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7/19
[apache](#)
 7/21 (11)
[askslashdot](#)
 1/27
[awards](#)
 7/21
[books](#)
 7/19
[bsd](#)
 7/20 (2)
[features](#)
 7/11
[interviews](#)
 6/22
[radio](#)
 7/20 (4)
[science](#)
 7/21 (7)
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First Direct Evidence Of Tau Neutrino

Posted by [timothy](#) on Thursday July 20,
 @05:23PM

from the [my-favorite-donut-is-an-e.claire](#) dept.

[leb](#) writes: "An international collaboration of scientists at the Department of Energy's Fermi National Accelerator Laboratory will announce on Friday, July 21, the first direct evidence for the subatomic particle called the tau neutrino, the third kind of neutrino known to particle physicists. This site has extensive coverage of the event with pictures and related material. The new direct evidence for the tau neutrino is far from closing the chapter on neutrino physics. Scientists are eager to learn whether neutrinos have mass, a result that would put a crack in the Standard Model, leading to major changes in our picture of the evolution of the universe." The site has some great explanatory diagrams to boot.



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'First Direct Evidence Of Tau Neutrino' | [Login/Create an Account](#) | **223** comments | [Search Discussion](#)

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Not only that... (Score:4, Informative)

by 11223 on Thursday July 20, @05:27PM EDT (#5)
 (User #201561 Info)

But in a recent ferminews, there was an article about how there may be 4 types of neutrinos - breaking the Standard Model! The article is [here](#), on Fermi's site.

- *Moderators: You should be browsing at -1, (Newest/Oldest) First, Nested, not +2, Highest Scores, Threaded*

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 - [The truth is a bit more complicated](#) by Tau Zero (Score:2) Thursday July 20, @07:25PM EDT
 - [Re:The truth is a bit more complicated](#) by Otter (Score:1) Thursday July 20, @10:10PM EDT
 - [Re:The truth is a bit more complicated](#) by morkeleb (Score:1)

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- [Re:Not only that...](#) by Phillip Birmingham (Score:1) Thursday July 20, @11:25PM EDT
- [Re:Not only that...](#) by ZeroConcept (Score:1) Friday July 21, @12:51AM EDT
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- [Actually...](#) by adipocere (Score:1) Friday July 21, @09:36AM EDT
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So how do we use these? (Score:2, Interesting)

by [dagoalieman](#) (buba@redneck.city) on Thursday July 20, @05:29PM EDT (#7)
 (User #198402 Info)

I still haven't heard of a practical use for the neutrinos other than to give scientists something to do. Is there some way we can use these for a practical purpose or to explain anything???

If there isn't, why are we wasting our money??

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- [Re:So how do we use these?](#) by geeklawyer (Score:1) Thursday July 20, @05:36PM EDT
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 - [He Man movie](#) by teasea (Score:1) Thursday July 20, @06:13PM EDT
- [Re:So how do we use these?](#) by cetan (Score:3) Thursday July 20, @05:37PM EDT
 - [Re:So how do we use these?](#) by Crosseyed & Painless (Score:1) Thursday July 20, @05:47PM EDT
 - [Re:So how do we use these?](#) by cetan (Score:2) Thursday July 20, @07:53PM EDT
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 - [Re:So how do we use these?](#) by mikpos (Score:2) Thursday July 20, @05:56PM EDT
 - [Re:So how do we use these?](#) by alleria (Score:2) Thursday July 20, @06:08PM EDT
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I'll respond (Score:5, Insightful)

by [2nd Post!](#) ([louis_wang\(at\)hp.com](mailto:louis_wang(at)hp.com)) on Thursday July 20, @05:40PM EDT ([#22](#))

([User #213333 Info](#))

You aren't an AC, so I'll give you credit beyond just a troll post.

Basic scientific research like this gives us rewards we cannot measure or calculate. It's premise is that we are studying the unknown, so the rewards are just as unknown.

In a similar vein, look at Newton, playing with light, over 200 years ago. How useful was his research into photons, spectra, etc. But look today, at our lasers, our CD players, our gas spectrometers, our fiber optics, etc.

