

Calendar

Monday, November 7

2:30 p.m. Particle Astrophysics Seminar
- Curia II

Speaker: A. Crotts, Columbia University
Title: Halo Microlensing in M31

3:30 p.m. Director's Coffee Break -
2nd Flr X-Over

4:00 p.m. All Experimenters' Meeting -
Curia II

Special Topic: Recycler Operations

Tuesday, November 8

11:00 a.m. Academic Lecture Series - 1
West

Speaker: C. Quigg, Fermilab
Title: The Electroweak Theory and Higgs
Physics – Lecture 1

3:30 p.m. Director's Coffee Break -
2nd Flr X-Over

Note: There will be no Accelerator
Physics and Technology Seminar today

Weather



Breezy 62°/48°

[Extended Forecast](#)

[Weather at Fermilab](#)

Current Security Status

[Secou Level 3](#)

Wilson Hall Cafe

Crash Course in Luminosity, Key to Discovery at Fermilab

There has been a buzz about peak luminosity records in recent months. But what, exactly, is luminosity and why have we gotten so much better at producing it? During the next few weeks, Fermilab Today will publish a series of stories to provide answers to these questions.



Ariel view of the acclerator complex, which gets the proton and antiprotons up to speed and ready for collisions. (Click on image for larger version.)

What is luminosity?

Imagine two schools of sardines swimming toward each other. The water is murky, so the fish don't realize they are about to collide. As the schools converge, some fish hit one another, but others slip by unscathed. Obviously, there will be more collisions between oncoming fish if the schools are packed together tightly since there is less space to slip through. But how does one characterize the density of these schools, and therefore the likelihood of collisions? Particle physicists use the word "luminosity" to describe the potential for collisions in this kind of situation. Instead of sardines, they deal with particles.

Safety Tip of the Week

Avian Flu



Frequent hand washing with soap and water is a good way to minimize the spread of respiratory infections including the flu.

An employee suggested that we run an article on the avian flu. This seems like a reasonable topic given the near-daily predictions of dire consequences, the international nature of our workforce and the large number of birds onsite.

Though the H5N1 virus is rapidly spreading among birds, human infections continue to be rare. As of November 1, the World Health Organization reported there had been 122 confirmed cases and 62 deaths. All occurred in Southeast Asia following close contact with infected poultry. The primary concern is that the virus will mutate to allow human-to-human transmission. A vaccine is under development and two antiviral medicines, oseltamavir (Tamiflu®) and zanamavir (Relenza®), appear to be effective.

There are a number of things you can do until infection control programs are put in place by various units of government.

Practice good health habits: Eat a balanced diet, get daily exercise and sufficient rest, and take common-sense

Monday, November 7

- French Quarter Gumbo
- French Dip w/Horseradish Cream Sauce
- Smart Cuisine Santa Fe Pork Stew
- BBQ Roasted Quartered Chicken
- Turkey Breast on Homemade Focaccia
- Pizza
- Sweet n' Sour Chicken w/an Egg Roll

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

[Wilson Hall Cafe Menu](#)

Chez Leon

Wednesday, November 9

Lunch

- Calzone w/Prociutto
- Roasted Pepper, Basil & Three Cheeses
- Cesar Salad
- Espresso Coupe

Thursday, November 10

Dinner

BOOKED

[Chez Leon Menu](#)

Call x4512 to make your reservation.

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"In the Tevatron, higher luminosity causes more collisions between protons and antiprotons," said Pushpa Bhat the project manager for Run II upgrades. "Collisions give researchers a chance to discover exotic forms of matter. So high luminosity is what we strive for."

To produce collisions, Fermilab scientists send billions of protons and antiprotons in opposite directions through the 4-mile Tevatron ring. "The protons and antiprotons circulate through the accelerator in hair-width, sausage-shaped bunches," explained Fermilab's Associate Director for Accelerators, Steve Holmes. Thirty-six of these sausage-shaped bunches orbit in each direction for several hours during what physicists call a "store." Each time the bunches in the store converge, a large number of protons and antiprotons slip past each other, but, like the sardines, a few meet head-on.

[Read More](#)

In the News

From *FYI: The American Institute of Physics Bulletin of Science Policy News* November 3, 2005:

Report Highlights "Worrisome Indicators" of US Competitiveness

A committee of the National Academies has issued a report that recommends a series of actions for the federal government to take to maintain the nation's competitiveness through the 21st century.

The report, "Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future," runs approximately 150 pages plus a

infection control measures (wash hands often, cover coughs/sneezes, and avoid others if sick).

Stay informed about the avian flu: Monitor the news and consult [this government website](#) for additional information.

Prepare for foreign travel: Make sure your vaccinations are current, take basic first aid supplies and identify in-country health-care resources. Avoid contact with poultry and poultry secretions. [Note: Well-cooked food is safe.] Monitor your health for 10 days after return. If you develop flu-like symptoms, contact your health care provider and avoid travel except to seek care.

Specific concerns? Consult with your personal health care provider.

[Safety Tip of the Week Archive](#)

Accelerator Update

November 2 - 4

- Two stores provided 27 hours and 48 minutes of luminosity.
- Store 4481 aborted due to RF trip.

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

Announcements

[Fermilab Safety Tip of the Week archive](#)

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lengthy series of appendices. It can be ordered, or read online. In the Executive Summary, the committee highlighted a series of "Worrisome Indicators" that the U.S.'s global preeminence is declining. This list is quoted below.

"When asked in spring 2005 what is the most attractive place in the world in which to 'lead a good life,' respondents in only one of the 16 countries polled (India) indicated the United States."

[Read More](#)

Mileage Reimbursement Rate Increase

In recognition of recent gasoline price increases, the Internal Revenue Service and the General Services Administration have increased the standard mileage rate reimbursement to 48.5 cents per mile for business miles driven between September 1 and December 31, 2005.

Bench Dedication

In memory of Sue Mendelsohn, NALWO is presenting a bench to the lab, which has been placed outside the Lederman Center. Anyone who would like to remember Sue and her contributions to the lab, NALWO and the community, is invited to an informal ceremony to dedicate this special bench. It will be held in front of the Lederman Center, at 1 p.m. on Tuesday, November 8. In case of rain, the dedication will be postponed to 1 p.m. Thursday, November 10.

[Upcoming Activities](#)