Ode to E Pluribus Unum for Sunday March 30 2025

Venus and the Triply Ultraviolet Sun

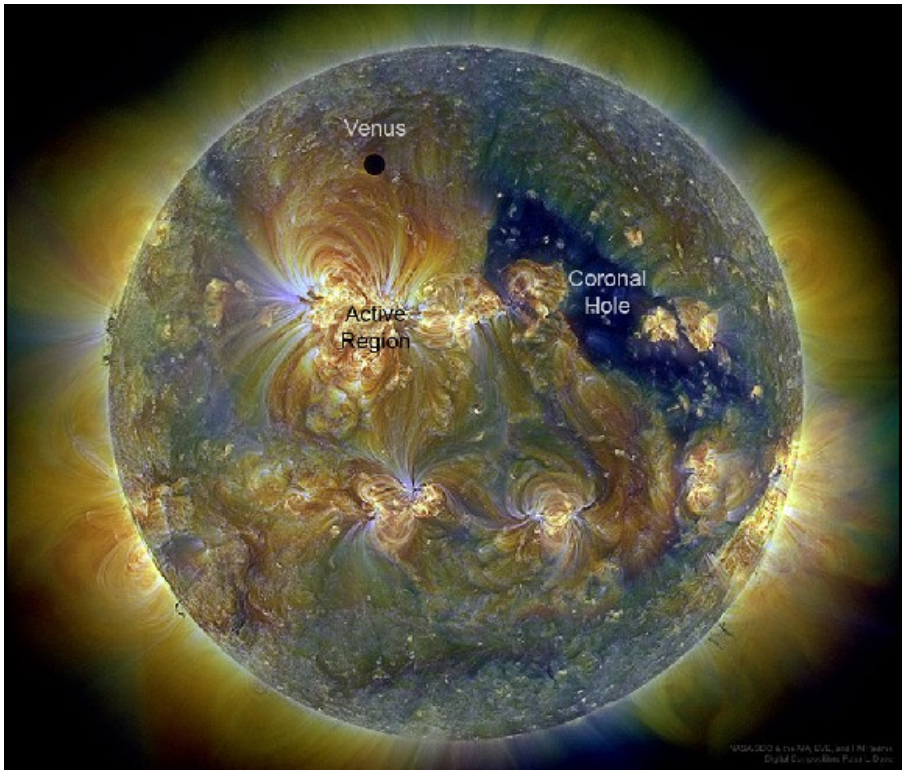

Image Credit: NASA/SDO & the AIA, EVE, and HMI teams; Digital Composition: Peter L. Dove

This was a very unusual type of solar eclipse. Typically, it is the Earth's Moon that eclipses the Sun.

In 2012, though, the planet Venus took a turn. Like a solar eclipse by the Moon, the phase of Venus became a continually thinner crescent as Venus became increasingly

better aligned with the Sun. Eventually the alignment became perfect and the phase of Venus dropped to zero. The dark spot of Venus crossed our parent star.

The situation could technically be labeled a Venusian annular eclipse with an extraordinarily large ring of fire. Pictured here during the occultation, the Sun was imaged in three colors of ultraviolet light by the Earth-orbiting Solar Dynamics Observatory, with the dark region toward the right corresponding to a coronal hole. Hours later, as Venus continued in its orbit, a slight crescent phase appeared again. The next Venusian transit across the Sun will occur in 2117.

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Apparently an RSVP to a wedding invitation "Maybe next time," isn't the correct response.

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Jester's Cap

Joe Horton,MD Looks at the Sunday 23 2025 Ode

Bird songs—Ever read The Nightingale's Song? It's quite good. Subject is Reagan's time in office and its effect on the lives of North, Poindexter, Webb, McCain, and McFarlane. The idea was that young nightingales don't sing until they hear their parents sing. That's the obvious metaphor for these guys acti9ns in the spadministration.

Longevity—and so it begins. The stuff of sci fi, literature, and some forms of reality. Part of the crux of aging deals with the ability of cells to divide—a necessity to repair tissue injuries. Turns out each time a cell divides, it uses up one or more adenine residues from the tail end of each chromosome. James Watson (of Watson and Crick fame) was the first to point out the obvious: sooner or later, you run out of adenine tail. Then it's game over for that cell. No more progeny. That has zero to do with methylation.

Novels and movies dealt with altering what goes into the head (via arteries) making it immortal. If you can do that, and if you have the ability to communicate with it, you've solved the problem. Of you can grow clones away from the rest of civilization for spare parts for your body. Kurzweil (and Neal Stephenson: Fall; or Dodge in Hell, one of his less good novels) look at it as uploading your consciousness so that it survives the death of your body—which, after all, is pretty much there to carry the head around. And entertain it.

The real philosophical question, though, is whether living forever is itself a good idea. I'm not sure it is. What happens when there are more mouths to feed than we have resources to make that food? In part, that question is the topic of a brilliant little

scientific history book entitled The Alchemy of Air. It begins with Crookes (inventor of the eponymous tube) receiving Britain's highest scientific honor. But instead of discussing his own work, he exhorts chemists to find ways of making fertilizers from the abundant nitrogen in the atmosphere. Nitrogen is relatively inert stuff, so pulling off that feat took smart guys quite a while to realize, at least on an industrial scale. Good book.

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Interesting Facts About Augusta National

andaluciagolf.com

There's just so much history and tradition, and Augusta National Golf Club's secrecy makes the business behind the Masters even more fascinating. So, today, we're going to do something different. Rather than an essay breaking down the economics of the TV deal or the logistical challenges of getting 50,000 people to a small town in Georgia, I'm going to share a laundry list of the things I find most interesting.

It'll be bullet-point-esque, and some things are quirky and random. But I'm confident you'll leave with an even bigger appreciation for golf's most iconic tournament. Enjoy!

