https://www.youtube.com/watch?v=zIpvZN8TteA&t=729s

What Banged at Big Bang?

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The Big Bang is the prevailing scientific theory that explains the origin and evolution of the universe.

(My reflections and commentary in red font in the text)
0:02
(01)- A common misconception is that the Big Bang provides a theory of cosmic Origins but it doesn't the Big Bang is a theory that describes how the universe evolved shortly after its creation but it says nothing about time zero itself it tells us nothing about what banged why it banged how it banged or frankly whether it ever really banged at all if you think about it for a moment the Big Bang poses a puzzle in the universe's early moments when matter and energy were densely packed gravity was by far the dominant Force but gravity is an attractive force it impels things to come together so what could possibly be responsible for the outward force that drove space to expand it would seem that some kind of powerful repulsive Force must have played a critical role at the time of the bang but which of Nature's forces could that possibly be in the 1980s an old observation of Einstein's was resurrected in a sparkling new form known as inflationary cosmology physicists realized that in just the right environment gravity can be repulsive during the early moments of cosmic history these conditions were met and gravity's repulsive side forcefully pushed space apart for a significant time [Music] after putting the finishing touches on general relativity in 1915 Einstein had realized that the equations of general relativity showed that the Universe could not be static the fabric of space could stretch or it could shrink but it could not maintain a fixed size this suggested that the Universe might have had a definite beginning when the fabric was maximally compressed and might even have a definite end in 1917 Einstein reopened his notebook Cosmological Constant and modified the equation by introducing a new term into the equations of general relativity the cosmological constant Einstein's strategy in introducing this modification is not hard to grasp the gravitational force between any two objects is attractive and as a result gravity constantly acts to pull objects toward one another the gravitational attraction between the Earth and a dancer leaping upward causes the dancer to slow down reach a maximum height and then head back down if a choreographer wants the dancer to float in mid-air there would have to be a repulsive force between the dancer and the Earth that would precisely balance their gravitational attraction and this can arise only when there is a perfect cancellation between attraction and repulsion Einstein realized that exactly the same principle applies for the entire universe just as gravity slows the dancer's Ascent it also slows the expansion of space to maintain a fixed size there must be a counterbalancing repulsive Force for space Einstein introduced the cosmological constant because he found that with this new term included in the equations gravity could provide just such a repulsive Force cosmological constant is interpreted as a form of energy that fills space and has a repulsive gravitational effect this energy is often referred to as dark

Gravity energy even though Einstein didn't say where the cosmological constant came from or what it was exactly he still managed to figure out its effects on gravity in Newton's gravity how strongly two things attract each other depends on their masses and the distance between them the heavier they are and the closer they are the stronger the pull in general relativity it's quite similar but Einstein's equations show that Newton's focus on mass was too Limited according to general relativity it's not just mass and distance that affect gravity's strength energy and pressure also play a role this is important so let's spend a moment to see what it means this is important so let's take some examples you have two identical solid gold cubes the same size and made from the exact same amount of gold your task is to somehow make these cubes appear to have different weights on a fixed precise scale there's a rule you can't alter the amount of gold in either Cube so no chipping scraping soldering or any such methods if you presented this puzzle to Newton he would say that both cubes must weigh the same without any exceptions based on Newton's laws equal amounts of gold mean equal masses general relativity shows that the strength of the gravitational attraction between two objects does not just depend on their masses but also considered total energy of objects we haven't talked about the temperature of the gold cubes yet temperature measures how fast the atoms within each cube move how much energy they have so you realize that if you heat up one Cube its atoms become more energetic making it way slightly more than the cooler Cube this is a fact Newton was unaware of let's take another example you're presented with two identical old-fashioned Jack-in-the-Box toys and tasked with making each have a distinct weight here's the twist you can't alter their mass and both toys must stay at the same

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(01)- A common misconception is that the Big Bang provides a cosmic origin theory, but this is not the case. The big bang is a theory that describes how the universe evolved shortly after its creation, but it tells us nothing about time zero itself, it tells us nothing about what banged, why it banged, how it banged, or frankly whether it sometimes it really hit. If you think about it for a moment, the Big Bang presents a puzzle in the early moments of the universe, when matter and energy were densely packed by gravity, the dominant force. But gravity is an attractive force that forces things together, so whatever could be responsible for the external force that drove space to expand, it would seem that some kind of powerful repulsive force must have played a critical role at the time of formation role. Oh no. You too personify the "powers" and their games...; Power need not be "the work of devil nor angel". The Force is a *curved state of multiple dimensions*. A force is a property of somehow specifically curvilinear dimensions of two quantities,
e.g. $(x^4 . t_1^1/ t_2^2 . t_3^2)$ .. but which of the forces of nature could it be?, in the 1980s, Einstein's old observation was resurrected in a sparkling a new form known as inflationary cosmological physicists realized that in the right environment gravity could be repulsive under these conditions during the early moments of cosmic history. ?? They were fulfilled and the gravitational repulsive side forcefully pushed the space together a fairy tale about Budulínek tale for a considerable time [Music]. After completing the general theory of relativity in 1915, or could shrink but could not maintain a fixed size, suggesting that the universe might have some beginning when the fabric was maximally compressed, well, that's it, that's my vision of the world... and could even have a definitive end. In 1917, Einstein reopened his notebook *Cosmological constant* and modified the equation by introducing a new term in the general relativity equations cosmological constant Einstein's strategy in

