

Calendar

Wed., June 13

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

3:30 p.m.

DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over

4:00 p.m.

Fermilab Colloquium - One West

Speaker: T. Shutt, Case Western Reserve University
Title: Results from XENON10 and the Race to Detect Dark Matter with Noble Liquids

Thurs., June 14

10:30 a.m.

Research Techniques Seminar - WH-10NW, West Wing

Speaker: J. Hamilton, University of Wisconsin, Platteville

Title: Diamonds in Washington and Volcanic Dust in Hawaii: Optical Surface Studies Using First Contact Polymers

1:00 p.m.

ILC ALCPG Physics and Detector R&D Seminar - WH-8XO, Hornets' Nest

Speaker: C. Milstene, Fermilab
Title: Precision Measurement of the Stop Mass at the ILC

2:30 p.m.

Theoretical Physics Seminar - Theory Conf Rm, WH-3NW (NOTE LOCATION)

Speaker: N. Christensen, Michigan State University
Title: Unitarity and Bounds on the Scale of Fermion Mass Generation

3:30 p.m.

DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over

4:00 p.m.

Accelerator Physics and Technology Seminar - One West

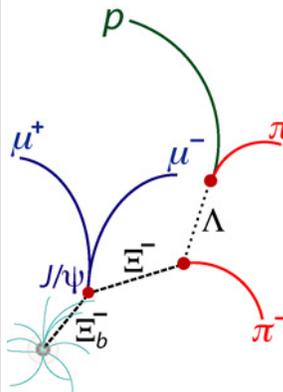
Speaker: J. Kerby, Fermilab
Title: Status of the LHC Inner Triplets

Feature

Fermilab physicists discover "triple-scoop" baryon

Three-quark particle contains one quark from each family

Physicists of the DZero experiment at Fermilab have discovered a new heavy particle, the Ξ_b (pronounced "zigh sub b") baryon, with a mass of $5.774 \pm 0.019 \text{ GeV}/c^2$, approximately six times the proton mass. The newly discovered electrically charged Ξ_b baryon, also known as the "cascade b," is made of a down, a strange and a bottom quark. It is the first observed baryon formed of quarks from all three families of matter. Its discovery and the measurement of its mass provide new understanding of how the strong nuclear force acts upon the quarks, the basic building blocks of matter.



The decay pattern of the Ξ_b particle.

The DZero experiment has reported the discovery of the cascade b baryon in a paper submitted to Physical Review Letters on June 12.

"Knowing the mass of the cascade b baryon gives scientists information they need in order to develop accurate models of

how individual quarks are bound together into larger particles such as protons and neutrons," said physicist Robin Staffin, Associate Director for High Energy Physics for the Department of Energy's Office of Science.

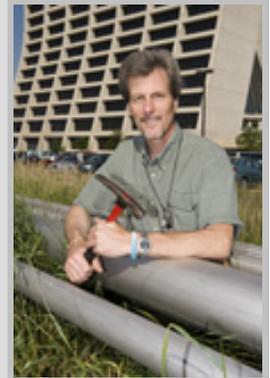
The cascade b is produced in high-energy proton-antiproton collisions at Fermilab's Tevatron. A baryon is a particle of matter made of three fundamental building blocks called quarks. The most familiar baryons are the proton and neutron of the atomic nucleus, consisting of up and down quarks. Although protons and neutrons make up the majority of known matter today, baryons composed of heavier quarks, including the cascade b, were abundant soon after the Big Bang at the

From the Business Services Section

Tools that We Use

Today's column is written by Dave Carlson, head of the Business Services Section.

I recently spent the better part of a Saturday at the annual Chicago Gem & Mineral Show. It was a chance for me to go back to some of my roots and do some prospecting for gems, fossils and old field geology books. Many years ago, I worked as an undergraduate research assistant and helped with geological digs. I still have the hammer I used in those days.



Dave Carlson

While wandering around the show I overheard part of a conversation between a man wearing a weathered leather field hat and a younger man carving a stone pipe. What caught my ear was the mention of the Mazon Creek fossils from the Francis Creek Shale deposits. These 300-million-year-old rock formations are located along the Vermilion River in central Illinois. Decades ago, I mined some fossils in that area. As my luck would have it, the man with the hat turned out to be one of the most knowledgeable living people about those fossils and I had a chance to talk to him about the treasures we can find right here on our own planet.

My conversation reminded me of the exciting research we do here at Fermilab. Both the geologist's hammer and Fermilab's Tevatron represent tools that unveil great treasures. The hammer is a small, simple tool used to uncover secrets on a comparatively coarse scale. The Tevatron is a massive and complex tool used to uncover secrets on an extraordinarily tiny scale.

