Pioneering atom smashing bid makes faltering start

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Scientists at the world's largest atom smasher seeking to unravel the secrets of the universe got off to a faltering start on Tuesday, when they failed to collide two high-energy proton beams.

The European Organisation for Nuclear Research (CERN) in Geneva made two aborted attempts to collide the beams in its 27-kilometre (16.8-mile) long Large Hadron Collider (LHC) at close to the speed of light.

Update story: Atom smasher achieves record power 'Big Bang' collisions: CERN

"We've had a few minor problems," said Paul Collier, head of CERN's beams department.

"These are the kind of things that happen when you have such a complicated machine. In one to one-and-a-half hours from now we'll inject again."

CERN has warned that it might take hours or days of repeated attempts to line up the high energy collisions as they cautiously tread uncharted scientific territory.

The experiment is aimed at unleashing powerful but microscopic bursts of energy that would mimic conditions after the Big Bang that created the universe.

A senior scientist on the project, Steve Myers, has likened the attempt to firing needles across the Atlantic and getting them to collide half way, while the particles speed around the ring more than 5,000 times a second.

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

Two separate beams of protons have reached a record combined speed of 7.0 teraelectronvolts (TeV) -- within a fraction of the speed of light -- in recent weeks, but without being steered into each other.

"It has been a long way to get here but it has been a very successful one and we are now ready for the collisions," said CERN Director General Rolf Heuer.

The 3.9 billion euro (5.6 billion dollars) LHC, which is located in a tunnel under the Franco-Swiss border near Geneva, ground to halt with a major breakdown within days of its launch in 2008.

The huge scientific experiment has passed several groundbreaking milestones since it was restarted from repairs last November, allowing physicists to start collecting data.

"We should not forget it's a new machine, it's not a turnkey machine, many things can happen and we have to be prepared for smaller hiccups," said Heuer.

"But I'm sure we will overcome these hiccups and we will have a fantastic time over the next two years."

Scientists around the world will sift through and process the eventual

data on a giant computer network, searching for evidence of a theorised missing link called the Higgs Boson, commonly called the "God Particle".

"In this kind of physics, what's important to observe new phenomena is to collect statistics," said CERN scientist Despiona Hatzifotiadu.

"It will give us a clue of how we were created in the beginning," she added. 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 current 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 after 2011.

At full power the cathedral sized detector chambers dotted around the tunnel 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 understand mysterious forces has inspired Hollywood in recent years with the fictional blockbuster "Angels and Demons".

The latest venture has also attracted sceptics, especially in Germany and the United States, who claim that the organisation is tampering with forces that might suck the world into a black hole, or generate destructive theoretical particles called strangelets.