

Ode to E Pluribus Unum for October 17 2021

New Scientist Photography Awards 2021



*Made of 19 photos combined together, this image shows a common rough woodlouse stretching up to feed on a gelatinous slime mould in the south of Buckinghamshire, UK
Photographer Barry Webb*



This blenny was found in Chesil Cove on the Isle of Portland in Dorset, UK. It seemed interested in Georgie Bull's torch and peered over a small pebble to see what was going on.

Photographer Georgie Bull

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Blind Pianist Nobuyuki Tsujii at Carnegie Hall



<https://www.youtube.com/watch?v=LqoV4ZW7xTA>

Pianist Nobuyuki Tsujii bursts into tears when he plays at Carnegie Hall his own composition "Elegy for the Victims of the Tsunami of March 11, 2011 in Japan".

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**FINALLY FIGURED
OUT WHY I LOOK
SO BAD IN
PICTURES.

IT'S MY FACE**

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Who Needs Fast Trains?

Japan started the high-speed train revolution in earnest, and it's still at the top of the charts. Now it seems the rest of the world except for the US is signing up.



Though it's fastest regular operating bullet trains (the N700A Shinkansen) can reach a top speed of 374 mph or 602 km/h, the country's new development in magnetic levitation (maglev) has established new speed records.

xataka.com

In fact, the top two fastest trains in the world are maglev, using two sets of magnets to elevate the train and propel it forward without friction to slow it down.

World's Fastest Trains

L0 Series Maglev

CRRC Qingdao Sifang 2021 Maglev*

TGV POS

Country

Japan

China

France

Speed Record

374 mph (602 km/h)

373 mph (600 km/h)

357 mph (575 km/h)

CRH380A Hexie	China	302 mph (486 km/h)
Shanghai Maglev	China	268 mph (431 km/h)
HEMU-430X	South Korea	262 mph (422 km/h)
Fuxing Hao CR400AF	China	260 mph (418 km/h)
Frecciarossa 1000	Italy	245 mph (394 km/h)

Japan's L0 Series Maglev is still in production, but with a land speed record of 374 mph or 602 km/h it is the fastest train in the world.

Fastest train of America has a top speed of 150 mph, with an average of 84 mph less than half that of high speed trains found elsewhere.



The fastest train of America also called Acela Express travels on 447 miles of track, from South Station Boston to Union Station in Washington D.C. The average journey time between point A and B is between 6 hours and 38 minutes to 6 hours and 50 minutes.
flickr.com



Gubner Moonbeam's payback to supporters, his Train to Nowhere, runs on fumes emanating from frustrated California taxpayers.

Voters approved bond funding (\$10 billion) in 2008, thinking it would be used to connect the cities of Los Angeles and San Francisco. Instead, What's left (\$4.1 billion) it's being requested in order to connect Merced to Bakersfield — the still-incomplete first stage of the project, which covers less than half of the hoped-for distance.

The plan started with a price tag of \$33 billion and a funding gap that officials hoped to fill with government money. Now, it's inflated to \$77 billion, and it could still jump up to over \$98 billion to continue the gravy train to speed from Bakerfield to Merced at an average speed between now and the end of the century that may approach one mile per hour...or maybe not.

Whoopie!

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Lou Gramm



American rock singer-songwriter Lous Gramm is best known for being the lead singer of the rock band Foreigner from 1977 to 1990 and 1992 to 2003 during which time the band had numerous Top 5 albums and singles.

Midnight Blue <https://youtu.be/7cRdgIZgobs>

Lost in the Shadows <https://www.youtube.com/watch?v=5eY0baENaL4>

Lost in the Shadows Lyrics:

Say hello to the night
Lost in the shadows
Say hello to the night
Lost in the loneliness
Say hello to the night
Lost in the shadows
No one knows

I can't wait, I can't wait, no
When I see little lights in the shadows
One must hide when the sun gets higher

I don't know what this madness means

Here comes the night
The bedroom in shadows
Candlelights
I don't know where it's coming from
But I, I keep moving on
Till the darkest thought makes me want to try these wings

Say hello to the night
Lost in the shadows
Say hello to the night
Lost in the loneliness
Say hello to the night
Lost in the shadows
No one knows

Loneliness pours over you
Emptiness can pull you through
Did you go to sleep with the light on?
I can't wait for this feeling to free me

Wind blows hard, but it doesn't matter
'Cause when the sun goes down
Nothing else matters
The line is where the night lies
I will wait outside her window tonight

Say hello to the night
Lost in the shadows
Say hello to the night
Lost in the loneliness
Say hello to the night
Lost in the shadows
No one knows

Loneliness pours over you
Emptiness can pull you through

Did you go to sleep with the light on?
I can't wait for this feeling to free me

Say hello to the night
Lost in the shadows
Say hello to the night
Lost in the loneliness
Say hello to the night
Lost in the shadows
No one knows
(All Copyrights to Atlantic Records & Warner Bros.)

