

CURIOUS?

IFLSCIENCE

IS HYSTERICAL
STRENGTH REAL?

8 MILLION PICKLED FISH SIT
IN A WWII BUNKER - WHY?

FEBRUARY 2026



Why Do We Need The DARK?



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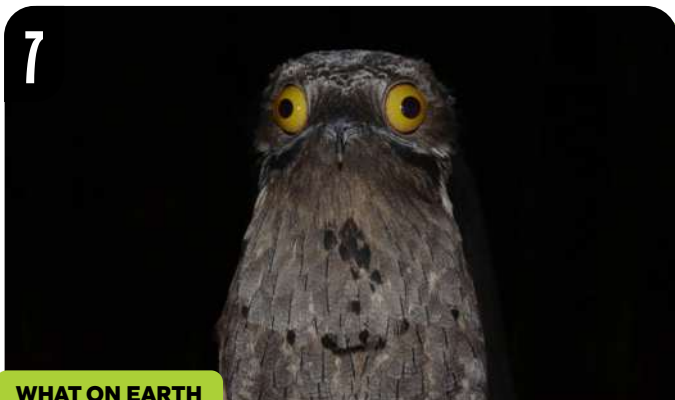


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SAINT LUCIA'S PERFECT PAIRED PITONS

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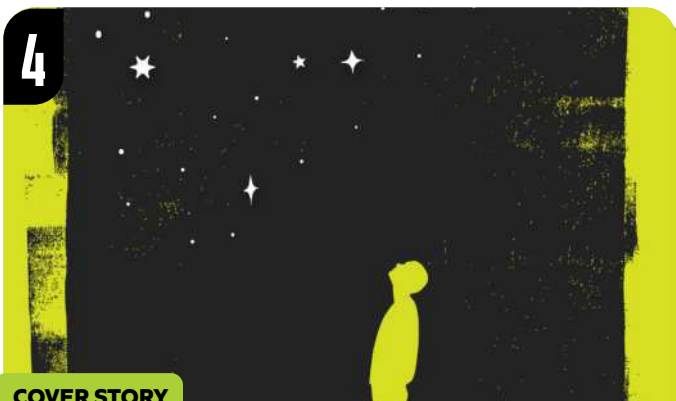


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FEBRUARY 2026

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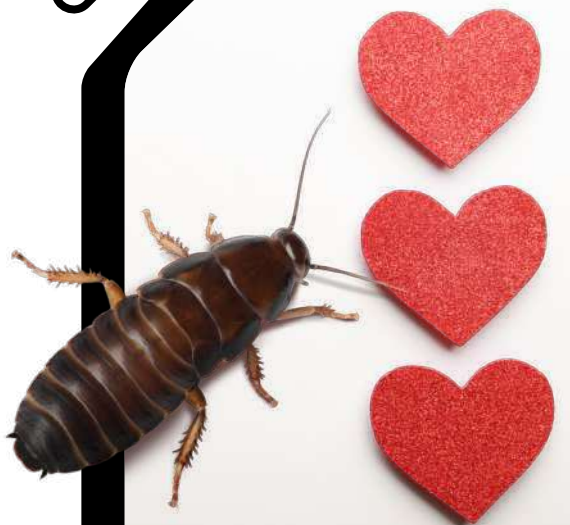
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STEM Valentine's

Valentine's, Galentine's, Palentine's, Malentine's, whichever (if any) you celebrate, here are a few ideas that will tickle the STEM bone. If you want an out-of-this-world gift, then plan a night of stargazing, as February not only starts the galaxy-viewing season but has a six-planet parade on Feb 28. You just need clear skies and a telescope to catch the ice giants. You can of course also name a star for your loved one, though the International Astronomical Union is the only recognized scientific body to actually get to name stars and they have an official ban on personal names. For something more terrestrial, zoos around the world are back with the all-purpose "name a roach" program, whether that's because, like cockroaches, your love will last forever, or, like your ex, one deserves to be fed to a meerkat (rats and vegetables are also options) – you decide. From San Antonio Zoo's "Cry Me a Cockroach" fundraiser to Dartmoor Zoo in the UK, just look up your closest or send your love internationally.

Galaxy Season Begins

February is known as the start of galaxy-viewing season, at least in the Northern Hemisphere, so grab your telescope. During February's long, dark nights, the Earth's nighttime side faces away from the dusty plane of the Milky Way. Less dust and gas means darker skies, making distant galaxies easier to see. From the New Moon on Feb 17 onwards, you should be able to ogle Andromeda, the Whirlpool Galaxy, Bode's Galaxy (M81), and the Cigar Galaxy (M82) as well as some galaxy-rich constellations like Leo, Virgo, and Ursa Major.

Year Of The Horse

Chinese New Year falls on February 17 this year, so for those who use the lunisolar calendar, welcome to the Year of the Horse! So, what is a **lunisolar calendar**? Well, first off, pretty much the whole world uses the Gregorian calendar based on the solar cycle, while lunar and lunisolar calendars are used to determine cultural and religious celebrations depending on the Moon's phase and Earth's position around the Sun.

A standard lunar year comes up short of the solar year with just 353-355 days, and a lunar month is 29.5 days, so there are still 12 months in the lunar year, although an extra leap month is added every three or so years. Chinese New Year falls on the second New Moon after the winter solstice, which usually falls between January 21 and February 20, and marks the first day of the new lunar year.

Ring Of Fire Eclipse

The first solar eclipse of 2026 takes place on February 17 and it will put on quite a show, though mostly for penguins. The "ring of fire", when the Moon will cover about 96 percent of the Sun, will only be visible to those within the path of annularity, a 4,282-kilometer-long and 616-kilometer-wide (2,661 miles by 383 miles) route that this year is only viewable from a remote region of Antarctica. Viewers in southern Africa and southern South America will see a partial solar eclipse. Don't worry, a total solar eclipse is also coming in August 2026, and this will be widely visible; in fact, it's the first one visible from Europe in over 10 years.





LEGO Gets "Smart"

LEGO has been sparking children's (and adults') imaginations since 1932, and for essentially incredibly simple bricks, the company doesn't lack in innovation. Its newest offering, however, is proving controversial. LEGO recently revealed its first-ever "Smart Brick" – a brick that has a speaker, LED lights, and a tiny chip inside that can sense and "talk" with other Smart Bricks and Smart Minifigures. It's all part of its new **"Smart Play"** initiative that allows builders' creations to become interactive, what LEGO calls a "truly responsive play experience". Critics, on the other hand, have pointed out that what LEGO has done best for over 90 years is let people's imagination run riot with the simplest of instruments. The first sets launch on March 1.

WPOTY'S People's Choice Award

Voting is finally open for everyone's favorite wildlife photography competition in the category where you, the viewer, get to choose the winner. The Wildlife Photographer of the Year 2025 winners have been revealed but every year the judges pick 24 entries for the People's Choice Award, where nature lovers worldwide are given the chance to vote for the photo that resonates most with them online. It's a unique way for everyone to take part in celebrating wildlife photography, even from the other side of the world, and from your sofa. From Wednesday, February 4, visit the **website** and select the one that you think is deserving of an award.