The problem is that we have to do research today for our advances 200 years from now; or farther! Imagine the ridicule chemists of 400 years past had to face, from people who didn't understand the worth of their research? No fault to the people, because they cannot obviously imagine titanium alloys, ceramic superconductors, high energy density batteries, etc. Likewise, you can't be faulted for not envisioning what research of today will give us in the future. No one knows!

Bye!

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- [Re:Face it, the tau neutrino is useless](#) by jaoswald (Score:1) Thursday July 20, @07:55PM EDT

- [Re:Face it, the tau neutrino is useless](#) by gilroy (Score:2) Thursday July 20, @09:30PM EDT

Re:Face it, the tau neutrino is useless (Score:5, Insightful)

by [sigwinch](#) (sigwinch@hotmail.com) on Thursday July 20, @10:40PM EDT

([#148](#))

([User #115375 Info](#))

Knowing more about the tau neutrino lets you fix some parameters in the Standard Model that have NO APPLICATION in any other field.

Their experiment is *not* an academic exercise of adding a few more digits to an existing measurement. It is the conclusive discovery of a particle whose existence was implied by mathematical symmetries. It's easy to say "yeah, we expected it", but consider that conclusive failure to detect the tau neutrino would have been utterly astonishing, and would have turned all of theoretical physics inside out. If the Standard Model is wrong at high energies, it is also wrong at room temperature, and you would suspect the existence of undiscovered interesting (and useful) phenomena at room temperature.

EVERYTHING that any engineer might put into use is going to be made up of ordinary matter: i.e. protons, neutrons, electrons.

And photons. And whatever it is that causes gravity (which, BTW, is unexplained by the Standard Model). You ignore nuclear engineers, whose work is strongly and directly affected by quarks, gluons, and color charge. Not to mention the people who will be cleaning up after nuke engineers,

possibly using particle beam transmuters.

And I'd wager that spacecraft engineers are rather concerned about where cosmic rays come from, what they do when they hit ordinary matter, and how likely they are. When a fully-ionized iron nucleus with the kinetic energy of a rifle bullet shows up, high energy physics suddenly seems rather relevant.

[A chemist's] life is based on what happens near ROOM TEMPERATURE where any contributions of neutrino physics are either ZERO or taken into account by the effective fields that he uses

This conveniently ignores the many uses of radioactive compounds (such as the radioactive tracers used for DNA analysis, metabolism studies, and PET scanners). These compounds are not made in billion-dollar government labs or giant reactors -- they are custom transmuted by privately owned particle accelerators in ordinary office buildings. If that's not good enough for you, how about the manufacture of radioactive cobalt for sterilizing food.

Have you ever heard of gamma ray bursts (GRBs)? Do a web search if you haven't. These things can reach halfway across the universe and ionize the Earth's atmosphere as much as the sun normally does. If we were caught in the beam of a nearby GRB, we'd be toast.

Have you heard of the solar neutrino problem? Neutrino measurements show that either the sun is going out, or that we don't understand basic physics very well. Don't know about you, but I consider Sol pretty relevant to my life.

Finally, much political power rests on mastery of nuclear power. Fast breeder reactors create strife, and military might rests in large part on nuclear submarines and aircraft carriers. What do those things have in common? They're all bright neutrino sources. Discovery of a sensitive neutrino detector would give the discovering nation tremendous power. They could monitor the power levels and reaction spectra of the enemy's weapons reactors and thus tell roughly how much plutonium was being produced. And they could track all the world's submarines. A good neutrino detector would change the world as much as ICBMs did. Of course, it is likely impossible, but remember that respectable scientists once pooh-poohed nuclear power the same way.

I'm not saying we'll all put neutrino ovens in the kitchen in five years, but that doesn't mean that the research is worthless and good only for keeping scientists off the streets.

