



# NMSR Reports

The Newsletter of the  
New Mexicans for Science and Reason

NMSR Reports, David E. Thomas, Editor, 801 Fitch Ave., Socorro, NM 87801 © 2018

**JUNE MEETING:**  
NEW MEXICANS FOR SCIENCE  
AND REASON WILL HEAR  
**Dave Straub**  
on "Building Models of Historic  
Structures"

**7:00 PM June 13<sup>th</sup>, 2018**

==>**CNM MAIN CAMPUS,**  
**Student Resource Center**<==

==>**Room 204**<==

**Bring a friend!**

## FUTURE MEETINGS ANNOUNCED

### June 13<sup>th</sup>, 2018: Dave Straub on "Building Models of Historic Structures"

Mr. Straub has given talks on scratch modeling to several groups, including the Smithsonian Institution. Dave has personally crafted dozens of such models, including dirigibles and aircraft. These are not toys. Many have taken thousands of hours to produce and include meticulous details taken from descriptions of the actual objects. Sandia Lab's Particle Beam Fusion Accelerator (PBFA) used such models to great advantage. Join us at 7:00 PM May 16th, 2018, CNM MAIN CAMPUS, Student Resource Center, Room 204.

### No NMSR Meeting in July!

NMSR is on vacation in July, and there won't be a meeting on the 2nd Wednesday.



### August 8th, 2017 NMSR Meeting:

Skeptical Inquirer managing editor **Benjamin Radford** will discuss "The Blue Whale Game: Moral Panic or Public Threat?"

This will be interesting!

### Glenn Branch to speak in New Mexico

Our sister organization, the Coalition for Excellence in Science and Math



Education (CESE), is hosting Glenn Branch for two talks later in June. Glenn, who is Deputy Director of the National Center for Science Education (NCSE), will be speaking on **Friday, June 22, 2018 at 7 p.m., in Fuller Lodge, Los Alamos, NM.** His topic will be "**Doubt and Denial as Challenges to, and in, Teaching Climate Change.**"

Glenn is also speaking on the topic "**Why Is It So Hard to Teach Evolution and Climate Change?**" on **Saturday, June 23, 2018 at 1:30 PM.** This free talk is open to the public, and will be held at the **UNM Anthropology Lecture Hall at UNM.**

Glenn was instrumental in getting national press for the attempted weakening and politicization of Next Generation Science Standards (NGSS) by the PED last fall.

## 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 CNM's Student Resource Center, room 204 (@ Richard Barr Boardroom). NMSR Reports is its official newsletter.

### NMSR officers:

**Dave Thomas, President**

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**Marilyn Savitt-Kring, Science Mom**

Membership: \$25/year (hardcopy newsletter), or \$15/year (downloadable PDF), make your check payable to NMSR, send to treasurer (Debbie Thomas).

### 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 Clue: Z = V, W = M.

Bonus Puzzle Clue:

### WANTED: READER ARTICLES & COMMENTARY

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

**REMEMBER**, our next NMSR meeting is at 7 PM on **WEDS., JUNE 13<sup>th</sup>, 2018**, at Student Resource Center, room 204 at CNM!

## PUZZLE TIME!

[Please send solutions to Dave Thomas at: [nmsrdave@swcp.com](mailto:nmsrdave@swcp.com), or at 801 Fitch Ave., Socorro NM 87801.]

### Cyber-Cypher: JUNE 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.

" N X R B C V O B Y R B C J K I B O  
E M I K N P M E E K J L V , N X R B C  
M J Z I E M N H N O O I K  
V O B Y Q I A P I , E M I O O B D B A R  
L J O E C K O R B C B X X . . . O B  
W J E E I K Y M J E E M I R H J R . " -  
D J K D J K J W L L Q N O E B L V

### 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

### MAY CYPHER SOLUTION

"THE WHOLE BUSINESS THAT I GOT THE NOBEL PRIZE FOR CAME FROM THAT PIDDLING AROUND WITH THE WOBBLING PLATE." - RICHARD FEYNMAN, BORN MAY ELEVENTH, NINETEENEIGHTEEN.