WHAT'S UP?

ARTEMIS II BLASTS OFF

Everybody say "FINALLY!"



Name: Artemis II

Appearance: Big rocket does a fiery fart that propels humans into space

Location: Earth to the Moon and back again

What exactly is Artemis II?

NASA's first crewed mission around the Moon in over 50 years, designed to be a critical step in eventually getting human boots back on the lunar surface.

About time, then.

Our sentiments exactly.

So, when's the big day?

Well... we can't give you a precise one – but there is a launch window. The earliest possible launch date in that pocket of time is Friday, February 6. Of course, it'd be great if it did happen then, but it's not as easy as just picking a date and launching on it. If the weather on February 6 is terrible, for example, the only thing that'll be flying at the Kennedy Space Center is people's words of disappointment.

What happens if that's the case?

Plans will move to the next possible launch date. That could be February 7, 8, 10, or 11, and if the mission isn't a go, the launch window extends throughout March into early April.

How has NASA been preparing for the launch?

Besides, y'know, making sure the rocket is built and the astronauts trained, they've been up to quite a lot. The first month of the year saw the rollout of the Space Launch System (SLS) rocket and Orion spacecraft to the launchpad, carried by the Crawler-Transporter 2 at a painstakingly slow top speed of 1.6 kilometers per hour (1 mile per hour). Let's be grateful the actual launch isn't that slow.

NASA's also conducted what's called a "wet dress rehearsal" – where they fuel the rocket, carry out a launch countdown, and then do a practice run at removing the fuel from the rocket again – as well as a flight readiness review, where the team managing the mission check that every system involved is ready to go.

How can I watch the launch?

You could be one of the lucky few who've managed to nab a ticket to watch the launch from the Kennedy Space Center Visitor Complex, but no worries if not. Should everything go ahead as planned, NASA will no doubt have a livestream of the event – not quite the same as being there in person, but at least then you don't have to worry about some tall random blocking your view.

WHY DO WE NEED THE DARK?

Humans' fight for 24-hour light has created a silent killer, but there is a solution.

By Rachael Funnell

Have you ever slept in a room with blackout curtains? I have, and it was a very strange experience for someone who grew up with performative curtains. As a child, I remember scowling in the summer when the Sun was allowed to stay up longer than I was, then again when it had the audacity to wake me earlier than I was ready to get up. One thing I'll say for ineffective curtains, you know where you are, because on that day that I slept in the blackout room for the first time, I woke up already 2 hours late for work.

Humans need light for just about everything. It helps us feed ourselves. It helps us identify friends, foes, and people we fancy. It tells us when to get up, and when to go to bed again, but just how important is the other side of the coin? If we all slung up some blackouts, would we really need the dark?

An absence of light

Light is energy in the form of electromagnetic radiation. We have a giant star to thank for being able to see clearly from dawn till dusk, but it's not all sunshine and rainbows.

Sunlight has **many benefits** for the human body. It contributes to healthier bones by encouraging vitamin D production, something that's also good for our **mental health**. It cements the **circadian rhythm**, or our "sleep-wake cycle", which is crucial for growth, development, and repair. But, as with all good things in life, you can have too much of it.

Just like any other form of radiation, **light can be harmful**. Sun creams are a testament to the fact that if you bathe too long in the light, you may risk becoming a dried-up raisin packed full of DNA damage. Twenty-four hours of blazing sunshine, therefore, would be logistically difficult. Especially in the summer months when temperatures can climb, but there is so much more to natural darkness than just an absence of light.

Sleep glorious sleep

There's a little thing in your brain known as the pineal gland that gets a real kick out of natural

darkness. Its job is to keep track of the light-dark cycle and feed it back to the body through the production and secretion of melatonin. So effective is the sleep hormone that it's become a staple in the treatment of sleep disorders and circadian rhythm abnormalities.

Beyond getting a good snooze, melatonin can also reduce DNA damage because it protects against oxidative stress caused by free radicals – unstable molecules that steal from healthy cells to become stable. This kind of oxidative stress is a catastrophic cascade of theft that can harm DNA, proteins, and cell membranes, increasing rates of aging, inflammation, and disease. It's a **negative cycle** that's hard to break, as poor sleep increases oxidative stress, and oxidative stress can disrupt sleep.

Darkness can help you get off that cursed merry-go-round by working with our pal the pineal gland to promote sleep through melatonin production. So, an easy fix, right? Oh, if only.

IN 2013, THE WORLD WAS
ROCKED BY THE DISCOVERY
OF THE FIRST KNOWN INSECT
TO USE THE MILKY WAY FOR
ORIENTATION. HOW DOES IT
USE THIS SUPERPOWER? TO
PUSH AROUND A BIG BALL
OF POOP, OF COURSE.

Light at night

Unless you've gone to the effort of printing this e-magazine as a PDF, it's likely you're staring at a little light source right now. Our homes are full of them. Bulbs, televisions, computer screens, phones. They're not the Sun, granted, but artificial light at night still has the potential to cause us some problems.

Artificial light at night has been found to disrupt melatonin production, something we saw in a **study of mice** that showed a reduction in liver antioxidants after just 30 minutes of exposure. Longer exposures led

to more significant changes in antioxidant activity, suggesting that oxidative stress may accumulate over time. The good news? Giving melatonin was able to counteract the stress caused by light at night.

The effects of light at night aren't even contained to our homes anymore as increasing urban development sees towns and cities lighting up the skies. The bane of amateur astronomers, "skyglow" is the accumulation of everybody's little outputs, creating a haze that drowns out the stars. Megan Eaves-Egenes, author of *Nightfaring: In Search Of The Disappearing Darkness* (read our Q&A and excerpt in this month's Meet the Author and Book Bites), says that the skies are getting 10 percent brighter every year. A great shame for stargazers, and a disastrous development for many animals.

Dancing in the dark

In 2013, the world was rocked by the discovery of the first known insect to use the Milky Way for orientation. How does it use this superpower? To push around a big ball of poop, of course.

Yes, the humble **dung beetle** (*Scarabaeus satyrus*) is, in fact, an astronomer that studies the night skies as a way to navigate. They roll their balls in straight lines to get away from competition. And, if they get a little lost, even climb on top to perform an orientation "dance". If it's overcast, which has the same effect as skyglow, it can't do it.

Then there's the **Bogong moth** (*Agrotis infusa*) that can fly up to 1,000 kilometers (621 miles) navigating by the night sky. In a planetarium experiment, it was found that when the stars projected on the roof matched their true positions, the moths flew in the correct direction for their seasonal migration.

Of course, we don't need to show you a dancing dung beetle to prove that there are creatures that rely on darkness. A quick nod in the direction of the **69 percent** of mammals that are nocturnal should be convincing enough. Then there's the 70 percent of North American birds that migrate, **80 percent** of which do it at night. Or the fact that **amphibians** are one of the most nocturnal groups of animals on the planet.

