

Calendar

Wednesday, July 6

THERE WILL BE NO FERMILAB ILC
R&D MEETING THIS WEEK

1:00 p.m. Seminar - WH10NW (The West
Wing)

Title: Search for coherent charged pion
production in neutrino-carbon interactions
with the K2K SciBar detector

Speaker: Masashi Yokoyama (Kyoto)

3:30 p.m. DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

4:00 p.m. Fermilab Colloquium - 1 West

Speaker: J. Turner, National Renewable
Energy Laboratory

Title: The Sustainable Hydrogen
Economy

Thursday, July 7

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

Speaker: S. Wiesenfeldt, University of
Illinois, Urbana-Champaign

Title: Sterile Neutrinos and Global
Symmetries

3:30 p.m. DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

THERE WILL BE NO ACCELERATOR
PHYSICS AND TECHNOLOGY
SEMINAR TODAY

Weather



Partly Cloudy **80°/56°**

[Extended Forecast](#)

[Weather at Fermilab](#)

Current Security Status

Repair Crews Rise to the Occasion: Power Restored



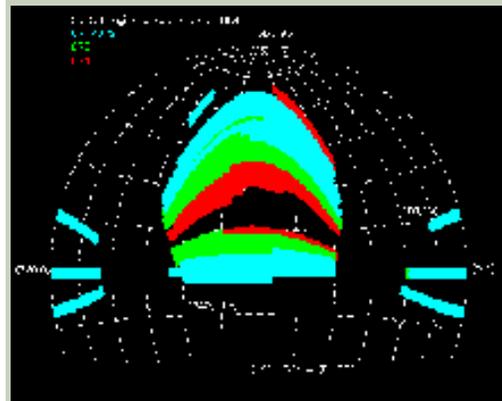
A crane was brought in to lift the old transformer out of the ground and safely replace it with a spare. The whole operation was completed in under 72 hours.

Over the long holiday weekend, nine employees from the EE Support Department and the Mechanical Support Department were called away from their barbecues and family gatherings to help repair a transformer outside the MI 20 Service Building. The transformer had to be disconnected and lifted out using a T&M rigging crew before it was replaced with a spare. "Other than the down time necessary to replace the transformer," said Dan Wolff of the EE Support Department, "there should be no short- or long-term effects on accelerator operations."

A transformer failure is by no means a frequent occurrence at the lab, but it is not unknown either. "I would estimate that we get some sort of transformer failure here at Fermilab every three or four years," said Wolff. The emergency crew was well-prepared, and handled the situation quickly and safely. The transformer failed late Saturday evening and all power was restored by early

Astrophysics Result

SDSS Makes Fourth Data Release, Receives Full Funding for SDSS-II



The figure shows in red the area of sky for which Data Release 4 (DR4) contains imaging data. Different colors show the areas covered by previous releases. (Click on image for larger version.)

The Sloan Digital Sky Survey celebrated two milestones last week: On Wednesday, the fourth major public data release (DR4) was made [available online](#). On the same day, SDSS director Richard Kron received an award letter from the National Science Foundation, which confirmed full funding for the requested NSF portion of a three-year extension to the SDSS.

With DR4, the SDSS is enabling the scientific and the general public to access 12 Terabytes of astronomical data - both images and object catalogs. Fermilab is hosting the data distribution servers, which include both a Linux disk archive of image and table data, and a cluster of Microsoft Windows machines hosting a Microsoft SQL Server, database which allows astronomers to run sophisticated queries. "Even though it's already our fourth major release, it's a new challenge every time, both because of the rapidly

[Secou Level 3](#)

Wilson Hall Cafe

Wednesday, July 6

Italian Wedding with Meatballs

Diner Style Patty Melt \$4.85

Chicken a la Mer \$3.75

Beef & Broc \$3.75

Greek Chicken Panini with Feta Cheese
\$4.85

Sicilian Style Pizza \$3.00

Grilled Chicken Bowtie in a Tomato

Cream Sauce \$4.85

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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Tuesday morning when the rest of the lab
returned from the July 4th break.

"The success of the lab's 24-hour-a-day
operation depends so much on
individuals like these who are willing to
give up family time and weekend activities
to ensure that repairs are made and the
machine is back up and running in a
timely fashion," said Wolff. "One only has
to read the E-log to see how many of our
people rise to this challenge on a regular
basis."

--*Amelia Greene*

FNAL Hosts International NBI Workshop July 7-11

Fermilab, URA and the University of
Texas at Austin will co-host the 2005
International Workshop on Neutrino
Beams and Instrumentation (NBI2005)
beginning tomorrow. Physicists and
engineers from around the world will meet
through Monday, July 11 to discuss their
current and planned projects for
conventional neutrino beams.

