

## Calendar

### Thursday, April 28

THERE WILL BE NO Theoretical Physics Seminar THIS WEEK

**2:30 p.m.** Special Fermilab Colloquium (NOTE DATE and TIME) - 1 West  
Speaker: C. Llewellyn Smith, UKAEA, Culham

Title: The Fast Track to Fusion Power

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

BREAK - 2nd Flr X-Over

THERE WILL BE NO ACCELERATOR PHYSICS AND TECHNOLOGY SEMINAR TODAY

### Friday, April 29

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

BREAK - 2nd Flr X-Over

THERE WILL BE NO Joint Experimental Theoretical Physics Seminar THIS WEEK

### Saturday, April 30

**7:00 p.m.** SOLD OUT - World Year of Physics Concert and Lecture - Auditorium Lecture: "From Einstein to Superstrings", B. Foster, Oxford University and J. Liebeck

Concert: Jack Liebeck, Violin and Inon Barnatan, Piano

The Lecture begins at 7:00 P.M.  
The Concert begins at 8:00 P.M.

## Weather



Mostly Cloudy **55°/37°**

[Extended Forecast](#)

[Weather at Fermilab](#)

## Current Security Status

## Fermilab's DZero Experiment Crunches Record Data with the Grid

Hundreds of scientists from the DZero collaboration at Fermilab are using the technology of the future to process particle physics data today. Using grid computing, facilities in six countries around the globe have begun to provide computing power equivalent to 3,000 one-gigahertz Pentium III processors to crunch more experimental data than ever before. In six months, the computers will churn through 250 terabytes of data — enough to fill a stack of CDs as high as the Eiffel Tower in Paris.

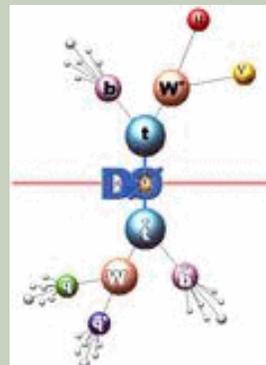
"We're using the grid to process three years' worth of data — one billion particle collisions — in six months," said Fermilab guest scientist Daniel Wicke, on leave from the University of Wuppertal, Germany, who heads the reprocessing effort. "DZero has a long history of using computing resources from outside Fermilab, including a project in 2003 to send a much smaller amount of data off-site for reprocessing. We knew that this much bigger effort, remotely processing ten times more collisions than before using five times the number of computers, would be possible."

As new data is recorded with the DZero detector at the Tevatron, the world's highest-energy particle accelerator located in Batavia, IL, it is processed into a form useable by physicists. The cluster of one thousand computer processors dedicated to DZero computing at Fermilab is kept busy processing the

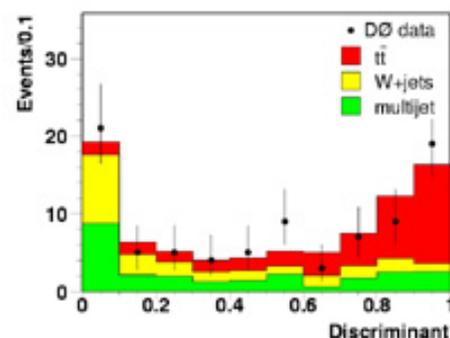
## Fermilab Result of the Week

### The Fingerprints of the Top Quark

Discovered 10 years ago at the Tevatron, the top quark provides unique possibilities to test the Standard Model of elementary particle physics. The top quark was predicted to exist almost 30 years ago, and so far Fermilab is the only place in the world where this elusive particle can be studied. Because it is produced so rarely, physicists had to come up with highly refined methods for its detection.



Animation of the production of a top quark pair and its decay into leptons and four jets. (Click on image for larger version.)



Separation of the top signal (in red) from the backgrounds (yellow, green) using kinematical information in data with one electron and at least four jets. (Click on the image for a larger version.)

[Secon Level 3](#)**Wilson Hall Cafe****Thursday, April 28**

Santa Fe Black Bean Soup

Marinara Meatball Sub \$4.75

Tex-Mex Lasagna \$3.75

Sauteed Liver &amp; Onions \$3.75

Baked Ham &amp; Swiss on a Ciabatta Roll

\$4.75

California Pizza \$2.75

Crispy Fried Chicken Ranch Salad \$4.75

The Wilson Hall Cafe now accepts Visa, Master Card, Discover and American Express at Cash Register #1.