Without dark skies, practically every essential behavior could fall out of kilter for these animals, from mating to feeding, migration, and even predator avoidance. The effects **can be deadly** for a vast number of terrestrial species, but emerging research is showing that light pollution even affects animals beneath the waves.

Wise old Moon

In 2021, scientists at the Plymouth Marine Laboratory in the UK published an **atlas of artificial light at night under the sea**. It revealed that if you look at a depth of 1 meter (3.3 feet), 1.9 million square kilometers (734,000 square miles) of the world's coastal seas are exposed to light pollution. That impact is widespread and expanding, but is it really a problem? After all, the surface of the ocean is constantly exposed to the Sun, Moon, and stars.

The issue arises where artificial light fails to follow any kind of seasonal cycle. Marine species have evolved under a waxing and waning Moon that ranges from just a sliver to a giant ball, and their cycles have developed in tandem. Just ask the Grouper Moon Project, whose name is inspired by the fact that solitary **Nassau grouper** will only gather (in enormous numbers) and spawn in the days after a full Moon.

The coolest party you'll never be invited to sees enormous numbers of **hammerhead sharks** gathering during the Full Moon. Coolest of all, we don't even really know why. Corals also rely on moonlight to spawn, something research has already found to be disrupted by light pollution.

"We found that artificial light at night (ALAN) from coastal cities disrupts the synchronised broadcast spawning of corals, advancing their spawning time by 2-3 days," **Dr Thomas Davies**, Associate Professor of Marine Conservation at Plymouth University, told IFLScience.

"We have also found that ALAN disrupts the reproductive development of marine invertebrate larvae and where they choose to settle and grow into adults. There are also

impacts on predator activity cycles, foraging intensity, and prey choice.

Like terrestrial animals, marine species' ability to navigate, communicate, reproduce, hunt, and hide could all be negatively impacted by light pollution, and it's only getting worse. The advent of LED lighting, an energy-efficient solution to earlier bulbs, has seen it be adopted by around 80 percent of the globe. Unfortunately, it brings with it blue-wavelength light that penetrates deeper underwater, reaching over **100 meters** (330 feet).

ALAN also differs from natural light at night in its intensity. Cities on the water, like Tokyo, Shanghai, Mumbai, New York, Buenos Aires, Lagos, and Los Angeles, are exposing the seas to light sources that can be six times stronger than natural moonlight. The short amount of time LED lighting has existed (in evolutionary terms, it's not even the blink of an eye) means these animals can't adapt fast enough.

Take back the night

So, are we doomed to keep lighting the skies into oblivion? Without intervention, possibly, but there is hope. In a study that demonstrated how artificial light is **reshaping the carbon balance of ecosystems** (yes, it gets worse), scientists shared that while light pollution is a disaster for the climate, there is an easy and immediate solution.

"Unlike climate change, we could reduce light pollution almost overnight with better lighting design," said Dr Alice Johnston, Senior Lecturer in Environmental Data Science at Cranfield University, who led the research, in a **statement**. "Adopting dimmable, directional, and spectrally sensitive lighting technologies is an immediate and achievable improvement."

"Since lighting accounts for around 15% of global electricity use, and growing evidence links excessive nighttime light to negative effects on human health, tackling light pollution represents a rare win-win-win for the environment, energy efficiency, and wellbeing."

A win-win-win? Suddenly the dark doesn't seem so scary. 🌟



POTOO WHO?

I know what you're thinking, but yes – it is a real bird. Meet the **potoo**, one of nature's greatest camouflage artists. As babies they are fuzzy white and learn to adopt the defensive "freeze" posture these birds are famous for, making them look like a clump of fungus. As adults, their woody-brown feathers are the perfect mimic of a tree stump, and they'll pose head up and eyes closed to avoid detection. That is, apart from this one.



8 MILLION PICKLED FISH SIT IN LOUISIANA'S WWII BUNKERS – WHY?

Including the only known specimen of a rare deep-sea shark.

By Rachael Funnell

If you'd visited a series of bunkers in Louisiana in the early 1940s, you would've found weapons. Lots of weapons. Visit it today, and you'll find yourself wandering among row upon row of pickled fish.

It's a curious makeover for a vast expanse of storage space, one that came to pass thanks to humans' love of wacky fish, and the alleged lack of integrity of Dinwiddie Hall's floors. This is the origin story of Tulane University's Biodiversity Research Institute (TUBRI), a place where you can find fish that are extinct, fish that nobody's ever seen alive, and a fish that's the only known specimen of a deep-sea shark.

So, how did all ~8 million of these pickled fish get here, and why? We sat down with TUBRI director **Brian Sidlauskas** to find out.

What's with all the pickled fish, Brian?

BS: It's a great question, and for me to be able to answer that question, I need to take you back to the middle of the last century, when the collection was really being founded. I need to take to take you back to the career of a scientist named Royal D Suttus, who has been described in song as "the collecting machine".

He was a natural historian and a zoologist in an era of great discovery about the North American fauna. He made it his life's work to go

WE HAVE QUESTIONS



everywhere that he could in the southeastern US and to document the diversity of animals, but fishes were his great love.

He collected everything. He took meticulous field notes, and he brought it all back to Tulane and just started stashing it wherever he could. Initially, it was in some halls that still stand on campus, Dinwiddie Hall, and a couple of others. But as legend has it, as he collected more and more (and more), the weight of the collection began to bow the floor of the building.

It was up on the second floor of Dinwiddie Hall, and so it gradually became apparent that if he was going to be continuing amassing this much information about the biodiversity of the most biodiverse region of North America, then some other solution needed to be found.

And the ammunition bunkers?

BS: Now I don't know exactly what the sequence of events was that made folks decide way back, probably in the '60s or early '70s, that the retired ammunition bunkers in Belle Chasse, Louisiana, were going to be the place. Tulane owned them. There are actually more than 20 of these bunkers out on an enormous property, so it seemed to be a good place for the university to stash not only large fishes, but there were some other laboratories out there.

So, it's a storage area for Tulane, but it's also a research area for us still. And the bunkers are very large. Currently, the fish collection and the associated laboratories are occupying about 40,000 square feet of floor space.

What are they like?

BS: It's cavernous, and it is divided among buildings, too. So, you look out across these rows and rows of shelves of jarred fishes, and then you think, "this is only half of it".

There's a lot of space, so you can walk up and down the aisles, and it just begins to give you a sense of almost a time machine. You walk down these aisles, and here's his documentation of which organisms existed in a particular stream in Louisiana or Mississippi, or in the Gulf, on this day in 1972. Or on this day in 1953.

They still hold their secrets. They still hold their data. We can go back and look at their

morphology. We can look at their parasites. We can dissect them and see if they have microplastics inside them. We can CT scan them and look at their skeletons. And so, every little fish is a time capsule. Then you realize that there are 8 million of them catalogued, and more on the way, and your mind just begins to explode with the possibilities of what kind of synthetic science you can do with that much data.

