

Ode to Happiness for August 1, 2021

1824 Drones at the Olympic Opening Ceremony



Kim Kyung Hoon / reuters

<https://www.youtube.com/watch?v=t8Zr6qpKPgs>

<https://www.engadget.com/tokyo-olympics-drone-display-183750593.html>

Toward the end of the ceremony, a fleet of 1,824 drones took to the skies above the Olympic Stadium. Initially arrayed in the symbol of the 2020 Games, they then took on the shape of the Earth before a rendition of John Lennon's "Imagine," which was reworked by Hans Zimmer for the Olympics, played across the stadium.

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Bridge Nijubashi in Tokyo



fineartamerica.com

Not a bad place to be a swan...or an emperor.

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Kintai Bridge, Iwakuni, Japan



zatigo.com

The bridge was built in 1673, spanning the Nishiki River in a series of five wooden arches. The bridge is located on the foot of Mt. Yokoyama, at the top of which lies Iwakuni Castle.. Kikkou Park.



Kintai Castle, Iwakuni Japan
kcpinternational

The famous Kintai Bridge was originally a bridge to the main gate of the castle. After the destruction of the castle, Kikkawa used a part of the old castle as his residential office. The Kikkawa clan held this castle and Iwakuni Han, which was assessed at 30,000 (later 60,000) koku.

A replica of the castle tower stands high on a hill above the Nishiki River and the Kintai Bridge in the city of Iwakuni, Yamaguchi Prefecture. Iwakuni Castle was selected to be one of the 100 Great Castles of Japan by the Japan Castle Foundation

A goodly number of Odesters have spent time at the Marine Corps Air Station, Iwakuni, located near Hiroshima on Japan's Inland Sea. I was told that the idea behind the bridge was that defenders could hide from attackers in the low points of the bridge. If true, it failed to prevent the castle's sacking, but it, the present castle, and the park make a picturesque backdrop to a wonderful airbase.

What I remember most about the castle was the hall containing manikins attired in Tokugawa period battle dress. The average height of the warriors was less than four feet.

During that period, the resident Catholic Church hired Japanese mercenaries to further their efforts in the Philippines, The castle's docent told me their number amounted to as many as 60,000, but my skeptical soul doubts it if for no other reason than the number of ships that would have been needed to accomplish such an effort.

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Robots Take Free Throws at the Tokyo Olympics.



<https://twitter.com/i/status/1419286794609336323>

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Scientists Have Discovered that the Tiny "Japan Pig" is a Distinct Species of Pygmy Seahorse.

By Douglas Main

Meet the Japan pig, a newfound species of pygmy seahorse discovered in Japan.



This newly described species of pygmy seahorse (Hippocampus japapigu) blends into the algae-covered rocks where it lives in Japan.
oceanrealimages

Only the size of a grain of rice, these colorful creatures inhabit shallow waters and blend in well with the algae-covered rocks where they live.

They're easy to overlook, as their color makes them look like little bits of floating seaweed. Their coloration is "very special," says Kevin Conway, associate professor and curator of fishes at Texas A&M University. "It's like a seahorse wearing a paisley pattern."

Scientists have named the creature *Hippocampus japapigu*—using the Latin for "Japan pig," the name adopted for it by divers who have seen it in southeastern Japan.

It earned that appellation "because to the locals, it resembles a tiny baby pig," says Graham Short, an ichthyologist at the California Academy of Sciences and lead author of a study describing the new species in the journal *ZooKeys*.

Strange Ridge

Although the tiny seahorses have been observed by divers for several years, it wasn't until Short and colleagues began to study them that the researchers realized they hadn't been described before, and were unique.

The Japan pig is one of about seven known species of pygmy seahorses, which, as the name implies, are much smaller than other seahorses.

The new species differs in several respects from its cousins, for example possessing an odd ridge on its upper back made of triangular struts of bone. The purpose of the ridge is unclear, though it could have evolved as a way to attract a mate, a process known as sexual selection. (Related: Strange mating habits of the seahorse.)

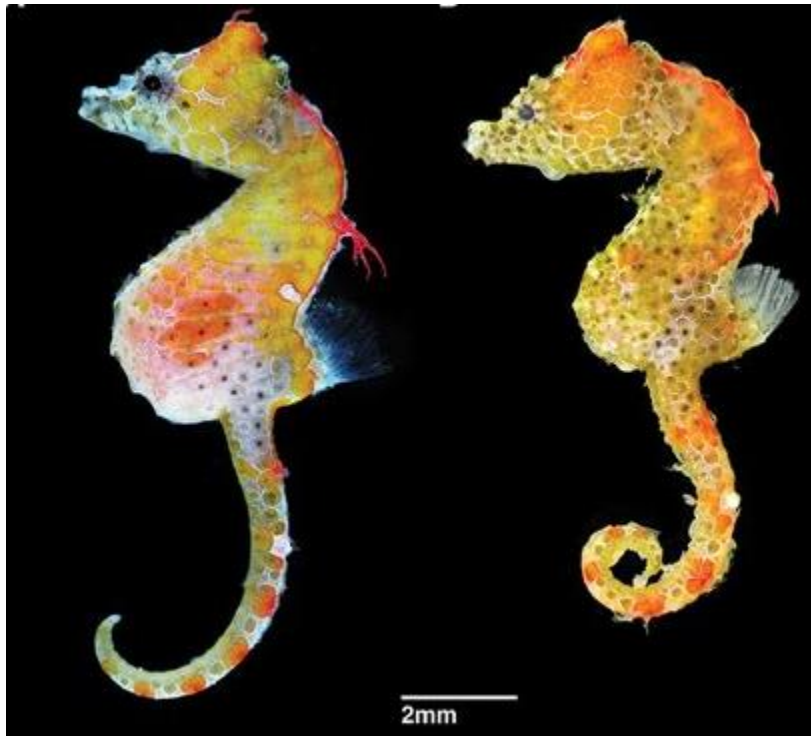
When Short first saw these bones on a CT scan, he "did a double-take," he says.

Like other pygmy seahorses, it has a wing-like structure on its back, the function of which is unclear. But unlike the other pygmies, which have two pairs, it only has one.

Besides being found in southeastern Japan, they also live near Hachijo-jima Island, a remote area more than 150 miles from Tokyo.

Luckily, "they are not rare," Short notes.

The Japan pig's habitat is a bit unusual for a seahorse. The water gets quite cold in some of these regions in winter, and warm in the summer, and most seahorses cannot tolerate such temperature swings. Other pygmy seahorses also prefer significantly deeper water.



The "Japan pig" is about the size of a grain of rice, and is luckily not rare, found in a number of locations throughout eastern Japan.

Photograph by Richard Smith

Evading Notice

Besides being smaller than regular seahorses, pygmies also have only one gill slit on their upper back, instead of two below each side of the head, like larger seahorses.

"It's like having a nose on the back of your neck," Short says.

And they are small enough "to fit two or three on the nail of my pinkie," he adds.

Their diet consists of plankton, such as copepods and other small crustaceans. As for their behavior, "they seem to be quite active, even playful," Short notes.

But that's about all that scientists can say about the creatures. "Really almost nothing is known about pygmy seahorses in general."

The benefits of being so small include evading recognition by predators. But they have also escaped excessive attention by humans.

Populations of larger seahorses are being depleted in many areas of the world by people who seek them for use in traditional Chinese medicine and the aquarium trade, Short says.

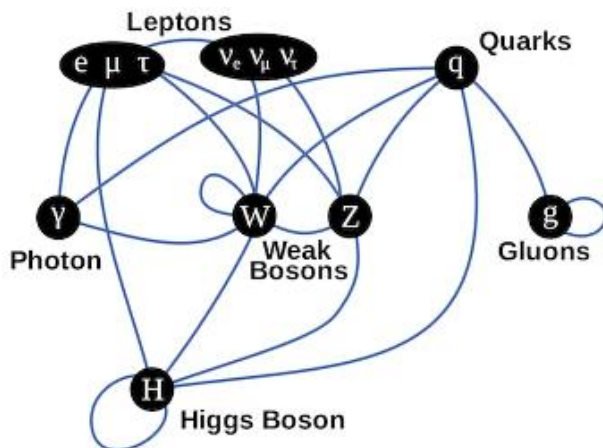
“But this will never be an issue for pygmy seahorses, because they are just too hard to find,” Short says

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The Standard Model (of Physics) at 50

It has successfully predicted many particles, including the Higgs Boson, and has led to 55 Nobels so far, but there’s plenty it still can’t account for

By Yvette Cendes



Elementary-particle interactions.

