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Back to the Stationary Cosmology

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Abstract

The aim of this review article is to show that developing a cosmology that is based only on astronomical observations gives excellent results. This article excludes all theoretical prepositions of the Big Bang model. Huge jets that are thrown out of SMBH are well documented by astronomical observations. These jets produce fresh energy that is the building material for the formation of new stars and galaxies. SMBH are rejuvenating systems of the universe, they keep the universe "eternally young". The transformation of old matter into fresh energy in the form of jests has no beginning and will have no end. There is no problem with "what was before" and "what will be at the end" because there was no beginning and there will be no end. The circulation of the energy in the universe in SMBHs has no beginning and will not have an end, it is eternal.

Keywords: SMBH jets, Big Bang cosmology, stationary universe model

1. Introduction

Jets from the black holes in the centers of some galaxies are well documented by astronomical observations [1]. The mechanism that forms these jests is not well-understood yet. We extended the mass-energy equivalence principle to the universal space where a given physical object diminishes the energy density of space in its center exactly for the amount of its energy [2]. In today's physics is understood that universal space is a type of energy often named "super-

fluid quantum space" [3]. Extension of mass-energy equivalence on universal space shows that in the center of the black holes energy density of universal space is so low that atoms become unstable. They fall apart into elementary particles that are thrown out in interstellar space in the form of huge jets [4,5]. Prof. Roger Penrose's singularities in the center of black holes [6] gain a physical interpretation in our model. In the center of black holes "old matter" is transformed back into "fresh energy" in the form of huge jets. Our model suggests that the universe is a system in a permanent dynamic equilibrium [7].

2. Weak points of the Big Bang cosmology

Big Bang cosmology was seriously challenged back in 2011 by Prof. Paul Steinhardt [8], and in 2017 by Prof Anna Ijjas, Prof. Paul Steinhardt, and Prof Avi Loeb [9]. The main unanswered question of the Big Bang model is: "From where did all this energy come in the first moment of the universe? Stephen Hawking's answer was that in the first moment of the Big Bang energy of matter and the energy of space (gravitational energy) are multiplying. The energy of matter is positive, gravitational energy is negative, and their sum is always zero, so they can multiply [10]. Mathematically Hawking is right: $1 + (-1) = 0$, $2 + (-2) = 0$, $3 + (-3) = 0$, $n + (-n) = 0$, but these mathematical equations cannot be implied in the problem of how energy has appeared in the Big Bang model. Besides this, they have no support in experimental physics, energy cannot be created and cannot be destroyed, it can only be transformed into another type of energy. In this sense, the model of black holes as rejuvenating systems of the universe is superior, because it respects the first law of thermodynamics.

Prof. Penrose is proposing that Big Bangs are cyclic and the universe is expanding into infinity. At a certain moment, a new Big Bang happens [11,12]. The so-called "Cyclic Conformal Cosmology" (CCC) is not answering the question of how matter that is expanding toward infinity is coming back into the central point of a new explosion. In the cosmological model, we proposed the circulation of energy in the universe is explained by the discovery of huge jets out of the centers of galaxies that are well documented [1]. We are back to the model of the stationary universe that did not start, it is eternal. Such a model was first proposed by English astronomer Thomas Digges (1546-1595).

It seems that the idea of the universe's expansion proposed by Belgian cosmologist Georges Lemaître back in 1931 [13] was misleading the entire generation of cosmologists. Strong evidence against Big Bang cosmology is NASA's measurement back in 2014 that universal space has a Euclidean shape. We do not have any possibility in the frame of Euclidean geometry that the distance between two galaxies in Euclidean space would be changed because we cannot expand or shrink Euclidean space. The Friedmann–Lemaître–Robertson–Walker (FLWR) metric is not valid for Euclidean space [7]. This mathematical fact is an additional theoretical problem of the Big Bang model.

Further on, cosmological redshift does not prove the expansion of the universal space. Cosmological redshift can be explained by the Mossbauer effect

that was experimentally observed, namely, photons when moving in the opposite direction of gravity have a loss of frequency [7]. That light from distant galaxies has some energy loss was proposed by Swiss astronomer Zwicky. He calls it the "tired light effect" [14]. Zwicky's proposal and Mossbauer's effect are much stronger arguments than explanations that cosmological redshift is proof of the expansion of the universe. Hypothetical expansion of the universal space was never observed experimentally, it is an unproven hypothesis. Mossbauer effect was observed on the Earth and is a valuable explanation of cosmological redshift.