You have the world's only *Mollisquama mississippiensis*?

BS: It's so rare. There are only two known specimens in this genus, and they're both of a different species. They're from different oceans.

We have one, and I can tell you some things about it, but it's one specimen. Everything that we know about this species is from one small specimen that's sitting in a jar out in Belle Chasse, Louisiana. I can tell you that it was described in 2015. I can tell you that it's a pocket shark that is very closely related to the cookiecutter sharks, which are much more famous – amazing sharks that take very circular plugs of flesh out of other animals.

I can tell you that it's called a pocket shark because it has weird little fleshy pockets in the axles of the pectoral fin, essentially like inside of its armpit. And there's been a synchrotron scan of the specimen to reconstruct the shape of what that little pocket looks like. It's called a pocket shark because of these little pockets, not because it fits in your pocket. *

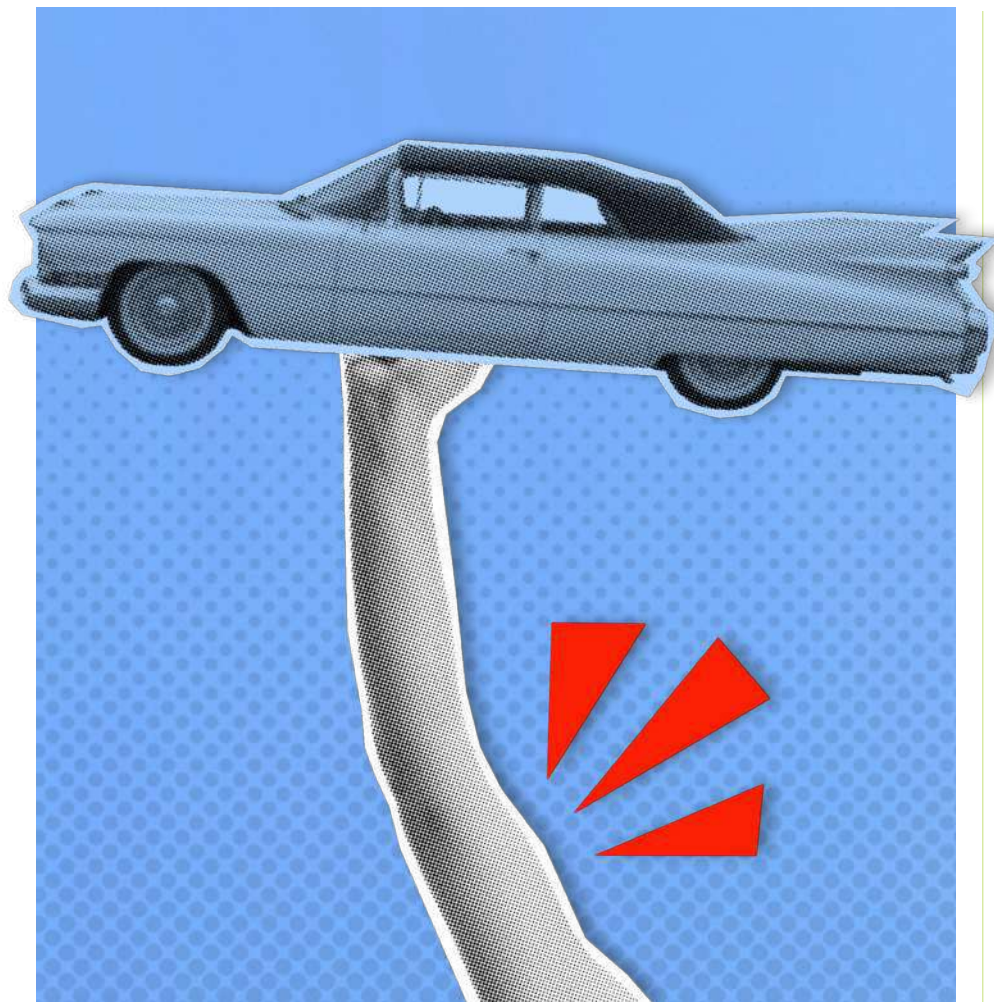


SCIENCE FACT OR FICTION:

IS HYSTERICAL STRENGTH REAL?

You've heard the stories of seemingly impossible feats, but is hysterical strength real, and given its extreme nature, how would we even test it? Dr Katie Spalding investigates.





Nobody expected Lydia Angyiou to fight the polar bear. Certainly, nobody would have thought she could win.

The 41-year-old mother was “about five-foot nothing and 90 pounds on a wet day,” local police captain Larry Hubert, a friend of Angyiou’s for 15 years, told news outlets at the time. “She’s pretty quiet.”

But in 2006, when she passed by the community center in her small village of Ivujivik, Canada, and saw the 320-kilogram (700-pound) predator sizing up one of her sons, instinct stepped in. She yelled at the children to run; she approached the bear, and she started swinging.

Kicks, punches, anything to keep the bear away from the village children. The animal swiped back, knocking her down. She started kicking upwards in a cycling motion, but got swatted

again; she rolled away, but the bear chased. The fight went on.

Who knows how it would have ended had a nearby neighbor not arrived with a shotgun. “I shot three warning shots in the air,” Ivujivik resident Siqueluk Ainalik **reported at the time**; “It moved towards me [and] I shot the bear four times.”

By the end of the fight, the bear was dead, and Angyiou had barely a scratch on her. “She saved some kids’ lives, I tell you,” Hubert said. It was, in a word, heroic – so how the hell did she manage it?

A hysterical reaction

Stories like Angyiou’s are rare, but not unheard of. An everyday person, pushed into an extreme situation, experiences a superhuman response – perhaps they **lift a ‘64 Chevy** to save their son’s life; maybe they **jump from a**

“IT’S SOMETHING YOU CAN’T REALLY ETHICALLY STUDY BECAUSE, IF YOU REALLY WANT TO ADDRESS THIS STUFF, YOU REALLY HAVE TO PUT PEOPLE IN A THREAT STATE – LIKE, A SURVIVAL STATE... AND OF COURSE, SOME PEOPLE WILL DIE IF THAT HAPPENS.”

second-floor window to escape a fire, using their body as a shield to protect a baby.

“I would say the true expression of hysterical strength would be ‘fight, flight, and cornered,’” says **E Paul Zehr**, a kinesiologist and neuroscientist and author of *Becoming Batman: The Possibility of a Superhero*. “You know, you’ve tried to escape or whatever, but it didn’t work, so it’s much worse now. There’s still more. And *that* is when the last little bit [comes out].”

It’s a theory that will probably never have conclusive proof. “It’s something you can’t really ethically study,” Zehr tells IFLScience. “Because, if you really want to address this stuff, you really have to put people in a threat state – like, a survival state, where things are absolutely *100 percent urgent to act now* with the most amount of whatever is required. And of course, people – some people – will die if that happens.”

