

## Calendar

### Thursday, Sept. 11

THERE WILL BE NO PHYSICS AND DETECTOR SEMINAR THIS WEEK

2:30 p.m.

[Theoretical Physics Seminar](#) -

Curia II

Speaker: I. Low, Northwestern University/Argonne National Laboratory

Title: Kaluza-Klein Parity in Warped Extra Dimensions

3:30 p.m.

DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

THERE WILL BE NO

ACCELERATOR PHYSICS AND TECHNOLOGY

SEMINAR TODAY

### Friday, Sept. 12

3:30 p.m.

DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

4 p.m. [Joint Experimental-](#)

[Theoretical Physics Seminar](#) -

One West

Speaker: S. Söldner-Rembold, University of Manchester

Title: Double Beta Decay Searches with NEMO-3 and SuperNEMO

8 p.m. [Fermilab Lecture Series](#)

- Auditorium

Tickets: \$5

Speaker: Dr. Victor Baker, University of Arizona

Title: Megafloods

[Click here](#) for NALCAL, a weekly calendar with links to additional information.

## Weather



Sunny  
78°/64°

[Extended Forecast](#)

[Weather at Fermilab](#)

## Current Security Status

## Feature

### Fermilab crowd joins CERN live to celebrate LHC startup



LHC First-beam Pajama Party emcee Herman White toasts the startup of the LHC.

Roughly 400 people gave up sleep early Wednesday to become part of history and watch the launch of the high-energy physics machine expected to change our knowledge of the universe.

Addressing the Fermilab crowd via video conference, CERN Director General Robert Aymar thanked the people at Fermilab for their help over the years.

Through the Department of Energy and the National Science Foundation, the U.S. contributed \$531 million to the LHC construction and hosts about 2,000 of the 6,000 scientists worldwide working on the LHC experiments. About 100 U.S. universities contribute to the LHC experiments, including hardware, computing and data analysis.

Aymar praised the Japanese-and American-made equipment that, he said, worked without difficulty on the first 17-mile clockwise trip of the beam of the Large Hadron Collider at CERN.

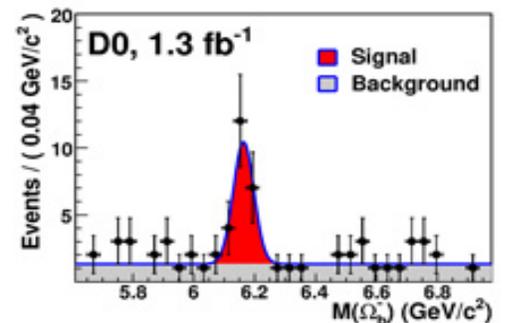
In less than an hour, a team of accelerator experts managed to send the first beam all the way around the 17-mile LHC ring.

[Read more](#)

--Tona Kunz

## Fermilab Result of the Week

### A strange, strange relative



This figure illustrates the invariant mass of  $\Omega_b^-$  events observed in  $J/\Psi$  and  $\Omega^-$  decays. The signal contribution (red) is shown along with the expected background (grey) and the observed data.

Everyone's got one or two in their family. It could be your delightfully eccentric, cat-loving aunt or your Star Trek-fanatic cousin. Either way, they're never the first relative you want to introduce to a new friend. This is exactly what happened with the proton. For more than four decades, physicists have suspected that the proton has a rather large extended family, but have had few opportunities to meet many of its relatives. Scientists at Fermilab's DZero experiment have just been closely introduced to a strange and somewhat reclusive member of the proton's family, who will hopefully mark a new phase in our understanding of matter.

The proton belongs to a family of particles known as baryons, which are composed of three quarks. The proton contains two up quarks and a down quark. Theory predicts that, along with the bottom and strange quarks, there are 20 ways to mix these four quarks to form baryons with one-half unit of spin (a quantum mechanical property related to angular momentum). Of these 20, three are very "strange" and contain two strange quarks along with one other quark. Two of these, the  $\Xi^-$  and  $\Xi^0$ , are well-known to physicists. But the third, the doubly strange b baryon  $\Omega_b^-$  (made of a bottom and two strange quarks), has until now been kept shut away from the curious eyes of the proton's physicist friends.

Using 1.3 inverse femtobarns of data, DZero researchers have reported the discovery of the  $\Omega_b^-$  baryon with a measured mass of  $6165 \pm$

## Secon Level 3

### Wilson Hall Cafe

#### Thursday, Sept. 11

- Santa Fe black bean
- Steak tacos
- Chicken Wellington
- \*Smart cuisine: spinach enchiladas
- Baked ham & Swiss on a Ciabatta roll
- Assorted slice pizza
- Crispy fried chicken ranch salad

\*Carb restricted alternative

[Wilson Hall Cafe menu](#)

### Chez Leon

#### Thursday, Sept. 11 Dinner

- Closed

#### Wednesday, Sept. 17 Lunch

- Pork satay w/peanut sauce
- Jasmine rice
- Coconut cake w/ rum caramel sauce

[Chez Leon menu](#)

Call x4598 to make your reservation.

### Archives

[Fermilab Today](#)

[Result of the Week](#)

[Safety Tip of the Week](#)

[ILC NewsLine](#)

### Info

[Fermilab Today](#)

is online at:

[www.fnal.gov/today/](http://www.fnal.gov/today/)

Send comments and suggestions to:

[today@fnal.gov](mailto:today@fnal.gov)

## In the News

### Scientists beaming after test of big atom smasher

From *Associated Press*, Sept. 10, 2008

A small blip on a computer screen sent champagne corks popping among physicists in Switzerland. Near Chicago, researchers at a "pajama party" who watched via satellite let out an early morning cheer.

