

# Phactum

The Newsletter of the Philadelphia Association for Critical Thinking

www.phact.org  
June 2006

**Newsflash!!**

Exclusive to Phactum

Researchers at the PhACT Institute, a world renowned Think Tank, have determined that 666, the number of the Beast, is a date. The world will end 06/06/06 and the Rapture begins. Protect yourself and **BE RAPTURE READY** by sending in Phact dues and/or a contribution. Can't be too careful in these Cosmic Matters, you know.

that endless list of fields of speculation, about some matter that interests you and might very well interest others of a like mind? There is no better way to hone critical thinking skills and improve clarity of mind than to put thoughts down on paper knowing that your words will be seen by thoughtful readers..

What I am driving at quite clearly is that I would like to obtain more short essays, book reviews, etc. from PhACT members who are frequent participants and I am even more eager to get input from those who are not very active participants in PhACT activities and discussions.

The next Phactum will be the August 2006 edition and submissions should be received by July 15 by way of e-mail at PhactPublicity@aol.com. Submissions can be about almost any topic, but please, no heavy partisan politics.

Do you fancy yourself an enlightened person, a critical thinker, a clear thinker? Why not then, if you do not regularly do so, try your hand at some creative writing about some matter of science, pseudoscience, culture, art, or something else from



## The PhACT Council

Eric Krieg, President  
Bob Glickman, Secretary  
Ray Haupt, Treasurer  
Dr. David Cattell  
Dr. David Cragin  
Greg Lester  
Tom Napier  
Harry Rothwell  
Becky Strickland

*Phactum* is, in theory, printed 6 times a year and is the main propaganda organ for the Philadelphia Association for Critical Thinking.

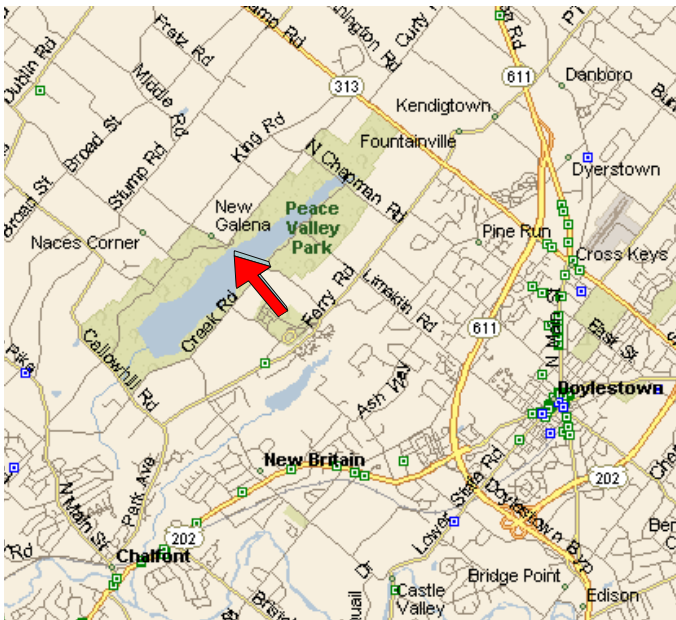
If you are not a subscriber we invite you to become one by sending a \$15 membership to PhACT, \$10 for students.

Send letters, ideas, and short essays or opinion pieces to Ray Haupt at phactpublicity@aol.com

## Saturday, June 17, 2006—Noon to 4 PM

**Picnic!!** Come and join other PhACT members at a picnic on Saturday June 17 from Noon to 4 PM at Peace Valley Park, near Doylestown, PA.

Bring some things to eat and drink. Bring a bike if you have one. This is a good park to bring bikes to. There are sailboats to be rented at the lake. Come and enjoy the company of some fellow Critical Thinkers and also some ants who will be happy to help with the food.



Directions take 611 north taking the bypass around Doylestown, get off at the 313 swamp road exit, turn left onto swamp road go 2 miles and make a left on New Galena Rd, then turn left into the parking area right after New Galena road goes through a 90 degree left turn. Look for us by the picnic tables. If you get lost, call Eric's cell phone at (215) 667-1151.

Non-car people can arrange to get a ride over from one of us from the Doylestown R5 trains station.

Saturday, September 16, 2006 the 2006/2007 series of lectures will resume at Community College of Philadelphia on the third Saturday of each month except December.

## Letters

### Who sez there are no miracles??

When I was a young boy, the local 5 and 10 had a banana split special.