Evidently, scientists can’t go around surprising random civilians with stray polar bears – and even if they could, the stress reaction it produced would be all but impossible to study objectively. Even the best potential methods for measuring a sudden increase in strength are flawed, and “would likely take far longer to perform than the duration of the extreme stress response itself,” points out **Dr Tom Balshaw**, a lecturer in Kinesiology, Strength, and Conditioning at Loughborough University’s School of Sport, Exercise, and Health Sciences. Repeated

exposure to high-stress experiences would risk longer-term health problems for test subjects – and it also likely skews the data, since participants eventually get used to most lab-based stressors.

It all adds up to a phenomenon that, as well-documented as it is, is yet to be fully recognized by science – let alone understood by it. The closest we can get, usually, is in studies of pro- and extreme endurance athletes, although even then, experts aren't super sure what's going on.

IT RAISES AN INTRIGUING POSSIBILITY. IF WE CAN'T WRESTLE A POLAR BEAR ON DEMAND, COULD WE AT LEAST, SAY, TAKE ON PADDINGTON?

"There is nobody who could say they're the world expert on researching hysterical strength," says Zehr. "That doesn't actually exist, as far as I'm aware."

Life on the edge

According to experiments using the interpolated twitch technique – "a methodologically flawed technique," cautions Balshaw, "but one of the few measures for estimating 'true' strength capacity," – most healthy young adults have an extra 10 percent or so of strength that they never really tap into. And even that "is likely an underestimate in my opinion," Balshaw adds, "especially based on the strength gains we can observe after even short-duration resistance training interventions in some individuals."

That might seem low, though, for a reserve that apparently allows us to lift cars or fight bears – and it's here that we have to tell you something kind of disappointing. As headline-worthy as these case reports are, they're often not quite as miraculous as they sound: read into the details of that quintessential "regular joe deadlifts a two-ton truck" story, and you'll inevitably find that it was actually only a small portion of the vehicle that left the ground. It's



still impressive, but it's an order of magnitude less than the legend we're told.

"A lot of these 'hysterical strength' things are probably similar to extreme athletic performance," says Zehr. "Things like ultra marathons, extreme power lifting, sprints – these things where people do a brief thing that takes them way outside of what's normal for what we think is human behavior."

"And we look at that and go, 'that's superhuman'," he says. "It's super normal human range, yeah, but it's human. I mean, it's still something you can do."

For most of us, the fact that we don't routinely get near this level of achievement is likely due to mental limitations rather than physical ones. "There's a huge psychological aspect to strength," says **Chris Ford**, Senior Lecturer in Strength and Conditioning at the University of Winchester. "I spend a fair bit of time with new

athletes helping them to realize they can lift heavier than they think."

It raises an intriguing possibility. Could we, with enough training, operate somewhere closer to that "hysterical" level? If we can't wrestle a polar bear on demand, could we at least, say, take on Paddington?

Zehr believes we can – "I think it's possible to train to tap into part of it," he tells IFLScience. Those who get closest are probably those elite athletes we mentioned before – sportspeople who have trained themselves to ignore pain; to override warning signals; to delay the nausea and the fatigue and the falling apart until they reach that finish line. Zehr calls it the "elastic ceiling" – an upper limit that "you can bump in and out of," he explains, "but it's going to snap back."

"You can't be operating there all the time," he says. "It's just too costly."



Mysterious hysteria

But if it's just a case of mind over matter, why should hysterical strength be so elusive? Well, it's kind of a survival tactic. While we don't know exactly what's going on when we access this apparently super-human strength, one popular idea is presented by the Central Governor Theory – a hypothetical process by which the brain regulates physical exertion.

In this model, “there are always reserves in the nervous system,” explains **Madison Fry**, a grad student in the Department of Kinesiology, School of Health and Human Sciences at Indiana University-Indianapolis – “[to] make sure we do not push the body to absolute failure.”

In a situation of extreme danger or stress, however, these guard rails are blown open. “If there is enough of a ‘fight’ response, presumably there are areas of the brain – the amygdala, hypothalamus, periaqueductal gray region, locus coeruleus – that can override the safety margins present in everyday homeostasis,” Fry, along with supervisor Associate Professor Zachary Riley, with whom she authored a **recent paper** on “superhero” physiology, tells IFLScience.

In this framework, hysterical strength is an anomaly similar to the effect of performance-enhancing drugs. With the aid of anabolic steroids or androgens, our bodies are able to push strength far enough to outpace

muscle and ligament resilience – “this is why you see so many connective tissue injuries in extreme strength sports,” Fry points out. With hysterical strength, the same thing is happening – except, this time, it’s “likely hormonal,” Fry says, “in the form of adrenaline, [and] possibly ignoring the slower hormone release of cortisol, which could inhibit the extreme actions that can take place.”

The same thing can happen on illicit drugs like phencyclidine – aka PCP, or “angel dust” – meth, and “bath salts” like flakka, which is why despite being basically unrecognized by science, hysterical strength has occasionally been considered a legitimate phenomenon in the legal world. “People have been arrested who were on some huge stimulant, and required like, six people to restrain them,” Zehr tells IFLScience. “So there used to be a thing in some jurisdictions that was like, ‘psychoactive strength’ – [but] **it was being misused**, so it’s not recognized anymore.”

Communing with our past

Hysterical strength may be baffling – but maybe it shouldn’t be.

“If you think about this, it’s pretty obvious right away that we would have to have something like this,” says Zehr. We are, after all, just animals – and “all animals require some kind of emergency thing – whether it’s a prey animal that has to, like, get out of Dodge, or a predatory animal which has to make that

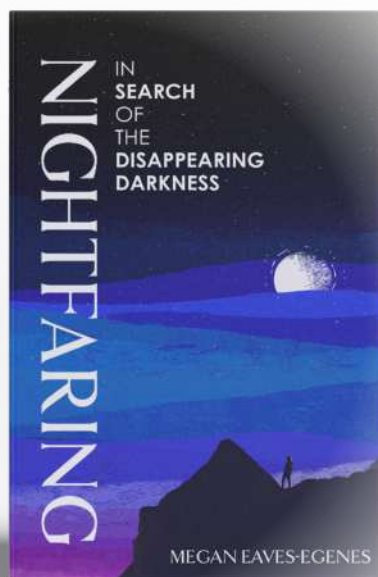
pounce – that ability has to be there.”

We may associate hysterical strength today with lifting cars and cutting-edge anabolics, but at base, it’s likely just a manifestation of a long, long dormant survival instinct. “People don’t like thinking about humans as animals,” Zehr says. “But the fundamental building blocks of our biology, and our physiological responses to things, and core behaviors [...] all these things are the same as other animals.”

For Zehr, then, a mother lifting a truck off her baby is no different from, say, a mama rabbit facing down a snake to save her kits, or a battered field mouse dragging itself the last few inches to the safety of its burrow. It’s an ability that’s “100 percent for survival,” he says, and so it’s “ridiculous” to think that we’d ever lose it – we’re just not as used to having to access it as our evolutionary cousins.

“Most of us are never in survival mode, not really,” Zehr says. “We might think, ‘Oh, I’m just getting by’, and ‘it’s a tough week’, but you weren’t really being attacked by a bear on your way to your car after work. I mean, that’s survival mode. We don’t experience this very often.”

