



# NMSR Reports

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

NMSR Reports, David E. Thomas, Editor, 1201 N. Avenida de Chamiso Pl., Socorro, NM 87801 © 2021

**DECEMBER MEETING:**  
**NEW MEXICANS FOR SCIENCE AND REASON will hear**  
**JW Madison on**  
**“What's New in Light Rail?”**  
**=>December 8<sup>th</sup>, 2021 7:00PM<=**  
**=>Attend online!<=**

### FUTURE MEETINGS ANNOUNCED!

#### December 8<sup>th</sup>, 2021 NMSR Meeting: JW Madison on “What's New in Light Rail?”

JW Madison spoke to NMSR on “What's so (damn) important about trains?” on August 8<sup>th</sup>, 2012. He is returning to give us an update on light rail and other transportation topics.



There are several articles on numerous aspects of rail travel at the Rails Inc. website, <https://www.nmrails.org/>. Here are some observations the group provides on the “Bus Trap,” the idea that busses are more economical than trains.

- Trains have greater – several times greater – fuel/energy economy per passenger-mile, with proportional reductions in pollution and grime. Add to this the fact that roads, unlike rails, are themselves made in part from petroleum products
- More versatile interlock with renewably generated energy

- Freedom from most traffic snarls, leading to greater on-time performance and peace of mind
- No tire-disposal problems (this one's bigger than you think)
- Promotion of “Smart Growth” and Transit Oriented Development through a sense of right-of-way permanence. This leads to a reduction in sprawl and big savings in the cost of infrastructure components per person or business
- A smoother and quieter ride
- More efficient use of land and materials per passenger mile; in other words, you need much less of each
- More efficient use of personnel. One train driver can haul a lot more people than can one bus driver
- Better security. No town or city can afford to put an officer on every bus, but they can put one on every train, freeing the operator to concentrate on running said train
- Rail lines and rolling stock require less maintenance and last much longer than do roads and road vehicles
- Rail tends to promote the increased use of neighborhood transit (lots of little busses) and other non-automotive forms of transportation
- People just like trains
- Busses and vans are important, but are the smaller bones. Trains in all their forms are the spine and limbs. The notion of up front cost is irrelevant except in terms of return on investment. Bite the bullet once, get those tracks in, and the results will pay us back over and over for generations to come.
- We at Rails Inc are not anti-bus. We're anti-bus-only.

Because of the ongoing Corona virus crisis, this meeting will be held online, and members can attend from their homes or offices. It will be hosted on Zoom. A Zoom Link will be sent out to all members and potential attendees before the meeting. To get added to the attendee list, simply email [nmsrdave@swcp.com](mailto:nmsrdave@swcp.com). Then, tune in to Zoom at **7:00 PM December 8<sup>th</sup>, 2021, On Line!** This will be an interesting meeting, don't miss it!

## 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 a secure, undisclosed location. 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**,  
Adjunct Professor, University of New Mexico.
- **Kendrick Frazier**  
Editor, Skeptical Inquirer
- **John Geissman**  
Professor of Paleomagnetism
- **Alan Hale**  
Southwest Institute for Space Research
- **Randy Thornhill**  
Professor of Biology, UNM

**Cyber-Cypher Clue:** Y = H, Z = K

**Bonus Puzzle Clue:** Bernoulli Trials.

### 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 **ONLINE, December 8<sup>th</sup> at 7PM, on Zoom!**



## PUZZLE TIME!

[Please send solutions to Dave Thomas at: [nmsrdave@swcp.com](mailto:nmsrdave@swcp.com), or at 1201 N Avenida de Chamiso Pl., Socorro NM 87801.]

### 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.

" I J H M T J M    Z T K R I    T K    J K C T Q N O ,  
E M J S C I M    Z T K R B M G U M    E M B K T U I  
Q K    Y C D S T H Q O ,    S T G    H I    Q Y M  
Q K N J Y    R Y H J Y    H B B C D H T S Q M I    Q Y M  
R K N B G . "    -    L S J J H T M    A H K T M M N  
B K C H I    A S I Q M C N

### 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

"THE MOMENT YOU SEE THE VULNERABILITY OF EVERYTHING; IT'S SO SMALL. THIS AIR, WHICH IS KEEPING US ALIVE, IS THINNER THAN YOUR SKIN." - ASTRONAUT WILLIAM SHATNER

Esteemed November Code Crackers: Mike Arms\*, and Austin Moede\*!