Pop a balloon and you pay the price of the paper in the balloon, between \$.01 and \$.49. I had only \$.01. I ordered the banana split, popped the balloon, and lo and behold it was the \$.01. Now is that a miracle or what? But it can be explained by science. I had a 1 in 49 chance. Boy I wish I had those odds in the lottery.

Keith Newman

### Books wanted

I'm in regular correspondence with an inmate in Illinois. He has a seventh grade education, is 27 years old, and has spent the last ten years in prison--the last four in solitary confinement. Beyond that, I don't know anything about his story--what he's in for, whether and when he hopes to get out, etc. I assume from his being committed to at least four years of solitary while already in prison that he's a tough and/or uncooperative character. But the interesting thing is that he avidly reads, among other things, his gift subscriptions to the newsletters of the National Center for Science Education and the Freethought Society of Greater Philadelphia; and he is remarkably well-read and articulate.

I've been able to send him, from my own collection, two books that he requested: Gould's *The Flamingo's Smile* and Gardner's *The Night is Large*. But there are four other books that he'd like to have:

Stephen Jay Gould: *Wonderful Life*

David Mills: *Atheist Universe: Why God*

*Didn't Have a Thing to Do With It*

Richard Lewontin: *The Triple Helix*

If any of you has clean copies of any of these that you can spare, please let me know by e-mail <wawisdom@temple.edu> or phone (610-527-7080), and I'll either give you his address, or pick up and mail the books myself.

Bill Wisdom

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## January 2006 PhACT Meeting “Toxicology and the Environment” by Dave Cragin, PhD,

PhACT council member Dr. David Cragin was our January speaker. Discussing issues of toxicology and the environment, he provided factual information without a personal or political agenda.

Dave began by explaining the difference between a toxin (formed by plant or animal cells) and a toxicant (a poison from another source). Anyone misusing these terms is probably not knowledgeable about toxicology.

Many of us get our information about environmental safety from the Internet. Dave said 100% of the internet/email health scares he's seen are bogus and provided a website, [www.snopes.com](http://www.snopes.com), as a resource.

Dave addressed popular concerns about the safety of many common products, noting that science rarely gives complete and final answers.

Aerosol cans don't deplete the ozone.

Cancer death rates are going up not because the environment is unsafe but because people are surviving other diseases, living long enough to develop cancer.

Mercury was used in teething and other medications (remember Merthiolate and Mercurochrome?) into the 50's in far larger amounts than the tiny amount used in vaccines. The increase in autism is most likely due to a broadening in the diagnostic criteria rather than to any other cause.

There is no link between breast cancer and antiperspirant use. Sunscreens do not cause blindness and plastics do not 'leach chemicals' into food in the microwave.

Dave discussed the sometimes hysterical fear of pesticides. DDT (now banned) has saved more lives than any other compound by killing mosquitoes carrying malaria. It was far safer than lead and copper arsenate, which it replaced. Because it was very cheap, it was used indiscriminately, creating environmental problems. Currently approved pesticides are extremely expensive; farmers around the world use them sparingly. Dave said there is no compelling scientific evidence to recommend organic produce and quotes the American Cancer Society, "People who eat more fruits and vegetables, that may be contaminated with pesticides, generally have lower cancer

rates than people who eat less fruits and vegetables.”

He pointed out some of the most studied chemicals, considered safe by toxicologists, remain very controversial. During WWI and II, the most common reason for not accepting men into the military service was the absence of at least 6 opposing teeth in the mouth. Fluoride has changed that dramatically. In spite of overwhelming evidence that fluoride is safe and beneficial, there are still people who campaign against it. The Sierra Club was instrumental in preventing it from being added to the water in Yardley, PA, where Dave lives with his wife and 2 young children .

Dave stated all substances are poison; the dose differentiates poison from remedy. The focus of toxicology is to determine the safe level of a substance.

*This meeting report was submitted by Becky Strickland.*

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## A new threat to America's leadership?