Internet etiquette tip #14: when Yoyodyne.com asks for your email address "to better serve you", answer MAILER-DAEMON@yoyodyne.com

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■ [Say it! brother! Mod this up!](#) by bobalu (Score:1) Thursday July 20, @11:15PM EDT

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- [Re:So how do we use these?](#) by [jppgrimes](#) (Score:3) Thursday July 20, @05:50PM EDT
 - [Re:So how do we use these?](#) by [daghlian](#) (Score:1) Friday July 21, @11:03AM EDT
- [Re:So how do we use these?](#) by [slickwillie](#) (Score:1) Thursday July 20, @06:26PM EDT
- [Re:So how do we use these?](#) by [Faramir](#) (Score:2) Thursday July 20, @06:38PM EDT
- [Use them to inspire your imagination.](#) by [Tau Zero](#) (Score:1) Thursday July 20, @07:30PM EDT
- [Re:So how do we use these?](#) by [Wixar](#) (Score:1) Thursday July 20, @07:46PM EDT
- [Re:So how do we use these?](#) by [craw](#) (Score:2) Thursday July 20, @08:37PM EDT
- [Dark Matter](#) by [morlly](#) (Score:1) Thursday July 20, @09:10PM EDT
- [Re:So how do we use these?](#) by [didymos](#) (Score:1) Thursday July 20, @09:54PM EDT
- [Re:So how do we use these? \[slightly OT\]](#) by [dagoalieman](#) (Score:1) Friday July 21, @12:08AM EDT
- [Re:So how do we use these?](#) by [Particle Man](#) (Score:1) Friday July 21, @12:28AM EDT
- [Re:So how do we use these?](#) by [Shimbo](#) (Score:1) Friday July 21, @04:54AM EDT
- [Re:So how do we use these?](#) by [dvduijn](#) (Score:1) Friday July 21, @08:56AM EDT
- [Those Wacky Scientist Guys](#) by [adipocere](#) (Score:2) Friday July 21, @09:43AM EDT
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Really bad humor (Score:2, Funny)

by [Ravagin](#) on Thursday July 20, @05:30PM EDT ([#9](#))

([User #100668 Info](#))

In related news, the scientists who conducted the study are co-authoring a book on the subject, entitled *The Tau of Neutrinos*.

-J

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- [funny, but wrong](#) by [Anonymous Coward](#) (Score:2) Thursday July 20, @05:37PM EDT
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 - [Re:funny, but wrong](#) by [SpryGuy](#) (Score:1) Thursday July 20, @07:36PM EDT
 - [Re:funny, but wrong](#) by [Ravagin](#) (Score:1) Thursday July 20, @09:12PM EDT

This will be interesting to see. (Score:3, Interesting)

by [THOAAG](#) on Thursday July 20, @05:31PM EDT ([#10](#))

([User #176906 Info](#))

I hope that the particle does have a decent mass. First off, it will help us decipher exactly how much dark matter is out there. Secondly, it will help us figure out if the universe is either going to expand forever, expand to a point, or eventually contract down upon itself. The more mass these neutrinos have, the more likely it is that the universe is a never ending series of Big Bangs and Big Crunches.

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- [That's a dead theory](#) by [efuseekay](#) (Score:2) Thursday July 20, @05:35PM EDT
 - [Re:That's a dead theory](#) by [drinkypoo](#) (Score:1) Thursday July 20, @07:02PM EDT
 - [Basically..](#) by [efuseekay](#) (Score:1) Thursday July 20, @07:35PM EDT
 - [Nope](#) by [Anonymous Coward](#) (Score:1) Friday July 21, @03:39AM EDT
 - [It's call the Lematre model.](#) by [efuseekay](#) (Score:1) Friday July 21, @11:56AM EDT
 - [Re:Basically..](#) by [Torak-](#) (Score:1) Thursday July 20, @10:22PM EDT
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"break the Standard Model" duh?! (Score:5, Insightful)

by [efuseekay](#) on Thursday July 20, @05:31PM EDT ([#11](#))

([User #138418 Info](#))

The tau neutrino is PREDICTED by the SM! So how it's detection break it?

Also, massive neutrinos are easily accomadated by the SM too, so that's a non-issue.

