



NMSR Reports

The Newsletter of the
New Mexicans for Science and Reason

NMSR Reports, David E. Thomas, Editor, 801 Fitch Ave., Socorro, NM 87801 © 2019

FEBRUARY MEETING: NEW MEXICANS FOR SCIENCE AND REASON will hear

Mick West

“Escaping the Rabbit Hole”

7:00 PM Feb. 13th, 2019

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

==>Room 204<==

Bring a friend!

FUTURE MEETINGS ANNOUNCED

FEBRUARY 13th, 2019 NMSR Meeting: Mick West

New Mexicans for Science and Reason is pleased to host Mick West at its February meeting, 7 PM, February 13th, 2019, at the CNM Main Campus, STUDENT RESOURCE CENTER (SRC), room 204, right next to the Richard Barr Boardroom. Free and open to the public!



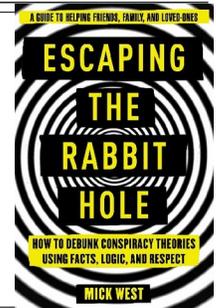
Mick West is a science writer, skeptical investigator, and retired video game programmer. He is the creator of the websites

Contrail Science and Metabunk, for which he investigates and debunks pseudoscientific claims such as chemtrails, UFOs, and conspiracy theories, and has appeared in various media as an expert analyst and science communicator. Mick will be talking about, and signing copies, of his new book, *Escaping the Rabbit Hole*. How to Debunk Conspiracy Theories Using Facts, Logic, and

Respect.

Checke out Mick’s webpages, www.metabunk.org and <http://contrailscience.com/>.

Join us at 7:00 PM February 13th, 2019, CNM MAIN CAMPUS, Student Resource Center, Room 204. Mick will have copies of the book available.



MARCH 13th, 2019 NMSR Meeting: Mike Hightower on Fire Science.

Nick Soutter’s Flat Earth Challenge

Nick Soutter is a Massachusetts-based writer who has created a “Flat Earth Challenge” at his blog, the Humanist Codex. The address for the challenge is www.theatheistcodex.com/codex/challenges/flat-earth-challenge/. He states “*We here at the codex believe very strongly in proving that the earth is flat. It’s a passion for us, and one in which we hope our theistic brothers and sisters will participate. We here at the codex think it’s time that Flat Earth is proven! ...*

To that end we propose experiments to prove that the earth is flat. We will offer a bounty of \$10,000, to anyone who can provide proof that the earth is flat. We’ll accept any number of proofs, and provide below two experiments where you and the Codex will participate in an effort to prove that the earth is flat. We will take up the position that it is not, and invite the challenger to prove it is. If the challenger fails, they will need to pay all expenses. If the challenger wins, they get their expenses plus the \$10,000 bounty.”



Nick Soutter tried really hard to get our December speaker, flat-earth believer Bruce Lacey, to accept the Challenge. How did *that* work out?

Details on Page 6.

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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John Geohegan, Past President

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Kim Johnson, Industrial Physicist

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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 = X, X = P.

Bonus Puzzle Clue: Iterate between equations for I and equations for R. Use Snell's Law, $n_1 \sin(I) = n_2 \sin(R)$.

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., FEBRUARY 13th, 2019**, 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: FEBRUARY 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.

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

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

JANUARY CYPHER SOLUTION

"BAD TIMES HAVE A SCIENTIFIC VALUE. THESE ARE OCCASIONS A GOOD LEARNER WOULD NOT MISS." - RALPH WALDO EMERSON

Esteemed January Code Crackers: George Egert*, Mike Arms*, Terry Lauritsen*, and Austin Moede*.

*Secret Word: "WATCH EVIL GROUP"

SOCORRO STUMPER

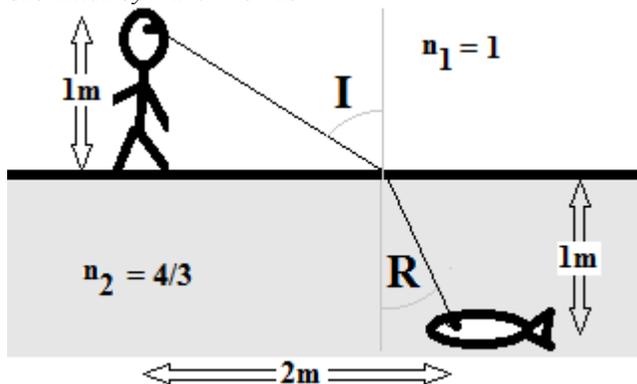
Need more Secret Word Cryptograms?