- RFID Tags: Augusta provides each media member with a badge upon arrival. These badges get you access to the tournament and media center each day, and they also contain an RFID chip, allowing club officials to see where you're located at all times.
- Making The Cut ($$): This year's Masters is expected to award $18 million in prize money, with the winner receiving the largest check at $3.2 million. However, unlike most other golf tournaments, which do not provide prize money to players who don't make the cut, even the golfers who head home on Friday night will still receive a $10,000 check.
- Home Rentals: Homes in Augusta, Georgia, command insane rates during the Masters. A 5-bedroom home rented by players, for instance, costs $30,000 to

$70,000 for the week, and brands like Nike (or billionaire attendees) often pay six figures for bigger homes. But here's the most interesting part — the IRS has a special exemption in the tax code called "The Augusta Rule," allowing homeowners to rent out their homes for 14 days per year without paying taxes on the income. This rule was initially put in place for Augusta residents and is now available to anyone in the United States.

- Merchandise Sales: The Masters will do about $70 million in merchandise sales this week alone. That's $10 million per day, $1 million per hour, $16,000 per minute, or $277 per second that the store is open. The reason this number is so high is because Augusta National artificially increases demand by only allowing people to buy official merchandise on-site, aka no online sales. This creates huge lines, and it's common to see people paying $5,000+ at checkout, often buying things for family and friends.
- Lottery Tickets: The Masters leaves a lot of money on the table with tickets. That's because rather than selling them to the highest bidder in the open market, Augusta selects attendees each year through a lottery system. It's estimated you only have a 0.55% chance of winning — I've applied every year for the last ten years and haven't won — and you don't get to pick which day you attend. But if you do get selected, you'll save a lot of money, as daily passes purchased through the lottery cost $100 to $140, while daily passes on the secondary market will often cost $1,000 to $2,000.
- Land Value: Augusta was purchased for $70,000 in 1931. And even if we adjust for inflation at $1.4 million, today's assessed valued of $200 million is a 14,000% gain.
- Augusta's Expansion: Speaking of land value, Augusta National is expanding. They have spent more than $200 million through an array of limited-liability companies (LLCs) over the last four years, acquiring 100+ properties and adding 270+ acres of land. Augusta has purchased nearby strip malls, restaurants, apartment complexes, and homes, and they often pay 3-4x their actual value. Some of this land has gone towards parking lots and hospitality venues, but the rumor is that Augusta wants to build a second golf course and a private exit off the highway directly into the club.
- Map & Flag: Augusta is debuting a new premium hospitality offering this year called "Map & Flag." Guests will receive a week-long tournament badge and have access to all-inclusive food and drinks. There will be dozens of TVs and even a private merchandise shop to save people time. However, I think this is the best example of Augusta's pricing power. The venue isn't even at Augusta National — it's down the street in a renovated shopping center they purchased for $26 million in 2020 — yet Augusta is charging people $17,000 per ticket, and they have completely sold out.

- Cheap Concessions: Three things in life are certain — death, taxes, and cheap concessions at the Masters. From $1.50 pimento cheese sandwiches to $5 beers, the Masters intentionally keeps prices low to ensure fans have a good time. And even if you wanted to test *every single item* on the menu, that would only cost you $66.
- Beer Sales: Speaking of cheap concession prices, don't expect to buy beer until 11 am on Sunday. The previous rule was 12:30 pm — the idea was that no one would drink until church was complete — but the rule was pushed 90 minutes forward in 2020.
- The Green Jacket: The Green Jacket tradition started in 1937 when Augusta bought the jackets from Brooks Uniform Co. so Masters visitors could easily find someone on the course who had accurate information about the tournament. Every Masters winner now gets a custom-fit jacket. They get to take it home for a year, but then they must return it to the clubhouse, and it can only be worn on property. My craziest green jacket story is that someone found a green jacket in a Canadian thrift story in 1994. They purchased it for $5, and it later sold at auction for $140,000. Not bad.
- Details Matter: Augusta National is incredibly precise with *everything* at the Masters. Magnolia Lane is exactly 330 yards long and has 61 Magnolia trees on each side. The clubhouse has a wine cellar with 30+ pages of the world's most exclusive wines. Employees study where each player's locker is located beforehand. The food is intentionally wrapped in green packaging, so it can't be seen on TV if someone litters. The fairways are cut to 3/8". The greens won't be longer than 1/8", and the grounds crew is so good that they can replace entire pieces of sod within just 15 minutes.
- Champions Dinner: We all know Augusta gathers all previous Masters winners for a champions dinner every Tuesday before the tournament starts. The previous year's winner gets to pick the menu — my favorite is a 21-year-old Tiger Woods making everyone eat cheeseburgers, french fries, and milkshakes. And while Augusta National provides the chef and service crew, they make the prior winner pay for the meal.
- Media Rights: The Masters has the most unique TV deal in sports history. Rather than selling the rights to a large network for hundreds of millions of dollars, they give the rights away to ESPN and CBS for free. It's a year-to-year handshake deal. There is no on-course sponsorship signage, and the Masters only works with a handful of blue-chip brands each year, giving them just 3-4 minutes of commercial time each hour.
- Tax Status: Unlike most golf clubs, which are non-profits, Augusta National is registered as a for-profit corporation. This requires them to pay more in taxes, but they do it anyway because it means they don't have to share their member

list, income, holdings expansion plans, or anything else. They value privacy more.