Credit: Wikimedia

Just over a half-century ago, the physicist Steven Weinberg published a seminal paper titled “A Model of Leptons in the journal *Physical Review Letters*.” It was just three pages long, but its contents were revolutionary: in the paper, Weinberg outlined the core of the theory now known as the Standard Model, which governs elementary particles. Hailed by many since then as the most successful theory ever conceived, the Standard Model describes the universe with a comprehensiveness that is hard to understate. All the particles it predicted to exist have been found, including most recently the Higgs boson. The masses of those particles lie within 1 percent of the theoretical value anticipated by the model. And three of the four fundamental forces of nature—electromagnetism, plus the weak and the strong nuclear force—have all been shown to be manifestations of one underlying force as part of the Standard Model.



Weinberg received the Nobel Prize in Physics in 1979 for his work, but no fewer than 54 other physicists have also won the prize for their research into aspects of the Standard Model. To celebrate, eight of these Nobel laureates, along with dozens of other preeminent scientists, gathered for a special symposium over the weekend of June 1–4, 2018 at Case Western Reserve University in Cleveland. Titled “The Standard Model at 50,” the meeting was in part a celebration, in part a time to reflect and in part a time to ponder the future. If you wanted to take stock of the Standard Model’s place in physics, and meet some physics icons of the past century, this was undoubtedly the place to do it.

The first thing to emphasize is that the Standard Model is well worth celebrating. As noted by Gerard t’Hooft (Nobel laureate, 1999), no one knew in the 1960s, when he did his own seminal work in electroweak theory, that there would be something as comprehensive as the model turned out to be. But there is, and it explains all matter on all scales, from the tiniest Planck length (6.3631×10^{-34} inch) to the scale of the universe. “It’s gorgeous!” said David Gross (Nobel laureate, 2004, for his work on the strong force that binds atomic nuclei,) beaming like a proud father at the written equation that encapsulates the model. So precise are its predictions that physicists who rely on it at the Large Hadron Collider (LHC) near Geneva, Switzerland, have to be alert to incredibly mundane effects like trains passing by miles away, because they set up electrical fields in the rails that can affect measurements at the giant accelerator’s detectors. You don’t worry about things like that unless the predictions are incredibly spot on.

And yet, despite its robust predictions, the consensus was that today’s Standard Model is not the final one. For all its success, the Standard Model does not answer the question of what the dark matter and dark energy are that make up the majority of matter in our universe. It does not explain why neutrinos have mass. It does not explain how the fourth fundamental force, gravity, can be reconciled with the other three. And it does not explain why all the matter in our universe is here in the first place—the question of why there’s something rather than nothing.

"The bottleneck in particle physics is experimental, not theoretical," explained Gross. The accelerators required to test the Standard Model are incredibly expensive—the LHC cost about \$9 billion to build, and costs \$1 billion a year to run—and finding discrepancies in experiments that could lead to a new, even more powerful theory could require even more costly experiments. Without that sort of data, however, "it's easy to get lost in the fog," observed t'Hooft.

Could the answers to those questions lie in extra dimensions, or string theory, or some other theory that hasn't even been conceived yet? It's possible, but without experimental proof, it's easy to get carried away. "Remember," said George Smoot, who shared the 2006 Nobel Prize for his work in characterizing the cosmic microwave background (CMB) radiation left over from the big bang, "the steady state theory for the universe [the theory ruled out by the first detection of the CMB in 1964] is extremely beautiful, but it's also extremely wrong."

Finally, on a weekend that was as star-studded as it gets in the physics world, it's important to remember that all these great advances were done by actual people, with all the good and bad qualities that this entails. Someone with a resemblance to Winston Churchill showed up a few minutes late for Sunday's talks and grabbed the seat next to me, and I was startled to notice it was Steven Weinberg (who proceeded to share his wry observations during the lecture). I found myself waiting at the bar at the reception beside George Smoot, and we proceeded to swap local craft beer tips. Helen Quinn, a brilliant Australian-American who should be on anyone's Nobel short list for her work in particle physics, went out of her way to offer career advice to every student she came across. t'Hooft reminisced about hitchhiking through rural France during graduate school, on his way to a summer school.

And one Nobel laureate, who shall go unnamed, proceeded to frame our introduction by stating I was clearly invited because I was pretty, and that I looked old enough to finish my PhD already. (The Nobel Prize in Physics is still such an old boys club that only two women have ever won the prize out of 207 recipients. The last was in 1962—a greater gap than in any other field, and not for a lack of good scientists.)

But no matter—you can't let a social imbecile ruin your time at a celebration, and the 50th birthday party for the Standard Model was one not to miss. It made me wonder what sort of party will be organized for its 100th. Will the speakers lecture on the solution to dark energy, or laugh at our current ideas, or still be puzzling over the answer? Will gravity be brought into the Standard Model family, or remain an outcast? It will be interesting to see if even "the most successful theory ever conceived" will stand firm over the coming years, or whether physicists will find themselves modifying it in the future.

[Steven Weinberg, a professor of physics and astronomy at The University of Texas at Austin, died on July 24, 2021. He was 88.]

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Pay attention guys. Tonight it's red coats and blue helmets.

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Shower Thoughts

- "The reason the washing machine only ever eats one sock is because when it eats a pair we don't notice it."
- "If we removed the walls and ceilings of trains, they would just be rollercoasters."
- "Life on earth is practically what happens when you don't store things in a 'cool, dry place away from light.' We are cosmic mold."
- "Once humans have lived on Mars for long enough, a Martian accent will develop."
- "People think Wikipedia is a source when it is actually a reference, and Wikipedia lists its sources as references."

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Single Toad Calls



Somewhere in these boulders
Single toad calls
Tremble of desire
Echo of needs rub
Against rounded rocks
Like shoulders held close
In naked embrace
I tremble too that such yearning
Roots in impossible place

Katherine Holden

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Cassie the Bipedal Robot Runs a 5K

Brian Heater



Image Credits: Agility

You may well recognize Cassie as the basis of Agility Robotics' delivery bot, Digit. If you've been following the tech's progression at all, however, you no doubt know that it started life as the ostrich-inspired Cassie. The robot is all legs and not much else.

In addition to fueling Agility's commercial ambitions, the robot has proven a solid platform for exploring bipedal location. Announced by Oregon State University professor

Jonathan Hunt in 2017, Cassie was created with the aim of a \$1 million grant from the DoD — a pretty familiar story in the robotics world.

https://techcrunch.com/wp-content/uploads/2021/07/OSU-Bipedal-Robot-First-to-Run-5K.2021-07-27-17_42_07.gif

https://youtu.be/FSaSjd_HOaI

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Comedian Mac King's Rope Trick



dailymotion.com

<https://www.youtube.com/watch?v=xmI9uwYzH9o>

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World's First 3-D-Printed Steel Bridge Debuts in Amsterdam

The newly opened overpass measures 40 feet long and weighs 6 tons

By Tara Wu for smithsonianmag.com



*The bridge is located in Amsterdam's red-light district.
(MX3D)*

Last week, the first 3-D-printed steel bridge in the world—an innovative project headed by Dutch company MX3D—opened to the public in Amsterdam. Queen Máxima of the Netherlands presided over the unveiling, pressing a button that prompted a robot to cut a ribbon hanging across the bridge, reports Aleksandar Furtula for the Associated Press

(AP). The novel landmark spans one of the city's oldest canals and sits in the center of the red-light district.

In addition to marking a milestone in the capabilities of 3-D printing technology, the 40-foot-long bridge doubles as a "living laboratory" with hidden sensors that collect real-time data about the overpass' performance. Researchers at Imperial College London will use this data to analyze how the bridge reacts over time as pedestrians interact with it.