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Kid's First Ice Cream Adventure



<https://www.youtube.com/watch?v=A0EPqmMPDa8>

My suggestion: Kill the sound and enjoy the sight without the cackles.

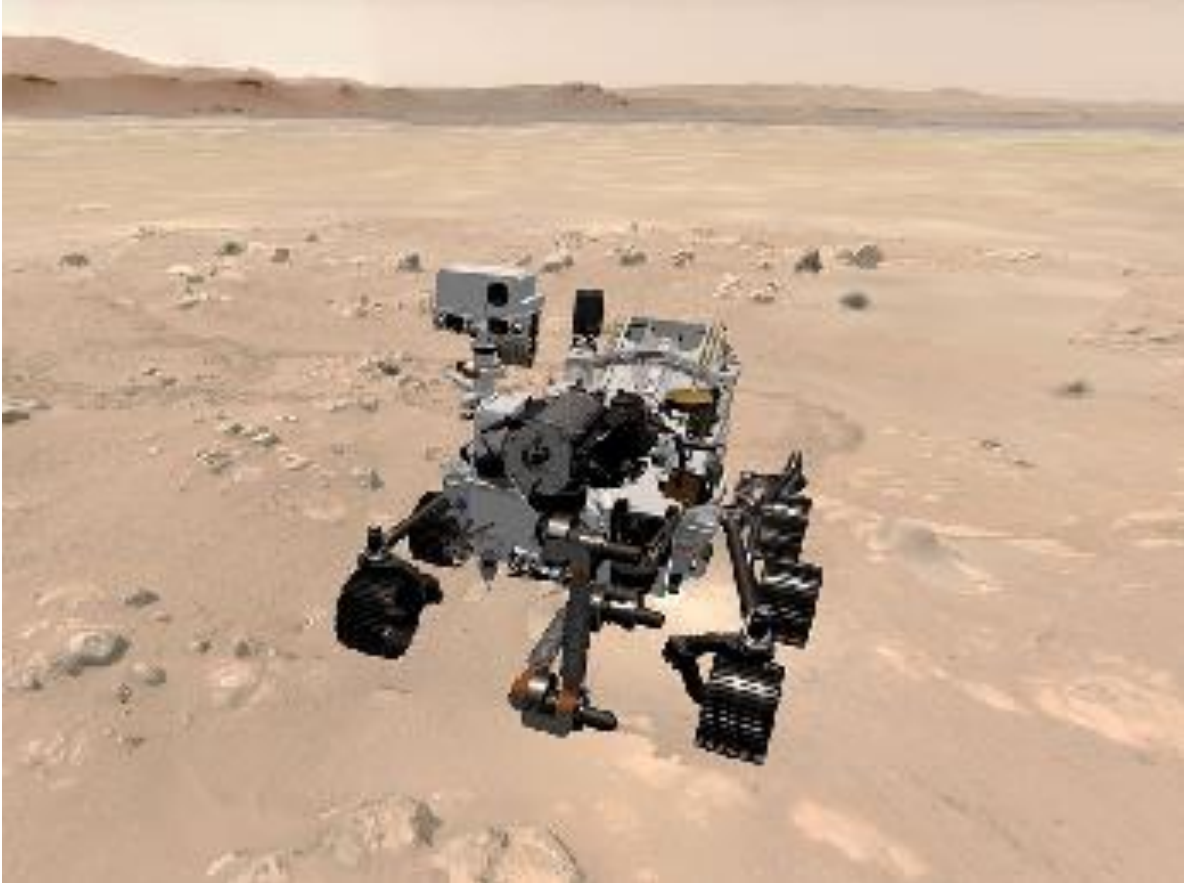
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Could Jackson Pollock match this? Uh-uh.

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Take a 3D Spin on Mars and Track NASA's Perseverance Rover



*NASA's Mars Perseverance rover is shown at its landing site in Jezero Crater in this view from the "Explore with Perseverance" 3D web experience. This interactive web tool features a 3D model of the rover on 3D landscape created from real images taken by Perseverance.
Credit: NASA/JPL-Caltech*

Two interactive web experiences let you explore the Martian surface, as seen by cameras aboard the rover and orbiters flying overhead.

