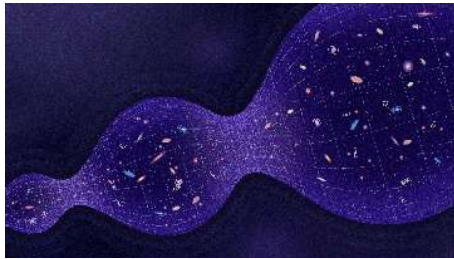


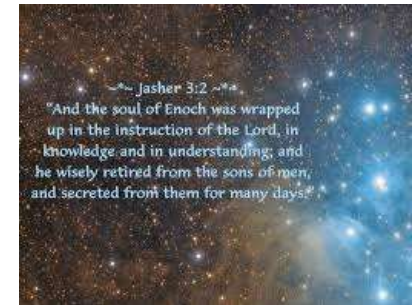
# Cosmology: The Big Bounce, Not the Big Bang



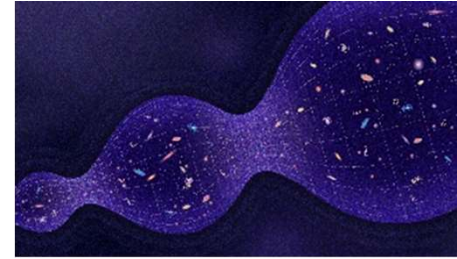
9 May 2024

Adapted from Wikipedia, YouTube

@2024, AlephTalks

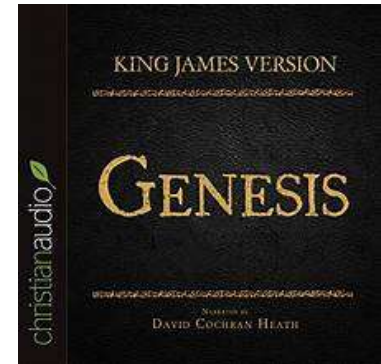


# Big Bang->Big Bounce



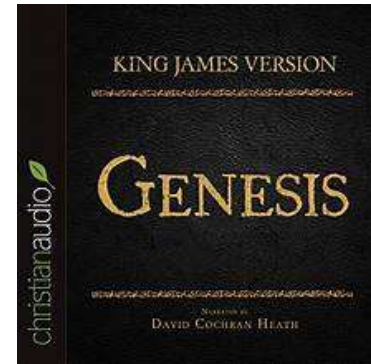
- Genesis, Book of John
- [Percival Lowell](#), [Henrietta Swan Leavitt](#), [Vesto Slipher](#), [Edwin Hubble](#)
- Dark Matter: [Fritz Zwicky](#), [Vera Rubin](#)
- [Cosmic Microwave Background \(CMB\) Radiation](#): [Penzias/Wilson](#)
- Supporting Theory
  - Einstein, [Alexander Friedmann](#), [Georges LeMaitre](#), [George Gamow](#), [Robert Alpher](#), [Robert Hermann](#), [Robert Dicke](#), [PJE Peebles](#)
  - Big Bounce: [Willem DeSitter](#), [Carl Friedrich von Weizsäcker](#), [George McVitte](#), [George Gamow](#)
- More detailed Cosmic Microwave Background measurements
  - [Cosmic Background Explorer](#)
  - [BOOMERanG Experiment](#)
  - [Wilkinson Microwave Anisotropy Probe](#)
  - [Planck Spacecraft](#)
- Inflation: [Guth](#), [Linde](#) -> multiple universes, not just one (cf [Tzimtzum](#))
- Exoplanets: [Michel Mayor](#), [Kepler Telescope](#), [James Webb Telescope](#)
- [Big Bounce](#)
  - [Aryuvedic Texts](#), [Penrose](#)
  - [Ronald Cowen Observations](#)
- Isaac Asmov: [The Last Question](#)

# Genesis: King James Bible



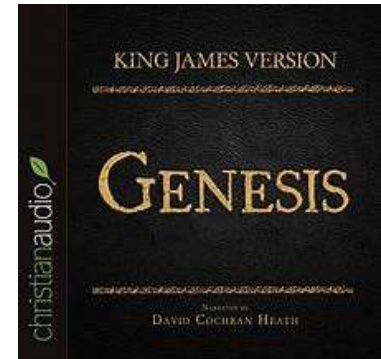
- 1 In the beginning God created the heaven and the earth.
- 2 And the earth was without form, and void; and darkness was upon the face of the deep. And the Spirit of God moved upon the face of the waters.
- 3 And God said, Let there be light: and there was light.
- 4 And God saw the light, that it was good: and God divided the light from the darkness.
- 5 And God called the light Day, and the darkness he called Night. And the evening and the morning were the first day.
- 6 And God said, Let there be a firmament in the midst of the waters, and let it divide the waters from the waters.
- 7 And God made the firmament, and divided the waters which were under the firmament from the waters which were above the firmament: and it was so.
- 8 And God called the firmament Heaven. And the evening and the morning were the second day.
- 9 And God said, Let the waters under the heaven be gathered together unto one place, and let the dry land appear: and it was so.
- 10 And God called the dry land Earth; and the gathering together of the waters called he Seas: and God saw that it was good

# Genesis: King James Bible



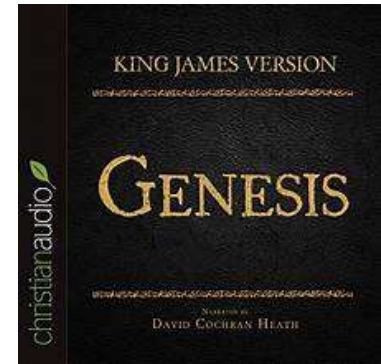
- 11 And God said, Let the earth bring forth grass, the herb yielding seed, and the fruit tree yielding fruit after his kind, whose seed is in itself, upon the earth: and it was so.
- 12 And the earth brought forth grass, and herb yielding seed after his kind, and the tree yielding fruit, whose seed was in itself, after his kind: and God saw that it was good.
- 13 And the evening and the morning were the third day.
- 14 And God said, Let there be lights in the firmament of the heaven to divide the day from the night; and let them be for signs, and for seasons, and for days, and years:
- 15 And let them be for lights in the firmament of the heaven to give light upon the earth: and it was so.
- 16 And God made two great lights; the greater light to rule the day, and the lesser light to rule the night: he made the stars also.
- 17 And God set them in the firmament of the heaven to give light upon the earth,
- 18 And to rule over the day and over the night, and to divide the light from the darkness: and God saw that it was good.
- 19 And the evening and the morning were the fourth day.
- 20 And God said, Let the waters bring forth abundantly the moving creature that hath life, and fowl that may fly above the earth in the open firmament of heaven.

# Genesis: King James Bible



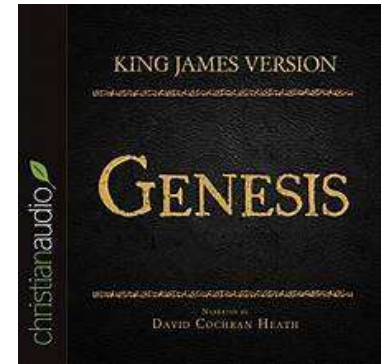
- 21 And God created great whales, and every living creature that moveth, which the waters brought forth abundantly, after their kind, and every winged fowl after his kind: and God saw that it was good.
- 22 And God blessed them, saying, Be fruitful, and multiply, and fill the waters in the seas, and let fowl multiply in the earth.
- 23 And the evening and the morning were the fifth day.
- 24 And God said, Let the earth bring forth the living creature after his kind, cattle, and creeping thing, and beast of the earth after his kind: and it was so.
- 25 And God made the beast of the earth after his kind, and cattle after their kind, and every thing that creepeth upon the earth after his kind: and God saw that it was good.
- 26 And God said, Let us make man in our image, after our likeness: and let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth.
- 27 So God created man in his own image, in the image of God created he him; male and female created he them.
- 28 And God blessed them, and God said unto them, Be fruitful, and multiply, and replenish the earth, and subdue it: and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth.
- 29 And God said, Behold, I have given you every herb bearing seed, which is upon the face of all the earth, and every tree, in the which is the fruit of a tree yielding seed; to you it shall be for meat.
- 30 And to every beast of the earth, and to every fowl of the air, and to every thing that creepeth upon the earth, wherein there is life, I have given every green herb for meat: and it was so.
- 31 And God saw every thing that he had made, and, behold, it was very good. And the evening and the morning were the sixth day.

