

## Ode to E Pluribus Unum for Sunday November 19 2023

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## How the IMAX Movie 'Deep Sky' Launches Us Through the James Webb Space Telescope



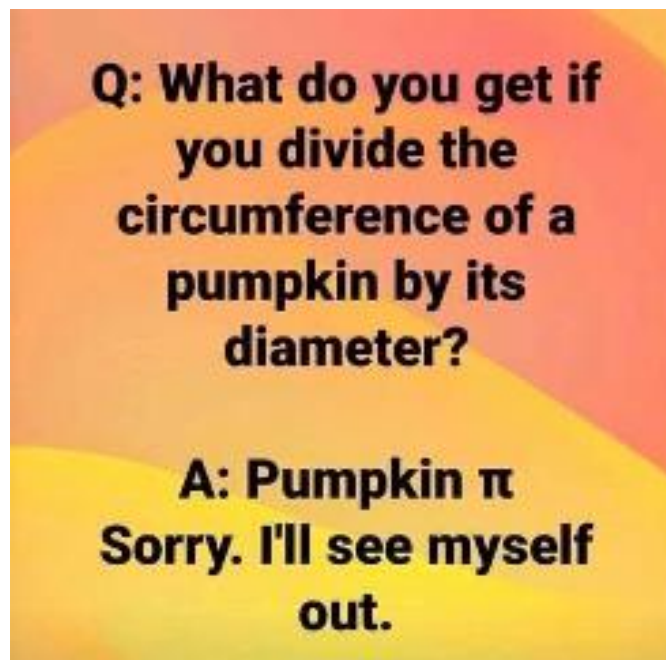
*Featured in the IMAX® documentary DEEP SKY, this mosaic image stretches 340 light-years across. JWST's Near-Infrared Camera (NIRCam) displays the Tarantula Nebula star-forming region in a new light, including tens of thousands of never-before-seen young stars that were previously shrouded in cosmic dust.*

NASA

Deep Sky, a 40-minute Imax original documentary about NASA's James Webb Space Telescope (JWST) showcases the mind-blowing images captured by the \$10-billion telescope, which started beaming pictures of stars, nebulae, galaxies, planets, and a massive black hole back to Earth in July 2022. It is surely the most expensive "camera" Kahn, or any filmmaker, has had the privilege to work with, and viewed on nearly 100-foot-tall screens, the footage becomes transporting.

<https://bit.ly/3MkLZLb>

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## **New Tarantula from Thailand with Rare Electric Blue Hair**



Blue is one of the rarest colors found in nature – along with the fact there are no green mammals, of course. Now a new species of tarantula has been discovered in Thailand with a blue-violet hue that researchers say resembles the color of electrical sparks.

<https://bit.ly/3M154Sv>

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## **Giant Long-Necked 'Titan' Dinosaur Unearthed in Europe**



The newly identified titanosaur, *Garumbatitan morellensis*, roamed what is now Spain around 122 million years ago. The unusual shape of some of its bones could hold clues about the evolutionary history of a unique group of sauropods.

<https://bit.ly/3tDEdWf>

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## **Guide to 85 Varieties of Apples, From Heirlooms to Hybrids**

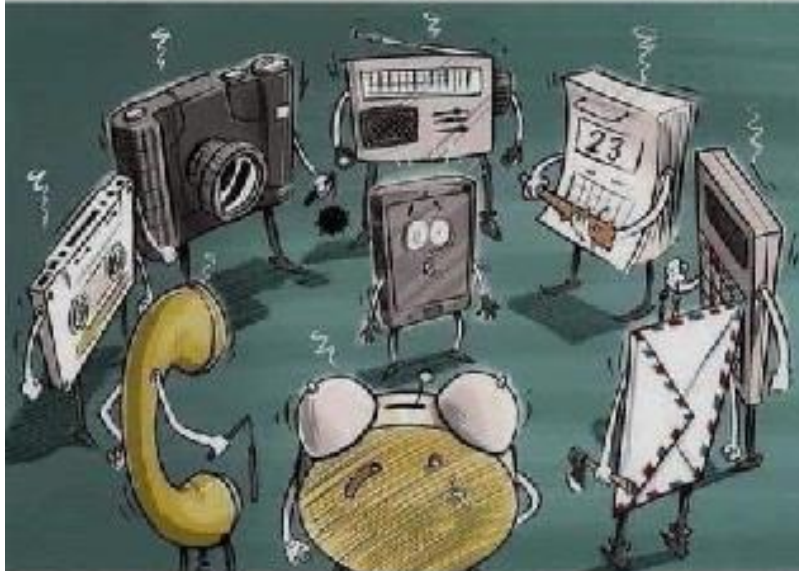


Everything you need to know about 85 types of apples, from heirlooms like Ashmead's Kernel to new creations like Gala.