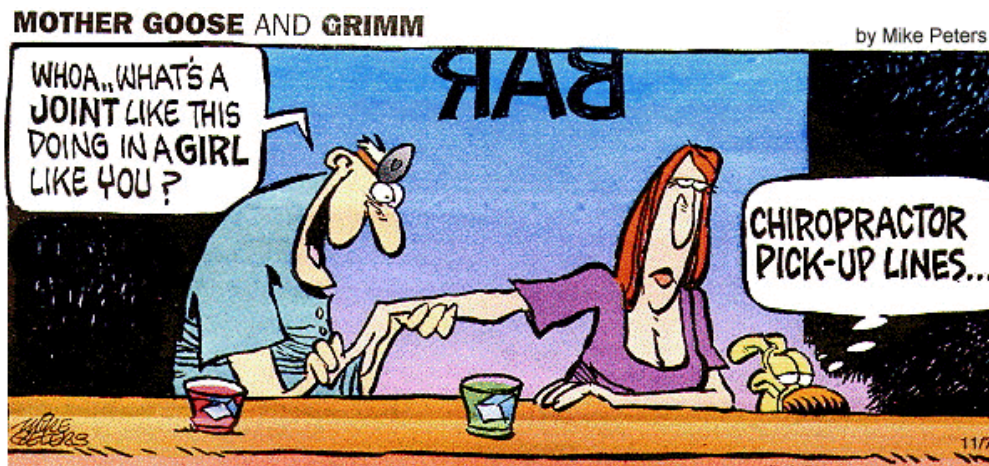
By Tom Napier

A familiar lament is that education in the sciences and engineering is discouraged in the United States, that all the best U.S. science workers are foreign born and trained, and that, thanks to ready international communication, many technical jobs are being out-sourced to workers abroad. I recently found evidence that this trend extends to the pseudosciences as well.

The Center for Frontier Sciences sends me biannual copies of their journal "Frontier Perspectives." (I had once written to them to point out a particularly silly mistake in one of their columns.) As is my wont, I skimmed through the most recent issue. I'll spare you a summary, most papers could most charitably be described as unsupported speculation, but I noticed one thing. There were papers from Russia, Norway, Hungary, Italy and Germany. Not one paper came from an American institution. A check on the previous issue added Argentina and Australia to the list. Its American connection amounted to a co-author retired from MIT and an article, with no institutional affiliation, written by someone in Ambler.

Does this reflect a trend? Is American pseudoscience falling down on the job? Are we skeptics going to have to look abroad for the richest veins of raw material?

Of course there might be another explanation. Perhaps the credibility of American crackpots has sunk too low even for Frontier Perspectives. Listen, you guys, you



**Ever been treated by a Chiropractor?** If you have had a good experience or not so good experience it could be interesting to hear your first-hand tale. Why not write it up and submit an article to Phactum? Send it to: [Phactpublicity@aol.com](mailto:Phactpublicity@aol.com)

have a duty to make your ramblings at least seem plausible. America's future as the world leader in wacky ideas is at stake. Don't leave the whole burden to the Creationists.

*Update - Since I wrote this, the Fall/Winter 2005 issue of Frontier Perspectives has arrived and corroborated my case. It contains not one paper by a U.S. Author. On the other hand, I am happy to report that a gentleman in Armenia has rediscovered N-rays. He finds that minerals emit radiation that instruments can't detect; only "biolocation" can sense it. As the author alludes to biolocation having been used for 2000 years to find water and various metals you may draw your own conclusion. You won't be surprised to hear that it is "not yet accepted in mainstream science." To paraphrase George Santayana, "Those who cannot remember past mistake are condemned to repeat them."*

*Tom Napier is a physicist and life long Critical Thinker.*

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## WALTER'S COSMIC ENERGY INTENSIFIER

By William A. Wisdom

Just about every year for the past 15 or 18 years my wife Fritz and I have attended the Blue Grass and Old Time Fiddlers Convention in Mt. Airy, North Carolina, which draws musicians and fans from around the country. We have regularly camped near one of the most colorful, generous, and interesting characters we've ever met.

Walter is a tall, lean fellow of indeterminate age--somewhere between 60 and 75--invariably wearing tattered shorts, sandals, and a scraggly beard to his waist. His little homemade trailer, in the shape and colors of a barn, is pulled by a pickup truck whose South Carolina license plate reads "THE BUM". Though now retired, for many years he worked as a physicist. Over the years, we have come to realize that Walter is no fool, though he is indeed a jester.

The first thing Walter does when he arrives at a festival is to decorate his trailer and surroundings with an exotic array of plants, sculptures, and signs (e.g., "Borogove Crossing", complete with a cutout borogove).

For the past several years he has brought us one sort of present or another. Once it was some of his homemade onion wine. And once it was a Cosmic Energy Intensifier of his own design, a larger version of which we had admired in previous years. Ours was a pyramidal wooden frame about four inches along the sides of the square base, with bright red beads attached to all its edges. Its function, Walter explained, was to absorb, intensify, and redirect the "cosmic energy" all around us--something like an orgone accumulator--the main difference being that orgone is imaginary whereas cosmic energy (he tells us) is very real.