"A 3-D-printed metal structure large and strong enough to handle pedestrian traffic has never been constructed before," says Leroy Gardner, a structural engineer at Imperial, in a statement. "It's fantastic to see it finally open to the public."

Plans for construction of the smart bridge began in 2015, when MX3D proposed 3-D printing a metal bridge with state-of-the-art technology that combines robotics and welding, reports Sofia Lekka Angelopoulou for Designboom. Six tons of stainless steel and several years later, the bridge stands as an award-winning feat of engineering.

According to New Atlas' Adam Williams, the actual printing process took six months and was completed in 2018. Due to renovations to the canal's walls, the bridge could only be installed this month. It was constructed remotely with the help of four robots, then shipped to the site and lifted into place by crane.

Tim Geurtjens, chief technology officer of MX3D, tells the AP that the project's success has exciting implications for the future of architecture.

"If you want to have a really highly decorated bridge or really aesthetic bridge, suddenly it becomes a good option to print it," he says. "Because it's not just about making things cheaper and more efficient for us, it's about giving architects and designers a new tool—a new very cool tool—in which they can rethink the design of their architecture and their designs."

To assess how the printed steel behaves over time, the team created a "digital twin" of the bridge that will use incoming data from the sensors to simulate the state of its physical counterpart. Information from this computerized model will help experts explore potential new uses for 3-D-printed steel and "teach" the bridge how to perform tasks like counting the number of pedestrians that cross it, per New Atlas.



*Queen Máxima of the Netherlands inaugurated the bridge with the help of a robot.
(MX3D)*

As Mark Girolami, a civil engineer at the University of Cambridge who is working on the digital model, tells New Scientist's Matthew Sparkes, bridge failures can often be attributed to overlooked deterioration. By constantly transmitting data about a bridge's status, 3-D-printed versions may be able to provide early warnings and prevent collapses.

The bridge, whose embossed silver waves lend it a modern, futuristic look, stands out amid its surroundings: Amsterdam's oldest neighborhood and a place known for being the underbelly of the Dutch city.

Micha Mos, a councillor at Amsterdam municipality, tells the AP that he hopes the new bridge will bring tourists to the area.

"This may attract a new kind of visitor, one who is more interested in architecture and design, which will help change the way the neighborhood is perceived as more of something you want to visit but visit respectfully than it has been over the few last decades."

A permit will allow the steel structure to remain in place for the next two years while the previous bridge undergoes repairs.

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1 Billion Years of Tectonic Plate Movement in 40 Seconds

According to plate tectonic theory, the Earth's surface is made up of slabs of rock that are slowly shifting right under our feet.

Because of this constant movement, today's Earth looks a lot different from what it did millions of years ago. Today's animation looks at the Earth's tectonic plate movement from 1 ga (geological time for 1 billion years ago) to the present-day, via EarthByte on YouTube.

https://www.youtube.com/watch?v=5_jhIv5mRP8

Editor's note: The video starts at time 1,000 ma (1,000 million years ago), and ticks down at the rate of about 25 million years every second.

The Emergence of Plate Tectonic Theory

Plate tectonics is a relatively new theory—in fact, according to National Geographic, it hadn't become popular until the 1960s. However, the concept of continental movement was brewing long before it became widely accepted.

In 1912, German scientist Alfred Wegener proposed a theory he called continental drift. According to Wegener's theory, Earth's continents once formed a single, giant landmass, which he called Pangaea.

Over millions of years, Pangaea slowly broke apart, eventually forming the continents as they are today. Wegener believed this continental drift explained why the borders of South America and Africa looked like matching puzzle pieces. He also pointed to similar rock formations and fossils on these two continents as proof to back his theory.

Initially, the scientific community wasn't on board with the theory of continental drift. But as more data emerged over the years, including research on seafloor spreading, the theory started to gain traction.

The Supercontinent Cycle

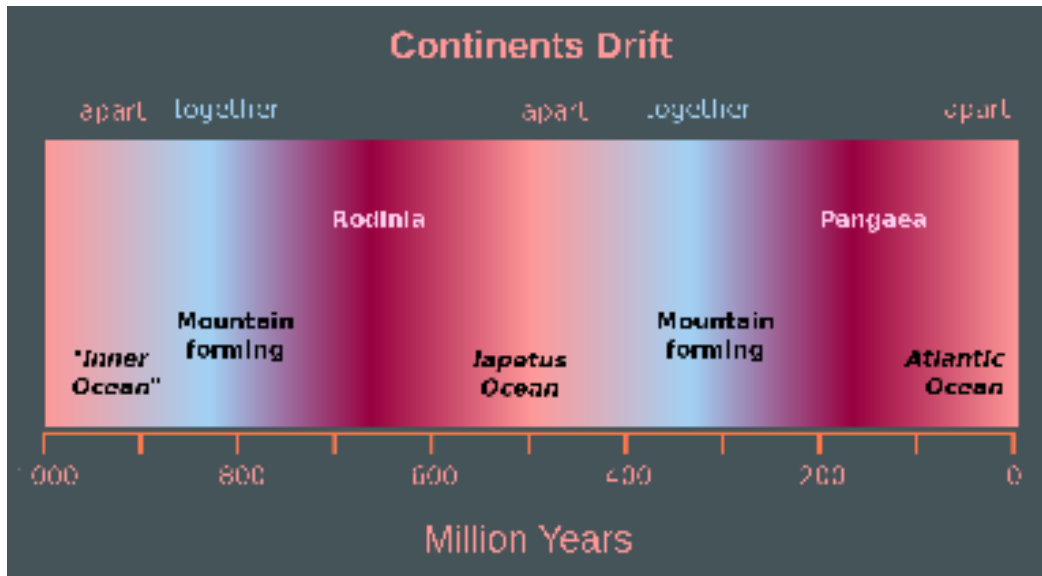
Nowadays, it's believed that Pangea was just one of several supercontinents to mass together (and break apart) over the course of geological history.

The exact number of supercontinents is largely debated, but according to the Encyclopedia of Geology, here are five (including Pangea) that are widely recognized:

- Kenorland: 2.7-2.5 billion years ago
- Nuna/Columbia: 1.6-1.4 billion years ago
- Rodinia: 950–800 million years ago
- Pannotia: 620-580 million years ago
- Pangea: 325-175 million years ago

According to the theory, this cycle of breaking apart and coming together happens because of subduction, which occurs when tectonic plates converge with one another.

The supercontinent cycle also ties into ocean formation. The below example of the Wilson Cycle specifically keys in on how the Atlantic Ocean, and its predecessor, the Iapetus Ocean, were formed as supercontinents drifted apart:



Source: Hannes Grobe

The Importance of Plate Tectonics

Plate tectonics has been a game-changer for geologists. The theory has helped to explain tons of unanswered geological questions, assisting scientists in understanding how volcanoes, mountains, and ocean ridges are formed.

It's also valuable for the oil and gas industry since it explains how sedimentary basins were created, allowing geologists and engineers to target and locate vast oil reserves.

Since the theory of plate tectonics is relatively new, there's still a lot to be discovered in this field of research. However, in March 2021, a report was published in Earth-Science Reviews that, for the first time, visualized a continuous plate model that shows how Earth's plates have shifted over the last billion years.

The video above visualizes this particular report and accurately depicts the Earth's tectonic plates' movement or the observed shift in Earth's tectonic plates over the years.

