



From the Pulpit: July 7, 2024

Fourteenth Sunday in Ordinary Time—Independence Day

The Reverend Dr. William A. Evertsberg

Genesis 1:1–5, 14–19

God After... VII: God after Hubble

Georgetown’s Professor John Haught has written these books: *God After Darwin* and *God After Einstein* and that sounded like a sermon series to Christine, Katie, and me. So we’re preaching this series of sermons about the revolutionary thinkers that have impacted Christendom’s image of God in the last 500 years or so. Today is *God After Hubble* and Karli beautifully sang the first part of our scripture from Genesis One

Remember on the first day God created light; on the second day God created the sky; on the third day God created the land, and ocean, and vegetation; and on the fourth day of creation:

“Dr. Hubble discovers that the universe is expanding; space-time is growing.”

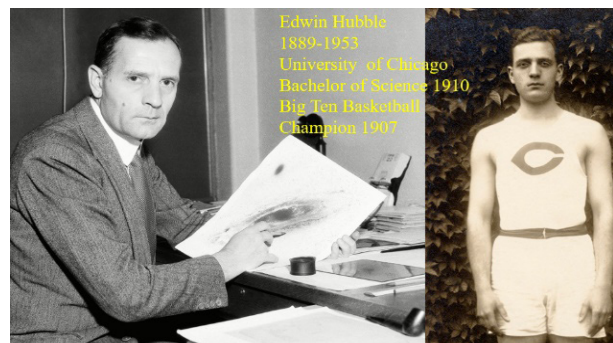
And God said, “Let there be lights in the dome of the sky to separate the day from the night, and let them be for signs and for seasons and for days and years, and let them be lights in the dome of the sky to give light upon the earth.” And it was so. God made the two great lights—the greater light to rule the day and the lesser light to rule the night—and the stars. God set them in the dome of the sky to give light upon the earth, to rule over the day and over the night, and to separate the light from the darkness. And God saw that it was good. And there was evening and there was morning, the fourth day.

Not *The Big Bang Theory*? *The Big Bang Theory* might not be the greatest sitcom of all time, but it might have the greatest sitcom theme song.

*Our whole universe was in a hot, dense state
Then nearly fourteen billion years ago expansion started, wait
The earth began to cool, the auto-trophs began to drool
Neanderthals developed tools
We built a wall (we built the pyramids)
Math, science, history, unraveling the mysteries
That all started with the big bang (bang)*

That’s actually a very terse, very snappy, very accurate lesson in physics. Do you know who came up with The Big Bang Theory? The science, not the show. He was actually a local guy. Sort of. Edwin Hubble lived in Wheaton, Illinois, for a time and earned both his Bachelor’s and his Ph.D. degrees from the University of Chicago. He did his early studies at the University’s Yerkes Observatory; surely some of you have visited there.

So what’s the greatest sitcom of all time? *Friends*? *MASH*? *Seinfeld*? *Cheers*? *Mary Tyler Moore*? *Veep*? *Rolling Stone* says it’s *The Simpsons*.



At the University of Chicago, he was actually a better athlete than student. He led the Maroons to their first Big Ten Basketball Championship in 1907. Take that Michigan, Northwestern, and Ohio State.

In 1919, he moved to the Mount Wilson Observatory in Pasadena, with its brand new 100-inch telescope, the biggest in the world at the time.

Now get this: before Edwin Hubble, astronomers thought the Milky Way Galaxy Cluster was all there was to the entire universe. Dr. Hubble started looking at the stars and said, "You know, I think it might be a little bigger than that. There might be more than the 50 galaxies in our neighborhood HOA. I think there might be 200 billion galaxies out there." You see why they named a space telescope after him.



Some astronomers after Dr. Hubble think there might be as many as two trillion galaxies out there. There are a septillion stars out there, more than all the grains of sand on all the beaches in the world.

Anyway through his fantabulous new telescope, Edwin Hubble watches a small fraction of these 200 billion or two trillion galaxies and notices that every one of them is moving away from us, and not only that, the further a galaxy is away from us, the faster it is receding. He knows this because of something called "red shift." That is to say, the further away a galaxy is from us, the redder it will look.

The red shift in light is equivalent to the Doppler Effect in sound. You've experienced this: the pitch of a train whistle will be higher if it is approaching you and lower if it is receding from you, just as light will get stretched out, redder, if it's moving away from you.

So Dr. Hubble discovers that the further a galaxy is from us, the faster it is receding from us, at almost unimaginable speeds; astronomers after Dr. Hubble

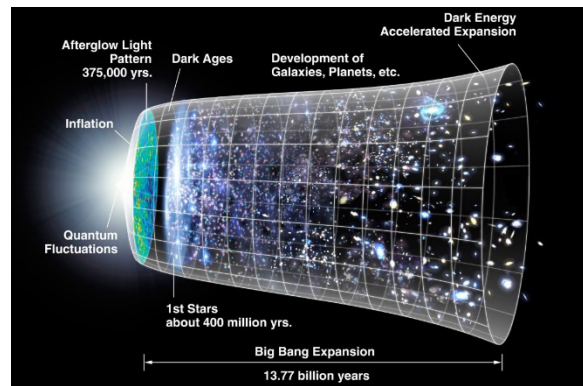
will discover that a galaxy four billion light years away will be fleeing the Milky Way at 400 million miles an hour.