It's the next best thing to being on Mars: Two online interactive experiences let you check out Jezero Crater – the landing site and exploration locale for NASA's Perseverance rover – without leaving our planet.

One new experience, called "Explore with Perseverance," allows you to follow along with the rover as though you were standing on the surface of Mars. Another interactive – "Where Is Perseverance?" – shows the current location of the rover and Ingenuity Mars Helicopter as they explore the Red Planet. It's updated after every drive and flight and allows you to track the progress of Perseverance and Ingenuity, in their journeys on and above the Red Planet.

Explore with Perseverance is made mostly with images taken by the rover from various vantage points, with additional images from the HiRISE (High Resolution Imaging Experiment) camera aboard NASA's Mars Reconnaissance Orbiter overhead.

"It's the best reconstruction available of what Mars looks like," said Parker Abercrombie, a senior software engineer who is leading the software development at NASA's Jet

Propulsion Laboratory in Southern California. The agency's Mars Public Engagement team recruited Abercrombie and his colleagues, who work on similar tools for the mission team, to develop a public-friendly experience by stitching together and reconstructing the Perseverance and HiRISE images.

The team plans to update the site regularly with new views from the spacecraft and the rover and some new points of interest, as they are found. For example, says Abercrombie, "we can highlight scientifically interesting rocks and other features, or the Ingenuity helicopter flight locations."

Abercrombie believes the site will help people understand the perspective as if they were on Mars. "It's sometimes hard for people to grasp location and distance from Mars images. It's not like here on Earth, where you can get your bearings by looking at trees and buildings. With the Martian terrain, it can be really hard to wrap your head around what you're seeing."

<https://mars.nasa.gov/mars2020/surface-experience/>

This video clip of the interactive 3D experience, "Explore with Perseverance," shows how users can follow the activities of the Mars rover at Jezero Crater. The web tool features a 3D model of the rover on a 3D landscape created from real images taken by Perseverance.

Credit: NASA/JPL-Caltech

The dashboard makes it easy for parents and teachers to share the 3D views with kids, bringing them along as Perseverance explores.

The 3D tool is based on the Advanced Science Targeting Tool for Robotic Operations (ASTTRO) that the rover's science team uses to select interesting targets for the rover to study – but has been modified to make it more user-friendly.

"It's a unique challenge to set things up so people can browse in a way they'll understand, since users have varying experiences in using 3D environments," Abercrombie said. "This is a great opportunity for the public to follow along with the mission, using the same type of visualization tools as the mission scientists."

The Curiosity mission has a similar experience built by the same team.

<https://mars.nasa.gov/msl/surface-experience/?drive=2176&site=82>

The location of NASA's Mars Perseverance rover is shown daily in the interactive "Where is Perseverance?" tool. The rover's path is marked in white. Additional layers available in the online map show the flight paths and landing location of the Ingenuity Mars Helicopter.

Credit: NASA/JPL-Caltech

A Mars Map of the Rover and Helicopter Journeys

"The Where Is Perseverance? map allows you to see more of what we're doing and where we're going," said JPL Mapping Specialist Fred Calef. It, too, is based on ASTTRO, and Calef notes that you'll get the data almost as fast as the engineers and scientists do. Plus, you're using practically the same software the team uses, "so

everyone can explore the way we explore in almost the same way," Calef says, zooming in, zooming out, and panning around.

https://youtu.be/yZoHQ6E7_aU

The map shows the rover's route and its stopping points with markers indicating the Martian day, or sol, and you'll get the overview of where Perseverance and Ingenuity might head next. Terrain maps like this one allow scientists to spot interesting places to look for possible evidence of ancient life, and you'll be able to share in the journey.

When Ingenuity flies, it's usually a burst of activity and then a lull for a couple of weeks. The rover, says Calef, "drives more often, though not as far, traveling around 130 meters [142 yards] on its longest drive (sol) to date. When we find a geologically interesting spot, we'll stop for a week or so to check it out."

<https://mars.nasa.gov/mars2020/surface-experience/?drive=0&site=7>

This interactive 3D experience shows NASA's Perseverance rover on the surface of Mars.

Credits: NASA/JPL-Caltech.

More About the Mission

You can get more news about the activities of Curiosity on Mars at the Mars Science Laboratory/Curiosity website, and follow the latest about Perseverance at the Mars 2020/Perseverance website.