<https://www.foodandwine.com/types-of-apples-7976165>

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"Ohh. ! So you're the  
one who,



took all our jobs."

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**London's October 17<sup>th</sup> 1814 Beer Flood Killed Eight**



On this day 209 years ago, a 15-foot-high wave of beer roared through the streets of an impoverished London neighborhood, killing eight people.

The beer had burst from the nearby Horse Shoe Brewery, where a senior brewer had noticed an issue with one of their 22-foot-high vats held together by weighty iron hoops.

One of the 22 iron rings that held together this particular vat, which contained more than 3,500 barrels worth of 10-month-old brown porter ale, had slipped off. This reportedly happened several times a year without catastrophe, prompting the worker to continue filling the vat unabated before leaving the brewing disaster alone in the storeroom.

The vat's teetering barrel boards quickly gave way, crashing into nearby vats and freeing hundreds of tons of porter into the St. Giles neighborhood.

The flood collapsed a wall, killing a 14-year-old girl who worked at a nearby pub and swept through nearby houses, killing a 4-year-old girl. The wave cascaded into cellar apartments, one of which held Irish immigrants mourning the loss of a 2-year-old boy who had died the previous day. The flood killed five of the mourners, all women and children, as well as another toddler. The exact circumstances of the last toddler's death are unclear.

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**Six New Venues Vying for Hosting National Championship Air Races**



*Photo: Reno Air Racing Association*

Six communities in six different states have submitted supporting documents seeking approval as the next home of the National Championship Air Races (NCAR). The submissions came in response to a request for proposal (RFP) from the Reno Air Racing Association, which hosted the last race at Reno-Stead Airport in Nevada last month, unfortunately with tragic results. Reno has been home to the annual air races since 1964, just shy of a 60-year run.

Vying to become the new venue for the iconic air races are Buckeye, Arizona; Casper, Wyoming; Pueblo, Colorado; Roswell, New Mexico (no word on any plans for a new, extraterrestrial-aircraft category); Thermal, California; and Wendover, Utah. The six contending cities submitted a total of more than 1,500 pages of supporting documents in their combined submissions.

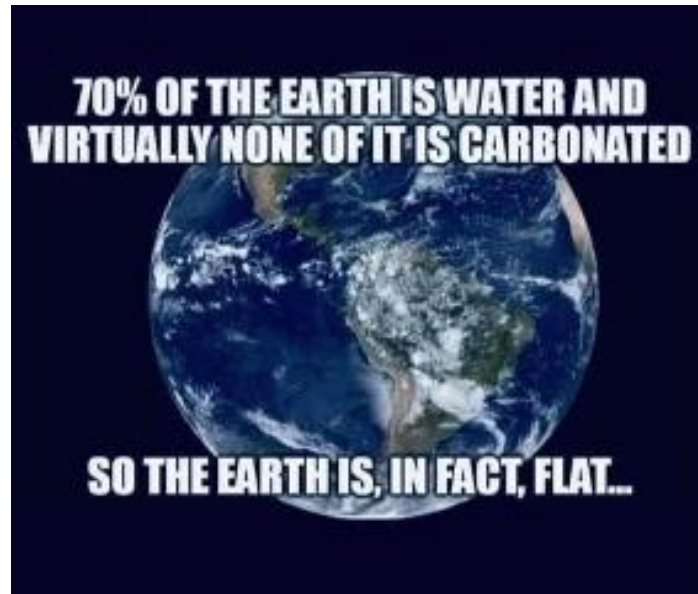
The economic attraction of becoming the new home for the races that have been known simply as "Reno" for so many decades is clear. According to the NCAR, "In the past 10 years alone, the event has attracted more than 1 million visitors to the [Reno] region, generated more than \$750 million for the economy and contributed significant aviation-related education and outreach to schools and non-profits all around the area."

Terry Matter, NCAR board member and chairman of the selection committee, said, "We only want to go through this process once, and because of that, we're going to make sure our next location is the best fit for the future of the air races." Fred Telling, CEO and chairman of the board for the Reno Air Racing Association, summed up: "Seeing the interest to host the National Championship Air Races at each of these unique venues gives me great hope for the future of air racing. We're looking for our next home, somewhere we can celebrate many more anniversaries, so we've assembled an expert committee that is putting an extreme amount of care and diligence into choosing our next location."

The announcement of the winning site is anticipated early next year. There will be one final non-racing airshow in Reno in 2024 before NCAR completes the transition of the air races to the new location in 2025.

*By Mark Phelps for AVweb*

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## **What Do EV Batteries Have to Do with Health?**

Stanford researchers combine epidemiology and management to confront a growing threat from lead-acid batteries in electric vehicles.