Having said that, the SM is now widely believed to be INCOMPLETE, i.e. it is just a low energy approximation of some thing more complete. (Yes, we only have accelerators at "low" energy, even the dead Supercollider is "low" energy..)

/. should really have a resident science nut.

Spock! Are you out of your -fulkan'- mind? (Jim Carrey)

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- [Re:"break the Standard Model" duh?!](#) by Chris Burke (Score:2) Thursday July 20, @05:46PM EDT
 - [Re:"break the Standard Model" duh?!](#) by efuseekay (Score:1) Thursday July 20, @05:49PM EDT
 - [Re:"break the Standard Model" duh?!](#) by Sebastopol (Score:1) Thursday July 20, @07:03PM EDT
 - [Re:"break the Standard Model" duh?!](#) by Chris Burke (Score:1) Thursday July 20, @07:55PM EDT
 - [Re:"break the Standard Model" duh?!](#) by Chris Burke (Score:1) Friday July 21, @11:25AM EDT
 - [Re:"break the Standard Model" duh?!](#) by efuseekay (Score:1) Friday July 21, @12:03PM EDT
 - **1 reply beneath your current threshold.**
- [Re:"break the Standard Model" duh?!](#) by CrusadeR (Score:3) Thursday July 20, @05:59PM EDT
 - [Re:"break the Standard Model" duh?!](#) by Dirtside (Score:2) Thursday July 20, @07:02PM EDT
 - [see my response "Clarificatino" in this thread](#) by efuseekay (Score:1) Thursday July 20, @07:28PM EDT
 - [Some first \(well, second\) hand perspective...](#) by Brand X (Score:2) Thursday July 20, @08:36PM EDT

Re: "break the Standard Model" duh?! (Score:5, Insightful)

by [styopa](#) ([hillsr@\(I_HATE_SPAM\)colorado.edu](#)) on Thursday July 20, @06:55PM EDT (#75)
([User #58097 Info](#))

*The tau neutrino is PREDICTED by the SM! So how it's detection break it?
Also, massive neutrinos are easily accomadated by the SM too, so that's a non-issue.*

The tau-neutrino is predicted by the standard model but massive neutrinos are not. In fact, the standard model cannot predict, or account for, mass without the Higgs Field Particle, which has not been observed yet. Masses to neutrinos is not part of the basic SM, the different theories are additions to the SM, or in geek speak, modules. There are two discussions one whether neutrinos have masses, there is the massive neutrino theory and the light neutrino theory. Neither have been fully accepted into the SM.

The SM has been broken for quite some time anyway, every sense the introduction of the Higgs Field particle. There have been numerous attempts to remove the SM because of its flaws. The only reason we haven't thrown it out yet is that there is nothing else that everyone can agree on as being a better truth. Whether it be Technicolor, SUSY, mSUGRA, SUSY with mSUGRA, etc...

The whole mass issue has been a problem with the standard model, that and unification theory. First it didn't predict/account for masses. The fudge factor that was introduced, the Higgs Field particle, which eliviate that problem had a diverging predicted mass for itself. Now most people agree that neutrinos have mass, but are they light or massive. Even with the Higgs boson all of the forces do not unite at a given energy, which is another problem.

(begin rant)

The Standard Model is broken, it has been broken, and as it stands it will always be broken. It's time to get a new model. Whoops the government probably won't support the NLC because the amount of money that the US would have to contribute in this multinational effort is equal to 2-3% of the our militaries budget. Now what?

(end rant)

They should never have changed beauty and truth quarks to bottom and top. I think they lost their charm.

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- [Clarification](#) by [efuseekay](#) (Score:1) Thursday July 20, @07:26PM EDT

- [Re:Clarification](#) by [styopa](#) (Score:2) Friday July 21, @09:36AM EDT

- [Re:Clarification](#) by [efuseekay](#) (Score:1) Friday July 21, @11:59AM EDT

Area Scientist Says Yay (Score:4, Funny)

by [LNO](#) on Thursday July 20, @05:31PM EDT (#13)
([User #180595 Info](#))

In related news, the collaboration of scientists at the Department of Energy's Fermi National Accelerator Laboratory gave public thanks to Star Trek writers, saying, "Without those pseudoscientific plotlines, we wouldn't have any direction in our research." When asked about future plans, one stated, "I've always been keen on developing a positronic brain, or maybe building a phasing tachyonic pulse emitter."

