

Philosophical Essay of Models of Universe

Galaxies and Explosions in Eternal Universe

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Abstract

The New Cosmological Revolution, the Second Cosmological Revolution, is to change the model of the universe from the Einsteinian and BB- models of 3+1 universe to the 4D universe. The time in some different way, as is in the DU or WUM or zero- time or otherwise and take more seriously the electromagnetic forces as in the Electric Universe Theory or in Lerner's Plasma Universe. And we must make a difference between the local and the whole universe. These all models are listed in the ACG's article: http://cosmology.info/essays/models_marmet.html

The Model of the Universe needs its own system- oriented handling, and the particle physics, QT can be united with the theory of the cosmology, but the main point is the model of the Universe as a whole. The beginning of the Local Universe needs the QT more than the theory of the Whole Universe. The possible Models for the Whole Universe are Cyclic, Steady State or Multiverse Models. The BB- theory is one of the Cyclic models. This Galaxies and Explosions Model unites them all in one way, that certainly is not yet the final or best one in the physical or philosophical cosmology in the future.

1. Introduction

This philosophical essay and a proposition for model of the universe is developed in the Internet forums¹ in dialog with other interested scholars and amateurs. Beginning of the initial invention that the accelerating going away of the galaxies from the eyes of the observer happens because of the infinite – no edge – property of the universe². It does not follow from the expansion of the space itself as the *Big Bang- theory* (BB)³ concludes and supposes. No one has been able to deny this proposal; only when based on the BB itself. No outside proof exists to refute the idea, so the idea might be the right one. The no edge property of the space of the universe exists in reality, expansion of the space exists only in the BB- theory, not likely in reality, and absolute infinity is not a physical thing either in the reality.

After that we have got many other philosophical ideas in the discussions. This was only the beginning. Also, the concepts of the eternity and infinity were handled thoroughly (in my books anyway). Most important is to make a strict difference between the local universe and the whole universe and handle them separately. And think again the concept of an observable universe. The observable universe is nothing that exists in the reality, it depends mainly of our capacities of observation, and only the limits of the velocity of the movement of light and other radiations and observations are exact limits in the reality. And we can know more than we observe, because we

¹ <https://www.tiede.fi/keskustelu/77392/filosofiaa-mitka-ovat-kosmologian-ikuiset-kysymykset> and Suomi24 filosofia and tähtitiede (astronomy). <https://keskustelu.suomi24.fi> and in some international forums. Also, in the ACG, A Cosmology Group, <http://cosmology.info> or <http://a.cosmology.info>

² OS: Filosofia, 1986. OS: Maailmankatsomusta etsimässä. 1994. www.santavuori.com

³ Big Bang means that the universe can have a beginning and it can expand. And does so.

can make some conclusions from all that we already know to the local universe and to the whole universe. We can make, invent, theories of the whole universe, and test them by observations.

Local universe and whole universe are theoretically exact things, which exist in the reality. If they are separate things, as supposed here. BB has concluded that they are the same thing. It is a not proven premise there or a proven conclusion. It differs what the proponents say of this.

It is a fallacy, that we can form a theory primarily or only from the observations. That kind of erroneous thinking comes from the empirical and naturalistic philosophy, which prevails in the academies. The science is not empirical or rational but both. Models and observations in the science go after each other eternally until the truth - the best possible map of the facts in the scientific community⁴ - is achieved some future day in the extremely far future, if ever. And it might be a fallacy that the limits of the observable universe are the same as the limits of the whole universe. In BB it is supposed that the observable universe and the whole universe are the same because the philosophy there is, that we cannot know anything more than what we observe. Well, they are not quite sure what they think here, but they do not see that the observable universe and the whole universe are not necessarily the same thing, and the local universe and the whole universe are not necessarily the same thing.

We know from the astronomy, that the galaxies form groups and chains, and this is how the universe looks like in a noticeably big area.⁵ How long, we do not know. What is farther away is only a hypothesis, and it is different in *Steady State theory* (QSSC), in *Multiverse- theories* (LMXT), in *Dynamic Universe- theory* (DU), in the *Cosmological Time- theory* (WUM)⁶ in this proposition for a theory (M-34DU)⁷, and in other theories. And besides galaxies and stars there are almost void areas too. And black holes in the galaxies.

The whole universe might be like this: *galaxies in chains in an eternal universe*. This is one way of interpreting the data we have. We can really say that the modern astronomy has already solved the main problem of the cosmology: which kind of universe we have there in the space?⁸ This is one way to think how things are there.

This proposed model now states differently as others, that *this situation prevails eternally and everywhere*. The Steady State of the universe is: *galaxies everywhere*.

There is always some ultimate basic way how the things are, an ultimate reality. This might be so that in the case of the universe we do not have to go and seek farther than the chains of the galaxies.