- Private Jets: More than 1,500 private jets will land in Augusta this week for the Masters, paying upwards of $3,000 in landing and parking fees. The public side of the airport will be busy, too, with Augusta seeing 6x more arrivals than normal — 5,000 in a typical week vs. 30,000 during Masters week. This requires 100+ extra employees.
- Landscaping Perfection: It's estimated Augusta spends tens of millions of dollars annually on landscaping. However, the course's most impressive feature might be the SubAir systems located beneath each green. These systems keep greens consistent, sucking up water when it rains and adding moisture when it's hot. Even crazier, Augusta put them under the walkways after a patron slipped and fell a few years back.
- Eisenhower Cabin: Dwight D. Eisenhower is the only U.S. president ever to become a member of Augusta National. He never actually attended the Masters, but Eisenhower made 29 trips to the property, playing 210 rounds, during his eight-year term as president. Even better? The Secret Service worked with the club to build a safe place for him to stay, called Eisenhower Cabin, which is still used on the property today.
- Ronald Reagan: Speaking of Eisenhower Cabin, there's a crazy story of when President Reagan vacationed at Augusta in 1983. He stayed at the cabin since the Secret Service had already built it for maximum protection. But one day, when he was out on the course, a man smashed through the gate with a gun and tried to hold him hostage in the pro shop. Nothing ended up happening, as the Secret Service got him off the course and back into the cabin safely. But we got some epic photos like this.

Ultimately, Augusta's history and allure are what makes the Masters so special. The club cares deeply about its reputation, giving away the TV rights for free so it can control everything, from commercials to how the course is shown. And with the rest of professional golf more divided than ever, the Masters' ability to handpick who plays in its tournament has elevated the world's premier golf event to an even higher level.

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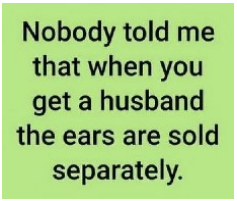

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FLASHMOB CENTRAL

Bella Ciao flashmob!!

youtube

https://youtu.be/xhN55G6KdRk

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Volkswagen Gives First Glimpse of Entry-Level Electric Model

VW says future entry-level electric model on SSP platform marks a key step in its plan to 2030.

VW

Volkswagen plans to present the show car for the new entry-level model to the public at the beginning of March. The world premiere of the production model is scheduled for 2027. With a base price of about €20,000, the new entry-level electric model will be 'attractive for a wide variety of user groups', according to VW. Schäfer said: "An

affordable, high-quality, profitable electric Volkswagen from Europe for Europe. This is the Champions League of automobile manufacturing."

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Aliens probably fly by Earth, go home and lock their doors.

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Volkswagen is a Sausage Company

Volkswagen's bestselling product isn't one you whip down the Autobahn at 160km/h. The automaker recently revealed that it sold a record number of its in-house-produced sausages last year. Sausage sales were up 2% over the year, outnumbering shipments of VM-branded vehicles, which declined from 2023.

picture alliance/Getty Images

The automaker sold 8.5 million sausages in 2024—and shipped 5.2 million VW vehicles.

Isn't that the wrong kind of cylinder? Sausages became a vital input in Volkswagen's production in 1973, when the auto giant began serving currywurst to workers at its Wolfsburg HQ. The seasoned weiners even have their own official part number, 199 398 500 A, but we're pretty sure motor oil isn't part of the recipe.

They've long graduated from worker treat to mass market fare:

Only a fraction of the record number of sausages Volkswagen sold last year were hoovered up by its employees.

Meatlovers across 12 countries can buy the Volkswagen Original sausages in places like football stadiums, corporate cafeterias, and supermarkets.

Volkswagen's culinary offerings don't end with sausage: It also sold 654,000 bottles of its signature spiced ketchup bottles last year.

Sure, automobiles-to-sausages is not an apples-to-apples comparison. And the 9 million cars sold by all of Volkswagen's brands, including Audi and Porsche, did eclipse sausage sales. But the VW sausage's success is striking a chord this year as the car business takes a turn for the wurst.

Sausage symbolism

Volkswagen's car and sausage sales trending in opposite directions was recently highlighted by the IG Metall Union, the labor organization representing VW employees, months after acrimonious negotiations resulted in the union and the company agreeing to up to 35,000 future job cuts.

Management says the workforce reductions are necessitated by a gloomy business outlook.

Volkswagen's net profit dropped 30% last year from 2023, amid a slowdown of sales in China, where it's getting lapped by local carmakers that produce cheaper EVs with increasingly impressive bells and whistles.

The company plans to halve its auto production capacity in Germany by 2030.

Volkswagen's status as Germany's top private employer, flagship exporter, national symbol, and engine of the European economy, has meant that this isn't the first year its sausages are as closely watched as the hotdogs scarfed down by Joey Chestnut.

The company got blowback in 2021 when it announced plans to phase out the pork sausages in favor of veggie versions at one of its Wolfsburg canteens. Even Germany's ex-Chancellor Gerhard Schröder weighed in, calling the sausages the "power bar of the skilled factory worker," and saying the change would've never happened when he was a Volkswagen board member. The company ended up reversing the decision.

Perhaps it's about how the sausage is made. Produced by a team of 30 including a butcher on Volkswagen's payroll, its in-house fabrication is a sentimental vestige of the post-war economic miracle era when the company grew food on its Wolfsburg campus to sustain employees.

Sometimes a sausage is just a sausage

While it's unusual for an automaker to get into the meatpacking biz, Volkswagen isn't the only brand that offers something started as an internal product to the masses.

Slack traces its roots to an internal messaging tool for failed gaming company Tiny Speck before it became a way for startups to signal that they're too hip for Outlook.

And in the mid-2000s, Amazon created an internal tool to manage the data from their sprawling e-commerce operation, now known to the world as Amazon Web Services.

But sausages aren't software when it comes to profit potential. Even if Volkswagen's currywurst achieves the international icon status of the Beetle, proceeds from the edible

business would barely budge the company's bottom line, given that its revenue was over $350 billion last year.

It's not just sausage…that Volkswagen might be cooking up in addition to cars. The company recently said that it's considering converting two of its shuttered auto plants into arms manufacturing facilities, as a way to capitalize on Germany's new defense spending push.