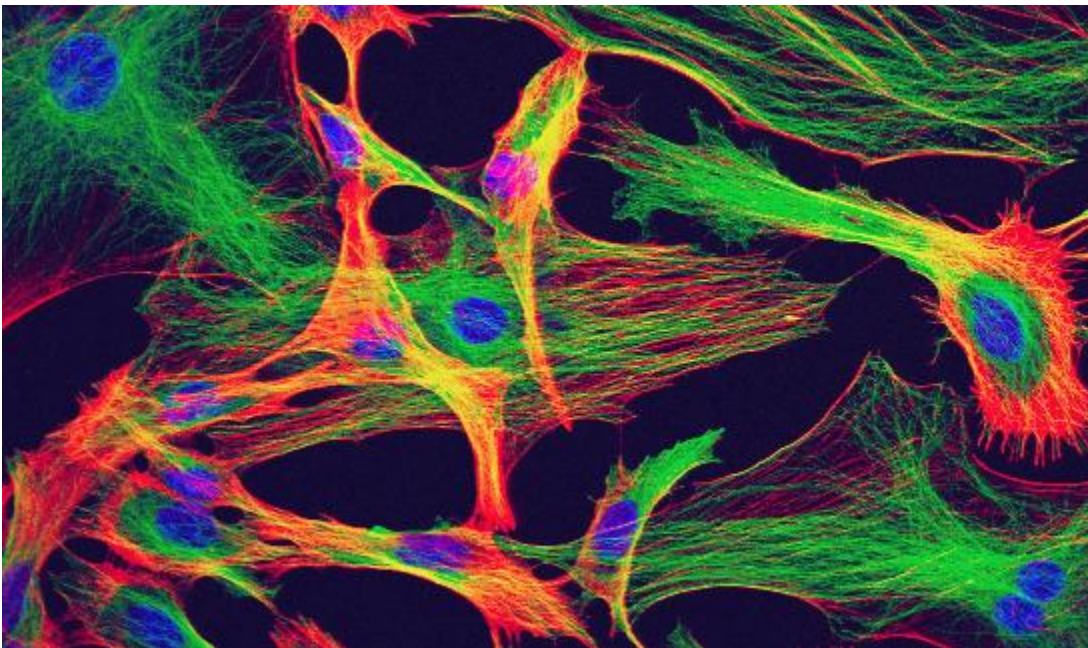
*Stanford researchers are collaborating to address greenhouse gas emissions and pollution from lead acid batteries often found in three-wheeled electric vehicles.*

*Image credit: Getty Images*

<https://bit.ly/3rZnmga>

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## **These Cells Spark Electricity in the Brain. They're Not Neurons.**



*New evidence suggests that some astrocytes can stimulate electrical signals just as neurons do.*  
*David Robertson, ICR / Science Source*

For decades, researchers have debated whether brain cells called astrocytes can signal like neurons. Researchers recently published the best evidence yet that some astrocytes are part of the electrical conversation.

<https://bit.ly/46PxXJw>

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## Growing Evidence that Vestibular Loss Increases Dementia Risk



*The relationship between vestibular loss and the risk of dementia.*

*Credit: Scientific Reports (2023). DOI: 10.1038/s41598-023-42598-w*

Existing research shows a link between hearing loss and the risk of dementia, and a new study adds to growing evidence that vestibular loss can increase dementia risk as well. Results from this work, by a team from the Korea University College of Medicine, are published in Scientific Reports.

Dementia is characterized by problems with judgment, language, memory, mood and social behavior, and problem-solving. Meanwhile, through its role in discerning head movement and spatial alignment, the vestibular system helps many animals, including humans, maintain balance.

Previous findings posit that vestibular system involvement in visuospatial processing may help guide cognitive functioning. In animals and in humans, issues with executive functioning and memory, processing speed, and spatial cognition impairment have all been linked to bilateral vestibulopathy, and vestibular disorders are more common in people with cognitive loss.

This new large-scale study included data from 2,347,610 Korean adults between the ages of 40 and 80. The research team derived the data from the database of the Korean National Health Insurance Service, in which all Korean citizens are enrolled, for the years 2002–2019.

Within the study population, 2,145,609 individuals (mean age: 53.29 years), who represented the general population, had neither hearing loss nor vestibular loss. Another 141,476 individuals (mean age: 58.52 years) had hearing loss; and 60,525 individuals (mean age: 58.26 years) had vestibular loss.

Among the general study population, 127,081 (5.9%) individuals received diagnoses of dementia, while 16,116 of those with hearing loss (11.4%) developed dementia, as did 7,705 of those with vestibular loss (12.7%).