Comments of "Get a life, you trekkie" and "Move out of your parents' basement" did not receive replies.

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- [Re:Area Scientist Says Yay](#) by Yamao (Score:1) Thursday July 20, @11:03PM EDT
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Pre-announcing announcements (Score:4, Funny)

by [Chairboy](#) (ben@vipmail.com) on Thursday July 20, @05:42PM EDT ([#25](#))

([User #88841](#) [Info](#)) <http://people.we.mediaone.net/hallert/friendsofthevisitors.html>

I like the new trend towards announcements announcing upcoming announcements. The same thing happened with the Martian water thing and a few other recent stories.

I'd like to pre-emptively announce the announcement of an announcement tomorrow announcing a new product!

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- [Re:Pre-announcing announcements](#) by fiziko (Score:2) Friday July 21, @02:04AM EDT

Oh Canada (Score:4, Interesting)

by YoJ on Thursday July 20, @05:59PM EDT ([#44](#))

([User #20860](#) [Info](#))

The Canadians have a neutrino detector too. It's in Sudbury. Take a look at:

[Sudbury Neutrino Observatory](#)

This detector is designed to answer the "solar neutrino problem", namely that we keep detecting half as many neutrinos as we should be from the sun. Where did the other half go? One theory is that neutrinos oscillate between types. I.e. a muon neutrino oscillates into a tau neutrino as it travels to the earth. The new form of neutrino is then not detected because the original detectors only detected muon neutrinos. SNO will be able to detect both types and distinguish between them, so it should be able to convincingly answer the question of the missing neutrinos.

nojw

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- [Re:Oh Canada](#) by YoJ (Score:1) Thursday July 20, @06:06PM EDT
- [Is it snowy up there?](#) by WillAffleck (Score:1) Thursday July 20, @07:48PM EDT
- [We do?](#) by Mals (Score:1) Friday July 21, @01:42AM EDT
 - [Re:We do?](#) by fiziko (Score:2) Friday July 21, @04:27AM EDT

All I want to know is... (Score:2, Funny)

by [KaiShin](#) (kaii_NO_SPAM@sympatico.ca) on Thursday July 20, @06:00PM EDT ([#45](#))

([User #209552](#) [Info](#))

When's it gonna appear in a Star Trek movie? Captain! We've got to reverse the Tau Neutrino flow through the warp transducers!

"I live in a world of make-believe, with faeries and leprechauns and tiny little frogs with funny hats."

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Big news! (Score:5, Interesting)

by [styopa](#) ([hillsr@\(I_HATE_SPAM\)colorado.edu](mailto:hillsr@(I_HATE_SPAM)colorado.edu)) on Thursday July 20, @06:01PM EDT ([#47](#))

([User #58097](#) [Info](#))

This is great news for particle physics. Hopefully the discovery of predicted tau neutrino will

show Congress that particle physics is still making discoveries, and therefore fund it.

As for the comment on the standard model breaking down, it broke down when Feinman was still alive and doing major work. The introduction of the Higgs Field heralded this breaking.

One problem with the standard model is that it doesn't account for the masses of the particles by itself. A graduate student, Higgs, predicted that there was a particle that emanated a "mass field", this was dubbed the Higgs Field particle. This fixed up many of the complications mathematically, but created its own problems. If one uses the standard model to predict the mass of the Higgs Field particle it diverges (heads towards infinity) which is unphysical. There are theories like supersymmetry that are being introduced to fix these problems with the standard model.