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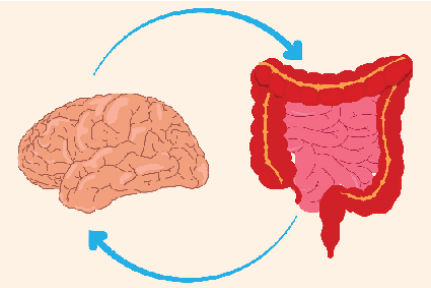
The Role of Gut-Brain Axis in Parkinson's, Anxiety, and Long COVID

Our brains and our digestive tracts are in constant communication. When that communication goes off the rails, research suggests diseases and disorders can result.



Getty Images

The gut plays an obvious role in our health by digesting what we eat and extracting nutrients. But there's a growing appreciation among scientists that our digestive

systems affect our general well-being in a much broader fashion. One fascinating aspect of the gut's widespread impact on health is its direct influence on and communication with the brain, a conduit known as the gut-brain axis.

Through direct signals from the vagus nerve, which connects the brain and the gut, as well as through molecules secreted into the bloodstream from our gut microbes and immune cells that traffic from the gut to the rest of the body, our brains and our digestive tracts are in constant communication. And when that communication goes off the rails, diseases and disorders can result.

https://bit.ly/4imVfww

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As I watch this new generation try to rewrite our history, one thing I'm sure of: it will be misspelled and have no punctuation.

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Everything Flows: Refining the Laws of Friction in Caltech's "Seismological Wind Tunnel"

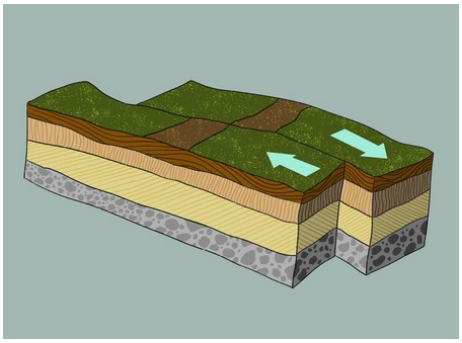

Illustration of two crustal plates interfacing along a fault. The plates slowly slide opposite to each other with shear motion. When the fault suddenly slips dramatically, an earthquake occurs.
Credit: Caltech

Friction between two sliding interfaces historically has been modeled with a simple expression called Coulomb's law. Now, Caltech researchers have demonstrated that Coulomb's law is insufficient for describing reality, and that interfaces subjected to shear and pressure, though they may appear motionless, are, in fact, always sliding at rates imperceptible to the human eye.

These new observations, reported in a paper appearing online on March 12 in the journal Nature, provide a more precise understanding of the mechanics of earthquakes an

Coulomb's model may seem intuitive, but, for decades, researchers who study rock mechanics and faults have known that it may not be the full story. These scientists have introduced more detailed equations, called rate-and-state laws, in which friction depends on the sliding rate and the evolving states of the sliding interfaces. Rate-and-state laws predict that there is no static friction coefficient and that shear movement occurs under all shear forces—so, for example, even the slightest pushing of a heavy book with the tip of your finger will cause the book to slide some tiny, imperceptible amount.

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Why Do Researchers Care About Small Language Models?

Larger models can pull off a wider variety of feats, but the reduced footprint of smaller models makes them attractive tools.

By pruning a language model, researchers can optimize it for a particular task.
Celsius Pictor for Quanta Magazine

The latest models from OpenAI. Meta, and Deepseek use hundreds of billions of parameters that determine connections among data and get tweaked during the training process. But such power comes at the cost of huge computational resources.A single query of ChatGPT consumes about 10 times as much energy as a single Google search.

https://bit.ly/4iAHVox

A particularly illuminating article on AI models.

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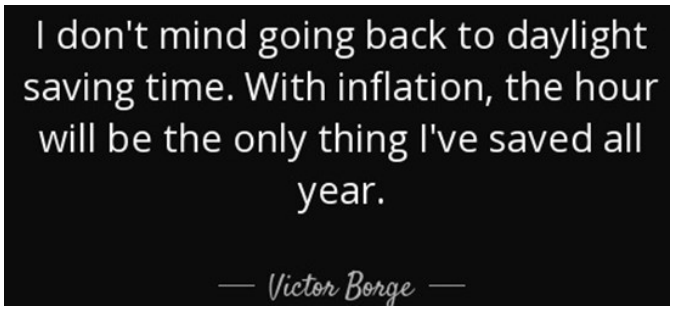

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Raw, Beautiful Visions of the Faroe Islands

Photographer Lukas Furlan

The rugged, sub polar oceanic climate of the Faroe Islands is quite remarkable. Strong winds, rain, and a cold climate make the fog-covered peaks all the more impressive and magical.

With trees unable to grow in the windy, exposed areas, the landscapes are full of mossy expanses, sharp cliffs, and waterfalls.

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My wife asked me to take her to one of those restaurants where they make food right in front of you. I took her to Subway.

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Rembrandt to Picasso: Five Ways to Spot a Fake Masterpiece

The recent discovery of an art forger's workshop reminds us of the long history of fraudulent artworks – here are the simple rules to work them out.

Samson and Delilah, by Peter Paul Rubens
(Credit: Alamy)

Doxiadis's conclusion corroborates one reached in 2021 by the Swiss company, Art Recognition, which determined, through the use of AI, that there was a 91% probability that Samson and Delilah is the work of someone other than Rubens. Her assertion that the brushwork we see in the painting is crass and wholly inconsistent with the fluid flow of the Flemish master's hand is strongly contested by The National Gallery, which stands by its attribution.

"Samson and Delilah has long been accepted by leading Rubens scholars as a masterpiece by Peter Paul Rubens", it said in a statement given to the BBC. "Painted on wood panel in oil shortly after his return to Antwerp in 1608 and demonstrating all that the artist had learned in Italy, it is a work of the highest aesthetic quality.

A technical examination of the picture was presented in an article in The National Gallery's Technical Bulletin in 1983. The findings remain valid."