The blip was literally of cosmic proportions, representing a new tool to probe the birth of the universe.

[Read more](#)

## In the News

### Scientists Activate Particle Collider

From *The New York Times*, Sept. 10, 2008

Science rode a beam of subatomic particles and a river of champagne into the future on Wednesday.

... An ocean away from Geneva, the L.H.C.'s activation was watched with bittersweet excitement here at the Fermi National Accelerator Laboratory, or Fermilab, which until that moment had the reigning particle collider.

Some 400 students and onlookers, and three local mayors, gathered overnight to watch the dawn of a new generation in high-energy physics, applauding each milestone of the night as the scientists slowly steered the protons on their course at CERN, the European Organization for Nuclear Research.

Many of them, including the lab's director, Pier Oddone, were wearing pajamas or bathrobes or even night caps bearing Fermilab "Pajama Party" patches on them.

[Read more](#)

## In the News

$10 \text{ (stat)} \pm 13 \text{ (syst)} \text{ MeV}/c^2$ . With roughly 18 events carrying the signature of  $\Omega_b^-$  decays to lighter particles, the observation has a significance of 5.4 sigmas or a one in 15 billion chance of coming from non- $\Omega_b^-$  sources. This discovery provides new data for theorists trying to understand complex quark interactions and arrives closely behind DZero's discovery of the  $\Xi_b^-$  baryon in 2007. With this closer look at the proton's extended family, DZero scientists are eager to learn more. Now that some of the strangest relatives have been introduced, the record luminosity delivered daily by the Tevatron may be all that's needed to break the ice with the remaining family.



A group of DZero collaborators made primary contributions to this analysis. Not pictured: Yuriy Merekov of the Joint Institute of Nuclear Research (JINR), Russia.



The algorithms used to preferentially select interesting events in DZero's level 3 trigger play a key role for analyses, such as the one shown here. Rick Jesik, Per Johnson and Daniela Bauer are the current and recent level 3 group conveners; Ray Beuselinck made major contributions to the trigger tracking algorithms and Nirmalya Parua to the certification of the level 3 code.



## Accelerator Update

### Sept. 9-10

- Four stores provided ~34 hours and 22 minutes of luminosity
- Computer room power glitch causes quench
- Raccoon shorts out Kautz Road substation

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

## Announcements

## Inside LHC Launch Party, Not End of World

From *Popular Mechanics*, Sept. 10, 2008

Want to see the Large Hadron Collider's first proton beam race through an underground loop at a blistering 185,000 miles per second? Don't blink.

Some 400 physicists, engineers and students just finished camping out here at the Fermi National Accelerator Laboratory through the night, awaiting the birth of an extreme machine so powerful that it could soon reveal what lent mass to the universe in the first place. At around 2:34 a.m., a fuzzy white ball appeared on a projection screen outside Fermilab's Remote Operations Center amid a sea of gray, framed by what looked like a rifle scope.

[Read more](#)

### In the News

## Fermilab celebrates CERN collider test

From *Beacon News*, Sept. 10, 2008

At 1:30 on Wednesday morning, Fermilab was the hottest ticket in town. But only if you had a pair of stylish pajamas.

That's where a couple hundred of the smartest people you could ever hope to meet gathered together, bleary-eyed but excited, to watch a live feed from Switzerland as the Large Hadron Collider, now the biggest particle accelerator in the world, took its first test flight.

[Read more](#)

*Editor's Note: Reporter Andre Salles, Beacon News, also produced [this video](#) of the pajama party.*

### In the News

## Bloggers highlight LHC startup

Yesterday's issue of *Fermilab Today* had links to several live LHC-startup blogs. Here are a few more.

[Greg Landsberg, Brown University](#)

[Bill Higgins, Fermilab](#)

[Sean Carroll, CalTech](#)

## [Have a safe day!](#)

### Megafoods lecture Sept. 12

Megafoods are the largest known freshwater floods with flows comparable in scale to ocean currents. They are capable of inducing global changes in climate. Fermilab Lecture Series will present a lecture on these floods by Dr. Victor Baker from the University of Arizona on Friday, Sept. 12, at 8 p.m. Tickets are \$5.

[More information.](#)

### September Wilson Hall Window washing

Window washing of Wilson Hall's exterior windows will continue through Friday. Please clear all items from in front of windows prior to your floor's interior washing date. Thursday: Ground, Mezzanine and floors 1-3.

### Oct. Microsoft Word, Excel classes offered

The Office for Professional and Organization Development will offer classes in Microsoft Word and Excel in early October. "Word 2003 Advanced" will take place on Oct. 7. [Learn more and enroll.](#) "Excel Advanced" will take place on Oct. 8. [Learn more and enroll.](#)

### International Folk Dancing Thursday

International Folk Dancing will take place in the Kuhn Village Barn on Thursday, Sept. 11. Dancing begins at 7:30 p.m. with teaching and children's dances earlier in the evening and request dancing later. For more information, call (630) 584-0825 or (630) 840-8194 or e-mail [folkdance@fnal.gov](mailto:folkdance@fnal.gov).

## [Additional Activities](#)