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Perihelion to Aphelion

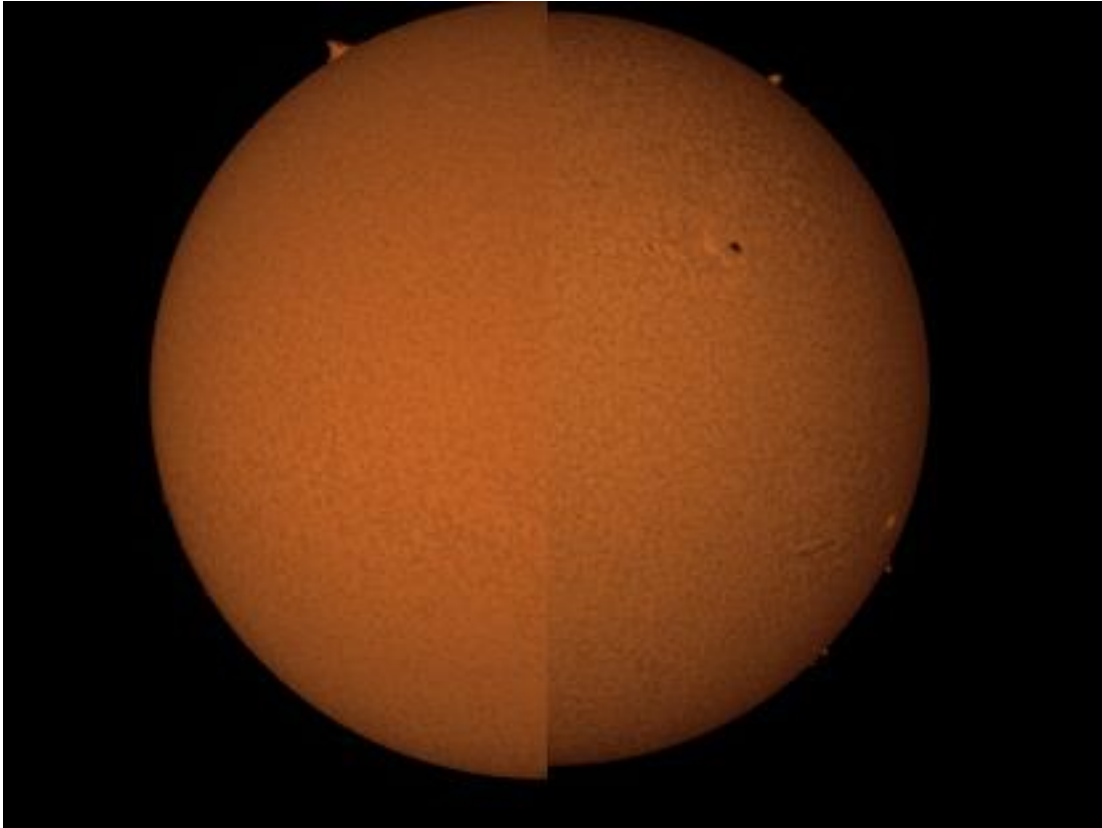


Image Credit & Copyright: Richard Jaworski

Aphelion for 2021 occurred on July 5th. That's the point in Earth's elliptical orbit when it is farthest from the Sun. Of course, the distance from the Sun doesn't determine the seasons. Those are governed by the tilt of Earth's axis of rotation, so July is still summer in the north and winter in the southern hemisphere. But it does mean that on July 5 the Sun was at its smallest apparent size when viewed from planet Earth.

This composite neatly compares two pictures of the Sun, both taken with the same telescope and camera. The left half was captured close to the date of the 2021 perihelion (January 2), the closest point in Earth's orbit. The right was recorded just before the aphelion in 2021. Otherwise difficult to notice, the change in the Sun's apparent diameter between perihelion and aphelion amounts to a little over 3 percent.

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Rock You Like a Hurricane: Scorpions

German rock band Scorpions signature song.



bravewords

<https://youtu.be/6yP1tcy9a10>

Not enough noise? Try this one.

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

t's early morning, the sun comes out
Last night was shaking and pretty loud
My cat is purring, it scratches my skin
So what is wrong with another.

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Chopin Raindrop Prelude for a Very Old Elephant



<https://youtu.be/4XVAd0LhP9E>

Every time a include one of these piano for elephants clips, I get a flood of responses...all positive.

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Richard Wagner - Tristan und Isolde, Prelude

Culturally and aesthetically, Richard Wagner's Tristan und Isolde was a game changer.



From the moment the opera premiered at Munich's National Theatre on June 10, 1865 (155 years ago this week), it elicited fervent and wildly conflicting reactions. Friedrich Nietzsche described "a lasting sense of ecstasy," and proclaimed the work to be "the real opus metaphysicum of all art...[inspiring] insatiable and sweet craving for the secrets of night and death...it is overpowering in its simple grandeur."

Clara Schumann called it "the most repugnant thing I have ever seen or heard in all my life," while the influential and notoriously conservative critic Eduard Hanslick compared its extended, writhing chromaticism with an "old Italian painting of a martyr whose intestines are slowly unwound from his body on a reel." Giuseppe Verdi said that he "stood in wonder and terror" before Wagner's masterpiece.

Early audiences found Tristan und Isolde to be radically shocking, partly because it broke long-established harmonic rules. Many music theorists consider it to mark the beginning of the "dissolution of tonality," opening the door to the full-fledged atonality that would take hold in the twentieth century.

Silence is a central element in the searching opening bars of the Prelude. Every possible resolution of the "Tristan chord" leads to another question. A halting dialogue between the strings and woodwinds initiates the Prelude's majestic and gradually unfolding crescendo of color and sound.

Simon Rattle: <https://www.youtube.com/watch?v=8uUFMWqcuNs>

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Earth Has a 'Pulse' of 27.5 Million Years

By Yasemin Saplakoglu – Live Science Staff Writer

Our planet's geological heart beats at a rhythmic pace.



*3D rendering of Earth showing Europe at night.
(Image credit: Shutterstock)*

Most major geological events in Earth's recent history have clustered in 27.5-million-year intervals — a pattern that scientists are now calling the "pulse of the Earth," according to a new study.

Over the past 260 million years, dozens of major geological events, from sea level changes to volcanic eruptions, seem to follow this rhythmic pattern.

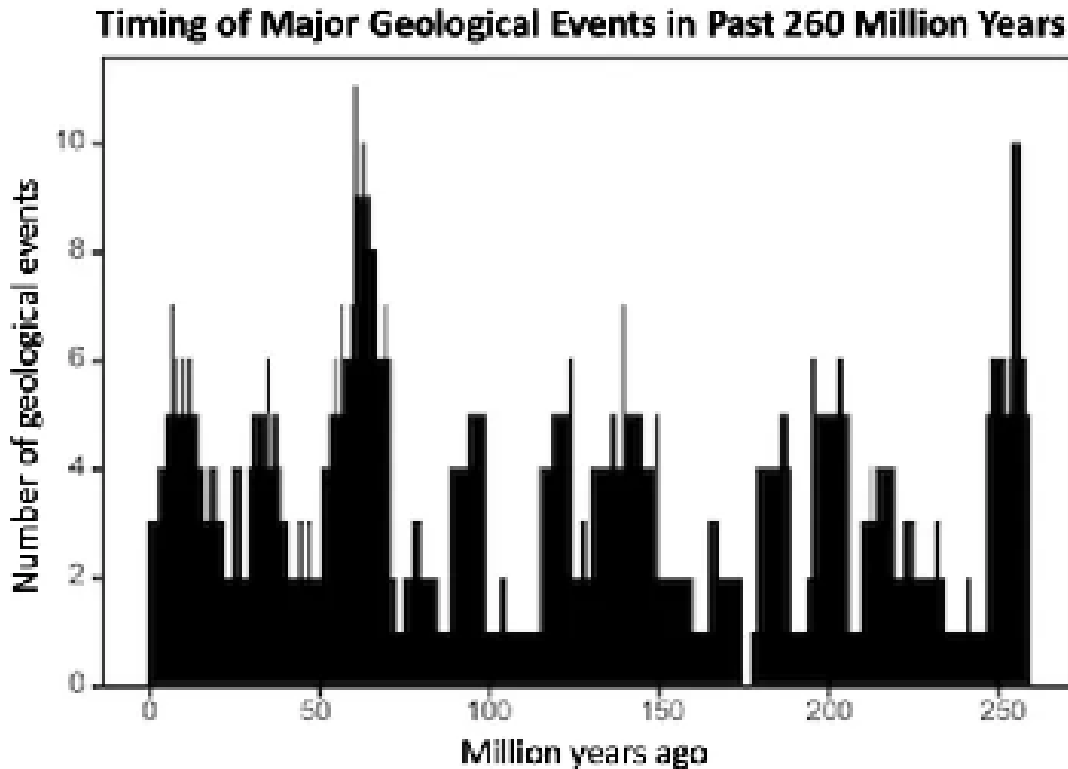
"For quite a long time, some geologists have wondered whether there's a cycle of around 30 million years in the geologic record," said lead author Michael Rampino, a professor in the departments of biology and environmental studies at New York University. But until recently, poor dating of such events made the phenomenon difficult to study quantitatively.