The divergence of opinion between the museum's experts and those who doubt the work's authenticity opens a curious space in which to reflect on intriguing questions of artistic value and merit. Is there ever legitimacy in forgery? Can fakes be masterpieces? As more sophisticated tools of analysis are applied to paintings and drawings whose legitimacy has long been in question.

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England's National Poet

pixabay.com

Background

Shakespeare was born in Stratford-upon-Avon, England, in 1564 and died in 1616 (see timeline). He's commonly referred to as "the Bard" or "the Poet," titles that speaks to his stature in English literature.

Writing Career

After finishing school and marrying his wife, Anne Hathaway, Shakespeare moved to London to pursue a career in the theater. By 1592, he was working as an actor and writing plays, leading to a notorious criticism by another writer who believed actors were not intellectual enough to write for the stage.

Only a few years later, Shakespeare's dramatic work—which included comedies, tragedies, and history plays—was regularly being published and staged in London.

In 1599, Shakespeare's theater troupe moved into the Globe Theatre. The artistic home led to an illustrious decade for Shakespeare, who would go on to write some of his most well-known tragedies, including "Hamlet," "Othello," "King Lear," and "Macbeth."

In addition to his plays, Shakespeare was a prolific poet. Although he was primarily known for his love sonnets, he also composed a handful of other poems, including two long narratives based on works by the Roman poet Ovid (see an overview).

Style

Contemporary readers often mistakenly assume Shakespeare's works are written in Old English, though the language found in Shakespeare's plays and poems is actually a form of Modern English.

His plays were mostly composed in blank verse, an unrhymed poetic style that almost always uses iambic pentameter, which features five unstressed and five stressed syllables per line. Lines of prose do occasionally appear in Shakespeare's dramas, however, and scholars say this is an intentional choice that signifies characters' feelings.

Outside of drama, Shakespeare mainly wrote sonnets. The 14-line form can be traced back to the early Italian Renaissance, but Shakespeare altered it by changing the rhyme scheme and organization, creating a variant that would come to be known as the "Shakespearean sonnet."

While some have questioned the authorship of Shakespeare's works, professors and linguists have refuted the theory, using both historical documents and analyses of his writing style to prove their point.

Legacy

The first collection of Shakespeare's works, called "The First Folio," was published by his actors after his death. It became a definitive text for Shakespeare scholars and publishers and is still used in productions and classrooms today.

Thanks to "The First Folio," Shakespeare's works are still taught and staged around the world. Although he has been dead for more than four centuries, his influence can still be felt through what scholars say is a lasting impact on the ways we understand ourselves and our history.

Shakespeare's work is still present in our contemporary language, too: His narrative structures and complex characters are often cited as the inspiration for pop culture behemoths (including "The Lion King" and "Succession") and his words still appear in everyday speech, thanks to his tendency to coin new turns of phrase in his plays.

I lifted this verbatim from 1440 Daily Digest, March 16, 2025.

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How mathematical breakthroughs influenced the Bard's plays https://bit.ly/3DA4uKK

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I asked my wife if I was the only one she had ever been with.
She said yes, all the others were nines and tens. Give it a minute ...

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The Tardigrade Brain Is Tiny But Mighty

Neuroscience's next top model is ready for its close up.
Philippe Garcelon Via Flickr | Cc By

Biologists just can't get enough of tardigrades, and honestly, it's not hard to see why. These microscopic animals, which are also known as "water bears" or "moss piglets," can shrug off boiling heat and freezing cold, survive the force of a bullet impact, endure doses of radiation that would kill a human , and even survive in the vacuum of outer space. This ability to withstand extreme conditions has attracted the attention of developmental biologists, biomedical engineers, and many others. Now, according to a new arXiv preprint, it's time for neuroscientists to start taking notice, too.

The field of systems neuroscience, which aims to understand how interconnected networks of neurons give rise to complex behaviors, faces a persistent dilemma: The more sophisticated an organism is, the harder it is to study. Itty-bitty tardigrades, the study authors argue, "offer an unprecedented opportunity to fill this gap—standing poised to become rising stars in the pantheon of systems neuroscience model organisms."

Despite only possessing a few hundred neurons, tardigrades are nonetheless capable of orchestrating complex behaviors. The tiny animals can coordinate movement across all eight of their limbs, respond to a variety of stimuli, and switch between active and dormant states. Their bodies also happen to be transparent, making them an ideal

organism to study in the lab. "Tardigrades really represent this ideal combination of traits," study co-author Ana Lyons tells The Transmitter.

The tardigrade's compact nervous system is organized into a central brain, two simple eye-spots, a ventral nerve cord, and four ganglia corresponding to four pairs of legs. This unique, modular anatomy, the study authors explain, could help reveal how local neural circuits interact with higher-level functions in the brain.

But before the tardigrade can be widely adopted as a model organism, the team writes, the scientific community must work together to develop new genetic tools and neuroanatomical maps. "The time to invest in tardigrade neuroscience is now," they conclude, "and the rewards promise to be transformative."

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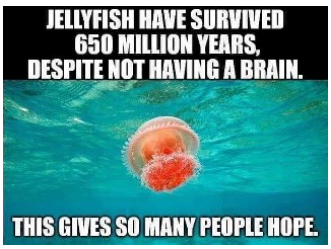

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Confuse your doctor by putting on rubber gloves at the same time he does.

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Heart of ~~Steel~~ Titanium

newatlas.com

An Australian man in his 40s lived for a record 105 days with a titanium heart before receiving a donor heart transplant March 6. Though five patients in the US had previously been implanted with BiVACOR's Total Artificial Heart, he is the first to be discharged from the hospital with the device and has the longest survival period between implantation and transplantation.

The device uses magnetic levitation technology—like that used in high-speed trains—to suspend a single moving part, a rotor, which pumps blood through the body. An external system controls the device, adjusting blood flow based on the patient's activity. Experts say it could be a solution for heart failure patients awaiting transplants and may become a permanent option for those ineligible for transplants due to age or other conditions, though further testing is required.