# Book of John: King James Bible



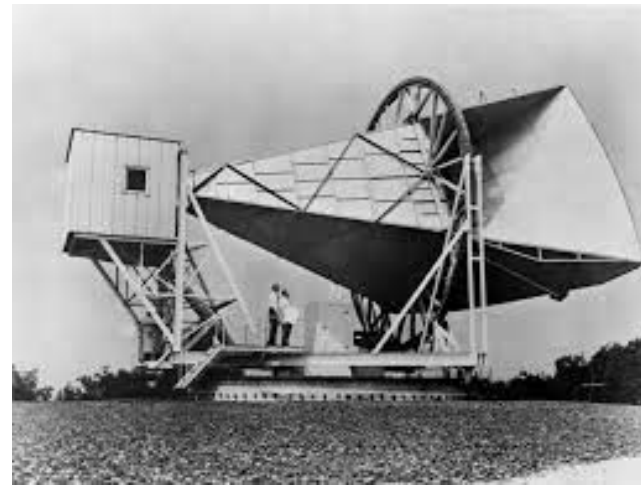
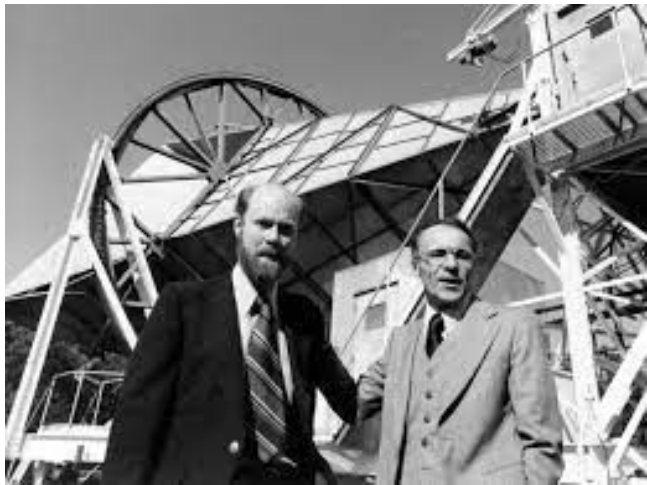
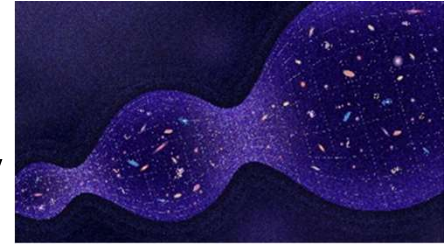
- 1In the beginning was the Word, and the Word was with God, and the Word was God.
- 2The same was in the beginning with God.
- 3All things were made by him; and without him was not any thing made that was made.
- 4In him was life; and the life was the light of men.
- 5And the light shineth in darkness; and the darkness comprehended it not.
- 6There was a man sent from God, whose name was John.
- 7The same came for a witness, to bear witness of the Light, that all men through him might believe.
- 8He was not that Light, but was sent to bear witness of that Light.
- 9That was the true Light, which lighteth every man that cometh into the world.
- 10He was in the world, and the world was made by him, and the world knew him not.

# Book of John: King James Bible



- 1In the beginning was the Word, and the Word was with God, and the Word was God.
- 2The same was in the beginning with God.
- 3All things were made by him; and without him was not any thing made that was made.
- 4In him was life; and the life was the light of men.
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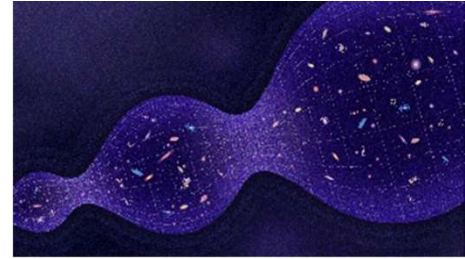
# Cosmic Background Microwave Energy



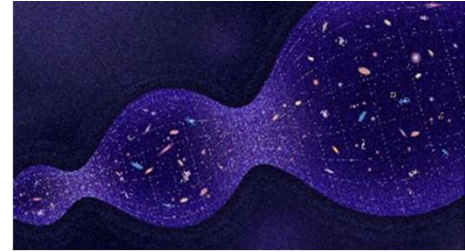


# Supporting Theory

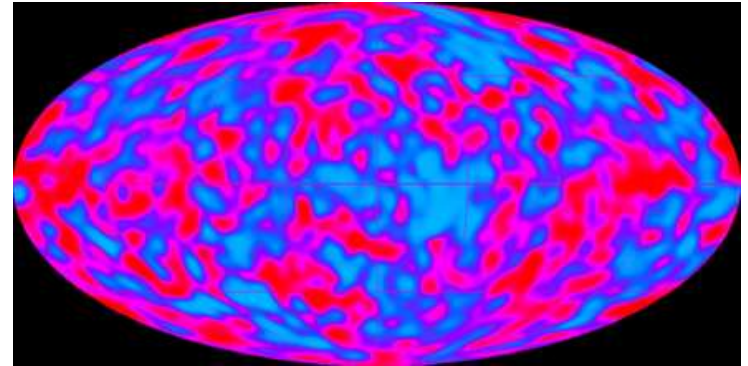
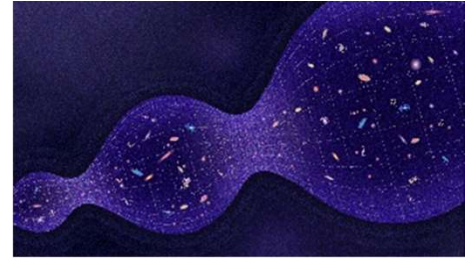
- Albert Einstein, Theory of General Relativity, 1915
- Alexander Friedmann, 1924
- Georges LeMaitre, 1927
- Ralph Alpher, 1948
- Robert Herman, 1948
- George Gamov, 1948
- Robert Dicke, 1963



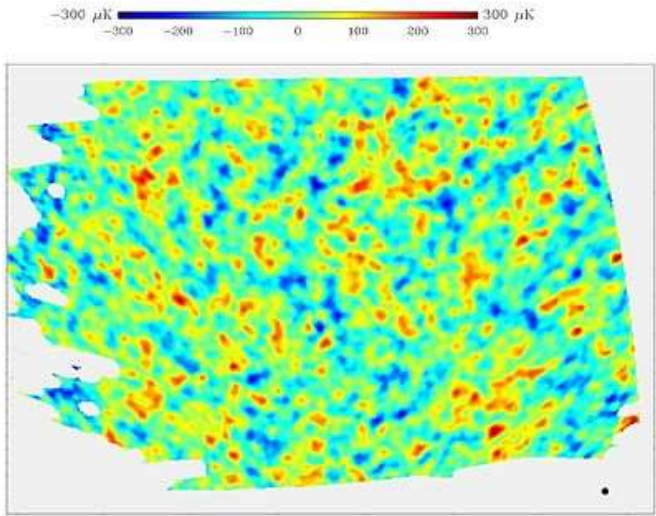
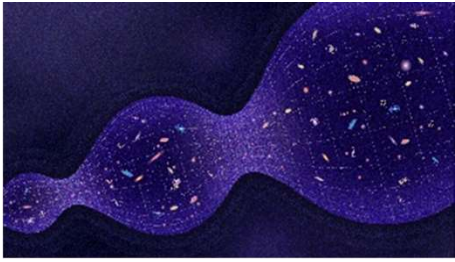
# Dark Matter



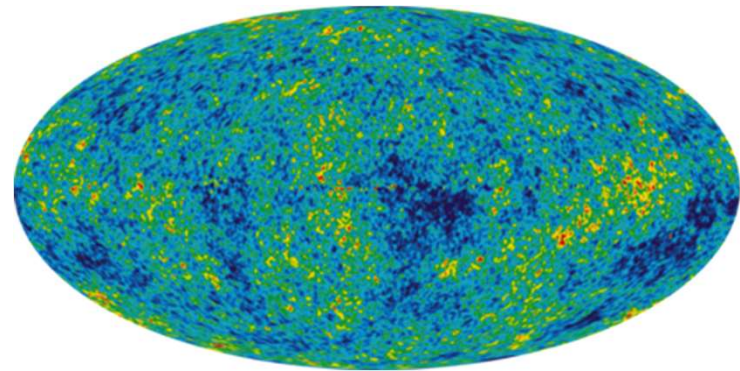
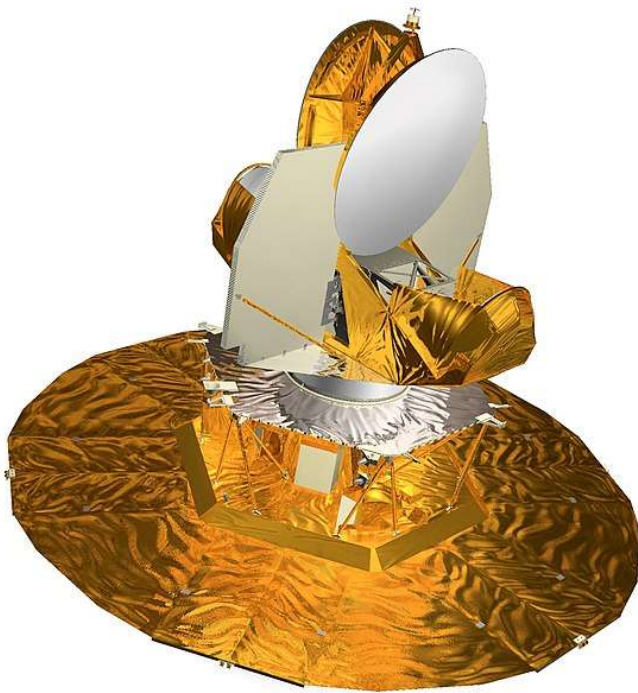
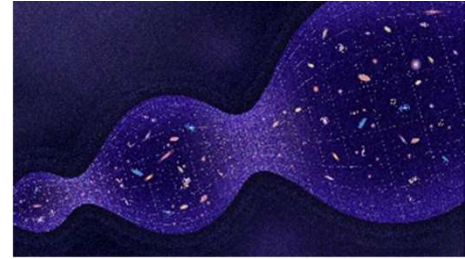
# Cosmic Background Explorer, 1989-1993



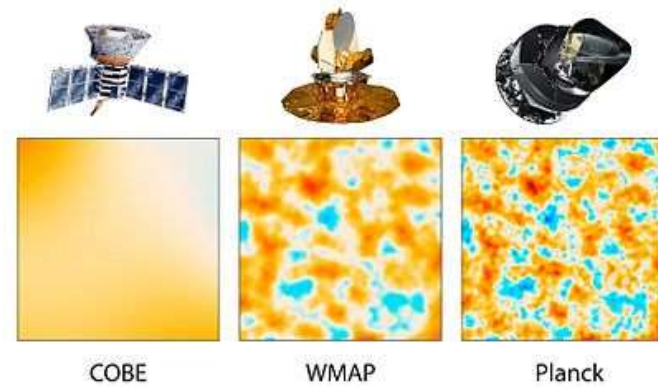
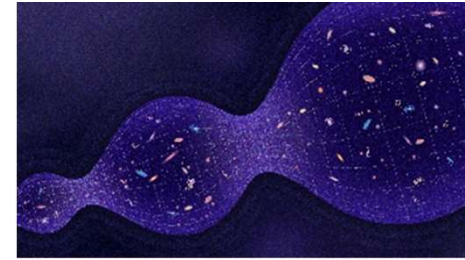
# BOOMERanG Experiment, 1997-1998



