The image features a circular graphic with a blue background, containing the text "THE VIEW from the CENTER of the UNIVERSE". The text is arranged in a circular pattern within the graphic. The words "THE VIEW" and "UNIVERSE" are in a white, sans-serif font. The words "from the" and "of the" are in a smaller, italicized, gold-colored font. The word "CENTER" is in a large, white, sans-serif font. The background of the graphic is a dark blue with a pattern of small, bright blue stars and faint, glowing lines, suggesting a cosmic or celestial theme. The entire graphic is set against a larger background of a starry night sky with various constellations and bright stars.

THE VIEW  
*from the*  
CENTER  
*of the*  
UNIVERSE

# JUDAISM AND COSMOLOGY

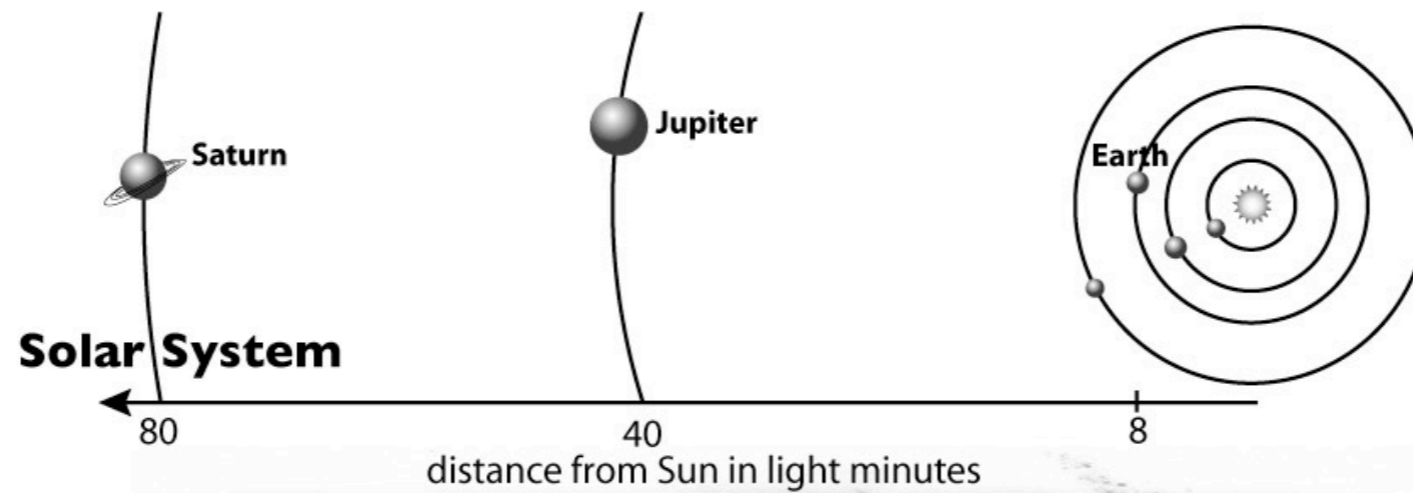
*Joel R. Primack, UCSC*

Cosmology is going through a scientific revolution that is creating humanity's ***first picture of the history of the universe as a whole that might actually be true.***

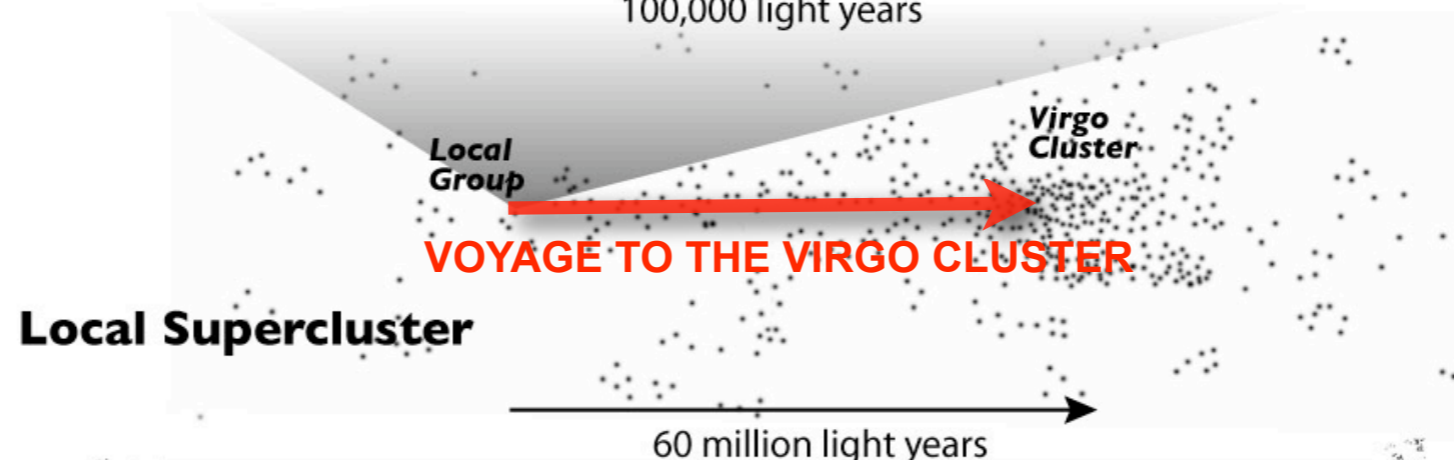
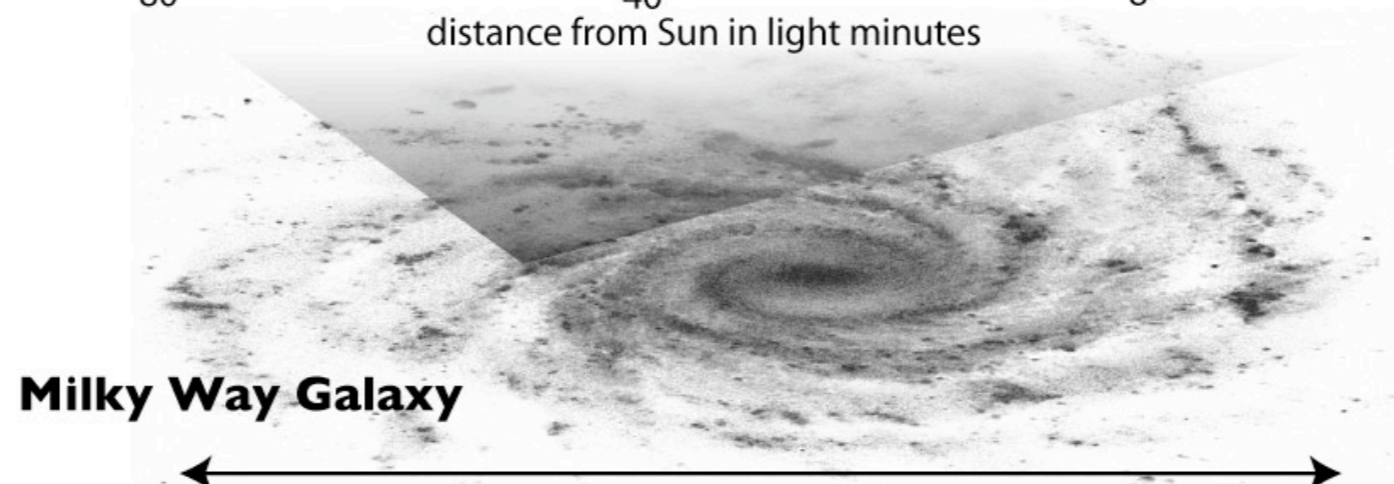
In this new scientific picture, ***we are cosmically central, and we live at a pivotal time.***

Knowing this helps us redefine ***Tikkun Olam*** for our pivotal time.