These results, which indicate that vestibular loss might raise dementia risk, are consistent with those of at least five other studies between 2013 and 2022. Results from one of those studies point to a link between loss of different cognitive areas and saccular vestibular and bilateral semicircular canal loss. Another study reports significantly diminished hippocampal volume (important for memory processing) among patients with persistent bilateral vestibular loss.

The findings, to date, comprise evidence of an association between vestibular loss and dementia, but what hasn't been proven yet is a causal relationship. Hypotheses for potential causes include:

- Brain atrophy resulting from reduced vestibular input to the brain
- Social isolation due to safety concerns, especially fear of falling, in those with vestibular loss
- Neurodegeneration with implications for both vestibular loss and cognitive loss.

The researchers of this study caution that it has a number of limitations, including possible exclusion of patients with vestibular loss due to specific parameters for inclusion in the vestibular loss group; no data on the duration of illness or the severity of symptoms; and possible data errors or omissions due to use of insurance claims data originally organized for reimbursement rather than research purposes.

Additionally, the researchers note that varying washout periods among this study and others on this topic, many of them less than three years, constitute an additional limitation.

Nevertheless, this newest study provides a good basis for more work on this topic. The research team suggests that future investigations could focus on the duration and symptom severity of vestibular loss and importantly, whether and how vestibular treatment might affect cognition.

*by Stephanie Baum , Medical Xpress*

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## **The Story Behind Soaring Myopia Among Kids**



*Daniel Hertzberg*

There's been a longstanding debate over why so many kids are going nearsighted—because bad eyesight used to be attributed solely to genetics. Now, experts agree that something else is going on, resulting from a shift in how children spend the majority of their time. Too little time outside. Too much time indoors, often staring at screens.

<https://bit.ly/3tV5PGs>

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Unfriending -- the early years

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## New Devices Could Change the Way We Measure Blood Pressure



*The Samsung Health Monitor, a photoplethysmographic technology that allows blood pressure measurement through the Samsung Galaxy Watch, was approved as a medical device by the South Korean Ministry of Food and Drug Safety in April 2020*

*Credit: Marco Verch / Flickr*

Embedded in a cell phone or in accessories such as rings, bracelets or watches, the novel tools aim to make it easier to manage hypertension. But they must still pass several tests before hitting the clinic.

<https://bit.ly/3MgDNM0>

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## Google Founder's Airship Gets FAA Clearance



*Lighter Than Air (LTA) Research is a Sunnyvale, Calif.-based company founded by Sergey Brin to explore the future of airships for disaster relief and cargo.  
LTA Research and Exploration*

Sergey Brin's Pathfinder 1 can now take to the skies.

Expect traffic on the 101 highway in Mountain View, California, to be even worse in the days or weeks ahead, as motorists slow down to watch Google co-founder Sergey Brin's 124-meter long airship Pathfinder 1 launch into the air for the first time.

IEEE Spectrum has learned that LTA Research, the company that Brin founded in 2015 to develop airships for humanitarian and cargo transport, received a special airworthiness certificate for the helium-filled airship in early September.

That piece of paper allows the largest aircraft since the ill-fated Hindenburg to begin flight tests at Moffett Field, a joint civil-military airport in Silicon Valley, with immediate effect.

The certificate permits LTA to fly Pathfinder 1 within the boundaries of Moffett Field and neighboring Palo Alto airport's airspaces, at a height of up to 460 meters (1500 feet). That will let it venture out over the south San Francisco Bay, without interfering with planes flying into or out of San Jose and San Francisco International commercial airports.

In a letter supporting its application for the certificate, LTA wrote: "Pathfinder 1's experimental flight test program is to demonstrate and establish the flight envelope for

the airship.... LTA's test plan is tailored to include substantial indoor and outdoor ground testing, using a build-up approach to gradually increase the flight envelope."

The huge airship will initially be attached to a mobile mast for outdoor ground testing, before conducting about 25 low-level flights, for a total of 50 hours' flight time.

Although its rigid design hearkens back to the gargantuan airships of the early 20th century, Pathfinder 1 is almost completely different from any large airship that has flown before. Crucially, its reported 96 welded titanium hubs and 288 carbon fiber reinforced polymer tubes are light enough that it can use non-flammable helium instead of explosive hydrogen as a lifting gas.



*Interior view of the airship's foundation during construction.LTA's airship frames are made of lightweight titanium and carbon-fiber.*

*LTA Research and Exploration*

Twelve electric motors distributed on the sides and tail of the airship, and four fin rudders, allow for vertical takeoff and landing (VTOL) and speeds of up to about 120 kilometers per hour. A tough layer of laminated Tedlar material contains 13 helium bags of ripstop nylon, which contain lidar systems to track the gas levels within.