⁴ *Stephen Toulmin* uses this map- analog in his philosophy of science, which professor *Oiva Ketonen* recommended to me in studies in the University of Helsinki of the Philosophy of Science. "An Introduction to the Philosophy of Science" (1953)

⁵ The latest map: https://www.forbes.com/sites/startswithabang/2020/07/21/how-our-record-breaking-3d-galaxy-map-reveals-the-universe-as-never-before/?fbclid=IwAR1Cxxv1KspFzk_FPeN1fPL0M0bjmcPsdPskMKSLamSONUQzG6FXjZFojg#5dc505a62f1d

⁶ <https://vixra.org/abs/2011.0038> Hypersphere World Universe Model: Cosmological time. Vladimir Netchitailo. http://cosmology.info/essays/models_marmet/wum-20200117.pdf

⁷ http://cosmology.info/essays/models_marmet.html

⁸ Nobody has not yet realized this important fact. It is my invention that the whole thing seems to be so simple now because of the developments of the astronomy. The scientists continue with their calculations, but the whole real problem, understanding the universe, is already resolved.

(And in the case of matter and energy it may be so, that they too have always existed, we do not have to seek any beginning of the matter and energy.)

The Multiverse theory normally states that our universe of galaxies is only one of many similar universes in the infinite multiverse and may be so on and so on still farther. But it is also possible that it stops here, that this situation of chains of galaxies is already the ultimate Steady State. And it has not any beginning as in BB. This situation has always been like this and is everywhere like this. Also, theoretically there might be many kinds of super- part- universes between the ultimate whole universe and our local universe: local universe, other local universes, super (part-)universes, the ultimate total whole universe. What we must – to use the terms in right way – mean by the “universe” is always the “total, ultimate, whole universe”.

This way of thinking is possible only if there are also eternally sometimes somewhere big and small *explosions*. Local Bangs, *Multi Bangs*. This is a simple solution to all the main problems of the cosmology, even when this is only a theory in the philosophical level, and it is not sure that this is the right one. Some other theory might of course be still better. And this is not a thoroughly formulated physical- mathematical theory, which needs time (movement) and space and matter and energy and forces all together in an exact form. And as has been said, differently for the whole and for local universes. This philosophical theory can be put in mathematical form, as any other philosophical, cognitive, verbal theory of the physics of the universe.

But it can be said, and this is amazing, that the whole philosophy and theology is ready as far as it can be understood nowadays. One can disagree, but this is the best of the alternatives. And from this philosophical theory follows some hypothesis that can be tested in astronomy. In normal Multiverse- theory it is not possible. The other “universes”, in fact only part- universes, are not visible there. Some of the local universes are visible if this theory is near the right one.

Big explosions will be seen in the astronomy in the very moment an astronomer starts to think that way. Or this model is wrong. But the truth is that every star and celestial body is from some explosion. So, the *LambdaCDM- model*, the prevailing BB- model, is going still more to wrong direction when it abandons the explosion⁹. (It abandons the Bang, because it has to cope with Lerner: “Big Bang never happened.”)

And there is no need for the beginning of the universe because it can be eternal. The beginning comes because there is supposed time for the universe; time, that is not eternal.

And there is no need for the expansion of the space, because it is possible that it has always been as big as now. The expansion comes because of one interpretation of the redshift, by the expansion of the space. Circular interpretation if used to prove the BB. There is a better interpretation by the other properties of the space. And interpretations by different understanding of the redshift.

In the Appendixes A-I is collected all the other achieved thoughts of the cosmology, answers to some critics and some profounder understandings.

⁹ https://en.wikipedia.org/wiki/Lambda-CDM_model

2. Philosophical background

Philosophical thinking in the academies is normally naturalistic¹⁰ in this day. This is not the only and the only right way to think in philosophy. It is based on empiricism and on a very atheistic thinking. It is possible to think more rationally and more dialectically¹¹ and more holistically. Here we do not go more deeply in these matters. Anyway:

No scientism:

Which kind of universe we have? The cosmology is all the answers to that question. This question is not only scientific, it is a philosophical and religious question too. It has meaning for the whole understanding of the truth, of the reality, it is a world view, not only science. To handle it only as a scientific question is scientism, not science, not sound philosophy.

There is only one whole universe, and it is not known, which kind of the universe we have here. We do not know whether there is a God or not, and what is the relation of the God to the universe. We do not know whether materialism is right, or whether idealism is right. We cannot ask just when and how the universe has begun because it can be eternal without any beginning and end. We can only make clear the alternatives, and only one of them supports BB. And that one is not a good one, anyway not the best of them.

What we know? What we do not know? What are the alternatives to the unknown things? This is how we must think these things in philosophy.

No physicalism:

Cosmology is not only physics. Even when the word is so used in science now. To think so is bad philosophy, physicalism, not science. Only the physics of the cosmology is physics. Cosmology is all the answers to the main questions.

The earth is in the universe, and to handle things in the earth we need all the sciences, physics, biology, psychology, sociology, and theology. Unfortunately, we do not know the things in other habitable planets. But we can make some philosophy of them. Philosophy is the science to handle unknown things in the best available way. Philosophy is the science to handle the universe in the right way, not the physics only. We can make a difference between physics, science, and metaphysics, philosophy, but metaphysics is the broader entity and has its influence on science.

We can make the alternatives visible and only one of them supports BB and it is the worse of them. Alternatives to the biology, to psychology, to sociology and history, to theology, in the astronomy of the universe, all this can be made in philosophy. They are only enlightened guesses by the achieved knowledge, because we know so little.

BB is not the only and right theory in cosmology:

In physics the BB- theory is only one theory, not the only one. Not the right one. Even when the mainstream says so. It is only their opinion, other scientists disagree.