Esteemed May Code Crackers: Mike Arms\*, Gene Aronson\*, Austin Moede\* and Terry Lauritsen\*.

\*Secret Word: "LONG BIRTHDAY SUM"

## SOCORRO STUMPER

### Need more Secret Word Cryptograms?

New puzzles every week at

[www.nmsr.org/SocorroStumper.htm](http://www.nmsr.org/SocorroStumper.htm)

## June Bonus: “Emoji Maths”

Submitted by Dave Thomas

Solve for  +  + , given:

$$\begin{array}{c}
 \begin{array}{c} \text{3 Australian flags} \end{array} + \begin{array}{c} \text{2 Pumpkins} \end{array} + \begin{array}{c} \text{1 Soccer Ball} \end{array} = 17 \\
 \end{array}$$

$$\begin{array}{c}
 \begin{array}{c} \text{1 Australian flag} \end{array} + \begin{array}{c} \text{2 Pumpkins} \end{array} + \begin{array}{c} \text{3 Soccer Balls} \end{array} = 23 \\
 \end{array}$$

$$\begin{array}{c}
 \begin{array}{c} \text{2 Australian flags} \end{array} + \begin{array}{c} \text{1 Pumpkin} \end{array} - \begin{array}{c} \text{1 Soccer Ball} \end{array} = 2 \\
 \end{array}$$

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$$\begin{array}{c}
 \begin{array}{c} \text{1 Australian flag} \end{array} + \begin{array}{c} \text{1 Pumpkin} \end{array} + \begin{array}{c} \text{1 Soccer Ball} \end{array} = ? \\
 \end{array}$$

## The May Bonus: “Construction Delay”

Submitted by Dave Thomas

A commuter normally drives at 80 mph for an hour to reach his destination. He has found that a stretch of new construction on his route, with a strict 50 mph limit, adds nine minutes to his normal commute.

**The May Bonus: How long is the construction zone?**

**ANSWER: 20 miles.**

**Congrats:** Eiichi Fukushima (NM), Keith Gilbert (NM), Earl Dombroski (NM), Paul Braterman (UK), Gene Aronson (NM), Rocky S. Stone (NM), Mike Arms (NM), and Terry Lauritsen (NM)!

# DIGITAL DOODLES

by Dave Thomas

Consider the Golden Rectangle, and the construction of the Golden Spiral, based on  $\phi = (1 + \sqrt{5})/2$ . This number has the very special properties  $\phi^2 = \phi + 1$ , and  $1/\phi = \phi - 1$ . Last time, we looked at decreasing intervals, i.e./ powers of  $1/\phi$ . You can also get a copy of the Fibonacci series by expanding  $\phi^n$  and simplifying.

Since  $\phi^2 = \phi + 1$ , then  $\phi^3 = \phi(\phi + 1) = \phi^2 + \phi = (\phi + 1) + \phi = 2\phi + 1$ . Continuing in this manner,  $\phi^4 = \phi(2\phi + 1) = 2\phi^2 + \phi = 2(\phi + 1) + \phi = 3\phi + 2$ .

Proceeding along, we eventually get the following:

$\phi^1$	$1\phi + 0$
$\phi^2$	$1\phi + 1$
$\phi^3$	$2\phi + 1$
$\phi^4$	$3\phi + 2$
$\phi^5$	$5\phi + 3$
$\phi^6$	$8\phi + 5$
$\phi^7$	$13\phi + 8$

Now, the interesting thing is that the coefficients for the  $\phi$  terms on the left and the numerical terms on the right are the sequences 1, 1, 2, 3, 5, 8, 13, 21 ... But this sequence is again the famous *Fibonacci* sequence, with the property  $a_i = a_{i-2} + a_{i-1}$ , e.g.  $21 = 8 + 13$  for  $i = 6$ . The ratio of any coefficient in this sequence to the previous one approaches  $\phi$  as the sequence goes to infinity.