In astronomy is well accepted that CMB radiation is the radiation of the existent universal space. This is what we observe, the entire universal space radiates CMB. The proposal that CMB is some relict radiation of recombination period again is only an unproved hypothesis, it is not proof that the universe has started from some big explosion. [7]. Big Bang cosmology interprets astronomical observations accordingly to its narrative, which is not a regular scientific way of thinking. The cosmological model proposed in this article is based only on astronomical observations which remain uninterpreted. In our model, there are no hypothetical, unproved prepositions that are the backbone of Big Bang cosmology.

3. Stationary universe is without physical singularities and has constant entropy

Hawking's idea was that the universe started from a mathematical point [15]. He has represented his idea at the Vatican conference back in 1983: "In 1981, many of the world's leading cosmologists gathered at the Pontifical Academy of Sciences, a vestige of the coupled lineages of science and theology located in an elegant villa in the gardens of the Vatican. Stephen Hawking chose the august setting to present what he would later regard as his most important idea: a proposal about how the universe could have arisen from nothing" [16]. His idea is problematic because the mathematical point is dimensionless. Dimensionless phenomena can't have physical attributes such as pressure, temperature, and density. Dimensionless also means without the attribute of energy. Hawking tried to solve this contradiction with the idea that in the first moment of the beginning where the universe was a mathematical point, pressure, temperature, and density were infinite which is against the first law of thermodynamics because energy cannot appear from "dimensionless nothing" even if this "nothing" is infinite. His idea is against the common sense of physics:

- dimensionless phenomena (as for example mathematical points) cannot have physical attributes
- physical properties of a given physical phenomenon are always finite.

The idea of physical singularities used by Hawking and Penrose is more philosophical than scientific. Physical singularities are contradicting themselves. For example, infinite temperature + 100 degrees of Celsius still is an infinite temperature. Infinity is not a metric term. It works well in mathematics but it does not work in physics. In the stationary cosmology proposed in this article, there are no physical singularities. The only infinity that exists is the infinity of the universal

space that was measured by NASA back in 2014: “Recent measurements (c. 2001) by a number of ground-based and balloon-based experiments, including MAT/TOCO, Boomerang, Maxima, and DASI, have shown that the brightest spots are about 1 degree across. Thus the universe was known to be flat to within about 15% accuracy prior to the WMAP results. WMAP has confirmed this result with very high accuracy and precision. We now know (as of 2013) that the universe is flat with only a 0.4% margin of error. This suggests that the Universe is infinite in extent; however, since the Universe has a finite age, we can only observe a finite volume of the Universe. All we can truly conclude is that the Universe is much larger than the volume we can directly observe” [17].

In Big Bang cosmology, the entropy of the universe is constantly increasing, which is a conceptual problem, it means the “thermal death” of the universe [18], which means one day the universe will die; there will be no free energy for anything to happen. In stationary cosmology, the universe is a system with constant entropy. Increasing the entropy that we observe in the universe is a partial process, it is not a general process as it is understood in a Big Bang cosmology. SMBHs are transforming high-entropy matter back into low-entropy energy of jets. SMBHs are keeping the entropy of the universe as a whole stable.

The cosmological principle, as Andrew Liddle puts it: "The cosmological principle means that the universe looks the same whoever and wherever you are" [19]. The cosmological principle suggests that what we observe in the observable universe is also valid in the unobservable universe. What we observe in the observable universe is that universe is recreating itself. The cosmological principle suggests that this is also valid for the unobservable universe. This is an additional argument that we are back to stationary cosmology.

Two recent articles are advocating the necessity of a stationary cosmology model restoration, exposing several points of weakness of the Big Bang model [20,21]. It seems that Big Bang cosmology is clinically dead and that the official declaration of death is only a question of time. When Big Bang cosmology will fall, the idea of supersymmetry in the first moments of the Big Bang which is the basis for the standard model where antimatter particles play an essential role will lose its theoretical basis. When Big Bang will be declared false also supersymmetry will become questionable and consequently the existence of predicted antiparticles of the standard model. For now, this is the neuralgic point of physics that almost nobody is ready to touch [22].

4. Conclusions

The idea that the universe had a beginning seems one of the most misleading ideas of 20th-century science. It has opened many questions that were never answered. The expansion of the universe was never directly observed and is still a hypothesis. The stationary model of the universe makes more sense, it is scientific in the original meaning of this word. Stationary cosmology has no irrational moments of creation as is the case with the Big Bang model, which seems more philosophical than scientific, it needs the initial kick of the Creator. From 1931 on

the Creator was not found, it is time we acknowledge that the universe's power of creation is embedded in the SMBHs transformation of old matter into huge jets of fresh energy and that the universe is recreating itself.

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