"Many, but maybe even most, [geologists] would say that geological events are largely random," Rampino told Live Science. In the new study, Rampino and his team conducted a quantitative study to see if they were indeed random or if there was an underlying pattern.

The team first scoured the literature and found 89 major geological events that occurred in the past 260 million years. These included extinctions, ocean anoxic events (times when the oceans were toxic due to oxygen depletion), sea level fluctuations,

major volcanic activity called flood-basalt eruptions and changes in the organization of Earth's tectonic plates.

Then, the researchers put the events in chronological order and used a mathematical tool known as Fourier analysis to pick up spikes in the frequency of events. They discovered that most of these events clustered into 10 separate times that were, on average, 27.5 million years apart. That number may not be "exact," but it's a "pretty good estimate" with a 96% confidence interval, meaning it's "unlikely to be a coincidence," Rampino said.



A new study finds that major geological events occurred in clusters every 27.5 million years. (Image credit: NYU)

The researchers looked only at the past 260 million years — when the dating of such events is most accurate — but they think the results likely extend further back in our planet's history. For example, data from sea level changes go back around 600 million years and also seem to follow this pulse, Rampino said.

It's not clear what's causing such a pulse in geological activity, but it could be internally driven by plate tectonics and movement inside the mantle, the researchers wrote in the study. Or it could have something to do with the movement of Earth in the solar system and the galaxy, Rampino said. For example, the 27.5 million year pulse is close to the 32 million year vertical oscillation around the midplane of the galaxy, according to the study.

One theory is that the solar system sometimes moves through planes containing larger amounts of dark matter in the galaxy, Rampino said. When the planet moves through dark matter, it absorbs it; large amounts of captured dark matter can annihilate and release heat, which can produce a pulse of geological heating and activity, Rampino said. Perhaps this interaction with large amounts of dark matter correlates with the pulse of the Earth, Rampino said. (But of course, this is just a theory. Scientists still don't know what dark matter is made of, and don't know how it's distributed in the solar system.)

Rampino and his team hope to get even better data on the dating of certain geological events and plan to analyze a longer time period to see if the pulse extends further back in time. They also hope that if, one day, they can get better numbers on the astronomical movements of Earth through the solar system and the Milky Way, they can see if there's any correlation in the astronomical and geological cycles.

In any case, if such a pattern exists, the last cluster was about 7 million to 10 million years ago, so the next one would likely come in 10 million to 15 million years, Rampino said.

The findings were published online June 17 in the journal Geoscience Frontiers.

Originally published on Live Science.

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Blood Test that Finds 50 Types of Cancer is Accurate Enough to be Rolled Out

Diagnostic tool being piloted by NHS England shows 'impressive results' in spotting tumors in early stages



*The blood tests are accurate enough to be rolled out as a screening test, scientists say.
Photograph: Getty Images*

By Nadeem Badshah and agency for The Guardian

A simple blood test that can detect more than 50 types of cancer before any clinical signs or symptoms of the disease emerge in a person is accurate enough to be rolled out as a screening test, according to scientists.

The test, which is also being piloted by NHS England in the autumn, is aimed at people at higher risk of the disease including patients aged 50 or older.

It is able to identify many types of the disease that are difficult to diagnose in the early stages such as head and neck, ovarian, pancreatic, oesophageal and some blood cancers.

Scientists said their findings, published in the journal *Annals of Oncology*, show that the test accurately detects cancer often before any signs or symptoms appear, while having a very low false positive rate.

The test, developed by US-based company Grail, looks for chemical changes in fragments of genetic code – cell-free DNA (cfDNA) – that leak from tumors into the bloodstream.

The Guardian first reported on the test last year and how it had been developed using a machine learning algorithm – a type of artificial intelligence. It works by examining the DNA that is shed by tumours and found circulating in the blood. More specifically, it focuses on chemical changes to this DNA, known as methylation patterns.

Now the latest study has revealed the test has an impressively high level of accuracy. Scientists analysed the performance of the test in 2,823 people with the disease and 1,254 people without.

It correctly identified when cancer was present in 51.5% of cases, across all stages of the disease, and wrongly detected cancer in only 0.5% of cases.

In solid tumours that do not have any screening options – such as oesophageal, liver and pancreatic cancers – the ability to generate a positive test result was twice as high (65.6%) as that for solid tumours that do have screening options such as breast, bowel, cervical and prostate cancers.

Meanwhile, the overall ability to generate a positive test result in cancers of the blood, such as lymphoma and myeloma, was 55.1%.

The test correctly also identified the tissue in which the cancer was located in the body in 88.7% of cases.

Dr Eric Klein, chairman of the Glickman Urological and Kidney Institute at Cleveland Clinic in the US and first author on the research, said: "Finding cancer early, when treatment is more likely to be successful, is one of the most significant opportunities we have to reduce the burden of cancer.

"These data suggest that, if used alongside existing screening tests, the multi-cancer detection test could have a profound impact on how cancer is detected and, ultimately, on public health."

Dr Marco Gerlinger, from the Institute of Cancer Research in London and consultant medical oncologist at the Royal Marsden NHS foundation trust, said: "This new study shows impressive results for a simple blood test that can detect multiple cancer types.

“False positives are low which is important as this will avoid misdiagnoses. For some of the most common tumor types such as bowel or lung cancer, the test even picked up cancers that were very small, at a stage where many of them could potentially be cured.

“The study was done in patients whose cancer was already diagnosed based on other tests and this screening technology still needs to be tested in actual screening trials before routine use.

“But it already allows a glance at early cancer detection in the future which will almost certainly be built around liquid biopsy tests, which detect cancer DNA in the bloodstream.”

Meanwhile, the results of the NHS pilot of the test, which will include 140,000 participants, are expected by 2023.

Prof Peter Johnson, national NHS clinical director for cancer, said: “This latest study provides further evidence that blood tests like this could help the NHS meet its ambitious target of finding three-quarters of cancers at an early stage, when they have the highest chance of cure.

“The data is encouraging and we are working with Grail on studies to see how this test will perform in clinics across the NHS, which will be starting very soon.”

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Can You Really Make Drinkable Beer From Concentrate?

One company is trying to let you make a fresh beer the way you'd make a K-Cup of coffee.

By Matt Goulet



Product, Yellow, Bottle, Logo, Black, Alcoholic beverage, Glass bottle, Bottle cap, Alcohol, Packaging and labeling, Philip Friedman

If you've ever tasted a Miller Lite, you know it takes a lot of water to make beer. That water is heavy—8 pounds per gallon. Which means that there's a huge monetary and environmental expense in transporting and distributing kegs and cases around the world. But in 2008 Pat Tatera of Pat's Backcountry Beverages in Golden, Colorado, came up with a solution: Add the water after you ship the beer.

Previous efforts to concentrate beer have involved removing water from full-fledged brews, taking away much of the beer's flavor in the process. Tatera, a chemical engineer and home brewer, came at it a different way. He devised a process he calls nested fermentation, whereby a beer is brewed in the largest amount of malt and with the least amount of water that the yeast can survive in and still effectively ferment. That beer is vacuum-distilled, which means the air pressure is removed and the alcohol from the brew is evaporated, extracted, and set aside for later. Left behind is a thick, nonalcoholic beer that gets brewed with a new batch of malt and yeast to make another, highly alcoholic, beer. The process is repeated several times before the syrup and the alcohol removed in each batch are combined to create a fluid that's 58 percent alcohol by volume per 50-milliliter packet. And looks like motor oil. There are three ways to turn the syrup into a real beer. You can add a packet of the company's 1919 Pale Rail ale or Black Hops IPA-style concentrate to a pint glass of cold soda water, or run it through a home soda maker. Or you can take it on the go and mix still water and the concentrate in Tatera's patented carbonator—basically a SodaStream in a Nalgene bottle. When reconstituted, you've got a craft beer that can stand up to traditional brews. Really.

