

Calendar

Thursday, July 22

Noon Summer Lecture Series - 1 West

Speaker: V. White, Fermilab

Title: Grid Computing and Physics

2:30 p.m. Theoretical Physics Seminar - Curia II

Speaker: D. Wackerth, State University of New York, Buffalo

Title: NLO QCD Predictions for Hadronic Higgs Production with Heavy Quarks

3:30 p.m. DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

THERE WILL BE NO ACCELERATOR PHYSICS AND TECHNOLOGY SEMINAR TODAY

Friday, July 23

3:30 p.m. Wine & Cheese - 2nd Flr X-Over

THERE WILL BE NO JOINT EXPERIMENTAL THEORETICAL PHYSICS SEMINAR THIS WEEK

Wilson Hall Cafe

Thursday, July 22

Santa Fe Black Bean soup

Marinara Meatball Sub \$4.75

Butter Crumb Baked Fish \$4.75

Sauteed Liver & Onions \$3.75

Baked Ham & Swiss on a Ciabatta Roll \$4.75

Sausage & Sweet Onion Strombolis \$2.75

Crispy Fried Chicken Ranch Salad \$4.75

[Wilson Hall Cafe Menu](#)

[Chez Leon](#)

Weather

CDF Brings the Bubbly Stuff to Main Control Room



CDF delivered a case of champagne to the Main Control Room on Tuesday after losing a bet about the recent luminosity record. (Click on image for larger version.)

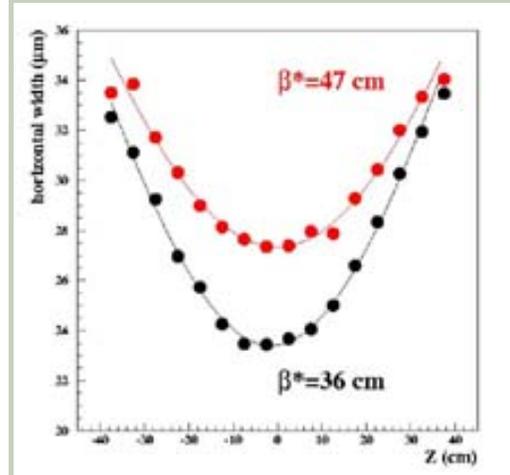
A large group of employees from the Accelerator Division and CDF met in the Main Control Room on Tuesday to celebrate last week's luminosity record with champagne. Larry Nodulman of CDF brought the bubbly, making good on a bet he lost to Dave McGinnis, Associate Head of the Accelerator Division, about the recent luminosity record.

"Dave advertised at the Users' Meeting in June that the Tevatron might hit $1 \times 10^{32} \text{cm}^{-2} \text{sec}^{-1}$ before the upcoming shutdown in late August," Nodulman said. "I promised to deliver a case of champagne if that happened."

Head of the Accelerator Division Roger Dixon acknowledged the efforts of McGinnis, Sergei Nagaitsev, Head of the Recycler Department, and the many other employees who helped achieve the luminosity record. "The Accelerator Division is full of incredible people," Dixon said. "When we started up after the last shut down,

Fermilab Result of the Week

DZero Tracks Luminosity Spot



The width of the beam for 6 stores before the beam optics change (in red), and 6 stores after the change (black). After the change, the better focusing of the beam at DZero produces a smaller beam spot in the center of the detector. (Click on image for larger version.)

For the past year and a half, DZero has been using its tracker to measure the profile of the colliding beams at the [DZero interaction region](#). Thanks to the tracker's excellent performance, the transverse width of the beam at the DZero intersection point -- typically no wider than a human hair, about 30 microns wide -- can be measured to an accuracy of a few microns. CDF also performs similar measurements at its interaction point. These new measurements complement the tools already in place to monitor Tevatron performance.

DZero's measurements confirmed independent indications from the Accelerator Division that the collision point at DZero was more spread out along the beam line than expected.



Chance Thunderstorms 89°/62°

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it was difficult to imagine reaching this luminosity. But after Dave told me his scheme for mixed pbar shots, I believed it could happen."

