DECEMBER MEETING:
NEW MEXICANS FOR SCIENCE
AND REASON WILL HEAR
MARK FRASER
on Debunking Climate Denialists
WEDS., DECEMBER 9th, 7 PM
====>MUSEUM OF NATURAL
HISTORY AND SCIENCE<===
====>1801 Mountain Road NW<===
In the Multi-Purpose Room
Bring a friend!

FUTURE MEETINGS ANNOUNCED

December 9th, 2015
NMSR Meeting -
Mark Fraser on
"Debunking Climate
Denialists"

Our December 9th
meeting will feature
member Mark Fraser,
who will discuss
approaches for dealing with climate denialists.

Here is Mark's Bio:
Mark Fraser teaches Astronomy at CNM with
a sub-theme on global warming. He has a Master’s
Degree in Physics from the University of Missouri –
Rolla, with graduate coursework in atmospheric
science. He is Public Policy Officer for the AIAA-
ABQ, in which he meets with congressmen and
senators concerning science education. As a defense
scientist for 30 years, he did research in ballistic
missile defense, infrared signatures, atmospheric
radiance/transmission, and endo/exo-atmospheric
nuclear burst phenomenology. For several years he
flew as a crew member on the USAF Argus C-135E
airborne remote sensing program on domestic and
overseas missions.

In this talk Mark will cover basic
misconceptions, fallacies of logic, and common tactics
used by climate denialists, politicians vs facts, satirical
references, and research on the psychology of climate
denialism. He uses scientific misunderstandings made
by public figures as teaching moments for his
students. His climate change article he wrote for the
AIAA-ABQ is available online at:
https://info.aiaa.org/Regions/SC/Albuquerque/Newslet
ters/2014/2014-06.pdf

7 PM Wednesday December 9th, New Mexico
Museum of Natural History and Science, Multi-
Purpose Room (to the left of the entry atrium), 1801
Mountain Road NW

January 13th, 2016 Meeting:

As of press time, it appears that our first
meeting of 2016 will be our last at the NM
Museum of Natural History and Science. Join us
to learn about the details. Starting in February,
we will meet on 3rd Wednesdays at the First Unitarian
Church at Carlisle and Comanche. Speaker TBD.

12th in Albuquerque; details on page 3.
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 Covan, Vice-President
jmcovan@juno.com
Nancy Shelton, Treasurer
11617 Snowheights NE, Albuquerque, NM 87112
nshelton10@comcast.net
Eddy Jacobs, Resident Neutron Generator
eddyjacobs88@gmail.com
John Geohegan, Past President
jgeo@swcp.com
Kim Johnson, Industrial Physicist
kimber@comcast.net
Marilyn Savitt-Kring, Science Mom

Membership: $20/year, includes newsletter, make your check payable to NMSR, send to treasurer (Shelton). Newsletter available in hard-copy and downloadable PDF.

NMSR Advisors:
• Mark Boslough, Physicist (Impacts, Climate Change, Global Warming). Sandia National Labs.
• 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: 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.

" W J F E Y F O W B I V L F E C L W
R F G C J B R X J L V L Q S W E ,
S Q W J B R X J L
B C U F E W B Z G W F E L H
H F E F G H I J F E ,
L O O L E V W L J B R X J L
G E E F H W E G C V W J B C Y E
W J G W J F J G E M L Q C V " -
R B Z Q F P V F Q C G R Q C L

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
"EVOLUTION AND CREATIONISM BOTH REQUIRE FAITH. IT'S JUST A MATTER OF WHERE YOU CHOOSE TO PLACE THAT FAITH." - PRESIDENTIAL CANDIDATE DR. BEN CARSON
Esteemed November Code Crackers: Mike Arms*, Austin Moede* and Terry Lauritsen*. *Secret Word: "FALSE DICHTOMY [sic]"

Need more Secret Word Cryptograms?
New puzzles every week at www.nmsr.org/SocorroStumper.htm
DECEMBER Bonus: “The Crooked Waiter”
Submitted by Dave Thomas

The Three Stooges went to a cafe, and ordered a pizza for $15. They each contributed $5. The waiter took the money to the chef, who was a friend of the Stooges, and asked the waiter to return $5 to them.

The waiter was lazy and dishonest, however, and instead of splitting the $5 fairly between the three, he just gave them $1 each, and pocketed the remaining $2 for himself.

Now, Moe, Larry and Curly each had effectively paid $4, so the sum actually shelled out was $12. Along with the $2 in the waiter's pocket, everything totalled $14.

