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

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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 is the universe. All parts together is 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, no 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: Four spatial dimensions. 4D space. So those dimensions, vectors, are different from the spatial dimensions in 3D, but all four are similar dimensions. Space is 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. 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.

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 4D and 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.

Matter: Energy and matter (stars, galaxies, galaxy clusters, clusters, superclusters, galaxy filaments, galaxy networks, forces, rays and fields) are the matter of the universe. Gravity is the most important force and a real force, not an apparent force as in GR. The formula for gravity is 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. 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.

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 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. And 4D as the coordination instead of 3D, so that we can model externality, that there is not any outside space. Q and 4D together describe 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

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 network 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, but to show that from every philosophical theory we can form mathematical theories and then still better test them in astronomy, here is one possible mathematics (this is totally preliminary):

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Below is a concise, step-by-step mathematical model that unites
(1) the global (“whole”) Universe,
(2) a system of “sub-universes,”
(3) galaxy distributions & explosions,
and (4) the Steady-State hypothesis.

Each variable is defined on first use and every formula is in KaTeX.

Step 1: Global metric (FLRW)

• Let (t) = cosmic time, ((r,\theta,\phi)) = comoving coordinates.
• Let (a(t)) = scale factor, (k\in{0,\pm1}) = spatial curvature, (c) = speed of light.

The line element is
[ds^2 ;=; -,c^2,dt^2 ;+; a(t)^2;\Bigl[\frac{dr^2}{1-
k,r^2}+r^2(d\theta^2+\sin^2\theta,d\phi^2)\Bigr].]

Step 2: Friedmann equations

• (G) = Newton's constant, (\rho(t)) = energy density, (p(t)) = pressure, (\Lambda) = cosmological constant.
• Define the Hubble parameter (H(t)=\frac{\dot a}{a}).

The two independent equations are
[\boxed{H^2 ;=;\frac{8\pi G}{3},\rho ;-;\frac{k,c^2}{a^2};+;\frac{\Lambda,c^2}{3}}
\quad\text{(Friedmann I)}] [\boxed{\frac{\ddot a}{a} ;=; -\frac{4\pi
G}{3}\Bigl(\rho+\frac{3p}{c^2}\Bigr) ;+;\frac{\Lambda,c^2}{3}} \quad\text{(Friedmann II).}]

Step 3: Continuity (energy conservation)

From (\nabla_\mu T^{\mu\nu}=0) one gets
[\dot\rho + 3,H\Bigl(\rho + \frac{p}{c^2}\Bigr) ;=; 0.]

Step 4: Steady-State Universe

Hypothesis: (\rho=) constant in time.
Then from continuity we require a creation term (\psi(t)): [\dot\rho + 3H\Bigl(\rho+\tfrac
p{c^2}\Bigr) = \psi(t).] For dust ((p\approx0)) and (\dot\rho=0),
[\psi = 3,H,\rho \quad\Longrightarrow\quad a(t)=a_0,e^{H,t} \quad(\text{constant }H).] (\psi) is the matter-creation rate per unit volume.

Step 5: Sub-universes

Index each domain by (i). In sub-universe (i):
• Local scale factor (a_i(t)).
• Local density (\rho_i(t)), pressure (p_i(t)), curvature (k_i).

They satisfy [H_i^2 ;=;\frac{8\pi G}{3},\rho_i ;-;\frac{k_i,c^2}{a_i^2};+;\frac{\Lambda,c^2}{3},] [\dot\rho_i + 3H_i\Bigl(\rho_i+\tfrac{p_i}{c^2}\Bigr)=\psi_i(t).] Boundary conditions at interfaces enforce metric continuity.

Step 6: Galaxy distribution (fractals)

Let (N(R)) = number of galaxies within comoving radius (R).
If they form a fractal of dimension (D),
[N(R);=;n_0,R^D,] where (n_0) is a normalization constant.

Step 7: Explosions (Sedov–Taylor solution)

A local energy injection (E) at time (t_i) in a medium of density (\rho) yields a blast-wave radius [R(t) ;=;\Bigl(\tfrac{E}{\rho}\Bigr)^{1/5},(t-t_i)^{2/5}.] This models supernova-like events in each sub-universe.

Step 8: Linear perturbations & sub-universe growth

Define density contrast (\delta_i(t)=\tfrac{\rho_i-\rho}{\rho}). In the linear regime, [\ddot\delta_i + 2,H,\dot\delta_i - 4\pi G,\rho,\delta_i = 0.] This governs how sub-universes deviate from the global density.

Step 9: Two-theory summary

1. Whole-Universe theory: single FLRW metric ({a,\rho,p,k,\Lambda}).
2. Sub-Universe theory: ensemble ({a_i,\rho_i,p_i,k_i,\psi_i}) each obeying Friedmann+continuity with interface matching.

Together, these equations form a unified mathematical model of a (possibly steady-state) Universe composed of interacting sub-universes, galaxy fractals, local explosions, and relativistic dynamics.