The company is introducing yet another way to dilute its syrup with the release of a reconstituting tap later this year, meaning that beer from concentrate could be on draft at the bar right next to traditionally made brews. It'll be the most flavorful watered-down beer you'll ever order.

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The Taste Test

By Dave Arnold, bartender and author of Liquid Intelligence

"Conceptually, kudos to these guys for pulling off such a crazy idea. My bartenders could make an interesting cocktail using the syrup as bitters. You get a nice head on the beers when you stir them up in the glass. The Pail Rail tastes like a beer. It's definitely not the worst I've ever had. Sort of like Yuengling. That is the better of the two. They hopped the hell out of the Black Hops. It was hard for me to taste it. It's over-caramelized, with a candied flavor at the end."

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Château de Chambord



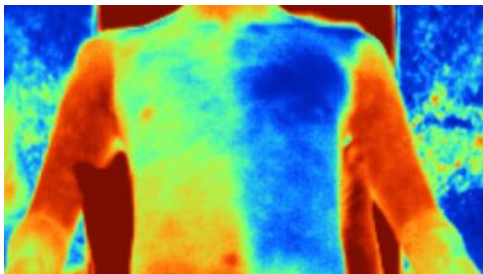
(Image credit: Benjamin Barakat)

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New 'Mirror' Fabric Can Cool Wearers by Nearly 5°C

By Alex Viveros

While it's easy to engineer clothing that keeps you warm, it's far harder to come up with an outfit that can keep you cool on a scorching summer day. Now, researchers have designed a fabric that looks like an everyday T-shirt, but can cool the body by nearly 5°C.



A new material (right) significantly reduces body heat compared to regular cotton (left), as seen in this infrared image.

S. Zheng, Et. Al., Science (2021) 10.1126

To make clothing that beats back the Sun, fashion designers typically use light-colored fabric, which reflects visible light. But another method reflects the Sun's electromagnetic radiation, including ultraviolet (UV) and near-infrared (NIR) radiation. NIR warms objects that absorb it and slowly cools them as they emit it. That cooling

process, however, is stymied by our atmosphere: After being emitted from an object, NIR is often absorbed by nearby water molecules, heating up the surrounding air.

To speed up the cooling process, researchers are turning to mid-infrared radiation (MIR), a type of IR with longer wavelengths. Instead of being absorbed by molecules in the surrounding air, MIR energy goes directly into space, cooling both the objects and their surroundings. This technique is known as radiative cooling, and engineers have used it over the past decade to design roofs, plastic films, wood, and ultra-white paints.

Human skin, unlike many of the clothes we wear, naturally emits MIR. In 2017, Stanford University researchers designed a fabric that lets MIR from the human body pass directly through it, cooling the wearer by about 3° C. But to work, the fabric had to be very thin—only 45 micrometers, or about one-third the thickness of a lightweight linen dress shirt. That led some researchers to question its durability.

To design a thicker fabric, engineers Ma Yaoguang of Zhejiang University and Tao Guangming of Huazhong University of Science and Technology took a different approach. Rather than letting MIR from the skin pass straight through their fabric, they and colleagues designed a textile that used chemical bonds to absorb body heat and re-emit its energy into space as MIR. The 550 micrometer fabric—made of a polylactic acid and synthetic fiber blend with titanium dioxide nanoparticles scattered throughout—also reflects UV, visible, and NIR light, further cooling the wearer. Even though it looks like a regular shirt, “optically, it’s a mirror,” Tao says.

To test their creation, the researchers assembled a snug-fitting vest, with one half made of their fabric and the other made of white cotton of about the same thickness. A graduate student donned the vest and sat in a lawn chair in direct sunlight for 1 hour. When the researchers measured his skin temperature, the side under the new fabric was almost 5° C cooler than the side under the cotton, they report today in *Science*. To an infrared camera, the contrast was clearly visible, and Tao says the student could feel the temperature difference.

Can vs. Will

“This is all interesting,” says Yi Cui, the Stanford materials scientist who led the previous work and whose lab has continued working on mid-IR transparent fabrics. But he adds that, because MIR-emitting technology has so far been used on stationary surfaces that constantly face the sky, the authors of the new work should also measure how well their fabric cools when people are standing or walking. He also wonders whether the fabric works as well when it is loosely fitted, since the cooling element relies on its close contact with the skin.

Evelyn Wang, a mechanical engineer at the Massachusetts Institute of Technology, shares some of Cui’s concerns. But she adds that the work speaks to speedy progress in the area of radiative cooling. “This kind of approach has advantages because it can enable a use of a broader range of materials and feel much more like cotton, which is important for the user.”

Ma and Tao are now reaching out to textile manufacturers and clothing companies to try to get their fabric on shelves. They say the nanomaterial-infused fabric should add only about 10% to typical clothing manufacturing costs. "We can make it with mass production, which means everybody can get a T-shirt ... and the cost is basically the same as their old stuff," Ma says. "It can benefit everybody."

Posted in: Engineering

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Rare Wildlife Encounter: Two White Killer Whales off Japan

By Harry Baker – Live Science Staff Writer

The pair are most likely true albinos.



The pair of white orcas swim side by side off the coast of Rausu in Hokkaido, Japan on July 24. (Image credit: Gojiraiwa Kanko Whale Watching)

Whale watchers in Japan were recently treated to a rare wildlife encounter when they saw, not one, but two white orcas swimming side by side.

The pair and their pod were spotted by a group on a Gojiraiwa Kanko Whale Watching boat off the coast of Rausu on the northernmost of Japan's main islands called Hokkaido on July 24, according to a Facebook post.

The white coloration of orcas, also known as killer whales, can be the result of either albinism or leucism.

Albinism in orcas is the result of inbreeding, but there is no clear evidence to suggest that this negatively impacts the killer whales in any other way, Hoyt said. Leucism is the result of a random genetic mutation and also doesn't seem to impact the orcas' health, according to WDC.

"The homogenous creamy yellowish coloration in these killer whales would indicate albinism," Hoyt said. However, the only way to tell for certain would be to see their eyes (which are not visible in the images); pink eyes would mean the killer whales are albinos, he added.

As a result of being white, both orcas have very visible scratch-like markings, known as rake marks, across their bodies. These marks are caused by the teeth of other orcas, most likely as a form of playing rather than actual fighting. "The black orcas have marks too, but you can't see them as well," Hoyt said. Even so, the white orcas in the most recent photos have an "exceptionally large number of markings," he added.



Distinctive rake marks are seen across the body of this white orca. Normal orcas also have these marks, but they are not visible on their black skin.

(Image credit: Gojiraiwa Kanko Whale Watching)

It is unclear exactly how many white orcas exist across the globe, but certain populations are known to have more white individuals than others.

"Roughly 1 in 1,000 orcas in the western North Pacific [are white]," Hoyt said. "That is probably the highest ratio anywhere in the world." In 2016, Hoyt and others published a study in the journal *Aquatic Mammals* highlighting the unusual abundance of white orcas in the region.

That North Pacific population is found primarily in Russian waters, but some are also transient — an ecotype or subspecies of killer whales that have a wide geographical range — meaning they could have made the trip to northern Japan.

"These Hokkaido orcas with two white individuals may well be a group coming from adjacent Russian waters," Hoyt said, "but we don't know."

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Walmart To Pay 100% of College Tuition and Books for Associates

The largest U.S. private employer commits to invest nearly \$1 billion over the next five years in career-driven training and development



BENTONVILLE, Ark., July 27, 2021 — Today, Walmart announced it will pay 100% of college tuition and books for associates through its Live Better U (LBU) education program. Starting Aug. 16, the \$1 a day fee will be removed for associates, making all education programs paid for by Walmart. This means approximately 1.5 million part-time and full-time Walmart and Sam’s Club associates in the U.S. can earn college degrees or learn trade skills without the burden of education debt. As the largest U.S. private employer, Walmart is committing to invest nearly \$1 billion over the next five years in career-driven training and development.