Pathfinder 1 has a hybrid propulsion system, with two 150 kilowatt diesel generators working alongside 24 batteries to provide power for the electric motors, according to a recent presentation by LTA's CEO, Alan Weston. He said that LTA has plans to use hydrogen in later versions of the airship, perhaps as fuel for future fuel cells or turbogenerators, and possibly even as a lifting gas.

LTA confirmed the airworthiness certificate had been granted but not provide any further details.

Although the Pathfinder 1 is designed for single pilot operation, it has dual controls and, according to LTA's letter to the FAA, will have a second pilot on board "for initial flight testing until pilot workload can be assessed." The gondola that LTA is using for the airship was designed by the famous Zeppelin company in Germany and can

accommodate up to 14 people, although no superfluous passengers will be allowed during testing.

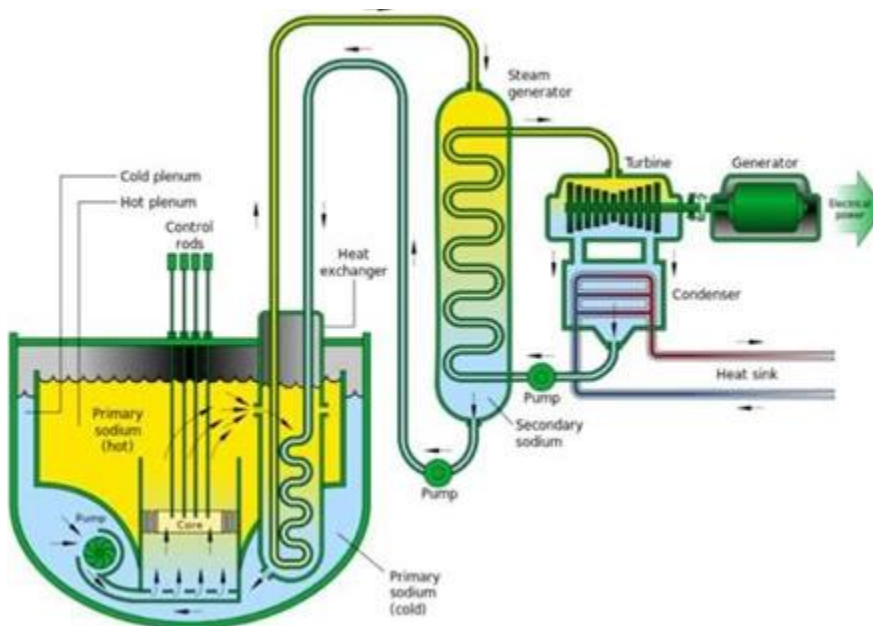
After extensive flight testing in California, the Pathfinder 1 will transit to the former Goodyear Airdock airship hangar in Akron, Ohio, which the company has acquired as its future manufacturing location. There, an even larger 180-meter long airship, the Pathfinder 3, is already under development.

Ultimately, LTA intends its aircraft to be used for humanitarian missions, deploying cargo and personnel to areas that are inaccessible by road. Brin runs a separate non-profit, called Global Support and Development, that has already carried out such missions by sea, in the Caribbean, Latin American and the South Pacific. It originally used Brin's own superyacht to ferry medical personnel to the scene of hurricanes and other disasters, and recently launched a purpose built vessel capable of transporting dozens of medical staff and full-size shipping containers. The MV Dawn also carries its own watercraft and vehicles, and is capable of producing and off-loading bulk supplies of fresh water, and could be a model for future humanitarian airships.

Pathfinder 1's airworthiness certificate is valid for a full year although LTA told the FAA in its application letter that it expects the test program to be complete within 180 days

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## Next-Gen Nuclear Fuel Small Reactors Face New Questions



Even as the U.S. opens its first new enrichment plant in 70 years—ending Russia's monopoly over a critical fuel cycle—questions persist about the economics of new nuclear.



<https://bit.ly/3s18JJy>

*The first of those questions is why are we dawdling?*

## **Mozart Encounters The Art of Fugue**



Baron Gottfried von Swieten introduces Mozart to the music of Johann Sebastian Bach, 1782; from the excellent French miniseries Mozart (1982), here overdubbed in German, and subtitled

<https://youtu.be/zArUrVlyQrI>

## **When Bach Invented Swing 170 YEARS EARLY!**



*dw.com*

Written in the 1740s (the final decade of his life) Johann Sebastian Bach's The Art of Fugue is a striking example of 'late style'. In it, Bach distilled the expertise of forty years

of contrapuntal practice in an extraordinary sequence of fugues and canons based on a single thematic idea. The cycle remained unfinished, and the final fugue breaks off, mysteriously, shortly after the composer introduced his own name, B A C H (in English notation B flat A C B natural) as a fugue subject. It was almost as if he was signing off his life's work.