introduct ugh...I don't like it when a >human being< orders the universe and gives it something " introduces" (the universe introduces itself and we only seek and clarify it) ... this modification is not difficult to understand that the gravitational force between any two objects is attractive because the "meaning" of the (re)curvature of dimensions for this physical field was set e.g. >right< and for the repulsive force >left< (I don't know, it's an opinion, but I believe physicists will think for themselves) and as a result gravity constantly pulls objects together gravitational attraction between the earth and the dancer jumping up causes the dancer to slow down, reach maximum height and then come back down, example, example of how >time< curves around the earth http://www.hypothesis-of-universe.com/docs/c/c_430.jpg if the choreographer wants the dancer to float in the air, there would have to be a repulsive force between the dancer and the earth that exactly balances their gravitational attraction and this can only happen when there is perfect cancellation between attraction and repulsion the curvature of the middle 3+3D dimensions of space-time around the Earth will be disrupted Einstein realized that exactly the same principle applies to the entire universe, **!** just as gravity slows down the dancers' ascent, it also slows down the expansion of space, gravity will slow down the "unpacking" of all global and local curvatures of dimensions (after the big bang, space-time curvature was at its maximum and today it is no longer...but still, today the behavior of space-time "in both positions, positions" **s i m u l t a n e o u s l y**, i.e. the universe both expands → http://www.hypothesis-of-universe.com/docs/c/c_485.jpg and both packing srings → http://www.hypothesis-of-universe.com/docs/c/c_427.gif → http://www.hypothesis-of-universe.com/docs/c/c_425.jpg → http://www.hypothesis-of-universe.com/docs/c/c_415.gif unfolds on global scales and collapses (dimensions collapse) on the microscopic level of elementary particle size scales there must be a counterbalancing repulsive force for the universe to maintain a fixed size. Einstein introduced ugh...I don't like it when a >human being< orders the universe and "introduces" something to it (the universe introduces itself and we just search and clarify it)... the cosmological constant because he discovered that with this new term included in the equations gravity could provide just such a repulsive force, the cosmological constant is interpreted as a **form of energy** O.K. , the 3+3D space-time itself on the Planck scales, if it is curved into a foamy form, it is already a "matter" state, i.e. energy. Every warping of dimensions >produces< matter (and therefore all physical fields), that's why there is "dark energy on Planck scales, the vacuum emerges emergently already "boiling" around us. Dark energy density is constant… why not, that fills space O.K. on Planck scales and has a repulsive effect. Gravitational effect this energy is often referred to as dark Gravitational energy, even though Einstein didn't say where the cosmological constant came from or what exactly it was, he still managed to figure out its effects on gravity in Newtonian gravity, how strongly two things attract depends on their mass and distance between them. They are heavier, and the closer they are, the stronger the pull, in general relativity it is quite similar, (m/x) . (m/x) . "G" ... unjustified constant "G" with unjustified dimensions
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http://www.hypothesis-of-universe.com/docs/c/c_317.jpg ;
http://www.hypothesis-of-universe.com/docs/aa/aa_084.pdf ;
http://www.hypothesis-of-universe.com/docs/aa/aa_139.jpg ;
http://www.hypothesis-of-universe.com/docs/f/f_072.pdf ;
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http://www.hypothesis-of-universe.com/en/index.php?nav=home but Einstein's equations show that Newton's focus on mass was too limited according to general relativity, **it's not just mass and distance** that affects the force of gravity, energy and pressure also play a role. Each Dimensional Warp plays a 'role'... The role is important, let's take a moment to look at what that means, it's important, so let's give some examples you have two identical solid gold cubes of the same size and made of the exact same the amount of gold your job is to somehow make these dice look like If you want to have different weights on a fixed exact scale there is a rule that you cannot change the amount of gold in a single die so no scratching, scraping solder or any such methods if you would submit this puzzle Newton, he would say that both cubes must weigh the same without any exceptions based on Newton's laws equal amount of gold equals equal mass general relativity shows that the force of gravitational attraction between two objects depends not only on their masses but also on the total energy of the objects , which we didn't talk about. Gold cubes, but temperature measures how fast the atoms in each cube are moving, how much energy they have, so you realize that if you heat up one cube, its atoms become more energetic, dimensionally more curved so it's slightly more than a cooler cube , this is a fact that Newton was unaware of. Let's take another example, you are presented with two identical old-fashioned Jack-in-the-Box toys and you are tasked with making each one a different weight, here is a twist where you cannot change their weight and both toys must remain the same,

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(02)- temperature now you can press the spring on one toy pushing Jack Down Under the closed lid on the other toy you leave Jack in his popped up position why when you compress a spring it gains more energy than when it's not compressed and again according to Einstein any additional energy affects gravity resulting in additional weight therefore the Jack in the Box with the compressed spring weighing slightly more than the open one with the uncompressed spring the solution to that second example hints at the subtle but critical feature of general relativity that we're after so Einstein showed that the gravitational force depends not only on mass and energy but also on any pressures that may be exerted this physics is key to understanding the cosmological constant outward directed pressure like that exerted by a compressed spring is called positive pressure naturally enough positive pressure makes a positive contribution to gravity but and this is the critical point there are situations in which the pressure in a region unlike mass and total energy can be negative meaning that the pressure sucks inward instead of pushing outward this may not sound particularly strange but in the context of general relativity negative pressure leads to an extraordinary outcome while positive pressure contributes to attractive gravity negative pressure leads to negative gravity which is repulsive gravity [Music] with this stunning realization Einstein exposed a loophole in Newton's attractive Force gravity let me emphasize one essential Point gravity and pressure are two related but separate characters in this story pressures can exert their own non-gravitational forces when you dive underwater your eardrums can sense the pressure difference between the water pushing on them from the outside and the air pushing on them from the inside according to general relativity pressure can indirectly exert another force a gravitational force because it plays a role in the gravitational field pressure like mass and energy is a source of gravity remarkably if pressure in an area is negative it doesn't lead to a gravitational pull in that region instead it adds a gravitational push to the overall gravitational

field [Music] when pressure is negative two gravitational forces come into play regular attractive gravity due to mass and energy and unusual repulsive gravity due to negative pressure if the negative pressure is strong enough the repulsive gravity wins causing things to move away from each other instead of getting pulled together here is where the cosmological constant comes into the story Einstein suggested that space is evenly filled with energy which has uniform negative pressure what's even more interesting is that the negative pressures gravitational repulsion overpowers the positive energies gravitational attraction as a result repulsive gravity becomes the dominant force a cosmological constant generates an overall push away gravitational force this was exactly what Einstein needed ordinary matter and radiation Across the Universe pull things together with attractive Gravity the newly added cosmological term pushes things apart with repulsive Gravity by carefully choosing the size of the new term Einstein found that he could precisely balance the usual attractive gravitational force with the newly discovered repulsive gravitational force and produce a static universe Einstein discovered that this Force accumulates growing stronger with greater distances on the scales of Earth or our solar system this repulsive force is immensely small in 1929 Hubble observations revealed that the universe is not static it is expanding had Einstein trusted the original equations of general relativity he would have predicted the expansion of the universe more than a decade before it was discovered observationally that would certainly have ranked among the greatest discoveries it might have been the greatest discovery of all time by learning Hubble's results Einstein regretted his biggest blunder and carefully removed it from his equations of general relativity however in the 1980s cosmological constant resurfaced in a dazzling new form as dark energy Higgs Field imagine you see a baseball going up in the air you can use science to predict where it will go but you might wonder who or what made the baseball go up in the first place this is similar to a bigger question about how the universe is expanding Einstein's equations can explain the universe's expansion just like they can predict the baseball's path but they don't tell us how the expansion started then in 1979 physicist Alan Guth showed that we can understand the universe's beginning better he discovered something that explained the bang in The Big Bang Theory and it was a surprising finding he was studying various aspects of Higgs fields in Grand unified theories the Higgs field is a fundamental field that permeates all of space according to the Higgs mechanism ……..