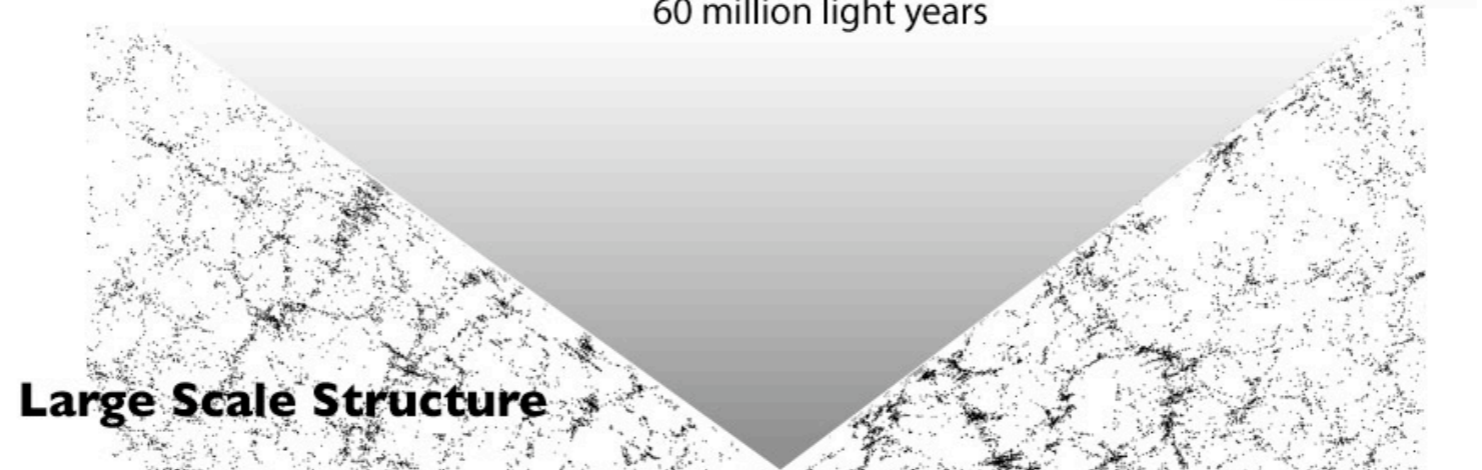
# The Modern Scientific Cosmos



## Our Cosmic Address



each dot is a big galaxy



Sloan Digital Sky Survey

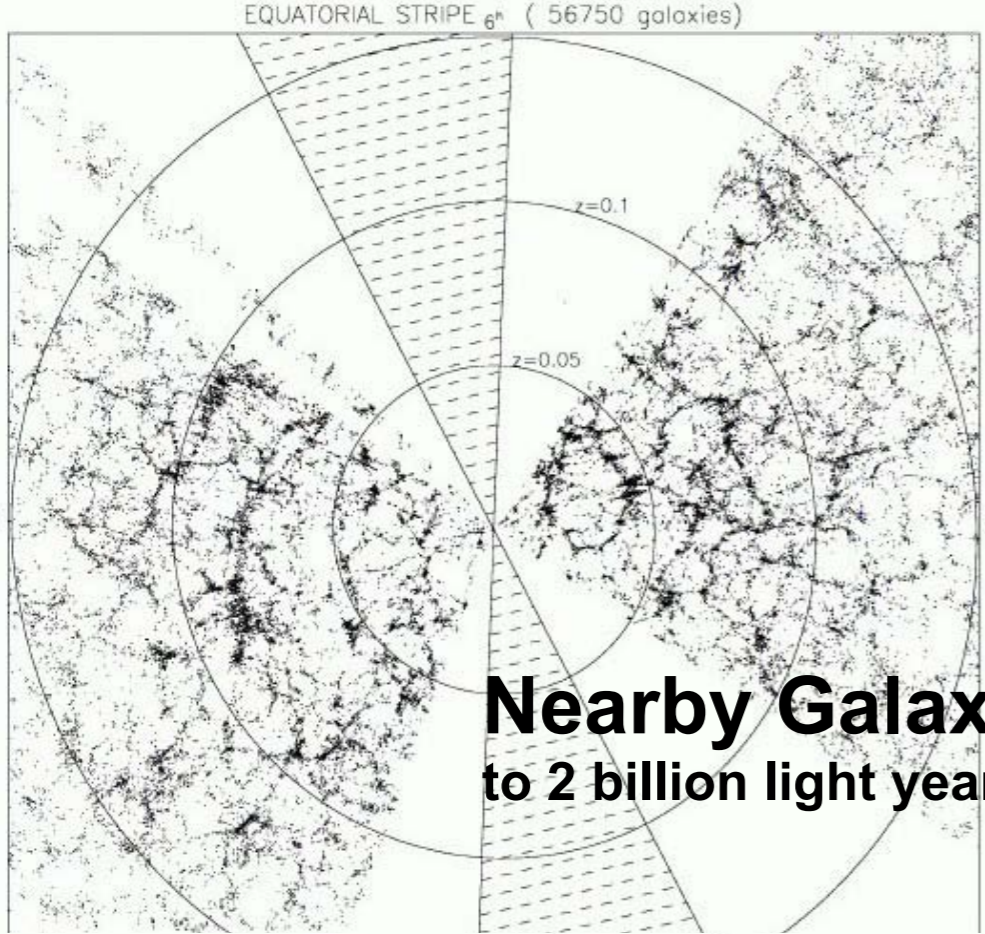
# VOYAGE TO THE VIRGO CLUSTER



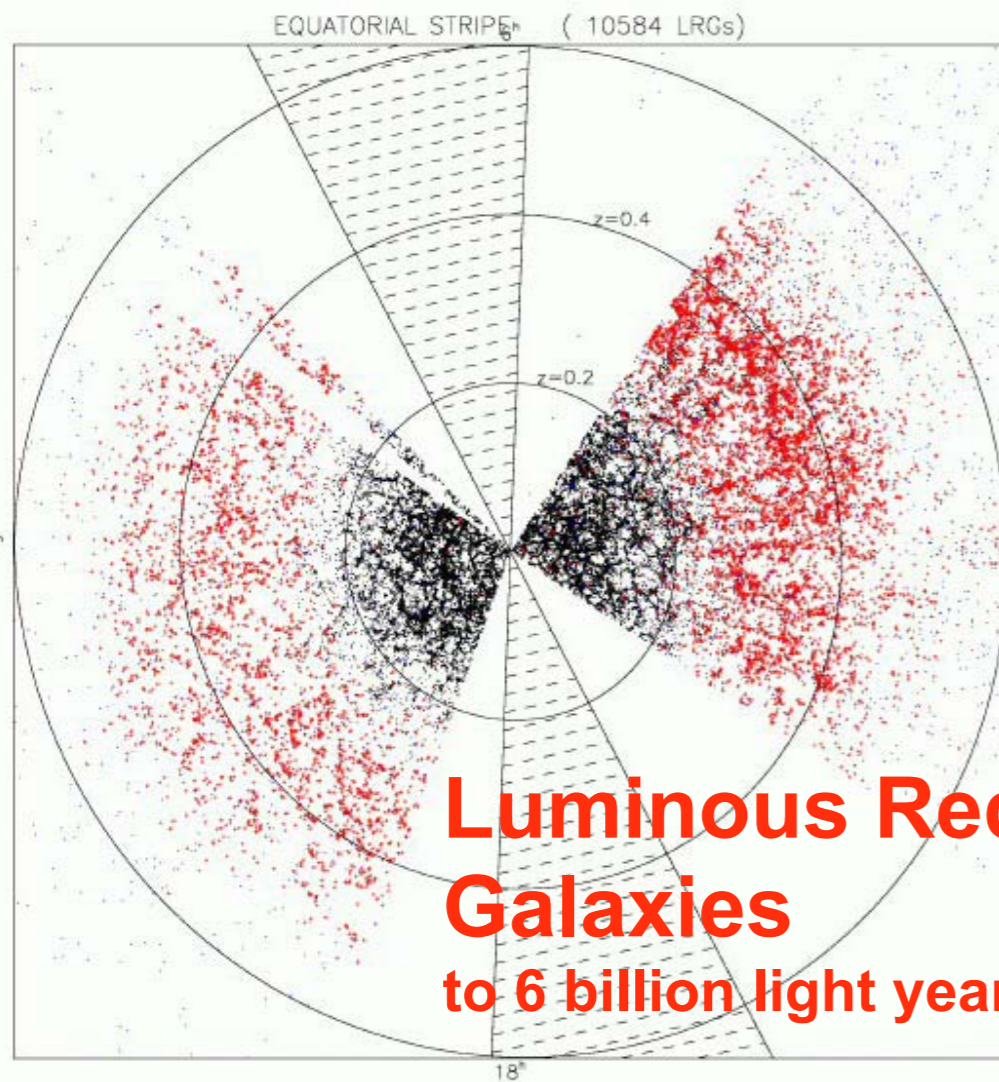
# VOYAGE TO THE VIRGO CLUSTER

A deep space photograph of the Virgo Cluster of galaxies. The image shows a vast field of galaxies in various colors and orientations, set against a dark background. The galaxies are densely packed, with some appearing as bright, elongated structures and others as smaller, more distant points of light. The overall scene is a rich and diverse collection of celestial bodies.

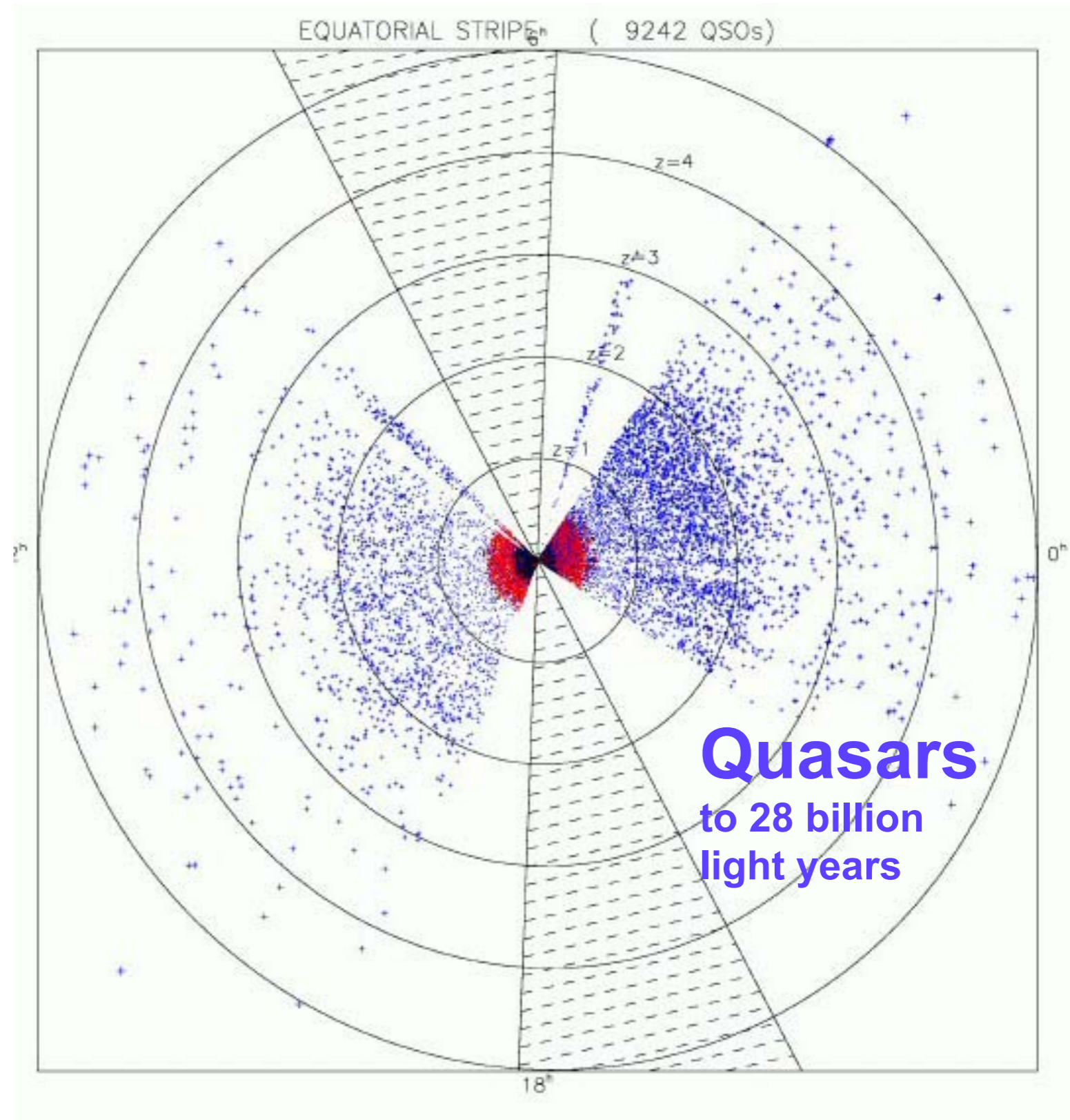
# Sloan Digital Sky Survey



**Nearby Galaxies**  
to 2 billion light years



**Luminous Red Galaxies**  
to 6 billion light years



**Quasars**  
to 28 billion light years

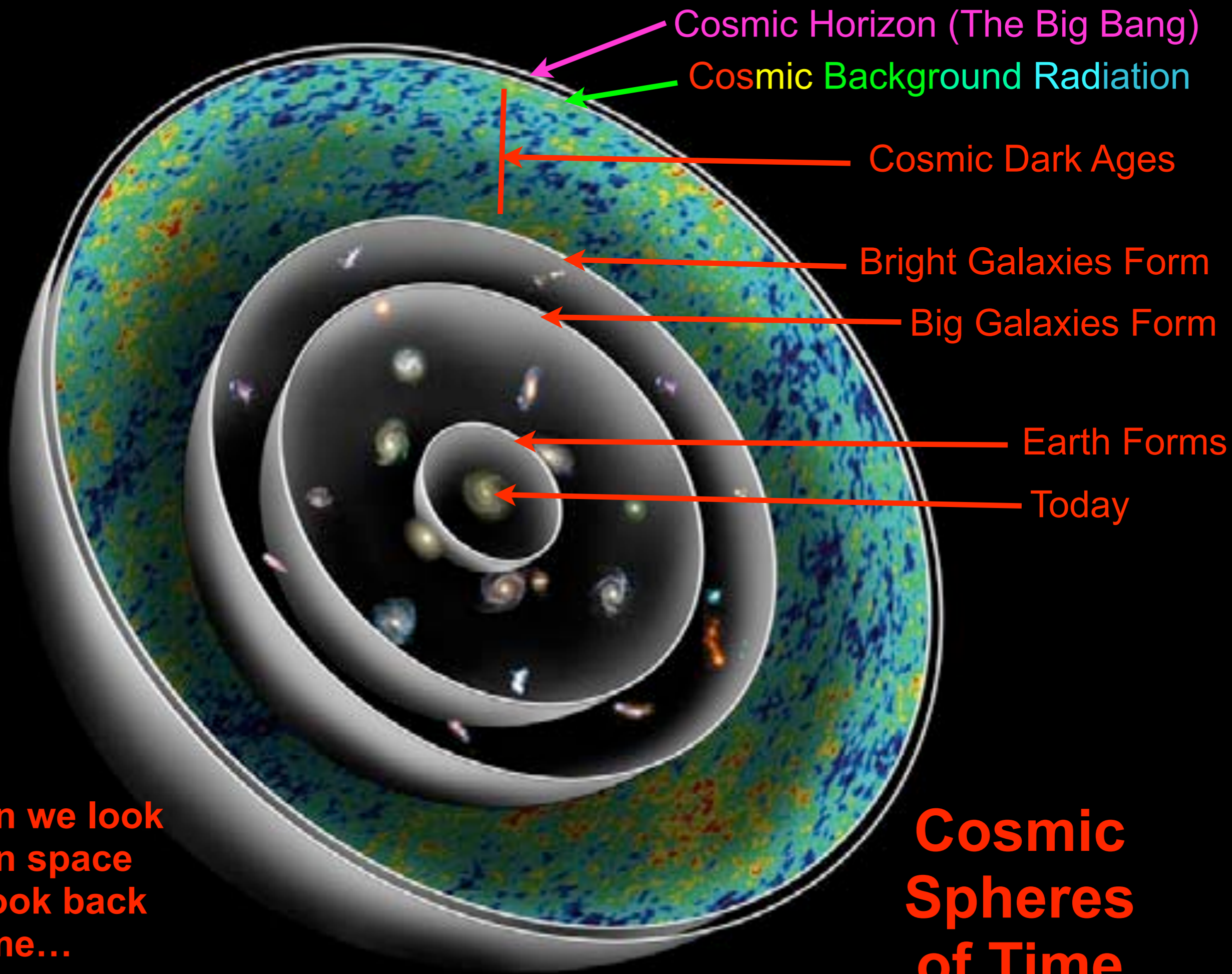
# GALAXIES MAPPED BY THE SLOAN SURVEY

Data Release 4:

565,715 Galaxies & 76,403 Quasars

# GALAXIES MAPPED BY THE SLOAN SURVEY





Cosmic Horizon (The Big Bang)

