



# NMSR Reports

## The Newsletter of the New Mexicans for Science and Reason

NMSR Reports, David E. Thomas, Editor, P.O. Box 1017, Peralta, NM 87042 © 2013

### DECEMBER MEETING:

NEW MEXICANS FOR SCIENCE  
AND REASON WILL HEAR  
**Mel Baer on "The Facts and  
Misconceptions of the TWA 800  
Accident"**

WEDS., DECEMBER 11<sup>th</sup>, 7 PM

==>MUSEUM OF NATURAL  
HISTORY AND SCIENCE<==

==>1801 Mountain Road NW<==

*In the Multi-Purpose Room  
Bring a friend*

*the NTSB and discuss how they determined a probable cause for the accident. The conclusion that a fuel-air explosion occurred in the center wing tank still remains the most likely cause of the accident."*

The meeting will be at 7 PM, Wednesday, December 11<sup>th</sup>, 2013, in the Multi-Purpose Room at the NM Museum of Natural History and Science. Info, 268-3772, or [www.nmsr.org](http://www.nmsr.org).

**Jan. 8<sup>th</sup>, 2014 - Dale  
Murray on "The Quadro  
Tracker"**

The Quadro Tracker was marketed as a device that could detect specific items like drugs, weapons, or explosives. Dale will talk about what happened when Sandia Labs was called in to assess the device.

*More Info, Page 3!*



### FUTURE MEETINGS ANNOUNCED

#### December 11, 2013: The Mystery of TWA Flight 800



Mel Baer is a retired Sandia National Laboratories Senior Scientist and member of the

Explosion Research team for the NTSB's investigation of TWA 800.

*"Although the TWA 800 accident occurred nearly 17 years ago, several independent "conspiracy-theorists" have suggested alternative explanations for the accident. All of these speculative theories fail to accept the science-based facts unraveled by the NTSB and are based on misconceptions of how jet fuel can act as an explosive source. In this talk, I will review the facts as determined by*

#### Darwin Day 2014 Planning Underway

The NM Museum of Natural History and Science is planning to host a series of events for Darwin Day 2014 (week of Feb. 12<sup>th</sup>). NMSR will be participating. If you would like to contribute to planning and/or organizing for this event, contact Dave Thomas pronto! **Next Org. Mtg: 5:00 Dec. 11<sup>th</sup> at the MPR!!**

#### March 12<sup>th</sup>, 214 NMSR Meeting

Barry Spletzer will speak on the History of the Astronomical Unit.

*"The Astronomical Unit, the mean distance from the Earth to the Sun, is the basis for all our distance measurements across the universe. The history of pinning down this elusive value spans 2000 years, from the ancient Greeks to jungle safaris to lasers. I'll trace the history step-by-step as, over the centuries, our knowledge of the AU became more and more precise."*



## New Mexicans for Science & Reason (NMSR)

NMSR is a non-profit group with the goals of promoting science, the scientific method, rational thinking, and critical examination of dubious or extraordinary claims. NMSR meets at 7 PM on the second Wednesday of each month, in Albuquerque, New Mexico, at the New Mexico Museum of Natural History and Science. NMSR Reports is its official newsletter.

NMSR officers:

*Dave Thomas, President*

P.O. Box 1017, Peralta, NM 87042

nmsrdave@swcp.com

*John Geohegan, Vice-President*

jgeoh@swcp.com

*Nancy Shelton, Treasurer*

11617 Snowheights NE, Albuquerque, NM 87112

nshelton10@comcast.net

*Kim Johnson, Industrial Physicist*

kimber@comcast.net

*Marilyn Savitt-Kring, Science Mom*

*Harry Murphy, Physicist, Medical Quackery*

Membership: \$25/year, includes newsletter, check payable to NMSR, send to treasurer (Shelton).

Newsletter subscription: \$15/year (12 issues)

### NMSR Advisors:

- *Mark Boslough*,  
Physicist (Impacts, Climate Change,  
Global Warming). Sandia National Labs.
- *Robert Cormack*  
Professor of Psychology, NMIMT
- *Kendrick Frazier*  
Editor, Skeptical Inquirer
- *John Geissman*  
Professor of Paleomagnetism, UNM
- *Alan Hale*  
Southwest Institute for Space Research
- *Randy Thornhill*  
Professor of Biology, UNM

Cyber-Cypher Clue: G = M

Bonus Puzzle Clue: We're all on our own...