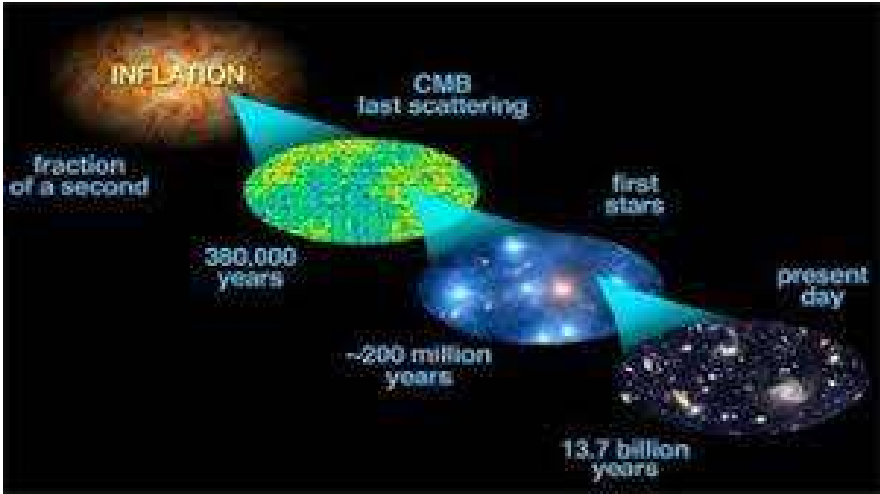
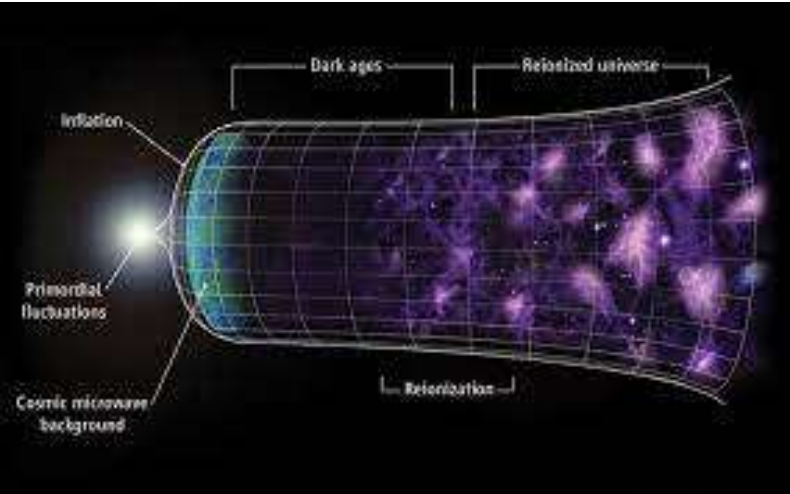
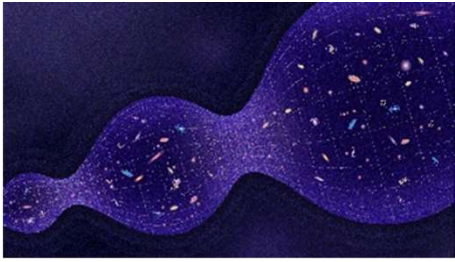
# Wilkinson Microwave Anisotropy Probe, 2001-2010



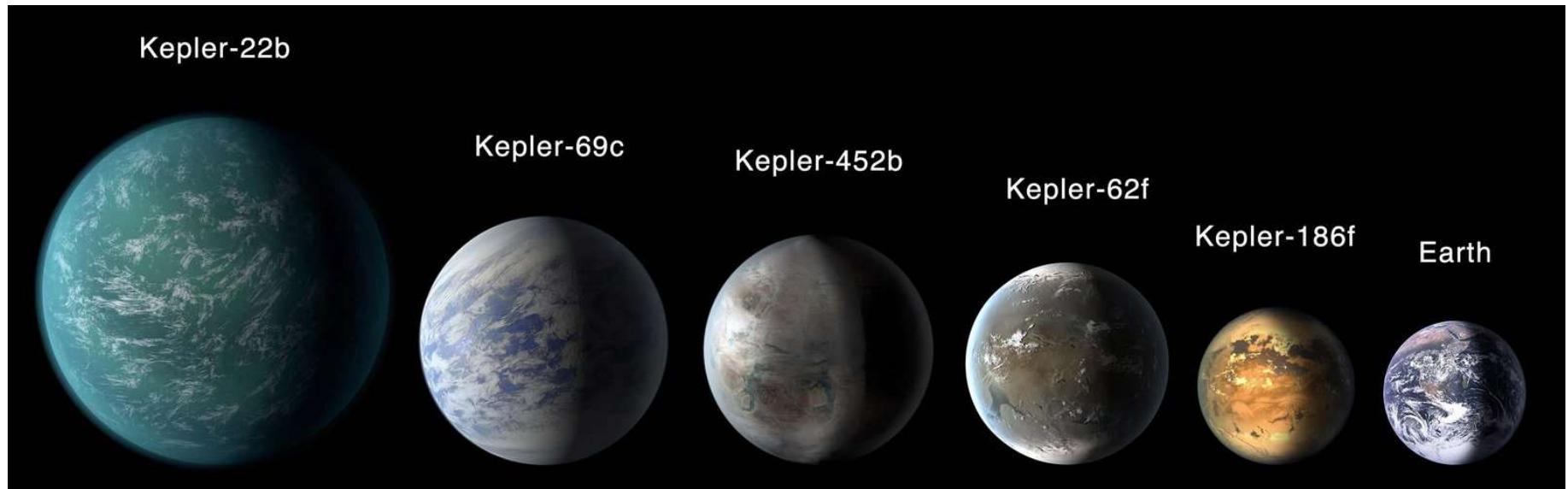
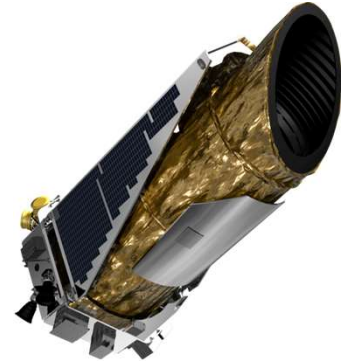
# Planck Spacecraft, 2009-2013



# Cosmic Inflation

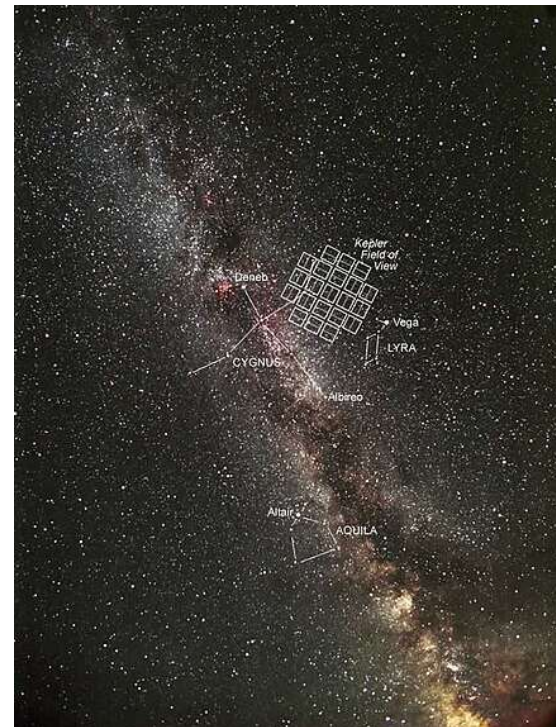
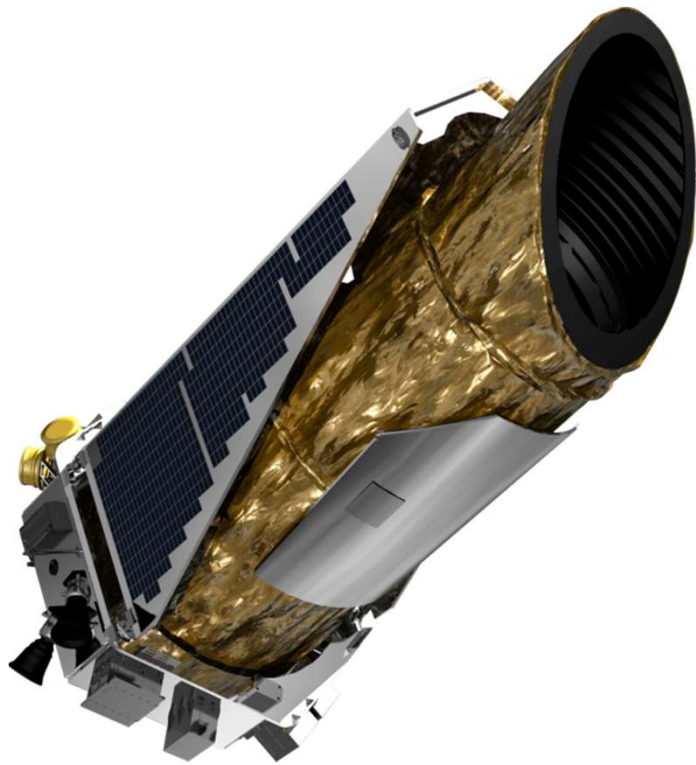
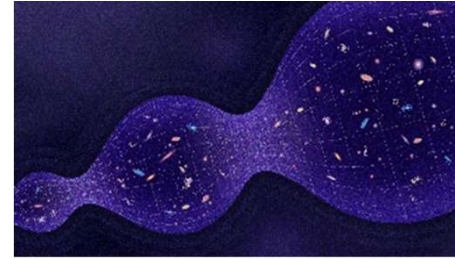