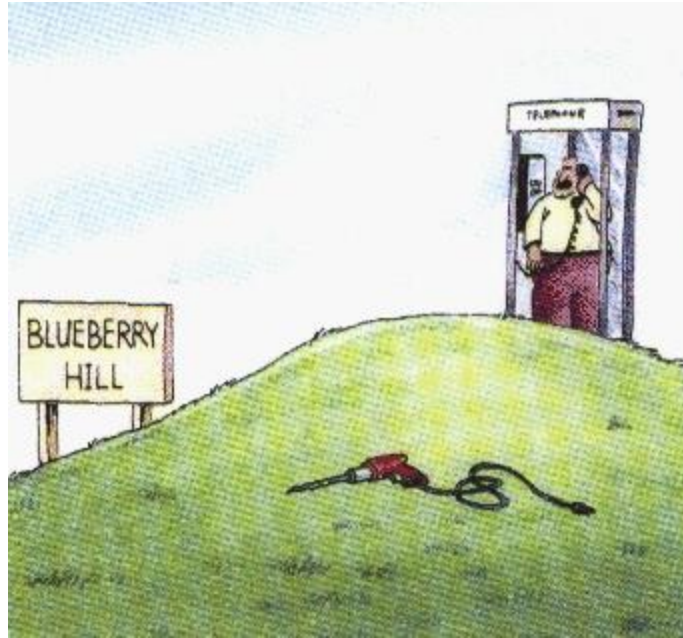
A key objective for Perseverance's mission on Mars is astrobiology, including the search for signs of ancient microbial life. The rover will characterize the planet's geology and past climate, pave the way for human exploration of the Red Planet, and be the first mission to collect and cache Martian rock and regolith (broken rock and dust).

Subsequent NASA missions, in cooperation with ESA (European Space Agency), would send spacecraft to Mars to collect these sealed samples from the surface and return them to Earth for in-depth analysis.

The Mars 2020 Perseverance mission is part of NASA's Moon to Mars exploration approach, which includes Artemis missions to the Moon that will help prepare for human exploration of the Red Planet.

JPL, which is managed for NASA by Caltech in Pasadena, California,

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Yep, it was here.

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Stanford Researchers Build \$400 Self-Navigating Smart Cane

The cane, incorporating sensing and way-finding approaches from robotics and self-driving vehicles, could reshape life for people who are blind or sight impaired.

Andrew Myers



Stanford PhD candidate Michael John Raitor tests out the augmented cane, created with way-finding capabilities similar to those used in autonomous vehicles.

Andrew Brodhead

Most know the white cane as a simple-but-crucial tool that assists people with visual impairments in making their way through the world. Researchers at Stanford University have now introduced an affordable robotic cane that guides people with visual impairments safely and efficiently through their environments.

Using tools from autonomous vehicles, the research team has built the augmented cane, which helps people detect and identify obstacles, move easily around those objects, and follow routes both indoors and out.

The augmented cane is not the first smart cane. Research sensor canes can be heavy and expensive — weighing up to 50 pounds with a cost of around \$6,000. Currently available sensor canes are technologically limited, only detecting objects right in front of the user. The augmented cane sports cutting-edge sensors, weighs only 3 pounds, can be built at home from off-the-shelf parts and free, open-source software, and costs \$400.

Read the study: "Multimodal Sensing and Intuitive Steering Assistance Improve Navigation and Mobility for People with Impaired Vision".

The researchers hope their device will be an affordable and useful option for the more than 250 million people with impaired vision worldwide.

"We wanted something more user-friendly than just a white cane with sensors," says Patrick Slade, a graduate research assistant in the Stanford Intelligent Systems Laboratory and first author of a paper published in the journal *Science Robotics* describing the augmented cane. "Something that cannot only tell you there's an object in your way, but tell you what that object is and then help you navigate around it." The paper comes with a downloadable parts list and DIY solder-at-home instructions.



The cane uses a LIDAR sensor to measure distance to nearby obstacles and then directs users around those areas.

Andrew Brodhead

Borrowing from Autonomous Vehicle Technology

The augmented cane is equipped with a LIDAR sensor. LIDAR is the laser-based technology used in some self-driving cars and aircraft that measures the distance to nearby obstacles. The cane has additional sensors including GPS, accelerometers, magnetometers, and gyroscopes, like those on a smartphone, that monitor the user's position, speed, direction, and so forth. The cane makes decisions using artificial intelligence-based way finding and robotics algorithms like simultaneous localization and mapping (SLAM) and visual servoing — steering the user toward an object in an image.

“Our lab is based out of the Department of Aeronautics and Astronautics, and it has been thrilling to take some of the concepts we have been exploring and apply them to assist people with blindness,” says Mykel Kochenderfer, an associate professor of aeronautics and astronautics and an expert in aircraft collision-avoidance systems, who is senior author on the study.