¹⁰ [https://en.wikipedia.org/wiki/Naturalism_\(philosophy\)](https://en.wikipedia.org/wiki/Naturalism_(philosophy))

¹¹ <https://en.wikipedia.org/wiki/Dialectic>

Alternatives to the physics of the universe: Infinite and eternal models, BB- models, Steady State models, Multiverse models, Cyclic models, and others.

Eternal universe

The whole universe, as a unique, peculiar entity, is eternal, and there is only one universe. That is a logical truth, or anyway it is rationally the best way to think this matter. But it is not so clear, what the eternity is in the universe, or anywhere. Here it is not something absolute, it is something that there really happens to be. So, this can be the solution to the whole problem of the beginning in the BB- theory. When we go far enough in time, the difference between the eternity and the beginning disappears. Looking from here, anyway, and that is what we are doing in the observational astronomy and cosmology. We need theoretical cosmology for understanding what there really is.

Infinite universe

The same is with the space. It is infinite, but not absolutely, not mechanically, not dogmatically infinite. When we go far enough, the difference between the finite and infinity disappears. In the infinite universe there is no edge, but there is all the space, and there is this kind of limit anyway. The whole non- Euclidian geometry is about this reality, it fits better here in cosmology because of this reality.

So, in the cosmology we must understand that the observations of the movements and forms and everything of the far away galaxies are not what we first think after these limits and near them. Where this difference disappears? And where is the limit of the light and other radiations getting here? Is the 13,8 billion years in BB- cosmology because of these things? As a circular argument, as a limit of observation, not as a limit of the universe?

3. The local universe

The local universe is all the galaxies that stem from the same beginning as the Milky Way. It expands only so long as the explosion expands. *General Relativity theory*, GR¹² handles all the happenings there in a sufficient manner, when all the forces are included that there really are: the gravity, the electromagnetic forces and all the forces what there happen to be, gravitation first as always. (Gravity can be a real force; this is one thing where GR maybe thinks wrongly.)

Without study we cannot know which galaxies belong to the local universe. They are not necessarily all from the same beginning. This is only the position of the BB. We should know the age of every galaxy, and the distribution of the galaxies, and we do not yet know these things exactly enough, and not independently of BB- theory.

¹² https://en.wikipedia.org/wiki/Theory_of_relativity

Time of the galaxies, stars and planets depends on the velocities of their movements. GR states that. Local universe, and every other local universe, begins in an explosion, then there is a big cloud, then the stars and planets form themselves, then the galaxies and groups of galaxies and chains of galaxies. Someday in some area the galaxies collapse to black holes or some big crunch happens anyway, and someday this all explodes, and everything begins again. The quasars might be these explosions, at least some of them. Black holes, quasars, centers of galaxies, and local big bangs might be the same phenomenon in different sizes and phases (note this, this is an invention, if true!).

This locality of local universes explains the *entropy*¹³. Everything begins again in this area. And the universe is different entity as a closed or open system.

The Bang points can be calculated to the place and time where the galaxies go younger and younger. This locality of our galaxies explains the *spectrum* of most of the galaxies (from which the amounts of the matters in the galaxies and so the ages of galaxies are estimated with other means), because we mainly see the local galaxies. Only them, says the BB and the Multiverse theory. But nobody has studied all the galaxies, and the ages must be studied again. They cannot be evaluated rightly by the BB only.

4. Other local universes

When we know which galaxies belong to which population, we can have some idea of which kind of different populations there is in the visible universe and farther away.

5. The whole universe

If this theory is right, the whole universe can be modelled as a **4D universe without time**. Space dimensions all four. The 4th is the infinite – no edge - property of the space¹⁴. And the all- property of the space of the whole might mean that it has a fixed size.

This again:

The universe has no beginning and not outside. It is infinite in the sense that there is no outside space and no edge, and finite because there is all the space.

This verbal expression is an exact formulation of this whole thing: the space and time of the universe. Logically it cannot be in any other way. At least rationally this is sound thinking. Better than any other way of thinking. GR does not think like this, but here it can be wrong. *Albert Einstein* did insist that his theory must be of the whole universe too. But this point is wrong and

¹³ Some people say that everything in the world goes to worse because of the entropy, or that entropy has some meaning for the model of the universe anyway. It is not so clear.

¹⁴ The Kaluza- Klein theory and other 4D theories have been criticized of not having any reality in the 4th dimension, but this no edge property is in the reality, and it can be put in the theory by the 4th dimension. This is my invention, that the 4th dimension is in the reality in this way. That it is in the reality.

leads to the beginning and expanding of the universe, to BB. Which things are absurd, at least it is not a rational way of thinking about the universe.

This verbal expression can be put in mathematics in various ways.

4D is one possibility to say this mathematically. If we choose this mathematics, the space of the whole universe is not 3D, not 5D¹⁵, but exactly 4D. The 4th space- dimension is the fact that there is not outside, but there is all the existing space. It is infinite, but it is at the same time finite, because there is *all* the existing space.

It is not easy to understand how the time must be handled, but one possibility is that there is no time for the whole. Just an eternal Steady State. The time is not eternal for the parts of the universe - they are moving, dynamic, have time, evolution, and development – but it is eternal for some static properties of the universe.