“And, you know, truthfully, this is a good thing, I think, for the evolution of the species and for society and so on,” he says. “But as a result, I think our ability to appreciate and understand all this has become a bit sketchy.” 🌱



SCATTERING THE MILKY WAY

In this excerpt of *Nightfaring: In Search of the Disappearing Darkness*, author Megan Eaves-Egenes shares the Māori story of how the stars were born – and how it can help us remember to protect the night sky.

It was cold and windy at the top, and there were no trees, so you could see for miles in every direction. Above, the sun had almost disappeared, and the world was a dome of purple sky. Below, the town of Tekapo was a crescent of amber lights along the lakeshore. Adrien led us up a small flight of stairs to a café where the lights were off and faux candles provided minimal illumination. As my eyes adjusted, mountains started appearing in shadowy outlines beyond the lake. With the horizon line well below us, it felt like we were swimming in the sky. It made me breathless. We were joined that night by a group of public visitors arriving all together in a minibus, and I was suddenly grateful to have been driven up the mountainside in Adrien's car rather

than a bus with its lights off. It had got dark very quickly. The purple hue disappeared from the sky and, with no moon up, we had to tread carefully along the pathways that led between the café and the observatory rooms, which were spaced around the top of the peak.

We stood outside in a semi-circle while a guide named Heather introduced herself, then led the group through a Māori acknowledgement ceremony in which she named and thanked the ancestors and recognised them as the *tangata whenua*, or original inhabitants of Aotearoa. She explained that the ancestors were the keepers of *tātai arorangi* – the Māori astronomical knowledge that informed everything from growing crops to navigation, fishing and the calendar. "When Māori people look up into the night sky, they see more than just stars and planets," she said. "They see a connection to their ancestors and all life. Māori people used the sky as a kind of life map, which marked places, time and seasons, helped to predict the weather, to know when certain fish were abundant and when to plant crops." She then recounted the story of how the stars were born: "There was a legendary warrior named Tamarereti, who was once sailing his waka, a type of canoe, far out on a lake, quite like the one below us now. He was very far from home and night began to fall. At that time, there were no stars in

the sky, and the night was completely dark. Tamarereti felt he was in danger from a lake monster called the taniwha, so he made the decision to ascend from the lake and fly his waka home through the sky. As he sailed, he scattered glowing stones along the way, leaving a bright wake behind."

"Today, we call this glowing trail the Milky Way and those stones are the stars." Next, she asked us to close our eyes for a few moments. We stood quietly and then opened them all at once to reveal the sky utterly filled with stars. "Can you see the Milky Way?" A few people gasped and a lady next to me spoke up in a North American accent to say she'd never seen our galaxy before. Heather explained that, because of light pollution, most people can't see the Milky Way any more. "That's why the Dark Sky Reserve regulations are so important here – to protect the darkness and our access to the night sky." "So from now on," she continued, "if you look up and see the Milky Way, you will think of Tamarereti and remember how the stars were scattered in the sky. And if you don't see the Milky Way, you will remember what can be lost." ✨



Q&A WITH

MEGAN EAVES-EGENES

AUTHOR OF:

***NIGHTFARING: IN SEARCH OF THE
DISAPPEARING DARKNESS***

The darkness of the night sky feels as though it should be an unchangeable feature, but light pollution is threatening to make it a thing of the past.

In *Nightfaring: In Search of the Disappearing Darkness*, journalist and dark sky advocate Megan Eaves-Egenes takes us on a journey into the importance of darkness across the world. But where did her own journey take her?

What was your motivation to write this book?

Nightfaring was born out of my years-long journey through personal growth, learning about light pollution and getting involved with dark sky advocacy. As a writer, it was a natural collision of all the things that were culminating in my life at one time. The more I probed this idea of darkness and why we have vilified it so much, the more I knew I *had* to write about it. Writing isn't an option for me; it is an almost pathological need. It keeps me sane and helps me make sense of the world.

Of all the amazing places you visited, what was one that will remain with you and why?

[Laughing] This is always the first question people have. "What was your favorite place you saw dark skies?" and it's a natural one. We humans love to categorize. I have trouble picking just one. All of the locations in *Nightfaring* had a profound

"YOU FIND, LOOKING AT
THE SKY, OFTEN THE MOST
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WHO YOU ARE EXPERIENCING
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OF CONNECTIVITY."

impact on me in different ways. In New Zealand, I touched a deeper part of my longing for family and connections to others. In Italy, I faced fear. In Germany, I found space to experience what felt in-experienceable: true darkness. In Argentina, I experienced something mystical. And in Japan, I was offered space to restore myself. But, if pressed to choose which sky is my favorite, I often go back to New Mexico. It is

my homeland, and home sky, and it will always feel extra special seeing the Milky Way from the same place I did as a child.

Were there places that you wanted to include but couldn't?

I had a few ideas that didn't quite make it in for various reasons (structuring a book and making it a readable length is its own challenge). I experienced an incredible night sky in eastern Kyrgyzstan, a couple of years before I really started on the book journey. I was with my friend Stephen up in the mountains, staying with a nomad family in a traditional yurt, and woke up in the middle of the night to use the outhouse. I found I didn't even need a torch – I could see by starlight. I woke Stephen up, and we sat outside bundled up from the September cold, drinking Kyrgyz cognac and putting the world to rights. It is still one of the most memorable nights I've spent under the sky. You find, looking at the sky, often the most important thing becomes who you are experiencing it with – a shared view of the cosmos, a sense of connectivity.

What do you hope people take away from it?

I truly hope that readers take away a sense of just how urgent the issue of light pollution is, and equally, how easy it is to solve. That there is hope in the shared connections we make under the night sky. I want this book to encourage people to suspend their fears of the dark for a moment and experience the full cycle of night and day on our planet.

What has the book taught you about darkness?

I learned to lean into what the mysteries and unknowns of life have to offer me. Often, the greatest lessons and growth come when we can't see the path ahead and have to trust our own process of becoming, one step at a time, through the dark. ✨