Mounted at the tip of the cane is the pièce de résistance — a motorized, omnidirectional wheel that maintains contact with the ground. This wheel leads the user with impaired vision by gently tugging and nudging, left and right, around impediments. Equipped with built-in GPS and mapping capabilities, the augmented cane can even guide its user to precise locations — like a favorite store in the mall or a local coffee shop.

In real-world tests with users that volunteered through the Palo Alto Vista Center for the Blind and Visually Impaired, the researchers put the augmented cane in the hands of people with visual impairments as well as sighted people who were blindfolded. They were then asked to complete everyday navigation challenges — walking hallways, avoiding obstacles, and traversing outdoor waypoints.

“We want the humans to be in control but provide them with the right level of gentle guidance to get them where they want to go as safely and efficiently as possible,” Kochenderfer says.

In that regard, the augmented cane excelled. It increased the walking speed for participants with impaired vision by roughly 20 percent over the white cane alone. For sighted people wearing blindfolds, the results were more impressive, increasing their speed by more than a third. An increased walking speed is related to better quality of life, Slade notes, so the hope is that the device could improve the quality of life of its users.

Opening Up Access

The scholars are open-sourcing every aspect of the project. “We wanted to optimize this project for ease of replication and cost. Anyone can go and download all the code, bill of materials, and electronic schematics, all for free,” Kochenderfer says.

“Solder it up at home. Run our code. It’s pretty cool,” Slade adds.

But Kochenderfer notes the cane is still a research prototype. “A lot of significant engineering and experiments are necessary before it is ready for everyday use,” he says, adding that he and the team would welcome partners in industry who could streamline the design and scale up production to make the augmented cane even more affordable.

Next steps for the team include refinements to their prototype and developing a model that uses an everyday smartphone as the processor, an advance that could improve functionality, broaden access to the technology, and further drive down costs.

Watch the Augmented Cane in Action:

Additional authors include Arjun Tambe in the Department of Mechanical Engineering at Stanford.

Funding provided by the National Science Foundation, Stanford Graduate Fellowship, and the Stanford Institute for Human-Centered AI (HAI). Not So Long Ago...Mid 50s

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The emotional support dog after I
get done telling it my problems.



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Styx



Styx is a rock band from Chicago formed in 1972 and is best known for melding hard rock guitar balanced with acoustic guitar, synthesizers mixed with acoustic piano, upbeat tracks with power ballads, and incorporating elements of international musical theatre. The band established itself with a progressive rock sound in the 1970s, and began to incorporate pop rock and soft rock elements in the 1980s.

Renegade <https://youtu.be/ZXhuso4OTG4>

Come Sail Away https://youtu.be/e5MAg_yWsq8

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These Lights, Which Shine: A 9/11 20th Anniversary Tribute



<https://www.youtube.com/watch?v=15vsm4RmZgQ>

This was recorded on September 10, 2021

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**Guys I need your help.
I'm in the middle of an
argument with my wife
and she just told me that
I'm right. What the hell
do I do next?!**

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Things I'm Super Good At

1. Forgetting someone's name 10 seconds after they tell me.
2. Buying produce...and throwing it away two weeks later.
3. Digging through the trash for the food box I just tossed, because I already forgot the directions. 😊
4. Making plans. And then immediately regretting making plans.
5. Leaving laundry in the dryer until it wrinkles. Then turning on the dryer to dewrinkle. Then forgetting it again.
6. Calculating how much sleep I'll get if I can just "fall asleep right now".

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Can You Top This for Beauty?



I guess you'd have to ask the hens.

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Was it Something I Said?



Burrowing owl appears a bit skeptical

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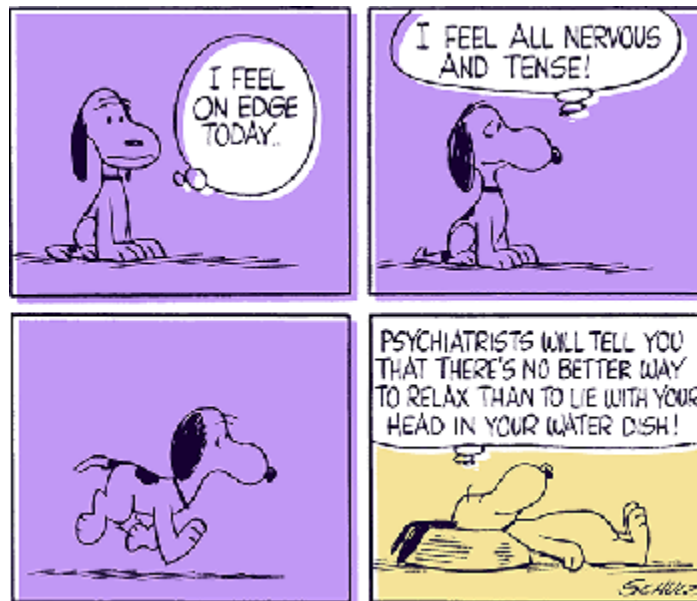
Family Tree of Vincent Van Gogh

