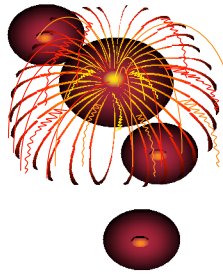


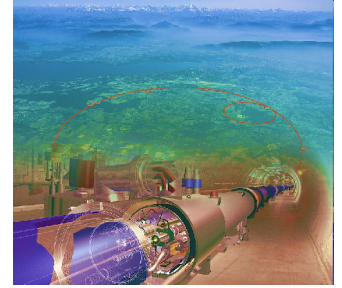
The Large Hadron Collider



<http://www.lhc.ac.uk/>

What is the Large Hadron Collider (LHC)?

- The LHC is a very large particle accelerator, roughly 17 miles long and finished on September 10th, 2008.
- Its primary function is to use electric fields to force charged particles to move at very high speeds and still keep them under control.



What is it made out of?

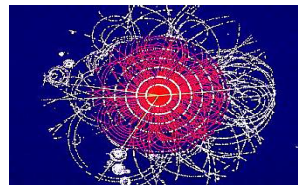
The Large Hadron Collider contains:

- 2 adjacent parallel beams
- 1232 dipole magnets
- 392 quadrupole magnets
- 1,600 superconducting magnets
- 96 tons of liquid helium for temperature maintenance purposes



Why was it created?

- Questions that need to be answered:
 - What is the Higgs Boson?
 - How many dimensions are there in the universe?
 - Is the string theory real?
 - What is dark matter?
 - What happened the instant after the Big Bang?



STRING THEORY SUMMARIZED:

I JUST HAD AN AWESOME IDEA. SUPPOSE ALL MATTER AND ENERGY IS MADE OF TINY, VIBRATING "STRINGS".

OKAY, WHAT WOULD THAT IMPLY?

I DUNNO.



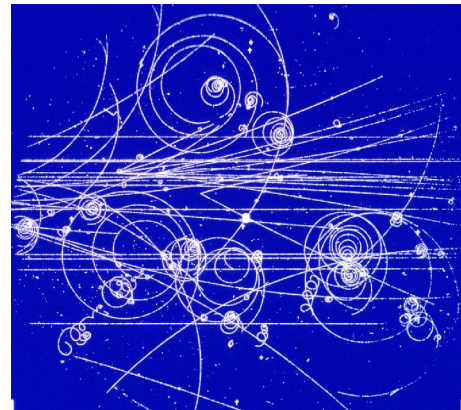
How does it work?

- Even Khristian Erich doesn't know the answer to this one...

...just kidding

In simplest terms, the LHC works by forcing two beams of atomic particles to travel in opposite directions surrounding the physical LHC itself. Once these beams reach their maximum speed, the LHC forces them to collide in four places on their path. These collisions create new particles and energy, allowing physicists to use the detectors in the LHC to observe much about the basic structure of our world.

Observing Elementary Particles...



Safety risk?

- There had been much speculation that the LHC was unsafe because it could produce microscopic black holes, strangelets, vacuum bubbles or magnetic monopoles.
- All of these "potential" dangers are highly unrealistic and the truth is really that nothing the LHC planned to do hasn't already been done constantly by nature, so the risk was not nearly as large as people feared.

Safety First



What went wrong with it?

- The reason behind the inability of the LHC to be appropriately followed through with as anticipated on September 19th was an electrical fault between two magnets which caused an arc, making the helium leak. Once the outer layer of the helium broke, it flooded the area, breaking 10-ton magnets and covering the tubes of proton with soot.



Overview and future outlook

- It is clear that the LHC has a very good chance to answer a lot of meaningful questions regarding physics and the nature of our universe.
- It has many scientific functions and it is quite possible that by the time it is launched again in October of 2009, it will be able to successfully demonstrate to the physicists currently observing it many important things about our universe.