The universe consists of innumerable local universes and we have no clue how big it is. We do not see the whole universe, but we might see some of the local universes. They merge with our local universe. There are whole the time clashes, merging of local universes, but the prevailing theory hinders us to see this, to understand what there happens. The chains of the galaxies fill whole the area of the whole universe, but all the galaxies are not from the same beginning, and the local universes merge with each other without so much trouble in doing so. Or some bangs are from the clashes.

When we think of the whole universe, the philosophical tools¹⁶ are better than the mere physical tools. Part of the philosophy of the cosmology is the same as theoretical physics of the cosmology. Philosophers have left the cosmology to the cosmologists, so now the cosmologists must handle the philosophical problems themselves, they should think like philosophers here in the philosophical problems of the cosmology. Are they ready for that? (No, they are not ready.)

In philosophical cosmology we do not have to turn whole time to the mathematics. This is totally or mostly a philosophical thing to understand which kind of the universe we have in the sky. It can be formulated in a verbal scientific language. Mathematics is not a mystical matter; it is only the language that is needed here, in physics. Whenever we have a verbal theory of the universe, a philosophical theory, we can make a mathematical model of it. And then test it in the astronomy.

And cosmologists deal too much with their observable universe, which is not so good concept as they think. The local and the whole are better.

And everything in the cosmology is not physics. It has its philosophical, biological, theological, astronomical, geological, and other scientific aspects too. Everything that exists in the earth, exists in the universe whole time, because it exists in the earth, and the earth is part of the universe.

¹¹ The Kaluza- Klein- theory is a 4+1 theory, so in fact a 5D theory: https://en.wikipedia.org/wiki/Kaluza-Klein_theory

¹⁶ Look the tools in my book of philosophy in the home page <http://www.santavuori.com/Filosofia2019.html> p. 8-12 in the pdf- form of the Epistemology (Tietoteoria).

Mathematics must be applied rationally, physically, and empirically in the right way, that is the main thing in sciences, not the mathematics *per se*.

Cosmologists should read this essay of *Louis Marmet*: “Criteria for a Scientific Cosmological Model” in ACG.¹⁷ Because it also handles the relation of mathematics to physics, even when it also warns against metaphysical models like mine.

This rational thinking of the universe might be a revolution in philosophy too: something can be said of the universe from the logical point of view already. Normally nothing follows from the logic to the reality. Logic is only tautologies and concepts, nothing more. Logic says if the conclusions follow from the axioms, the premises; but the premises themselves must be concluded from the sciences and other concepts of the human understanding of the truth.

From the universe we know that it has all the space without outside, there is all the matter and energy, there is only one total, whole universe and it is eternal. Is it so? If it is, then something in the reality comes straight from logic. And there might be still some more logically fixed things.

6. Entropy, spectrum of the galaxies, microwave radiation, red shift, fine tuning, extrapolation

Some things are considered as proofs for the BB. But in fact, every theory has its own explanations for these matters. The explanations for entropy and the spectrum of the galaxies are already handled here before. These physical matters will not be discussed here more deeply. Others can handle them much better in ACG. Only the red shift, fine tuning and extrapolation are also philosophically important matters.

In this theory the Multi Bangs everywhere eternally explains the *microwave radiation*. There has always, eternally been explosions in the universe, so there prevails this kind of radiation. Some explosions have been nearer, which explains the minor differences.

After this invention this too goes from philosophy to physics, as entropy, and spectrum of the galaxies, from which the amounts of different matters in the galaxies and so ages of galaxies are evaluated.

This radiation is not a proof for BB. Every cosmological theory has its own explanation for it.

The infinity – no edge – explains the *redshift*, the observable movements of the galaxies. *Expansion* is not real, it is theoretical, it comes *from the theory*, and from interpretation of redshift by the Doppler phenomenon; the *observation is exactly and only the redshift*. The observed, concluded, *movements* of the galaxies are to some extent real. They depend mainly on other properties of the space and time of the whole universe, not from the expansion of the space.

¹⁷ Luis Marmet: https://cosmology.info/essays/criteria-for-a-scientific-model_marmet.html The distinction between physics and mathematics.

The movements tell us which kind of the space of the universe we have there. You cannot go out of the space of the universe; everything just goes round and round and round each other's. The space of everything is different of the space of a ball for example. But this is a ball- like entity. It maybe has a fixed radius. And the time in the distant galaxies goes differently as we think when we look them from here in an infinite universe.

The red shift tells us that the universe is a boundless 4D ball-like entity. From the Hubble's law, from the Hubble constant we can mainly estimate the size of the 4D universe, it does not measure the velocity of the expansion of the universe as is supposed in the BB- theory. Its interpretation depends of the theory.

This steady radiation with the observable almost steady chains of the galaxies, proves that this kind of Steady State, **Galaxies and Explosions**, probably **is already the Ultimate Steady State of the universe**

Fine tuning is a question of the philosophy of science. We do not chance the reality; we chance the theories to fit the reality. The reality must be studied as such as it is, without any foreign presuppositions of the reality. This is the first principle of the science, *philosophical materialism*, and so is the *epistemological realism* and the *correspondence theory of the truth*¹⁸. In philosophy they can be argued, but in the sciences, these are supposed always. Otherwise it is not possible to make science. The other theories of truth are also important in the sciences, but the basic supposition is the correspondence theory.