- His dizzy aunt-- *Verti Gogh*
- The brother who ate prunes-- *Gotta Gogh*
- The brother who worked at a convenience store-- *Stop N Gogh*
- The grandfather from Yugoslavia-- *U Gogh*
- His magician uncle-- *Where-diddy Gogh*
- His Mexican cousin-- *A Mee Gogh*
- The Mexican cousin's American half-brother-- *Gring Gogh*
- The nephew who drove a stage coach-- *Wells-far Gogh*
- The constipated uncle-- *Can't Gogh*
- The ballroom dancing aunt-- *Tang Gogh*
- The bird lover uncle-- *Flamin Gogh*
- The fruit loving cousin-- *Man Gogh*
- An aunt who taught positive thinking-- *Way-to-Gogh*
- The little bouncy nephew-- *Poe Gogh*
- A sister who loved-- *discoGo Gogh*
- And his niece who travels the country in an RV-- *Winnie Bay Gogh*
I saw you smiling *there ya Gogh*

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Jennifer Bricker Tumbles into Our Hearts

Jennifer Bricker (born October 1, 1987) American acrobat and aerialist is the sister of gymnast Dominique Moceanu. Born without legs, she was placed for adoption by her parents, but by dint of her own indomitable will and encouragement of her adoptive family, she carved for herself a career as a gymnast and motivational speaker.

In the case of Tesla and their rapid ascent to the top of the global automobile business, this might be true. After all, the electric vehicle company somehow manages to spend \$0 on advertising year after year, despite the fact that marketing is typically a significant expense line item for most other auto manufacturers.

On the flip side, Tesla is spending an average of \$2,984 per car sold on research and development (R&D)—often triple the amount of other traditional automakers.

Automaker	R&D/car	Ad/car	R&D/Ad \$
Tesla	\$2,984	\$0	\$0
Ford	\$1,186	\$468	\$2.53
Toyota	\$1,063	\$454	\$2.34
General Motors	\$878	\$394	\$2.22
Chrysler	\$784	\$664	\$1.18

On this per vehicle sold basis, Tesla’s \$2,984 in R&D spend per car is far greater than that of other car manufacturers. It’s even higher than the collective amount going to R&D per car from three of the other automakers (Ford, GM, and Chrysler) combined.

When it comes to advertising, the average spend among traditional automakers is \$495 per vehicle. And while Tesla technically spends nothing on advertising, the company is a marketing machine that is rated as the world’s fastest growing brand, and Tesla often dominates press mentions and social media chatter.

Capital Allocation: R&D and Advertising

The balance of expenditures between R&D and advertising is part of capital allocation, a decision every business needs to make. Generally speaking, more R&D can improve and advance the quality of either your goods or service, relative to your competitors. If executed correctly, it has the potential to lead to greater pricing power that will reflect in the margins.

In contrast, advertising can spread awareness and promote the business. But it’s a tricky balance that isn’t always easy to get right.

While capital allocation is vital, one factor that differentiates Tesla from the rest, is Elon Musk himself. With over 60 million followers on Twitter, his wild popularity has no doubt aided in Tesla’s brand recognition, where they’ve arguably become synonymous with the electric vehicle revolution.

