

# The Large Hadron Collider: How Humanity's Largest Science Experiment Bears Witness to God

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## I. Introduction

### a. LHC – Large Hadron Collider

#### i. What it is

1. The world's largest scientific experiment
2. 10,000 people have worked nearly two decades to build the largest, most expensive, most power consuming science experiment on earth, a 17-mile long underground tube near the France-Switzerland border, housing an high-powered particle accelerator
3. In the collider, beams of sub-atomic particles called protons are whipped around and around the circular loop at nearly the speed of light, and then smashed into each other at extremely high speed and energy
4. The result: These collisions are expected to produce temperatures 100,000 hotter than the sun's core, melting the protons and releasing the even smaller particles they are made of.
5. 600 million collisions per second, as the particles smash into each other, their postions are detected by high tech measuring devices, which produce 15 million megabytes of information annually
6. 9,300 highly specialized magnets are used to accelerate the particles and guide them into their collision courses. These magnets are superconducting, and must be kept at temperatures that are colder than outer space (-271 degrees Centigrade). They must be cooled with liquid nitrogen and liquid helium. It takes nearly a month to cool one of these magnets to its operating temperature.

#### ii. What it cost

1. 10 Billion dollars
2. Initially 8 billion dollars
3. But shortly after they turned it on, a flaw was detected that required them to take it off line and do extensive repairs
4. The repairs were finally completed and now the LHC is active again and producing results
- 5.

#### iii. What it is intended to do

1. Recreate the conditions that supposedly existed immediately following the Big Bang and observe

subatomic particles being formed from more fundamental particles

2. Attempt to find evidence of the Higgs boson, a particle scientists think may explain why matter has mass
3. Attempt to find evidence of six more dimensions that some scientists believe may exist
4. Attempt to figure out why matter exists, since our best efforts to understand the Big Bang indicate that no matter should have survived very long
5. Try to observe some of the dark matter and dark energy that, according to the best guess of scientists, makes up 96% of the universe, but which we have never seen

- b. What we as Christians can learn from the Large Hadron Collider
  - i. Carl Sagan is famous for saying, “The Cosmos is all there is, or was, or ever will be.”
  - ii. This statement expresses a naturalistic philosophy that says that this universe is all that there is, and that God has no place in it, or in the lives of men
  - iii. Every new scientific discovery or human achievement is pointed to as evidence that we don’t need God
  - iv. The purpose of this study this morning is to look at three spiritual lessons we can learn from the Large Hadron Collider that will build our faith and honor the God who made us and who loves us

II. Key Sentence: The scientific phenomena which the LHC is designed to investigate demonstrate the existence of a Creator. The existence of the LHC demonstrates His infinite wisdom and creativity. And the naturalistic philosophy dominating the investigation of the origin of the universe demonstrates the accuracy of God’s inspired word.