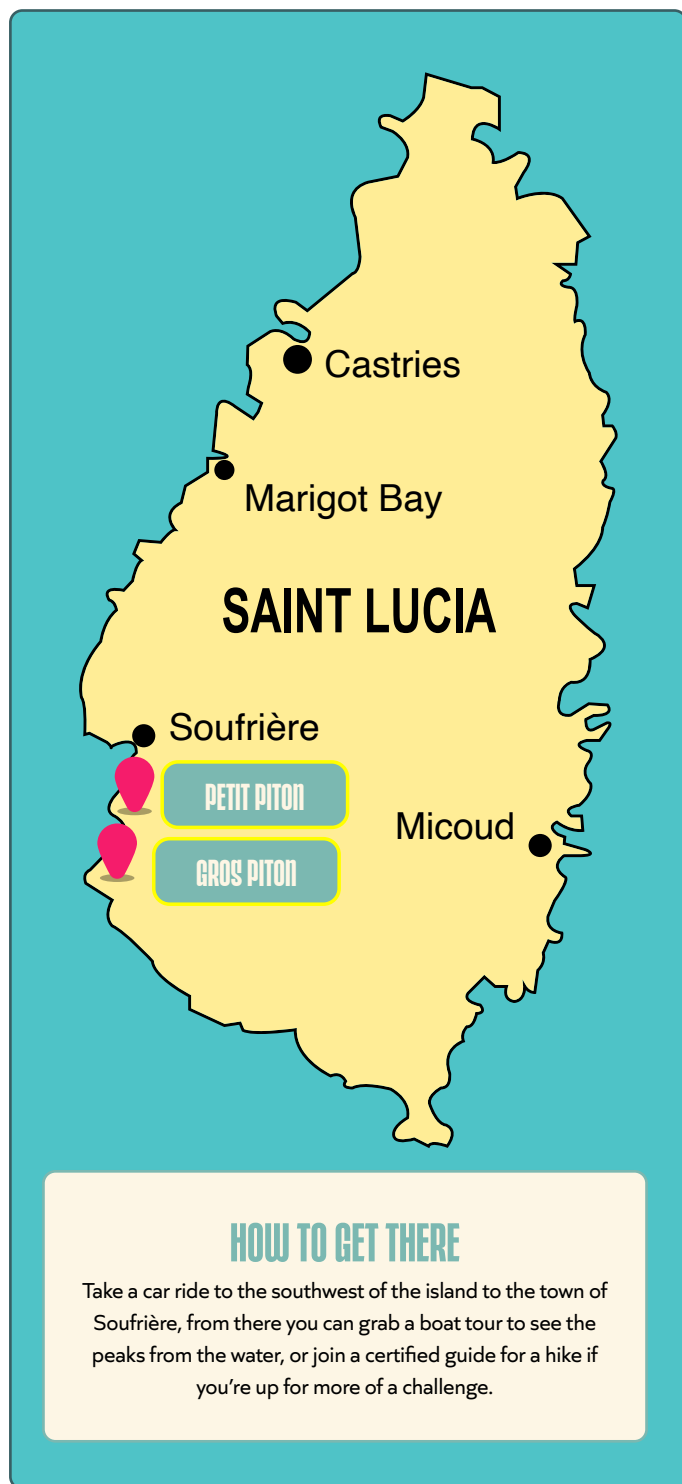
***Nightfaring: In Search of
the Disappearing Darkness
is published by Simon &
Schuster and is out now.***

WHERE ON EARTH

Dramatic twin towers rise above the sea near the Soufrière Volcanic Centre, Saint Lucia's youngest and most active volcanic zone. Known as the Pitons, they've become the stars of the Saint Lucia flag, but what are they?

By Rachael Funnell

SAINT LUCIA'S PERFECT PAIRED PITONS



HOW TO GET THERE

Take a car ride to the southwest of the island to the town of Soufrière, from there you can grab a boat tour to see the peaks from the water, or join a certified guide for a hike if you're up for more of a challenge.

Over 200,000 years ago, something explosive changed the face of the Caribbean's Saint Lucia forever. Pressure was building deep within the Earth – pressure that released when it forced molten rock up through vents belonging to what is now known as the Soufrière Volcanic Complex.

This pressure and release continued over thousands of years as countless eruptions built upon a solidified core of molten rock. Eventually, it gave rise to a perfect pair of peaks: Gros Piton and Petit Piton. And no, we won't be giving you a gold star for guessing which one is bigger.

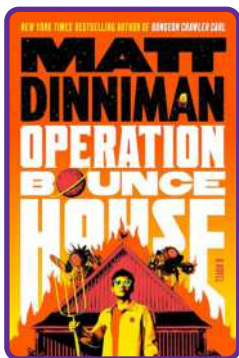
These kinds of structures are known as volcanic plugs, made up of hardened magma that solidified inside a volcano's central vent. What's interesting is that the plug winds up being a tougher kind of rock than the surrounding volcanic material that, in time, erodes away. This is why these plugs, or spires, end up with a distinctive shape.

The Pitons and the adjoining Mitin ridge form the UNESCO World Heritage Site known as the Pitons Management Area. It's a site of rich geological history, but there's also tons of wildlife to be seen. Around 60 percent of the Pitons Management Area's marine habitats are covered by corals, home to 168 species of fish. The Pitons themselves are also home to rare species, some of which aren't found anywhere else on Earth.

They include the endangered Saint Lucia amazon parrot and the world's most threatened snake, the Saint Lucia racer. There's also the **Saint Lucia fer de lance** pit viper that can grow almost 2 meters (6.6 feet) long and has potent venom. They're not aggressive, but their deadly potential means many are killed on sight and they're now in danger of extinction.

Like many parts of the world, much of Saint Lucia's wildlife is under threat from the introduction of invasive species and habitat degradation due to land development. The international nature conservation charity Fauna & Flora has been working with the Forestry Department and Durrell Wildlife Conservation Trust since 2000 to tackle invasive rats on the island, and in 2026 have named the Saint Lucia fer de lance as one of its "10 Species To Watch".

"Our annual Species to Watch list offers insight into the key challenges facing some of the world's most vulnerable species, including habitat loss, deforestation, illegal wildlife trade and climate change," said Fauna & Flora CEO Kristian Teleki. "It also shines a spotlight on the weird and wonderful plants and animals we are working to protect, and on the inspiring people and partners Fauna & Flora works with across the globe to deliver effective conservation action. In challenging times, it stands as a beacon of hope." 🌟



FIGHT

OPERATION BOUNCE HOUSE

Book from Matt Dinniman

Oliver Lewis lives a humble life on planet New Sonoran, tending to his crops with the help of his family's fleet of aging agricultural bots. Life is good on the ranch until the Apex Corporation decides to call time on New Sonoran by exterminating all life in preparation for a reboot. His home becomes the map in which bored Earthlings will play a deadly game, Operation Bounce House.

Available Feb 2.

SURVIVE

PARADISE - SEASON 2

Series from Disney + and Hulu

Watched season 1? You've experienced life inside a bunker made to mirror reality. Now, it's time to find out what's happening on the outside.

Available Feb 23.

WATCH

MONARCH: LEGACY OF MONSTERS - SEASON 2

Series from Apple TV

Titan X is coming out to play for the return of *Monarch*. Looks like King Kong and Godzilla are going to have their work cut out, never mind the humans.

Available Feb 27.



LISTEN

WHAT DO OTHER COSMIC OBJECTS SMELL LIKE?

Podcast from IFLScience

Here's a thought: have you ever considered what it smells like on Titan? In this episode of *We Have Questions*, Dr Alfredo Carpineti was inspired to hunt down the creator of otherworldly smells featured in the *Space: Could Life Exist Beyond Earth?* exhibition at the Natural History Museum, London.

"It was so fascinating to relate to space objects, something we usually only do with our eyes, using the sense of smell," Carpineti said. "It opens up a completely new approach to astronomy... including finding out that Titan smells delicious and asteroid Bennu stinks!"