Automobiles Of Tomorrow

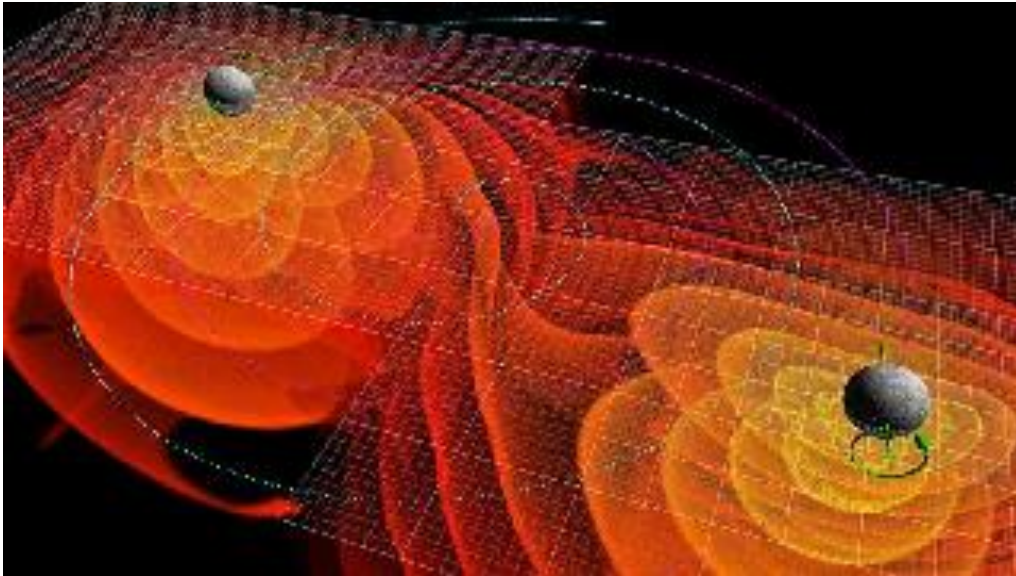
For Americans, 85% still use an automobile as their primary method of transportation to work. As a result, automobiles will likely undergo a serious shake up as the world continues on its path towards a greener future.

With increasing investments made in the electric vehicle space—poised to be worth a trillion dollar market by 2028—how will R&D and advertising budgets of tomorrow look for major automobile companies?

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Super-Precise Clock Tech Wins Physics Breakthrough Prize

By Mike Wall



Optical lattice clocks could help researchers detect the ripples in space-time known as gravitational waves, among many potential applications.

(Image credit: C. Henze/NASA Ames Research Center)

Two physicists just snagged \$3 million for helping develop a super-precise clock that could allow scientists to study and explore the universe like never before.

Hidetoshi Yatori and Jun Ye won the 2022 Breakthrough Prize in Fundamental Physics "for outstanding contributions to the invention and development of the optical lattice clock, which enables precision tests of the fundamental laws of nature," Breakthrough Prize representatives announced today (Sept. 9).

Yatori is based at the University of Tokyo and Japan's Riken research institute, and Ye calls the University of Colorado Boulder and the National Institute of Standards and Technology home. The duo worked independently and will share the \$3 million award.

Yatori and Ye's research was key to the creation of the optical lattice clock, which Breakthrough Prize representatives said improves timekeeping precision by a factor of 1,000. The new timepiece would lose less than 1 second if operated for 30 billion years — more than twice the age of the universe.

Optical lattice clocks are an evolutionary step beyond traditional atomic clocks, which are based on the quantum leaps made by electrons in energized atoms. Indeed, "one second" is officially defined as 9,192,631,770 cycles of the radiation that gets electrons in a cesium atom to make a quantum leap.

Atomic clocks initially used microwave-frequency radiation to induce those leaps. An advance came with the substitution of optical light, which features frequencies about 100,000 times higher than microwaves. Those higher frequencies enabled greater

timekeeping accuracy, just as they do in grandfather clocks with faster-swinging pendulums, Breakthrough representatives said.

Measuring the higher frequencies was much more difficult, but that problem was more or less solved by the "optical frequency comb," technology developed by John Hall and Theodor Hänsch that earned them the 2005 Nobel Prize in Physics. (Hall was Ye's Ph.D. advisor at the University of Colorado Boulder, and Ye took over his mentor's lab when the older man retired.)

Optical-frequency atomic clocks use strontium rather than cesium atoms. Both Yatori and Ye figured out how to tame strontium atoms, holding them still so they could be measured. The researchers use an "optical lattice," a standing wave from a laser beam that creates a sort of egg-carton shape whose wells trap the atoms.

"It's almost like a science-fiction tractor beam," Ye told Space.com. "You put a tractor beam in the middle of the vacuum chamber, and you can hold atoms in the middle of the vacuum chamber with light."

Manipulating atoms in this manner could disturb them enough to affect measurements crucial to accurate timekeeping. As Ye put it: "You're squeezing these atoms. How can you be sure they're going to tell you the truth?" But Yatori and Ye figured out that picking the right wavelength for the "tractor beam" solves that potential problem.

"We engineered it in such a way that this action of holding onto these atoms turns out to cause no perturbations to the measurement of the energy spacing between these two quantum states that really mattered for the clock measurement," Ye said. "So, this was almost like the free lunch."

This advance helped make the optical lattice clock a reality and earned Yatori and Ye the Breakthrough Prize in Fundamental Physics. The potential applications of the technology are numerous and diverse, Breakthrough representatives said. For example, optical lattice clocks could greatly improve the accuracy of the Global Positioning System and other satellite-navigation networks and allow deep-space probes to be guided more precisely.

