

CERN may extend initial Big Bang research phase

Geneva: New data on the origins of the universe is pouring in so quickly that physicists may extend the current opening phase of their Big Bang project to the end of 2012, directors of the CERN (European Centre for Nuclear Research) laboratory said.

An extension, to be decided in late January, could lead to an early discovery of the elusive Higgs boson believed to have turned an amorphous mass of particles into solid matter at the birth of the cosmos.

There is a big window for new discoveries opening up and we want to ensure the momentum of these past few months is maintained, said CERN director general Rolf Heuer, who oversees the centres Large Hadron Collider (LHC) experiments.

We have confirmed this year all that we thought we knew about the physical universe, and now we are moving into new territory, his deputy, research director Sergio Bertolucci, added. We are looking towards the known unknowns and also things we may not even have thought about.

Heuer and Bertolucci spoke as CERN engineers began to close down the giant, subterranean LHC and its huge detector magnets which smash particles together at all but the speed of light and make up the world's biggest scientific project until next February for winter fine-tuning.

In a further confidence boost, CERN experts reported on Thursday to a packed hall of enthusiastic and mainly young researchers the recreation of a super-hot quark-gluon plasma believed to have been the totality of the cosmos a fraction of a second after the Big Bang 13.7 billion years ago.

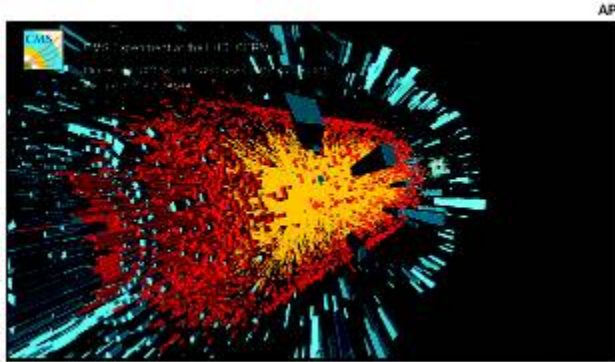
For the first time, activity of the two elementary particles within the plasma was clearly tracked and a phenomenon called jet quenching was observed, giving hints on how matter evolved into stars, planets and eventually life on Earth.

The results were achieved after only days of colliding lead ions in the LHC at ultrahigh energies producing temperatures some 500,000 times hotter than the core of the sun.

The mini Big Bangs created were of even greater intensity than the collisions of hydrogen protons of the LHCs first seven months of operation.

With hydrogen protons, the CERN physicists re-established for the scientific community the validity of what is known as the Standard Model, a group of theories that brings together everything presently understood about fundamental particles and the forces that influence them.

After the two-month break, CERN researchers will resume colliding particles at impact energies of up to 7 Tera-electron Volts (TeV) in the LHC's 27-kilometre (16.8 mile) ring tunnel buried under the French and Swiss border near Geneva. REUTERS



A handout image released by CERN illustrating one of the first lead-ion collisions seen by the Compact Muon Solenoid experiment at the Large Hadron Collider

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