Although he assured us, when asked, that it worked, we were rather skeptical. In fact, we had no idea what it meant for it to "work". But it was not long before we had our own experience of the Cosmic Energy Intensifier in action. Our little electric water heater failed to work one morning. We had no idea what the problem was; it had worked well the day before. So Fritz and I undertook our separate investigations of the problem. My first thought was to put the Cosmic Energy Intensifier on top of the heater and try again. At just the same time, Fritz decided to plug in the water heater. Voilà! It worked just fine. The Cosmic Energy Intensifier had done its job!

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*Bill Wisdom, among many other interests, is an enthusiast for folk and gospel music.*

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## A Tale of Two Kellers

By Dave Thomas

It's been a busy month for David and Rebecca Keller, the husband-and-wife chemists of the New Mexico chapter of the Intelligent Design Network, IDnet-NM. David Keller spoke at Sandia on ID on Jan. 9th, while Rebecca Keller represented the Discovery Institute at school hearings on ID in South Carolina on Jan. 23rd.

### David Keller at Sandia

John Covan and I (Dave Thomas) took in David Keller's talk at Sandia, titled "Is Intelligent Design Science?" It was presented Monday, Jan. 9th, 11:30-12:30 at the Steve Schiff auditorium at SNL. Keller is an assistant professor in the UNM Chemistry department. Here is his abstract for the Sandia talk, sponsored by Sandia's "Christians Networking in the Workplace" group:

*After a brief introduction to the main ideas proposed within the Intelligent Design viewpoint, I will present two ongoing research projects as examples of research into ID-related questions. The first is an attempt to understand how biological molecular machines work, with emphasis on DNA polymerases (the machines that copy genetic information). The goal is to determine the range of possible design parameters for a working DNA polymerase, as a prelude to estimating the probability of hitting upon such a machine by Darwinian processes. The second is a proposal for investigating how or if life could have started by physical processes alone-the basic Origin of Life question-by reducing it to a problem in pure physics. Neither of these projects is complete, but will be offered as examples of the sorts of projects that are "normal" within the broader ID paradigm, but difficult in the narrower existing paradigm. Finally I will conclude with an overview of where the ID/Evolution debate stands at present.*

Keller briefly mentioned that there were court cases, op-eds, statements from scientific societies, and many claims and counter-claims about this controversial topic. He did not mention any specific court cases, op-eds, statements from scientific societies, or claims/counter-claims.

He said he's working on two ongoing projects to address

these issues - the first involving Molecular Machines, and the second the Origin of Life (which I'll abbreviate OOL). Neither project is "finished."

What IS ID? He said it involves "Intelligent activity is detectable in principle, AND some features of the natural world (e.g. Life, origin of the Universe/Earth/Solar System) may not be the result of natural processes alone."

Keller said ID is different from science ONLY in that it's willing to consider teleology and purpose. Keller said that if molecular machines or Life Itself were somehow programmed into the laws of Physics, then ID would fall.

He said neither project was completed as yet. Then, he showed computerized movies of flagella, ribosomes, etc. I synopsise these images thusly: "Cells are Complex. Ooooh!" He then got into DNA Polymerase, the molecules which copy strands of DNA. As he discussed these, Keller broke analogy - a Freudian slip? He said the flagellum, polymerase etc. were "Designed quite differently from the way macroscopic machines are."

**"Religion needs science to keep it away from superstition and close to reality, to protect it from creationism, which is a kind of paganism."**

**Guy Consolmagno of the Vatican observatory in Arizona, and curator of the Vatican meteorite collection in Castel Gandolfo, Italy. Quoted in the May 5th edition of 'the Scotsman' ,Edinburgh, Scotland.**

Re Polymerase, he said there was only one basic design (finger-palm-thumb structure), with LOTS of variants. He said the existence of the one basic design shows that either there are no other viable designs at all, or that this design is much better than all others possible.

He then described his analysis of whether DNA polymerase could have evolved - his method is a search, a "Random Walk in the set of all proteins." Except that instead of doing random walks from protein to protein, he said there's always a pathway from any protein to any other, so he substituted finding sets for his Random Walks. His analogy was throwing darts at the universe of proteins, with each protein being like a balloon. He then made some huge simplifications to justify a probability limit of less than 10<sup>-30</sup> for the Answer. Less than 10<sup>-30</sup>, no evolution; more, maybe. Not only did he substitute samples for walks, but he consolidated samples by "Design Parameters." "How many Design Parameters are needed?" he asked. He suggested several - the protein needed to have certain binding capabilities (Parameter #1), mass and inertia (Param. #2), and so forth. Even

though he was generous in assigning probabilities for each parameter (e.g., taking 10%, or 1 in 10 of all proteins as having acceptable binding properties), he managed to select/specify enough parameters to guarantee a small probability in the end.