The technology could also enable new tests of Einstein's theory of relativity — for instance, by allowing researchers to study gravitational time dilation and other effects more accurately. Optical lattice clocks could help detect gravitational waves as well, alerting researchers to tiny time variations induced by these space-time ripples.

The link between gravity and time means that the tech could also help researchers track volcanic and seismic events here on Earth and hunt for buried oceans on alien worlds. Optical lattice clocks could even aid the search for elusive dark matter, Ye said.

"Dark matter somehow must interact with ordinary matter, other than just gravitational physics," Ye said. "We want to be able to see very feeble signatures of a possible dark matter component to the ordinary matter that we know on Earth in the signatures of a clock being slowed down or sped up when the dark matter comes through. So we have been preparing experiments like that."

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California-Based Artist Takes on Covid



<https://estherpearlwatson.com/2021>

Esther Pearl Watson has painted one scene every day of the pandemic, juxtaposing day-to-day activities against a changing world. Quaint? Yeah maybe. Telling? Yep.

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U.S. Marine Wounded in Kabul Attack Gives Eyewitness Account

CBS News



Marine Major Ben Sutphen was just 15 feet away when a suicide bomber detonated a bomb last month near an entrance to the Hamid Karzai International Airport in Kabul.

The Marines were warned an attack was coming and had a physical description of the suspected bomber, but in the crush of humanity outside the airport, they were unable to spot him. The explosion killed 13 U.S. service members and over 100 Afghans, and wounded at least 15 American service members, including Sutphen.

"We brought a truck with a loudspeaker down to try to disperse the crowd. I was standing right by that truck when it happened," Sutphen said.

"The truck shielded you?" asked CBS News' David Martin.

"I'd say so," Sutphen replied.

After the suicide bomber detonated his vest, gunmen opened fire from a nearby roof. Sutphen described the actions of one marine corporal.

"He's blown off his feet and still has his wits about him. Shot through the shoulder. Immediately recovers his weapon and puts the opposing gunmen down," he said.

"If they had just opened fire without you firing back, what would have happened?" Martin asked.

"Without a doubt, many more Marine and civilian lives would have been lost," Sutphen replied.

Sutphen said "another corporal with substantial blast injuries to his lungs and internal organs" still had "enough grit and courage at, at risk of his own life to drag another injured Marine out of harm's way."

The attack happened about 300 yards from Abbey Gate, one of the main entrances to the airport. The Marines had set up a corridor between Abbey Gate and the Baron Hotel, where British troops were located. On the day of the attack, Abbey Gate was the only way into the airport.

"The other two gates had been closed for a while, so what was happening is everyone, it looked like the city, converging on Abbey Gate," said Sutphen.

Despite intelligence warnings of an imminent attack by the terrorist group known as ISIS-K, Abbey Gate stayed open so British troops at the hotel could return to the airport.

"The day of the attack we, we had gotten probably the most direct indications of, of a threat at the Abbey Gate and an individual to look out for, so we made sure that that information was passed to our Marine snipers and the Marines on location," recalled Sutphen.

"How difficult would it be to pick out one person who you, who you have the description of," Martin asked.

"I would say next to impossible in, in crowds of thousands, tightly packed, shoulder to shoulder chest to chest. I mean, this was a very dense crowd," Sutphen replied.

Sutphen, who was the operations officer of his battalion, said the Marines took every possible precaution.

"Armed aerial surveillance overhead at the time. We had electronic countermeasures for improvised explosive device all along the corridor that would try to eliminate any, you know, electronically triggered device," he said.

But the suicide bomber was not detected, and the carnage was horrific. An estimated 170 Afghan civilians were killed. The airport went into mourning as the dead Americans

were sent home with honors. Sutphen said there wasn't a lot that could have been done to change the situation.

"I'm sure you've asked yourself this. In retrospect, what would you have done differently?" Martin asked.

"The mission was evacuating people. We have to keep that road open. There was not a lot we could change about that situation. It was the mission, and we executed it," he said.

The mission was going to be the last for the Marines. Abbey Gate was scheduled to be closed that evening, and the Marines of Sutphen's battalion were supposed to return to the airport and board planes for the flight out.

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My Walking Thoughts

October 17, 2021

This has been a disrupted week so I don't want to rush things. But if you have to know, I had a steroid injection in my lower spine and it seems to have worked, so I'm back to walking again.

Please check back next week.

Root 66



Ditto

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