Other interesting things that can occur now that the Tau Neutrino has been discovered more research on figuring out whether or not neutrinos have mass will become easier. The basic premise behind the test is that the group over at Fermilab will send mu-neutrinos, or now tau-neutrinos, down a long tunnel. If the the mu-neutrinos, or tau-neutrinos, deteriorate into electron-neutrinos or change polarization, then we know that they have mass. Knowing whether neutrinos have mass is **VERY** important to knowing which new model is correct.

They should never have changed beauty and truth quarks to bottom and top. I think they lost their charm.

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- [Re:Big news!](#) by drinkypoo (Score:2) Thursday July 20, @07:05PM EDT
 - [Re:Big news!](#) by teslakid (Score:1) Friday July 21, @12:32AM EDT
- [Re:Big news!](#) by spiral (Score:1) Thursday July 20, @07:15PM EDT

I wanna be a professor! (Score:3, Funny)

by [rjamestaylor](#) ([rjtonlineAToneboxDOTcom](#)) on Thursday July 20, @06:02PM EDT ([#49](#))
(User #117847 [Info](#)) <http://home.earthlink.net/~thetaylorfamily>

George Tzanakos has truly inspired me to seek my PhD and become a professor. That is, once I saw the picture with this caption: George Tzanakos (Univ. of Athens) and his graduate student Niki Saoulidou.

("His graduate student"? A wee-bit Freudian, don't you think??)

<SIG>I lived through the IPO Rush of '99

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- [Re:I wanna be a professor!](#) by HomeySmurf (Score:1) Thursday July 20, @06:30PM EDT
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- [Funny Slashed-Dots:](#) by rjamestaylor (Score:2) Thursday July 20, @06:08PM EDT
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- [2 replies beneath your current threshold.](#)

How it was done.. (Score:2, Interesting)

by [lennon](#) on Thursday July 20, @06:15PM EDT ([#58](#))
(User #200343 [Info](#))

The interesting thing about this is how they found the proof for tau neutrino existence: their beam left millions of tracks in 3D medium. What they were looking for is a 1 mm track left by a decaying particle, "a track with a kink" as they call it. Computer controlled cameras were used,

and I bet some supercomputers were used to search for this pattern (or maybe just a lot of work studies and interns). If this is not an application for distributed computing, I don't know what is.

A fun quote from the article : "*Stanford University physicist Martin Perl, winner of the 1995 Nobel Prize for discovering the tau lepton, the first indicator for a third generation of particles, congratulated the DONUT experimenters.*"

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- [Re:How it was done..](#) by drinkypoo (Score:2) Thursday July 20, @07:17PM EDT
- [Re:How it was done..](#) by daala (Score:1) Friday July 21, @05:02AM EDT

Blast From The Past (Score:1)

by [dthable](#) (dthable@NOSPAM.execpc.com) on Thursday July 20, @06:17PM EDT ([#59](#))
(User #163749 [Info](#)) <http://www.uwm.edu/~dthable>

I remember the Neutrinos. They were those funny little things on the Teenage Muntant Ninja Turtles. I think I just dropped in karma. TURTLE POWER!

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What's really going on... (Score:1)

by ErikTheRed on Thursday July 20, @06:30PM EDT ([#65](#))
(User #162431 [Info](#))

MiniBooNE will use beam from the Booster accelerator for a short-baseline fixed-target experiment, expected to begin taking data late in 2001 via a 12-meter sphere filled with mineral oil and photomultiplier tubes.

I don't know about you, but a large sphere full of mineral oil has much kinkier applications than physics (although I did once try to compute the acceleration due to gravity on a waterbed).

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the slashdot effect on scientists... (Score:2)

by [ilkahn](#) (ed@SPAM-ME-NOT.home.com) on Thursday July 20, @06:37PM EDT ([#68](#))
(User #6642 [Info](#)) <http://www.arino.net>

anyone else as curious as I am as to whether having the slashdot effect on fermilabs network connection caused the world of neutrino science to be slowed down for one day? it makes you wonder... did slashdot just 'cause the next big thing to happen one day later just 'cause no one could use their email or their network? :)