# Exoplanets: Michel Mayor



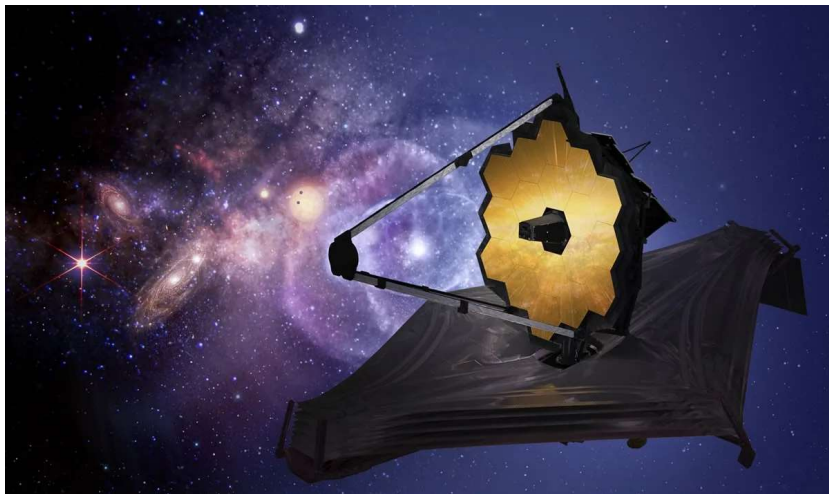
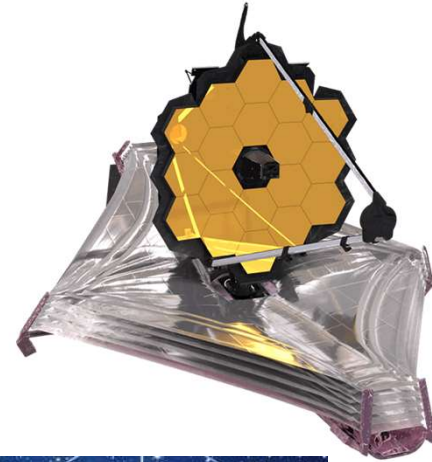


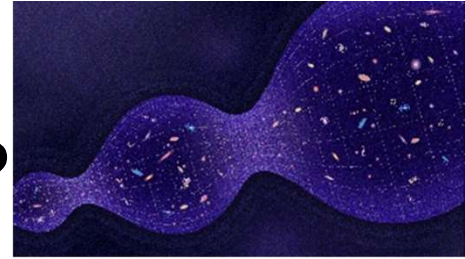
# Kepler Space Telescope



# Exoplanets:

## James Webb Space Telescope

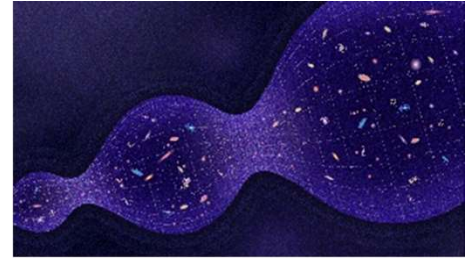




# What Is the Problem: Bang vs Bounce?

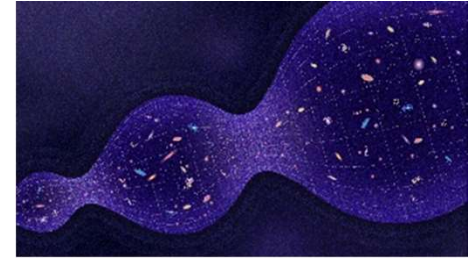
- One of the main problems with the Big Bang theory is that there is a singularity of zero volume and infinite energy at the moment of the Big Bang. This is normally interpreted as a breakdown of physics as we know it; in this case, of the theory of general relativity. This is why one expects quantum effects to become important and avoid a singularity.
- However, research in loop quantum cosmology purported to show that a previously existing universe collapses not to a singularity, but to a point where the quantum effects of gravity become so strongly repulsive that the universe rebounds back out, forming a new branch. Throughout this collapse and bounce, the evolution is unitary.

# Big Bounce Theories



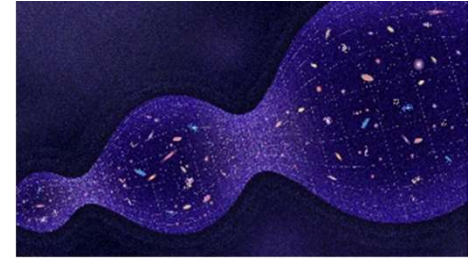
- In 2010, Roger Penrose advanced a general relativity-based theory which he called the "conformal cyclic cosmology". The theory explains that the universe will expand until all matter decays and ultimately turns to light. Since nothing in the universe would have any time or distance scale associated with it, the universe becomes identical with the Big Bang, resulting in a type of Big Crunch that becomes the next Big Bang, thus perpetuating the next cycle.

# Big Bounce Theories



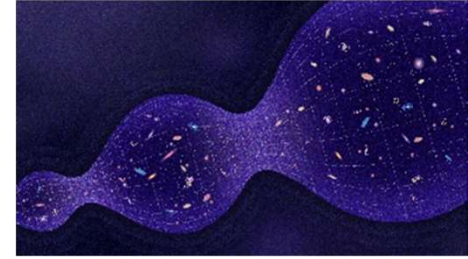
- In 2011, Nikodem Popławski showed that a nonsingular Big Bounce appears naturally in the Einstein–Cartan–Sciama–Kibble theory of gravity. This theory extends general relativity by removing a constraint of the symmetry of the affine connection and regarding its antisymmetric part, the torsion tensor, as a dynamical variable. The minimal coupling between torsion and Dirac spinors generates a spin-spin interaction which is significant in fermionic matter at extremely high densities. Such an interaction avoids the unphysical Big Bang singularity, replacing it with a cusp-like bounce at a finite minimum scale factor, before which the universe was contracting. This scenario also explains why the present Universe at the largest scales appears spatially flat, homogeneous, and isotropic, providing a physical alternative to cosmic inflation.

# Big Bounce Theories

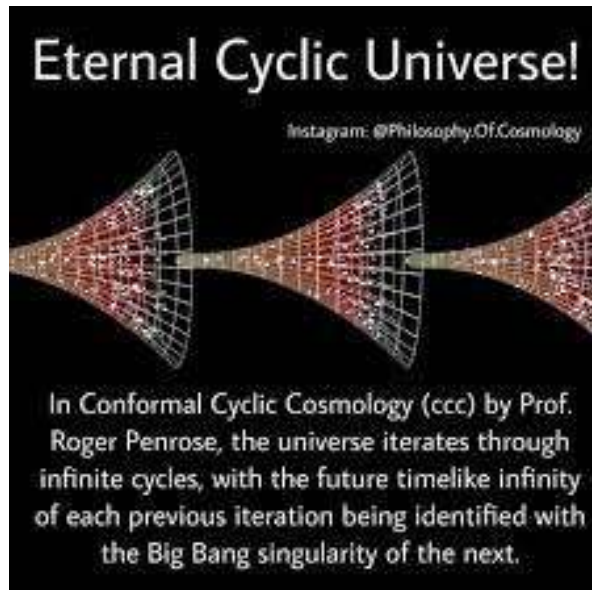
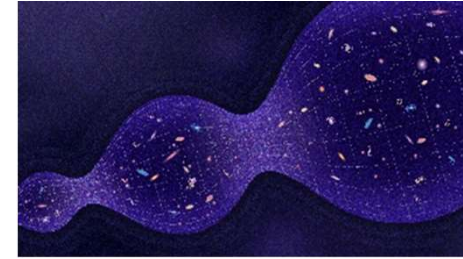


- In 2012, a new theory of a nonsingular Big Bounce was constructed within the frame of standard Einstein gravity. This theory combines the benefits of matter bounce and ekpyrotic cosmology. Particularly, in the homogeneous and isotropic background cosmological solution, the [BKL](#) instability is unstable to the growth of anisotropic stress, which is resolved in this theory. Moreover, curvature perturbations seeded in matter contraction can form a nearly scale-invariant primordial power spectrum and thus provide a consistent mechanism to explain the cosmic microwave background (CMB) observations.