New puzzles every week at
www.nmsr.org/SocorroStumper.htm



February Bonus: "Fishy Encounter"

Submitted by Dave Thomas



A boy whose eyes are one meter above the surface of a river spots a fish. The fish is one meter below the surface. The horizontal distance between the boy and the fish is two meters. The index of refraction of air is $n_1 = 1$, and that of water is $n_2 = 4/3$.

The February Bonus: What are the angles of incidence (I) and refraction (R)?

January Bonus : Clock Palindromes?

Submitted by Dave Thomas

Sometimes the time of day, in hours:minutes:seconds, can be a palindrome. Examples of such palindromes include 5:29:25 and 10:33:01.

The January Bonus: (A) Of the 86,400 seconds of a day, how many are palindromes? (B) What is the shortest interval between two palindromes? (C) How many palindromes come five minutes after their predecessors?

ANSWER: For a 12-hour clock (range is 12:00:00 – 11:59:59, twice), #Palindromes = 1116, minimum interval between two palindromes = 2 seconds (between 9:59:59 => 10:00:01), and number of palindromes that come 5 minutes after their predecessor = 0. (But there are some that are 5 minutes and 10 seconds, such as 11:55:11 => 12:00:21). For a 24-hour clock (range is 0:00:00 – 23:59:59), #Palindromes = 660, minimum interval between two palindromes = 2 seconds (between 9:59:59 => 10:00:01), number of palindromes that come 5 minutes after their predecessor = 0.

Congrats: Earl Dombroski (NM), Mike Arms (NM), Rocky S. Stone (NM), Gene Aronson (NM)!

JANUARY 9TH, 2019 NMSR Meeting: An Evening of Science and Magic

Our first meeting of 2019 featured demonstrations of science, of magic, and even some scientific magic. Presenters included Bill Fienning, Steve Brugge, John Geohegan, Allen Robnett, and

Dave Thomas. Bill Fienning showed some amazing and elaborate illusions. In one, a series of freely-made choices on who was to live or die (made from character cards) somehow ended up on Death himself. Bill also demonstrated Satanic dress burning, to the delight of the audience (Left). John Geohegan did some splendid rope tricks; for example, if you cross your hands, then grab both ends of an open rope, and uncross your hands, a knot is formed. John had some card tricks as well, preserving the separation of suits, even as he riffle-shuffled the deck.



Allen Robnett coiled a very long chain into a coffee cup, and then let it spill out over the edge. When the coffee cup was at waist level, the height of the loop formed by the falling chain was a few inches (Left). When the cup was raised several feet higher, with the aid of a ladder, the increased energy of the drop pulled the loop considerably higher (Right).



Dave Thomas stuck a needle through a balloon, and demonstrated a slow electric-field antenna. Steve Brugge showed off some delightful gadgets he found at the Dollar store, as well as some fun gyroscopes, and a demo of pressure-induced combustion ($PV = nRT$). A fine time was had by all.



Bruce Lacey's Response to January Report

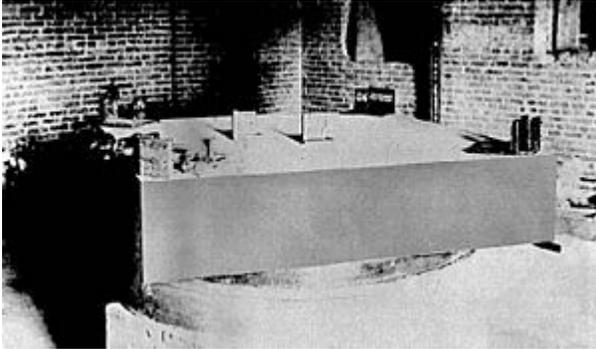
Bruce Lacey was invited to respond to the article about his December talk which appeared in the January issue of NMSR Reports. Here follows his response.

By Bruce Lacey

The most important message I try to convey is - demand evidence. When something is claimed to be based on science, you have to understand this doesn't always mean - proven by factual data. This past century real science has been hijacked by the theoretical. Nikola Tesla sounded the alarm to this happening more the 80 years ago, when he stated: *"Today's scientists have substituted mathematics for experiments, and they wander off through equation after equation, and eventually build a structure which has no relation to reality."* — *Mechanics and Inventions, July, 1934*

And that, my friends.... is exactly the situation we find ourselves into today. Our reality is not a reflection of our beliefs, because our beliefs are based on pseudoscience. The basic concepts of the Heliocentric model directly contradicts the known "laws" that are firmly grounded in empirical based experiments. These are not debatable.