Cosmic Background Radiation

Cosmic Dark Ages

Bright Galaxies Form

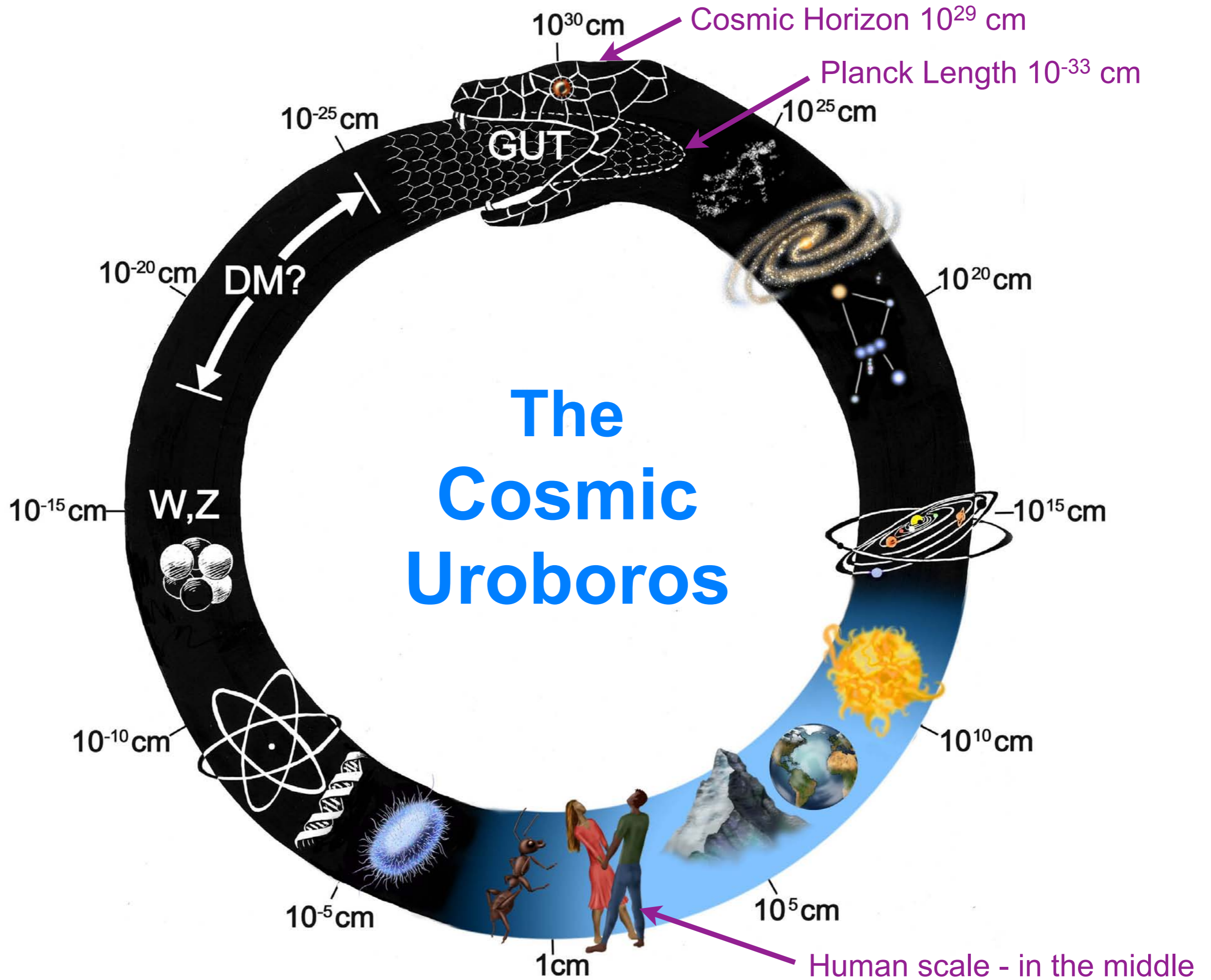
Big Galaxies Form

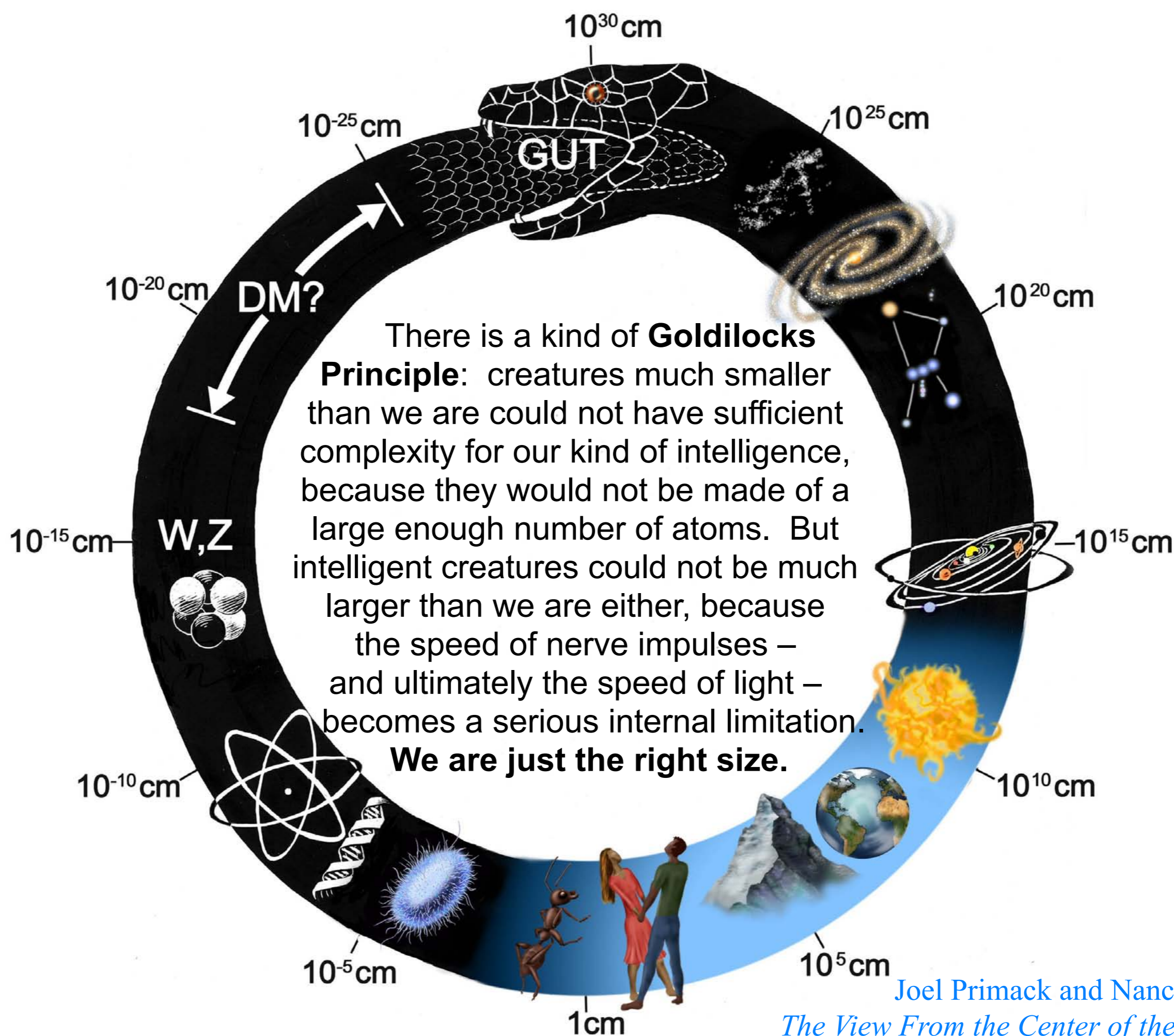
Earth Forms

Today

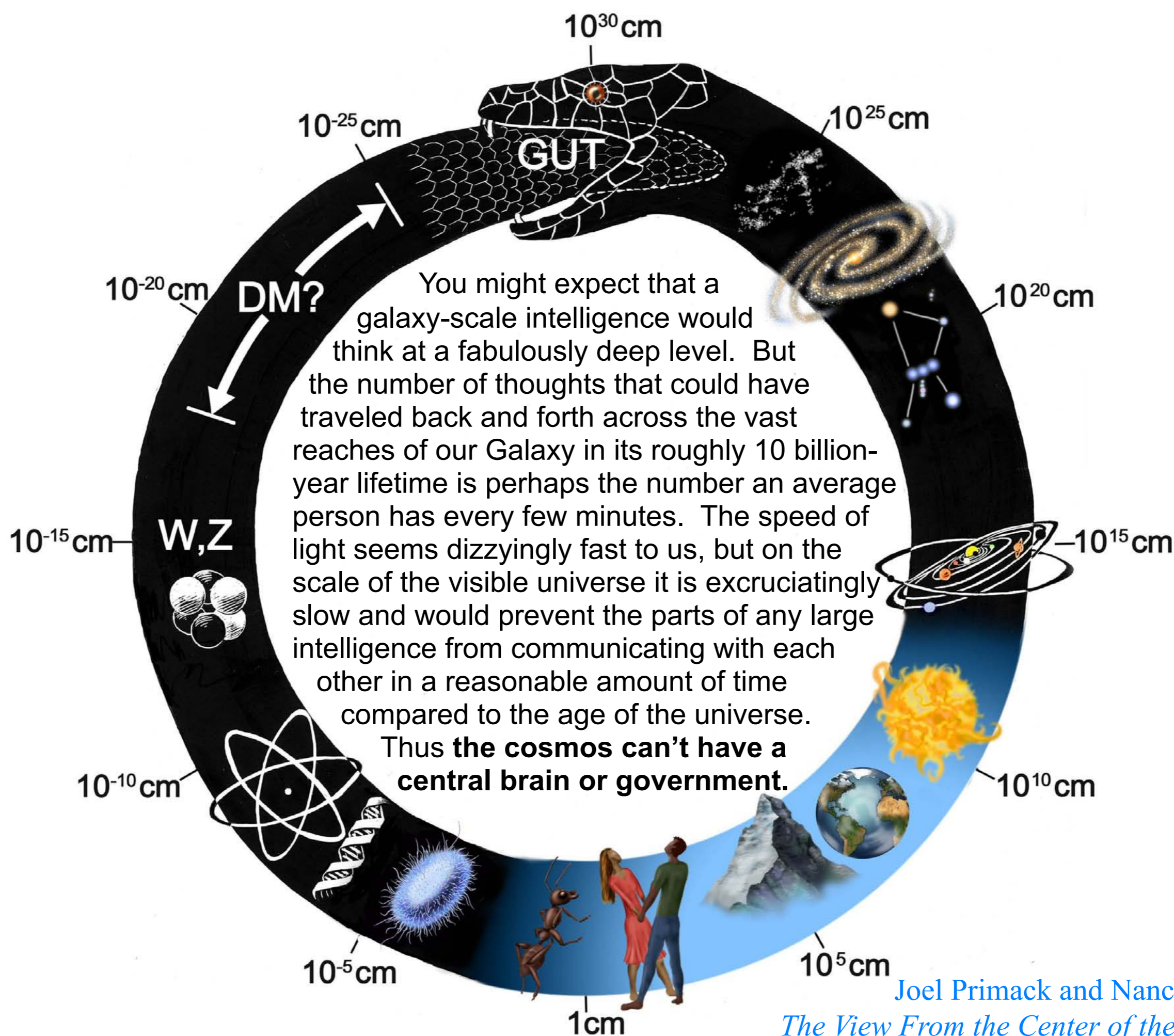
When we look out in space we look back in time...

Cosmic Spheres of Time





There is a kind of **Goldilocks Principle**: creatures much smaller than we are could not have sufficient complexity for our kind of intelligence, because they would not be made of a large enough number of atoms. But intelligent creatures could not be much larger than we are either, because the speed of nerve impulses – and ultimately the speed of light – becomes a serious internal limitation. **We are just the right size.**



Joel Primack and Nancy Abrams,  
*The View From the Center of the Universe*

The image is a vast field of galaxies, each appearing as a small, colorful speck against the black background of space. The galaxies vary in color, including shades of blue, purple, yellow, and white. Some are bright and clear, while others are faint and blurry. The overall appearance is a dense, multi-colored collection of distant celestial objects.

# Hubble Space Telescope Ultra Deep Field

This picture is beautiful but misleading:  
it only shows the 0.5% of the universe  
that's visible.

What's the other 99.5%?