# Ayurvedic Cyclic Cosmology



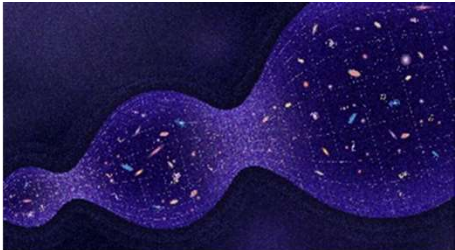
# Conformal Cyclic Cosmology



[The Next Universe and Before the Big Bang,](#)  
Roger Penrose

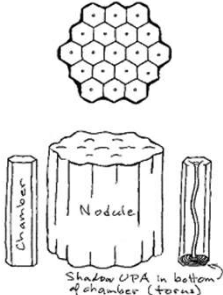
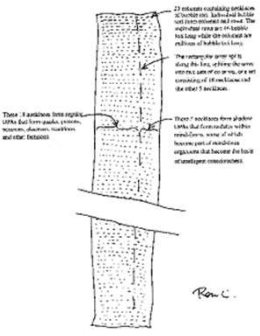
[Will The Big Bang Repeat,](#)  
Sabine Hossenfelder



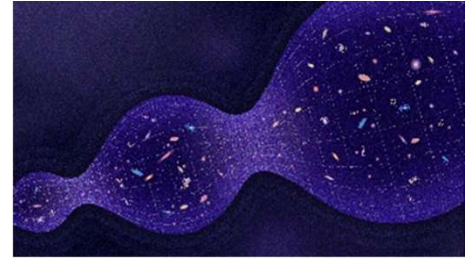


# Ronald Cowen Observations

- Observations made through memories of mind forms/dark matter going back to origin of this universe
- Big bounce, not big bang: no nuclear fireball NO BANG
- Inflation confirmed: space compartments spring to full size
- Two Higgs bosons, one for matter, one for dark matter

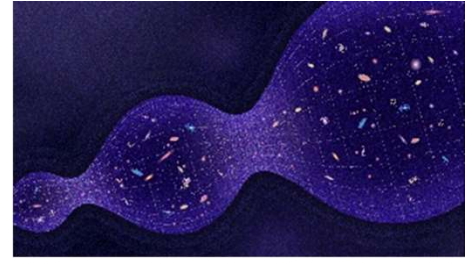


# Ron Cowen: Bubble Torus



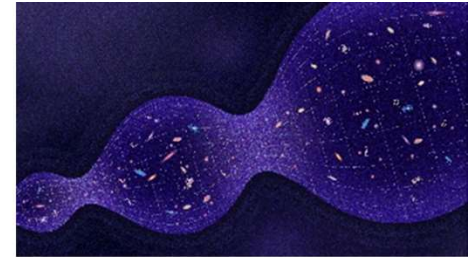
- Almost all memory of the previous universe was erased in the Big Bounce. The brief remnants of memory suggest the previous universe had been shrinking for a very long time, and the space compartments had gradually flattened.
- Inside each space compartment was a rectangular array of a large number of particles I called bubble tori (Leadbeater and Besant called them bubble koilon).
- The bubble tori appear to be information waves.

# Ron Cowen: Bubble Torus

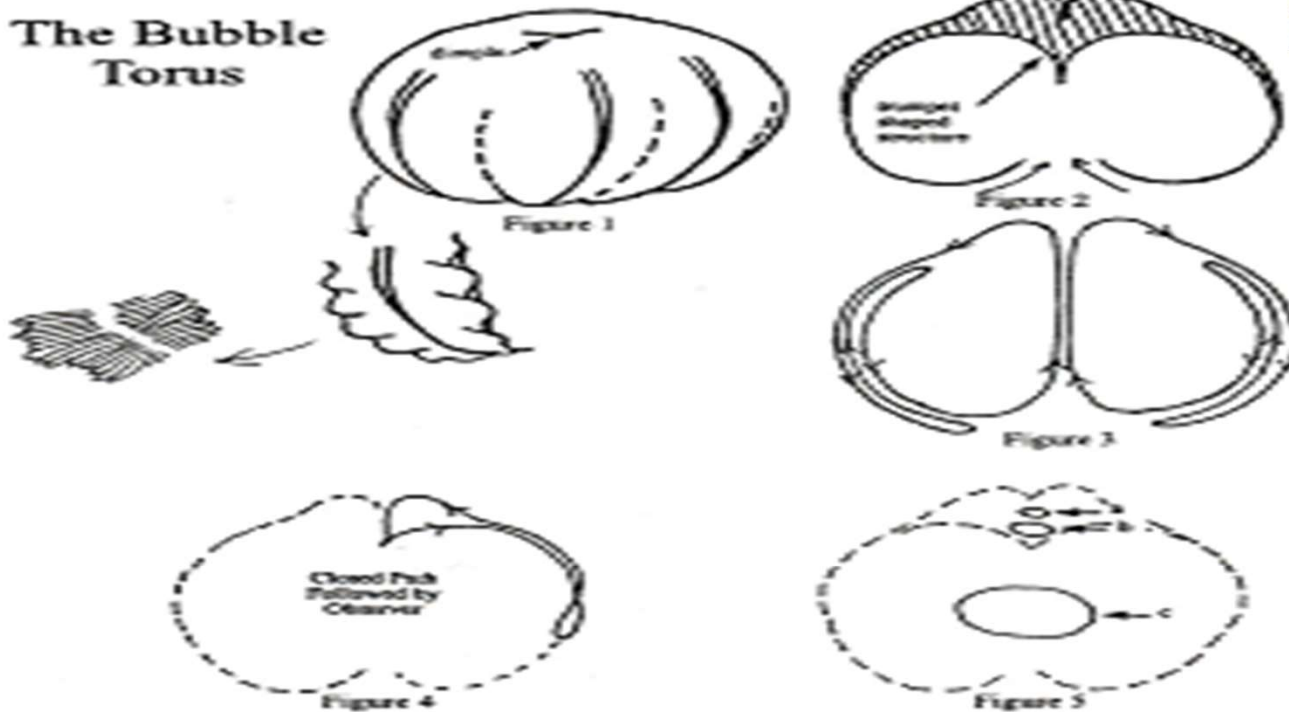


- The bubble tori was the only type of matter to survive the Big Bounce.
- For a brief moment, each flattened space compartment was occupied by 23 heterotic strings (I counted a few and always found 23). Each string was a hollow tube with bubble tori flowing back and forth inside the tube. The number of bubble tori were in the millions upon millions.
- The string were in constant oscillatory motion.

# Ron Cowen: Bubble Torus

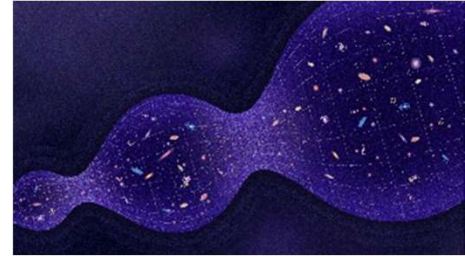


## The Bubble Torus



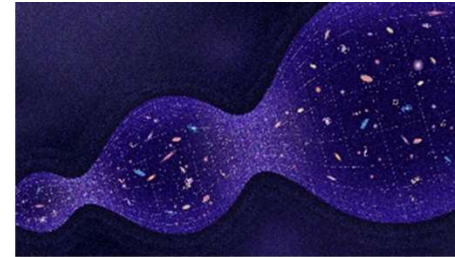
Necklaces of bubble tori are not stable until they form either a UPA of ten necklaces (which go on to form protons, neutrons, electrons, and other forms of ordinary matter) or a UPA of five necklaces (which go to form mind-forms and other forms of shadow matter). For reasons that are not clear to me, the five necklaces in the original splits became shadow matter while the remaining 18 went on to form UPAs with ten necklaces each. The resulting instability created chaos with space compartments breaking up as unstable necklaces tried to form stable UPAs. The result was the formation of large numbers of neutrinos that consisted of a few bubble tori. But most of the necklaces peaked off without getting broken into pieces.

# Ron Cowen: Bubble Torus

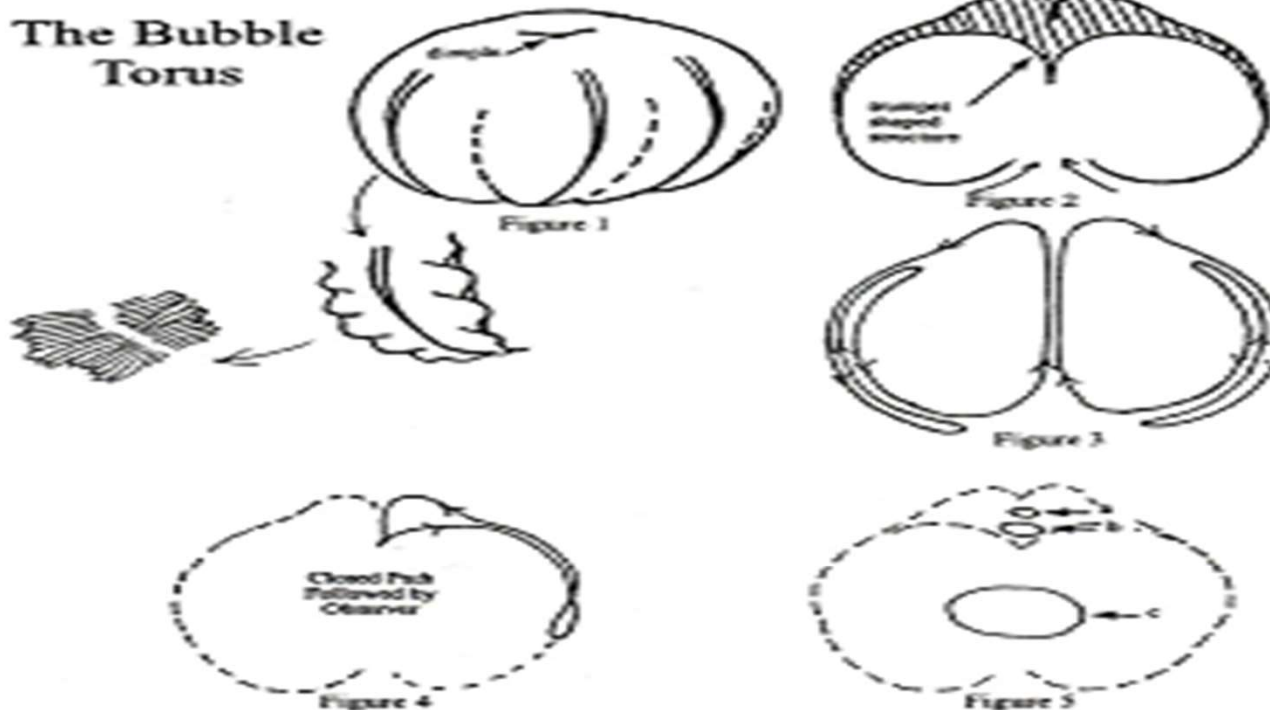


- Somewhere in the small universe, a rectangular array of 23 strings started to split in two.
- The split occurred between the fifth and sixth strings.
- As soon as the array started to split the space compartment holding it expanded in size.
- Each adjoining space compartment then to have its array of 23 strings split in 18 strings and 5 strings, and the space compartment started to expand in size (inflation).