And of course, the *Quantum Theory*¹⁹ has made the whole *concept of reality* different as before, but anyway these principles are true and right and necessary in making science.

In the universe there is not anybody to fine tune the universe. Because there is not any outside to the universe. At least there is not any beginning from the void to existing. In the earth there can be a Creator who has finetuned the things in the prevailing order of the globe. Because the earth has the whole universe outside of it. (Whole the material reality of our human world might have an outside spiritual and divine reality too, but not the whole universe.) This is a religious question and not possible to solve in science now or never. Its solution goes to the realm of religion.

Extrapolation in the atomic level in BB presuppose a beginning for matter. If it is only a local universe that begins, the happenings are something that happens in the nuclear explosions of the black holes and galaxies. It is not the beginning of matter from some pre- matter at the same time in the whole universe, exactly in seconds as they now calculate. Extrapolation needs mathematically exact and *right* theory, but we are not there yet. Extrapolation in cosmological level is handled in Appendix I.

7. Biology of the universe

¹⁸ These terms can be looked in the books of philosophy.

¹⁹ https://en.wikipedia.org/wiki/Quantum_mechanics

Cosmology, at least astronomy is not only physics and geology, there are beings also in the stars and planets, humans, and *flora et fauna*. And there might be gods, angels, and aliens. If they have something to do with the cosmology, it depends on how much powers they have. We have no clue; this goes again to philosophy and now also to theology.

8. Theology of the universe

We have no scientific knowledge of the gods.

But one thing is important to note. The theory of *creatio ex nihilo* (creating from nothing) is logically impossible; there has always been something, the whole universe is not created, has no beginning. Beginning and creating are same as organizing the existing things and elements, not creating them from nothing. Nobody comes from the outside of the universe to create the universe, because the universe has not outside. This needs not any other proof: the universe simply has not outside, nothing can be created from void and there has never been and will never be such situation that anything at all does exist. Something is now, you cannot deny that²⁰. (Now is only time the universe has (this can be doubted)). You can speculate otherwise, but it is nonsense.

If there is the spirit world, then something can come from there, but that is a different question. And the spirit world is in the universe, not outside the universe.

In the physics too, the singularity, whatever it is, is not a beginning of the whole universe. Only the local universes can have their beginnings.

The eternal and infinite – no edge - universe is a materialistic and not an idealistic theory. It has nothing to do with religion, as so often has been said erroneously in discussions. The theology comes to cosmology only when we start thinking what the relation of God and Universe is, and when we speculate of the question of beings in the universe. These questions are not normally considered scientific, but in fact they are. We just do not know how they are. It is pure philosophy to handle them, but philosophy can handle them. Atheists think otherwise, but atheism and theism are world views, metaphysics. Atheists leaves the gods away of reality, but the agnostics and theists leave them not. So, in the pure science you can do both ways. It depends on how you think philosophy, metaphysics, is it science or not.

In the physics of cosmology, it is maybe best to ignore whole the question of theology. But we cannot avoid theological issues in the philosophy of cosmology, and somehow it might influence our theories. Naturalists accept only atheism and ignoring whole the thing. Science should be agnostic.

9. What is wrong in the BB?

²⁰ This is the answer to Jim Holts question in his book: “Why does the world exist?”, 2012: Descartes’ *cogito, ergo sum*. The question: why there is something, why it is not so that there is nothing. Answer: There is something, that’s it.

Rationally it is clear that the universe is not expanding, and it has not a beginning, it is much better understood as infinite and eternal. BB gives a wrong view of the universe, even when it is very well in the calculations of the astronomers, so they love it and are not willing to change the theory, to abandon it. This was the situation with the Ptolemaian view of the solar system too. But in the long run the theory became too complicated and some observations were against it. And finally, there came a better theory, which was bitterly opposed by the scientific community and church authorities. And everybody could see this in the sky too, after making a little thinking.

This is the situation today also. BB is wrong and it is already proved by science, but the truth is bitterly opposed by the scientific community and church authorities (this is humor). Supporters of the BB say that there are no observations against it, it can explain all the facts, and there is not any better theory. But this just is not true, the models and facts of observations which ACG has collected proves it²¹. And today everybody can understand that BB is wrong. Everybody, but not the fine scientists.

Contracting observations are better explained in the pages of ACG, but these things can be said here: there are too many galaxies in a too big area, so that it is impossible that they all are from the same Bang. This is the thing that everybody can and should understand. And the ages of the individual galaxies, when valued independently, will eventually show this, there is too old galaxies too far away to fit with the BB.

BB can explain all the things, but to do it, it includes many odd and some impossible things, singularity, inflation, expansion of the space faster than light and others.

And as stated already, it is rationally wrong anyway if not experimentally in the minds of mainstream scientists. It is true that the macrocosmos and the theory of it might include peculiar things, but not all these together. Much easier is to change the whole theory.

Better theory is maybe missing, but as you see, there are already many candidates, so it is not true that these are not existing. And they are not all refuted as it is often said. They are refuted only because they are valued by the BB. Independently valued they are not all refuted. And it is possible to be eclectic on the question of which is the best theory. This is new for physicists, but common in psychology and history and sociology.