Dr. Hubble discovers that the universe is expanding; space-time is growing. What's the implication? The further you look backward in time, the smaller the universe proves to be, all the way back to the beginning, 13.78 billion years ago.

Dr. Hubble is the first to prove that in fact the universe did have a beginning, and at that beginning there was nothing but an infinitesimal singularity, smaller than an atom,

with infinite density and heat that for some inscrutable reason inflated and stretched and hasn't stopped inflating and stretching ever since. In 1949, English astronomer Fred Hoyle called it The Big Bang.

"the universe is 13.78 billion years old, that's a lot younger than we used to think."



And what a bang it was! In the first microseconds after the Big Bang, the universe was exploding outward faster than the speed of light.

At 10^{-43} microseconds after the Big Bang, the universe was so dense it weighed 10^{90} tons per square inch. That's a 1 with 90 zeroes behind it.

So what about *God After Hubble*? Two things: the universe is a lot larger and a lot younger than we thought before Dr. Hubble. There might be two trillion galaxies instead of the 50 in the Milky Way Cluster.

And even if the universe is 13.78 billion years old, that's a lot younger than we used to think. We used to think the universe was always there. It's called the Steady State Theory. The universe had no beginning.

Edwin Hubble has given God something to do. I don't know if God **did** it, as Genesis claims. The laws of physics don't apply at the heat and density of that aboriginal infinitesimal singularity, but **something** caused the universe to inflate and stretch like a balloon.

Even when I was a child, the creation story in Genesis troubled me. I said to myself, if light is created on the **first** day of creation, and the stars are created on the **fourth** day of creation, where did the first light come from? You can't have light without stars, right? Wrong! Astronomers say that light first appeared in the universe 380,000 years after The Big Bang; the stars didn't congeal, condense, and ignite until 200 million years after The Big Bang; for over 100 million years, there was light in the universe without stars.

I'm not saying the author of Genesis was unusually prescient with a scientific explanation of creation; I'm just pointing out that these ancient legends are very relevant and somewhat accurate 3,000 years after they were written.

Scientists hate this kind of thinking. You should never give a theological answer to a physical question; that's not science. So my apologies if you are in that camp. Did you know that 90% of the members of the National Academy of Sciences claim to be atheists or agnostics?¹ That's something to think about.

Not all of them though. Robert Jastrow was an astronomer at Columbia University and NASA. He once said,

At this moment it seems as though science will never be able to raise the curtain on the mystery of creation. For the scientist who has lived by his faith in the power of reason, the story ends like a bad dream. He has scaled the mountains of ignorance; he is about to conquer the highest peak; as he pulls himself over the final rock, he is greeted by a band of theologians who have been sitting there for centuries.²

I'll let you decide.

“Edwin Hubble has given God something to do....
...but something caused the universe to inflate and stretch like a balloon.”

¹Cited by John Haught, *Deeper than Darwin* (New York: Basic Books, 2003), p. 15.

²Robert Jastrow, *God and the Astronomers* (New York: Norton, 1978), p. 116.

—Prayers of the People— The Reverend Dr. Katie Snipes Lancaster

Yahweh, Adonai, El Roi,
God who sees me,
God who offers healing,
Who makes a shelter for peace,
Who stirs us toward a path,
More just, more awake, more kind,
Let your great Shalom enter here.

Hover over us, lighting up the vault of heaven.
Brood over us, out of chaos creating life.
You are luminous, the architect of distant stars.
As we find our place in the universe
expand ahead of the very boundaries of space
deeper into infinite
so that we are surrounded by your spirit.

Knowing that you are with us
Incarnate, we bring before you our very lives,
raw and real, in tune with the concerns of the global household,
just as much as we are in tune with our own kitchen table
concerns.
We feel the careening force of politics and ask you to oversee it
all.
Guide us toward your vision for this country,
where justice might roll down like waters,
and righteousness like an ever-flowing stream.

Even when our actions seem inadequate,
empower us to walk the path of goodness and mercy.
For the reality of hardship, conflict and war,
Lord hear our prayer.
And for the possibility of ceasefire in places of war,
Lord hear our prayer.
In our own households
we ask for a kind of peace that comes:
when our hearts are open,
when we return the language of love,
patterned after your healing and mending.

Where there is anxiety within our minds and bodies
do not let us be overwhelmed.

In our waiting and wanting for something new,
something beyond this current reality,
let us find an internal strength to carve out a path
guided by your spirit.

As we stand lakeside, stilled by the shoreline,
let the canopy of heavens, the clouds by day,
and the stars by night
stir within us,
the sand and seas,
and night sky
part of the vast rhythm of this life.
Instill within us a sense that you are with us,
that your presence goes ahead of us.

On the days when we sit alongside
someone dear to us
who no longer knows who we are,
give us your inexhaustible spirit,
and the ability to see possibility of the
connection and life,
even on the hardest days.
Give us the capacity for caregiving,
A kind of vigor we did not know was within us,
for the invisible labor of love necessary for this day.
Let whatever is happening under the surface between us
lead us toward self-surrender and trust,
knowing that your spirit is alive within us,
that in every moment,
resurrection and life
is given to us,
for renewal,
and for strength.

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