This argument really irritated me, and I commented on it in the Q/A. I said "You folks like analogies, so here's an analogy for your flawed polymerase argument." I continued, to wit, suppose you wanted to see if there were any 'average' people in America, and that your method was to take 10 parameters (such as height, weight, income, IQ, etc.) to describe Americans. For each parameter, 10% (or 1 in 10) would be considered "average" - for height, you could say 1 in 10 people are close to average height (so 5'1" to 5'9" , or whatever). Using just 10 such parameters, with 1 in 10 chances for each, results in this enigma: there will only be one "average" American per 10 billion people (which is more people than live on the whole planet at present). I argued that this exercise is a silly approach to the question of "What is the Average American," and that Keller's approach was an equally silly strawman/inappropriate method for looking at the probability of evolution. Where is the history? The contingency? I compared Keller's approach to the old creationist saw that evolution is like a tornado going through a junkyard, and hiping up a 747 airplane out of the junk. No, evolution is not like that, I said.

Keller ended his talk going on about Markov processes. He also said "There is almost NO sequence similarity across all DNA polymerases." I found this hard to believe, and queried the Panda's Thumb list, which provided an answer. It's tricky - Keller is partly right, but partly wrong - and is taking advantage of a tricky situation. Here's what the crew contributed:

*For most classes/families of polymerases, there are large groups that have good sequence similarity going way way back, probably to the LCA (Last Common Ancestor,*

*however defined). But, for example, reverse transcriptases (RTs) have essentially no similarity to any of the other DNA polymerases, and many RTs, like telomerase, have absolutely no sequence similarity to anything but themselves.. ... when someone hears "there's no sequence similarity between polymerases", they might think that human polymerase alpha is completely different from chimp polymerase alpha, which ain't the case. Alpha and beta might be very different, but alpha in one species is similar to alpha in another species. ...*

I offered the Networking Group an abstract for a lunch-time symposium talk at Sandia on ID, in the spirit of giving the controversy a full airing and thorough discussion, but the group declined. This February's speaker is Russell Humphreys, the ex-Sandian noted for believing the earth is under 10 thousand years old.

### Rebecca Keller in S. Carolina

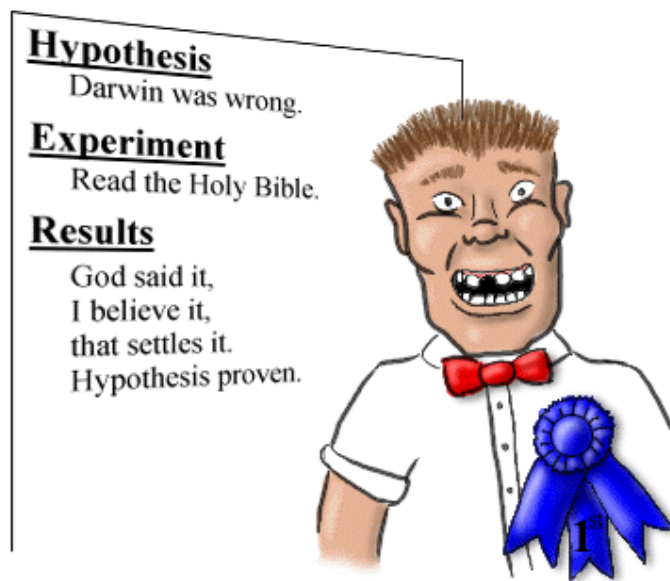
The Charlotte Observer noted on Jan. 20th that "A scientist who helped revise education standards for New Mexico will talk to the oversight group reviewing the way evolution is taught in S.C. schools. On Thursday, the S.C. Education Oversight Commission announced the names of two panelists for an EOC subcommittee

meeting next week. One of them, Rebecca Keller, president of an educational science product company and a former chemistry research professor in Albuquerque, N. M., helped revise standards in her state three years ago. The other panelist named was Richard von Sternberg ... Keller said she was contacted about being a panelist by the Discovery Institute, a Seattle based tank that supports research developing intelligent design, the idea that an unspecified intelligent force is involved in the creation of complex life forms. Keller said that the changes made in New Mexico included revisions of wording like 'students will know' to 'students will critically analyze' or 'understand.' ... "

