

**BIG BANG EASTER:
THE PHYSICS OF THE RESURRECTION**
EASTER, April 20, 2014
Matthew 28 The Resurrection Story
Forest Home Chapel United Methodist Church
Linda Nicholson and Rebecca Dolch

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The purpose of this dialogue sermon is to tell people about the reality of the unseen that has been revealed through science, and to relate this reality to the creation and the resurrection.

There are parallels between the creation of the universe and the resurrection of Christ and eternal life, and there are new understandings of reality (i.e. the Big Bang Theory, and the inter-conversion of light and matter) that have direct bearing on these Biblical stories.]

Rebecca:

A few weeks ago one of our members, 6-year-old Charles, was with his grandparents who were asking him what he was thinking about. Charles said: "I need to figure out how the world got started."

The ancient people asked the same question as Charles asked. Easter is a story about those core questions: *What is life? What happens to life when we die? Where did we come from and where are we going?*

Easter is a celebration of the core story of the Christian faith: Jesus Christ lived on earth, was crucified, died, and was buried. On the third day he arose again and appeared to people in a physical form that could be touched. Notice that when Mary saw the resurrected Jesus, she went and touched his feet.

Although I've always believed in the resurrection of Christ both literally and metaphorically, it is not the most important part of my faith. I don't see belief in the resurrection as a litmus test about who is "really Christian" or not.

However the story does **point** to the most important part of my faith:

Christ **demonstrates** that life is not *just* "material" – (what we can *see touch taste smell hear*, measure, describe.) It is also a story about how life is not limited by what we call time or space or our own limited experiences and perceptions.

Linda Nicholson and I were talking about miracles one day, and she mentioned how as a biophysicist she accepts the possibility of any miracle, including the bodily resurrection of Christ. Miracles and wonders fit right in with her quite academic, scientific view of the universe.

As a preacher of the Bible, I also love learning about the scientific view of the universe. I believe that, every day, science is uncovering the message of the Easter story. That message says:

We are part of a universe that is unlimited in possibility. Life is bigger and deeper and more complex and exquisite than human beings can understand or imagine. There exists the mind-blowing concept we call eternity. In the Christian faith we say that all of that is In God's hand.

You know something that has always annoyed me? I get annoyed when people say that the concept of evolution is anti-Biblical. I get impatient when people insist that science and Biblical stories contradict one another. I see scientific discoveries and ancient sacred texts as two different perceptions and languages, like two different parts of the brain, talking about the same unseen reality of the universe.

My goal this Easter morning is that we leave here as citizens of a larger universe. We leave here more expanded, more in touch with eternity and infinite possibility.

My greatest hope is that we encounter the remarkable spirit of Jesus Christ as our guide and companion and teacher. This spirit is available to us and is not limited by time or space or by our mistakes, sins, limited thinking, or our resistance.

The Spirit of Christ is a spirit of grace and Truth that truly loves our humanity.

Guided meditation:

First breathe in and out, noticing the air coming in and going out through your nose and mouth. *(pause)*

Next, breathe, but realize that the air is coming from this room and all the space around us. *(pause)*

Third, breathe in and out thinking of where the air came from and all the particles in the air—remembering the sky, the sunlight, the moon, the stars, fanning further and further into space. *(pause)*

Prayer:

God of us all, open our hearts and minds and bodies so that we can receive the infinity of your presence, power, and love here and now. AMEN.

Today we are talking about the big bang theory, the creation story in Genesis, the creation story in the gospel of John

We'll then talk about the Resurrection of Christ and how physics has discovered that physical matter can miraculously turn into light and that light can turn back into matter—all of this in the next 30 minutes! So open your hand out, fasten your seat belts. Here we go.

LINDA –What does science say about the creation of the universe? The Big Bang theory says that the universe has expanded from a tiny speck about the size of a single atom, within which the entire universe was packed. This infinitesimally small speck of infinite mass suddenly expanded in what physicists call “inflation.” (see step 1 on your handout.)

As the expansion of the cosmos began, at first we had only fundamental particles, no atoms had formed yet, and as noted at step 4, there was darkness – the cosmos was a superhot fog in which no light could shine. *It was dark.*

At step 5, as atoms began to form from the fundamental particles, light could finally shine. *There was light.*

At steps 6 and 7, we have huge clouds of gasses that coalesce and eventually become galaxies, stars, and finally planets, including our earth. This scientific creation story is based on many observations and is well accepted in the scientific world.