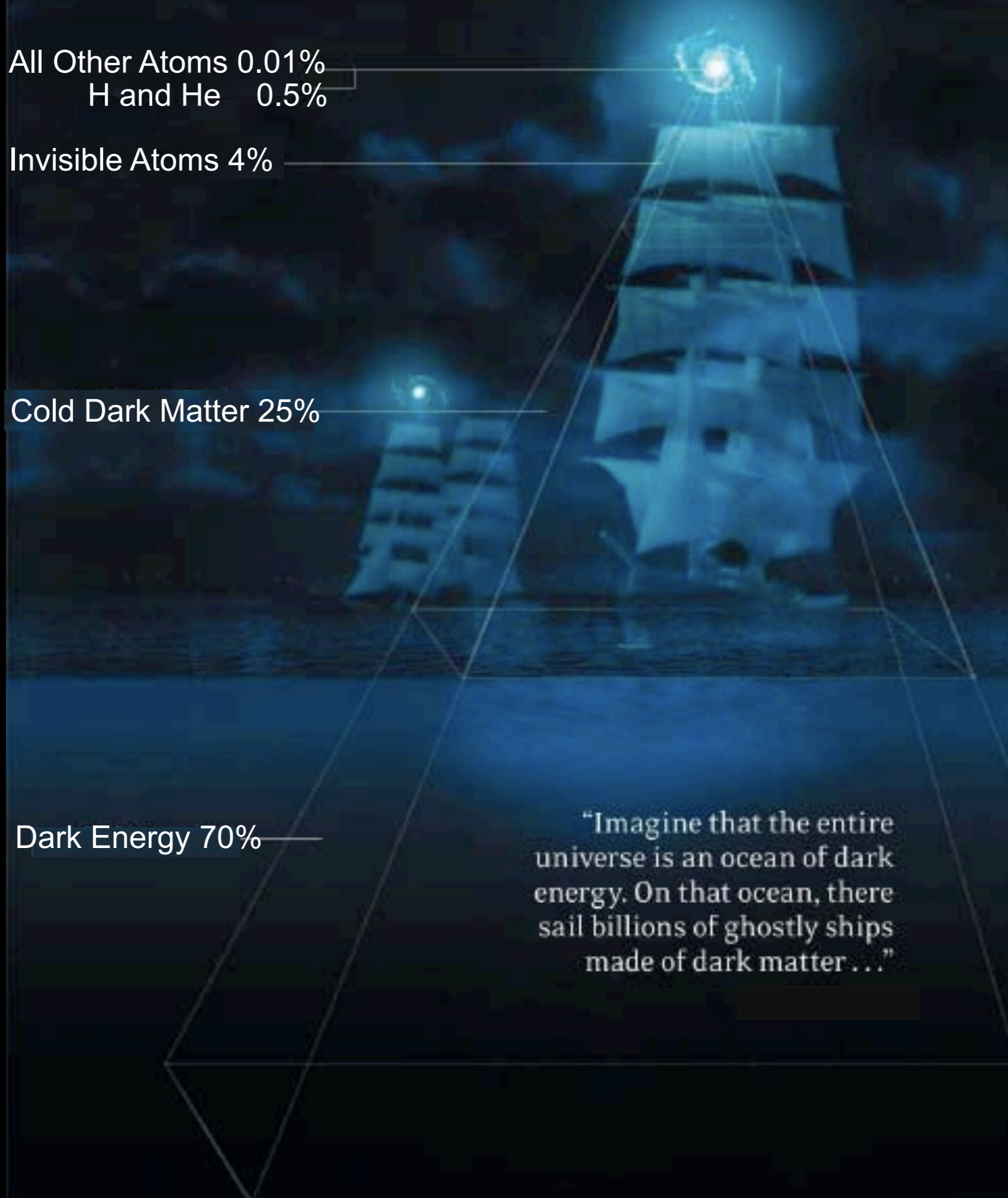
All Other Atoms 0.01%  
H and He 0.5%

Invisible Atoms 4%

Cold Dark Matter 25%

Dark Energy 70%

“Imagine that the entire universe is an ocean of dark energy. On that ocean, there sail billions of ghostly ships made of dark matter...”



All Other Visible Matter 0.01%  
Hydrogen & Helium 0.5%

Invisible Atoms 4%

Cold Dark Matter 25%

Dark Energy 70%

“Imagine that the entire universe is an ocean of dark energy. On that ocean, there sail billions of ghostly ships made of dark matter...”

Nancy Ellen Abrams

Issue 40 / May–July 2008

what is **enlightenment**  
www.wie.org consciousness ■ culture ■ cosmos

WELCOME TO THE CENTER OF THE

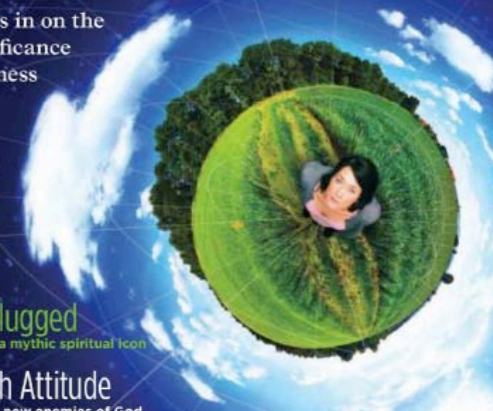
**universe**

Science zeros in on the cosmic significance of consciousness

**Chopra Unplugged**  
Off the record with a mythic spiritual icon

**Atheists with Attitude**  
A field guide to the new enemies of God

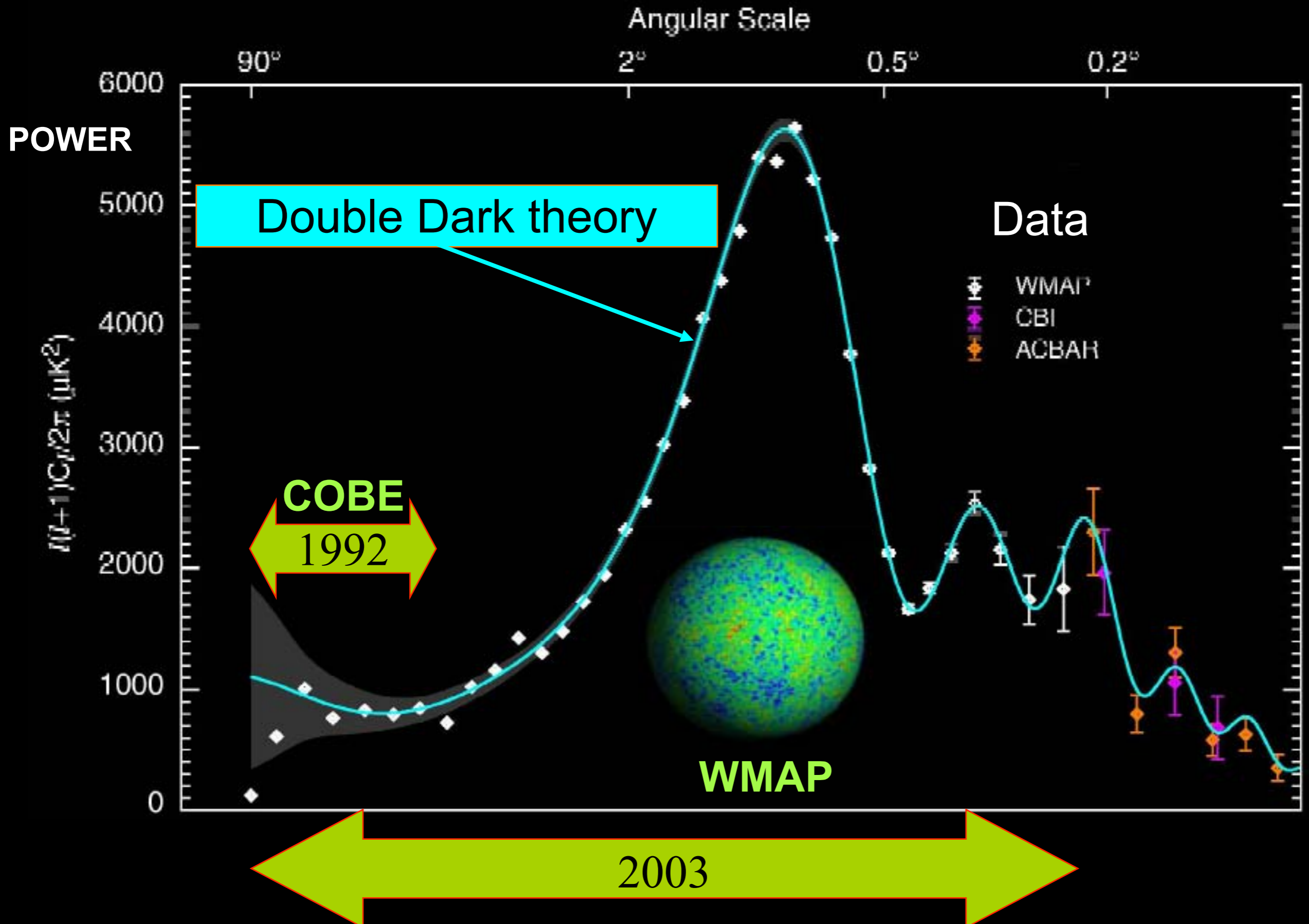
**Absolute Health**  
And the elixir of exercise



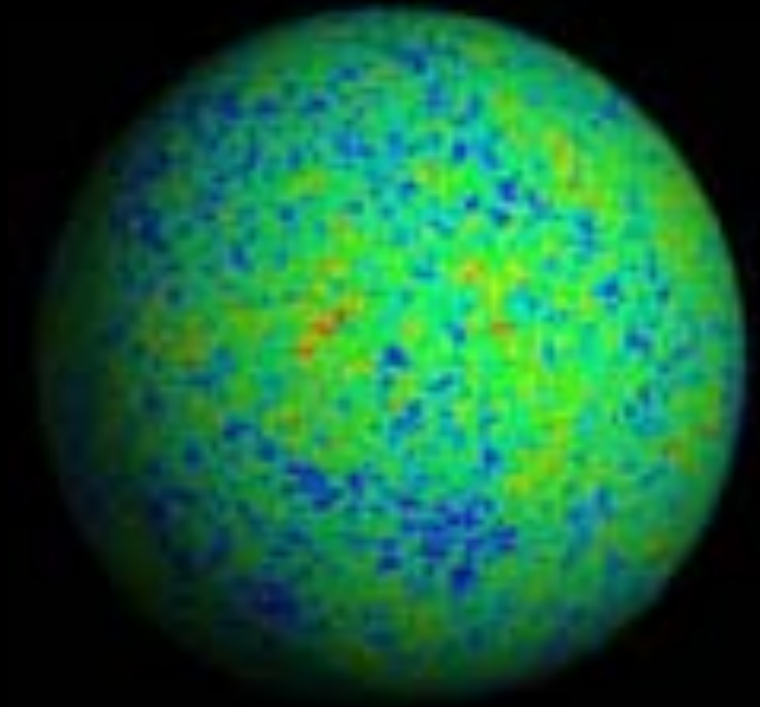
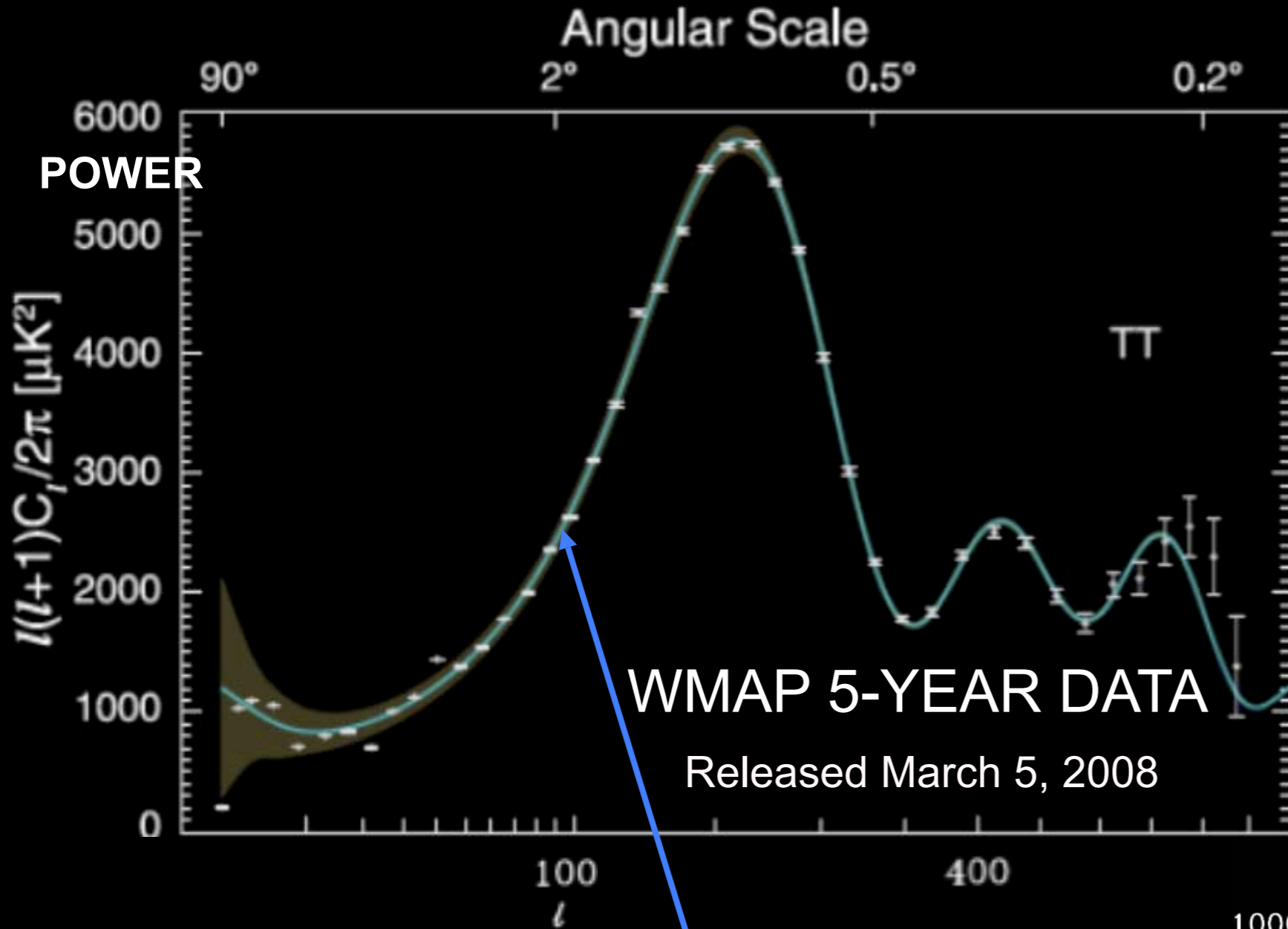
Issue 40 May–July 2008  
16.95 USD / 10.95 CAN / 10.95 UK  
ISSN 1049-3885  
0 74470 1000 2