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### WANTED: READER ARTICLES AND COMMENTARY

Got something you want to share with NMSR members? Send it in! ATTN: Dave Thomas, Editor, NMSR Reports.

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**REMEMBER**, our next regular NMSR meeting is at 7 PM on **WEDNESDAY, DECEMBER 11th, 2013**, at the **NEW MEXICO MUSEUM OF NATURAL HISTORY AND SCIENCE!**

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## PUZZLE TIME!

[Please send solutions to Dave Thomas at: nmsrdave@swcp.com, or at P.O. Box 1017, Peralta NM 87042.]

### Cyber-Cypher DECEMBER PUZZLE

(Submitted by Dave Thomas)

The following letters are a simple substitution cypher. If R stands for L, R will stand for L everywhere. Your Cyber-Cypher Clue: Clue? Oh, well - if you must, see p. 2.

" Z C G F I B M N F Y A O F

Z M I B ; I W F J W M X F

I M A Y B , M D L I W F J L C

H N F Z A B F Y J V W M I I W F J

V M D I . " - L M X A L Y F X J

### SUPER SECRET WORD!

However you prefer to do the cypher itself (above or below), simply duplicate those actions on the alphabetized row of cypher letters below. You'll build an answer key, and you'll also reveal - the Super Secret Word!

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

### NOVEMBER CYPHER SOLUTION

"I MEAN, YOU COULD CLAIM THAT ANYTHING'S REAL IF THE ONLY BASIS FOR BELIEVING IN IT IS THAT NOBODY'S PROVED IT DOESN'T EXIST!" - J.K. ROWLING

Esteemed November Code Crackers: Mike Arms\*, Terry Lauritsen\*, Ross Goeres\*, Hal Wagnon\*. \*Secret Word: UNPROVIDABLE MYTH

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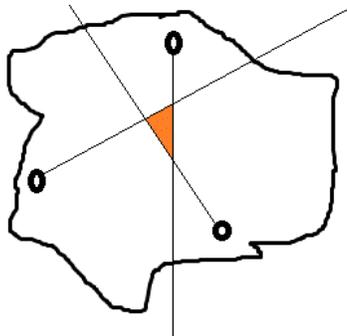
### People With Highly Superior Powers of Recall Also Vulnerable to False Memories

ScienceDaily reported on Nov. 19<sup>th</sup> that "People who can accurately remember details of their daily lives going back decades are as susceptible as everyone else to forming fake memories, UC Irvine psychologists and neurobiologists have found."

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## December Bonus: “Plumb Strange”

Submitted by Dave Thomas



Consider an irregular flat surface such as pictured above. To find the center of mass of the object, three plumb lines have been drawn, but the measurements weren't exact, and the three lines do not intersect at a single point. Instead, the three intersections lines form a triangle as shown.

### The December Bonus:

Assuming that the probability of finding the true center of mass on either side of each line is  $\frac{1}{2}$ , **what is the probability that the true center of mass is actually located within the triangle?**

## November Bonus: Highway 119,163 Revisited

Submitted by Dave Thomas

A commuter who dabbles in mathematics has observed that, when he travels north on his preferred interstate highway, the difference between the highway's mile markers and his own car's odometer is a constant. (Actually, this 'constant' can change drastically for different interstate trips, and even varies a bit during a single trip, but let's assume it's a constant for any given trip.) He has also observed that, when he's on the same freeway southbound, the sum of the highway's mile markers and his own car's odometer is a (different) constant.

As our commuter leaves a small town and enters the interstate, he notes that his constant for this trip is 119,163, while if he had gone the other direction, his constant would have been 118,799.

### The November Bonus:

- What is the interstate mile marker at this intersection?
- What is the commuter's odometer reading here?
- Which direction is he going on the freeway?

ANSWER: Mile marker = 182, odometer reading: 118,981, and direction on freeway: southbound.

Congrats to our November solvers: Harold H. Gaines (KS), Eric Hanczyc (WA), Mike Arms (NM), Ross Goeres (NM), Keith Gilbert (NM), Brian Pasko (NM), Rocky S. Stone (NM).

## The Divine Workshop

Lawrence K. Marcel

The Bible tells us, in Genesis 1:16-17, that God made the sun and the moon and then set them in the firmament. This means that they were not made in situ, but elsewhere. This must make the creationists wonder about just where this workshop was. Were these bodies simply built in another part of the natural cosmos and then herded near Earth, or was there a supernatural factory?