Available Feb 23.



EAT

MEAT

Book by Bruce Friedrich

The meat industry comes with ethical, environmental, and health costs. Bruce Friedrich, the president of the Good Food Institute – a top five nonprofit for climate change mitigation – explores if the solution isn't eradicating meat, but changing the way it's produced.

Available Feb 3.

WATCH

SENTIENT

Documentary from Tony Jones

Animal testing has been pivotal in the discovery of the causes and treatment of disease in humans. In telling the story of Dr Lisa Jones Engel, a primatologist turned animal welfare advocate, this documentary explores whether the ends justify the means.

Premieres at the Sundance Film Festival 2026.

READ

WHY WE SUFFER AND HOW WE HEAL

Book by Dr Suzan Song

Child and adult psychiatrist Dr Suzan Song explores a new way of thinking to transform life's challenges into opportunities for growth and resilience using "three keys": narrative, ritual, and purpose.

Available Feb 26.

2

GROUNDHOG DAY

For the uninitiated, trusting a rodent with meteorology may seem strange, but though their success is roughly the same as chance, groundhogs are **not the only animals** that can "predict" the weather.

4

WORLD CANCER DAY

BLACK HISTORY MONTH - USA

LGBTQ HISTORY MONTH - UK

6

ARTEMIS II CREW FIRST LAUNCH DATE

We're (hopefully) going back to the Moon this month for the first time since the Apollo era ended in 1972. The Artemis II crew is ready to travel further into space than any humans before them. Feb 6 is the first launch date of the February window, followed by 7, 8, 10, and 11.

11

INTERNATIONAL DAY OF WOMEN AND GIRLS IN SCIENCE

It's the 11th anniversary of this day that highlights and celebrates the women and girls in all aspects of STEM. This year's theme is "From Vision to Impact: Redefining STEM by Closing the Gender Gap," highlighting areas like AI, cybersecurity, and health to promote equal access to opportunities in STEM.

11

NATIONAL INVENTORS DAY

14

VALENTINE'S DAY



17

RING OF FIRE SOLAR ECLIPSE

2026

FEBRUARY

This month we're (hopefully) going back to the Moon, it's a great time to shout about women and girls in STEM, there's some great skywatching to be had, and we'll see what a large fat rodent in the US has to say about when spring will arrive.



12

DARWIN DAY

23

NEW WHOS PODCAST EP!

What do other worlds smell like, and how do we know? We spoke to a literal perfumer for the stars to discover curious odors of planets, moons, and asteroids, in the latest episode of *We Have Questions*.

28

RARE 6-PLANET ALIGNMENT

Get ready for a planetary parade as 6 planets will appear to line up in the night sky. Mercury, Venus, Saturn, Jupiter, Uranus, and Neptune will be visible, though Uranus and Neptune will need a telescope. Jupiter will be the brightest, easily seen with the naked eye.



ARE YOU DRAWN TO THE DARKER OR LIGHTER SIDE OF SCIENCE?

Choose how you end each issue. For those who prefer the darker side, Holly Large explores how horses can smell if you're afraid. If you like your science lighter, discover how eavesdropping isn't all bad when it comes to our pooch pals.



EXPLORE YOUR SIDE ON FACEBOOK

HORSES SMELL FEAR

You know how they say not to let something know you're afraid of it? Well, if you've got a fear of horses, we're sorry to report that there's not much you can do to avoid it. In lowkey horror movie fashion, it turns out that they can literally smell it on you.

That was the conclusion of a recent **study** that investigated whether chemical cues – like body odor – could play a role in human-horse interactions, specifically whether horses could pick up on these signals and react to them.

Luckily for any equinophobics out there, horses aren't actually murderous villains and aren't plotting to use your fear against you. In fact, the study found that horses come off pretty badly from being able to sense when a human is afraid.

To find this out, the study authors first took odor samples – sweat on a cotton pad – from 30 adult humans in two different emotional states. The first was fear, induced by watching a 20-minute clip from the supernatural horror movie *Sinister*, and the second was joy, which involved watching a compilation of sketch comedy and clips from not-so-scary movies like *Singin' in the Rain* and *Grease*.

These cotton pads, as well as unused ones acting as a control, were then attached to a breathable muzzle and separately presented to 43 adult female horses (known as mares). The study authors then monitored the horses' physiological response through salivary cortisol and heart rate, and also carried out multiple behavioral tests, including how willing they were to interact with humans, the intensity with which they were startled (tested by opening an umbrella near a bucket of food), and how they responded to novel objects.

The results from the tests showed that when mares were exposed to the "fear" odors, they showed "significantly heightened fear responses and reduced interaction with humans compared to joy-related and control odours," the authors wrote.

In other words, the horses could smell the fear and that made them more fearful in response. Not only is this an interesting insight into how species might subtly be communicating with each other, but it also has practical implications too. Handling a horse and want it to be more chilled? It's probably a good idea to chill yourself out first.

EAVESDROPPING DOGS

Despite their best efforts to convince us otherwise (see: attempting to eat everything poisonous in sight, chasing their own tails), dogs are undeniably smart. Some, however, are smarter than others, and a new **study** has revealed their learning skills might even be on par with human toddlers.

So-called "gifted word learner" (GWL) dogs are particularly clever canines that have a ridiculously good level of word comprehension. That's not an overstatement – these dogs are capable of learning the names of hundreds of objects, and quickly, too. Tell them to fetch their half-destroyed gherkin plushie called Mr Pickles out of a pile of other toys, and it's Mr Pickles that they'll get.

But can they learn such objects outside of direct training situations? Human toddlers certainly can; at the age of 1.5 years, they can pick up new words in a passive way simply by overhearing conversations between adults. In other words, you shouldn't be surprised if it seems like your toddler suddenly knows, for example, the word "dishwasher" when you never directly taught it to them.

Researchers from Eötvös Loránd (ELTE) University set out to discover if GWL dogs were capable of the same skill, and recruited 10 such dogs, and 10 "typical" family dogs, to help them find out.

In one experiment, owners directly introduced and repeatedly labeled two new toys to gifted dogs in one part, and in another part, spoke about the toys with another person, as the dog watched on unaddressed.

The dogs were then asked to go into another room to retrieve each of the new toys one by one – and in the very first trial, GWL dogs collected the correct toy 100 percent of the time. Typical dogs, on the other hand, were much less successful in retrieving the correct new toy in a second experiment using the same learning methods.

"These findings suggest that GWL dogs can flexibly use a variety of different mechanisms to learn new object labels," said senior scientist and study author Dr Claudia Fugazza in a **statement**.

"Our findings show that the socio-cognitive processes enabling word learning from overheard speech are not uniquely human," added lead scientist Dr Shany Dror. "Under the right conditions, some dogs present behaviors strikingly similar to those of young children."

Maybe eavesdropping isn't so bad after all.



The **Darker** Side of Science



THE **Lighter** Side OF SCIENCE