\*Secret Word: "WISHFUL CANOPY TREK"

## SOCORRO STUMPER

### Need more Secret Word Cryptograms?

New puzzles every week at

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

### December Bonus: "Autofilling Teams"

Submitted by Dave Thomas

Players in a weekly football pool choose winners of 15 contests between the 32 NFL teams.

The person entering picks in a spreadsheet can use the autofill function to enter teams quickly. If the two opposing teams (in blue) are at the top of a column, only the first letter needs to be

BAL	SF	DEN
PIT	SEA	KC
BAL	SEA	DEN
BAL	SF	KC
BAL	SF	KC

typed in most cases. In the 3<sup>rd</sup> column above, typing a D will fill as DEN, and typing a K will fill as KC.

However, when the opposing teams start with the same letter (like S, for both SF and SEA), the autofill does not work well, and errors (like entering Seattle for someone who actually chose San Francisco) are much more common.

The 32 teams are: ARI, AZ, BAL, BUF, CAR, CHI, CIN, CLE, DAL, DEN, DET, GB, HOU, IND, JAX, KC, LAC, LAR, LV, MIA, MIN, NE, NYG, NYJ, NO, PHI, PIT, SEA, SF, TB, TEN, and WAS.

**The December Bonus:** (A) For a contest between any random pair of teams, what is the probability that the two teams start with the same letter?

(B) For a weekly schedule of 15 games, what is the probability that  $n$  of the 15 will have same-letter teams, where  $n = 0, 1, 2,$  and  $3$ ?

**November Bonus Solution: “Mark The Date”**

*Submitted by Dave Thomas*

**The November Bonus:** What do the following seven dates have in common?

March 14<sup>th</sup> ( $\pi$  day), June 6<sup>th</sup> (D Day), July 4<sup>th</sup> (Independence Day), August 8<sup>th</sup> (Nixon Resignation Day), September 19<sup>th</sup> (Talk like a Pirate Day), October 31<sup>st</sup> (Halloween), and December 26<sup>th</sup> (Boxing Day).

**Answer: They all occur on the same day of the week (for 2021, Sunday).**

**Congrats:** Earl Dombroski, Mike Arms, Austin Moede!

## November 10<sup>th</sup>, 2021 NMSR Meeting: “Sodom, Airbursts, and Tall el-Hammam”: A Panel Discussion

Recently, the article “*A Tunguska sized airburst destroyed Tall el-Hammam a Middle Bronze Age city in the Jordan Valley near the Dead Sea*” was published in Scientific Reports (Nature) on September 20<sup>th</sup>, 2021. The authors wrote “...we consider whether oral traditions about the destruction of this urban city by a cosmic object might be the source of the written version of Sodom in Genesis. We also consider whether the details recounted in Genesis are a reasonable match for the known details of a cosmic impact event.”



Dr. Mark Boslough, who has been following the work of the report’s authors for years, started off the discussion by talking about the general history of airbursts, and how things led up to the publication of the new paper. This

rendition of the 1908 Tunguska airburst over Russia was done by Don Davis, using Mark’s technical help. At Tunguska, the explosion of the meteor/comet fragment occurred in the atmosphere, and only the shock wave (shown) reached the ground, toppling millions of trees.



Mark’s interest in asteroid impacts began in August 1972, when he was a high-school student on vacation in the Tetons. His family had just missed a “UFO” that everyone at their campsite was talking about. A couple of years later, Mark saw a video of the same object, which had just skimmed the upper atmosphere before returning to space. Mark said that some materials from this meteor made their way to Earth, and that this process is common and ongoing. Simply finding meteoritic dust on the ground does not prove a catastrophic explosion.

