

## Calendar

### Thursday, December 1

**11:00 a.m.** Academic Lecture Series -

Curia II

Speaker: P. Langacker, Fermilab/

University of Pennsylvania

Title: Tests of the Electroweak Theory –

Lecture 2

**3:30 p.m.** Director's Coffee Break - 2nd

Fir X-Over

**4:00 p.m.** Accelerator Physics and

Technology Seminar - 1 West

Speaker: G. Coutrakon, Loma Linda

University Medical Center

Title: Proton Therapy

**Note:** Due to the taping of the Late Show

with Lederman today from 1:45 - 3:30 p.

m., the Theory Seminar has been moved

to Friday, December 2, at 11 a.m. in

Curia II.

### Friday, December 2

**11:00 a.m.** Theoretical Physics Seminar

- Curia II

Speaker: A. Freitas, Zurich University

Title: Exploring the Nature of Matter at

Future Colliders

**3:30 p.m.** Director's Coffee Break - 2nd

Fir X-Over

**4:00 p.m.** Joint Experimental Theoretical

Physics Seminar - 1 West

Speaker: J. Repond, Argonne National

Laboratory

Title: Jet Energy Flow and Calorimetry

**8:00 p.m.** Fermilab Lecture Series -

Ramsey Auditorium

Dr. John Stachel presents: World Year of

Physics Lecture, Einstein: A Man for the

Millennium?

## Weather

## Late Show with Lederman

As part of a live worldwide Webcast, former Fermilab director Leon Lederman

will host the "Late Show

with Leon Lederman" in

Ramsey Auditorium this

afternoon. The show

will feature fun physics

demonstrations,

interviews with young

physicists and live



Leon Lederman

music. About 200 high school students

will attend the show. Seating for Fermilab

employees and users is available in the

back half of the auditorium on a first

come, first serve basis. All attendees

must be seated in the auditorium by 1:45

p.m. Guests at the "Late Show" will

include Anna Goussiou, Notre Dame/

DZero; Jason Nielsen, Berkeley Lab/

CDF; and Peter Skands, Fermilab/

Theory.

The "Late Show" is one of more than 20

programs to be broadcast live during the

12-hour "Beyond Einstein" Webcast,

which begins with a program from CERN

at 5 a.m. (noon Central European Time).

Other broadcast locations include

London, San Francisco, Jerusalem and

Taipei, with guest appearances by four

Nobel Laureates, including Lederman.

Conceived to honor Albert Einstein's

achievements, this World Year of

Physics program will cover subjects such

as relativity, gravitational waves, mass

and gravity, antimatter and neutrinos,

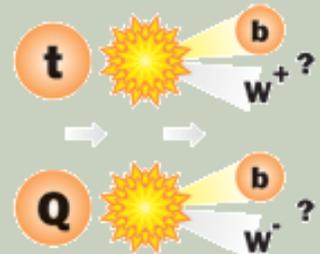
along with the mysteries remaining in

Einstein's physics, and the technologies

derived from it.

## Fermilab Result of the Week

### Top Charge



Top exotic charge decay. (Click on image for larger version.)

In all basic theories of physics and their applications, there appear fundamental constants which have such importance that they need to be known to very high precision. Examples of these are the speed of light and the electric charge of the proton. The values of these fundamental constants affect the world around us. For example, varying the speed of light, or Planck's constant would lead to shifts in the energies held by atomic electrons, and thus affect chemistry and even life itself.

Physicists at Fermilab have determined for the first time the electric charge of the heaviest fundamental object so far observed, the top quark. Within the Standard Model of particle physics, quarks are considered to be the building blocks of more complex objects such as the proton. The Standard Model predicts that quarks possess charges (with either sign) with a magnitude of 2/3 or 1/3 the charge of the proton. Although the top quark was discovered by the DZero and CDF collaborations in 1995, it is only now with the precision Run II data-sets that the electric charge of the top quark has

Snow Flurries **31°/16°**[Extended Forecast](#)[Weather at Fermilab](#)**Current Security Status**[Secon Level 3](#)**Wilson Hall Cafe****Thursday, December 1**

- Southwestern Chicken Tortilla
  - Philly Style Cheese Steak
  - Chicken Pot Pie
  - Tomato Basil Chicken Parmesan
  - Southwestern Turkey Wrap
  - 4 Cheese Pizza
  - Marinated Grilled Chicken Caesar
- Salads

**Seasonal Changes in the Cafe Menu:**

There is now a daily oatmeal bar with all of your favorite toppings and chilli will be offered on Monday, Wednesday and Friday each week.