Contrapunctus II is the second Fugue in the cycle and elaborates the fugue subject with dotted rhythms. His approach here is no doubt influenced by 'French Style' performance practice of the period in which pairs of 'notes inégales' are played in a manner that might today be described as 'swung'. The dotted notation implies that the ratio of swing is more severe than 2:1 but possibly less severe than 3:1. Coupled with the use of tied notes, the syncopations enliven Bach's magnificent contrapuntal fabric in a strikingly groovy way.

A fugue always has a main theme (called the subject) which is presented in several voices at the start, each entering in succession. The subject counterpoints with a secondary theme called a countersubject: in this fugue, the subject is in rather solemn half notes and the countersubject is in more dance-like dotted rhythm with some syncopation. Throughout the fugue, Bach brings in the subject, from time to time, in all the main related keys. These entries of the subject alternate with freer episodes, so the structure of the fugue has a kind of ebb and flow. At the end of the fugue, there is a final climactic presentation of the subject in the home key so that the fugue comes to a fully resolved and satisfying conclusion.

<https://youtu.be/mOG6n1WGPM?t=3>

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## **A Brief History of the Electric Car, 1830 to Present**



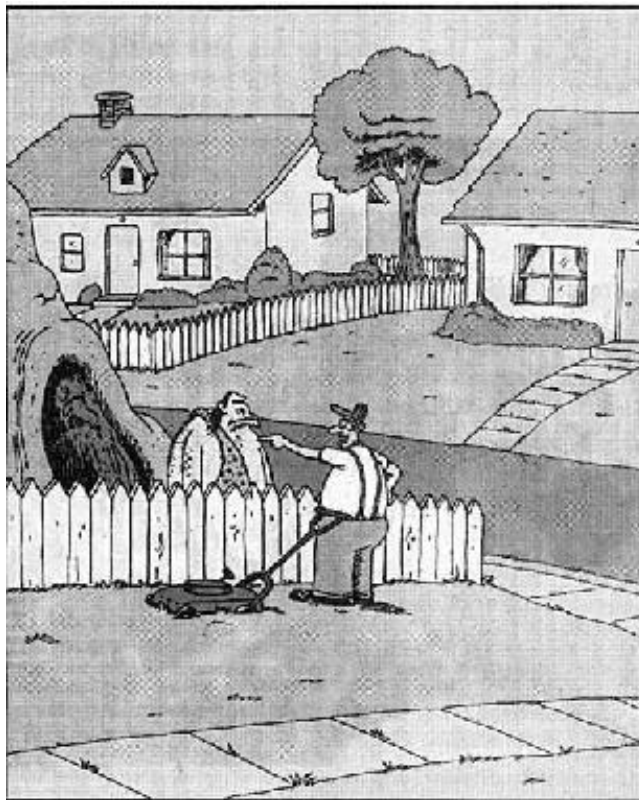
*Car & Driver*

The first electric cars appeared long before the earliest gas autos, and the history of electric cars is littered with innovative takes on four-wheeled transit.

Electric cars have been around a lot longer than today's Tesla or even the General Motors EV1 of the late 1990s. In fact, electric cars appeared long before the internal-combustion sort, and dreamers have never stopped trying to make them work both on the road and as a business proposition. A lack of historical perspective sometimes leads to misunderstandings of how things came to be as they are now, so let's take the long view of the road that got us here.

<https://www.caranddriver.com/features/g43480930/history-of-electric-cars/>

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*Don't threaten me Thagerson! My cousin's an anthropologist and she can make your life hell.*

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## **November is Manatee Awareness Month**



Bring out the best in hu-manatee

### **What exactly is it?**

A mixture of celebration and seriousness – a month-long opportunity to share fun facts about manatees aka “sea cows”, but also raise awareness about their conservation.

### **Why do they need a whole month?**

Their wholesomely chonky appearance and docile nature should be convincing enough on their own, but it’s also useful to know that things aren’t looking so great for manatees at the moment. Listed as an endangered species on the IUCN Red List, poor water quality and massive loss of seagrass (their main food source) along the coast of Florida have led to a drastic increase in Florida manatee deaths in the last few years.

Humans can be problematic too – boat collisions, plastic pollution, and fertilizer-triggered algal blooms all pose a threat to these marine mammals. This month aims to bring these issues to people’s attention and hopefully, give rise to change for all species of manatee.

### **How can I participate?**

According to [Save The Manatee](#) – founded by former Florida Governor Bob Graham and musician Jimmy Buffett – there are lots of things you can do. They recommend spreading awareness by contacting local representatives and posting on social media. People can also take part in conservation fundraising events and, if you live close enough, help out with habitat restoration projects.

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## Will This Electric Jet Revolutionize Regional Air Travel?



