



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 © 2022

MARCH MEETING:
**NEW MEXICANS FOR SCIENCE AND
 REASON will hear**
Dr. Alan Zelicoff on
**“Long COVID - Some recent,
 unexpected, and troubling findings”**
=>March 9th, 2022 7:00PM<=
=>Attend online!<=

FUTURE MEETINGS ANNOUNCED!

March 9th, 2022 NMSR Meeting:
**Al Zelicoff, “Long COVID - Some recent,
 unexpected, and troubling findings”**



Five-time NMSR speaker Al Zelicoff will grace us with a Covid-19 Update at our March 9th meeting. Al, formerly at Sandia, is a renowned expert on physics, medicine, biological weapons, pandemics, and more. In a talk to NMSR about bird flu in 2006, he said “Why do we always get it wrong? And what can we do about it? It's a combination of no data, bad science, poor statistical understanding, and failure to learn from history.” He decried the lack of awareness of statistics among many medical doctors, who often generalize a few observations of a particular syndrome over their careers into "In case after case after case..."

Wednesday's talk will be about Long COVID, and recent findings that are both puzzling, and cause for concern. This will be a good one!

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. Then, tune in to Zoom at **7:00 PM March 9th, 2022**, On Line! This will be an interesting meeting, don't miss it!

April 13th, 2022 NMSR Meeting: TBD

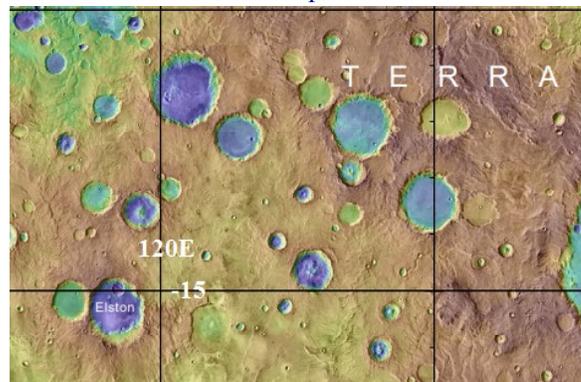
Got an idea for a speaker, or topic? Send them along to Dave Thomas for consideration.

Wolfgang Elston Honored Via Naming of Martian Crater



The late Wolfgang Elston, longtime NMSR member, has been honored with the naming of a large Martian crater after him. KRQE News reported on January 17th, 2022 that “From now on, when someone looks at a map of the planet Mars, they will see a massive crater that would span from Grants to Albuquerque named for Wolfgang Elston. Elston died in 2016, with his work mapping Mars just a small part of his legacy. ... Dr. Larry Crumpler, a grad student of Elston's in the 70s, said ‘He was a sort of down-to-Earth sort of person who actually knew what it took to be a scientist.’ ... Crumpler is also on the team using the Perseverance Rover right now to map Mars and collect rock samples.” Crumpler, who's on the staff of the Museum of Natural History, spoke to NMSR in October 2021.

<https://www.krqe.com/news/space-news/longtime-unm-professor-honored-on-latest-map-of-mars/>



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:

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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 = W, X = F.

Bonus Puzzle Clue: Men's combined age = women's + 10.

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, March 9th at 7PM, on Zoom!**



PUZZLE TIME!

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

Cyber-Cypher: MARCH 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.

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

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

FEBRUARY CYPHER SOLUTION

"I'M SURE THE UNIVERSE IS FULL OF INTELLIGENT LIFE. IT'S JUST BEEN TOO INTELLIGENT TO COME HERE." - ARTHUR C. CLARKE

Esteemed February Code Crackers: Mike Arms* and Austin Moede*!

*Secret Word: "MOCKING EARTH FLUBS"

SOCORRO STUMPER

Need more Secret Word Cryptograms?

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

March Bonus: "A Marriage Ensemble"

Submitted by Dave Thomas

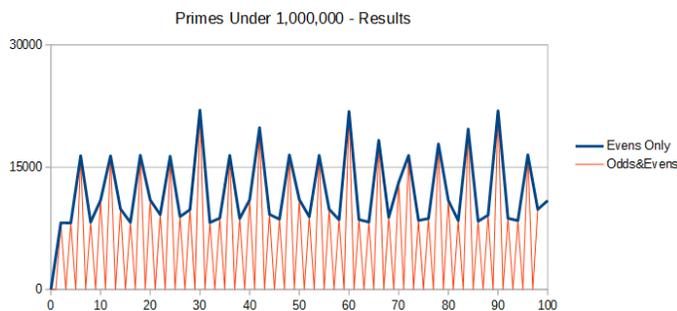
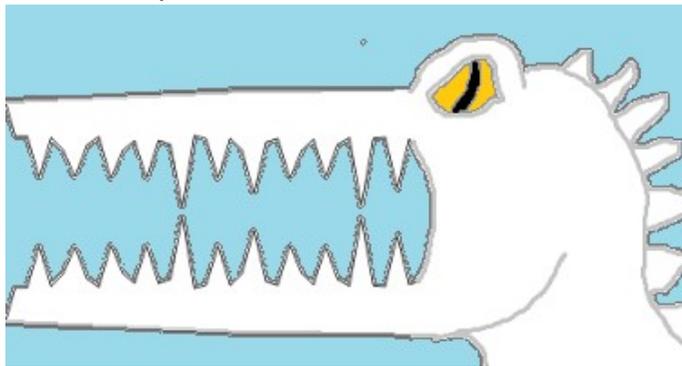
Dan and Terry are two husbands. Their wives are Betty and Julia, not necessarily in that order. The combined ages of the foursome is 106 years. Each husband is 5 years older than his wife. Terry is 4 years younger than Dan. The combined ages of Dan and Betty is 53 years.