# Ron Cowen: Bubble Torus

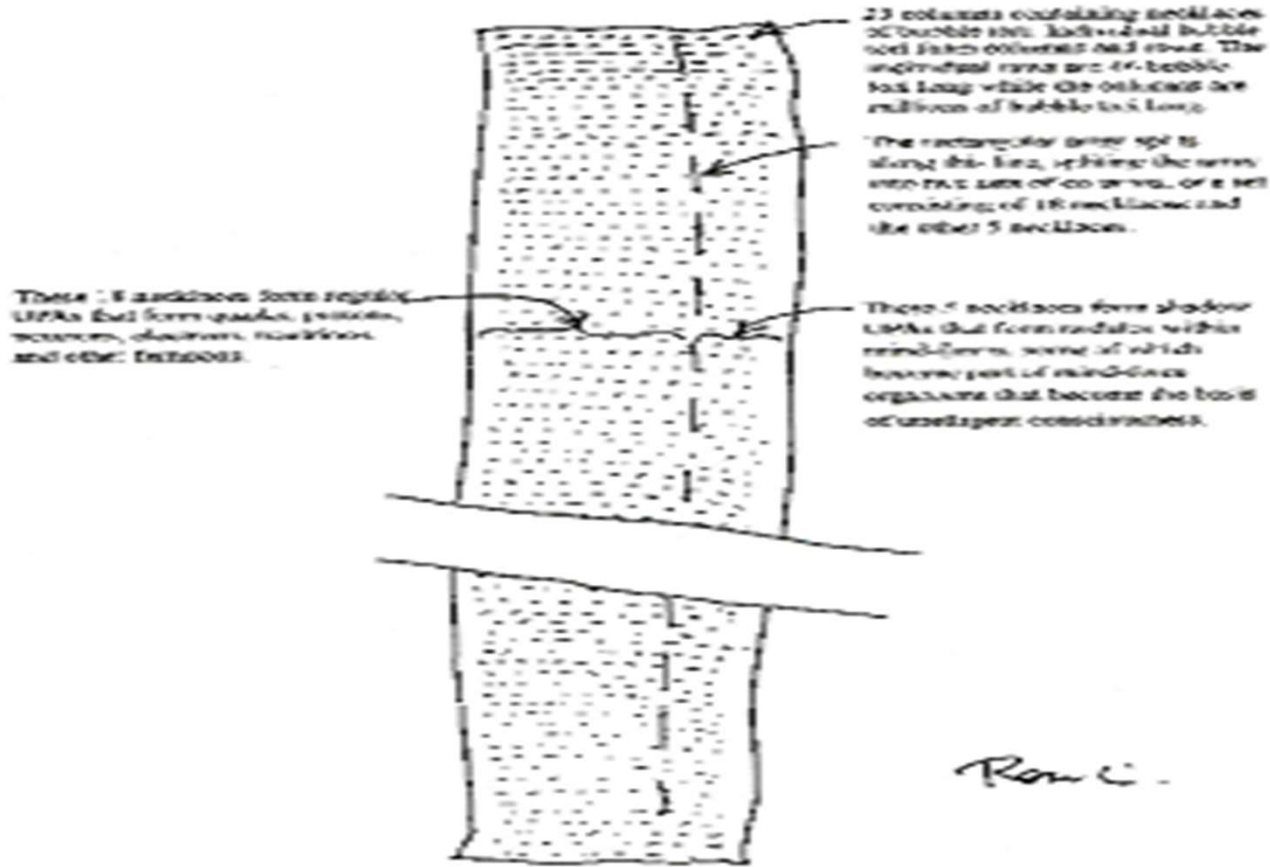
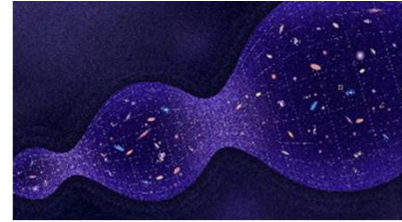


## The Bubble Torus

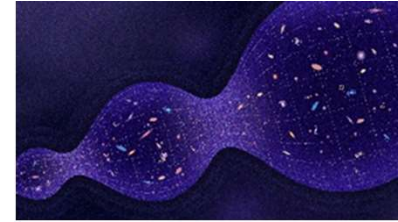


Necklaces of bubble tori are not stable until they form either a UPA of ten necklaces (which go on to form protons, neutrons, electrons, and other forms of ordinary matter) or a UPA of five necklaces (which go to form mind-forms and other forms of shadow matter). For reasons that are not clear to me, the five necklaces in the original splits became shadow matter while the remaining 18 went on to form UPAs with ten necklaces each. The resulting instability created chaos with space compartments breaking up as unstable necklaces tried to form stable UPAs. The result was the formation of large numbers of neutrinos that consisted of a few bubble tori. But most of the necklaces peeled off without getting broken into pieces.

# Ron Cowen: Bubble Torus



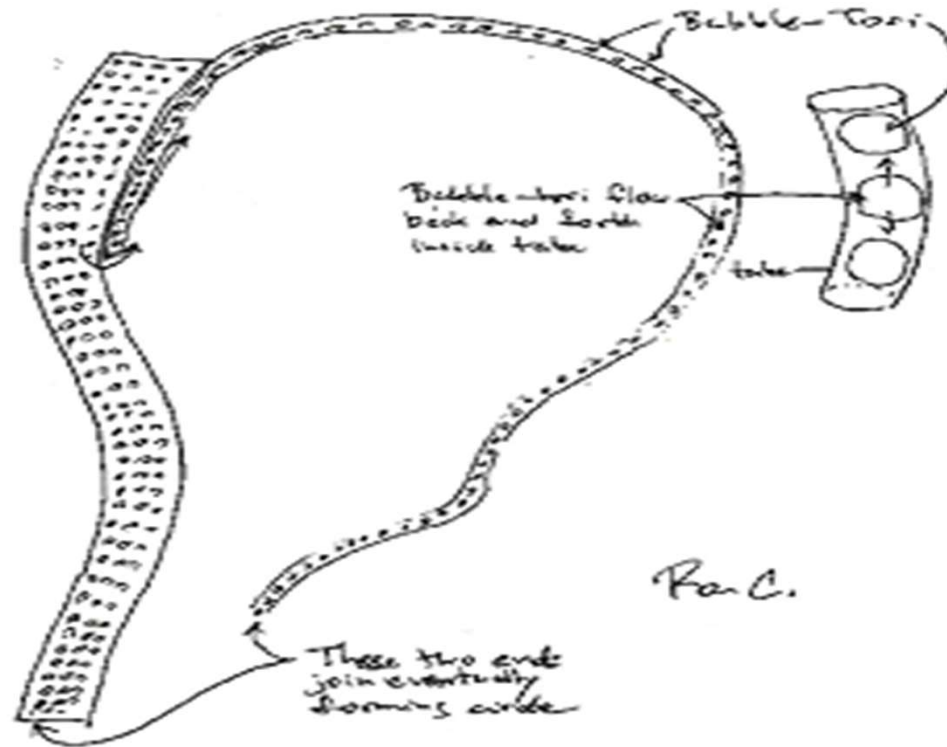
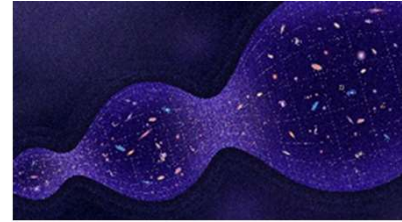
# Ron Cowen: Helix Formation



- To achieve stability, 18 of the 26 dimensions become compactified. The influence of each compactified dimension is shown by bosons that interact in that dimension.
- While the rectangular array is intact, for matter and dark matter, respectively, six dimensions are compactified inside the bubble tori, four space-time dimensions are not compactified, with a final six dimensions being compactified to synchronize boson interactions in all compactified dimensions.

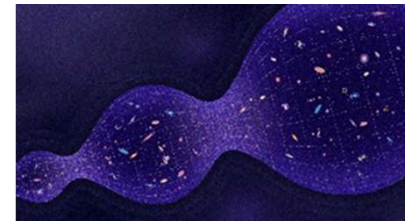


# Ron Cowen: Helix Formation

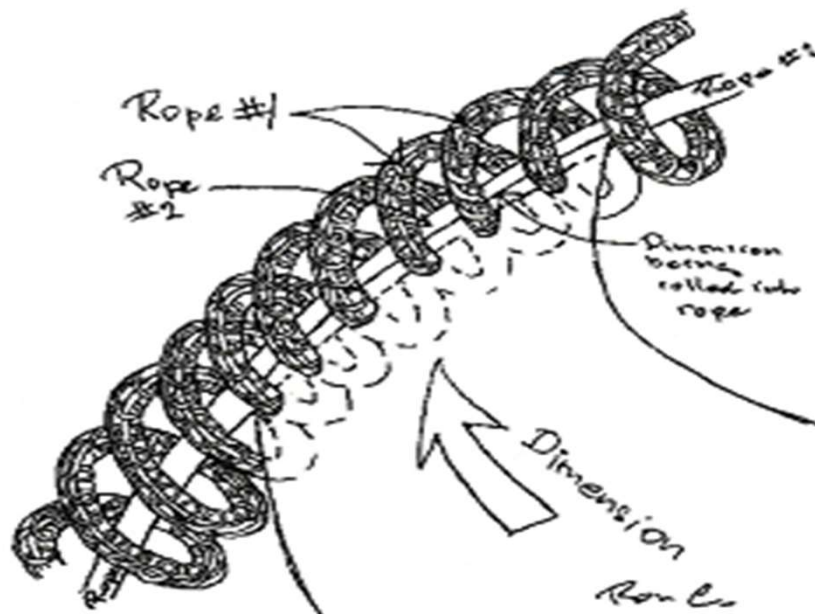


The formation of strings. A necklace becomes a string, as in string theory, when it becomes one of the ten strings around a regular UPA or one of the five strings around a shadow UPA. As soon as a space compartment started to explode and the rectangular array split between the fifth and sixth necklaces, multiple necklaces began to peel off and flying in all directions. If a necklace broke into a line with two ends, it quickly reformed a circle in most cases. These necklaces were unstable in two ways: (1) a single necklace quickly form multiple cylindrical helices and (2) groups of five or ten quickly for UPAs.