(02)- (02)- temperature you can now compress the spring on one toy by pushing Jack down Under the closed lid on the other toy you leave Jack in the extended position why when you compress the spring it gains more energy than when it is not compressed and again according to Einstein any extra energy affects gravity, which leads to additional mass, therefore a Jack in the Box with a compressed spring weighs slightly more than an open one with an uncompressed spring, solving this second example suggests a subtle but critical feature of general relativity that Einstein showed that the gravitational force does not depend only on mass and energy, but also on any pressures that may be exerted. This physics is the key to understanding the cosmological constant outward pressure, again I must say that the strangeness of the behavior is in that curvature of dimensions… like the pressure exerted by a compressed spring, **is called positive pressure** naturally enough positive pressure contributes positively to gravity, but and this is the critical point, there are situations where the pressure in an area unlike the mass and total energy **can be negative**, meaning the pressure sucks in instead , to push out, it doesn't have to sound bad. Strange, but in the context of general relativity, negative pressure leads to an extraordinary result:

while positive pressure contributes to attractive gravity negative pressure leads to negative gravity which is repulsive gravity [Music] with this amazing realization, Einstein revealed a loophole in Newton's attractive force gravitation let me emphasize one crucial point gravity and pressure are two relatives, both are a certain state of curvature of space-time dimensions; then they "float" in the basic Euclidean 3+3D grid, flat as "state of gravity, state of force" and the other forces are in principle "curvature of dimensions" again... everything, absolutely everything in the universe is built from the dimensions of quantities by "curvature of dimensions"! !!, but the individual characters in this story pressures can exert their own non-gravity forces, when you go underwater your eardrums can sense the pressure difference between the water pushing on them from the outside and the air pushing on from the inside according to the general relativity pressure can indirectly exert another force the gravitational force because it plays a role in the gravitational field pressure as matter and energy are notably the source of gravity if the pressure in an area is negative it does not result in the gravitational force in that area instead adding gravitational pressure to the total gravitational field

[Music] when the pressure is negative two gravitational forces come into play regular attractive gravity due to mass and energy and unusual repulsive gravity due to negative pressure if the negative pressure is strong enough the repulsive gravity wins and causes things to they move away from each other instead of pulling together, this is where the cosmological constant comes into the story Einstein proposed that space is uniformly filled with energy, it's vacuum energy, that is, on the microscopic Planck size scale is time-space **foamy**, which of course is again and again and again the curvature of dimensions...curvature is a matter-creating act (and therefore matter is energy). That's why the density of the universe is always the same, constant, because the vacuum predominates in the universe (70% of the volume of the universe is a vacuum) and the boiling vacuum is the "dark energy"... it is, of course, everywhere around us, both at home and outside on pavement, in the microcosm on scales of 10^{-40} m; that's deep below the "micro world happening"… which has a uniform negative pressure, even more interesting is that negative pressures gravitational repulsion prevails over positive energies gravitational attraction as a result repulsive gravity becomes the dominant force with a left-right spiral wrapping of those dimensions .. the cosmological constant generates the overall repulsive gravitational force, that was exactly what Einstein needed ordinary matter and radiation across the universe pulling things together by attractive gravity newly added cosmological term separates things by repulsive gravity by carefully choosing the size of the new term Einstein discovered that he could precisely balance the usual attractive force of gravity with the newly discovered repulsive force of gravity to create a static universe this is not inconsistent with the idea of "dimensional warping" for the construction of matter (I don't call it my made-up creation *"right-handed warping "* ... and dark energy *"left-handed curvature"*. Physicists will additionally clarify the truth of physics and terminoogy and nomenclature) ..I will note one more thought: time was curved after the big-bang not only "right-handedly, but also left-handed, i.e. "into the flow to the future and the past" and during the realization of the unfolding, "the Universe chose" the right-handed unfolding of time for us, our future, and the left-handed unfolding for the Anti-Universe; for antiparticles in interactions where it vibrates, the swirling of "crumpled space-time" is "back and forth", so it is "together -linear-." Note again: savvy and decent physicists will refine my HDV theory by themselves.

Einstein discovered that this force **accumulates and grows** stronger with greater distances on the scales of the Earth or our solar system this repulsive force is extremely small. Yes and no. The density of dark energy and the density of "other" matter should be constant on a long-term scale, that is, as the volume of the macroworld grows, dark energy grows, but the volume of the microworld with baryonic matter does not grow...; at the Earth-People scale http://www.hypothesis-of-universe.com/docs/c/c_017.jpg space-time (space-time "just") expands ""relatively"" little compared to the microcosm where dimensions expand ""relatively"" a lot.. (?)... until physicists understand that even the pace of the passage of time is different in each (!!) location of the universe, (different curvature of the time dimension) and that pace is also different in every historical epoch of the universe, in every "stop-age" of the universe since the bang, so...so Hubble and relativity go crazy with it... in 1929, HST observations revealed that the universe is not static, it is expanding, not unfolding and not from a singularity, but expands "from every point of the volume of the universe" (at a different rate into the dimensions of length and time) if Einstein trusted the original equations of the general theory of relativity, he would have predicted the expansion of the universe. The universe more than ten years before it was observed, which would certainly rank among the greatest discoveries, **could be the greatest discovery of all time**, only to be surpassed by HDV… when he found out about Hubble's results, Einstein regretted his biggest mistake and carefully removed it from his equations of general relativity. A cosmological constant from the 1980s has reappeared in a dazzling new form, when the dark energy Higgs Field imagine you see a baseball rising into the air, you can use science to predict where it will go, but you might wonder who or what made the baseball took off for the first time instead it's similar to the larger question of how the universe expands Einstein's equations can explain the expansion of the universe just as they can predict the trajectory of a baseball, but they don't tell us how the expansion began, then in 1979 physicist **Alan Guth** showed that we can better understand the beginning of the universe : *discovered something that explains the bang in the Big Bang Theory*