[Wilson Hall Cafe Menu](#)

[Chez Leon](#) is now open. Call x4512 to make your reservation.

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newly acquired data.

[read more](#)- *Katie Yurkewicz***Barrington Native Jack Upton Retires After Nearly 36 Years**

Particle Physics

Division's Jack Upton

will retire tomorrow,

April 29, almost two

months before the

36th anniversary of

his first day at

Fermilab. Upton worked with former

Fermilab Director Leon Lederman on

Experiment 288, which in 1977

discovered the upsilon -- the bound state of the bottom quark and its anti-quark.

Fermilab recruited Upton in 1969 from the Argonne National Laboratory where he had worked for 12 years. He will miss the people at the lab and enjoyed his work. "The intellectual stimulation from everyone was incredible," said Upton, who wears a belt buckle emblazmed with a quadrapole magnet. "I hope I have made some contribution to science at Fermilab."

Upton grew up about 30 miles north of Fermilab, on what is now the Crab Tree Nature Center. He also served in the Strategic Air Command before working at Argonne. He is unsure of what he will do during his retirement. "Oh, I don't know, maybe clean up my house," said Upton. "I haven't thought about it. Time goes fast when you are having fun."

Upton's supervisor Eileen Hahn had only positive comments about him. "We joke about his name because he really is a jack-of-all-trades," said Hahn. "He is one of the sweetest guys ever. He is very



Jack Upton

The DZero experiment has developed a clever way to identify top quarks based on the spatial distribution and energies of their decay products that distinguishes events with a "top fingerprint" from overwhelming background. This method works with a reduced set of assumptions about the top quark, thereby providing a less model-dependent measurement of its production rate, which is found to be in excellent agreement with predictions of the Standard Model.

A plain English summary of this measurement can be found [here](#), together with a link to the full article submitted for publication.



(L-R) Norman Buchanan (Florida State) and Pierre Petroff (LAL) have led the operation of the calorimeter which has been used in all analyses at DZero.



(From left) E. Shabalina (UIC), T. Golling (Bonn), M.-A. Pleier (Rochester), C. Gerber (UIC), G. Otero (UIC) and J. Vlimant (LPNHE, Paris – not shown) have worked on this measurement of the top quark production cross section. (Click on the image for a larger version.)

[Result of the Week Archive](#)**Announcements**

creative, always a great help, understands the big picture and how it all fits together. We will sorely miss him."

There will be a retirement party for Upton next Friday, May 6th, at 11:30 at Le Berry Bistro in Geneva. If you would like to attend, please contact Eileen Hahn at x4164 or Sabina Aponte at x3651 by May 3.

- *Eric Bland*

### In the News

#### From the *Beacon News*, April 26, 2005

##### Museum Gets Hubble Photos — Stars glitter at SciTech

By Matt Hanley

AURORA — When the kids look at the giant new photographs posted at the SciTech Museum in downtown Aurora, what will they discover?

In the swirling patterns of a galaxy in motion will they find a misty, upside-down snail?

[read more](#)

#### Thursday Lunchtime Cleanup Today

The first Thursday Lunchtime Cleanup of the season will be today, April 28, from 11:45 a.m. to 1:30 p.m. Transportation to the clean-up site will be available outside the east ground floor entrance of Wilson Hall. Cleaning gear will be provided, and hot dogs and refreshments will be served. Call Bob Lootens at x3303 for more information.

[more information](#)

#### Deadline to Apply for the Voluntary Separation Program This Friday

This is a reminder that Friday is the last day to apply for the Voluntary Separation Program. You must turn your application in by 5:00 p.m. April 29 to Kay Van Vreede, Wilson Hall, 15th Floor. There are still packets of information available on the 15th floor or go online for [information and necessary forms](#).

#### World Year of Physics Concert Booked

Saturday's World Year of Physics lecture and concert are completely booked.

#### Spring Book Fair - April 27-28

Fermilab Recreation will sponsor the Spring Book Fair, hosted by Books are Fun, in the Atrium on Wednesday, April 27 from 10:00 AM until 6:00 PM and on Thursday, April 28 from 7:00 AM until 3:00 PM. A portion of the proceeds from the Book Fair subsidizes some of our Recreation Programs.

#### DASTOW Scheduled for June 23

This year, DASTOW will take place on June 23. More information about the day's activities will be coming soon in *Fermilab Today*.

[Upcoming Activities](#)