Let's start with motion. There seemed to be some alluding that I thought Einstein believed the earth to be motionless. I can't time travel into Einsteins mind, so I can honestly say - I don't know what he thought. I can assume, since he developed his Special theory to offset the data of the Michelson Morley - that he must have believed in Heliocentrism.



This is nothing but a red-herring — soaring around the interpretation of the data. It doesn't matter if Einstein, Wolfson, Hubble, or any other person I quoted - believed the earth to be stationary. It doesn't matter the excuses or math-a-magic (transform equations) that have been applied to the experiment, so it would conform to the heliocentric model. The only thing that matters - is - What did the data conclude? It concluded the Earth was motionless - as did - every interferometer test conducted afterwards.

Many will state that the M/M only disproved the aether - and not the motion of earth, I have showed, "renowned" heliocentric's, admit this. The experiment was more than detecting the aether - they were trying to detect earth's motion - and failed.

Even today, people such as John D. Norton Professor at Pittsburg University make it perfectly clear as to what the M/M experiment was seeking to do.:

"The result was negative. Michelson and Morley found shifts in the interference fringes, but they were very much smaller than the size of the effect expected from the known orbital motion of the earth."

Mind reflect, "expected known orbital motion of the earth?"

I feel there is no room for a different interpretation. They were measuring for the velocity of earth around the sun - and failed to do so. Doesn't matter the "reasoning" or the excuse given.. What matters is - What the data proved.

Professor John D. Norton:
"The assumption of uniformity has much to be said in its favour...Such a condition would imply that we occupy a unique position in the universe, analogous, in a sense, to the ancient conception of a central earth. The hypothesis cannot be disproved but it is unwelcome and would be accepted only as a last resort in order to save the phenomena. Therefore, we disregard this possibility and consider the alternative."

So - in other words - he states that the empirically collected data is proving the earth to be motionless - but, he as others, will disregard what the empirical science is reflecting - and instead - believe in a theoretical or philosophical idea"

Einstein does the same exact thing when he stated:
"...if we admit Michelson's null result as a fact. This was the first path which led me to the special theory of relativity. Since then I have come to believe that the motion of the Earth cannot be detected by any optical experiment, though the Earth is revolving around the Sun."

Mind reflect: "Though the Earth is revolving around the sun"

Being a true scientist, how could he have arrived at that assumption? How could he deny the entire premise of science and experimentation so directly? His philosophy should never be considered the answer to his scientific endeavors, especially when they completely contradict the observable and repeatable evidence. Is this not, the reasoning behind the scientific method? It stifles out our prejudices - and holds the empirical data as the bringer of truth.

This goes back to me stating that our current state of the sciences, could actually be considered a religion. I define it as, when Philosophy took precedence over empirically driven data.

Einstein decided to go with his world view...his philosophy... instead of accepting what the empirical backed science was telling him. Einstein created the Special Theory, which was "the answer" to the "null" result from the M/M.He specifically states, "No Terrestrial experiment can prove Earth's motion".

He had to know about Foucault's pendulum, Eratosthenes and other pseudoscientific proofs that the earth is in motion. I have a hard time contemplating the concept he was only referring to optics, when using the word Terrestrial.

It's a catch-22.. If you could prove the Earth's motion, then the entire theory of relativity gets debunked. Yet, time and time again.. People will state aberration, parallax, pendulum, and many other observations.. prove earth is in motion. Completely contradicting what Einstein based his theories on. Even the most scientific of people fail to see this logic.

Many also don't understand how the M/M experiment got helio-centri-fied. They concluded that the apparatus was contracting in length. Another unproven, unseen, unrepeatable phenomenon where time, space, and light are being warped by the apparatus's contraction. The mathe-magic bandage, is what's referred to as, the Lorentz Contraction.

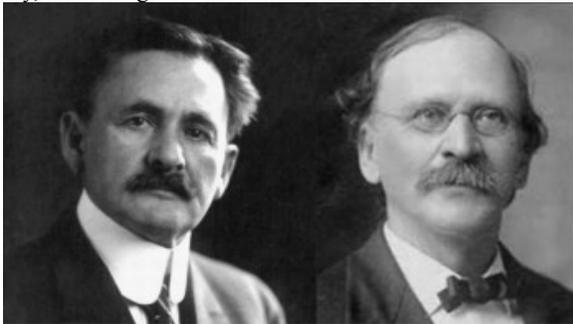
Many heliocentric's like to throw out the Occam's Razor argument. This is exactly the opposite. Instead of taking the data at face value, they invent this transform equation that is based on the "warp of time and space" to mathemagically conform these experiments to agree with the heliocentric philosophy. To me, the excuses amount to little more than deception and lies.

