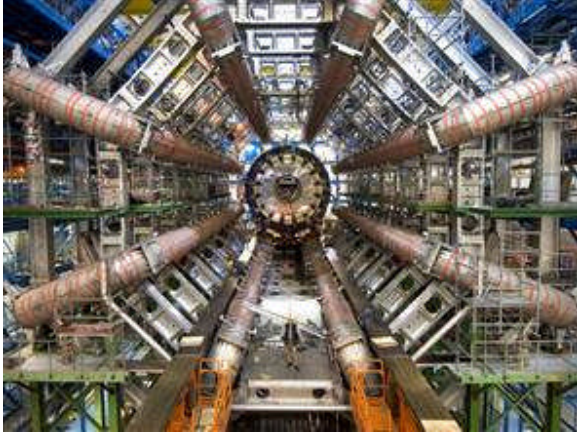


Physicists set schedule for Earth's biggest bang

Large Hadron Collider to smash protons at record energy starting March 30



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GENEVA - The world's largest scientific experiment will try to collide particles at the highest energy level so far on March 30, re-creating conditions at the "Big Bang" birth of the universe 13.7 billion years ago, CERN said Tuesday.

The Large Hadron Collider, centered in a 17-mile-round (27-kilometer-round) underground tunnel beneath the French-Swiss border, began circulating particles last November after being shut down in September 2008 because of overheating.

Twin beams are currently circulating at 3.5 trillion electron volts, or TeV, the highest energy ever achieved. The next step is to bring those beams together for the first actual collisions at that energy, according to CERN. The acronym stands for Centre Européen pour la Recherche Nucleaire, or the European Organization for Nuclear Research.

"The first attempt for collisions at 7 TeV (3.5 TeV per beam) is scheduled for March 30," CERN said in a statement.

Rolf Heuer, CERN's director-general, said: "It may take hours or even days to get collisions".

The multiple collisions at 7 TeV will each create mini-big bangs, producing data that thousands of scientists will analyze for years to come.

"Just lining the beams up is a challenge in itself: It's a bit like firing needles across the Atlantic and getting them to collide halfway," Steve Myers, CERN's director for accelerators and technology, said in Tuesday's statement.

Once the high-speed collisions are established, the plan is to run continuously for 18 to 24 months at 7 TeV, with only a short technical pause at the end of 2010, CERN said. At the end of the extended run, the collider will be shut down for more thoroughgoing maintenance — and then physicists will work toward doubling the collision energy to 14 TeV. It may take until 2013 or 2014 for the LHC to reach full power.

CERN said the collisions at 7 TeV will mark the beginning of the LHC's official research program. One of the

discoveries that could be made relates to the nature of dark matter, which scientists believe makes up 25 percent of the universe.

Astronomers and physicists say that only 5 percent of the universe is known currently, and that the invisible remainder consists of dark matter and dark energy, which make up some 25 percent and 70 percent, respectively. Physicists speculate that dark matter may be composed of exotic particles that could be detected for the first time by the Large Hadron Collider.

"If we can detect and understand dark matter, our knowledge will expand to encompass 30 percent of the universe, a huge step forward," Heuer told a news conference earlier this month.

This report includes information from Reuters and msnbc.com.