# Ron Cowen: Helix Formation

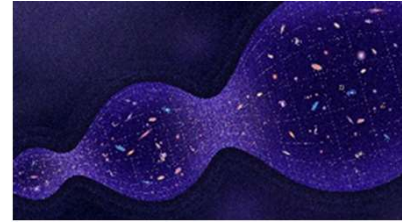


Helix formation occurs in seven stages. The first stage occurs as the row of bubble tori "wrap" into a cylindrical helix formation in which the tori wrap around a rope that absorbs specific dimensions. The rope forms the axis of the helix. This first rope then immediately forms a second and larger helix wrapped around a second rope. This process is repeated seven times until there are seven ropes.



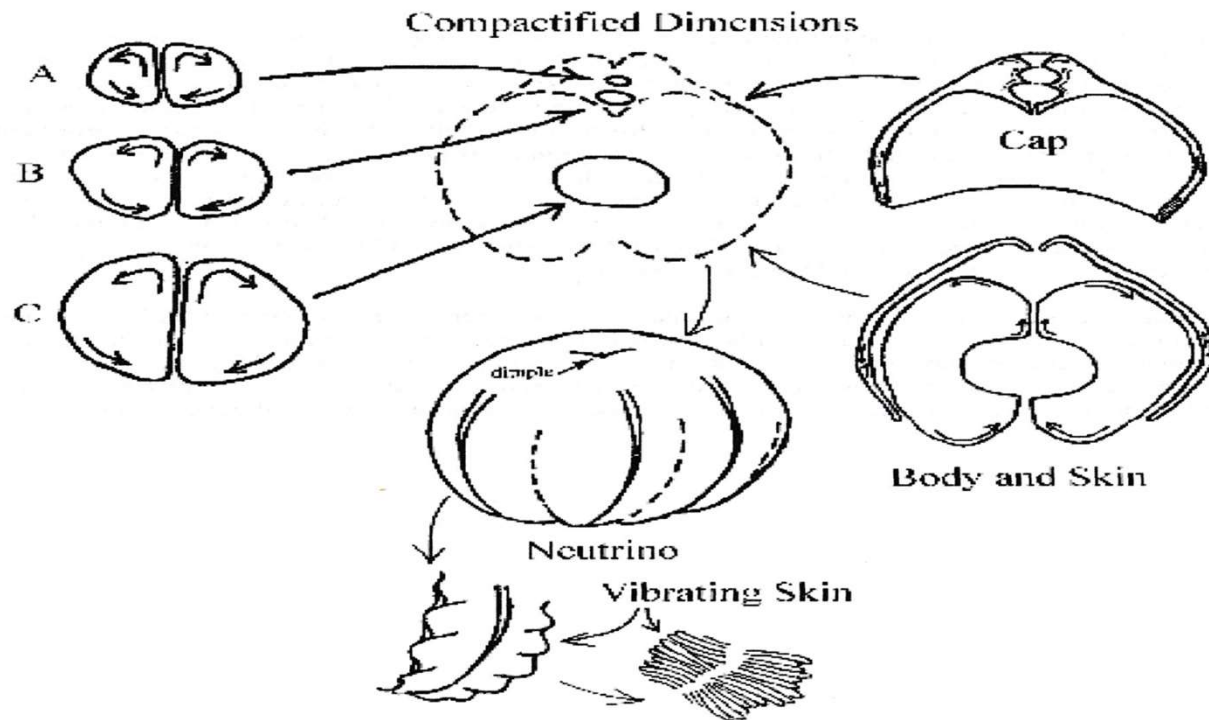
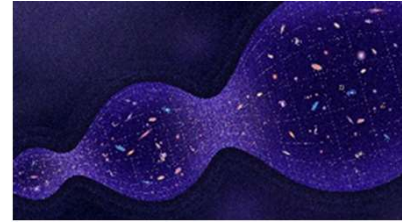
After a flurry of activity, two types of UPAs were formed, the regular UPA and the shadow UPA. The regular UPA was described in great detail by Leadbeater and Besant in their book, *Occult Chemistry*, and looks like this:

# Ron Cowen: Proton



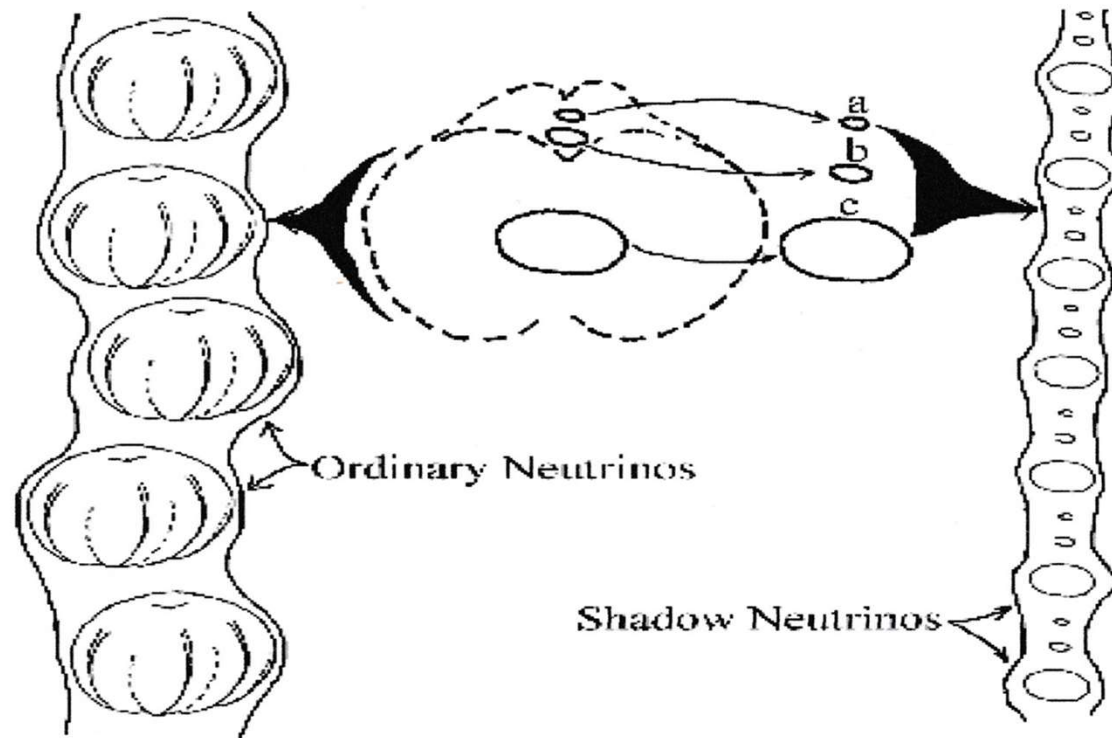
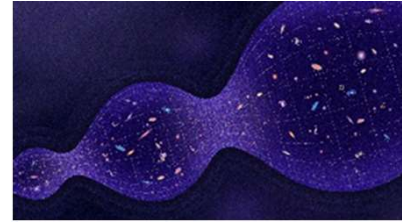
- Ron Cowen observed that when nine subquarks came together, the Higgs bosons around the individual subquarks became unstable and try to envelope all nine subquarks
- This is not stable, instead two large Higgs bosons take turns enveloping the nine subquarks in two hemispheres, with three bumps that pop in and out together; the hemispheres are actually tori, and the hole in each torus jumps from one bump to the next in a fixed order

# Ron Cowen: Neutrino

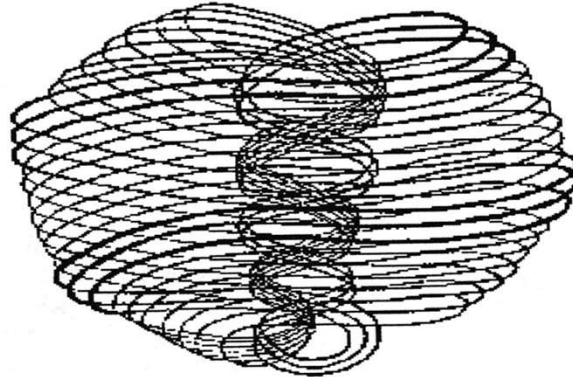
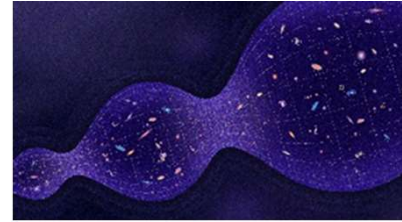


**The necklace of neutrinos.** A necklace consists of tubes of neutrinos. These tubes form helixes inside helixes and look like this. The ropes consist of compactified dimensions.