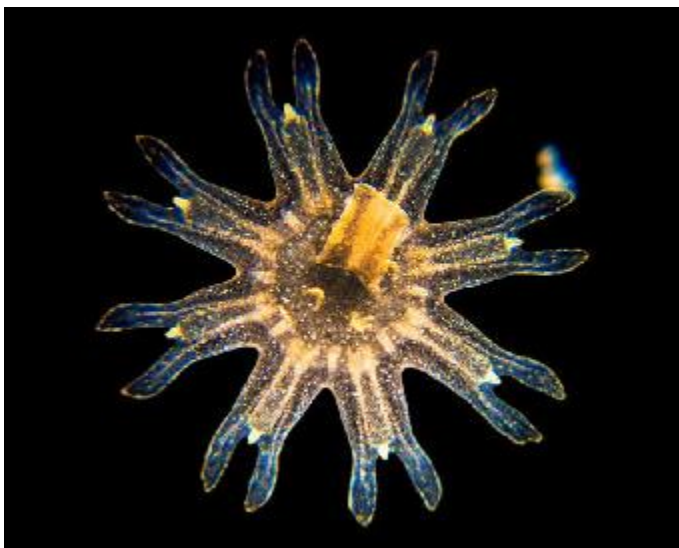
Lilium's cofounder and chief engineer shares how the German aerospace company developed the world's first jet with electric vertical takeoff and landing.

<https://youtu.be/40SHIPYc0xU>

<https://youtu.be/ywJWka1evH8>

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## Birth of a Jellyfish



The life cycle of the scyphozoan's jellyfish are cataloged as simple or complex. The complex life cycles are represented by a metagenetic model where individuals alternate different live forms and reproductive models due to the highly seasonal environment. We can start describing the life cycle when males and females of adult jellyfish release sperm and ovules into the ocean. The fertilized eggs undergo a metamorphosis into planulae, which sits on the benthic substrate and gives rise to a polyp in a slow process.

*Rubén Duro*

<https://oceanographicmagazine.com/features/jellyfish-blooms/>

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## **Why Do People Migrate to the U.S.?**



*emr.ac.uk*

The U.S. is a country created and built by immigrants from all over the world. As a result, it's home to more immigrants than any other country.

As of 2021, more than 45.3 million people living in the U.S. were foreign-born, accounting for about one-fifth of the world's migrants. But while some come to reunite with family, others are seeking work or escaping dangerous situations.

<https://bit.ly/3QtRoB9>

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## **COVID's Damage Lingers in the Heart**



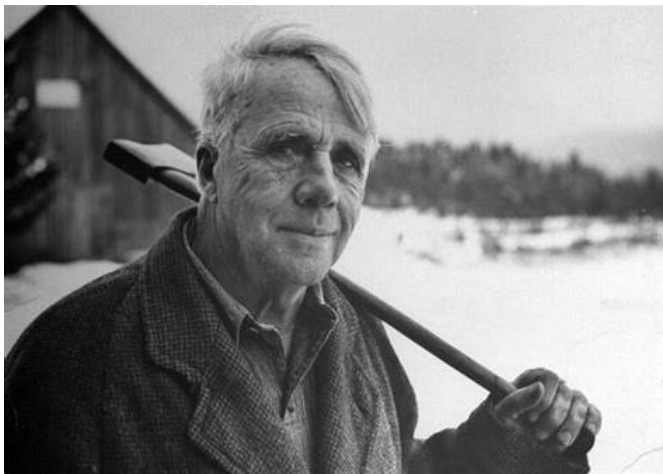
*Harvard medical*

Researchers increasingly find that the effects of infection by SARS-CoV-2 extend to the cardiovascular system

*The Heart Issue by Charles Schmidt for Harvard Medicine*

<https://bit.ly/46h0E18>

## **Robert Frost (1874-1963)**



*childreader.net*

Known for his realistic depictions of rural life and his command of American colloquial speech, Frost frequently wrote about settings from rural life in New England in the early 20th century, using them to examine complex social and philosophical themes.

Frequently honored during his lifetime, Frost is the only poet to receive four Pulitzer Prizes for Poetry. He became one of America's rare "public literary figures, almost an artistic institution". He was awarded the Congressional Gold Medal in 1960 for his poetic works. On July 22, 1961, Frost was named poet laureate of Vermont.

### **The Road Not Taken**

Two roads diverged in a yellow wood,  
And sorry I could not travel both  
And be one traveler, long I stood  
And looked down one as far as I could  
To where it bent in the undergrowth;

Then took the other, as just as fair,  
And having perhaps the better claim,  
Because it was grassy and wanted wear;  
Though as for that the passing there  
Had worn them really about the same,

And both that morning equally lay  
In leaves no step had trodden black.  
Oh, I kept the first for another day!  
Yet knowing how way leads on to way,  
I doubted if I should ever come back.

