

Atom smasher achieves 'Big Bang' collisions (Update)

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Scientists at the world's biggest atom smasher at the European Organization for Nuclear Research (CERN) near Geneva celebrate after making protons collide at record power, mimicking conditions close to the Big Bang that created the universe.

Scientists at the world's biggest atom smasher on Tuesday started colliding particles at record energy levels, opening a new era in the quest for the universe's deepest secrets.

The European Organisation for Nuclear Research (CERN) said it had unleashed the unprecedented bursts of energy on the third attempt, as beams of protons thrust around the 27-kilometre (16.8-mile) accelerator collided at close to the speed of light.

"This is physics in the making, the beginning of a new era, we have

collisions at 7 TeV (tera-electronvolts)," said Paola Catapano, a CERN scientist and spokeswoman, referring to the record energy levels achieved.

CERN Director General Rolf Heuer could barely contain his excitement by video conference from Japan: "It is a fantastic moment for science."

Within an hour, physicists from dozens of countries around the world were marvelling at their initial observations, rendered graphically as colourful bursts of energy.

"What we saw within the detector was really a firework, a lot of energy, something completely different from what we have seen until now," said Fabiola Gianotti, spokeswoman for one of the biggest parts of the experiment.

The success came after a faltering start at the giant 3.9 billion euro (5.2 billion dollar) machine under the Franco-Swiss border near Geneva, which is aimed at unravelling some of the outstanding secrets of the universe.

But collisions among the 20 billion protons emerged in the Large Hadron Collider (LHC) at 1:06 pm (1106 GMT), creating powerful but microscopic bursts of energy mimicking conditions close to the Big Bang that created the universe.

"We're within a billionth of a second of the Big Bang," CERN spokesman James Gillies told AFP.

Cheers and applause erupted in separate control rooms as the detectors recorded the collisions of sub atomic particles on computer screen graphs.

"We're certainly going to do the same thing several times over the coming week and hundreds of times over the year," said Steve Myers, CERN's Director for Accelerators and Technology.

Myers had likened the attempt to firing needles from either side of the Atlantic and getting them to collide half way, while the particles sped around the ring more than 5,000 times a second.

The new stage, dubbed "First Physics", marks only the beginning of an initial 18- to 24-month series of billions of such collisions.

Scientists around the world will sift through and analyse huge quantities of data on a giant computer network, searching for evidence of a theorised missing link called the Higgs Boson, commonly called the "God Particle".

"Internationally we sent out data at the rate of one DVD every two seconds," CERN computing chief David Foster said after Tuesday's first steps, illustrating the vast volume of data generated by the atom smasher.

Physicist Despiona Hatzifotiadu said much of the observation of new phenomena would rely on number crunching.

"It will give us a clue of how we were created in the beginning."

The experiment also aims to shed light on "dark matter" and subsequently "dark energy", invisible matter or forces that are thought to account together for some 96 percent of the cosmos.

At this stage the LHC is still running on only partial power. It is designed to run collisions at twice the energy -- 14 TeV, equivalent to 99.99 percent of the speed of light.

CERN is aiming to cross that threshold with the giant, cryogenically-cooled machine, which straddles the French-Swiss border near Geneva, after 2011.

At full power the detectors in cathedral sized chambers should capture some 600 million collisions every second among trillions of protons racing around the LHC 11,245 times a second.

The decades-long attempt by CERN to observe and understand mysterious forces has inspired in recent years the fictional Hollywood blockbuster "Angels and Demons".

The venture has also attracted sceptics who claim that the organisation is tampering with forces that might suck the world into a black hole.

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