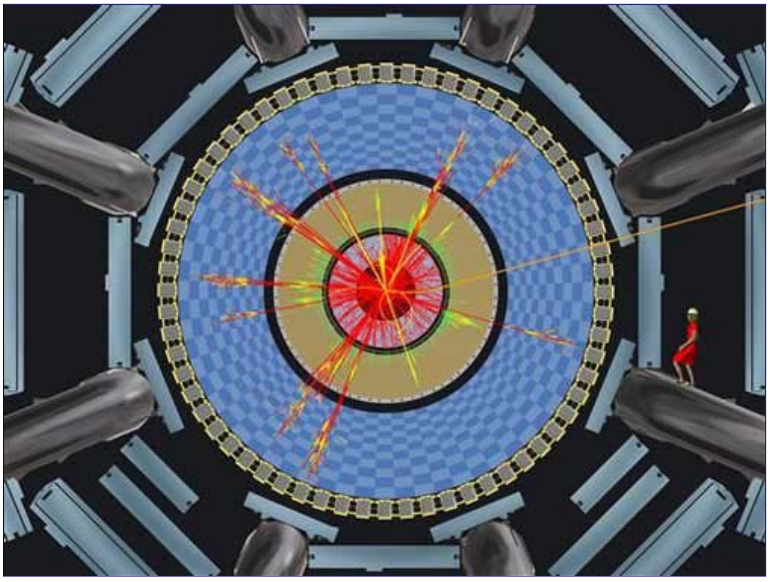
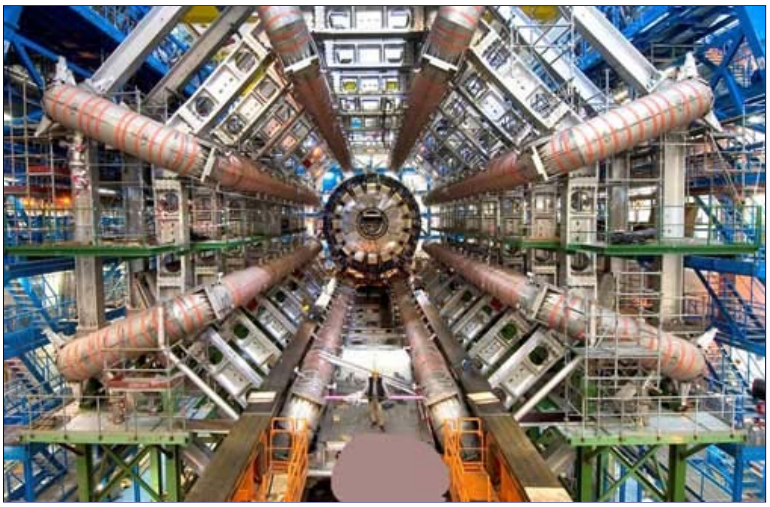
CERN Announces Start Date for Hadron Collider

First circulating beam on September 10, 2008,
at the injection energy of 450 GeV (0.45 TeV).



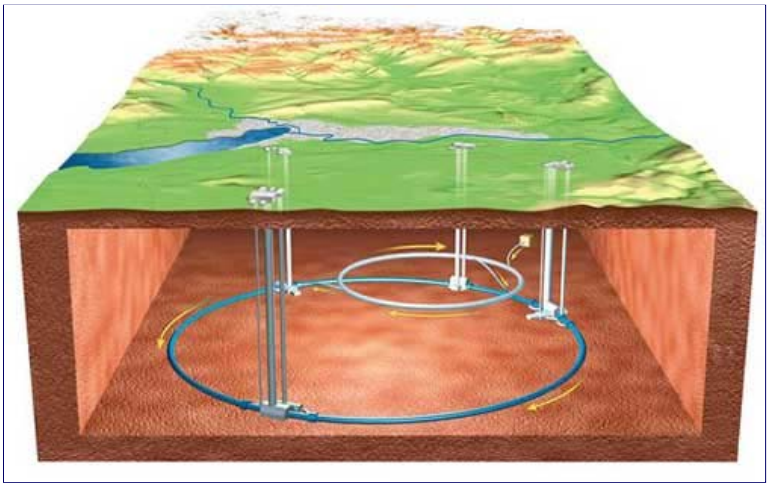
In some theories, microscopic black holes may be produced in particle collisions that occur when very-high-energy cosmic rays hit particles in our atmosphere. These microscopic-black-holes would decay into ordinary particles in a tiny fraction of a second and would be very difficult to observe in our atmosphere. The ATLAS Experiment offers the exciting possibility to study them in the lab (if they exist). The simulated collision event shown is viewed along the beampipe. The event is one in which a microscopic-black-hole was produced in the collision of two protons (not shown). The microscopic-black-hole decayed immediately into many particles. The colors of the tracks show different types of particles emerging from the collision (at the center). Computer graphic and actual Large Hadron Collider image below courtesy CERN LHC.



August 7, 2008 Geneva, Switzerland - CERN announced today that the first attempt to circulate a beam in the Large Hadron Collider (LHC) will be September 10, 2008. TV coverage of the start-up will be made available through a **Eurovision webcast.**

CERN Press Release: "The LHC is the world's most powerful particle accelerator, producing beams seven times more energetic than any previous machine, and around 30

times more intense when it reaches design performance, probably by 2010. Housed in a 17-mile-long (27 kilometers) tunnel, it relies on technologies that would not have been possible 30 years ago. The LHC is, in a sense, its own prototype.



This computer-generated image shows the location of the 17-mile-long (27 km) Large Hadron Collider (LHC) tunnel (in blue) on the Swiss-France border. The four main experiments (ALICE, ATLAS, CMS, and LHCb) are located in underground caverns connected to the surface by 50 meter to 150 meter pits. Part of the pre-acceleration chain is shown in grey. Illustration courtesy CERN LHC.

"Starting up such a machine is not as simple as flipping a switch. Commissioning is a long process that starts with the cooling down of each of the machine's eight sectors. This is followed by the electrical testing of the 1600 superconducting magnets and their individual powering to nominal operating current. These steps are followed by the powering together of all the circuits of each sector, and then of the eight independent sectors in unison in order to operate as a single machine.

"By the end of July 2008, this work was approaching completion, with all eight sectors at their operating temperature of 1.9 degrees above absolute zero, - 459 degrees Fahrenheit (-271°C). The next phase in the process is synchronization of the LHC with the Super Proton Synchrotron (SPS) accelerator, which forms the last link in the LHC's injector chain. Timing between the two machines has to be accurate to within a fraction of a nanosecond. A first synchronization test is scheduled for the weekend of August 9, 2008, for the clockwise-circulating LHC beam, with the second to follow over the coming weeks. Tests will continue into September to ensure that the entire machine is ready to accelerate and collide beams at an energy of 5 TeV per beam, the target energy for 2008. If all goes well, the LHC will see its first circulating beam on September 10, 2008, at the injection energy of 450 GeV (0.45 TeV).

"Once stable circulating beams have been established, they will be brought into collision, and the final step will be to commission the LHC's acceleration system to boost the energy to 5 TeV, taking particle physics research to a new frontier.

'We're finishing a marathon with a sprint,' said LHC project leader Lyn Evans. 'It's been a long haul, and we're all eager to get the LHC research program underway.'"

Website:

CERN Large Hadron Collider:
http://lhc-first-beam.web.cern.ch/lhc-first-beam/Welcome.html

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