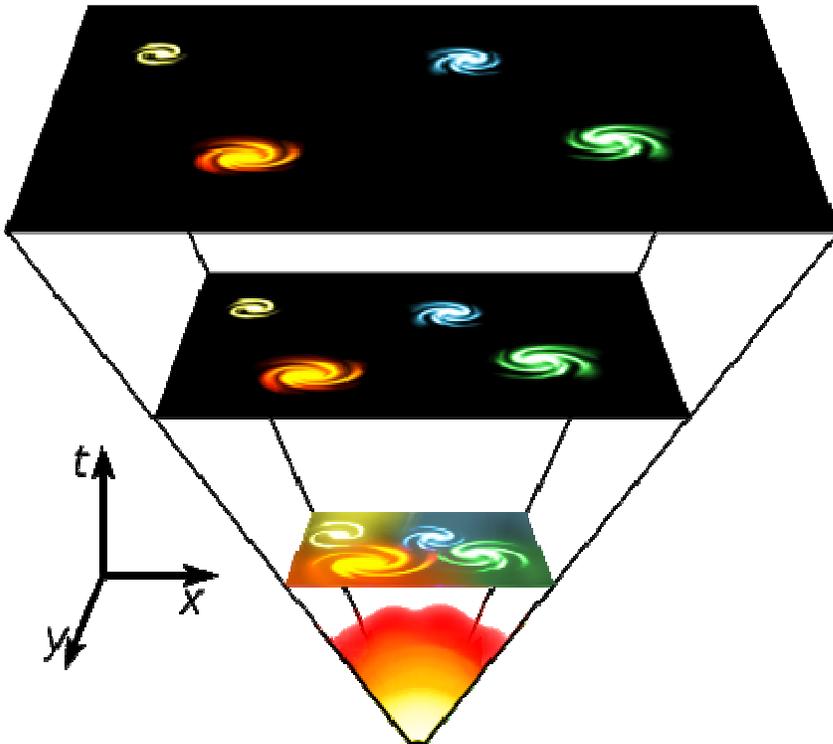
III. Big Bang

- a. Naturalistic philosophy assumes that we understand so much about the universe that there is no need for a Creator
  - i. The opposite is true
  - ii. We know so much about the universe, there **MUST BE** a Creator!
- b. 100 years ago the view of the universe was that it was static and unchanging in size
  - i. In 1917, Albert Einstein realized that his theory of general relativity implied that the universe was either expanding or contracting.
  - ii. Over the next few years astronomer Edwin Hubble, using telescope observations, discovered that every visible object in the universe appeared to be moving away from us, and that the further away the object was, the faster it appeared to be moving away
  - iii. It soon became clear that the universe was expanding
  - iv. The implications of an expanding universe were difficult for scientists to accept
    1. Einstein

- a. Just the possibility so perplexed Einstein that he revised his equations to add what he called a cosmological constant to keep the universe static
  - b. It was a fudge factor added to make the theory of relativity match his idea of what the universe was like
  - c. When Einstein heard of Hubble's discovery, he said that changing his equations was "the biggest blunder of [his] life".<sup>[7]</sup>
2. Fred Hoyle – was a famous scientist and atheist
- a. He predicted the structure of the carbon nucleus based on the fact that it was the only way that it could be structured that would allow enough carbon to exist for life to arise in the universe
  - b. That prediction was later confirmed experimentally
  - c. In his words, "A common sense interpretation of the facts suggests that a superintellect has monkeyed with physics, as well as with chemistry and biology, and that there are no blind forces worth speaking about in nature. The numbers one calculates from the facts seem so overwhelming as to put this conclusion almost beyond question."
  - d. But he denies a Creator anyway, and rejected the idea that the expanding universe meant that the universe had a beginning
  - e. He advanced an alternative explanation called the steady-state theory, which required matter to continuously be created at the center of the universe causing it to expand forever in all directions
- c. The expanding universe means that the universe has a beginning.
- i. This discovery led to two questions:
    - 1. When did it begin?
      - a. Uniformitarianism is defined in the authoritative *Glossary of Geology* as "the fundamental principle or doctrine that geologic processes and natural laws now operating to modify the Earth's crust have acted in the same regular manner and with essentially the same intensity throughout geologic time, and that past geologic events can be explained by phenomena and forces observable today; the classical concept that 'the present is the key to the past'." (Robert Bates and Julia Jackson, *Glossary of Geology*, 2nd edition, American Geological Institute, 1980, pg. 677).
      - b. The same principle is used in other sciences, including cosmology.
      - c. Scientists observe how the universe is presently expanding, and "rewind the tape", with the assumption that "the present is the key to the past" and conclude

that the universe had “infinite density and temperature at a finite time in the past”