# Big Bang Data Agrees with Double Dark Theory!

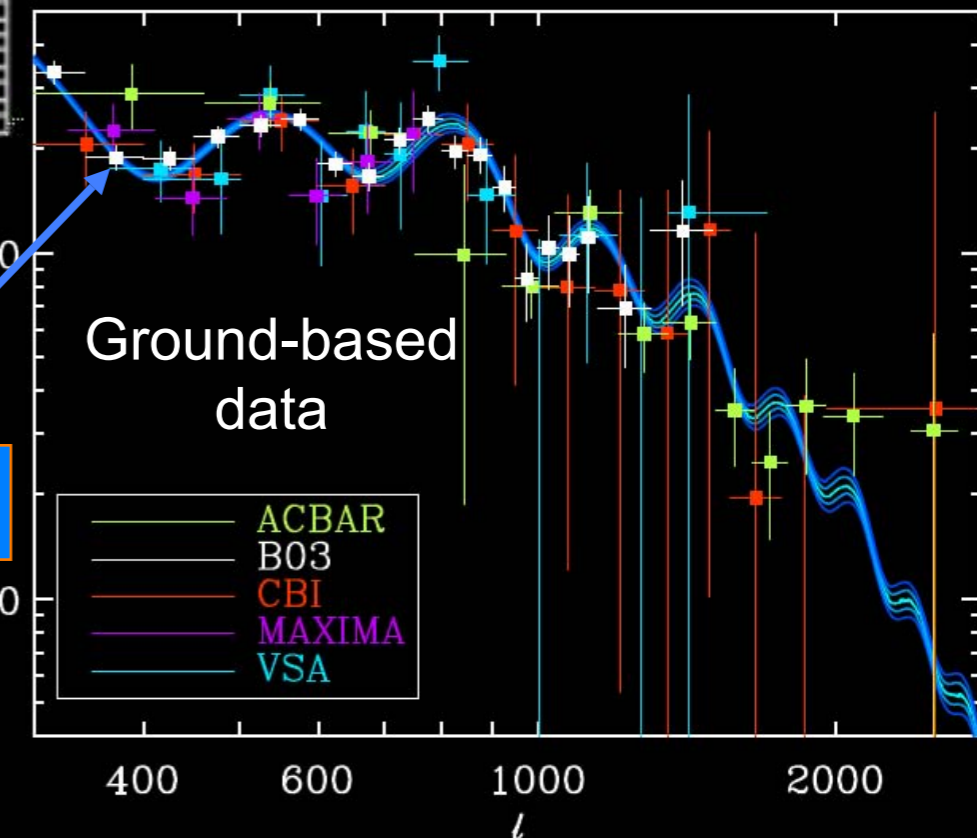


# Latest Big Bang Data Strengthens the Agreement!



Angular Scale

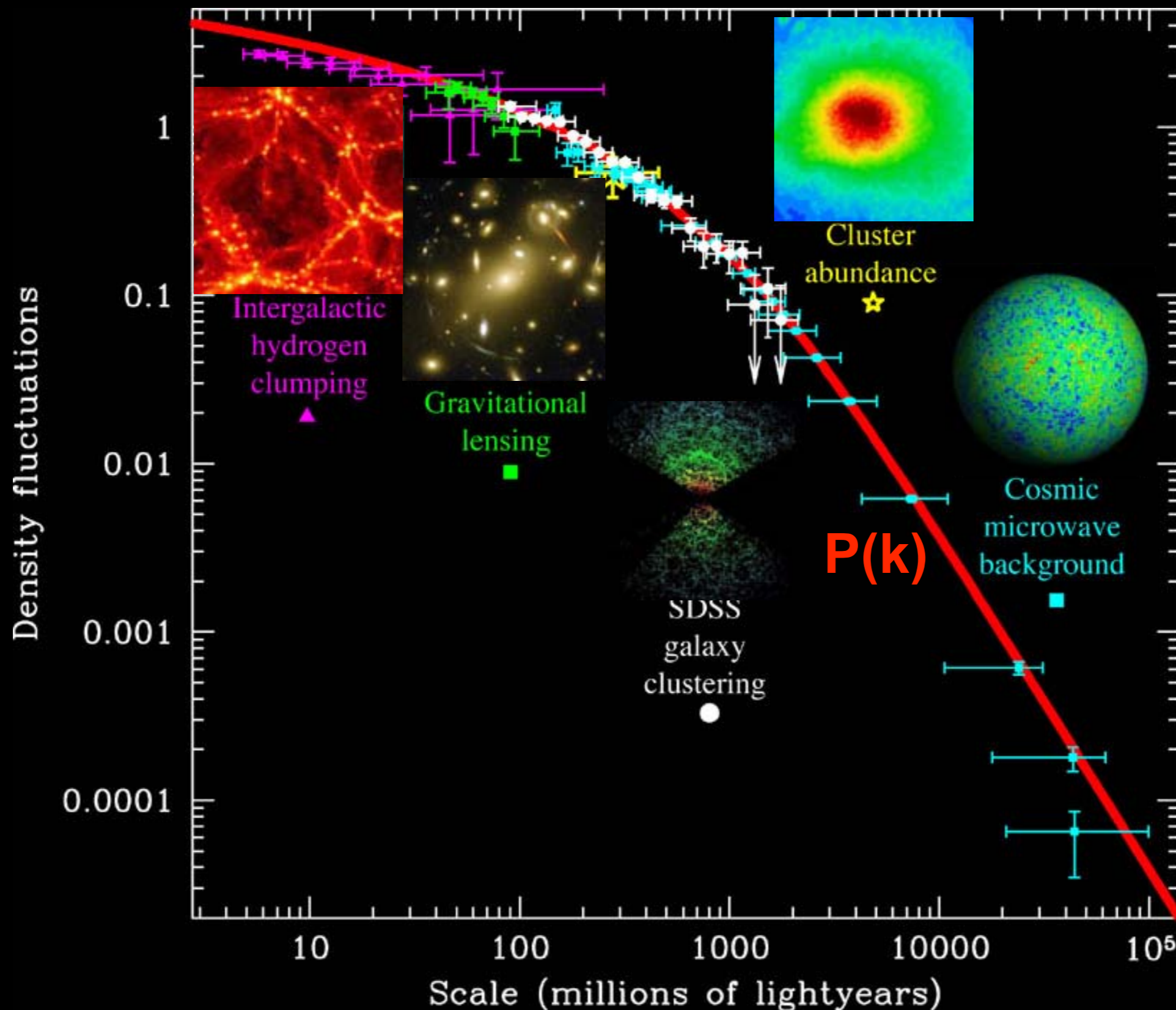
0.5° 0.2° 0.1°



Double Dark theory

# Distribution of Matter

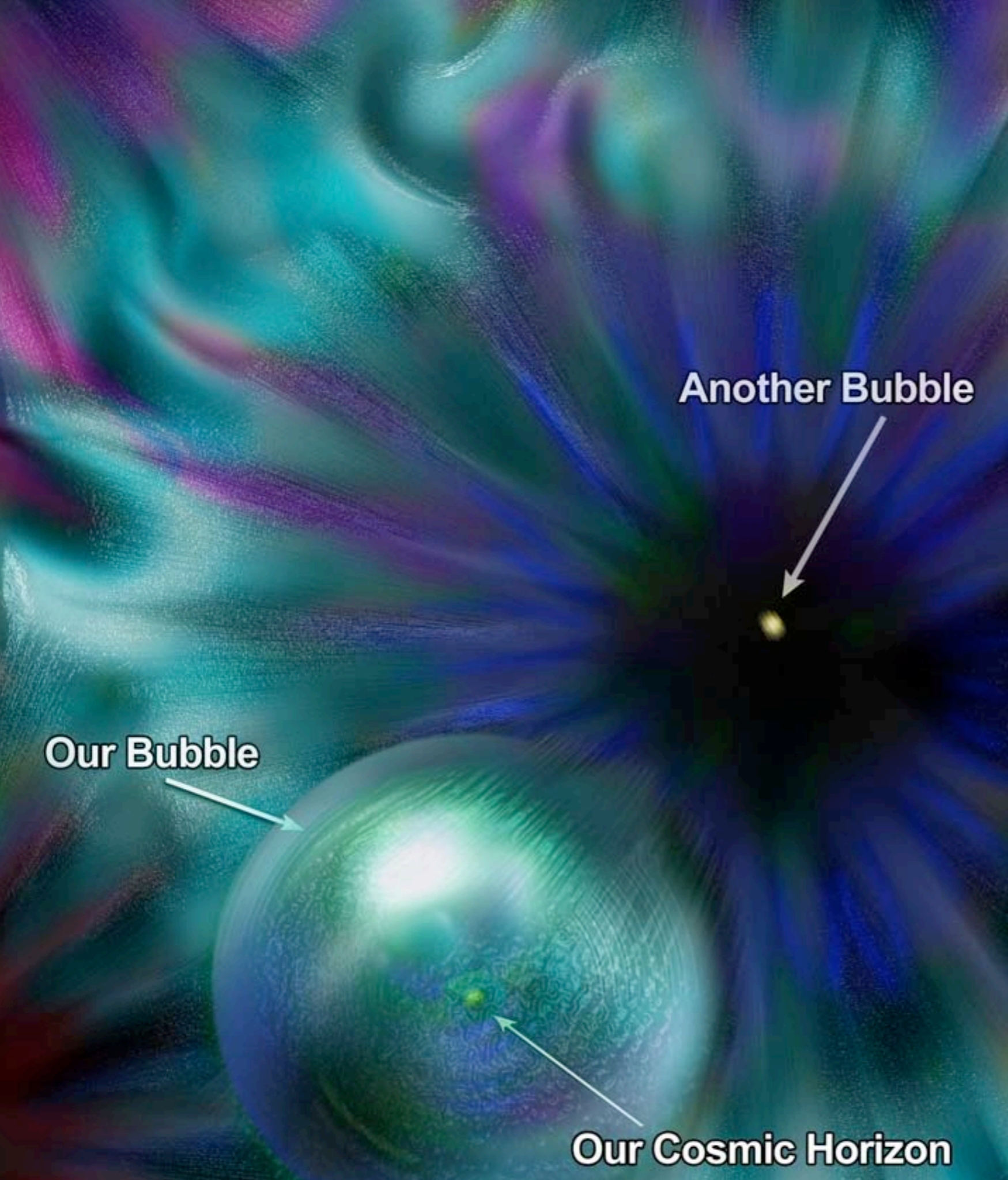
Also Agrees with Double Dark Theory!



What happened before  
the Big Bang?

No one knows!  
But there is a favorite  
theory...