IDnet-NM's own Rebecca Keller spoke up for Intelligent Design at hearings in South Carolina on Jan. 23rd. The

## Billy wins his first Creation Science Fair.

Fitz, 1996



hearings were instigated by Sen. Mike Fair, whom Agape says is a creationist: "It was for that purpose that Fair, a creationist, introduced a bill in the South Carolina legislature last summer requiring state schools to expose students to the "full ranger of scientific views that exist" on biological evolution. Nevertheless, the conservative lawmaker has found many proponents of Darwinian evolution uncomfortable with and resistant to the introduction of competing theories. ..." (Agape Press, Dec. 29, 2005)

Agape also reported that "Fair believes what students learn in public school science classes should not



undermine what they are taught at home or at church. 'Many of us -- most of us, I hope -- come from homes where children are taught by their parents that there's a reason behind it all,' Fair says. 'The biblical worldview, the one that I embrace, is that our Creator God spoke things into existence, and that same creator God demonstrated His love for me by sending His only son, Jesus, to die on the cross. And what a wonderful message that is.' ..." (Agape Press, Aug. 26, 2005)

But don't stop there! The Charleston SC Post and Courier reported on Jan. 24th that "state Rep. Robert Walker left no doubt about his position on the adoption of new state biology teaching standards on the subject of evolution. 'Back when the Constitution was established, the Bible was our textbook,' the Landrum Republican said. 'Somehow the Bible has become a point where it's no longer any good, and that concerns me - it tears my heart apart.' ..."

Oh, and the ID folks are still saying ID is science, not religion. Yeah, right.

Here's a review of Keller's Home-School Course in Biology: ([www.realscience-4-kids.org](http://www.realscience-4-kids.org)): "We stumbled on this curriculum at a homeschool convention and e-mailed

Gena, begging to review it! ... Most importantly, the materials utilize an Intelligent Design perspective so there are no evolutionary assumptions to wade through. There are three subjects available: chemistry, biology, and physics. Each subject has two levels, although the Level II materials are not released yet. ... Biology also includes 10 chapters. Beginning with Living Creatures and carrying on through cells, classification, and photosynthesis, this course is packed with information. There is no reference to evolution or creation. The text really sticks to what has been discovered and proven true scientifically. I highly appreciate the fact that there is no conjecture or supposition of fact. Real science is just what it claims to be - real science written for real kids. And parents too, I might add. I learned a thing or two in the early lessons...."

[www.thehomeschoolmagazine.com/reviews/reviews.php?rid=916](http://www.thehomeschoolmagazine.com/reviews/reviews.php?rid=916)

*Dave Thomas, based in New Mexico, is a prolific writer about Critical Thinking issues.*

*This article was first printed in the February edition of the newsletter of New Mexicans for Science and Reason. Their website is: [www.nmsr.org](http://www.nmsr.org)*

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**It's a bird (the SKEPTIC)!**  
**It's a plane (The Skeptical Inquirer)!**  
**It's Superman (JSE?)!**

By L. David Leiter

*JSE*, for the uninitiated, is the *Journal of Scientific Exploration*, the **refereed, scientific** journal of the "Society for Scientific Exploration" (SSE), of which I am a long-time member; that is, as opposed to my status in PhACT, wherein I am its *only* dues-paying *non-member*.

Am I saying that *JSE* is of the same (though distinctly more professional) ilk as those other two skeptical stalwarts? Well, kinda, at least in its latest issue (Volume 20, Number 1, Spring 2006) where no fewer than three skeptical articles appear, out of the six major articles presented. Normally, however, most PhACTors consider both SSE and *JSE* the bane of organized skepticism. To be sure, none of these articles strays very far from SSE's primary theme, i.e. anomalistic data which disagree with existing paradigms.

The first is a "Research Article" entitled "Questioning





## Hydrogen (a sonnet)

*By Mike Verona*

Oh, you fair and prevalent Hydrogen!  
Thou art called common by the small of mind  
Whose intellectual scope blindeth them  
And to such prevalence do refer, unkind.

In their base estimation thou art naught  
But of the elemental list, the start.  
No care pay they to thy earn'd place  
That demands you lead that hallow'd chart.

Yet, despite their blindness, they require  
You for fire's blaze and its extinguishment.  
They, for food and drink, and lover and lyre,  
Need you, the source of earth and firmament

For bound up in their molecules, 'tis true,  
Is the universe, and in that 'verse is you.

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## PHACT

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