The March Bonus:

Which husband is married to which wife? How old is each individual?

February Bonus Solution: “Godzilla Primes”

Submitted by Dave Thomas



The graph above shows the occurrence of various differences between all the prime numbers below 1,000,000. There are only two pairs with a difference of 1 (1,2 and 2,3); many pairs with a difference of 2 (3,5; 5,7; 11,13; etc.); only one pair with a difference of 3 (2,5); and many pairs with differences of 4, 6, 8, and so on. Generally, the odds counts are all less than that for the difference of one. The graph shows all differences (thin:odds, and thick:evens).

The February Bonus: The plot of even differences looks like Godzilla’s teeth. The differences at the tip of each “tooth” are multiples of a single number. **What is that number?**

Answer: 6.

Congrats to: Earl Dombroski!

**February 9th, 2022 NMSR Meeting:
Dr. Pace VanDevender on “Magnetized Quark Nuggets and Dark Matter”**

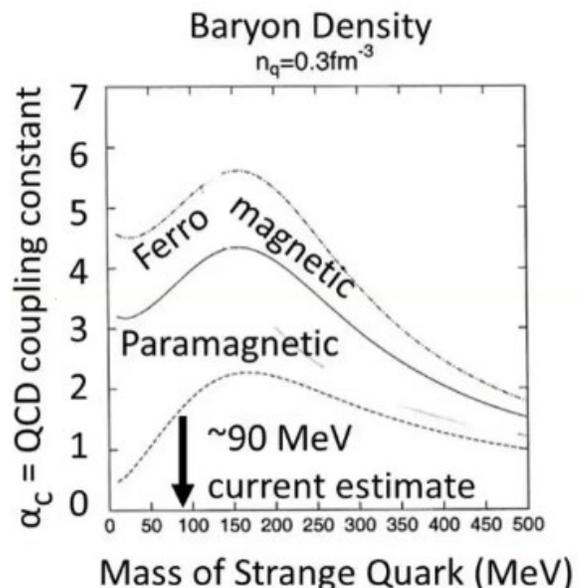
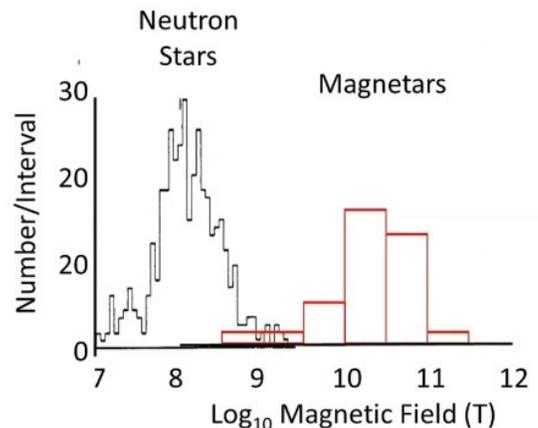
Pace VanDevender, formerly at Sandia National Laboratory, began his talk by mentioning two earlier talks he’s given to NMSR. In 2005, he discussed some tantalizing conjectures to explain ball lightning, and in 2017, he expanded on this theme, and connected it to something called “Magnetic Quark Nuggets.” Pace remarked that the current consensus explanation for matter, the Standard Model of Physics, does not explain Dark Matter, and that explanations for Dark Matter (DM) must go beyond the Standard Model. Pace explained that the existence of consensus science provides a vehicle for obtaining billions

of dollars in funding. But, what if the consensus hypothesis is wrong? Pace mentioned NMSR’s January meeting in this regard, commenting that the old consensus view that cancer is completely explainable with just viruses (and genetics) was, in fact, wrong, and that billions of reasearch dollars were wasted.

Dark Matter is beyond the current Standard Model (and thus, can be called BSM). In 1984, a Princeton physicist, Ed Witten, proposed that DM could be explained within the Standard Model, with a curious entity known as a Quark Nugget.