In fact on March 17th 2014 (just last month!) scientists announced the observation of “gravitational waves” that provide new and convincing evidence for inflation, the first step in the Big Bang Theory.

BUT, while everything that happened from inflation to present day seems to be well explained by scientists, science offers no explanation for the *initial conditions* of the universe.

Where did that mind-blowing speck come from, and what was the essence of it?

There’s one more thing I have to tell you: it appears that at the center of every galaxy is a *black hole*. A black hole has an enormously massive, tiny speck of mass at the bottom (does that sound familiar?), and it has a really strong gravitational field. When matter comes close, it gets pulled into a black hole. The gravitational field is so strong that you’d have to travel faster than the speed of light to get out – no light can be emitted, hence the name “black hole”.

The truly amazing thing about a black hole is that it is effectively a *time machine*. Gravitational field strength governs how fast time passes. The stronger the field, the slower time goes.

As a real-life example, a clock on a GPS satellite experiences a lower gravitational field than a clock here on earth, so time passes slightly faster on the satellite. The satellite clock has to be made to run slightly slower than a clock on earth in order for GPS to work. *Time depends on where you are.*

Now, let’s go back to the edge of our black hole, where we are in a really high gravitational field, where time would move very slowly. One minute for us there could be 1000 years on earth. The point is this: how long something takes – such as creation of the universe or the earth – completely depends on the vantage point from which you observe it happening.

REBECCA – As we read excerpts from Genesis, the first book of the Bible, it is remarkable to me how the story of the Big Bang, which Linda just described, and the story of Creation in Genesis 1 have so many things in common.

The darkness, the light, the formless void and the formation of things,

The concept of 7 days, and the concept of the black hole in which one day in the gravitational pull of the black hole, can be like millions of years in earth time.

In our responsive reading sections in the darker print are excerpts from the Creation story in the gospel of John.

“In the beginning was the WORD.” This phrase does not use the word “tiny speck” whence the Big Bang came forth.

It doesn’t use the word “God” whence the earth was created in Genesis. It says in the beginning was the WORD, also translated, *the wisdom or Sophia*. Other translations describe THE WORD as the original vibration or ETERNITY.

The point of the creation story in the Gospel of John is the claim that the same source “in the beginning” was also the source, the essence of Jesus. In John 1, JESUS was the speck, the spark, the energy behind the Big Bang, the Spirit. The presence of Jesus was the Divine, which brought everything into existence, and then became flesh and dwelt among us.

Turn now to the responsive reading on your handout from Genesis 1 and John 1*:

In the beginning God created the heavens and the earth, the earth was a formless void and darkness covered the face of the deep, while a wind/spirit from God swept over the face of the waters.

In the beginning the Word was; and the Word was with God; and the Word was God.

Then God said, “Let there be light”; and there was light. And God saw that the light was good; and God separated the light from the darkness. God called the light Day, and the darkness he called Night. And there was evening and there was morning, the first day.

That which came into being in the Word was life and the life was the light of humanity; the light shines in the darkness, and the darkness never overpowered it.

And God said, “Let the waters under the sky be gathered together into one place, and let the dry land appear.” God called the dry land Earth, and the waters that were gathered together he called Seas. And God saw that it was good.

Then God said, “Let the earth put forth vegetation

And God said, “Let the waters bring forth swarms of living creatures, and let birds fly across the dome of the sky.” And God saw that it was good.

And God said, “Let the earth bring forth living creatures of every kind:

Through the Word all things came into being and nothing came into being apart from the Word.

Then God said, “Let us make humankind in our image, according to our likeness; and let them have dominion over [every creature.]

The True Light that enlightens every person was coming into the world. He was in the world, and the world was made through him, yet the world knew him not

So God created humankind in his image, in the image of God he created them; male and female he created them.

God saw everything that he had made, and indeed, it was very good.

And the Word became flesh and lived among us. We saw his glory – the glory of the only Child from the Father, full of grace and truth.

**The bold print readings from the Gospel of John are from A New New Testament: A Bible for the 21st Century, Edited by Hal Taussig (Handout by R.Dolch)*

It is remarkable to me how the Big Bang and the two Creation stories appear to be science and poetry describing the same miraculous reality.

Now let us look at LIGHT.

In the gospel of Matthew, the resurrection of Christ is accompanied by images of light. Mary Magdalene and Mary the mother went to the tomb and they had an experience of light. An Angel in radiant-light garments came from heaven. The earth shook from an earthquake. The angel of light rolled back the stone at the tomb of Jesus and sat on it, shining and saying to the women: “Don’t be afraid of what is happening. Jesus is risen; he will meet you in Galilee.” So they ran in fear and joy toward Galilee. Jesus, in the flesh, met them and said: Greetings!