“We are creating a path of opportunity for our associates to grow their careers at Walmart, so they can continue to build better lives for themselves and their families,” said Lorraine Stomski, senior vice president of learning and leadership at Walmart. “This investment is another way we can support our associates to pursue their passion and purpose while removing the barriers that too often keep adult working learners from obtaining degrees.”

The LBU program was initially designed after consulting with experts, reviewing other employer-provided education programs and studying the research around what helps drive completion rates among adult working learners. This helped guide the initial \$1 a day approach, but the economy and job market have changed, and Walmart is always looking for new ways to encourage more associates to pursue further education.

“We’re also excited to add in-demand college degree and certificate options in business administration, supply chain and cybersecurity. These additional offerings join a robust catalog of programs to set associates up for new career opportunities,” Stomski said. “Our education offerings tie directly to our growth areas at Walmart, and what better way to fill the pipeline of future talent than with our own associates.”

In addition, Walmart will add four academic partners, including Johnson & Wales University, the University of Arizona, the University of Denver and Pathstream. These complement the existing partners: Brandman University, Penn Foster, Purdue University Global, Southern New Hampshire University, Wilmington University and Voxy EnGen. Each of these institutions were chosen for their history of success with adult and working learner programs as well as their focus on degree completion.

Walmart is committed to eliminating the burden of education debt. Cost is a leading barrier for earning a degree with student loan debt in the U.S. topping \$1.7 trillion. Since launching LBU in 2018, more than 52,000 associates have participated in the

program to date and 8,000 have already graduated. Nearly 28,000 associates have been active in a LBU program this summer.

"As the company making one of the nation's largest investments in education for America's workforce, Walmart is setting a new standard for what it looks like to prepare workers for the jobs of the future," said Rachel Carlson, CEO & co-founder of Guild Education. "Walmart is creating growth opportunities for their workforce and preparing them for the future of work."

When associates enrolls in LBU and earn a certificate or degree, they take important steps toward creating a long-term career within the Walmart ecosystem.

Other leadership quotes

"We are thrilled to partner with Guild Education and Walmart in our mission to deliver Arizona's world-class higher education programs to working adult learners in a flexible, engaging and highly effective way. We are honored to be a part of the industry-leading Live Better U program at the nation's largest private employer and look forward to welcoming Walmart and Sam's Club associates into the Wildcat family." University of Arizona President, Dr. Robert C. Robbins, M.D.

"The University of Denver is passionately committed to working adult learners. Through this partnership with Walmart and Guild Education, approximately 1.5 million associates will now have access to DU's programs, completely funded by their employer. We are proud to be a part of this moment for Live Better U and every moment to come on associates' upcoming educational journeys." University of Denver Chancellor, Dr. Jeremy Haefner

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Barnstorming Takes on a New Participant



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My Walking Thoughts

Ramblings and Shamblings: A Dodderer's Progress .

August 1, 2021

PC or Not PC...That's the Question

In my walk today I didn't get around to the topic of Political Correctness until I was homeward bound, but it underlay much of what was on my mind as I crossed over to the west side of the Ventura River and headed north. Anyhoo...

Science and Us

Today is my 85th birthday...something of a monument to the role of luck in our lives. My father died at 50, my mother at 75, my sister at 78, my brother at 18, so how do I explain me? I don't.

But for some reason it got me to thinking of the accelerating march of science in contrast with the changes involved in mankind's road to the present.

Imagine if the science giants of the 17th or 18th centuries had today's transportation and communications equipment along with the societal norms that accept—better still—applaud--change.

These are a few of the factors that make life in the 21st century both interesting and challenging. Revolutions that once took millennia, then centuries, now emerge and pass as curious stepping stones to the present in the space of decades, and possibly...who knows what lies in store?

When I was 18 and just entering college, my vision of change was rooted in such features as my growth that summer of two inches to add to my theretofore five-foot, four-inch frame.

Height was not the only example of my late-bloomer propensity. Science was another, even if I didn't know it. It was college that would give me entry visions into both:

While 5'4" allowed me to play first-singles on my high school tennis team, it wasn't sufficient even for second doubles in college.

Science was pretty much what the likes of Galileo, Newton, and Mandeleev professed...except there were a few upstarts out there—Einstein, Heisenberg, and Pauling among others who were running around shaking trees.

The name Willard Gibbs was not in my rolodex, an omission I was soon to rue, but that's a story for another day.

My very first freshman class was Geology 101.

The year was 1954 and our guru was the department chairman, who was also the head of the U.S. Geological Service, headquartered a scant five miles up the road in Menlo Park, CA.

With a goodly portion of the 1,600 freshman class in rapt attendance, the professor whose name I have long since forgotten, proceeded to enlighten us as to his view of the various planet-shaping processes, all known for more than a century.

In the 49th minute, he took the opportunity to clear up any doubts about rumblings we might have heard about tectonics, stating archly, "...and there are even fools who believe the continents are running around."

I, along the other attendees, laughed heartily and went away relieved of any fears that the gods of geology were anywhere other than in their holy temples. Except...

Things in the globular world were about to get a wake-up call three years later, the results of an activity known as the *International Geophysical Year* in 1957 that gave birth to what for about 20 seconds was the *Integrated Theory of Plate Tectonics*, based on solid evidence that indeed the continents did 'run around.' Twenty seconds was the time it took to shake large cracks in the clay feet on which various elements of the theory stood, but the basic premise held fast, though the rattling has been going on ever since.

It was one of the thousands of Omigosh two-steps in the march of science that have bedeviled us in recent days.

What's our solar neighborhood like? Don't ask me, ask poor Pluto how he feels about his demotion; ask the King of the Khyber Belt rifles if he plans to send any visitors our way; ask Voyager where inter-solar space begins and why we should care.

Don't bother about a few Bosons wracking around the CERN collider when there are new whichamajigs popping up in need of names.

But how about us?

I suspect Utopians were around when Homo added Sapiens to his title--certainly by the second one—but have the forces that shaped and moved us from that upright beginning changed since then?

Certainly not in historical or archaeological records. Not even in the reckonings of physical or theoretical anthropologists.

But according to the messianic visions of avant garde political scientists, today we stand at the brink of universal brotherhood; world peace; the eradication of the strivings and skills that got us here.

So the question remains of how to align the prodigious advances in science with our inquisitive, acquisitive, territorial, predatory nature?

While provocative, ruminations of this sort are far too deep and convoluted for my limited store of gray cells...but intriguing nonetheless.

Future walks? Maybe...uh...maybe not. We'll see.

More on my Entry into Academia

When I entered college career as a freshman, I knew I was in over my head academically and socially, the former because I was not a very good student, the latter the result of having spent all but one of the last five years at boys' schools.

The first day on campus was like summer camp, with lectures, tours, tales by teachers' assistants of "...that glorious voyage on which you are about to embark," and finally a get-together during which, I hoped, the happy travelers were fated to find their shipmates for the headlong rush into intellectual awakening.

In eager anticipation of this near-sacred event I had marked out a potential soulmate, a strawberry blond named Ann Bishop from La Jolla wearing a pleated red skirt, white socks and penny-loafers, and as frosting on the cupcake a white shirt unbuttoned just far enough down to arrest the attention of most all the guys in our convoy.

Stealthily, I maneuvered myself arm's-length from her left hip just as our docent came to the end of her day-long duty. Then in an instant the assemblage went from respectful attention to swirling mayhem.

Before I was able to establish my rightful claim on young Miss Bishop (remember, this was the fifties when this title was Ok), I found myself punted four rows rearward by the press of stalwarts who shared my assessment of the incoming crop of beauties. It took several moments to realize that our convoy had been shadowed by a wolfpack of lean-and-hungry upperclassmen who understood what I and most of the 1199 other freshman male slobs had yet to realize ... that when it came to young ladies our co-ed marketplace was woefully understocked—400 by the provisions of Mrs. Stanford's will, with that three-to-one male/female ratio holding steadfast for the entire four-year adventure.