Approximately 6.7 million Americans over age 20 have heart failure, and around 4,600 heart transplants were performed in 2024. The US Food and Drug Administration has approved expanding the trial to include 15 more participants.

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Do you ever get up in the morning, look in the mirror and think "This just isn't right."

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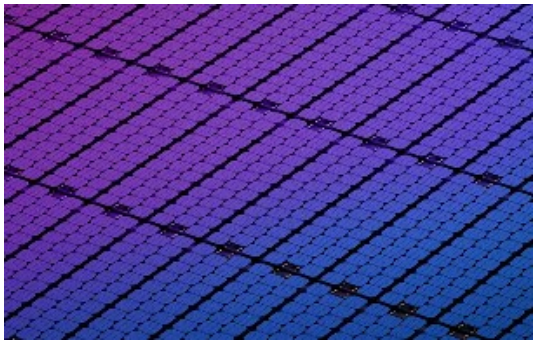
Nanoparticle Breakthrough Could Change the Future of Solar Power

Perovskite cells are much cheaper and more flexible than their silicon alternatives, but they have major durability problems. A new breakthrough could be about to change that.



Digital generated image of solar panel with purple-blue reflection.
(Image credit: Andriy Onufriyenko/Getty Images)

Often referred to as the "holy grail" of solar power, perovskite cells offer a lightweight alternative to traditional silicon-based solar technology. Their flexible structure enables them to be applied to cars and phones in the form of a printable layer so they can charge on the go, but they come with some major flaws… they degrade quickly because of chemical reactions with moisture in the air that make them leak iodine.

But now, a team of researchers has found a solution to this problem. By embedding nanoparticles within the perovskites, they produced a new cell that lasts for 1,530 hours, a near-tenfold increase on previous perovskite solar cell designs. The researchers published their findings Feb. 20 in the journal EES Solar.

https://bit.ly/4iAokV6

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I miss the 90s when bread was still good for you and no-one knew what kale was.

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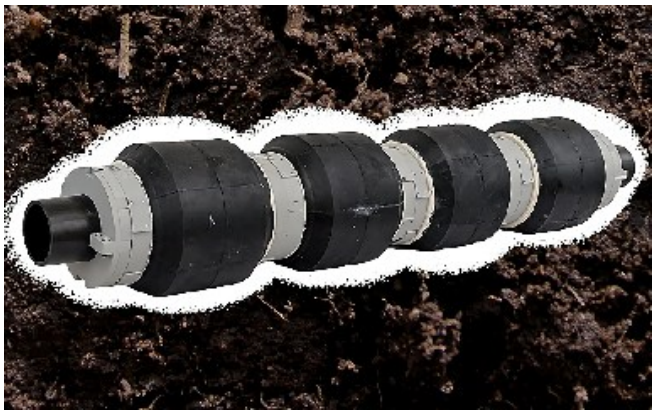
Worm-like Robots Install Power Lines Underground

Bio-inspired approach simplifies underground construction



Case Western Reserve University has built multiple prototypes of its earthworm-inspired digging tool. Austin Mills/Case Western Reserve University;
Catherine Ulitsky/USDA-NRCS

After January's Southern California wildfires, the question of burying energy infrastructure to prevent future fires has gained renewed urgency in the state. While the exact cause of the fires remains under investigation, California utilities have spent years undergrounding power lines to mitigate fire risks.

Pacific Gas & Electric, which has installed over 1,287 kilometers of underground power lines since 2021, estimates the method is 98 percent effective in reducing ignition threats. Southern California Edison has buried over 40 percent of its high-risk distribution lines, and 63 percent of San Diego Gas & Electric's regional distribution system is now underground.

Case Western Reserve University in Cleveland, Ohio, is building a self-propelled robotic sleeve that mimics earthworms' characteristic peristaltic movement to advance through soil. Awarded $2 million, Case's "peristaltic conduit" concept hopes to more precisely navigate underground and reduce the risk of unintended damage, such as breaking an existing pipe.

Despite its benefits, undergrounding remains cost-prohibitive at US $1.1 to $3.7 million per kilometer ($1.8 to $6 million per mile) for distribution lines and $3.7 to $62 million per kilometer for transmission lines, according to estimates from California's three largest utilities. That's significantly more than overhead infrastructure, which costs $394,000 to $472,000 per kilometer for distribution lines and $621,000 to $6.83 million per kilometer for transmission lines.

In Case's worm-inspired robot, alternating sections are designed to expand and retract to anchor and advance the machine. This flexible force increases precision and reduces the risk of impacting and breaking pipes.

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Tree Climbing Goats of Morocco

moss&fog

Goats are well known as climbers, and they have been seen clinging to the slipperiest of rock faces for the right bite of food. So it shouldn't surprise us to see these rock climbing goats of Morocco, which cleverly scamper to the tippy tops of Argan trees, to feed on the sweet, nutty fruits.

A favorite food of the goats, the Argan tree provides ample snacking for the animals, and in return, the seeds are dispersed and spread after the goat has digested them.

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PHOENIX Air Monitoring Project in Altadena Rises from the Ashes

In the wake of the Eaton fire, Caltech researchers working with community members, business owners, and schools in Altadena and Pasadena have quickly deployed a network of particulate air quality sensors on rooftops in and around the burned areas of Altadena. The network, dubbed PHOENIX (Post-fire airborne Hazard Observation Environmental Network for Integrated Xposure-monitoring), aims to provide the community with a way to monitor airborne dust as debris removal and rebuilding proceed.

Data from the PHOENIX sensors can be viewed here and are updated every five minutes

Each of the air quality devices is able to measure particulate matter in three size categories—particulates measuring less than 1 micrometer in

diameter (PM1.0), those that are less than 2.5 micrometers (PM2.5) in diameter, and larger particulates up to 10 micrometers in diameter (PM10).