I discovered another possible explanation **"bang = changes of state"**, **in the Big Bang Theory**, bang = as a jump (in time "t" = 0 and "x" = infinity) **from flatness 3+3D to extreme curvature 3+3D** http://www.hypothesis-of-universe.com/docs/c/c_027.jpg ; http://www.hypothesis-of-universe.com/docs/c/c_028.jpg . For 20 years I have not understood why educated physicists didn't get it. Why… At least one wise person will tell me “why” ??????? and it was surprising to find out that he studied various aspects of the **Higgs Fields** in the Grand Unified Theories. The Higgs field is a fundamental field, **?** which permeates the entire universe (well, everything permeates the entire universe, including the gravitational field, etc.) according to the Higgs mechanism

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(03)- particles gain mass by interacting with this field imagine the Higgs field like a field of energy that particles move through as particles interact with the Higgs field they gain resistance which gives them mass in the early moments after the big bang the universe was extremely hot and dense the Higgs field was in a high energy State similar to a ball at the top of a hill this high energy obscured the intrinsic matters of particles making them effectively massless and symmetric as the universe cooled the Higgs field underwent a phased transition just like water freezing into ice and the Higgs field moved to a lower energy State like the ball rolling down the hill this transition gave particles their masses and broke the initial symmetry

leading to the variety of masses observed in particles today Alan goth showed that the Higgs field plays a role in the rapid expansion of the universe in its earliest moments during inflation the universe expanded exponentially due to the energy associated with the Higgs field it suggested that the Higgs field might have been temporarily trapped in a high energy State during this inflationary phase similar to how water can be supercooled below its freezing point temporary state of supercooling contributed to the rapid expansion of space goth realized that a Higgs field behaves similarly to a cosmological constant creating both energy and negative pressure in space this makes it exert a repulsive gravitational force pushing space to expand this discovery connects with Einstein's idea of a cosmological constant but so what what's the big deal the concept of a cosmological constant had long been abandoned its introduction into physics was nothing but an embarrassment for Einstein
Whats the Big Deal well here's why supercooled Higgs field and a cosmological constant are similar but not exactly the same there are two important differences first a cosmological constant remains constant over time it doesn't change or fluctuate it provides a consistent unchanging outward push on the universe's expansion second a supercooled Higgs field is not constant over time it can change and fluctuate due to Quantum processes think of it like a frog on a bump in a bowl even though the bowl has cooled the Frog might still make random jumps causing it to move off the bump similarly the Higgs Field's value can get stuck on a central bump in its energy potential but Quantum fluctuations can push it off the bump allowing its energy to decrease the change in the Higgs Field's value from a central bump to a lower energy state is driven by Quantum jumps spontaneous changes that happen due to the inherent uncertainty in quantum physics these jumps can happen relatively quickly causing the Higgs field to transition from the higher energy bump to the lower energy Valley goth's calculations showed these jumps might happen very quickly in a tiny fraction of a second other scientists like Andre Linder and Paul steinhardt found ways for the Higgs field to relax even more efficiently they showed that if the energy Bowl was smoother the Higgs Field's value would naturally roll down without needing Quantum jumps so if the Higgs field acted like a cosmological constant it was only for a short time by combining these two observations the Higgs field quickly leaves its plateau and its outward push is strong we get something important physicist goth realized this leads to a massive burst outward a big bang this is exciting because it fills a gap in The Big Bang Theory when the universe was super dense an energetic Higgs field called the inflating field sat far from its energy Bowl's lowest point due to its negative pressure it pushed everything away causing the universe to rapidly expand or inflate this repulsion lasted a tiny fraction of a second but caused a huge expansion depending on details the universe could have grown by factors of 10 to the power 30 or even 10 to the power 100 these numbers are mind-boggling imagine expanding a DNA molecule to the size of the Milky Way galaxy all in a fraction of a blink this expansion even conservatively estimated at 10 circumflex 30 times is billions of times more than the standard Big Bang prediction for the same time it's even larger than the universe's total expansion in 14 billion years in some inflation models where expansion is even greater the visible universe is a tiny part most of the cosmos is unseen light from much of it hasn't even reached us and won't for a long time about 10 circumflex 35 seconds after starting the inflating field moves off the energy Plateau stopping the repulsive push its energy creates particles that fill expanding space from here things follow the standard Big Bang story it's space expands cools and particles form galaxies and more goth's inflationary cosmology along with others contributions explains the initial expansion a Higgs Fields energy burst makes space swell
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(03)- particles gain mass by interacting with this field. I don't really believe this theory (yet). In my opinion, "mass" is a property of matter that it "acquires" (((and this is still a mystery to me))) when "curving dimensions" into "packages-cocoons-balls" that become matter, material elements...i after interactions with complex formations of mass combination packages. There's a dog buried somewhere http://www.hypothesis-of-universe.com/docs/c/c_313.jpg up to http://www.hypothesis-of-universe.com/docs/c/c_333.jpg how "property - weight arises" just by non-simple bending of dimensions" um, if only I knew. The Standard Model of Physicists invented **"mass transfer"** by the Higgs field to "packets of matter" that were born "from Nothing and had no mass" by bang-collision-interactions...but...but that's the same >nonsense< as warping dimensions , impart curvature to the "bundles of dimensions" and then "feel" the mass of matter…(?) Think of the Higgs field as an energy field, (ho-ho, energy existed before mass??) which the particles move through when the particles interact with the Higgs field, **get**, ?? are they stealing?, are they removing?, are they moving?, are they taking?, are they taking? from that field weight ? (lots of opinions on Higgs) → http://www.hypothesis-of-universe.com/docs/aa/aa_022.pdf ; http://www.hypothesis-of-universe.com/docs/aa/aa_181.pdf ; http://www.hypothesis-of-universe.com/docs/aa/aa_176.pdf ; http://www.hypothesis-of-universe.com/docs/aa/aa_175.pdf ; http://www.hypothesis-of-universe.com/docs/aa/aa_181.pdf ; http://www.hypothesis-of-universe.com/docs/aa/aa_188.pdf ; http://www.hypothesis-of-universe.com/docs/g/g_052.pdf ; http://www.hypothesis-of-universe.com/docs/g/g_057.pdf ; http://www.hypothesis-of-universe.com/docs/g/g_062.pdf ; http://www.hypothesis-of-universe.com/docs/g/g_070.pdf ; http://www.hypothesis-of-universe.com/docs/b/b_082.pdf ; http://www.hypothesis-of-universe.com/docs/b/b_101.pdf ; http://www.hypothesis-of-universe.com/docs/b/b_100.pdf drag that **gives them mass** in the early moments after the big bang the universe was extremely hot and the dense higgs field was in a high energy state so what was born? in the big bang ? **Born** Higgs field and nothing else???? With a magic wand or otherwise? What was it born into? And what about the plasma?, was it somewhere in the corner?, what about space-time??.. ; If you physicists need to "give birth" to the Higgs field to distribute mass, then why don't you give it up and distribute "mass" directly, without an intermediary??? like a ball on top of a hill, this high energy has obscured the inner mass of particles and **made them** effectively massless and symmetrical as the universe cooled, ?? how what why ? The Higgs field went through a phase transition just as water froze into ice and the Higgs field moved, **??** to a lower energy state like a ball rolling down a hill, this transition gave the particles their mass and broke the initial symmetry leading to the variety of masses seen in today's particles **Alan Goth** showed that the Higgs field plays a role in the rapid expansion of the universe by what? in its earliest moments during inflation the universe expanded exponentially. O.K., but there can be other reasons too... or did the physicists forbid other reasons? The universe didn't expand, but it **u n f o l d e d.** http://www.hypothesis-of-universe.com/docs/c/c_032.gif even the unwrapping may be >exponential< http://www.hypothesis-of-universe.com/docs/c/c_239.jpg due to the energy associated with the Higgs field, suggesting that the Higgs field may have been temporarily trapped in a high energy state during this inflationary phase, similar to how water can be subcooled below freezing, the temporary supercooled state contributed to the rapid expansion of the universe. **Alan Goth** realized that the Higgs field behaves similarly to a cosmological constant that creates both energy and