The December Bonus: Where did the other $1 go from the original $15?

November Bonus:
“To Tell The Truth”
Submitted by Dave Thomas

Two types of intelligent bipedal organisms live on planet Blarnia: obligate liars and obligate truth tellers. The ambassador from Earth met with three Blarnians to negotiate a peace pact. One Blarnian spoke, but the ambassador didn't catch it. The second one remarked, "He said he was a liar." The third Blarnian yelled at the second, "You are lying!"

The November Bonus: Is the third Blarnian a liar or a truth teller?

Solution: Because no Blarnian would ever say “I am a liar”, the second one was lying, and the third spoke Truth.

Congrats to our crack November Solvers: Eric Hanczyc (WA), Rocky S. Stone (NM), Terry Lauritsen (NM), Harold H. Gaines (KS), Austin Moede (NM), Brian Pasko (NM).

November 11th, 2015 NMSR Meeting: Illusions Part II

Dave Thomas presented his new collection of optical illusions at our November 11th meeting. First off, John Geohegan talked about prime numbers and their uses in nature. John demonstrated Euclid's Algorithm, which is very useful for reducing a fraction to simplest terms. Consider the fraction 1071 / 462. One way to simply this down to 51 / 22 is to find all the factors of top and bottom, and then cancel out the common factors:

\[
\frac{1071}{462} = \frac{3 \times 3 \times 7 \times 17}{2 \times 3 \times 7 \times 11} = \frac{3 \times 17}{2 \times 11} = \frac{51}{22}
\]

This procedure can be quite time-consuming; for example, one might have to test divide 1071 by numbers from 3 to 535 to find all possible factors by brute force.

Euclid's algorithm is much simpler to execute. One simply divides the smaller number into the larger, noting the remainder. Repeat using the old denominator as the new numerator, and the remainder as the new denominator, until a remainder of zero is found. Then, the last denominator is the greatest common factor of the original numbers, and the simplified ratio follows directly:

\[
\begin{align*}
1071 &= 2 \times 462 + 147 \\
462 &= 3 \times 147 + 21 \\
147 &= 7 \times 21 + 0
\end{align*}
\]

\[
\frac{1071}{462} = \frac{1071/21}{462/21} = \frac{51}{22}
\]

Dave Thomas presented several new optical illusions, including a new pair of skulls (one regular, one bas relief) to demonstrate Necker Cube ambiguity.

NMSR thanks Dave and John for their presentations.
Marshall Berman Memorial set for Dec. 12th in Albuquerque

Marshall Berman passed away on October 25, 2015 in Louisville, CO, at the age of 76. Marshall was a devoted father, scientist, educator, and leader. He is survived by his partner Jan Harkins, his sons Brandon and Brian Berman, his daughter Brenna Berman, his sister Rhoda Berman, and four grandchildren.

Marshall was born on June 16, 1939 in Detroit, MI, to his parents Martin and Esther Berman. He was valedictorian of his high school class and graduated with a B.S. with Distinction in Physics from the University of Michigan. He went on to receive his Ph.D. in Nuclear Physics from Wayne State University.

1966, Marshall married Nancy Thomadsen and shortly thereafter moved to Albuquerque, NM, after accepting a position at Sandia National Laboratories where he worked for 32 years on nuclear reactor safety, managed a variety of defense research projects, and served as Executive Director of the Innovation Initiative for the U.S. Council on Competitiveness. He raised his family in Albuquerque and enjoyed excelling in hobbies including photography, landscaping, and woodworking.

As Marshall neared retirement at Sandia, he was elected to the New Mexico State Board of Education and served on the board for 4 years. He was passionate about changing science education standards for the children of the State of New Mexico and went on to be the founding president of the Coalition for Excellence in Science and Math Education (CESE), devoting his time to help ensure the integrity of New Mexico’s education system. He was also an early and active member of New Mexicans for Science and Reason and served a term as president of the New Mexico Academy of Science.

A memorial service will be held Saturday December 12, 2015, at 1:00pm at the First Unitarian Church (3701 Carlisle Blvd NE, Albuquerque, NM 87110). All are welcome to attend and celebrate Dr. Berman’s life (RSVP at http://www.BermanLife.com). In lieu of flowers, please give a tax deductible donation to CESE, at 803 Maverick Trail SE, Albuquerque, NM 87123.

IN THIS ISSUE:
- Future Meetings Announced
- New Puzzles!
- November Meeting Illusions

Marshall Berman Memorial