Representatives from Neutrinos at the
Main Injector (NuMI) and MiniBooNE
(Fermilab), the Cern to Gran Sasso
(CNGS) Project (CERN), KEK-to-
Kamioka (K2K) Project (KEK),
Brookhaven Neutrino Beam Proposal,
and the Tokai-to-Kamioka (T2K) Project
at the Japanese Proton Accelerator
Research Project will focus talks
on detailed description
of equipment, tests
and results, and
especially on any
design challenges.

The workshop has
drawn about 65
registrants. "This is
our biggest attendance yet," said



increasing data volume and because we
keep adding new features and data
products to the archive servers," explains
SDSS project manager Bill Boroski.
"Everyone in the data distribution team
here at Fermilab and at Johns Hopkins
University, together with scientists
throughout the SDSS collaboration, really
pulled together to make it happen on
time."

SDSS-II is a three-year extension to the
SDSS, whose original funding expired on
June 30. The extension continues to use
the SDSS 2.5m telescope at Apache
Point, NM, for which Fermilab is in the
process of upgrading the data acquisition
system. There are three science
programs in SDSS-II: the "SDSS Legacy"
will complete spectroscopy of galaxies
and quasars over an enormous
contiguous area of roughly 8000 square
degrees. The SDSS Supernova Survey
will repeatedly observe a 200 square
degree patch of sky to discover exploding
stars. Measuring the distances to these
distant supernovae will constrain the
expansion rate of the universe, thus
teaching us about the properties of the
mysterious "dark energy" that speeds up
the expansion of the universe. Finally, the
SEGUE program will measure the
positions and velocities of stars in the
Milky Way in order to infer the distribution
of dark matter and the formation history of
the Galaxy. The NSF award letter
completed the funding requirements for
SDSS-II, which had already received the
support of the Sloan foundation and of old
and new participating institutions in the
project, including Fermilab.

organizing committee co-chair Sacha Kopp of MINOS and the University of Texas. "We have lots of new exciting results from NuMI and MiniBooNE to discuss."

The program includes sessions on primary beam delivery systems, high-power target design, focusing horns, secondary beam instrumentation, beam Monte Carlo techniques, and radiation shielding and protection. Kopp emphasizes that "everyone is welcome," and a full schedule is available at the [conference website](#).

--Amelia Greene

Accelerator Update

July 1 - July 4

- During this 72 hour period operations established one store that provide the experiments with approximately 29 hours and 46 minutes of luminosity
- Linac switched to I- Source
- KRF7 tripped off
- MI transformer ground fault

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

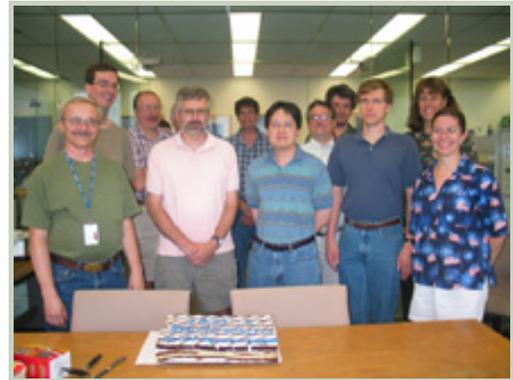
[View the Tevatron Luminosity Charts](#)

In the News

From the *New York Times*, July 5, 2005

How Quantum Physics Can Teach Biologists About Evolution

In the fall of 1900, a young German physicist, Max Planck, began making calculations about the glow emitted by objects heated to high temperature. In retrospect, it seems like a small-bore problem, just the task to give a young scientist at the beginning of his career.



(Left to Right) John Hendry, Brian Yanny, Nickolai Kouropatkine, Steve Kent, Bob Tschirhart, Huan Lin, Chris Stoughton, Hubert Lampeitl, Eric Neilsen, Eileen Berman, and Jen Adelman-McCarthy celebrate the completion of SDSS-I and start of SDSS-II at modified Julian Date 53552.0.

[Result of the Week Archive](#)

Announcements

Fermi Days at Great America in July - \$25 Tickets

Enjoy a day at Great America for only \$25.00. The Recreation Office has designated July 9, 10, 23 & 24 as Fermi Days at Great America. Purchase tickets in the Recreation Office for only \$25.00 and enjoy one of these days at Great America with your friends and family. Tickets can be purchased in the Recreation Office.

International Folk Dancing

International Folk Dancing will meet Thursday, July 7, in Ramsey Auditorium in Wilson Hall. Dancing begins at 7:30 p.m. with teaching earlier in the evening and request dancing later on. Newcomers are welcome and you do not need to come with a partner. On July 14, there will be a dance party with live music by accordionist Don Weeda. Dancing will continue in the Auditorium through the summer. Info at 630-584-0825 or 630-840-8194 or folkdance@fnal.gov.

[Upcoming Activities](#)

But if the question sounds minor, Planck's answer was not. His work led him to discover a new world, the bizarre realm of quantum mechanics, where matter is both a particle and a wave and where the predictable stability of Newton gives way to probabilistic uncertainty.

[Read more](#)