George Ellis, a famous cosmologist, in Scientific American, "Thinking Globally, Acting Universally", October 1995 Stated:

"People need to be aware that there is a range of models that could explain the observations," Ellis argues. "For in - stance, I can construct you a spherically symmetrical universe with Earth at its center, and you cannot disprove it based on observations." Ellis has published a paper on this. "You can only exclude it on philosophical grounds. In my view there is absolutely nothing wrong in that. What I want to bring into the open is the fact that we are using philosophical criteria in choosing our models. A lot of cosmology tries to hide that."

Another not so classic - example - of someone trying to explain the philosophical hold that has captured our academics. He, like the others, clearly state there is no evidence for the motion of Earth - therefor the heliocentric model is not one based on Scientific understanding but one of beliefs that are philosophical in nature. Ellis seems to have failed in his attempt to bring this knowledge to the public.

The M/M Experiment shows the methods and tactics that are used. It's the old adage "If the facts don't reflect the theory, then change the facts"



This trend doesn't stop with the M/M - is goes into all things Flat Earth. The physics of water state it will find and maintain level — That data is ignored and replaced with mathemagical gravity. The laws of Entropy are violated because a vacuum can't exist next to a non-vacuum/pressure without a barrier. Around every corner you will find elaborate hood-winks - that have manipulated the fundamental nature of humanity.

Nikola Tesla sums it all up brilliantly, when in 1935, he was talking to the New York Times about the Theory of Relativity:

"a beggar wrapped in purple whom ignorant people take for a king" and "a mass of error and deceptive ideas violently opposed to the teachings of great men of science of the past and even to common sense... the theory wraps all these errors and fallacies and clothes them in magnificent mathematical garb which fascinates, dazzles and makes people blind to the underlying errors.... its exponents are very brilliant men, but they are metaphysicists rather than scientists. Not a single one of the relativity propositions has been proved."

Closure

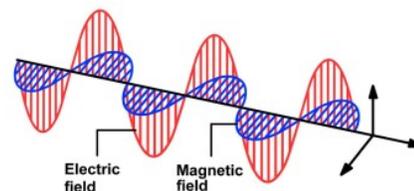
by Dave Thomas

It's evident that Bruce Lacey *thinks* he has found a fatal flaw in heliocentrism; however, he is mistaken. He argues that the Michelson-Morley (M-M) null result means that the Earth really is motionless in space, and that Einstein's Relativity was simply a desperate attempt to explain away the null result of the M-M experiment.

While related to the findings of M-M, Einstein's main pathway to relativity was trying to reconcile James Clerk Maxwell's laws of electromagnetism with transmission of light waves. Two of Maxwell's equations can be combined to predict electromagnetic waves, traveling at a constant speed of $1/\sqrt{(\epsilon_0\mu_0)}$, where ϵ_0 and μ_0 are physical constants relating to electricity and magnetism. The speed of the electromagnetic waves didn't depend at all upon the motion of the source or the observer, which led some to think that these waves were carried by a special medium, the *aether*, in which the speed of waves would remain constant.

Given electrons moving back and forth at a given frequency, electromagnetic waves of speed $c \sim 300,000,000$ m/sec are the result. The electrons could be moving up and down, forward and backward, or left and right; Maxwell's laws of physics say their radiated waves all move at speed c . Imagine if the antenna holding the electrons is on a fast train, and an observer outside the train measures its waves. Maxwell's laws state clearly that the electrons wiggling back and forth, even with an extra left-to-right motion caused by movement of the train, **still create waves going at speed c** . Einstein's brilliant formulation of relativity was based on the insight that the laws of physics must be the same in all (inertial) reference frames; as a result, the speed of light, calculated with Maxwell's Laws, must be the same for all moving sources and/or observers. Einstein realized that for this to work, the concept of absolute time had to be abandoned – events that were simultaneous in one reference frame might occur at separate times in a different reference frame.

