

Feature Story

From CERN: First beam in the LHC - accelerating science



In the CERN Control Centre yesterday (Photo: CERN)

Geneva, 10 September 2008. The first beam in the Large Hadron Collider at CERN1 was successfully steered around the full 27 kilometres of the world's most powerful particle accelerator at 10h28 this morning. This historic event marks a key moment in the transition from over two decades of preparation to a new era of scientific discovery.

"It's a fantastic moment," said LHC project leader Lyn Evans, "we can now look forward to a new era of understanding about the origins and evolution of the universe."

Starting up a major new particle accelerator takes much more than flipping a switch. Thousands of individual elements have to work in harmony, timings have to be synchronized to under a billionth of a second, and beams finer than a human hair have to be brought into head-on collision. Today's success puts a tick next to the first of those steps, and over the next few weeks, as the LHC's operators gain experience and confidence with the new machine, the machine's acceleration systems will be brought into play, and the beams will be brought into collision to allow the research programme to begin. [Read more...](#)

Calendar

Feature Story

**First beam in the LHC
You can witness it even if you weren't there**



Watch the re-run of the first beams in the LHC. (Video: CERN Audiovisual Service)

Wednesday must have been one of the biggest days in science history. It certainly was the biggest day in particle physics for a long time coming - the first full beam around the LHC. The first protons completed the full circle at 10:28 am (less than an hour after first injection), and scientists in CERN's control rooms cheered and clapped, ran to the screens, pointed at monitors and breathed a massive, communal sigh of relief. Amazingly, after a cryogenic glitch around lunchtime, another first beam made its first full lap in the opposite direction at 15:03. The media centre in CERN's Globe was abuzz, French media had gathered in a Paris bar to follow the events, German press was connected via a multi-way videoconference and at Fermilab scientists and press watched in dressing gown and pyjamas. It was a picture-book start-up.

- Watch the [re-run](#)
- See the [pictures](#).

-- Barbara Warmbein

In the News

Director's Corner

US National Science & Technology Summit



Oak Ridge National Laboratory, host of the Science and Technology Summit

The US government policy for support of science and technology is being developed around the [2007 America Competes Act](#), a consensus policy to strengthen long-term US economic competitiveness through science and technology. This act calls for a substantial increase in US investment in science and technology, including an approximate doubling of the funding for the National Science Foundation over a five-year period, and an almost similar increase for the Department of Energy (DOE) Office of Science. Consequently, the President proposed increased budgets. President and Congress approved them with bipartisan support last year. Unfortunately, they were interrupted by the Omnibus Bill that so adversely affected high-energy physics funding, including the ILC. Hopefully this plan will resume on track in the next US budget. The Act directed the President to "*convene a National Science and Technology Summit to examine the health and direction of the United States' science, technology, engineering, and mathematics enterprises,*" and to issue a report on the Summit results. That summit meeting was held on 18 August 2008 at Oak Ridge Laboratory. [Read more...](#)

-- Barry Barish

[Director's Corner Archive](#)

Image of the Week

Upcoming meetings, conferences, workshops

[ILD meeting](#)

Cambridge, UK
11-13 September 2008

[Conference on the Design/Optimization of the Silicon Detector at the International Linear Collider](#)

University of Colorado at Boulder, Colorado, USA
17-19 September 2008

[Workshop of the Collaboration on Forward Calorimetry at ILC](#)

Belgrade, Serbia
22-24 September 2008

[Workshop on Sources of Polarized Electrons and High Brightness Electron Beams \(PESP 2008\)](#)

JLab, Newport News, Virginia, USA
1-4 October 2008

[EUNET Annual Meeting 2008](#)

Nikhef, Amsterdam, The Netherlands
6-8 October 2008

[18th International Symposium on Spin Physics \(SPIN 2008\)](#)

University of Virginia, Charlottesville, VA, USA
6-11 October 2008

[CLIC08 Workshop](#)

CERN
14-17 October 2008

Upcoming school

[Third International Accelerator School for Linear Colliders \(2008 LC School\)](#)

Oak Brook, Illinois, USA
19-29 October 2008



= Collaboration-wide Meetings

[GDE Meetings calendar](#)

[View complete ILC calendar](#)

Top world news

Sorry NewsLine readers - we are overwhelmed! The LHC start-up was the main news story for days running in print, radio and TV. We had to give up collecting articles as it was impossible to make a selection. We apologise and suggest you run a google news search and enjoy the lively reports.

From *Boston Globe*
8 September 2008

All eyes on collider as it comes to life

...What scientists discover at the Large Hadron Collider will also help set the path for the next big experiment, the International Linear Collider, which will smash together another family of particles, called leptons.

[Read more...](#)

From *Chicago Tribune*
8 September 2008

WHEN THEORIES COLLIDE Why the Earth could end when the new collider fires up

...The dream outcome of this science thriller for Fermilab would be a sequel: the International Linear Collider, an even bigger and more expensive device that would build on the European collider's findings. There's no word yet on whether the proposed collider would pose a threat to life as we know it.

[Read more...](#)

From *CERN press release*
5 September 2008

CERN reiterates safety of LHC on eve of first beam

The LHC is safe, and any suggestion that it might present a risk is pure fiction.

[Read more...](#)

From *Fermilab press release*
3 September 2008

Fermilab physicists discover "doubly strange" particle

The discovery of the doubly strange particle brings scientists a step closer to understanding exactly how quarks form matter and to completing the "periodic table of baryons."

[Read more...](#)

From *Cosmos*
5 September 2008

Are scientists about to explain dark matter?

European astrophysicists have reported on possible evidence of the elusive particles behind dark matter, controversially using data leaked from an international conference.

[Read more...](#)

Start-up in pyjamas



From *Fermilab Today*: first images from Fermilab's LHC start-up 'Pajama Party'. Pictured: Fermilab Director Pier Oddone waits to speak with CERN Director General Robert Aymar after the first beam injection early Wednesday morning.

Announcements

EUROTeV Reports

[2008-044](#)

Mechanical Design of Collimators for the ILC

[2008-045](#)

Measurement of Collimator Wakefields at End Station A

[2008-046](#)

Wakefield Calculations - Comparison between Simulation and Experimental Data

[2008-047](#)

Design of the Photon Collimators for the ILC Positron Helical Undulator

From *Cornell Chronicle*

4 September 2008

Particle accelerator will benefit society, physicist Yuval Grossman says

...the potential benefit is huge -- from the possibility of answering questions about mass, dark matter and the origins of the universe, to spinoffs including lifesaving medical applications and advances in computer science.

[Read more...](#)

From *Scientific American*

4 September 2008

What Happens to Particle Accelerators After They Are Shut Down?

[Read more...](#)

From *Nature*

4 September 2008

Cool philosophies

High-energy physicists should not gloss over fundamental conundrums.

[Read more...](#)

From *El País*

3 September 2008

Llega la hora de la gran colisión

El diseño, construcción y montaje de esta máquina científica supone tantos retos que es difícil elegir los más llamativos.

[Read more...](#)