The most important thing is, that BB- thinking is logically circular thinking whole the time in many ways. All the observations do prove the theory in the mind of the proponents. But this is circular because they can be explained by other theories too.

Circular means that the BB theory proves the BB theory. To some extent this is normal in science because we do compare theories with all the achieved knowledge. But this way can also be just circular thinking.

BB forces the facts to the theory, changes reality, when true science changes the theory, tries to find such a theory that fits the facts in the best available way. To form and find a better theory is to make

²¹ List of models here and other articles in ACG, A Cosmology Group
http://cosmology.info/essays/models_marmet.html

science, to be solely a proponent of the BB, is dogmatism, it is right only if this theory is the best and only, and there are no better ones. BB- thinkers think so, others do not.

Second reason for the opinion of the scientific community is that nature of the universe has only philosophical meaning. The astronomers are not really interested of that. For the philosophy it is important whether the universe is eternal or not, infinite or something else, and in which way infinite and eternal. For the astronomer only their calculations of the galaxies and stars matter. They take such a theory that is most practical and developed for their uses. With a wrong theory, in the long run they will get wrong results of the stars and galaxies too, and this has happened already in the study of the galaxies. When the hypothesis, axiom in BB, is that there is always an “young universe” far away, the results of the galaxies are erroneous.

Third reason is money. Money does not come to the hands of the dissidents. Nor the offices in the academies. This is an awfully bad thing and not good for the science and the fame of it.

10. Summary

The possible models of the universe are Cyclic models, Steady State models and Multiuniverse models.

This philosophical model unites them all in a Galaxies and Explosions in a Steady State Eternal Non- expanding MultiBang Whole Universe model, and a Beginning Cyclic Local Universe model.

Static Whole Universe and Dynamic Local Universe.

In this proposition for model, the whole universe is chains of galaxies, and explosions in an eternal universe. This wholeness of all has no time in any normal sense, it is static. Its space has two contradictory properties, it is infinite in some respect and finite at the same time from other angle: it has all the infinite space, but no outside place exists, so it is not absolutely, mathematically infinite. This situation can be handled by various ways, but the BB- way is absurd, wrong, and old fashioned.

Something of the universe can be concluded from the philosophical ground, rationally, and this should be taken in account in the empirical studies.

It is imperative to differentiate between the local and the whole universe. The local begins, the whole not. The local has expansion in the beginning, not anymore, the whole only seems to expand, because the galaxies move away from the eyes of the observer in such space as the universe really is (maybe 4D space, 4+0 universe), in a somehow infinite space and eternal unknown time. When we look the far galaxies in the 3D frame, the movements are movements away of us, but when we understand that the movements happen in the 4D space, this kind of movement is not what actually happens, it is only superficial. As the movement of the sun in the sky, there we move, not the sun.

This is the solution to the whole problem! How to get rid away from the beginning and expanding universe, of the impossible BB: Different theory for the local universe and for the whole universe.

Every prevailing theory of the whole is still just an enlightened guess. Even when they are mathematically exact theories. GR is not good enough for a theory of the whole. And this means that also the theory of the local happenings is not exact. We only can continue to test the theories; to choose one as best too early is the main fault of the prevailing cosmology.

We do not have observations of the whole universe; we can only make models and test them. From the other local universes, we might have observations, because we see already hundred billions of the galaxies.

How we think the total universe has influence how we interpret the observations and how we see the local universe.

It is possible to make a theory on the eternal and infinite (boundless) ground. The whole universe is like that, not the local universe or the observable universe. These terms, “eternal” and “infinite” just must be understood better and more profoundly, as has been tried to do here. The analysis of concepts is the task of philosophy always. And the analysis of the premises of every theory.

Models for example: GR with the cosmological constant, Steady State²², when modernized, or Multiverse²³, or Dynamic Universe, (T. Suntola)²⁴, Cosmological time (V. Netchitailo), or MultiBang (A. Trepanier)²⁵ there we have similar and almost ready physical- mathematical theories for this frame too. This essay is not so much a ready model as a program to make one, and a way to make comparisons between theories. To make physical models, as a philosopher, without physical-mathematical competence is impossible. This is only thinking of the possible models in the philosophical level.

But of every philosophical model can be made a mathematical model. The physicists cannot any more intimidate the philosophers by their higher mathematics, as the BB- thinkers have tried to do always.

Now, in cosmology, we must be eclectic, approve many theories for a while, or some anyway. This is a solution too.

²² QSSC, HyC for example in the list of models.

²³ LMXT for example in the list.

²⁴ DU in the list.

²⁵ WUM, LMXT in the list

More sources and thanks:

Thanks to *Louis Marmet* for critic to make my thoughts and arguments more clearly understandable.

All the arguments are in my homepage in books and articles in a more detailed way, but this is more developed. My philosophy is epistemological realism, holistic dialectical philosophy, and philosophical materialism. The philosophy of BB- thinkers is philosophical naturalism and empiricism, which are basically near epistemological idealism.

Other sources are the other theories mentioned here and the normal textbooks of astronomy.

Homepage: www.santavuori.com

Moses 2:1. In the Book: Pearl of Great Price. Utah. (The creation story is from this earth and this haven (not from the universe.))