vacuum in the universe, causing it to exert a repulsive gravitational force pushing on space. To expand on this discovery, it connects with Einstein's idea of the cosmological constant, but what is the matter actually, the concept of the cosmological constant has been abandoned for a long time, a group of physicists (randomly) "got together" who had the same feelings, that's what happens … her introduction into physics I love the introduction; nature itself doesn't know, so physicists >|introduce it, it was just an embarrassment to Einstein What's the big deal, here's why the supercooled Higgs field and the cosmological constant are similar but not exactly the same, there are two important differences, behind first: the cosmological constant remains constant over time, apparently identical to dark energy, whose density is also constant…

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it doesn't change or fluctuate, it provides a consistent unchanging external pressure on the expansion of the universe a second the supercooled Higgs field is not constant over time, it can change and fluctuate due to quantum processes, **imagine it** like a frog on a hump in a dish, even though the dish is cooled, the frog can still make random jumps that cause it to move outside the bump similarly, the value of the Higgs field can get stuck on the central bump in its energy potential, but quantum fluctuations can push it out of the bump and allow its energy to decrease a change in the value of the Higgs field from a central hump to a lower energy state, driven by quantum jumps spontaneous changes that occur due to inherent uncertainties in quantum physics, these jumps can occur relatively quickly, causing the Higgs field to transition from a higher energy inequality to a lower energy calcns. Valley Goth showed that these jumps can happen very quickly in a small fraction of a second other scientists like Andre Linder and Paul Steinhardt found ways to relax the Higgs field even more efficiently, they showed that if the energy bowl were smoother the value of the Higgs field would naturally dropped without the need for quantum jumps so if the Higgs field acted as a cosmological constant it would only be for a short time. By combining these two observations the Higgs field quickly leaves its plateau and its outward pressure is strong, we get something important, Physicist Goth realized that this leads to a massive explosion out, **big bang** it is exciting because it fills gap in the Big Bang Theory, when the **universe was super dense**, the energy Higgs field called the inflation field was located far from the lowest point of its energy Bowl due to its vacuum it pushed everything back **??** and caused that the universe was rapidly expanding or inflating. Well, it's such an artificial fairy tale about Princess Jasmine (she had a 7 meter long nose) lasted a tiny fraction of a second, what came before? but caused a huge expansion depending on the details, where the universe could grow by a factor of 10 per to the power of 30 or even 10 to the power of 100. These numbers are staggering,
are and...and could also prove my vision that in an infinite flat (i.e. non-curved) 3+3D space-time, **"with a jump, in the blink of an eye, suddenly, a location"** (!!! Think about it) almost infinite, which is the same as "early zero" and...and that was a big bang : a sudden jump, a sudden change in the curvatures of dimensions >in the locality< of infinite 3+3D space-time...; why no ?? imagine the expansion of a DNA molecule to the size of the Milky Way galaxy, all in a fraction of the blink of an eye this expansion even conservatively estimated at 10 circumflex 30 times is a billion times more than the standard big bang prediction and at the same time is even greater than the total expansion of the universe in 14 billions of years in some models of inflation where the expansion is even greater, the visible universe is a tiny fraction, most of the universe is invisible, the prism of this narrative is different than mine, but perhaps the intent can be unified here: I am describing an infinite flat

