

## Calendar

### Wednesday, July 12

**11:00 a.m.** Fermilab ILC R&D Meeting - Curia II (note location)

Speaker: D. Mitchell and T. Arkan, Fermilab

Title: Cryomodule #6 Assembly at DESY

**3:30 p.m.** DIRECTOR'S COFFEE

BREAK 2nd Flr X-Over

**4:00 p.m.** Fermilab Colloquium -

Auditorium (note location)

Speaker: B. Filippone, California Institute of Technology

Title: Ultra-Cold Neutrons: From neV to TeV

### Thursday, July 13

**2:00 p.m.** ILC Detector R&D Meeting -

Hornet's Nest (WH-8X)

Speaker: W. Cooper, Fermilab

Title: ILC Vertex Detector Mechanics

**3:30 p.m.** Theoretical Physics Seminar -

Curia II

Speaker: H. Boos, Universität Siegen

Title: Inclusive Semileptonic B Decays in Soft-Collinear Effective Theory

**3:30 p.m.** DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

**4:00 p.m.** Accelerator Physics and

Technology Seminar - Curia II

Speaker: D. McGinnis, Fermilab

Title: Introduction to Radio Frequency Fundamentals for Particle Accelerators – Part III

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

## Weather

## DZero: Better than expected and way ahead of schedule



The installation and commissioning of the DZero Run IIb upgrades relied on efforts from many people. Four of them are pictured above.\* (Click image for larger version.)

When dramatic changes are made to a detector, it usually takes months--or even a year--to synchronize all the pieces of the detector. But when the Tevatron resumed operations this June after a complicated three-month shutdown and upgrade project, DZero recorded collision events as soon as the first set of particles hit the detector. "This time we hit it right on," said Ron Lipton, deputy project manager for the DZero Run IIb Upgrades. "The detector has come up for physics much more quickly than anyone could have anticipated."

A major accomplishment during the shutdown was the [harrowing installation](#) of a new layer of sensors in the detector. Dubbed "layer zero," it was inserted just beneath the old inner layer to hug the beampipe inside--like placing a fresh new layer inside an onion. Since the new layer lies closer to the collision point, it will give better geographical information about objects that fly out from collisions. With 96 sensor chips Lipton described as

## From the Computing Division

### A global concert

Every Wednesday, Fermilab Today alternates letters from the eight division and section heads. In today's issue, Computing Division Head Vicky White compares the computing infrastructure--which is highly focused, yet gracefully coordinated--to music.



Over the July 4th holiday I was able to relax and listen to music and in particular to the local band playing in the park outside my house. It always amazes me how the cacophony of a stageful of musicians warming up can turn into the beautifully coordinated and moving sounds of an orchestra or band playing together.

From my daughter, an accomplished cellist, I have learned something about the amount of focus and determination required to play an instrument well and to work together with other musicians. Often when I look at what we do here at Fermilab--at the accelerator, at the gigantic detectors that took so many

Chance of Showers **81°/65°**[Extended Forecast](#)[Weather at Fermilab](#)**Current Security Status**[Secon Level 3](#)**Wilson Hall Cafe****Wednesday, July 12**

- Portabello Harvest Grain
- Santa Fe Chicken Quesadilla
- Garlic Herb Roasted Pork
- Beef Stroganoff
- Triple Decker Club
- Assorted Slice Pizza
- Pesto Shrimp Linguini with Leeks and Tomatoes

The Wilson Hall Cafe accepts Visa, Master Card, Discover and American Express.

[Wilson Hall Cafe Menu](#)**Chez Leon****Wednesday, July 12****Lunch**

- Roasted Vegetables and Cheese Strudel
- Vanilla Custard w/Blueberry Sauce

**Thursday, July 13****Dinner**

BOOKED

[Chez Leon Menu](#)

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"more robust devices than the things that were used before," layer 0 is already online and giving a much clearer picture of each fleeting collision. "We'll be able to get better time resolution on  $B_s$  mixing, which is crucial, as well as B tagging with higher signal and less background," he said.