ETERNAL INFLATION



OUR  
COSMIC  
BUBBLE  
IN  
ETERNAL  
INFLATION

# THE COSMIC LAS VEGAS

**Coins constantly flip. Heads, and the coin is twice the size and there are two of them. Tails, and a coin is half the size.**

**Consider a coin that has a run of tails. It becomes so small it can pass through the grating on the floor.**



**At the instant it passes through the floor, it exits eternity.**



**Time begins with a Big Bang, and it becomes a universe and starts evolving.**

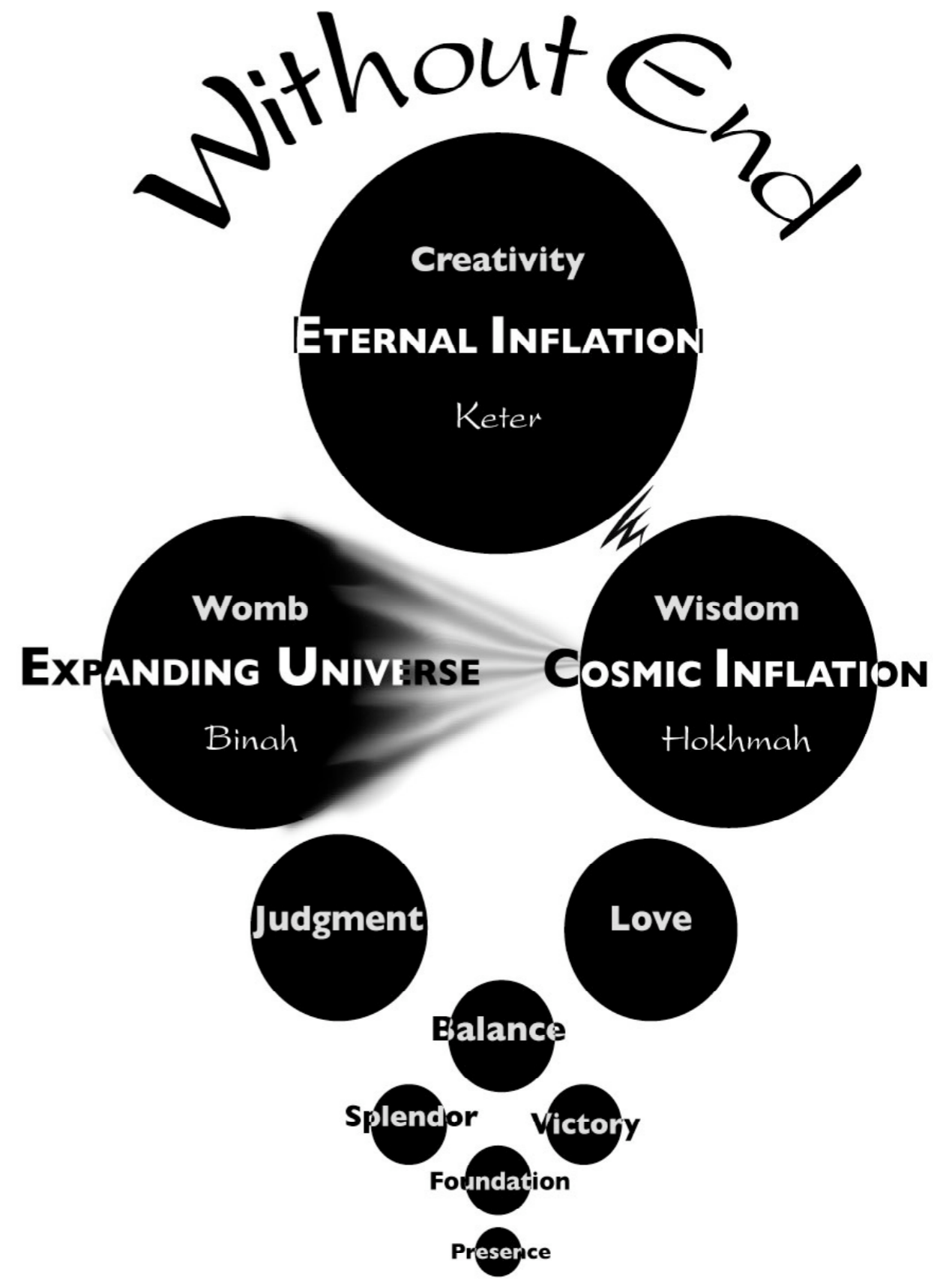
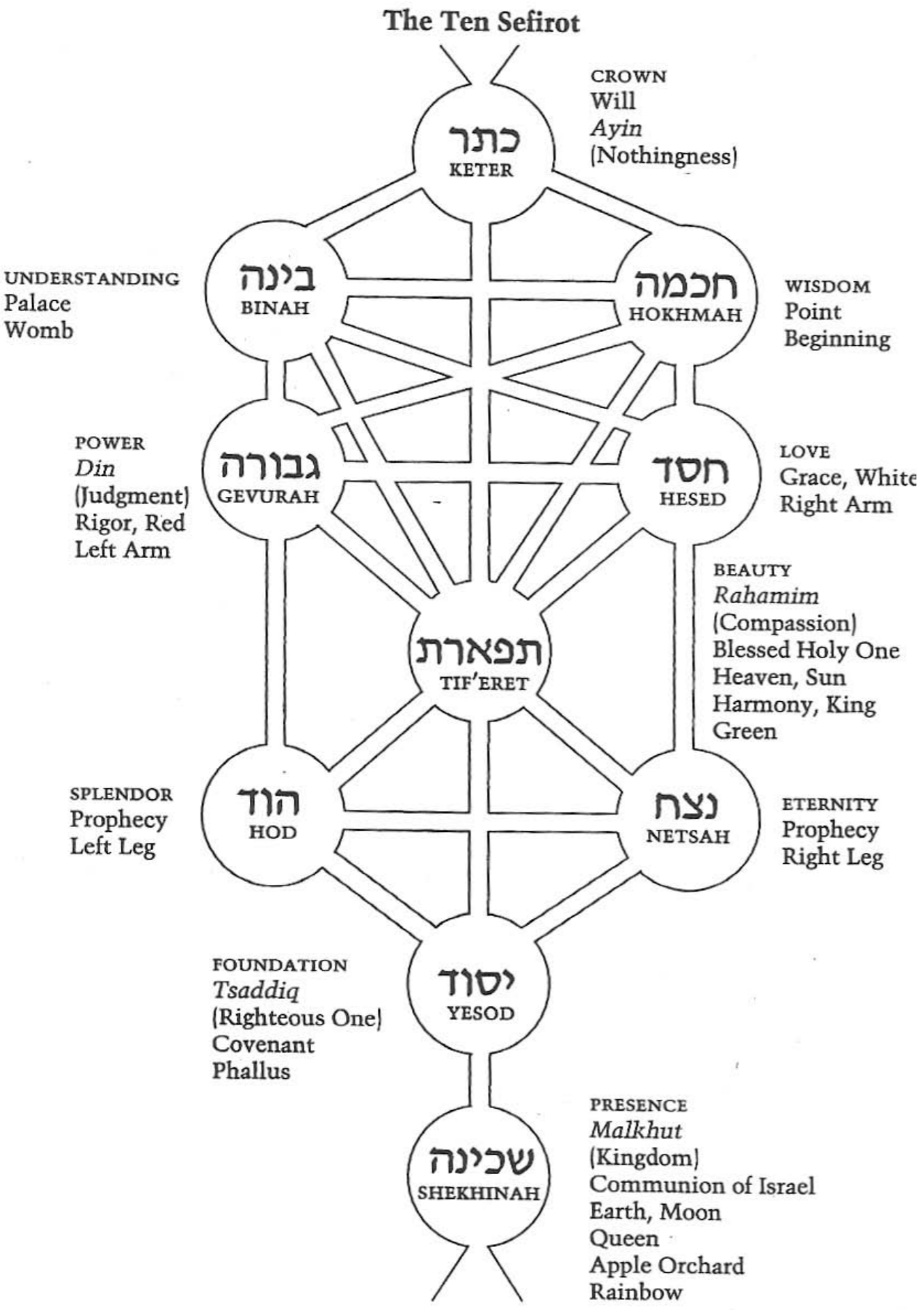
**The Multiverse**

