billion degrees) and the density of matter was extremely high. There, matter is compressed into a singularity. About 20 billion years ago, there was an explosion, and the temperature gradually cooled, forming various star systems, which are the universe we can observe today. The big bang theory is supported by the following astronomical observations. There are systematic redshifts in the spectral lines of extragalactic galaxies. In 1917, the American astronomer Shriver found that the spectral lines of extragalactic galaxies moved systematically to the red end, indicating that these distant objects were moving away from us. In 1929, American astronomer Hubble found that almost all galaxies have redshift phenomenon. The farther the galaxy is, the greater the redshift is. This linear relationship between redshift and distance is called Hubble's law.

2. Stellar explosion

This is a phenomenon of the separation of the core and shell of some massive stars in the later stage of evolution, that is, constant star scale explosion. Stars with a mass of 8 to 25 times that of the sun end their "life" in the form of supernova explosions, while the gas packages outside the stars are thrown away at a high speed, and the absolute luminosity can exceed 10 billion times that of the sun. At this stage, light elements become heavy elements, and the density of elements increases, so the collapse is not only the gravitational force, but also part of the electromagnetic force and strong force.

3. Galaxy explosion

Active galactic nuclei (AGNs) are a kind of extragalactic galaxies with strong activity in the central nucleus. These galaxies appear to be more active than ordinary galaxies. They emit strong electromagnetic radiation in the whole wave band from radio waves to gamma rays, and the luminosity is about 1036-1041j / s. People call them active galaxies. Active galactic nuclei (AGNs) are the bright core parts of these galaxies. The size of AGNs is usually about 1 light year, only a small part of

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the whole active galaxy. However, since the luminosity of AGN is much higher than that of host galaxy, AGN usually refers to the whole active galaxy.

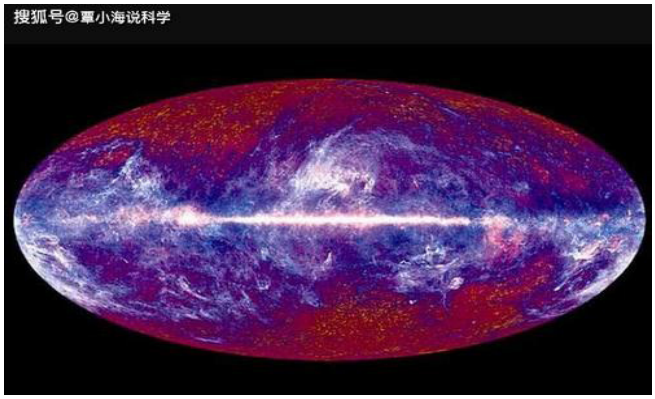
Since the discovery of quasars in the 1960s, many objects with similar characteristics have been discovered one after another. All of them are extra solar systems, collectively known as active galactic nuclei. The common point is that the spectrum has a high red shift, which indicates that the distance is far in the cosmological scale, and the luminosity is very high, which is far higher than ordinary galaxies. Further observations show that these objects often have fast light changes, with time scales ranging from several hours to several days, indicating that their scales only account for a small part of the whole galaxy. In addition, the spectral range of AGNs is very wide, which is characterized by non thermal radiation spectrum, strong emission lines and jet phenomena. There are many kinds of AGNs discovered in recent decades, including siver galaxy, quasars, radio galaxies, BL type objects in Scorpio and so on. For a long time, people have been puzzled about their mechanism and evolution, and have invested a lot of human and material resources to study them, which makes AGNs one of the most popular and active research fields in astronomy since the 1990s. It is widely accepted that AGNs are composed of supermassive black holes and accretion disks. According to theoretical and observational studies, a standard model of AGN has been established, there is a black hole in the center, and the matter around the black hole falls by gravity, forming an accretion disk around the black hole. Due to the dissipative effect, the gas is heated to a very high temperature and gradually falls to the center of the black hole, forming a jet along the normal direction of the accretion disk. The velocity of the jet is close to the velocity of the explosion. There is a large amount of hydrogen at both ends of the jet. Since there is hydrogen at both ends of the jet, it can be considered that hydrogen is produced by the jet. The whole process shows that the evolution of the universe has completed a local small cycle process. Hydrogen has started a new round of star formation.

4. Universe big bang

According to the grand unification theory, there should be a small explosion in the universe, that is, the eruption of galaxies. The mechanism of the Big Bang is similar to that of Galaxy level eruption. The result of eruption and explosion is to form two independent symmetrical parts, and the singularity of eruption and explosion is in the middle of the two independent parts. This is the first form of big bang. However, the scale of the Big Bang is far larger than that of the galaxy level. The Big Bang is the joint participation of all cosmic matter. The result of the explosion is part of the universe we see now（Figure）. Under the action of gravity, when these two parts meet again, it will trigger another big bang.

In addition, there is another form of Big Bang: because the explosion is the joint participation of all cosmic matter, including the same amount of antimatter, the positive and negative matter will annihilate and explode when they meet; That is, 1-1 = 0. And then the universe comes out of zero, but not out of nothing. Now it has been found that the vacuum is not empty. This is a good evidence. 0 is also a kind of matter, it also retains the basic properties of black hole matter, which is the hairless theorem. According to the same-sex repulsion principle, there is only repulsion between 0 and 0, but no gravity. This is dark energy. Most of the Dark energy 0 is a matter left over from the big bang, which has not yet been transformed. The transformation here is the reverse reaction of annihilation reaction, that is, 0 = 1-1. But ultimately, it will be transformed into ordinary matter to participate in the next round of great cycle.

The real big bang of the universe should be the coexistence of the two. Now scientists have observed the whole picture of the universe (as shown in the picture): two traces of coexisting explosions can be clearly seen from the picture. The traces of both big explosions are clearly visible.



In the picture: 1) the white line is the trace of the first eruption explosion. 2) The whole oval part is the trace of the second kind of annihilation explosion.

5. Conclusion

This paper summarizes the gradual progress of the big bang theory, combined with the observation basis of the small bang in the universe, especially the panorama of the universe observation. We found a model of the coexistence explosion of the universe. According to the derivation of the grand unification theory, this model is further proved to be meaningful. The theory of the big bang of the universe has made a new progress, and the theory of the big bang has gradually become clear.

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