As always in the world of mythology, the gap between nature and supernature involves a juggling of concepts. The something-from-nothing problem faces even the most fanatical naturalists who try to explain how the universe came to exist. The reasoning seems to be that since Reality is here now, there must have been a point in the past when it didn't exist.

That mistake is what has led to such things as religious apologetics. Creationism is totally based upon the syllogistic premise that all natural things which exist must have origins, and that includes the universe. Having decided that the creating entity must necessarily be intelligent, self-aware and strategic, the creationists go on to build an unbridled catalogue of human attributes for this being.

Originless existence is too tricky to imagine. It even effects science itself. People can't help themselves. Everything, they think, had to come from somewhere. Until people can get past that sort of thinking, creationism will thrive.

## Jan. 8<sup>th</sup>, 2014 - Dale Murray on “The Quadro Tracker”

In a world full of improvised explosive devices and drugs, the desire to field technology to protect our populations is creating a fertile market for the proliferation of devices that range from the unproven to the disproven. The market place is currently being flooded with detection devices whose manufacturers are making inflated and inaccurate marketing claims of high reliability, high detection probabilities, and ease of operation—all while offering detection capabilities at safe distances.

Rather than enhancing security, the reliance on these unproven and disproven devices is creating a sense of false security that is actually lowering the safety of front-line forces and citizens in places like Iraq and Afghanistan. Many of these devices are no more than dowsing rods and it all started with the Quadrotracker.



## November 13, 2013: Quantum Bayesianism

Professor Ruediger Schack of the Department of Mathematics, Royal Holloway, University of London spoke on 'QBism and the Greeks, or how to interpret Quantum Mechanics' at our November meeting.



Prof. Schack began by remarking that the recent Scientific American article regarding Qbism was not correct, especially in its presentation of the Schrodinger Cat paradox. He said "Quantum mechanics is a theory of probabilities. Whose probabilities? Those of Bruno de Finetti. Probabilities of what? Nature and the Greeks."

He quoted Finetti's approach to probability: "The abandonment of superstitious beliefs about the existence of Phlogiston, the Cosmic Ether, Absolute Space and Time, or Fairies and Witches, was an essential step along the road to scientific thinking. Probability, too, if regarded as something endowed with some kind of objective existence, is no less a misleading misconception, an illusory attempt to exteriorize or materialize our actual probabilistic beliefs."

Schack presented the concept of the Dutch Book, i.e. a set of odds and bets which guarantees a profit, regardless of the outcome of the gamble. He said that Bayesian statistics means you start from your prior probabilities (= prior belief), collect data to refine and update these, and use the updated "posterior" probabilities to make predictions; this is implied by Dutch-book coherence. He also mentioned the spectacular performance of Bayesian statistics in the recent election (Nate Silver's analysis). Schack said that "Any quantum state assignment starts from a prior quantum state. Different agents with different beliefs will in general assign different quantum

states."

Whereas the Copenhagen Interpretation of QM holds that a measurement corresponds to an objective laboratory procedure, in QBism "A measurement is any action an agent takes to elicit an experience. A measurement outcome is the particular experience of that agent so elicited. A measurement outcome is personal to the agent." He argued that "It can be unwise to rely on a picture of the physical world from which personal experience has been explicitly excluded, as it has been from physical science since the ancient Greeks."

You can view Prof. Schack's slides at [www.nmsr.org/qbism.pdf](http://www.nmsr.org/qbism.pdf). NMSR thanks Professor Schack for a scintillating discussion.

**DUES** - check the date on your mailing label. If it's time for you to renew, or to make a contribution, please check the box and send a check to

NANCY SHELTON, NMSR Treas  
11617 Snowheights NE, Albuquerque, NM 87112

Name \_\_\_\_\_

Address \_\_\_\_\_

Membership \$25\_\_ Paperless or Newsletter Only \$25 \_\_

On the Net? Ask for the Paperless NMSR Reports! <mailto:nmsrdave@swcp.com> "Dave Thomas"

**The NMSR e-mail list is fun! It's an e-mail list with news announcements of interest to NMSR members, discussions about news of the times, and more. To join, send a request to [nmsrdave@swcp.com](mailto:nmsrdave@swcp.com).**

Thanks to: John Geohegan, Lawrence Marcel, Debbie Thomas and our Puzzlers

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David E. Thomas, Editor (505) 869-9250  
P.O. Box 1017, Peralta, NM 87042-1017

**TWA Flight 800:  
Facts  
& Misconceptions  
DEC. 11  
7PM  
Museum of Nat.  
History and Science**

**IN THIS ISSUE:**  
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