



# 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

**MAY MEETING:**  
**NEW MEXICANS FOR SCIENCE  
 AND REASON WILL HEAR**  
**Lee Skinner**  
 on "Exploration in New Mexico's  
 Fort Stanton Cave and Snowy  
 River Passage"  
**7:00 PM May 16<sup>th</sup>, 2018**  
**==>CNM MAIN CAMPUS,**  
**Student Resource Center<==**  
**==>Room 204<==**  
**Bring a friend!**

## FUTURE MEETINGS ANNOUNCED

**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 now thought to have the longest cave formation in the world.

The presentation will be made by Lee Skinner. Slide preparation is by Ron Lipinski, John Corcoran, Pete Lindsley and



numerous other cavers. The Fort Stanton Cave Study Project is conducted in cooperation with the Bureau of Land Management and the U.S. Forest Service,



**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.

**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: T = Z, U = V.

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., MAY 16<sup>th</sup>, 2018**, at Student Resource Center, room 204 **at CNM!**

**PUZZLE TIME!**

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

**Cyber-Cypher: MAY 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.

" I J Y            Z J B A Y            F P O G C Y O O  
I J L I    G    D B I    I J Y    C B F Y A  
V H G T Y            X B H            W L Q Y            X H B Q  
I J L I            V G K K A G C D            L H B P C K  
Z G I J            I J Y            Z B F F A G C D  
V A L I Y . "            -            H G W J L H K  
X Y M C Q L C ,    F B H C    Q L M  
Y A Y U Y C I J , C G C Y I Y Y C Y G D J I Y Y C

**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

**APRIL CYPHER SOLUTION**

"BEING A STUDENT OF HIS WAS NOT EASY. HE HAD BEEN KNOWN TO RUN HIS WHEELCHAIR OVER THE FOOT OF A STUDENT WHO CAUSED HIM IRRITATION." - ROGER PENROSE, ON STEPHEN HAWKING

Esteemed April Code Crackers: Mike Arms\*, George Egert\*, Austin Moede\* and Terry Lauritsen\*. \*Secret Word: "CAMBRIDGE PLUSH TOY"

**SOCORRO STUMPER**

**Need more Secret Word Cryptograms?**

New puzzles every week at [www.nmsr.org/SocorroStumper.htm](http://www.nmsr.org/SocorroStumper.htm)

### 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?

### The April Bonus: “Run, Fastman, Run”

*Submitted by Dave Thomas*

Two trains are approaching each other on adjacent tracks, and each is moving at 60 mph with respect to the ground. The world’s fastest man, Fastman, departs from train #1 when the two trains are 120 miles apart. When he gets to train #2, Fastman turns around instantly, and heads back toward train #1, then turns again and heads back to train #2, and so forth. This continues until the two trains meet, at which time Fastman stops.

Fastman is running faster (constant speed  $w$ ) than the trains (constant speed  $v=60$ mph). How fast? Your big clue is that the length of each leg in Fastman’s back-and-forth run is one quarter the length of the preceding leg.

#### The April Bonus: How far does Fastman run altogether?

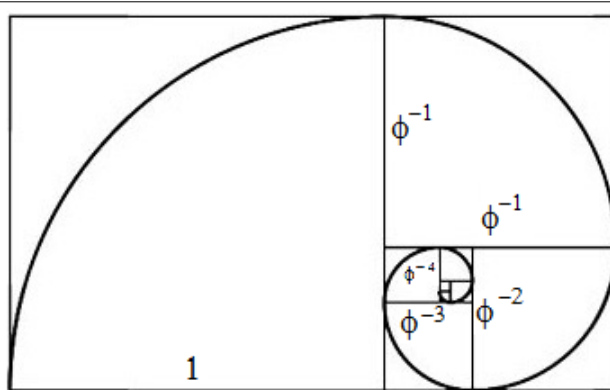
**ANSWER: 100 miles.**

**Congrats:** Allen Robnett (NM), Earl Dombroski (NM), Paul Braterman (UK), Rocky S. Stone (NM), Gene Aronson (NM), and Keith Gilbert (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  $1/\phi = \phi - 1$ . In the figure, each smaller side is the previous side times  $1/\phi = 0.61803398\dots$