# Kabbalistic Version of Medieval Cosmos



God  
Surrounds

the  
Created  
World

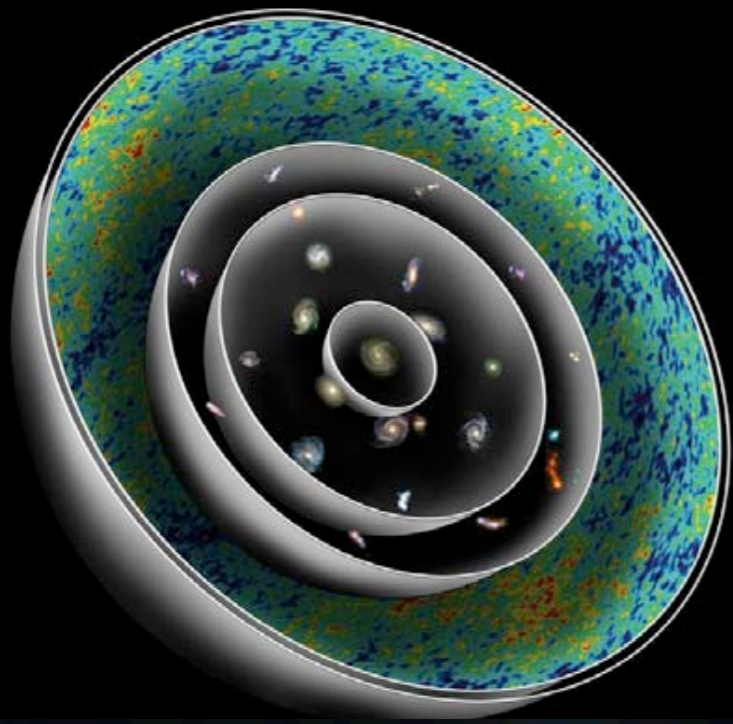


Joel Primack and Nancy Abrams,  
*The View From the Center of the Universe*

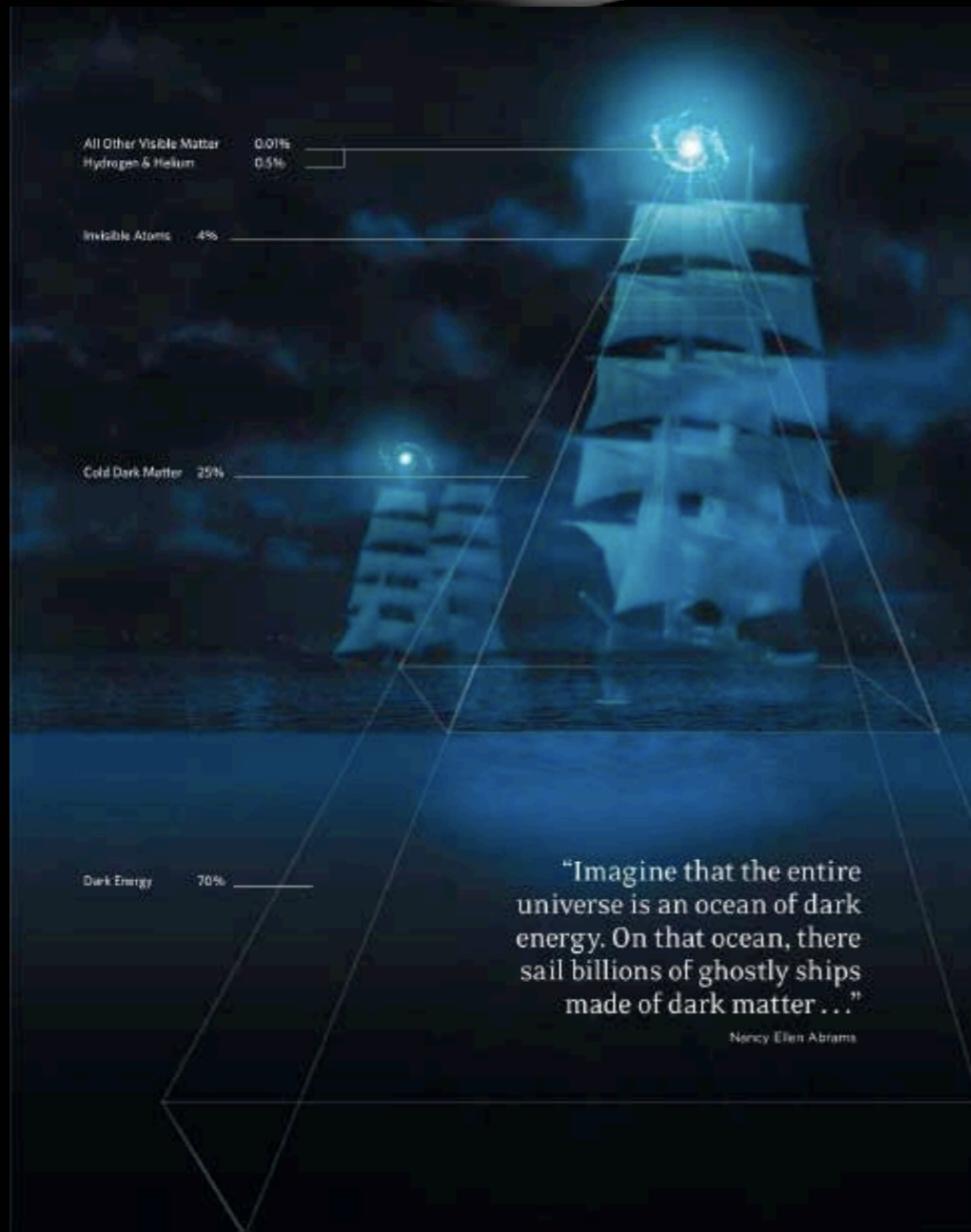


# It's Time to Conclude

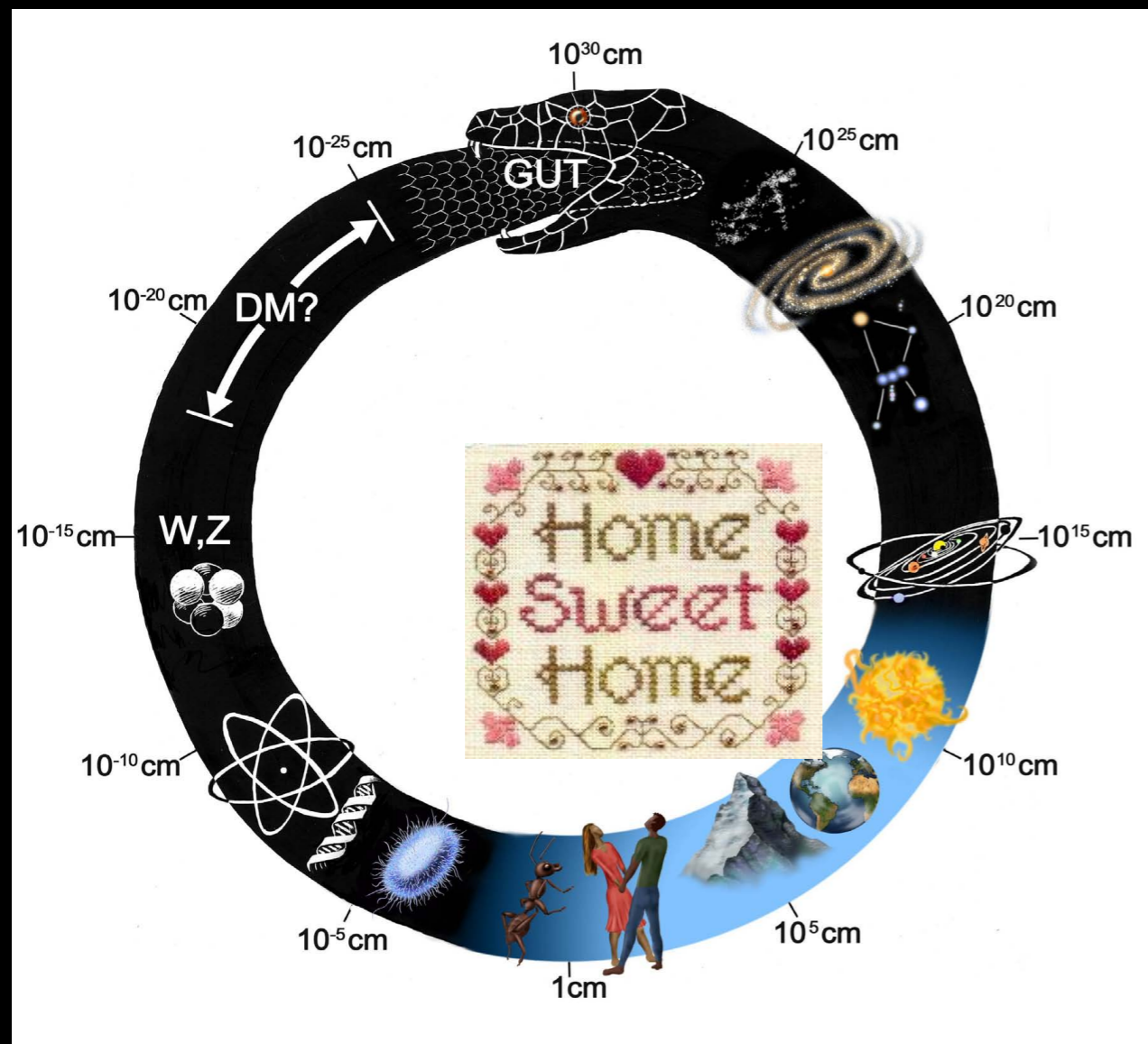
Human beings are central to the Universe not in a simple geographic sense but in at least seven different ways all of which follow directly from astronomy and physics.



1) We live at the center of our Cosmic Spheres of Time. The finite speed of light makes this inevitable.



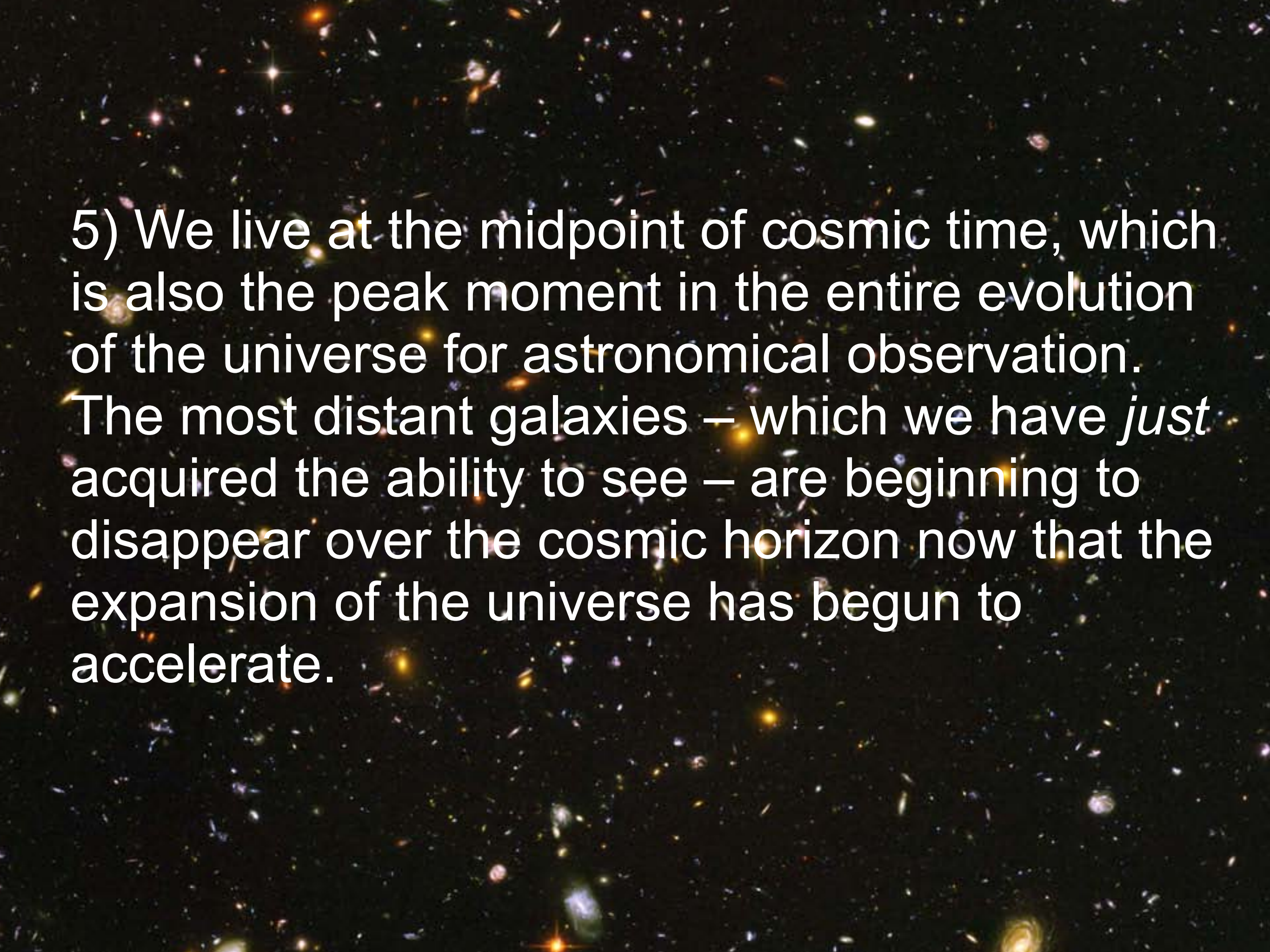
2) We are made of the rarest stuff in the universe: stardust.



3) We live at the middle of all possible sizes – where the possibility of tremendous variety and complexity coming in small packages keeps life interesting. Life of our complexity could bloom nowhere else on the Cosmic Uroboros.



4) We live in a universe that may be a rare bubble of spacetime in the infinite, seething cauldron of the eternal superuniverse. Outside our unique and isolated bubble, which we call the Big Bang, there is neither space nor time as we know it. But here inside there is time for evolution and history, and there is space across which connections can form and structures can develop.



5) We live at the midpoint of cosmic time, which is also the peak moment in the entire evolution of the universe for astronomical observation. The most distant galaxies – which we have *just* acquired the ability to see – are beginning to disappear over the cosmic horizon now that the expansion of the universe has begun to accelerate.



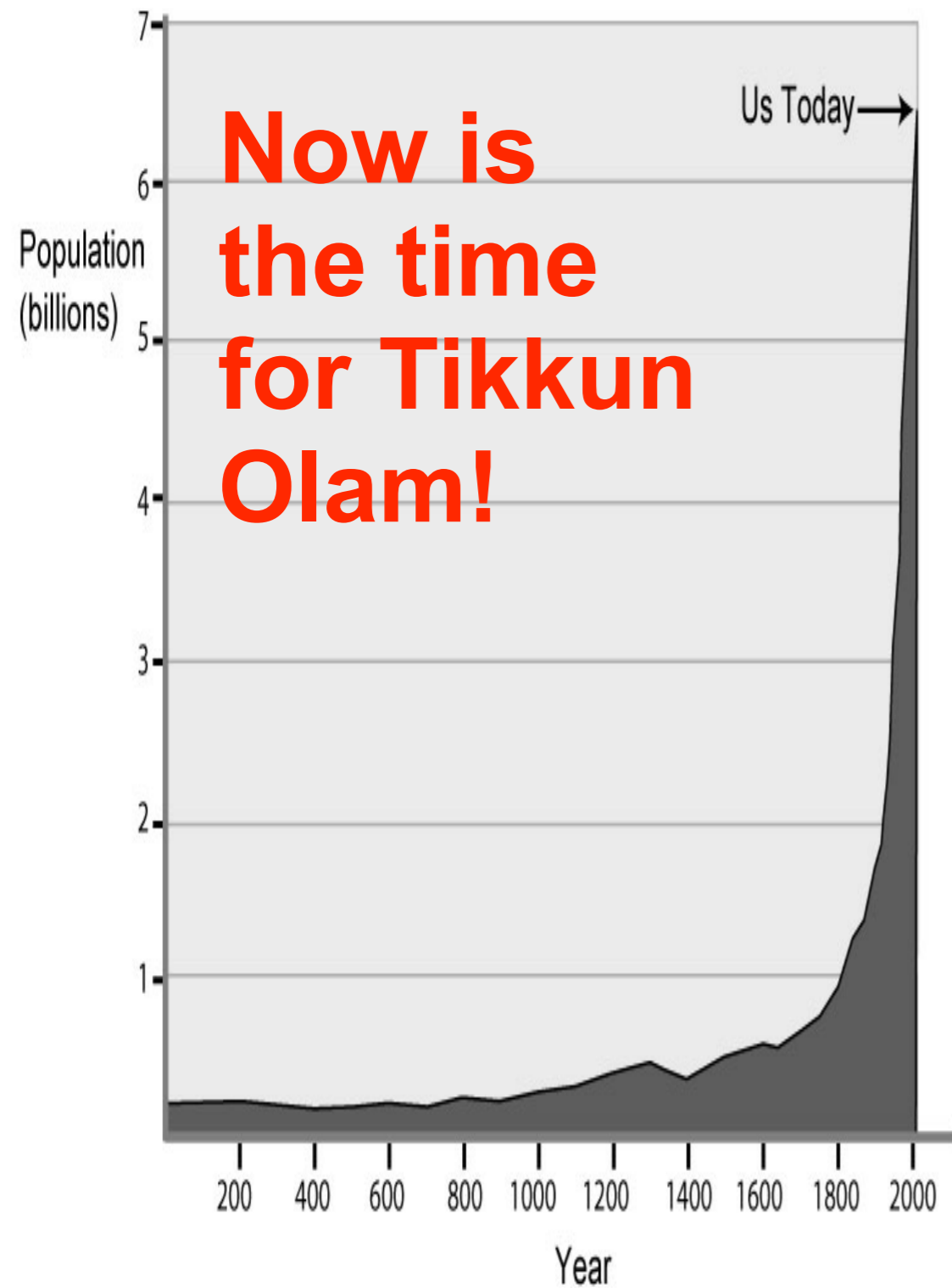
6) We live at the midpoint in the life of our planet. It formed, along with the sun and the other

planets, about four and a half billion years ago. It has about six billion years to go before it is roasted when our sun swells into a red giant star.