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- [Re:the slashdot effect on scientists...](#) by styopa (Score:2) Thursday July 20, @06:59PM EDT
- [Re:the slashdot effect on scientists...](#) by jafac (Score:1) Thursday July 20, @07:14PM EDT
- [Re:the slashdot effect on scientists...](#) by Tau Zero (Score:2) Thursday July 20, @07:54PM EDT
- [Re:the slashdot effect on scientists...](#) by Relmjub (Score:1) Friday July 21, @12:47AM EDT
- [Re:the slashdot effect on scientists...](#) by YoJ (Score:1) Friday July 21, @01:19AM EDT

But neutrinos DO have mass! (Score:3, Informative)

by [dysprosium](#) (dysprosium@netscape.net) on Thursday July 20, @07:05PM EDT ([#89](#))
(User #12904 [Info](#))

Neutrinos have mass. See [here](#)
an announcement dating from June '98 to that effect.

and this doesn't break the standard model at all, btw

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- [Re:But neutrinos DO have mass!](#) by SpryGuy (Score:1) Thursday July 20, @07:45PM EDT

- [Re:But neutrinos DO have mass!](#) by [vptr](#) (Score:1) Thursday July 20, @11:18PM EDT
 - [Error](#) by [vptr](#) (Score:1) Thursday July 20, @11:22PM EDT
 - [The answer](#) by [Anonymous Coward](#) (Score:1) Friday July 21, @03:26AM EDT
 - [Re:But neutrinos DO have mass!](#) by [SpryGuy](#) (Score:1) Friday July 21, @12:02AM EDT
 - [Re:But neutrinos DO have mass!](#) by [jfern](#) (Score:1) Friday July 21, @12:23AM EDT
- [1 reply beneath your current threshold.](#)
- [1 reply beneath your current threshold.](#)

DONUT detector heralds new era in tasty food (Score:2, Funny)by [techmuse](#) on Thursday July 20, @07:06PM EDT ([#90](#))[\(User #160085 Info\)](#)

My favorite device in the experiment is the DONUT detector. Although they claim to have used this to find Tau neutrinos, the REAL purpose of this detector is to identify and locate tasty toroidal snack and dessert foods for consumption by hungry physicists.

[[Reply to This](#) | [Parent](#)]

- [Donut detector invented by Homer Simpson?](#) by [hedgehog_uk](#) (Score:2) Friday July 21, @07:38AM EDT

Is this news Massive? (Score:1)by [TimeHorse](#) on Thursday July 20, @07:06PM EDT ([#91](#))[\(User #6545 Info\)](#) <http://www.timehorse.com/>

As I recall, the Tau-Neutrino would be the most massive of the Triplet Electron-Neutrino and Muon-Neutrino. If they didn't directly observe mass on this particle, I'd hate to think how low the mass was on the others. Personally I think Muons and Tao particles ROCK with their Neutrino pairs, not like those LAMER Electrons which like to hang out with those blasted up-n-down quarks in their trinary configurations of 2-1 no matter how strong those gluons are! :)

Be Seeing You,

Jeffrey.

Time Lord, Dark Horse: The Techno Mage of Gallifrey

[[Reply to This](#) | [Parent](#)]**mmmmmmm donut experiment** (Score:1)by [FIGJAM](#) ([figgy @ beer . com](#)) on Thursday July 20, @07:39PM EDT ([#114](#))[\(User #29275 Info\)](#)

aaarrgrgdhrghdhdghrgdhdghdrgdgdgfgggghhhh

Do your best, hope for the best, suspect the worst.

[[Reply to This](#) | [Parent](#)]**He Ain't Heavy, He's My Tao Neutrino** (Score:1, Redundant)by [WillAffleck](#) on Thursday July 20, @07:43PM EDT ([#116](#))[\(User #42386 Info\)](#)

But, even under Massive Attack, inquiring minds want to know:

Is the Tao Neutrino Open Source?

Is it GPL?

Can we build a Beowulf Cluster out of Tao Neutrinos?