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

[Wilson Hall Cafe Menu](#)**Chez Leon****Thursday, December 1****Dinner**

- Steamed Mussels with Garlic, Thyme & White Wine
- Pork Tenderloin with Madeira Cream Sauce
- Risotto with Wild Mushrooms
- Vegetable of the Season
- Pear and Hazelnut Souffle

**Wednesday, December 7**

Since the demand for the live broadcast is expected to exceed capacity, the entire 12-hour Webcast will be [archived](#) and can be accessed for viewing at later times.

The "Late Show," organized by the Fermilab Education Office and Fermilab Visual Media Services, will run until 3:45 p.m. No laptops will be allowed in the auditorium.

—Kurt Riesselmann

**Lecture to Look at Future View of Einstein's Work**

John Stachel, Director for Einstein Studies at Boston University, will lead the Fermilab presentation "Einstein: A Man for the Millennium?" at 8 p.m. Friday, December 2, in Ramsey Auditorium. During the World Year of Physics lecture, Stachel will provide an overview of the work Albert Einstein did in 1905 and discuss how Einstein might be viewed a thousand years from now. He will describe the two major theories of 20th century physics - quantum mechanics and general relativity - and how the theory that succeeds in merging them will determine what will be seen as Einstein's greatest contribution.

Stachel, who has written about 100 papers on theoretical physics and history and philosophy of science, was founding editor of "The Collected Papers of Albert Einstein" and is author of "Einstein from 'B' to 'Z.'" After completing his doctoral work on general relativity, Stachel taught at Lehigh University, the University of Pittsburgh and Boston University, where he is a member of the Physics Department. Tickets cost \$5. To make reservations, call 630-840-2787 between 9 a.m. and 4 p.m. on weekdays. Further

been measured.

Physicists at the DZero experiment were able to reconstruct the top quark charge from the decay products of a top quark and able to show that it is consistent with having 2/3 of the proton's charge. Also they ruled out the possibility that the charge of the quark was 4/3 the proton charge, as has been predicted by some theories.



Per Hansson of Kungliga Tekniska Hogskolan, Stockholm Sweden, has worked on this analysis under the supervision of Christophe Clement and David Milstead of Stockholm University (not pictured).

[Result of the Week Archive](#)**Accelerator Update****November 28 - 30**

- Tevatron sector B17 work continues.
- MiniBooNE, NuMI, and the Meson experiments resume taking beam.

[Read the Current Accelerator Update](#)[Read the Early Bird Report](#)[View the Tevatron Luminosity Charts](#)**Science Grid This Week**

**Lunch**

- Shrimp
- Roasted Red Peppers w/Spinach
- Tortellini in Cream Sauce
- Lingonberry Cheesecake

[Chez Leon Menu](#)

Call x4512 to make your reservation.

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—*Kendra Snyder*

**In the News**

## From *The Register UK*, November 30, 2005:

### Plymouth to Dakar rally: On your marks...

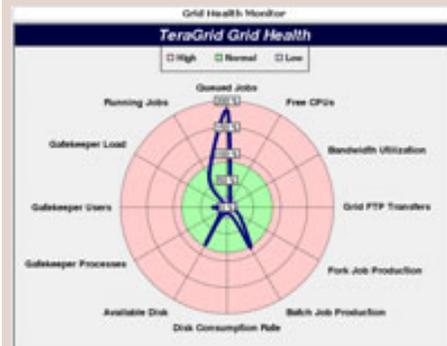
The fourth Plymouth-Dakar rally is ready for take off - the first contestants leave Blighty in early December for the six thousand kilometre journey to west Africa.

The challenge is to spend less than £100 on a car and less than £15 on preparing it. Once the budget has been spent simply drive to Gambia (via Morocco, Mauritania and Senegal) where the cars are all sold for charity. The three week drive takes in a couple of minefields and a three-day drive across the Sahara. A car co-driven by a Reg hack made it to Banjul last year with help from Microsoft UK, the Register, ClassicCarStorage and other generous sponsors.

Taking up the challenge this year are TeamGilaMonsters. They are Matt Leslie, James Monk and Simon Waschkeup, three Oxford graduates and keen Reg readers, who met while working in Chicago at Fermilab's particle accelerator.

[Read More](#)

## Buffalo Scientists Lead New York Grid Research



The Grid Health Monitor is one of the many tools available on the ACDC Grid Dashboard.

The University at Buffalo's Center for Computational Research is a hub of grid activity in New York State. Three years ago CCR researchers and staff members started the regional Advanced Computational Data Center Grid, a project that now provides the driving force behind the NSF-funded Western New York Grid for Science and Engineering. The ACDC Grid also leads a grass roots effort to create a New York State grid linking the state's Centers of Excellence and State University of New York campuses.

[Read More](#)

**Announcements****Fermi Singers**

Mark your calendars for December 15! The Fermi Singers are preparing a winter concert for your listening pleasure. It will be at noon in the Ramsey Auditorium - just 30 minutes and treats to follow!

[Upcoming Activities](#)