Complex life evolved about half a billion years ago, and has about half a billion years to go until the warming sun overheats the earth.

Or billions of years if our descendants move the earth farther from the sun.



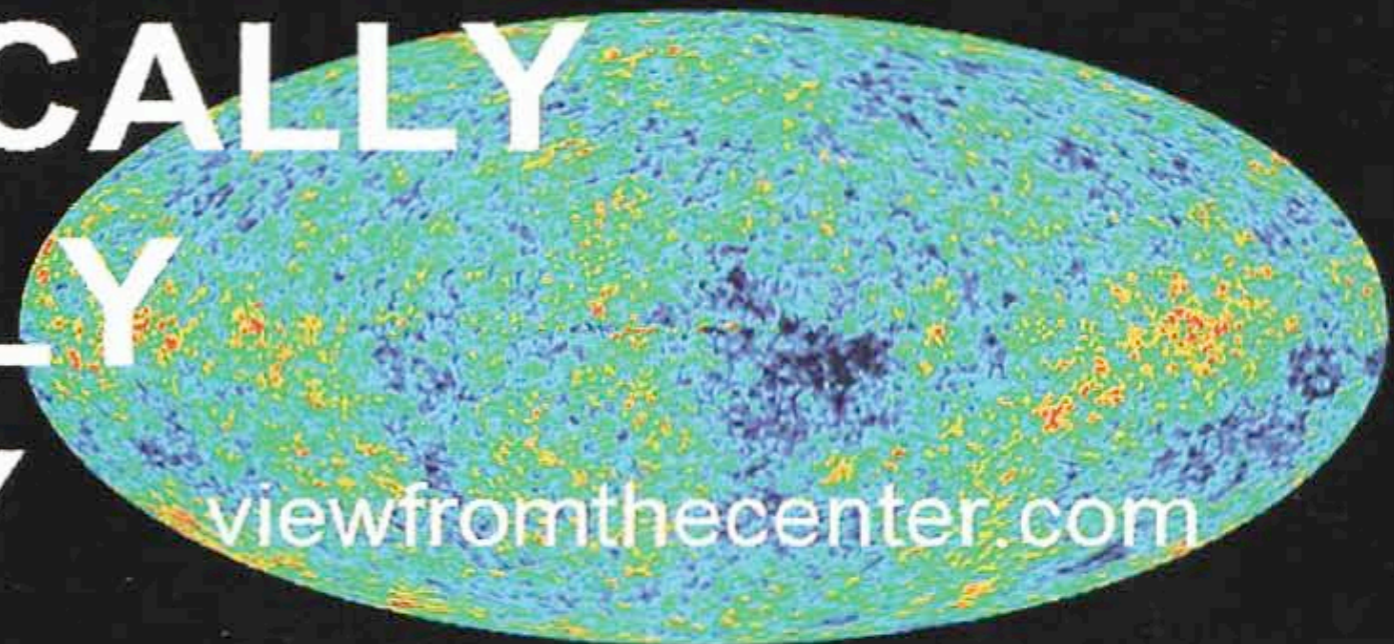


7) From the point of view of our species, today is late enough to have evolved to our present abilities while early enough to have a multi-billion year potential future. For the generations alive now, it is late enough that we are sobering up to the scale of our problems, but not so late that we have lost all chance to solve them. This is a very special time that will never come again.

The Biblical creation stories (except for Job) emphasized the origin and significance of humans. Modern cosmology shows that we humans are central or special in important ways. But we also have unique responsibilities in this special moment.

We Jews have helped to create the new cosmological worldview. Now we should help lead the way in absorbing it into the emerging global culture. Our shared creation story can help unify world culture and help us save our planet.

**THINK COSMICALLY**  
**ACT GLOBALLY**  
**EAT LOCALLY**





# Credits

## Videos:

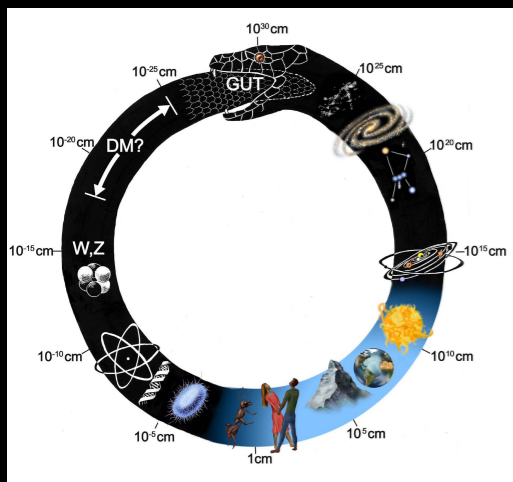
Voyage to Virgo Cluster - [www.ifa.hawaii.edu/~tully](http://www.ifa.hawaii.edu/~tully)  
SDSS galaxies map - [astro.uchicago.edu/cosmus](http://astro.uchicago.edu/cosmus)

## Music:

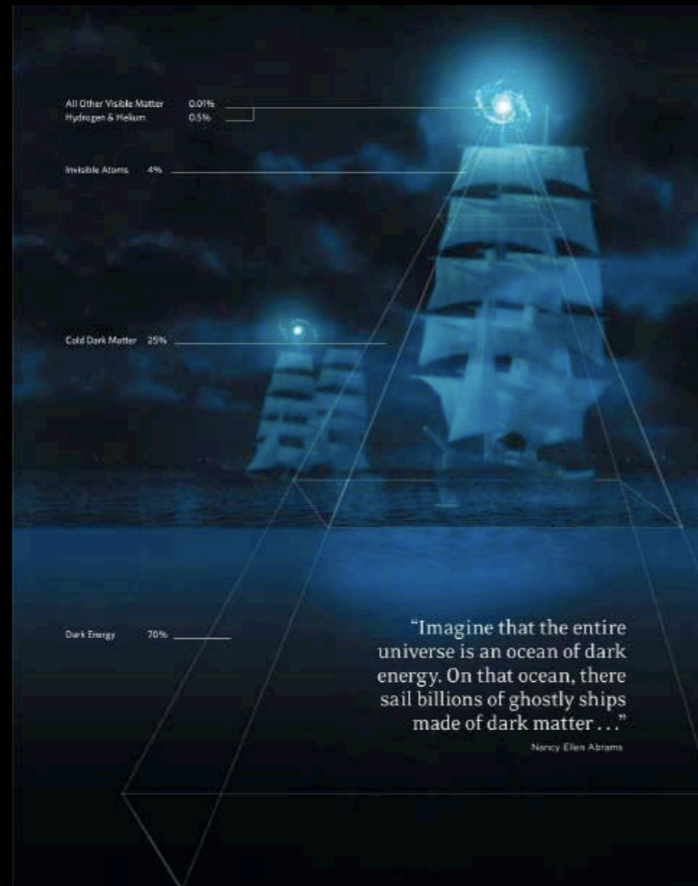
Nancy Abrams  
Nancy Abrams

## Symbolic Images of the Cosmos:

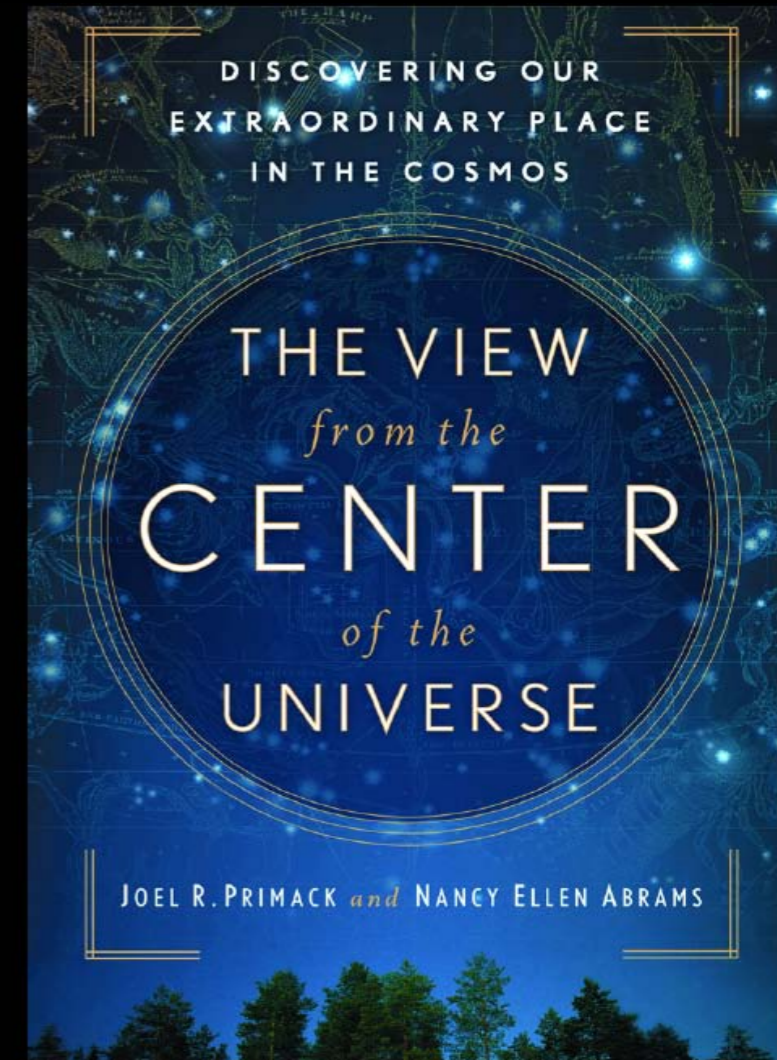
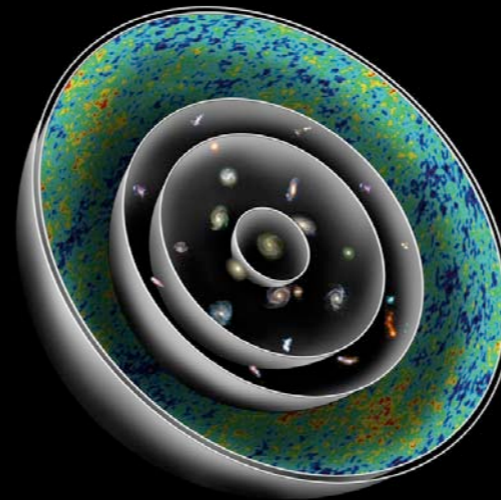
Cosmic  
Uroboros



Cosmic  
Density Pyramid

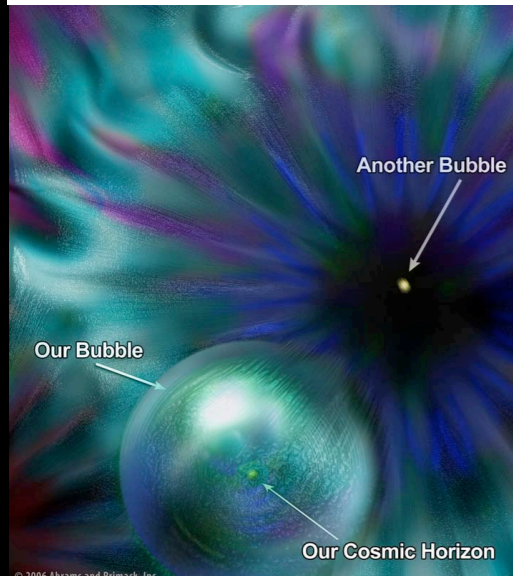


Cosmic  
Spheres of Time



LINKS and IMAGES  
are at our website

<http://ViewfromtheCenter.com>



Our Bubble

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