I shall be telling this with a sigh  
Somewhere ages and ages hence:  
Two roads diverged in a wood, and I—  
I took the one less traveled by,  
And that has made all the difference.

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### **Stopping by Woods on a Snowy Evening**

Whose woods these are I think I know.  
His house is in the village though;  
He will not see me stopping here  
To watch his woods fill up with snow.



My little horse must think it queer  
To stop without a farmhouse near  
Between the woods and frozen lake  
The darkest evening of the year.

He gives his harness bells a shake  
To ask if there is some mistake.  
The only other sound's the sweep  
Of easy wind and downy flake.

The woods are lovely, dark and deep,  
But I have promises to keep,  
And miles to go before I sleep,  
And miles to go before I sleep.

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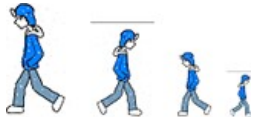
### **Mending Wall**

Something there is that doesn't love a wall,  
That sends the frozen-ground-swell under it,  
And spills the upper boulders in the sun;  
And makes gaps even two can pass abreast.  
The work of hunters is another thing:  
I have come after them and made repair  
Where they have left not one stone on a stone,  
But they would have the rabbit out of hiding,  
To please the yelping dogs. The gaps I mean,  
No one has seen them made or heard them made,  
But at spring mending-time we find them there.  
I let my neighbor know beyond the hill;  
And on a day we meet to walk the line  
And set the wall between us once again.  
We keep the wall between us as we go.  
To each the boulders that have fallen to each.  
And some are loaves and some so nearly balls  
We have to use a spell to make them balance:  
'Stay where you are until our backs are turned!'  
We wear our fingers rough with handling them.  
Oh, just another kind of out-door game,  
One on a side. It comes to little more:  
There where it is we do not need the wall:

He is all pine and I am apple orchard.  
My apple trees will never get across  
And eat the cones under his pines, I tell him.  
He only says, 'Good fences make good neighbors.'  
Spring is the mischief in me, and I wonder  
If I could put a notion in his head:  
'Why do they make good neighbors? Isn't it  
Where there are cows? But here there are no cows.  
Before I built a wall I'd ask to know  
What I was walling in or walling out,  
And to whom I was like to give offense.  
Something there is that doesn't love a wall,  
That wants it down.' I could say 'Elves' to him,  
But it's not elves exactly, and I'd rather  
He said it for himself. I see him there  
Bringing a stone grasped firmly by the top  
In each hand, like an old-stone savage armed.  
He moves in darkness as it seems to me,  
Not of woods only and the shade of trees.  
He will not go behind his father's saying,  
And he likes having thought of it so well  
He says again, 'Good fences make good neighbors.'

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## My Walking Thoughts



## For Sunday November 19 2023

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### Trip to Terra Incognita, 1948

I was a month shy of my 13<sup>th</sup> birthday as I set out for summer camp near Prescott, Arizona. I had been to Y-Camp in the mountains east of Los Angeles the year before, but this time was different because I would be on my own from when I boarded the Santa Fe 'San Diegan' at Oceanside for the hour-and-a half train ride to Los Angeles. There I was to search out the Trona Stage Line bus for the rest of the trip.

"Oh Lord, I hope I can find it," the first of a thousand prayers bobbed incessantly in my mind as I made my way through the station's catacombs lugging the summer's worth of

necessities in a large canvas bag. Emerging into the sunlit plaza I spotted a ranch sign waved by a young man in a cowboy hat who escorted me toward a group of two dozen fellow campers, explaining in an authoritative voice that the roster was complete. We were off to our summer adventure.

Vestiges of civilization grew fainter then disappeared altogether as we ground our way eastward across desert scrubland. At Blyth we crossed the Colorado River, continuing on to the outskirts of Phoenix and finally north where in deep shadows we arrived at what was to be our home for the next two months.

It was a working ranch where we campers spent mornings doing grunt work...digging irrigation ditches, moving hay bales, hoeing weeds. Afternoons involved sports of all types as well as roping, riding, and caring for horses. After dinner we took turns reading stories or presenting skits to the forbearance of others, though after a while we all began to look forward to the innocence of such silliness.

It felt as if I had just arrived when the time came to pack up, say goodbye to people who had become as close as family, sing songs around a bonfire one last time before we scattered like sparks before the wind.

The same Trona Stage Line bus squeaked and groaned in retracing its way through the wilderness back to Union Station where I made farewells to fellow travelers I pledged never to forget. Then with the supreme confidence of one who has 'been there and done that,' I slung the bag easily over my shoulder and headed for Oceanside a lightyear closer to manhood than when I'd left.

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