Since  $\phi^{-1} = \phi - 1$ , then  $\phi^{-2} = (\phi - 1)^2 = \phi^2 - 2\phi + 1 = (\phi + 1) - 2\phi + 1 = -\phi + 2$ . Continuing in this manner,  $\phi^{-3} = (-\phi + 2)(\phi - 1) = -\phi^2 + \phi + 2\phi - 2 = -(\phi + 1) + \phi + 2\phi - 2 = 2\phi - 3$ . Proceeding along, we eventually get the following:

1	1
$\phi^{-1}$	$1\phi - 1$
$\phi^{-2}$	$-1\phi + 2$
$\phi^{-3}$	$2\phi - 3$
$\phi^{-4}$	$-3\phi + 5$
$\phi^{-5}$	$5\phi - 8$
$\phi^{-6}$	$-8\phi + 13$
$\phi^{-7}$	$13\phi - 21$

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, ... with alternating +/- signs on both terms. But this sequence is simply 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. But, using the expansion of  $\phi^{-n}$  above, we can see that the sequence 1, 1, 2, 3, 5, 8, 13, 21 ... is deeply involved with  $\phi$  right at the beginning of the series, and not just at the end!

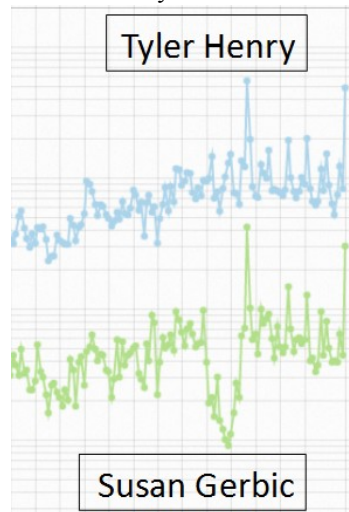
### April 11th, 2018 NMSR Meeting: Susan Gerbic, on "Guerrilla Skepticism on Wikipedia (GSoW): It's About Time"

Susan Gerbic gave a dynamic presentation on her efforts toward promoting skepticism on Wikipedia. While the March for Science was a fun event, it had little long-lasting impact. With reporter populations in decline, an increasing number of over-worked journalists worldwide are using Wikipedia for their research. Susan's "Guerilla Skeptics" group has 122 members who are creating or updating Wiki pages on skeptics, skeptical organizations, and related topics, in several languages.



Gerbic showed the original Wiki page for comet discoverer Thomas Bopp. It was so small that the page didn't even scroll down – a "no scroller". Gerbic's group updated Bopp's page with substantial content and citations, and provided a good and accurate source of information for world media when Bopp died earlier this year.

Wikipedia is also a resource for journalists to learn about controversial figures like "medium" Tyler Henry. Gerbic edited Henry's Wiki page to include criticism published by a sports blogger writing about Ronda Rousey's supposed "reading" with Henry. Because Gerbic made the edits, her Wiki statistics mirror those of Henry's page. This graphic compares Henry vs. Gerbic hits over time – they track very well, except for a curious gap. The gap occurred because one of Henry's supporters edited the Wiki page to remove mention of criticism. Other editors



quickly reversed the edits and restored the criticism. The "talk" tab on a Wiki page allows you to peruse a page's history.

Pseudoscientific documentaries often have their own Wiki page, and sometimes these are simply glowing testimonials with no real criticism. But, to be cited on a page, one has to have appropriate credentials. Gerbic's group is adding criticism to Wiki pages (like the one for the horrid show "What the Health?") by informed critics like Dr. Harriet Hall. These efforts have far-reaching impact, and are far more important than arguing with believers on Facebook, in the long run. Collaborators are solicited!

After the meeting, 20 attendees saw the Space Station fly overhead. NMSR thanks Susan Gerbic for a fascinating presentation.

### Science Fair Winner!

Congratulations to Mattealle R Calhoun, an eighth-grader at Portales Junior High School. She was awarded NMSR's annual science fair prize of \$200 for her State Science Fair project "Nutrition Labels: How Accurate Are They?"



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).*

**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, and all our Puzzlers!


**IN THIS ISSUE:**  
Future Meetings  
Announced  
**New Puzzles!**  
April Meeting - Guerrilla  
Skeptics on the Web!  
Digital Doodles - φ  
Science Fair Winner

**May Meeting**  
Lee Skinner on  
Ft. Stanton Cave  
Weds. May 16th  
7:00 PM  
CNM SRC 204

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