3+3D spacetime without matter, without the flow-flow of time, without the expansion of space and then in some "eye" "moment" big-bang as a sudden change of the curvatures of dimensions and thus the onset of the genesis of the universe of a "new state" where matter will be born by "packing" dimensions, the physical field also by the curvature of dimensions, the flow of time will be according to the unfolding (one ????? dimension of time, or three?), and other transformations of space-time structures with galaxies, and the genesis of complex matter-structures = our "Bang universe". - - You imagine my vision, I will imagine your vision. Where does the right to stoning the other come from?? The light for the most part has not even reached us and will not reach us for a long time It has not reached because the "edge of observability" (the curvature of the global space-time) is more and more twisted until already (from the Observer) it is rotated by 90^0 and the emitter from the edge emits light (photon) on the tangent and the light no longer flies in our direction. Beyond the edge of observability, the number 3+3D can be "straightened out" and then further and further it is only straight-not curved, the great Hubble himself observed that when a body-quasar approaches the edge of observability, that its speed increases, that it is getting closer what's up and where there is already "c", there will be no material circulation, there will only be those that have "c", i.e. photons...; the universe from the edge towards us is curved (the location of "our universe"), from the edge away from us it is flat (this is the universe "before the big-bang", i.e. flat without matter, etc.)... ((is that so? ..?, I don't know, **I'm not sure, and...and it would be good if the experts were finally thinking too**)). About 10 circumflex 35 seconds after starting to move the inflatable field out of energy Platform ?? maybe the author wanted to say the word "space-time yarn", by stopping the repulsive pressure of her energy **creates** particles, this is already a very bold proposal "how" material elementary particles came into being...um, but they came into existence like this: in " with the crooked yarn" dimension, the dimensions begin to be packed into balls, then they connect (atoms, molecules, compounds...proteins, DNA) and these will be entities with character and behavior like particles of matter... which fill the expanding space, from there the standard things follow the story of the big bang the universe expands and the particles cool down in your model the x^3 space expands, i.e. they are born somewhere, grow, new points are added on ***the dimension of*** length (and time) and... and according to your model, the energy of particles flying around in that space where does it go? Where is it given to, to whom is it given? Those new "x" points on the infinite line of the "new" born protor?, those points will take that energy to cool the particles? Or what?
and particles form galaxies and more ***gothic inflationary cosmology** along with other contributions **explains**, **??**initial expansion and burst of energy the Higgs field expands space well it is nice poetry - prose mixed with the detective genre...(and such similar "explainers" will be built by a witch, a cleaner by profession, many, many.).

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(04)- giving the big bang a bang Inflationary Cosmology goth's Discovery was a big deal in cosmology but considered two points first in the standard Big Bang idea the bang is seen as the universe is beginning like a creation event in inflationary cosmology the Bang occurred when the right conditions were set by an inflating field not necessarily at the universe's birth imagine a stick of dynamite that only blows up when lit so the inflationary bang happened within the existing Universe not necessarily creating it second inflationary cosmology isn't a single Theory but a framework it's about gravity causing space to swell the exact details of the

Burst when how strong how much it expanded depend on unknown factors like the shape of the inflatant fields energy scientists explore various options consistent with observations what's key is that inflation models share certain common aspects like the burst itself which helps solve Big Bang problems one problem is the Horizon problem which Horizon Problem relates to the uniformity of microwave background radiation this radiation's temperature is the same from all directions with Incredible precision in simpler terms The Horizon problem questions how regions of the universe that appear to be disconnected and unable to communicate could have the same temperature in the cosmic microwave background radiation it seems like there wasn't enough time for them to equalize their temperatures through normal physical processes inflation is a proposed solution to this problem as it would have caused distant regions of the universe to come into contact before the rapid expansion allowing them to reach the same temperature and explaining the uniformity of the CMB across the sky Flatness Problem a second problem addressed by inflationary cosmology has to do with the shape of space we imagine space is shaped like a ball positive curvature a saddle negative curvature or a flat tabletop general relativity says the amount of stuff matter energy density in space decides its shape lots of stuff makes it spherical less stuff makes it saddle-shaped and a very special amount makes it flat now the issue is this if early on the stuff was just right equal to a critical value it would stay right as space expanded but even a tiny difference from this critical value would drastically change the stuff's density as space expanded it's like a climber on a narrow ledge a small misstep leads to a big fall in the 1980s measurements showed that the universe's stuff isn't way too much or too little and space isn't hugely curved this caused problems for the standard Big Bang idea it meant some unknown Force had to fine-tune the early universe's stuff amount very precisely for what we see today if it was a tiny bit off the predictions would be way off so the flatness problem is that the universe's early balance was like a tightrope walk and even a slight slip billions of years ago would have led to a very different Universe today the flatness problem isn't about proving the standard Big Bang model wrong some accept it as is saying the universe was finely tuned in the past but this bothers many physicists they want theories that don't rely on precise past details we can't explain inflationary cosmology is one such theory in this Theory the universe's shape and density matter regular gravity makes deviations from a critical density bigger but inflation's repulsive gravity makes them smaller imagine a basketball and Earth's surface even a curved thing seems flat if it's huge in inflation the universe stretched a lot so our visible part seems flat even if the whole universe is curved it's like magnets in a climber's boots keeping her on a narrow ledge inflation made our universe's part flat even if the early Universe wasn't so inflation addresses the flatness problem by making our observable universe appear flat no matter the universe's actual shape or density Dark Matter in the 1930s Fritz zwicki noticed galaxies in the coma cluster moved too fast to be held by their visible matters gravity he suggested unseen matter was present Vera Rubin later confirmed this by studying star movements in galaxies they found that visible matter couldn't explain the movements instead a lot of unseen Dark Matter was needed this dark matter doesn't emit light but has gravitational pull its exact nature is unknown it's about 25 of the universe's critical density along with five percent visible matter totaling 30 percent as predicted by inflation but 70 remained a mystery physicists seeking inflationary cosmology suggests 70 of the universe's mass energy is unknown so they want proof they wanted to measure the deceleration parameter which shows how space expansion slows due to gravity this measurement helps determine the universe's matter amount observing galaxies and quasars reveals their past speeds and distances showing how space expanded measuring their light's