- d. This is the best guess of science of how the universe began, if nothing else acted upon it other than the forces we can observe today.
  - e. We call this description of the beginning of the universe the Big Bang
  - f. The best guess of how old the universe is under these assumptions is about 13.7 billion years old.
  - g. Train Illustration: A train is heading West at 50 MPH. 20 miles to the East on the same track, a second train is heading East at 50 MPH.
    - i. How far apart will the trains be in 1 Hour?
      1.  $20 + 50 + 50 = 120$  Miles
      2. If everything remains the same
    - ii. How far apart were the trains 1 hour ago?
      1. If everything remains the same
      2.  $20 - 50 - 50 = -80$  Miles
      3. They passed through each other about 12 minutes ago
      4. Impossible, so we know that the present position and/or speed of the trains has changed in the past 12 minutes
      5. Assuming that everything has been the same as it is now produces an impossible result
2. What caused it to begin?
- a. Science does not know what caused the universe to come into being:
    - i. “Without any evidence associated with the earliest instant of the expansion, the Big Bang theory cannot and does not provide any explanation for such an initial condition, rather explaining the general evolution of the universe since that instant.” - [http://en.wikipedia.org/wiki/Big\\_bang](http://en.wikipedia.org/wiki/Big_bang)
    - ii. The origin of the universe is unexplained, and cannot be explained scientifically



- ii. If it began, then something or someone began it
  1. Despite the claim of some, that “the universe is just one of those things that happens from time to time”
  2. The universe had to be caused by something
  3. Whatever caused the universe, it must be greater than the universe it caused
  4. According to Chuck Colson, “Science historian Frederic B. Burnham observed that scientists consider the idea that God created the universe, "a more respectable hypothesis today than at any time in the last hundred years." [In 1992,] Dr. Geoffrey Burbridge, of the University of California at San Diego, complain[ed] that many astronomers are rushing off to join what he calls "the First Church of Christ of the Big Bang." That's a cynic's way of acknowledging that many astronomers are being forced by their data, to recognize the existence of a Creator-God.’ - [http://www.connectionmagazine.org/2002\\_05/co\\_colson.htm](http://www.connectionmagazine.org/2002_05/co_colson.htm)

- d. Did the Big Bang happen?
  - i. The current position, direction, and speed of the two trains did not prove that they passed through each other 12 minutes ago. It proves that the current conditions have not always existed
  - ii. The evidence that leads to the Big Bang theory does not prove that the Big Bang occurred, it only proves that the universe has not always existed, it has a beginning,

- iii. And that beginning cannot have been more than 13 or 14 billion years ago
    - iv. But we have eyewitness testimony to the creation of the universe in Genesis 1:1, In the beginning, God made the heavens and the earth. This did not happen over vast eons of time, but in six days. Exodus 20:7
  - e. Conclusion: The theories that the Large Hadron Collider was built to test, demonstrate the fact that the universe had a Creator
  - f. Dr Arno Penzias, was a scientist with Bell Labs, whose microwave telescope data helped prove that the universe had a beginning, saw the philosophical significance in his discovery. "...(T)he best data we have," he said, "are exactly what I would have predicted, had I had nothing to go on but the five books of Moses, the Psalms, the Bible as a whole... (T)he creation of the universe is supported by all the observable data astronomy has produced so far."
- IV. LHC demonstrates the wisdom and creativity of God
  - a. Naturalistic philosophy would tell us that we are so far advanced scientifically, that we don't need God
    - i. In fact, the opposite is true...
  - b. Man has advanced tremendously in technology and understanding of the universe around us works
    - i. LHC is a monument of human engineering and creativity
    - ii. The scientific theories that are being tested there are the great ideas of brilliant minds
    - iii. If one of these theories, the existence of the Higgs boson, is confirmed, Peter Higgs will almost certainly win a Nobel prize
      - 1. It looks like it will be
      - 2. On July 4<sup>th</sup>, the LHC team announced preliminary findings that appear to confirm the existence of the particle Peter Higgs predicted - <http://abcnews.go.com/Technology/wireStory/physicists-find-evidence-subatomic-particle-16708720>
  - c. But....
    - i. If the universe is an uncaused, purposeless mass of chance and necessity, then
      - 1. The universe itself is meaningless
      - 2. Everything that happens in it is the result of necessity (it had to happen) or chance (it just happened) or a combination of the two
      - 3. If that is true, what is the meaning of a Nobel prize? The prize for having the greatest amount of necessity and luck in Chemistry, or Literature, or Physics?
    - ii. If the universe is uncaused and purposeless
      - 1. Our thoughts and feelings have no meaning
      - 2. Our will and purpose is an illusion