The PHOENIX network will eventually consist of 25 sensors installed mostly on rooftops in and around the burned areas of Altadena. This sensor is installed on the roof of the Altadena Public Library.
Credit: Caroline Champlin

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I picked up a hitchhiker. He asked if I wasn't afraid, he might be a serial killer?
I told him the odds of two serial killers being in the same car at the same time were extremely unlikely.

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Sikorsky Flies VTOL Flying Wing

New drone combines flying wing and twin rotors for two flight modes.

autoevolution.com

Sikorsky has flown a prototype of an interesting flying wing drone that incorporates twin rotors for vertical takeoffs and landings. The concept was unveiled at Verticon in Dallas on Monday. The "rotor blown wing" is a tilt-rotor of sorts, but because the whole aircraft is the wing it doesn't need complicated technology to make the transition. No performance data was released on the aircraft but Sikorsky has already started thinking about bigger versions using hybrid power. The first prototype weighs 115 pounds and is battery-powered.

"Combining helicopter and airplane flight characteristics onto a flying wing reflects Sikorsky's drive to innovate next-generation VTOL UAS aircraft that can fly faster and

farther than traditional helicopters," said Sikorsky Vice President and General Manager Rich Benton. "Our rotor blown wing platform is a prime example how we are leveraging the breadth of our 102-year aviation heritage to develop new designs that meet the emerging missions of commercial and military operators."

It took about a year to take the design from the drawing board to test flight and the company's rapid prototyping arm, Sikorsky Innovations, first flew the aircraft in January. It has done 40 takeoffs and landings and 30 transitions from vertical to horizontal flight and back. Top speed so far has been 86 knots.

https://youtu.be/cDnN1BcUDBU

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Electric Motors For Helicopters Unveiled

MagniX's new HeliStorm motor delivers 450 horsepower and weighs 180 pounds.

magniX

Electric aviation motor developer magniX has unveiled a helicopter motor that mimics the operation of a turbine engine. The HeliStorm motor, introduced at Verticon in Dallas, spins at 6,000 to 7,000 rpm and makes 330 kW of power, equivalent to about 450 horsepower, and weighs about 180 pounds. The motor is powered by magniX's Samson batteries. Low-RPM magniX motors are flying in several airplanes, including a 70-year-old Beaver on floats. MagniX says helicopter power is a natural extension of its business. The first installation may be in Robinson R44 helicopters.

"Robinson is supportive of magniX's HeliStorm electric engine range and we look forward to continuing our collaborative efforts to deliver market leading sustainable

helicopters," said Robinson CEO David Smith. MagniX CEO Reed MacDonald said the HeliStorm is a natural outgrowth for his company's business. "The helicopter market represents a tremendous opportunity for magniX, as the strengths of our technology align well with the market need," he said.

Russ Niles Editor AVweb

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China's Latest Carrier Getting Near to Service Entry

Ultra-modern catapult system is only the second in use, worldwide.

China's third aircraft carrier, the Fujian, could be commissioned and operational later this year. First launched in 2022, the 80,000-metric-ton ship began sea trials in 2024 and is currently undergoing its seventh sea trial sortie. According to an article in the China/Military section of the myNews website, observations that the ship did not have large aircraft on the flat deck when it departed suggest that this trial might include fixed-wing jet fighter tests of its electromagnetic catapult technology and arresting cables.

China's two in-service carriers, the Liaoning (refitted from an incomplete Russian Kuznetsov-class vessel acquired from Ukraine) and the Shandong, are equipped with steam catapults and "ski-jump" decks. The Fujian electromagnetic system enables faster launch and recovery operations and are more energy-efficient and flexible. The

U.S. Navy carrier USS Gerald Ford is the only other carrier in the world with an electromagnetic system.

Experts anticipate that the flight testing on the current sea trials will include China's J-15T and J-35B combat aircraft, seagoing variants of the J-15 and J-35 that incorporate catapult and arresting gear hardware.

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1X's Latest Humanoid Robot Will Do Your Chores in a Sweater

Norwegian startup 1X plans to begin testing Neo Gamma in homes by late 2025.

youtube.com

Norwegian startup 1X released new video showcasing its humanoid robot, Neo Gamma, performing household tasks like vacuuming, cleaning windows, and carrying laundry. While the demo doesn't confirm its level of autonomy, 1X has previously shown its Eve robots working independently. Neo Gamma features a 3D-printed nylon suit and shoes, designed for a minimalist home. 1X plans to begin testing Neo Gamma in homes by late 2025.

https://youtu.be/0nSAY2C9XKA https://youtu.be/bUrLuUxv9gE

Commented [jt1]:

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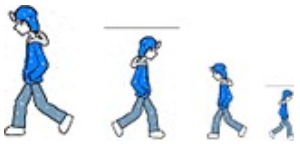
My Walking Thoughts



For Sunday March 30 2025

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Mia Love: My Last Wish for the America I Know

In the last piece she wrote before her death, the late former Utah congresswoman took up her pen—not to say goodbye but to say thank you.

Rep. Mia Love, R-Utah, participates in a news conference on immigration reform at the Capitol on May 9, 2018.
(Bill Clark via CQ Role Call)

Mia Love never had it easy. Yet in an age where cynicism about the United States and its founding had become the norm, she never lost sight of the great opportunities America had given her.

In 2022, Love was diagnosed with brain cancer. Two weeks ago, she announced in a moving Deseret News essay that she would soon die, and used this final opportunity to write a love letter to America. We wanted to have her on "Honestly," but this past weekend, her family announced that she had passed away at age 49.

You can read all about her life in this beautiful obituary published by Deseret News, a Utah publication we admire. We are grateful to them for allowing us to reprint this lightly edited piece and help it find the widest possible audience.

