Errors in Nobel Prize for Physics (2)

——Exist at least seven states of accelerating expansion & contraction and the like in universe

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Abstract: One of the reasons for 2011 Nobel Prize for physics is "for the discovery of the accelerating expansion of the universe through observations of distant supernovae". But "the accelerating expansion of the universe" is debatable. Through mathematical derivation, according to Hubble's law, the values of far away distance, far away speed, far away acceleration of a galaxy, and the force acted on this galaxy are all the exponential functions of time, these reach the unreasonable conclusions: as time tends to infinity, all of these values will tend to infinity too. Due to the observation of distance is limited, at most we can say: "partial universe is in the state of expansion (including accelerating expansion)." In addition, partial universe (such as the area nearby a black hole) is in the state of contraction. Therefore the correct conclusion is that there exist at least seven states of accelerating expansion and contraction and the like in the universe, namely "partial universe is in the state of accelerating expansion, partial universe is accelerating contraction, partial universe is uniform expansion, partial universe is uniform contraction, partial universe is decelerating expansion, partial universe is decelerating contraction, and partial universe is neither expansion nor contraction".

Key words: Accelerating expansion of the universe, expansion of the partial universe, contraction of the partial universe, neither expansion nor contraction of the partial universe, Hubble's law, black hole

Introduction

In 1929, Hubble, an astronomer of the United States, found the famous Hubble's law. According to Hubble's law, some scholars reach the conclusion of the accelerating expansion of the universe. One of the reasons for 2011 Nobel Prize for physics is "for the discovery of the accelerating expansion of the universe through observations of distant supernovae".

But "the accelerating expansion of the universe" is debatable. Due to the observation of distance is limited, at most we can say: "partial universe is in the state of expansion (including accelerating expansion)."

As well-known, all of the absolute, solitary and one-sided viewpoints are completely wrong. For example, in reference [1] we already pointed out that the strict "unified theory" cannot be existed, there is only "partial and temporary unified theory so far".

Through Mathematical derivation, it can be concluded that Hubble's law will lead to unreasonable results. Therefore, Hubble's law needs to be amended or

replaced by other law. Considering all possible situations, the correct conclusion is that there exist at least seven states of accelerating expansion and contraction and the like in the universe, namely "partial universe is in the state of accelerating expansion, partial universe is accelerating contraction, partial universe is uniform expansion, partial universe is uniform contraction, partial universe is decelerating expansion, partial universe is decelerating contraction, and partial universe is neither expansion nor contraction".

1 The unreasonable results caused by Hubble's Law

Hubble's law reads

$$V = H_0 \times D \qquad (1)$$

where: V — (galaxy's) far away speed, unit: km / s; H_0 —Hubble's Constant, unit: km / (s. Mpc); D — (galaxy's) far away distance, unit: Mpc.

According to Hubble's law, we have

$$V = \frac{dD(t)}{dt} = H_0 \times D(t) \qquad (2)$$

From this differential equation, it gives

$$D = k e^{H_0 t} = k \exp(H_0 t) \qquad (3)$$

where: k — a constant to be determined; if we assume that the distance is positive, then its value is positive too.

It gives the far away speed as follows

$$V = k H_0 \exp(H_0 t) \qquad (4)$$

The far away acceleration is as follows

$$a = dV / dt = k H_0^2 \exp(H_0 t) \qquad (5)$$

According to Newton's second law, the force acted on this galaxy is as follows

$$F = ma = m k H_0^2 \exp(H_0 t) \qquad (6)$$

Based on these equations, apparently we can reach the unreasonable conclusions: as time tends to infinity, all of the values will tend to infinity too.

If Hubble's law needs to be amended, the conclusion of "the accelerating expansion of the universe" also needs to be amended. At least it should be amended as "the accelerating expansion of the partial universe."

2 The states of contraction and the like of the partial universe

Many scholars have presented the state of contraction of the universe (or partial universe). Here we stress that partial universe (such as the area nearby a black hole) is in the state of contraction.

As well-known, the mass of black hole (or similar black hole) is immense, and it produces a very strong gravitational field, so that all matters and radiations

(including the electromagnetic wave or light) will be unable to escape if they enter to a critical range around the black hole.

The viewpoint of "the accelerating expansion of the universe" unexpectedly turns a blind eye to the fact that partial universe (such as the area nearby a black hole) is in the state of contraction.

To sum up, considering all possible situations, the correct conclusion is that there exist at least seven states of accelerating expansion and contraction and the like in the universe, namely "partial universe is in the state of accelerating expansion, partial universe is accelerating contraction, partial universe is uniform expansion, partial universe is uniform contraction, partial universe is decelerating expansion, partial universe is decelerating contraction, and partial universe is neither expansion nor contraction". As for the detailed study for these seven states, it will be the further topic in future.

Besides these seven states, due to the limitations of human knowledge, there may be other unknown states.

3 Conclusions

All of the absolute, solitary and one-sided viewpoints are completely wrong, and in physics we should avoid these views as far as possible. The application scope of Hubble's law should be reconsidered, and the viewpoint that "the accelerating expansion of the universe" should be also reconsidered.

Reference
1 Fu Yuhua，Errors in Nobel Prize for Physics (1)——Strict Unified Theory Cannot be Existed，the general science journal (ISSN:1916-5382)
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