## May 16<sup>th</sup>, 2018: Lee Skinner, on "Exploration in New Mexico's Fort Stanton Cave and Snowy River Passage"

Fort Stanton Cave is located in the south-central part of New Mexico in Lincoln County, between the villages of Lincoln and Capitan. The Snowy River Passage, discovered in 2001, is one of the longest cave formations in the world.

Lee showed the relative sizes of three famous New Mexican caves: Carlsbad Caverns (32 miles of passages), Lechuguilla Cave (138 miles of passages) and Ft. Stanton Cave (32 miles of passages). Until 2001, Ft. Stanton Cave was only known to have 8 miles of passages; then, the discovery of the Snowy River Passage quadrupled the cave's known size.

The cave was known to indigent natives, as shown by artifacts found within. A regiment from Fort Stanton explored the cave in 1855. It is located near

Capitan, off of Highway 380.

In 1962 Lee Skinner noted an airflow at the far end of the "New Section" (the farthest in at that time). He and numerous other cavers spent seven years and over a hundred trips digging toward the source of the air. This led to the discovery of Lincoln Caverns within Fort Stanton Cave. Digging stopped in 1970's, however, because of the danger of collapsing ceilings. Lloyd Swartz, John McLean, and others were allowed to resume digging in 2001. After four months, the breakthrough to Snowy River

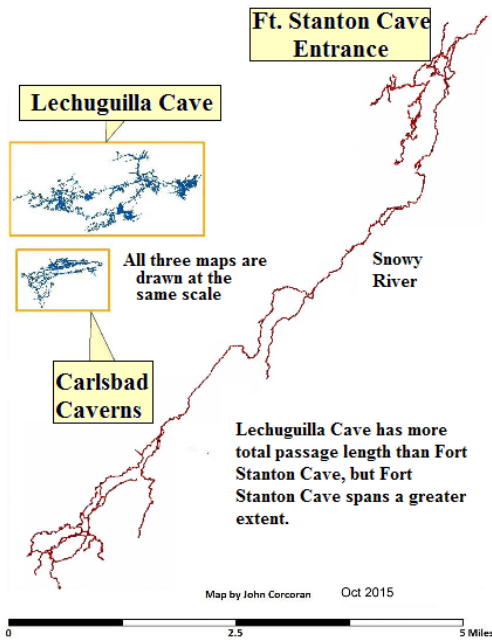
resonate with cavers' voices), and many more.

Due to White Nose Syndrome in bats, Fort Stanton Cave is only available to approved science projects. BLM is working towards allowing some public access again, but you can visit it virtually via "Caver Quest Fort Stanton" (free download: Google it, or visit [www.fscsp.org](http://www.fscsp.org)). Lee gave us all a tour of the cave using this program.

NMSR thanks Lee Skinner for a penetrating presentation.

### Summer Skeptiverse Haiku! by Keith Thomas, June 2018

Which caves might connect With Aztec's vast underground Alien compound?	Undeniably, Our political climate Has been heating up!
Some fields are filled with Pseudomathematical Numerical crap.	Junk science will smell Less septic/When sold by skills And token skeptics.
Small misperceptions Can become building blocks for Grand misconceptions.	Will research reveal How those Martians now conceal All their grand canals?



DUES - check the date on your mailing label. If it's time for you to renew, or to make a contribution, please send a check to **DEBBIE THOMAS, NMSR Treasurer**, 3205 Alcazar NE, Albuquerque, NM 87110  
 Name \_\_\_\_\_  
 Address \_\_\_\_\_  
*Membership \$25 per annum (hard copy newsletter), or \$15 per annum (online newsletter).*

occurred on September 1, 2001.

The "Snowy River" is a white pathway created by calcites precipitating from now-removed water.



Lee showed dozens of incredible chambers – The Lower Runway, Finger Lake, Midnight Junction, Turtle Junction, Harmony Hall (where stalactites and soda straws

**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 Covan, Eddy Jacobs, Debbie Thomas, Keith Thomas, and all our Puzzlers!


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June Meeting  
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 Weds. June 13th  
 7:00 PM  
 CNM SRC 204

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