



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

OCTOBER MEETING:
NEW MEXICANS FOR SCIENCE
AND REASON will hear
Allen Robnett
with “Astronomy: A Humanist
Perspective”
7:00 PM Oct. 10th, 2018
==>CNM MAIN CAMPUS,
Student Resource Center<==
==>Room 204<==
Bring a friend!

nothing but tiny photons, streaming for thousands, millions, and even billions of years, only to be annihilated by contact with our eyes or instruments.

Join us at 7:00 PM October 10th, 2018, CNM MAIN CAMPUS, Student Resource Center, Room 204.

November 14th, 2018 NMSR Meeting:
Dave Thomas, on
“Scientific Animation”

At our November 14th meeting, Dave Thomas will present several examples of Scientific Animation, e.g. using computer-generated movies to illustrate complex phenomena, optical illusions, and more. Dave will discuss and show his home-brewed animations for:

- **Special Relativity and the Twin Paradox**
- **Seismic Refraction - “Seeing” Underground**
- **Optical Illusions – Peripheral Vision**
- **Isochron and Concordia Dating Methods**
- **Map Projections, Day vs Night, Seasons**
- **Path of the Sun: Globe vs. Flat Earth**
- **3D Shape Visualizations**
- **9/11 Collapse Simulation**
- **Curved Mirror Reflections**
- **Dancing Anagrams**

FUTURE MEETINGS ANNOUNCED

October 10th, 2018 NMSR Meeting:
Allen Robnett, on
“Astronomy: A
Humanist Perspective”



It is impossible to digest the Universe in an hour and a half, so we will just savor the flavor. We will concentrate on how clumps of carbon, nitrogen, oxygen, hydrogen, calcium, etc managed, after becoming aware of themselves, to become intimately aware of the nature of objects that

are unimaginably far away. And all of this was done using

Socorro Saucer Followup!

UFO blogger Kevin Randle has followed up on some of the Socorro UFO Incident reports mentioned here, and has written about it at <http://kevinrandle.blogspot.com/>. He even found Bruno, and says “*I find this tale interesting and slightly disturbing, but I don’t believe this is the solution... which is not to say that Bruno and his pal weren’t blowing up barrels, or that he believes this solves Socorro. ...*”

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

801 Fitch Ave., Socorro, NM 87801
nmsrdave@swcp.com

John Covan, Vice-President

jmcovan@juno.com

Debbie Thomas, Treasurer

3205 Alcazar NE, Albuq., NM 87110
abqdebbie@comcast.net

Eddy Jacobs, Resident Neutron Generator

eddyjacobs88@gmail.com

Mark Fraser CNM Sponsor

ippon@earthlink.net

John Geohegan, Past President

jgeoh@swcp.com

Kim Johnson, Industrial Physicist

kimber@comcast.net

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: U = V, X = J.

Bonus Puzzle Clue: Turn the question on its head.

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., OCTOBER 10th, 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: OCTOBER 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.

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

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

SEPTEMBER CYPHER SOLUTION

"IF I COULD REMEMBER THE NAMES OF ALL THESE PARTICLES, I'D BE A BOTANIST." -- ENRICO FERMI, WINNER OF THE 1938 NOBEL PRIZE IN PHYSICS

Esteemed September Code Crackers: Mike Arms*, Terry Lauritsen* and Austin Moede*.

*Secret Word: "PUNISH LAZY ROTE"

SOCORRO STUMPER

Need more Secret Word Cryptograms?

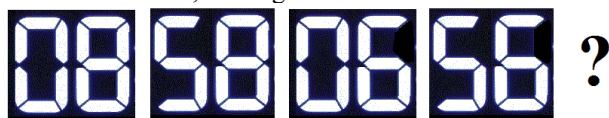
New puzzles every week at www.nmsr.org/SocorroStumper.htm



October Bonus: “What Comes Next?”

Submitted by Dave Thomas

Here are some values in a sequence. They appear one after the other, starting with the one on the left.



The October Bonus: What comes next?

September Bonus : Uphill is Downhill (On the Return Trip)

Submitted by Dave Thomas

A bicycling commuter can go 6 mph uphill, 8 mph on level road, and 12 mph downhill. It takes him 17 and a half minutes to get to work in the morning, and 12 and a half minutes to return home in the afternoon.

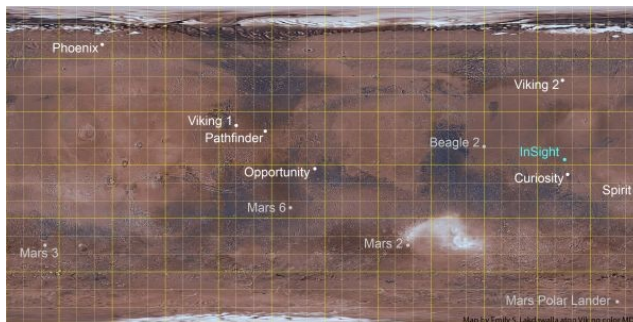
The September Bonus: (A) How far is it to work? (B) On the way to work, how many more miles are spent going uphill than are spent going downhill? (C) What are the minimum and maximum values of level riding possible?

ANSWER: (A) 2 miles. (B) 1 mile. (C) min level = 0, max = 1 mile.