# Ron Cowen: Matter Neutrino and Dark Matter Neutrino



# Ron Cowen: Dark Matter Subquark



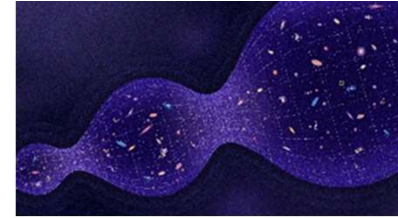
The shadow UPA was not observed by Leadbeater and Besant and it looks like this:



An individual string from the shadow UPA looks like this:

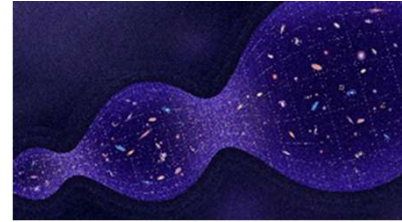


# Ron Cowen: Dark Matter Nodule



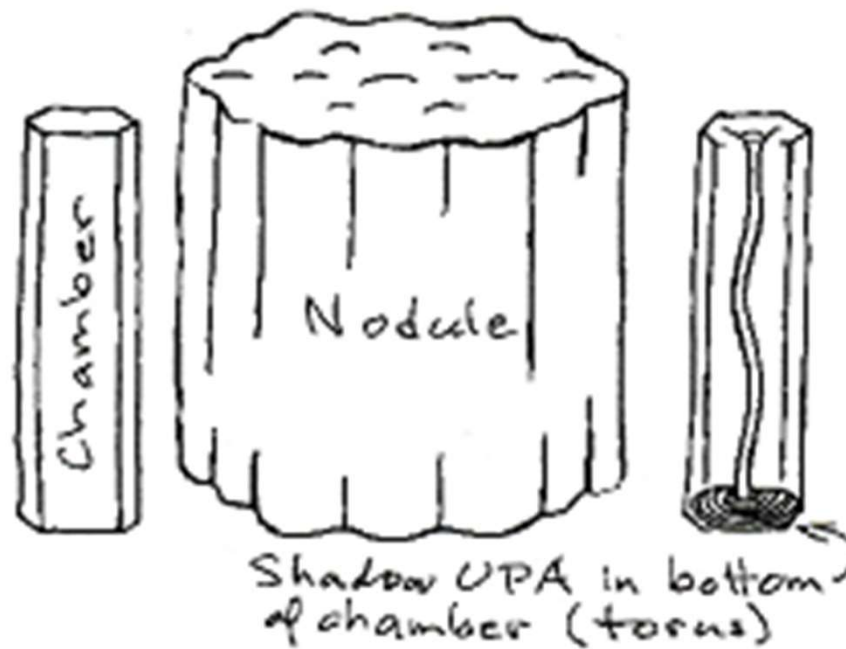
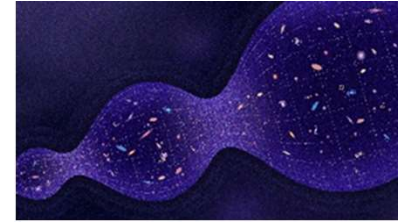
- Dark matter subquarks form at the bottom of hexagon shaped torus chambers that cluster together in groups of 19 to form nodules.
- The 19 chambers are tied together by strings consisting of rows of bubble tori inside a hollow tube.
- Viewed from above, a nodule contains 19 hexagon shaped tori with the holes extending top to bottom; viewed from the side, a nodule looks more like a barrel.

# Ron Cowen: Dark Matter Nodule Top View



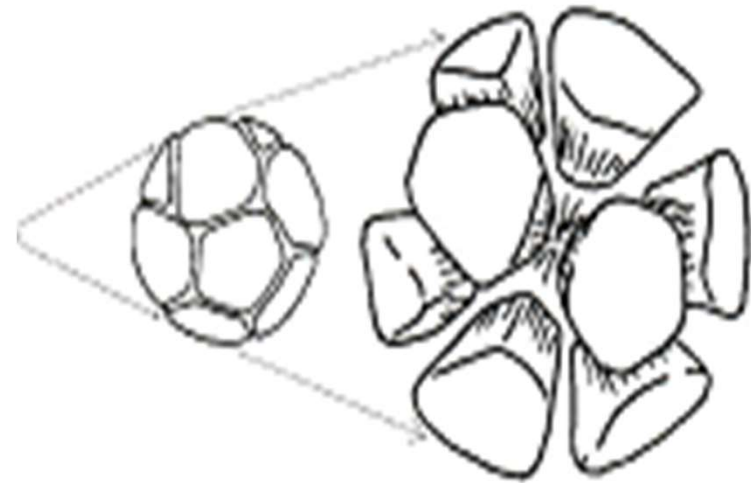
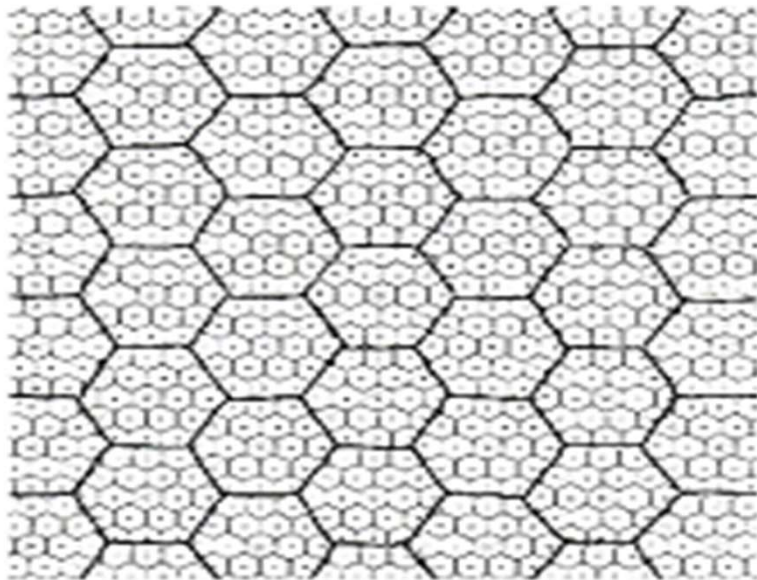
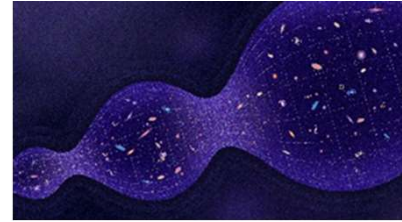


# Ron Cowen: Dark Matter Nodule Side View

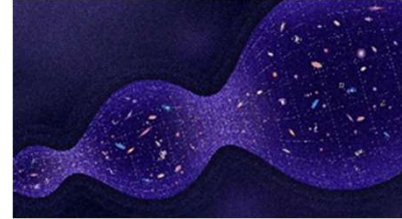


# Ron Cowen: Dark Matter Mega-Nodule

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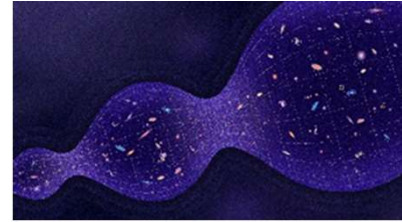
# Ron Cowen: Dark Matter Nodule



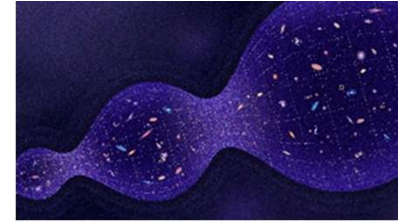
- Immediately after the big bounce, the number of mega-nodules multiplied very rapidly, while exploding in all directions.
- Mega-nodules at some point started to grow into a tree, with the oldest at the root, the youngest at the ends of the branches.
- This tree is a mind-form that has barely started to grow; when it absorbs a boson, it starts to grow the branches of the tree.
- Inside the human body are many mind forms.

# Ron Cowen: Dark Matter Initial Mind Form

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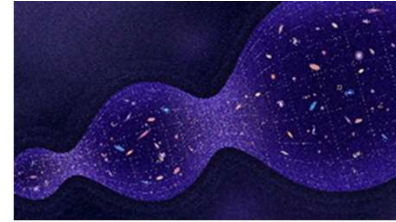


# Ron Cowen: Dark Matter

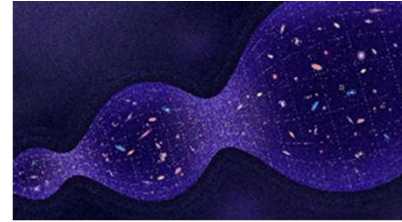


- A mind form grows many mega-nodules many times a second: the growth is incredible.
- The growth is fueled by dark matter interacting with matter through gravitation and the weak force to absorb energy from matter.
- Inactive dark matter forms wide swatches of arc shaped clouds, effectively hundreds of kilometers long parallel threads, within disk shaped galaxies

# Ron Cowen: Dark Matter Intermediate Mind Form



# Ron Cowen: Dark Matter Advanced Mind Form





# Summary: Big Bounce

All Matter Is Converted to Dark Matter

- No electrons, only subquarks in space compartments

Bounce Occured When Space Foam Compartments Collapse then Bounce

- Inflation is expansion of collapsed space foam compartments
- Dark energy is energy generated from bounce
- This occured several trillion years ago with creation of two Higgs bosons, one for dark matter and one for matter, to handle scaling of masses et al
- Dark matter combined and evolved to create sentient creatures/souls
- Much later after bounce, matter was created: Cosmic Microwave Background radiation appears to be remnant of our universe merging with another universe, probably millenia after the Big Bounce
- After expansion, universe begins to collapse to start cycle over again

Other universes/multiverses are also extant and going through cyclical bounces



# The Last Question

by Isaac Asimov, 1956

