

Theory of the Universe and its Subuniverses. Galaxies and Explosions.

Olli Santavuori 10.9.-1.10.2025

Two different theories are needed, a theory of the whole universe and a theory of our local subuniverse. Making this distinction solves many otherwise unclear things.

Theory 1. The Whole Universe.

The Steady State of the Universe: The basic state of the universe is an eternal, static web of galaxies, the kind we know from animations and galaxy maps. And also, from deep sky pictures. This structure has always existed and is the same everywhere. It is the unchanging form of reality in the universe, the largest structure, although it changes and evolves locally, because it has local big bangs, and galaxy filaments slowly oscillate. It is no longer inside any larger space but is itself the largest possible and existing space. The universe is needed in theories as its own entity, although it exists in a different way than any other thing. It is not inside a larger entity but is itself the largest entity.

There is only one universe. “The whole universe” and “universe” are synonyms. There are no “other universes”, there are only other subuniverses, and there are no “parallel universes” but parallel subuniverses to the subuniverses. All subuniverses and parallel subuniverses together are the universe. All parts together are the whole.

The proof of the web of galaxies everywhere is that it is similar far away and near, before and now. Inductive reasoning. Evidence for subuniverses is that there are highly developed galaxies far away, which cannot be from the same origin as the Milky Way.

Time: Eternal, without beginning or end. It is continuous, it is time what is coming more, not space, not matter. We don't know exactly how we should think of time at this level, but it is not the fourth dimension, it is not a spatial dimension, it is just one property of the universe, like it is one property of all particles, bodies, things, entities and beings. The basic thing about time is the **movement** of bodies etc.

Space: All subuniverses and parallel subuniverses are in the same and only space. Space is external, without outside, and boundless, but not absolutely infinite. The true size of the universe is such that the diameter of this ball-like structure is **the longest possible distance in reality**, denoted **Q**, which is smaller than absolute infinity and larger than the observable universe. The exact length of that Q is not yet known, but the exact length exists as long as relativity does not affect it very

much. The space is ball-like, but without edge, has no surface. Immensely large, not expanding. Such space can be called infinite, but that word does not describe the whole situation accurately. Every point of the universe is in the middle of the universe.

A new word is needed, I use the word “mighty”, to describe all these properties of the space of the universe. The space of the universe is mighty, the word of which is defined by Q, and these listed properties. It is neither infinite nor finite, but something in between, both in some sense. Infinite because there is no limit, and finite because there is size. No more space is coming from nowhere, or created, its amount is constant, because it is external.

Matter: Energy and matter (stars, galaxies, galaxy clusters, clusters, superclusters, galaxy filaments, the web of galaxies, forces, rays and fields) are the matter of the universe. Matter has always existed. Gravity is the most important force and a real force, not an apparent force as in GR. The formula for gravity can be changed from GR to MOND theory. Electromagnetic forces are stronger and diverse than in BB theory. The motions are due to the relative interactions of these forces in such space and time. No more matter is coming; its amount is constant as long as relativity does not affect it very much. The redshift is explained by the distance of galaxies and the properties of such space and time. The interpretation of background radiation is also changed. Together, these new things remove the need for expansion, and galaxies do not move away from each other in the way BB claims. This model excludes expansion and gives natural explanation for redshift, explanation by the model.

Relativity: Time, space, and matter are deeply intertwined and dependent on each other, relative, they do not exist separately, but it is necessary to treat them separately as well. Likewise, the universe and subuniverses.

New concepts are needed: At least Q instead of infinity as a physical-mathematical concept, and some scientific word instead of “infinite” (or finite) to describe all the properties of the space of the universe. I suggest the word “mighty” here. Mighty space describes an external, immensely large space, which the universe from logical necessarily is, although its exact size is not yet known, other than the maximum and minimum.

Theory 2. Theory of our subuniverse and other subuniverses

Theory 1 prevails everywhere, but because we don’t in fact have it, or we don’t yet have it in the right way, we must first make these two different theories and then calibrate them many times, or eternally.

Steady state: The universe is an eternal, relatively unchanging, static web of galaxies. As above, Theory 1. It also has eternal local big bangs, such an eternal steady happening too. They form local subuniverses.

Local Events: Within this eternal steady state, there is a continuous, dynamic change of subuniverses through local big bangs, i.e. black hole explosions, etc., which recycle matter and energy. The whole universe is like “boiling porridge”, or “fireworks”. Big bangs are local manifestations within an unchanging basic state. Thus, everything starts again locally, and the cycles are local from start to finish, and the cycle does not apply to the universe. The end is the joining of new galaxies into the eternal web of galaxies.

Time: Subuniverses have their own temporal evolution. The beginning is the local big bang and its nebula, then follows the formation of stars, and then galaxy evolution, and the end is joining the eternal web of galaxies as new galaxies. The passage of time in each celestial body depends on its speed, as in the theory of relativity, but with corrections by this theory.

Space: 3D is usually sufficient except perhaps in the largest entities. The size is the size of the explosive nebula and the size of the forming galaxy population, initially expanding to the maximum of the explosive nebula, then not expanding. Galaxies from different subuniverses mix with each other, and galaxy collisions can also cause big bangs.

Matter: Matter and forces act the same way both in the universe and in local subuniverses. Our subuniverse is made up of galaxies that originated from the same origin as the Milky Way. Galaxies from different subuniverses mix with each other. Galaxies can collide and cause big bangs. Some distant quasars may be big bangs. Nebulae, dark regions with no galaxies visible behind them, may be big bang nebulae. Bright spots of light that disappear may be big bangs. Black hole explosions may be big bangs.

How to proceed: At first, we do not know correctly, nor do we know accurately either the universe or our subuniverse. As knowledge and understanding of one or the other increases, it affects the other. The development of these theories is therefore a continuous calibration. (See **Hegel**, on the relationship between the whole and the parts.)

This theory can be tested already in astronomy, and from every philosophical theory we can form physical-mathematical theories.

The arguments, discussion and critics are not here, must be done separately. The proof is to test this in astronomy, correct it or approve it or abandon it.

Sources:

<https://santavuori.com> sources are in the other articles of cosmology in my homepage, especially in the article <https://santavuori.com/Kirja2.pdf>