To refute *creatio ex nihilo* is not my own invention but the specific arguments here are. It is one classic Christian tradition, also in:

Joseph Fielding Smith: Teachings of the Prophet Joseph Smith. Utah 1976 (p. 348 for example in the Finnish edition)

Appendixes

Appendix A. Entropy

Entropy is something that has more meaning with the question of evolution and creation than with cosmology. But some people think that entropy in cosmology is especially important and say that it proves this or that theory as a wrong theory.

When we think of our somewhat infinite universe, the entropy is totally different as in a closed or open system. It is only the fundamentalists who insist that the entropy ruins the evolution theory. In cosmology it is like I said here before, that

1. everything locally sometimes begins again, so the development of entropy begins again, and
2. the entropy is different in this kind of entity, which the universe is, as in any other kind of entity.

Appendix B. Why it is not so that there is nothing?

Why there is something and why it is not so that there is nothing? The answer is *Descartes' Cogito*. *Descartes' Cogito, ergo sum* (I think, so I am) means that there is something now. When this is an indisputable fact, then there is no need for the opposite, that there is nothing. The situation that there is nothing, does not exist. Also, the wholeness of everything does exist, and it eventually has no other time as now. Eternal *now* might be the time of the universe.

The existence (existing) of the whole universe is little different as the existing of all the other things. It does not exist in some bigger space, and its time is different; eternal time or no time at all. It is not in the space and time. But it exists; differently, but it exists.

Jim Holt (Note 20) has made a whole book of this speculation, but the answer is this. "Hard fact" as he says as one of the answers. But it *is* the answer, solution to the whole problem. "Hard fact", that there is now something, is the solution to this problem.

Appendix C. Redshift and 4D and time and space

We just must think *vice versa*, upside down. Don't ask why the galaxies move like they move in the context of GR and BB, you have to ask in which kind of the space galaxies move like observed, or seem to move, as thought by measurement of redshift and its Doppler interpretation. The space does not expand, galaxies just move as they move. You can say that such happening is an expansion, it depends on the meanings you put to the words, but anyway it is not an expansion of the space. No more space is coming from nothing, universe is not becoming bigger. Even when matter and space are relative.

And this proposed 4D is only one way to make the model. There might be better ones. But thinking this way means that the 4th dimension is in the reality.

In 4D space, with an enormous, fixed radius R, they can move like that. Others say often that this does not explain the movements. But it really does. Especially when you take the time too there in the explanation.

The time of the whole is different. No time at all, an eternal time, a cosmological time, an unknown time? Time like in DU²⁶ or Cosmological time.²⁷ Must test the models. This also has meaning to how we interpret the redshift.

By the history of the cosmology:

Einstein put to his theory the cosmological constant to conserve the infinite and eternal, static universe. But when he realized that without the constant it was good with the BB theorists, he abandoned the constant. This was where the cosmology went to the wrong direction. The right and scientific way should have been to think in which kind of the space and time the galaxies move like observed by the redshift and its Doppler interpretation.

The right way should have been to abandon the beginning of the universe and the expansion of the space, to preserve the constant and abandon BB, to take an extra space- dimension. Finnish astronomer *Gunnar Nordström*²⁸ suggested something like that. This was not done, and even *Fred Hoyle* did think that the space was expanding, and *Halton Arp*'s comments were not accepted. Fortunately, these lines, The Steady State and Electric Universe have continued. Also, the lines of Nordström and *Kaluza- Klein*²⁹ have followers (DU) with the 4D universe.³⁰

The red shift is a proof that the universe is a ball-like 4D entity, and from it we can estimate the size of the whole universe!

²⁶ DU in the list of models

²⁷ WUM in the list of models

²⁸ https://en.wikipedia.org/wiki/Gunnar_Nordström

²⁹ https://en.wikipedia.org/wiki/Kaluza-Klein_theory

³⁰ Look the list of the models http://cosmology.info/essays/models_marmet.html

And about GR:

Here can be stated also the four problems with the GR: (1) Time is not a dimension, but the 3+1 (4D space- time), the fact that GR- theory has four dimensions, is the reason for the success and apparent total rightness of the theory, (2) the space of the whole universe is not 3D, as it still is in the GR, (3) Gravity is a real force and not so as in the GR, (it is also not effecting by gravitons, by any quants, but by some other unknown means), and (4) it is wrong to generalize GR to the whole universe, it fits only (approximately) with the local universe, the whole universe must be handled otherwise. If we generalize it, it follows that the whole universe has a beginning, which is absurd. The total universe needs different kind of theory.

Appendix D. Ultimate reality

Where stops the going farther and farther, having a bigger, deeper reality of things? It can go ever and ever or stop somewhere. Best way is just to think, that there somewhere is an ultimate reality. This cannot be proved in any direction, but we can think that there is an ultimate *Steady State*. We do not know which kind it is, but it is there. Seems to be the chains of the galaxies, but it can be still bigger thing as the Multiverse theory seems to think. The part- universes can also be separate bubbles in the greater universe.

The microwave radiation might the proof of the ultimate steady state of eternal explosions.

Appendix E. What follows from logic?

The universe is a totally different entity than all the other entities and things³¹, so we must thoroughly analyze it before making dogmatic proposals or thinking it only on the observational base, we do not have direct observations of it.