This approach happened to explain the null result of the M-M experiment. Here's an analogy I hope will be of use to Bruce Lacey. Let's imagine that a clever car manufacturer has invented a windshield that measures the speed of droplets of rain as they impact the windshield. If the car is stationary, the speed of the drops is "normal." As the car speeds up, it will run into the oncoming droplets, making them impact the windshield at a higher speed. One could measure the increased speed of the droplets, and infer the speed of the car itself. This is an analogy of what the M-M experiment was looking for, with the "aether wind" replacing the droplets. Now, imagine that, for some very odd reason, the speed of the raindrops on the windshield was not affected at all by the motion of the car. Even at high speed, with the drops coming in almost horizontally, they still hit the windshield with the same speed as if the car wasn't moving at all. Could you measure the speed of the car from the impact speeds of the droplets? No! There would be a "null result" for the speed of the car.



While the speed of raindrops would, of course, depend on the speed of the car, the speed of light does *not* do so. And so, the null result of M-M does *not* mean the earth is motionless. Earth's motion is confirmed by numerous other experiments, including stellar parallax and stellar aberration, which Einstein himself explained correctly, for the first time. There is no paradox; the earth moves, the laws of physics are the same in all reference frames, and lightspeed doesn't depend on the motions of source or observer.

Since the December meeting, Bruce Lacey has made numerous comments in conversations on Facebook. Here is one of the most revealing: "Nothing in the damn sky will actually prove what shape the Earth is. The only reason you people even talk about it, is because you can't 'talk about' the Flatness of EARTH.. so you look into the sky. ... That is what Globies do.. Okay.. Stop talking about the f**ing stars, planets, sun, moon and everything else that is in the sky... Get on the GROUND..." This reveals an incredibly unscientific outlook. Of course the motions of the sun, moon and stars will differ if the world is round versus flat. The sun must stay above the flat earth, or else it will be night all over the planet. And that means the sun can't sink behind the horizon of the flat earth. The flat earth model *can* be tested, and it fails, abysmally.



This sunset is **impossible** on Flat Earth

How did Lacey respond to Nick Soutters's Flat Earth Challenge? Soutter made every effort to accommodate Lacey's concerns, letting him choose the experiment, the location, and his share of the judges, but Lacey responded negatively, saying "Sorry, but you have the wrong person.. I can go out and prove the Flat Earth all day..Just as you can.. You don't need to offer 10,000.. How about you keep your 10g's and do a test that proves water can stick and conform to spinning objects.. Go out and prove water is curving.. Find that bendy water.. You can be the guy who shut the Flat Earth Movement down...I will be waiting a long time for that.. There is a reason the movement continues to grow daily.. That is because there is ZERO science backing up the magical spinning ball theory."

Nick's reply: "The \$10,000 is my personal money, and while it's something I can afford, it's not a small chunk of change. Rest assured I'm not going to go through the trouble of setting

this up, vetting it, getting the contracts, lawyers and scientists, not to mention flying across the country, without taking every available precaution to make sure that this test is reliable and completely accurate. I'm sure neither side wants results that could be undermined.... But since (that I can tell) we've been reasonable, and handled every objection, offered him \$10,000 at absolutely no risk to him, and since he appears to be almost running away from this challenge.... Well unfortunately **this makes it look a lot like he isn't sure the experiment will work in his favor (and maybe never was)**... Every flat earther tells me it's easy, that I can do it myself (I've tried, many, many times, never been able to do it), and while dozens – like you – have told me that they could easily do it, prove it with me, not a single one has every done it, they all back out, even when offered \$10,000 to do it. Any idea why?"

February Skeptiverse Haiku!—by Keith Thomas

Supplement sellers Are boasting about boosting Our cellular health.	Today's herbalists Are offering some brand-new Old-time remedies.
Scientist's say there's Just no hope/For Scantilli's Silly telescope.	Might flat-earth flight paths Generally earn higher Frequent-flyer miles?
Hobbs, New Mexico? Perhaps it is no wonder That Mary now weeps!	Computer graphic Movie megasharks must need Many megabytes!

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.

Thanks to: John Covan, Eddy Jacobs, Debbie Thomas, Keith Thomas, and all our Puzzlers!

<p>NMSR Reports Vol. 25, No. 2 February 2019 David E. Thomas, Editor (505) 410-0753 801 Fitch Ave, Socorro NM 87801</p>			
<p>February Meeting MICK WEST Weds. Feb. 13th 7:00 PM</p>	<p>IN THIS ISSUE: Future Meetings Announced New Puzzles! January Meeting: Science & Magic Bruce Lacey final arguments, Dave Thomas Closure February Skeptiverse Haiku</p>		
	<p>Empty space for notices or advertisements.</p>		