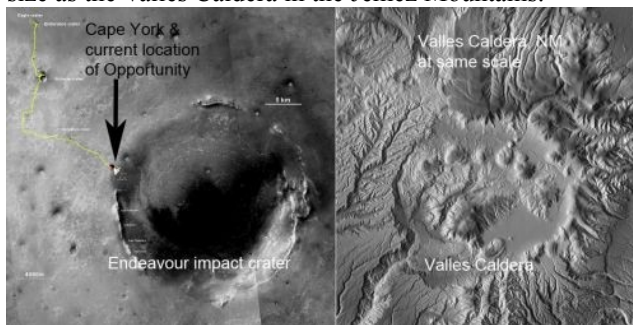
Congrats: Earl Dombroski (NM), Paul Braterman (UK), Mike Arms (NM), Allen Robnett (NM), Gene Aronson (NM).

September 12th, 2018 NMSR Meeting: Larry Crumpler, with News from Mars

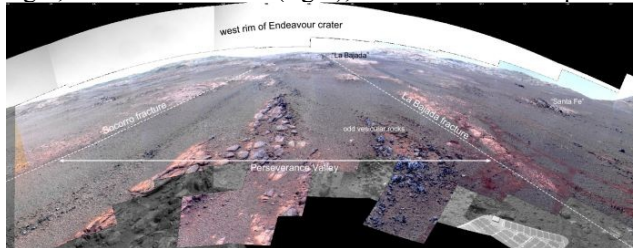
Our Sept. 12th speaker was scientist Larry Crumpler of the NM Museum of Natural History and Science. Larry talked about the accomplishments of the rovers he helped to deploy, and also what’s ahead for humans regarding the Red Planet.



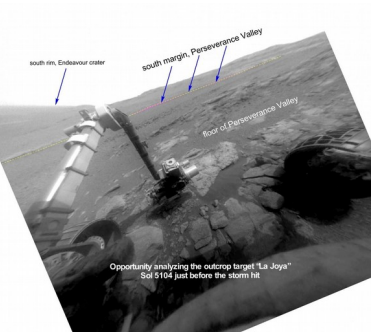
Larry showed the locations of previous missions to Mars. One of the active rovers he works with, Opportunity, is shown above. Below, it is shown on the rim of the Endeavor Impact Crater, which is about the same size as the Valles Caldera in the Jemez Mountains.



Larry and his colleagues have named several features near the Endeavor Crater for locations along New Mexico’s El Camino Real. The image below shows the Socorro Fracture to the left, the La Bajada Fracture to the right, and in the distance (right), the Santa Fe outcrop.



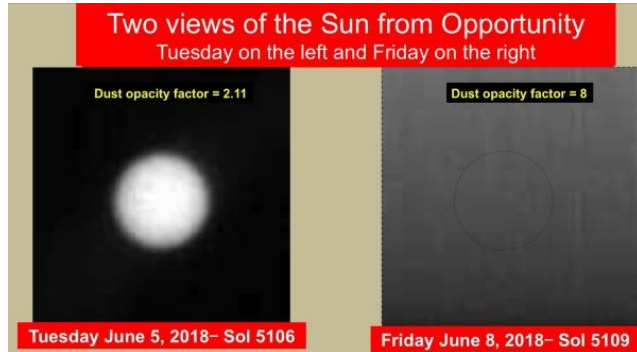
This image shows the “La Joya” outcrop, just before a massive dust storm affected the area last summer.



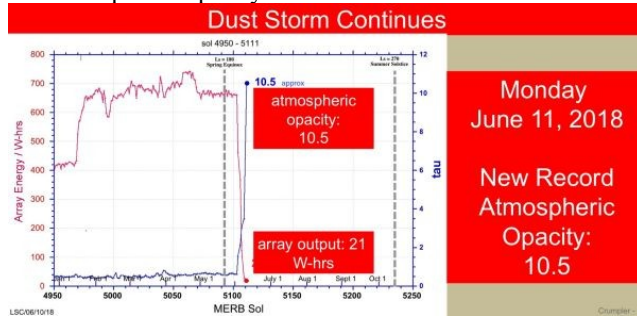
You can also find Bernalillo, Albuquerque and Tome near the Endeavor Crater on Mars.

The dust event was called a PEDE - “Planet-Encircling Dust Event”. In just a few

days, from June 5 to June 8, 2018, Opportunity's clear view of the sun was obstructed completely by swirls of Martian dust.



The graph below shows how the solar panel output (upper curve at left) plummeted to near zero, while the atmospheric opacity rose to a new record level of 10.5.



Without solar panel power, the rover has not made contact for over 70 days. The dust storm has long since subsided, but the rover's panels are still covered by dust. It will be several months before seasonal winds are expected to clear the panels of dust, and the rover's future is uncertain. Will it be able to resume operation? When it landed on Mars in 2004, it was expected to be a three-month mission. It has hung on for 14 years; perhaps it can hold on for just a bit longer on the red planet.



The picture above shows the dwindling sunlight over several days, as the rover was covered with dust.

Larry talked about upcoming missions to Mars, including Odyssey, the ESA Reconnaissance Orbiter, Maven, and the 2020 Science Rover, which will be equipped to test for signs of life. A Martian helicopter design was discussed – because of the very thin air on Mars, the wings are very large, and the payload quite small. The upcoming Insight mission will see seismometers deployed on Mars.

The barometric pressure on Mars is some 6 millibars. The atmosphere is mostly carbon dioxide. The rover's innards seem obsolete now – it runs on a PowerPC chip, and has a 1MB flash drive. There is still some volcanic activity, on the order of 10 million years between eruptions.

NMSR thanks Larry Crumpler for a fascinating presentation.

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 our Puzzlers!

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 David E. Thomas, Editor (505) 410-0753
 801 Fitch Ave, Socorro NM 87801

October Meeting:
 Allen Robnett,
 Astronomy: a
 Humanist Perspective
 Weds. Oct. 10th
 7:00 PM

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