My hopes of snaring the favor of some beauty, or runner-up after twenty minutes of futile prospecting, were dashed on the rocks and shoals of despair. I had in the past felt powerless in the realization the field belonged to those who had been there and seen it all before, but never so acutely as that moment. Thoroughly chastened, I returned to the solitude of my dorm room to bask in the totality of my rejection.

"Hey," a headless voice popped into the room, "you're wanted on the phone." A million thoughts raced through my head as I ran to the dormitory office. Maybe the fetching young Miss Bishop was about to rectify a grave mistake. Perhaps it was a contingent of young things pleading for my return.

Umm...probably not

"John?" an unfamiliar voice asked through the static-laced line.

"Yes," I answered, hoping I sounded far more reserved than I felt. "This is he ... I mean I'm John," my knees sagged at my ineptitude.

"Hi. This is Anne Milton Your mother and my parents are best friends, you know."

Of course I knew. She was two years older, a cheerful soul given to giggles after the second rum toddy she habitually allowed herself at her family's Christmas cocktail party that marked our annual meeting ground.

"Sure," I said, more under control than before. "How are you?"

"I'm fine. Look, a friend of mine, Elizabeth Courtenay--you probably don't know her--and I are having a little 'welcome back' party this weekend and I wonder if you'd like to come?"

As the story unwound, there was a little more to it than a simple invitation. Her friend lived with her parents in Burlingame, a town 15 miles up the peninsula toward San Francisco, and had just broken up with her boyfriend of some long standing. Rather than put up with the problems of resurrecting old flames on the spur of the moment, they had decided that I--both as a stranger and a discountable freshman--would do quite well as escort/deputy host under the circumstances.

I leaped at the chance.

Scrubbed behind the ears and about as well turned out as possible given the conditions of dorm life, which included having your clothes borrowed without warning, I arrived on Miss Courtenay's doorstep clueless of what lay beyond. The door was answered by a subdued young lady, pretty in what I think of as the 'Colonial Dames' over-bred manner. She reminded me of tepid tea and marmalade.

"Beth," she introduced herself as if it were an apology, and we stood at the doorway for a moment with her in some sort of reverie. "Oh," she said, returning to the present with a start. "Come in." and for the first time she looked at me and started crying.

Had I worn the wrong clothes or something, I wondered, but then she got hold of herself, snuffled into a limp handkerchief, and threw her shoulders back in a burst of determination.

"Look," she said, offering me a way out before the guests arrived, "I'm a mess. I'm silly. I have no business giving a party or dragging you into the middle of my problems so maybe you ought to leave now while there's time."

"Only if you leave with me," I made it sound gallant though the combination of her vulnerability and my need had already steered me into dangerous waters. The thought brought her up short and for an instant she looked puzzled. Then a big smile lit up her face and she began to radiate. "That we'll talk about later after the party's over," she said mischievously, reacquiring the 'junior-to freshman' mantle of superiority.

I was a full-blown tornado. Greeting people, taking their coats, ushering them to the bar, introducing "Paul and Caroline" to "Peter and Jane"; putting out a small fire in the pantry; guiding Gary out back where he could puke without stinking up the powder room. I slid between two red-faced polemicists about to settle the question of Shakespeare and Bacon, suggesting to the opponents that such heady discussions required outdoor air rather than the dingy muck of cigarette smoke and alcohol vapors.

For a while the crowd grew from a handful to half-a-hundred, see-sawed up and down as arrivals kept pace with departures, then began a slow but steady retrenchment. I had just begun to think about the aftermath and whether Beth was just pulling my leg,

when I saw her crossing the room toward me with a stricken look on her face. Oh God, I thought. It's just dawned on her what a little creep I am.

But no, it wasn't that.

"There're some party crashers in the kitchen drinking all the beer and eating everything in sight," she blurted out, clearly afraid they might invade the living room if something weren't done in a hurry. "Throw them out," she ordered as if the task were no more complicated than emptying ashtrays into the trash bag.

Now here's an opportunity, I considered unhappily. No thought as to who they were or how many there might be, or how big they were or whether they enjoyed kicking the stuffings out of undersized freshmen nerds.

No sir! I, an iffy five-foot-six and 111 pounds with little prospect of tacking on much more height or weight before the confrontation took place, nodded, slammed through the swinging door between the pantry and the kitchen and demanded in the most authoritative voice I could muster, "Which one of you jerks is the leader?"

Heads snapped toward an easy-going, casually dressed, dark-haired young man sporting coke-bottle-lensed black-rimmed glasses. The commotion caused him to stop gnawing on the turkey leg liberated from the carcass on the pantry table.

While everyone in the room reeled in the confusion, I pressed my advantage. "You!" I said imperiously, carrying it off better than I dared hope. "Outside! The rest of you wait here until I come back!" As an afterthought, "Leave the turkey alone."

With that I continued my headlong plunge out the back door to the yard where the Shakespeare versus Bacon scholars continued their academic discussion, rolling about in the flower bed shouting vile oaths, oblivious to the rose thorns and sprinkler heads.

Behind me the screen door squealed and slammed shut and rapid footsteps descended the stairs. At that point the lunacy of the situation drained me of bravado and ideas at the same time.

"Do you want to take your glasses off?" I asked lamely, praying for a miracle of some sort...perhaps a Marian apparition.

"How can I?" he answered sheepishly, "I'm blind without them." We looked at each other and I remember thinking with vaulting wonder, you mean I might live through this after all?

This led to his choppy response of, "Heard noise coming from Beth's house ... figured food and beer ... thought we'd drop in." These led to an animated discussion of our connections to the situation. By this time a dozen or so onlookers were plastered to the kitchen windows straining to see what was going on.

Finally, Tom Somethingorother said, "Look, I'll shoo these geeks out of here and let you get on with things." With that he gave a wave to his friends; four of them I realized as they bolted down the stairs and headed off into the dark.

By then the last remaining guests were making their good-byes. Anne and her date lingered by the door talking with Beth and someone I hadn't seen earlier but instantly placed ... it was the way she held herself soft and attentive to his easy movements. He was the one for whom I was the evening's surrogate, come to gather the spoils.

"You sure you wouldn't like a nightcap?" Beth asked, leaning her hip ever-so-lightly against my replacement. "No thanks," I replied trying to make my voice as light and jolly as my heart was heavy and sad. "Maybe another time."

And to myself I promised, "Someday I'll be the one who's been there before and makes the rules."

And today's final footfalls...

Feet approaching the point of no return, my thoughts turned resolutely to the topic that had been ping-ponging for my attention most of the walk, *Political Correctness*.

For years, the crux of my concern vis-à-vis PC was its cavalier substitution of *fancy* for *fact*, but increasingly it had risen to such epic heights of scale and intensity as to make me question my sanity.

But today as I focused my attention on the topic, I realized questions of fact vs. fancy were small potatoes compared to the real issue...the divisiveness ensconced in the practice so precisely aimed and fired as to cut off the past from the present.

It is cultural and intellectual equivalent of the recent removal of anything that is thought to be offensive to peoples even if in a general sense no offense is either evidenced or endured.

"Hey dude, don't like how the guy whose money was responsible for your university's existence made that money? No problem, we'll just remove his statue, and when that isn't enough remove every trace of his involvement by changing the name of the institution..." all in the name of PC, of course.

You want a broader example? Take a look at what's being done to even the most trivial traces of the Confederacy.

The very essence of PC is quite literally the same as my saying to you regarding any element of a discussion, "It is what I say it is...end of conversation."

Of the myriad slice-and-dice forces our society has had to endure in recent years...months...days, PC is by far the most destructive of all, dismembering our society by severing lines communication right at the outset.

The worst part is nobody seems to notice it for what it is...or care that with every enactment it becomes more deeply embedded in the fabric of our culture...a pernicious milestone on our march into ignorance...or is it merely my doddering footsteps on the road to...to where?

As I am wont to ask, "What do I know?" the answer to which is a resounding, Nothing. But as everyone else on the planet I hold opinions on just about everything...and oh yes, my legs are a little sore this evening."

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