3. Our mind and intellect has no validity other than as a combination of physical processes
  - iii. The meaninglessness of a Creator-less world couldn't be expressed better than by a one-liner told by one of the project chiefs who was announcing the success of the LHC experiments
    1. "Thanks, nature!" joked Fabiola Gianotti, the Italian physicist who heads the team called ATLAS, with 3,000 scientists, drawing laughter from the crowd.
    2. Guess what?
      - a. Nature doesn't care if you understand it.
      - b. It won't help you in your darkest hours
      - c. There is no one to thank in your moments of greatest achievement
  - d. There is an alternative:
    - i. If you could design a build a group of 10,000 robots who would on their own design and build a giant atom smashing machine, you would far surpass the accomplishments of everything achieved in the field of robotics today
    - ii. The fact that we can witness with our own eyes the work of 10,000 men and women working together to design and build, on their own a giant atom smashing machine teaches us that the One who designed them has abilities that far surpass the abilities of any human being, or all human beings put together
  - e. Therefore, the existence of the Large Hadron Collider demonstrates the infinite wisdom and creativity of God
  - f. Psalm 19:1;
- V. The naturalistic philosophy of those who claim that the universe is all that exists proves the accuracy of God's word
- a. We are told by the world that the fact that many of the best minds in science reject a supernatural explanation for the universe demonstrates that the Bible is wrong.
  - b. Actually, the opposite is true...
  - c. If I could demonstrate a Bible prophecy made thousands of years ago being fulfilled, would it show that the Bible is God's word?
  - d. 2 Pet. 3:1-7 – The apostle reveals that scoffers would come in the last days
    - i. They would make the following statement: "Since the fathers fell asleep, all things continue as they were from the beginning of creation."
    - ii. Friends, this is the doctrine of uniformitarianism!
    - iii. the fundamental principle or doctrine that geologic processes and natural laws now operating to modify the Earth's crust have acted in the same regular manner and with essentially the same intensity throughout geologic time, and that past geologic events can be explained by phenomena and forces observable today; the classical concept that 'the present is the key to the past'." (Robert Bates and Julia Jackson, *Glossary of Geology*, 2nd edition, American Geological Institute, 1980, pg. 677).
  - e. Peter said that they were willfully ignorant of two things

- i. The creation – This world was spoken into existence by God
  - ii. The flood – This world was destroyed by flood according to the word of God
- f. He said that they should keep in mind two other things:
  - i. The universe is sustained by the word of God
  - ii. And one day it will be destroyed by fire
- g. The modern doctrine of uniformitarianism, and the naturalistic philosophy that says that this natural world is all there is, represents a direct fulfillment of this Bible prophecy
- h. God's word is true and accurate about
  - i. what happened then,
  - ii. what is happening now
  - iii. and what will happen in the future
- i. The willful forgetting by modern philosophy of God's role in creating and sustaining the universe is a fulfillment of prophecy, and demonstrates the accuracy of God's word

## VI. Conclusion

- a. The Large Hadron Collider is a marvel of human ingenuity. Unfortunately, some view the scientific theories that are being tested there as a way to get away from God.
- b. We can no more escape from the reality of God than we can escape from the universe that He created
- c. We saw
  - i. The phenomena that are being tested at LHC demonstrate that our universe had a beginning, and therefore had a Creator
  - ii. The intelligence and creativity of the men and women who designed and built LHC demonstrate that the Creator is infinitely wise and creative
  - iii. And the naturalistic philosophy that tries to rule out God as an explanation for the universe and mankind is a fulfillment of Bible prophecy and demonstrates the accuracy of God's word.
- d. The universe had a beginning, not in the Big Bang, but in the Word of God
- e. Just as surely as it had a beginning, it will have an end
- f. 2 Pet. 3:9-13
- g. Are you ready?