It turns out that lone neutrons are unstable, but neutrons surrounded by protons and other neutrons (inside atomic nuclei) are quite stable. Similarly, Pace said, the Witten model says that large aggregates of up, down and strange quarks could be stable: Quark Nuggets. Other authors started looking into quark nuggets, but no one included consideration of their magnetic fields, until Toshitaka Tatsumi’s paper arguing that the super-strong magnetic fields of magnetars may be due to a ferromagnetic fluid of quark nuggets: Magnetic Quark Nuggets (MQNs).



If the Quantum Chromodynamic Coupling Constant, α_c , is on the order of 4, that would explain both magnetars, and MQNs (see preceding graph). This important parameter is still undetermined.

A number of papers are available at the web site for Pace's MQN project, at mqncollaboration.com. Pace explained his hypothesis, that MQN aggregation rates outpace their decay rates, and they should thus be found in the universe. And, just as the Earth's magnetic field is much larger than Earth itself, the magnetic fields of tiny MQNs would react to macroscopic things like magnetite. A nugget reaching the Earth would not just fall in to the core, but might interact with, and be trapped by, magnetite or other strongly magnetic rocks. A quark nugget with mass on the order of a kilogram would be incredibly tiny (about a micron in diameter), due to the very high density of the material.

Pace discussed three candidates for detection of MQNs: a 12-meter crater discovered in Nicaragua in 2014 (estimated mass 1000 kg), a small "explosion" that threw a beachgoer several feet in Rhode Island in 2015 (estimated mass 50 μ g), and a fatality in India in 2016 (estimated as a 10kg mass). He explained that, as magnetite ore is processed, any MQNs therein would grab onto the steel crusher blades (much more ferromagnetic than magnetite ore), and would eventually could be concentrated in ore-processing equipment. Pace discussed ongoing experiments to measure these predicted effects. Because the research won't be published for a few more months, NMSR is holding release of the YouTube video of this talk until publication happens. Stay tuned for an announcement of the video release. The results are tantalizing!

NMSR thanks Pace for a fascinating talk.

Abstract: *This talk updates research on Magnetized Quark Nuggets (MQNs), which are a candidate for dark matter and are consistent with the Standard Model of Physics and with the Standard Model of Cosmology. The initial and motivating observation of extreme (20 minute duration) ball lightning was presented to NMSR in 2005.*

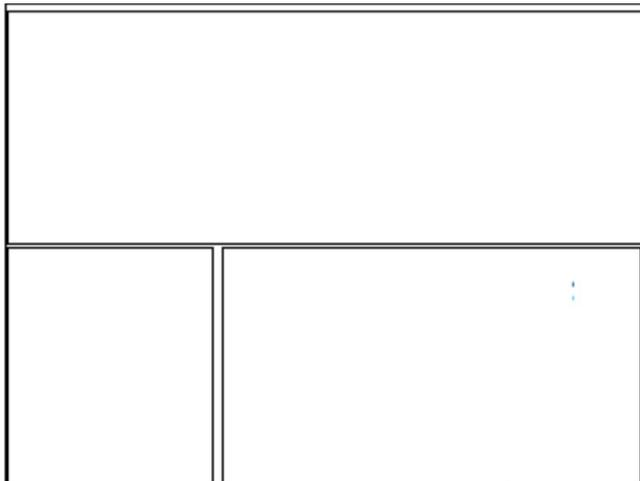
The association of extreme ball lightning with MQNs, the

interaction of MQNs with normal matter, and a proposal to instrument the Great Salt Lake to record MQN impacts were presented to NMSR in 2017. This talk briefly summarizes subsequently published results of 1) the Great Salt Lake experiment, 2) the first-principles calculations of the formation and evolving mass distribution of MQNs, 3) the theory of interaction with normal matter, 4) observations of non-meteorite craters as evidence of MQN impacts, and 5) the potential of observing MQNs by their radio-frequency emissions with a three-satellite constellation beyond geosync orbit. More introductory information and links to the published papers can be found at mqncollaboration.com. However, most of the talk will be devoted to the accumulation of MQNs in magnetite deposits, where the magnetic force prevents the gravitational force from pulling MQNs to the center of the Earth after MQNs are slowed by passage through overburden. We show that mining of magnetite and taconite would cause MQNs to be accumulated in the bottoms of the furnaces that reprocess the steel from ore-processing machines. Three such furnaces should have the MQNs accumulated in several gigatons of ore during the last 1.8 billion years. We present scans of the magnetic field of these three furnaces. The scans are easily distinguishable from control scans of unexposed steel and are consistent with hundreds of MQNs residing in these furnaces. Negotiations are underway to collect some of these presumptive MQNs for laboratory experiments and applications. As before, alternative explanations and other critical comments from the audience would be appreciated as preliminary peer review of these unpublished results.

As usual, **videos of past meetings are available at <http://www.nmsr.org/meetings.htm>.**

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, and all of our Puzzlers!



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