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(04)- give the big bang a bang. The inflationary cosmology of Goth's Discovery was a big problem in cosmology, but in the standard idea, (well, the standard idea was held by all 250 delegates of the CPC Central Committee in 1969, and they all raised their "standard" hand in unison to vote, and thus the correct theory was discovered) of the big bang the bang is seen ***as the first***, the bang is seen when the universe begins as a creation event in an inflationary cosmology that occurred when the right conditions were set up by the inflatable field, (that is, "first there was an egg = an inflatable field, then there was a hen = inflationary cosmology and then the right conditions were extinguished = and there was a henhouse in the world..the universe) it is not necessarily at the birth of the universe, imagine a stick of dynamite that only explodes when ignited, so an inflationary bang occurred in an existing universe , not necessarily creating it. Well, that's already a silly statement and it seems to have "climbed out" from my HDV hypothesis, where "a bang = a sudden change in the state of the curvature of 3+3 dimensions" already exploded in the finished previous universe, i.e. a flat 3+3D number without matter, etc. and "our three-dimensional Universe" was formed. ***The Second Inflationary Cosmology*** isn't the only theory but the framework is about gravity causing space to swell . The exact details of the explosion, while how strongly it spread depends on unknown factors such as the shape of the inflatable fields, energy scientists are exploring various possibilities they haven't gotten around to exploring HDV yet… consistent with observations, key is that inflationary models share some common aspects, and whoever doesn't report inflationary models goes against us and will be kicked out of the party… like the explosion itself which helps to solve big bang problems, one problem is problem horizon, what is it? which horizon problem has to do with the uniformity of microwave background radiation< the temperature of this radiation is the same from all directions with incredible precision, in simpler terms the horizon problem questions how regions of space that appear being disconnected and unable to communicate could have the same temperature in the background cosmic microwave radiation, it seems that there was not enough time for them to equalize the temperatures by normal physical processes inflation is the proposed solution to this problem. Don't you have another solution?? Really not? It would cause distant regions of the universe to come into contact before the rapid expansion that allowed them to reach the same temperature, and would explain the uniformity of the CMB across the sky.

Flatness Problem

The second problem that inflationary cosmology deals with has to do with the shape of space we imagine, space is shaped like a sphere, positive curvature, negative saddle curvature or a flat plate, http://www.hypothesis-of-universe.com/docs/c/c_485.jpg got it. But do you also understand me, how I have been describing the model for many years that the universe **does not expand, but unpacking**. So, from the state of the big-bang, the extreme curvature of dimensions firstly **a) unwraps-unpacking** and...and secondly, simultaneously in that boiling soup of curvature dimensions **b) they pack up**into balls, which then they will have function, character, nature, and similarity and manifestation: matter, elementary particles, even fields. Particle balls http://www.hypothesis-of-universe.com/docs/c/c_421.gif also conglomerates http://www.hypothesis-of-universe.com/docs/eb/eb_002.pdf + http://www.hypothesis-of-universe.com/docs/eb/eb_004.pdf ; http://www.hypothesis-of-universe.com/docs/eb/eb_016.pdf of them, then they still "float" in the curved soup of space-time, the same...which expands on global scales and in the microworld on Planck scales it

interacts by permutations-transformations-exchanges (gluons perhaps) by the curvature of dimensions. A few examples for visual reflection; . General relativity says that the amount of matter matter energy density in space determines its shape http://www.hypothesis-of-universe.com/docs/c/c_485.jpg lots of stuff makes it spherical, less stuff makes it saddle-shaped and very thanks to the special amount it is now flat, **the problem is that** if things were equal to the critical value at the beginning, it would remain correct even when expanding the space, but also a slight difference from this critical value would drastically change the density of the material, as space expanded it is like a climber on a narrow ledge a small misstep leads to a big fall in the 1980s measurements showed that there is not too much or too little matter in the universe and space is not too curved, causing problems with the standard big bang idea, which it meant some unknown Force had to very fine tune the amount of material of the early universe for what we see today, if it was a little off the predictions would be way off, so the problem of flatness is that the early equilibrium of the universe was like walking on doe and even a slight slip billions of years ago would have led to a very different universe, today the flatness problem is not about proving the big bang standard model wrong, some accept it because they say the universe was fine-tuned in the past, but that bothers many physicists. want theories that don't rely on precise past details we can't explain. Inflationary cosmology is one such theory. In this theory, the shape of the universe and the density of matter, regular gravity makes the deviations from the critical density larger, but the repulsive gravity of inflation makes it smaller …**the problem is that** imagine a basketball and the surface of the Earth is also curved a thing appears to be flat if it is huge in inflation, the universe has stretched a lot so our visible part appears to be flat, the large-scale global universe is "already" flat, but even in this universe there is a mini-scale state that is grossly curved http://www.hypothesis-of-universe.com/docs/c/c_034.jpg curved is 3+3 dimensions... even if the whole universe is curved it's like magnets in the climber's boots holding her on a narrow ledge, inflation it wasn't inflation, but the unwrapping of the curvatures was! , made part of our universe flat, even though the early universe wasn't so inflation solves the flatness problem by making our observable universe appears flat regardless of the actual shape or density of the universe Dark matter in the 1930s Fritz Zwicki noticed that galaxies in a coma cluster were moving too fast to be sustained by the gravity of their visible masses suggested that invisible matter was present Vera Rubin later confirmed this by studying the movements of stars in galaxies, they found that visible matter could not explain these movements, instead a lot of invisible dark matter was needed this dark matter does not emit light but has a gravitational force, its exact nature is unknown, it is about 25 of the critical density of the universe along with five percent of the visible matter for a total of 30 percent as predicted by inflation, but 70 remained a mystery, physicists seeking inflationary cosmology suggest, that 70 of the matter energy of the universe is unknown, so they want evidence that they wanted to measure the deceleration parameter, which shows how the expansion of the universe is slowing down due to gravity, this measurement helps determine the amount of matter in the universe, observing galaxies and quasars reveals their past speeds and distances, showing how the universe expanded by measuring their light

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(05)- frequency shift helps determine their speed as familiar as a police sirens pitch dropping as it moves away determining how far something is in space is tricky for astronomers objects look dimmer when they're farther away but measuring this isn't easy to judge an object's

