



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 © 2023

SEPTEMBER MEETING:
NEW MEXICANS FOR SCIENCE AND REASON will hear
Dr. Frank Etscorn III,
Inventor of the Nicotine Patch
=>SEPTEMBER 20th, 2023
7:00PM<=
=>Attend online on Zoom!<=



FUTURE MEETINGS ANNOUNCED!

September 20th, 2023 NMSR Meeting: Dr. Frank T. Etscorn III, Inventor of the Nicotine Patch

Our September meeting will feature Dr. Frank T. Etscorn III, the inventor of the Nicotine Patch. It's a fascinating romp through the back alleys of the psychiatric profession. Join us at 7:00 PM on Wednesday September 20^h, on Zoom!



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.

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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.
- *John Geissman*
Professor of Paleomagnetism
- *Alan Hale*
Southwest Institute for Space Research

Cyber-Cypher Clue: W = J, Z = V.

Bonus Puzzle Clue: Consider Enumeration.

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 **September 13th at 7PM!**

Meetings, Live or Zoom? Vote!

www.roundorflat.com/covid19

**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: SEPTEMBER 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.

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" P M N X J P Y          J E          K M G O
J G G O H O O K C D V R          J G G O V O Z C P N
N X C P   D C H   E Q J O P Q O . " -   P M D O V
V C F G O C N O   C P H   Q X O K J E N   W M X P
Q X C G V O E   L M V C P R J
```

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

AUGUST CYPHER SOLUTION

"TO STEAL IDEAS FROM ONE PERSON IS PLAGIARISM;
TO STEAL FROM MANY IS RESEARCH." - STANDUP
COMEDIAN STEVEN WRIGHT

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

*Secret Word: "COHERING STUDY"

SOCORRO STUMPER**Need more Secret Word Cryptograms?**

New puzzles every week at

www.nmsr.org/SocorroStumper.htm

September Bonus: "Drop Mystery"

Submitted by K. Sengupta



Adam and Beau both have a whole number of chocolate drops, fruit drops and lemon drops, and the product of the number of each boy's of chocolate drops, fruit drops and lemon drops is 336. It is known that:

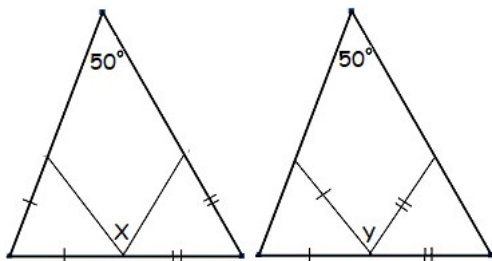
- (A) Each boy has fewer chocolate drops than fruit drops.
- (B) For each boy, the product of the number of chocolate drops and fruit drops equals the total number of candies he has.
- (C) Adam has more fruit drops than lemon drops.

The September Bonus: What is the number of chocolate drops, fruit drops and lemon drops possessed by each of Adam and Beau?

August Bonus Solution: “And The Angle Is...”

Submitted by Dave Thomas

Given triangles having two isosceles triangles at their bases, as shown.



The August Bonus: What is Angle X? And what is Angle Y?

Answer: $x = 65$ degrees, $y = 80$ degrees.

Congrats to: Earl Dombroski (NM), Paul Braterman (UK), K. Sengupta (INDIA).

August 9th 2023 NMSR Meeting: Joe Archbold and Dave Thomas, on “Looking Under the Hood of Wave/Particle Duality”

Our August meeting featured Joe Archbold and Dave Thomas, in a discussion on the puzzle of wave/particle duality. The video of this meeting is available at



<http://nmsr.org/nmsr-hot.htm#archbold>, as are digital versions of Joe’s paper, “*Quantum Mechanics: A Dublin Interpretation With a Solution to the Measurement Problem*,” Joe’s Powerpoint presentation, and Dave’s Powerpoint presentation.

Here follow some notes from Joe’s presentation:

Types of waves: Liquid, Sound, Magnetic, Tsunami and Earthquake

How do they collapse?

Along their entire front

There is one other type of wave: Quantum

How does it collapse? To a point.

Why is this the only wave that nature decides should collapse to a point and not along its entire front?

Well! We don’t know, we just see that nature does it that way.

We see it with our own eyes, when we send a particle through two slits it immediately appears on our screen.

Or does it?

Einstein had a problem with this idea.

If allowed the expansion of a quantum wave would eventually reach a dimension, where to collapse instantaneously, it would have to travel, one end to the middle faster than the speed of light.

However, since the experimental distances were relatively small, and the speed of light so fast, this objection was generally ignored.

Fine, no problem, let’s press on, So this particle lands at some apparent random spot on our screen. However, when we send thousands of these particles through our double slit, one at a time they are not random they form an interference pattern.

How does each particle know it should land in one of the cluster areas of particles and not between clusters of our interference pattern?