Another major success had to do with getting DZero's upgraded data-sifters, also known as 'triggers,' online quickly. "As luminosity goes up, the amount of stuff coming into the trigger is getting larger," said Lipton. "So we had to get better at figuring out what is interesting." DZero has always used three trigger levels that work in progression, sifting through data like a series of sieves with progressively finer holes. According to DZero post doc Sabine Lammers, a major success of the trigger upgrades was "clustering" energy deposited in the first trigger to make it more selective. "Clusters use algorithms to identify interesting events," she said. By clustering on the first level (rather than relying on an old, rougher method), DZero is able to weed out events before they hit the second and third triggers-- giving physicists a more refined assortment of events to analyze.

Trigger upgrades for detectors designed to track charged particles and muons, as well as other overall improvements to the machine, came on line just as rapidly. "The nearly flawless upgrade installation and extremely rapid turn-on of the upgraded detector is due to the tireless efforts of the entire team," said DZero spokesperson Jerry Blazey. To complete this upgrade, DZero partner universities were supported by the Department of Energy and the National Science

people so long to build and at our computing facilities with their vast amounts of scientific data and thousands of CPUs--I experience a similar sense of wonder that we have managed to work together, at Fermilab and across the world, to achieve all this. Computing, like other aspects of our work, is increasingly a global and cooperative activity and is "on stage" around the clock. Do you know that our helpdesk interchanges trouble tickets with the helpdesk of the Open Science Grid (a Grid computing infrastructure serving Run II, LHC, Astrophysics, ILC and a broad scientific community)?

In the Computing Division we now work in larger teams collaboratively across ever more organizational and institutional boundaries. All the accomplished computing "musicians" need to practice and improve their individual skills, and then together we can aspire to "perform:" to achieve the goals of the lab and prepare ourselves for a bright and challenging future.

***Next week's column will feature Jim Strait of the Particle Physics Division.***

**Argonne Credit Union E-Mail Fraud Alert**

It has come to our attention that multiple e-mail fraud attempts, known as "Phishing," were sent that appeared to be initiated by Argonne Credit Union.

This false e-mail asks for the recipient to click on a link to visit an upgraded Online Banking System. If the recipient proceeds, the link directs them to a false website and asks that they login to an ACU home banking site.

Fermilab Today is online at: <http://www.fnal.gov/today/>

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Foundation.

--Siri Steiner

\*From left: Mike Mulhearn, who worked on the level 1 calorimeter trigger; Ron Lipton, deputy Run IIB project manager; George Ginther, technical integration coordinator; and Sabine Lammers, level 1 calorimeter trigger.

### Photo of the Day



AD's Elvin Harms found this barn swallow nest when he was looking through his office window in the Booster West Tower. (Click on image for larger version.)

### In the News

#### **MSNBC, June 10, 2006:**

#### **New letters shed light on Einstein's love life**

JERUSALEM - Albert Einstein had half a dozen girlfriends and told his wife they showered him with "unwanted" affection, according to letters released on Monday that shed light on his extramarital affairs.

The wild-haired Jewish-German scientist, renowned for his theory of relativity, spent little time at home. He lectured in Europe and in the United States, where he died in 1955 at age 76. But Einstein

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### Announcements

#### **Why Work at Fermilab?**

The Employment Department is conducting an employee survey to find out why you enjoy working at Fermilab. We will gather the comments and post them on the Employment website as another avenue to help attract candidates to Fermilab. Click [here](#) to start the survey. It should take you about 2-3 minutes to complete.

#### **Fermilab Barnstormers Today**

Fermilab Barnstormers will have trainer airplanes available to fly today at noon on the Model Airplane field across from the Pioneer Cemetery (rain date on Thursday). Come out to try your hand at flying models and learn what our hobby can offer. Today is also the last day to purchase tickets for our raffle of a radio controlled aircraft. The drawing is tonight

wrote hundreds of letters to his family.

[Read More](#)

during the Barnstormers regular monthly meeting at the Frello Model Airplane field, starting at 5:30 pm. For more information, please contact Jim Zagel, x4076, or Rick Mahlum, x4316.

[Upcoming Activities](#)