Distance by its brightness you need to know how bright it would be up close finding a reliable standard for brightness is challenging one option is Supernova explosions when stars run out of fuel they collapse and explode shining incredibly bright type 1A a supernova are consistent in their brightness making them good standard candles astronomers have been studying them for years to measure distances in space in a type one a supernova a white dwarf star takes material from a nearby star and when it reaches a certain Mass explodes in a consistent way these supernovae are very bright and uniform making them useful for measuring distances in the 1990s two groups led by Seoul Perlmutter and Brian Schmidt used type 1A supernovae to measure the universe's expansion they found that instead of slowing down the expansion has been speeding up since the universe was about 7 billion years old the universe's expansion initially slowed like a car approaching a toll booth this matched predictions however data showed that after about 7 billion years the universe started speeding up like a car accelerating after an Easy Pass Lane expansion rates were slower in the past than they are now Einstein's idea from 1917 about a cosmological constant can explain the universe's acceleration regular Gravity from matter slows expansion but as space spreads out this pool weakens if there's a small cosmological constant with the right value it could initially be overpowered by gravity's pull causing the universe to slow down later as Mata thins out the constant's repulsive Force which doesn't weaken takes over and accelerates expansion in the late 1990s after analyzing data both Perlmutter and Schmidt groups suggested that Einstein's concept of a cosmological constant wasn't entirely wrong the universe likely has it but its effect has been mainly repulsion not matching Einstein's original idea of balance between attraction and repulsion this discovery if verified would confirm Einstein's Insight after over 80 years the speed at which a supernova moves away depends on the balance between regular matters pull and the dark energy push from the cosmological constant Supernova researchers found that for the observed acceleration the dark energy from the constant must contribute about 70 percent of the universe's mass energy this number is remarkable if true it means only a tiny portion five percent is ordinary matter and another mysterious Dark Matter form contributes a bit more while most seventy percent is this enigmatic dark energy this shifts our view not just from being at the center but that our composition is a small part of the universe the Supernova data and inflation ideas match perfectly they support each other confirming the Unseen part of the universe that inflationists pondered over combining both we understand that the Universe began with an inflating field causing rapid inflation later ordinary matter and radiation were produced for billions of years their gravity slowed expansion then around 7 billion years ago the universe's cosmological Constance repulsion took over leading to continuous acceleration in around 100 billion years ??? most galaxies will move away faster than light due to expanding space this means we won't be able to see them even with powerful telescopes if this is accurate the distant future will bring a vast empty and isolated universe with these discoveries it seemed like the cosmological puzzle was coming together inflation addressed questions from the standard Big Bang Theory like why space expanded and why the microwave radiation is uniform however deeper questions remain such as what came before inflation and why the universe has a mix of ingredients five percent regular matter 25 dark matter and 70 dark energy despite these challenges inflation is the leading cosmological theory supported by observations and Theory many physicists believe in it as a
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significant contribution to understanding the universe's Origins
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(05)- (05)- The shift in frequency helps determine their speed as well known as when police sirens fade away as they move away, determining how far something is in space is difficult for astronomers, objects appear fainter when they are further away, but measuring it's not easy judge the distance of an object by its brightness you need to know how bright it would be up close finding a reliable standard for brightness is challenging one possibility is supernova explosions when stars run out of fuel they collapse and explode glowing incredibly bright type 1A and supernovae are consistent due to their luminosities are good standard candles astronomers have studied them for years to measure distances in space for a type one supernova a white dwarf picks up material from a nearby star and when it reaches a certain mass it explodes in a consistent fashion these supernovae are very bright and uniform, which makes them useful to measure distances in the 1990s, two groups led by **Soul Perlmutter** and **Brian Schmidt** used Type 1A supernovae to measure the expansion of the universe, discovered, ??????? and how? that instead of slowing down, the expansion has been accelerating ugh ever since the universe began. The 7-billion-year-old expansion of the universe initially slowed down like a car approaching a toll booth, which was consistent with predictions, but the data showed and that after about 7 billion years the universe began to speed up like a car accelerating after the rate of expansion Easy Pass Lane was slower in the past than now these are Einstein's 1917 idea >about a cosmological constant that can explain the acceleration of the universe how ????, what ???? by speculation, and by Bulgarian constants !! regular gravity from matter slows down the expansion, but as space expands this pool weakens, if there is a small cosmological constant with the right value that could initially be overwhelmed by gravity causing the universe to slow down later as mass thins out the repulsive force constant, which does not weaken, will take over and accelerate the expansion in the late 1990s after analyzing data from both Perlmutter's and Schmidt's groups suggested that Einstein's concept of the cosmological constant was not entirely wrong in the universe. probably yes, but its effect was mainly repulsion, which did not match Einstein's original idea of a balance between attraction and repulsion, if this discovery were verified, after more than 80 years, it would confirm Einstein's insight that the speed at which a supernova moves away depends on the balance between by attracting ordinary matter and the pressure of dark energy from the cosmological constant Supernova researchers **discovered**, ? what, how ? that for the observed acceleration, dark energy must contribute about 70 percent of the mass energy of the universe from the constant, **??** this number is remarkable, if true, it means that only a small fraction, five percent, is ordinary matter and another mysterious form of dark matter contribute a bit more, while most seventy percent is this mysterious dark energy that shifts our view ?? not only from being in the center, but from our composition being small part of the universe, the supernova data and the inflationary ideas are a perfect match, supporting each other, confirming the invisible part of the universe that inflation enthusiasts have thought about connecting the two we understand that the universe began with an inflationary field causing rapid inflation, later ordinary matter and radiation were produced billions of years, their gravity slowed the expansion, then about 7 billion years ago the cosmological repulsion in the universe took over, leading to a continuous acceleration for about 100 billion years, ????? most galaxies will be receding faster than light due to the expanding space, meaning we won't be able to see them even with powerful telescopes, if accurate, the distant future will bring a vast empty and isolated universe with these discoveries, the cosmological puzzle seemed to come together, inflation addressed questions from the standard big bang theory , such as why the universe expanded and why microwave radiation is uniform, but deeper questions remain, such as what came before inflation and why the universe has a mixture of

components of 5 percent regular matter 25 dark matter and 70 dark energy despite these challenges, inflation is the leading cosmological theory supported observations and a theory that many physicists believe to be a 29:59 major contribution to understanding the origin of the universe.

JN, com 07.12.2023

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At the big bang there was a "change of state" from the previous state to the subsequent state. The previous srav, i.e. the previous universe, was only a two-dimensional space-time, without matter, flat, infinite, without the flow of time, without the expansion of space. And the big-bang was a sudden change in curvature !!!! curvature of all dimensions of space-time, i.e. 3+3D, to the state of extra, ultra-curved space-time. Now, in that boiling plasma, the formation of matter occurred by "packaging" dimensions into basic (simple) wave packets, which then interacted into more complex formations (atoms, compound molecules...DNA), the boiling space-time began to expand (not expand, but expand! http://www.hypothesis-of-universe.com/docs/c/c_032.gif), began to run, time passed (expanded by time dimensions, unfolded by space), the emergence of 4 physical forces, and last but not least, the emergence of a sequence of laws, rules, princes. (At the beginning of "this universe" there was no law of combining acids and bases into salts)...So the "warping" of dimensions by a jump, that's the big-bang.

JN, 03.12.2023 příspěvek do YouTube

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