Mark’s work at Sandia led him to predict that the airburst from the 1994 impact of comet Shoemaker-Levy 9 on Jupiter would be visible from Earth. That prediction panned out, and Mark’s work on the simulation was published. Year’s later, that led to Mark’s involvement in a television production about the provenance of a strange glass scarab on the tomb of Tutankhamun. The scarab was made of “Libyan Desert Glass”, which is thought to have formed from an airburst over the Sahara almost 30 million years ago. The glass covers a wide area, which led Mark’s colleague John Watson to think that perhaps a cluster of many fragments had exploded over a larger area. There were many problems with the cluster hypothesis, which was dropped when scientists learned that geological reworking of sediments over the last 30 million years could eventually spread glass created by a local airburst over a much larger region. Mark said it is now agreed that the scarab glass had indeed been formed by an ancient meteoritic airblast above a small region in the Sahara, and that the heat from the explosion fused material on the ground, quite unlike Tunguska.



Mark then mentioned the “Younger Dryas Impact” hypothesis, which invoked a cosmic airburst to explain extinction of megafauna in North America. He has long been critical of this analysis, which was from the same group that has put forward the new paper on Tall el-Hammam. When Mark perused the new paper, he was surprised to see his own work misrepresented in Figure 53, which mis-labeled his simulation as a model of the “Tunguska airburst.” This particular simulation was actually for a blast much larger than Tunguska, which did *not* experience a super-heated plume or “fragments reaching the surface.” “They never



even asked me,” Mark said.

Dave Thomas presented some criticisms of the paper, starting with Elisabeth Bik’s devastating analysis on [scienceintegritydigest.com](http://scienceintegritydigest.com).

Bik found that many of the digital images had been altered, with portions of some images copied to cover over direction markers and rulers. Dave showed how one of the altered images, figure 15b, had a North indicator that had been removed, and that the apparent position of the indicator in the original implied that the “strewing” vector shown in the figure, supposedly facing NE, was instead probably facing NW, an error of about 90 degrees. This carries over to figure 17, which shows the directionality of six types of debris at five locations. In addition to one of the arrows being in the wrong direction, as Dave showed, Mark pointed out that all 21 arrows in the figure point in exactly the same direction, and look “too good to be true.” In fact, Dave’s discovery of an error would actually make figure 17 look “more realistic,” the panel concluded. Austin Moede noted that Figure 17’s contour plot did not have contours or intervals listed, an egregious omission. Numerous other questionable facets of the new paper were discussed, including the fact that other processes besides a meteor airburst, such as “cooking,” might also explain some of the burnt materials at Tall el-Hammam. Dave also showed that one of the paper’s citations of trees a meter in diameter being “snapped like twigs” at Tunguska was based on an unconfirmed comment in a paper published by the Institute for Creation Research and the Seventh-Day Adventist Church. The NMT co-author of the paper was invited to join the panel, but declined. All co-authors were invited to

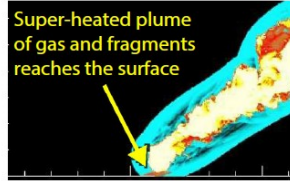


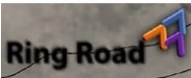
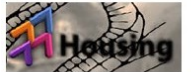
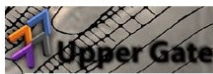
Figure 53. Supercomputer 15-megaton model of the Tunguska airburst. Conference presentation slide 26 from Boslough<sup>197</sup>, Sandia National Laboratories

submit a video statement for presentation at the panel, but no videos were received. The corresponding author of the paper, Allen West, has said the original images have been submitted to Scientific Reports, and will be forwarded to NMSR once that journal decides what to do with them.

NMSR thanks the presenters for an informative presentation. **Videos of this and other meetings are available at <http://www.nmsr.org/meetings.htm>.**

### December Skeptiverse Haiku! by Keith Thomas

May your Holidays Overflow with optimal Wellness potential!	Some old jackass is Expectin’/That equine dose Of ivermectin.
Buried in White Sands, Beneath our modern tread marks, Ancient human tracks.	IgNoble research – Scientists fly/With upside Down rhinoceri!
Yesterday’s rumors May return as tomorrow’s Alternative facts.	A winter solstice. Geophysicists foresee Longer days ahead.



DUES check the date on your mailing label. If it's time for you to renew, or to make a contribution, please make your check **payable to NMSR**, and send it 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, Keith Thomas and all of our Puzzlers!


**December**  
Meeting  
Madison, Trains!  
Weds 8th 7PM  
Online/Zoom

**December Haiku!**

Future Meetings  
Announced  
New Puzzles!  
November meeting,  
Sodom/Tall el-Hammam

**IN THIS ISSUE:**  
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