LINDA - How did the women see the angel? See the radiance? See the risen Christ? Light was certainly playing a special role! Light is really special in the scientific world, too. How can we “see” teeny particles that are way too small for our eyes to see (but that make up all that exists), and how can we “see” galaxies and stars and stuff that are way too far away for our eyes to see?

We use LIGHT. Light is composed of little packets of pure vibrating energy that have no mass, that weigh nothing, but that bounce off of things and also get absorbed. We have visible light that shows itself to us through the colors of the rainbow, and we also have light that our eyes can’t see but we are familiar with because we know the effects of it, like X-rays, microwaves, and radiofrequency waves. In my own research, I use radiofrequency waves to study some of the molecular machines that make life work, and to figure out what goes wrong with them in certain disease processes. Through its interactions with matter, whether it is bouncing off an atom or being absorbed by a proton or an electron, light literally allows scientists to “see” the unseen! Light is really special.

Physicists such as Einstein had long ago predicted something really amazing and cool about light: that it can transform into matter, or STUFF with mass! AND, that matter

can transform into LIGHT! They predicted that light and matter could, in theory, interconvert.

And now, with modern technology such as exists at a place called CERN (where Susan Dittmer is in Switzerland!), scientists have indeed observed this interconversion. How this works involves something that we don't see very often: antimatter.

Our universe is made up almost exclusively of matter. But each of the fundamental particles that matter is composed of, like an electron and a proton, have exact antimatter counterparts with exactly the same mass but with opposite charge. When matter and its antimatter counterpart collide, they annihilate each other and become ... pure light (shown on your handout). Conversely, when a photon of light is struck by a high-energy particle, it splits into matter and antimatter counterparts.

What does this mean? It means that there exists a mechanism by which matter can be present, can encounter antimatter and disappear into a flash of light, and can appear along with its equivalent antimatter from light. In other words, although it doesn't happen very often and we have to go to great lengths with fancy equipment to make this happen on a very small scale, scientific observation tells us that light can serve as a connection or conduit between different manifestations of matter.

REBECCA –

In the resurrection appearances, Jesus demonstrated what Linda and physics is talking about. Jesus' body disappeared. It appeared. Sometimes it appeared as radiance. Sometimes he was physical: the disciples touched him, or he ate and drank something in a physical way.

Science is blowing our minds wide open to unimaginable realities, and the amazing thing is that these realities are described in our sacred texts !!!

LINDA: Is it OK to think about how science might prove the existence of God, and how the Bible holds truths about what scientific discoveries are gradually revealing? This is something I have asked myself, wondering whether it diminishes my faith to look for God in science.

But as Rebecca has reminded me, *To be called to see the wonders of Thy hands is to praise*. This has helped me to see that bringing the unseen world to light and sharing it with others is an act of sharing God's amazing creation with the greater consciousness. For me, it is a true blessing to serve as a conduit between the seen and unseen worlds.

But, we can't explain everything. Science offers no explanation for the initial conditions of the universe, and no explanation for what *exactly* is at the bottom of a black hole. However, based on scientific observations and our limited understanding of them, we know that unimaginable things are true. To me, this means that we must

not limit our thinking, but must trust – in fact, EXPECT – that God’s greatness and power and Truth and Grace are indeed *without limit*.

REBECCA: To me the resurrection stories and science are saying to us: *Don’t limit yourselves. Don’t limit God. Don’t put God in a small box. Don’t kick science out of the church. Reality is bigger than we think it is. Inconceivable things are entirely possible and we see more and more evidence of that.*

- The Big Bang is possible.
- The black hole where time stops and eternity is a reality is possible.
- The creation of the earth in 7 days being the same as 13 billion years is possible.
- Life is possible, the disintegration of our physical bodies is possible, re-materialization is possible.
- The Divine Radiance at the beginning of time is possible—
- The speck, the Word, God, Sophia, eternity, Jesus, energy—all the words meaning the same thing is possible.
- Your life, your hopes and dreams, your prayers, healing, eternal existence is possible.
- The Resurrection of Christ is as real as light and matter going back and forth with each other; and your eternal existence is part of the same, vast miracle of God at the beginning of creation. In God, possibilities have no limitation!

And that is the good news of the Gospel on this Easter morning.