Well, to do so would require each particle to have more intelligence than we possess.

So, is there a way to rationally understand what’s happening, or only appears to be happening?

Can there be a way Nature does not have to change its whole Modus Operandum for a quantum wave to exist?

And the answer is a resounding –

YES. Nature does not have to change.

Therefore, let us treat QM waves just like all other waves and see what happens.

To quote Einstein-

*“The simplest possibility is that a light quantum transfers its entire energy to a single electron; we will assume this can occur. However, we will not exclude the possibility that the electrons absorb only a part of the energy of the light quanta”.**

** A. Einstein, “On a heuristic point of view concerning the production and transformation of light *Annalen der Physik* 17; 1905. p132-148.”*

Yes. Einstein was aware that, electrons while in a single orbital could store varying amounts of energy. When that electron received or loses a quanta of energy for that orbital it jumped to a higher or dropped to a lower orbital.

Therefore-

If in the path of the interfered wave, that exited our two slits, there was just one atom that was on the brink of jumping to a higher orbital, it would, when it received a small amount of energy from this extended wave, jump to the next orbital

indicating to us that a particle is now manifest on our screen. This is not the particle we sent through the double slit. It is a completely new particle with just a smidgen of the original particle in its make up.

In Conclusion:

Quantum Waves behave like all other waves. They can be added to and subtracted to other waves.

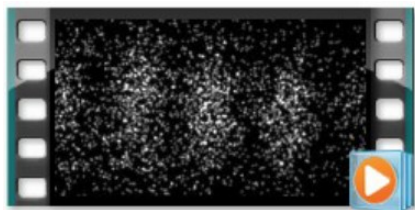
They can be split longitudinally as they encounter atoms or molecules.

And as demonstrated in chapter II of my Paper "A Dublin Interpretation of Quantum Mechanics" Quantum Waves can also be split laterally. Providing a logical explanation for many weird spin experiments.

Splits of Bosons, Fermions, and Molecules naturally are not the same as "The Splitting of the Atom" we are accustomed to in Nuclear Reactors and Bombs. This new split divides the forces evenly and maintains a balance of forces within each split. As opposed to shredding or ripping apart an atom.

We cannot detect Quantum Waves other than to convert portions of matter to matter with matter or energy. Therefore, this hidden matter in wave form and as virtual particles is an excellent candidate for Dark Matter.

Dave show some slides regarding QM and wave/particle duality. He showed a video of the "Feynmann Experiment", showing electrons hitting a screen blocked by a double slit. The video shows individual electrons light up as they impact the screen, just like particles. The video then transitions to a time lapse, which shows that after a sufficient time, the pattern of electron impacts grows into a classic interference pattern, something only waves produce.



Controlled double-slit electron diffraction_ electron buildup pattern.mp4

Dave discussed Richard Feynmann's interpretation of

this experiment. If no attention is given to which slit a given electron passes through, then the electrons are free to form an interference pattern. However, if you look at the electrons to see which slit they pass through, the photons of light you use to observe the electrons affect the electron pathways, preventing the wave interference pattern from forming. It's an application of the Heisenberg Uncertainty Principle – a change in the momentum of an electron precipitates change (uncertainty) in its position.

With regards to Joe's claim that photons of lower energies could "accumulate" until they possessed sufficient energy to, say, cause an electron to shift orbitals, Dave showed a QM transition for the ammonia molecule. This graph shows that there is a limited range of frequencies capable of triggering a transition. The sidelobes on left and right show that even lower or higher frequencies can trigger a transition, albeit with lower probabilities. But there's no way photons of very different energies can somehow add up to the required frequency.

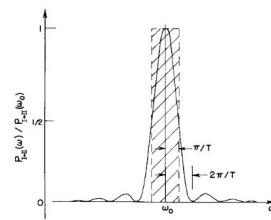


Fig. 9-7. Transition probability for the ammonia molecule as a function of frequency.

NMSR thanks Joe Archbold, Dave Thomas, and our Zoom attendees Coffey and Gerald, for a vigorous and interesting discussion. **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, Debbie Thomas, and all of our Puzzlers!

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