[had to do it - surface tension breaker]

Will in Seattle

[[Reply to This](#) | [Parent](#)]

Tao neutrino? (Score:1)

by cryptolitho on Thursday July 20, @08:54PM EDT ([#137](#))

([User #144245](#) [Info](#))

Is the Tao neutrino the particle responsible for the balance of all forces in the universe? I assume the other two are the Yin neutrino and the Yang neutrino. Excuse me while I go catch up in Lao Tzu's textbook on particle physics.

[[Reply to This](#) | [Parent](#)]

But what ... (Score:1)

by KidSock on Thursday July 20, @10:40PM EDT ([#149](#))

([User #150684](#) [Info](#))

But what can we do armed with knowledge of subatomic particles?

Will beams of Tau Nutrinols be usefull?

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'Bout Damn Time... (Score:1)

by Tau Neutrino on Thursday July 20, @11:03PM EDT ([#151](#))

([User #76206](#) [Info](#))

I got the recognition I deserve. Geordi LaForge doesn't know anything.

-- Theater is life, cinema is art, television is furniture.

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Amiga? (Score:1)

by arodrig6 on Thursday July 20, @11:25PM EDT ([#159](#))

([User #22052](#) [Info](#)) <http://www.nd.edu/~arodrig6/>

Wait, isn't Tau Neutrino Amiga's new OS????

[[Reply to This](#) | [Parent](#)]

I feel violated, (Score:1)

by datadictator (ajventer@plug.spamproofing.za.org) on Friday July 21, @07:36AM EDT ([#196](#))

([User #122615](#) [Info](#)) <http://www.plug.za.org>

These scientists took pictures of my brain, and now their putting them on a web-site!

FOR THE LAST TIME, IT MAY BE SUBATOMIC BUT I DID NOT GPL MY BRAIN.

"You know what assumptions do. They make an ass outa you and Umption" :*Samuel L. Jackson*

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Donuts? (Score:1)

by Benwick on Friday July 21, @11:31AM EDT ([#215](#))

([User #203287](#) [Info](#)) <http://zerofuture.cjb.net>

"Donuts... is there anything they can't do?"

-Homer Simpson, the best mono-thingy-guy there ever was.

Ben Chadwick - Editor, Zero Future/Post-Collegiate Malaise
"A writer is a device for turning alcohol into words."

[[Reply to This](#) | [Parent](#)]

...for the theoretical physicist in all of us... (Score:1)

by [ketch](#) (ketch_nrc@NOSPAM.hotmail.com) on Friday July 21, @ 11:32AM EDT ([#216](#))
([User #40676 Info](#)) <http://home.sprintmail.com/~markangela>

Particle physics is really simple once you can get past the part where everything is made of smaller pieces. If you want to read something that completely blows the Standard Model out of the water, then you should read the book [Hyperspace](#), by Michio Kaku It is about theoretical physics and talks about really cool stuff like higher dimensions wormholes, and relativity.

If you just want to stick to particle physics then you can check out [CERN](#)
bleed and die, yub-yub

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Re:Quantum Physics... (Score:1)

by [Spazmoid](#) ([spazm\(NOSPAM\)@cfw.com.ISAIDNOSPAM](mailto:spazm(NOSPAM)@cfw.com.ISAIDNOSPAM)) on Thursday July 20, @06:21PM EDT ([#60](#))
([User #75087 Info](#))

Sorry... it was meant to be joking... yo know kinda funny. I raely even check my Score bonus off... sorry if I offended.

www.mp3.com/Undocumented

If you go to the above, download a song!

[[Reply to This](#) | [Parent](#)]

Re:Neutrino (Score:1)

by [daala](#) (memyselfanderis@snufu.com) on Friday July 21, @05:00AM EDT ([#191](#))
([User #66380 Info](#))

I think you are mistaken I was detecting more of a red shift there not black hole??

Perhaps a new Phenomena a RED HOLE?????????????????

"I apologise for calling your wife a bloated warthog and I bid you good day!" Highlander "I'm not expendable, I'm not Stupid and I'm not going" Avon Blake 7

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26 replies beneath your current threshold.

Avoid the Gates of Hell. Use Linux (Unknown source)

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