— BW for the Free Press, March 24, 2025

https://bit.ly/4bYujRn

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My dear friends, fellow Americans, and Utahns, I am taking up my pen, not to say goodbye but to say thank you and express my living wish for you and the America I know.

My battle with brain cancer is coming to an end. The disease is no longer responding to treatment, and my family and I have shifted our focus from treatments to enjoying every moment and making memories with the time we have.

My life has been extended by exceptional medical care, science, and extraordinary professionals who have become dear friends. My extra season of life has also been the result of the faith and prayers of countless friends, known and unknown. The result of such humble faith and pleading prayers have been felt by me and my family in ways too numerous to count. I have always believed that faith and science are inextricably interconnected.

As a mayor, member of congress, and media commentator, I have seen the worst of petty politics, divisive rhetoric, and disappointing lapses of moral character by some. These same roles also provided me a front-row seat and backstage pass to be blessed and inspired by the courage, vision, and hope of America's finest daughters, sons, and citizens.

Couching this column as a "dying wish" felt a little dramatic, even for a drama person like me. We are not certain how long this season of my battle will be, and I do want to share, and reshare, some things with the world that I passionately believe. I write all of this as my "living wish" and hopefully "enduring wish" for you.

Let me tell you about the America I know. My parents immigrated to the United States with $10 in their pocket and a belief that the America they had heard about really did exist as the land of opportunity. Through hard work and great sacrifice they achieved success—so the America I came to know growing up was filled with all the excitement found in living the American dream. I was taught to love this country, warts and all, and understand I had a role to play in our nation's future. I learned to passionately believe in the possibilities and promise of America.

Watching my father and mother work odd jobs in order to provide for us and maintain their independence taught me valuable lessons in personal responsibility. When tough times came, they didn't look to Washington, they looked within. Because the America they knew was centered in self-reliance, the America I know is founded in the freedom self-reliance always brings.

What makes America great is the idea that when government is limited and decisions are made closest to the people they impact, people are free—free to work, free to live, free to choose, free to fail, and free to achieve. The America I know provides everyone an equal opportunity to be as unequaled as they choose to be.

The America I know gives back. Americans, regardless of financial status, are the most giving people on the planet. On their own, without government requirement, our people give their money, their time, and their attention to causes, communities, and people in

need whether it is across the street or around the world. I've experienced this generosity throughout my life and during my battle with cancer. I am so grateful.

The America I know makes tough choices. As the mayor of Saratoga Springs, Utah, facing its own fiscal cliff, we put limited government, fiscal discipline, and personal responsibility first in order to create an amazing community that could last. I have also seen that facing challenging choices head-on inspires our citizens to get involved, engage in meaningful dialogue, rally around shared values, do things differently, and change the way government works.

Regardless of the difficulties we may face individually, in our families, in our communities, and in our nation, the old adage is still true—you can make excuses or you can make progress, but you cannot make both! The America I know doesn't make excuses.

The America I know is grounded in the gritty determination found in patriots, pioneers, and struggling parents, in small business owners with big ideas, in the farmers who work in the beauty of our landscapes and the artists who paint them, in our heroic military and our inspiring Olympic athletes, and in every child who looks at the seemingly impossible and says, "I can do that."

The America I know is great—not because government made it great, but because ordinary citizens like me, like my parents, and like you are given the opportunity every day to do extraordinary things. That is the America I know!

What the America I Know Deserves

Some have forgotten the math of America—whenever you divide, you diminish. What I know is that the goodness and compassion of the American people is a multiplier that simply cannot be measured. The goodness and greatness of our country is multiplied when neighbors help neighbors, when we reach out to those in need and build better citizens and more heroic communities.

You see, the America I know is built by citizens and leaders who respect, strengthen, and serve each other, not based on race, gender, or economic status but because we are Americans! We all have a role to play in uniting the country around the principles that have made us extraordinary.

The America I know will continue as long as each of us simply remember that this country is exceptional—because it is! I know it is! I can see on the horizon that our best and brightest days as a nation are still to come.

The America I know deserves leaders who trust the people and will tell them the hard truth about where we are and what we need to do in order to preserve our future. We

need leaders who are prepared to engage in a dialogue about realities, priorities, and solving America's problems.

When I wrote my memoir, Qualified, the working title was By the Content of Your Character. The American principles I wrote about in my book are the principles that shaped and blessed my life. I have always felt that it was character that counts in this country. The America I know, while far from perfect, is the place where we strive every day to live up to the principles Dr. Martin Luther King declared from the steps of the Lincoln Memorial. We will be judged in the end, individually and as a nation, by the content of our character.

Preserving the America We Know

The America I know isn't just my story, and it isn't just your story. It is our story. It is a story of endless possibilities, human struggle, standing up and striving for more. Our story has been told for well over 200 years, punctuated by small steps and giant leaps; from a woman on a bus to a man with a dream; from the bravery of the greatest generation to the explorers, entrepreneurs, reformers, and innovators of today. This is our story. This is the America we know—because we built it—together.

As my season of life begins to draw to a close, I still passionately believe that we can revive the American story we know and love. I am convinced that our citizens must remember the principles of our story so that our children, and those seeking freedom around the world, will know where to look to find a place for their story.

We must fight to keep the America we know as that shining city on a hill—truly the last best hope on earth. Like Benjamin Franklin and countless patriots down through the ages, I believe the American experiment is not a setting sun but a rising sun.

I thank each of you, and all of you, for being part of my journey in the American dream. You and I, we the people, will be forever connected in the cause of this country we love.

In the end, I hope that my life will have mattered and made a difference for the nation I love and the family and friends I adore. I hope you will see the America I know in the years ahead, that you will hear my words in the whisper of the wind of freedom and feel my presence in the flame of the enduring principles of liberty.

My living wish and fervent prayer for you and for this nation is that the America I have known is the America you fight to preserve and that each citizen, and every leader, will do their part to ensure that the America we know will be the America our grandchildren and great grandchildren will inherit.

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