When asked how he felt about winning the bet, McGinnis took a sip of his drink and replied, "This is very good champagne."

Computing Division's Gene Oleynik Captures Photos of Fermilab Wildlife



Meadow Lark at Fermilab (Courtesy of Gene Oleynik) (Click on image for larger version.)

To amateur wildlife photographer Gene Oleynik, Fermilab is more than just a physics laboratory. With approximately 1,100 acres of restored prairie, it's also a treasure trove of extraordinary photo opportunities.

"I bring my camera to work with me every day," said Oleynik, who recently

returned to the Computing Division after working 6 years in telecommunications.

"Last month I had to be on site early every morning to copy data tapes from KTeV onto the mass storage system. Because I was



Gene Oleynik

The successful beam optics installed last May, which reduced the beam spot size and resulted in an impressive 20% increase in the luminosity, were confirmed by reduced beam spots as measured by DZero. Luminosity is a measure of the number of collisions produced at the Tevatron.

There are still issues to be understood (the vertical beam width may experience further reduction and a significant discrepancy exists between the DZero and CDF luminosities). However, these beam spot measurements provide one more method in the highly successful effort to increase collisions. The increased number of collisions will help the Tevatron experiments search for the faint signals of many interesting phenomena, such as supersymmetry and the Higgs boson.



The beam-size analysis shows the important contributions to our everyday operation by the international collaborators of DZero who work from their home institutions. The periodic measurements of the beam shape are performed by Avdhesh Chandra, a student from TIFR in India. Juan Estrada (not in the picture), from Fermilab, also contributed to this project. (Click on image for larger version.)

[Result of the Week Archive](#)

Accelerator Update

here so early, I was able to take pictures of night herons, which are nocturnal, and also got some great photos of prairie birds like meadow larks, northern flickers, and redwing blackbirds in their natural environment." Oleynik also photographs mammals such as coyotes and deer, but is particularly enamored with raptors. Last winter he drove to Mississippi 6 times to photograph bald eagles that migrate there every year.

"Whether I'm taking pictures of eagles fishing on the Mississippi river or of meadow larks foraging for food, photography brings me closer to my surrounding world and helps me to stop and smell the roses," he said. His photos can be viewed [online](#).



Whitetail Deer at Fermilab (Courtesy of Gene Oleynik) (Click on image for larger version.)

In the News

July 19 - July 21

- During this 48 hour period Operations established one store that, combined with an existing store, provided approximately 43 hours and 6 minutes of luminosity to the experiments.
- Booster RF had many station trips
- Linac had RF and quadrupole problems
- TeV suffered quench during end-of-store study
- Store 3663 established by mixed mode antiprotons
- I- Source tripped off due to motor generator trouble

[View the current accelerator update](#)
[View the Tevatron Luminosity Charts](#)

Announcements

Heartland Blood Center Drive

The Heartland Blood Center Drive is going to be August 2-3, 2004 from 8:00 a.m. - 2:00 p.m. in the WH Ground Floor ES&H NE Training Room. The screening process will be in the EOC Room next to the Communications Center. Heartland needs our support to make this drive a success. Recent news reports indicate that several parts of the country are experiencing their worst blood supply shortages in 20 years, forcing postponement of some surgeries and cancer treatments. Those dramatic and drastic measures haven't taken place in the Chicago land area yet. For appointments you can sign up on [online](#) or contact Lori Limberg x6615 to schedule an appointment. Walk-ins are always welcome. A Photo ID is required.

From *Stanford Report*, July 21, 2004

SLAC experiment triples its data production for study of matter and antimatter

by Kate Metropolis

If the laws of physics were precisely the same for matter and antimatter, you wouldn't be reading this. All matter, as we know it, would have been converted into light after the Big Bang. To explore the fundamental differences between matter and antimatter, physicists need a vast amount of data. In early July, the PEP-II accelerator at the Stanford Linear Accelerator Center, one of the world's chief suppliers of these data, reached a new milestone: It is delivering three times as many particle collisions per second as the machine was designed to produce.

[read more](#)