The whole universe already logically:

- Eternal somehow
- Infinite in one sense, not outside, no edge, finite in other sense, all space
- At least somehow static size (big, never small, always big), even if in the model the space and fields are somehow interconnected, even if there is some kind of “ether”, or plasma
- Only one total, whole universe
- Ball- like, not a ball
- Parts dynamic, static whole in some respect
- The total amount of the matter and energy is not changing, because there is no outside
- What else, what from indisputable observations?
- All these terms must be analyzed to their right and ultimately profound meaning
- Logical connections and summary of these all
-

³¹ <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.694.576&rep=rep1&type=pdf> for example, *Georg Ellis*

Appendix F. Biology

The relation of living organisms to material reality. It is maybe not so clear, when we come to the highest living forms. In my books of philosophy (now only in finish language) I have not considered this aspect. Only that there are four levels, matter, life, humans, and maybe gods. What if the universe is a living organism too? Meaning that not only the matter has always existed but also the intelligent beings and life has always existed? And the higher life forms and conscious forms are higher than pure matter. As matter, they have also always existed. Why not? The evolution and creation might be a circle, not only so that evolution makes living beings.

But I have speculated of the life in the space. In my mind it exists, and it is *knowledge*, not only a hypothesis, because it has been knowledge since Bruno, since we understood that the stars are suns, since the great philosopher *Giordano Bruno*³². We can rationally reason it from the facts we already know, how *much stars and galaxies* there are, from the *evolution* theory and from the fact that *life and humans* exist in the earth. From these tree things it follows almost logically.

Science is theories, good and right (best) theories, observations *per se* are only pre- science and used for forming and testing the theories.

³² https://it.wikipedia.org/wiki/De_1%27infinito,_universo_e_mondi There are many worlds, because stars are suns. And the universe is eternal and infinite.

Appendix G. Theology

In my books of philosophy.

Here has been stated already, that the *creatio ex nihilo* is not a good idea logically and rationally, and that the infinite and eternal universe is not a religious statement, it is a totally materialist statement, not an idealist one.

And theology in this case, in cosmology, is answer to the question: what is the relation of God to Universe? This is a scientific, metaphysical question in philosophy and does not matter what you think of God and his existence. Only an atheist thinks that there are not any gods. The science does not yet know how this is.

And of course, in philosophy we need to say which kind of gods we are talking about. There are gods that do not exist and gods that might exist. The existence of God is a big philosophical question always.

Appendix H. Cosmology, Creation and Evolution

Evolution has something to do with universe. The solution to the problem of creation and evolution in the cosmological level might be an eternal circle. This is the same question as the question of materialism and idealism. Which is first, the spirit or the matter? The answer is an eternal circle.

Or the universe goes materialistically and the earth idealistically. I have made a longer article of the evolution in the universe too: <http://www.santavuori.com/Evoluutio2.htm>

Appendix I. Extrapolation

The conclusions of the past of the universe in BB- theory are based on an extrapolation of the now prevailing situation to the past by that theory. The reliability and validity of the conclusions depend on the reliability and validity of two things.

- a. The view of the prevailing situation in the universe, by that theory, and
- b. The view of the history of the universe by that theory.

The first is that now the universe is about 93 billion light years (I am not sure what they now say) wide and is expanding in an accelerating velocity. It consists of galaxies that are all from the same beginning. What we see in the sky is a younger and younger universe everywhere.

In fact, we do not know, what there is farther than observed by telescopes, but we do know, that we see the galaxies and everything only in the form they have had in the past. We do not see how the things are now. We just estimate it by theory.

The history is that it has been smaller and now is expanding. This also is known only by theory, not by observation. The observation is redshift, the size and luminosity of the galaxies, supernovas, radiation and so on.

How can anybody from these observations and this theory extrapolate the past exactly? How can anybody have such firm believe in any prevailing theory? The mathematics can be exact, but the reliability and validity of this theory are not exact.

From the theory, supposing that it is right, its mathematics and physics all can be calculated exactly from the beginning to the situation now. There are also animations of that:

<https://www.youtube.com/watch?v=74IsySs3RGU&fbclid=IwAR2yqU7STwuUHAR02e6FEAgBYp48B2rLdwZ0zB2C8mu0E1Mm6hmxT01E6JE>

When you look these animations, you can very well think, that they are from the whole universe, but as well they can be interpreted as happenings in the local universe, and the whole universe is just galaxies everywhere. The animation is good, but it tells of the happenings in the local universe. The history is right, but the prevailing situation is different, it is not expanding any more, and the history is not from the whole universe.

Or you can interpret the facts by some other way. And make different animations. But it is really tempting to interpret the animation by

- Steady State – no beginning, no expansion, just real or superficial movement of the galaxies, in the eyes of the observer - for the whole universe, and
- beginning for the local universe. Expansion only by explosion in the beginning phase of the local universe.

The astronomy has resolved for us which kind of universe we have there!

Also, the new map proves that:

https://www.forbes.com/sites/startswithabang/2020/07/21/how-our-record-breaking-3d-galaxy-map-reveals-the-universe-as-never-before/?fbclid=IwAR1CxwxvIKspFzk_FPeN1fPL0M0bjmcPSdPsKMKSLamSONUQzG6FXjZFojg#733361542f1d

when interpreted by a somehow infinite and eternal universe.