Even though I don't understand the exact details of how the Tevatron works, I take pride that you and I contribute to the hunt for the Higgs boson and other great subatomic treasures we cannot even imagine to exist. Like the hammer, the Tevatron offers us the chance to study things we would probably

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

Weather



Partly Cloudy 89°/69°

[Extended Forecast](#)

[Weather at Fermilab](#)

Current Security Status

[Secon Level 3](#)

Wilson Hall Cafe

Wednesday, June 13

- Portabello harvest grain
- Santa Fe chicken quesadilla
- Terkiyaki chicken w/ vegetables
- Beef stroganoff
- Triple decker club
- Assorted sliced pizza
- Pesto Shrimp Linguini w/leeks & tomatoes

[Wilson Hall Cafe Menu](#)

Chez Leon

Wednesday, June 13 Lunch

- Sesame chicken salad
- Peanut noodle
- Lime tart

Thursday, June 14 Dinner

- Shrimp & chorizo kebobs
- Pork tenderloin w/ mexican chipotle marinade
- Sweet potatoes & poblano peppers
- Rum raisin soufflé

[Chez Leon Menu](#)

Call x4598 to make your reservation.

Archives

beginning of the universe.

[Read More](#)

Feature

Bicyclists receive warnings



Many people ride bicycles at Fermilab.

In an effort to improve traffic safety, Fermilab Security has conducted a series of safety surveys since the beginning of June. During the first week of June, the surveys focused on bicyclists. Security officers issued seven warnings to bicyclists for stop sign violations.

"Over the course of the week, we saw a significant drop in the number of violations observed," said Bill Flaherty, head of Fermilab Security.

Flaherty pointed out that there are misconceptions on what bicyclists are allowed and not allowed to do. Ignoring stop signs is a severe traffic violation, he said, and Fermilab Security will continue its series of traffic surveys throughout the summer. But contrary to popular believe, bicyclists are *not* required to use a bicycle path if one is present.

"Bicyclists in Illinois have the option of using the roadway. They are not required to get off the roadway when vehicles approach from behind."

While Fermilab Security will continue its efforts to enforce the Rules of the Road on the Fermilab site, Flaherty recommends that motorists should always be prepared for the unexpected. "Whether it is a deer crossing the road or a bicyclist turning into oncoming traffic, motorists have to realize that they are steering a deadly weapon."

Read more on bicycle and vehicle safety [here](#).

-- *Kurt Riesselmann*

In the News

never otherwise see or have a chance to understand.

No matter what your job at Fermilab, I hope you can share this sense of excitement with our scientists. Having worked with geologists and the scientists here at the lab, I can.

Announcements

Special seminar Friday

DZero physicist Eduard De La Cruz Burelo, University of Michigan, Ann Arbor, will present results on the discovery of the cascade b particle in a special seminar, titled "Observation of a New b-baryon Ξ_b at DZero: Celebrating 30 Years of Beauty at Fermilab" on Friday, June 15, at 1 p.m. in One West.

Sign up for Fermilab Blood Drive

Employees, users and summers students can now sign up for Fermilab's quarterly blood drive, taking place Tuesday, June 26 and Wednesday June 27 from 8:00 a.m. to 2:00 p.m. Walk ins will be welcome. The blood drive will be located in the Wilson Hall ground floor training room. Call Diana at x3771 or Margie at x3411 or sign up [online](#).

Taxi service closed on lunch Wednesday

The Fermilab taxi service will be closed today from 11:15 a.m. to 1:15 p.m. for a safety luncheon.

Barnstormers meeting June 13

The Fermilab Barnstormers will have their monthly meeting on June 13 at 5:30 p.m. at the Frello Field (next to site 39). Apart from flying, there will also be an auction of pre-owned RC items donated by members. The auction is open to club members only, but interested Fermilab employees and users may join at the meeting. Spectators are also welcome. [More information](#).

Volunteers for prairie study

The Education Office is looking for volunteers, both adults and teenagers, to help with the plant monitoring program. In a 3-hour session, participants will learn to identify prairie plants, map a prairie plot and track restoration progress just like the experts. First session is offered on Monday, June 18, with a registration deadline of June 13. Sign up as individual or as group. [More information](#)

Salary review information for supervisors

Managers and supervisors will receive information on new features of this year's performance and salary review process in one-

[Fermilab Today](#)[Result of the Week](#)[Safety Tip of the Week](#)[ILC NewsLine](#)**Info**

Fermilab Today
is online at:

www.fnal.gov/today/

Send comments and
suggestions to:

today@fnal.gov

From American Institute of Physics FYI:

June 12, 2007

House Appropriations Committee Backs Full FY 2008 DOE Science Request

The House Appropriations Committee has approved its version of the FY 2008 Energy and Water Development Appropriations Bill and sent it to the House floor for consideration later this week. Under this bill, H.R. 2641, the Bush Administration's request for the Office of Science for the upcoming fiscal year was fully funded.

An advance copy of the report (110-185) accompanying the bill sets forth the recommendations of the Energy and Water Development Appropriations Subcommittee.

[Read more](#)

hour training sessions scheduled on June 14, 15 and 25. [Enroll here](#).

June Wilson Hall window washing

Window washing began yesterday at Wilson Hall and will continue through the end of June. The exterior of Wilson Hall will be washed this week. Please avoid walking through or moving barricades.

DASTOW 2007

On June 21, Fermilab will hold this year's Daughters and Sons to Work day (DASTOW). Please check the [DASTOW Web site](#) for more information.

Men's locker room closed this week

The men's locker room on the ground floor of Wilson Hall will be closed through June 15 for ceramic tile repair.

[Additional Activities](#)