

Ode to E Pluribus Unum for Sunday November 14 2021

A Waterfall and the Milky Way



Image Credit & Copyright: Xie Jie

The dream was to capture both the waterfall and the Milky Way together. Difficulties included finding a good camera location, artificially illuminating the waterfall and the surrounding valley effectively, capturing the entire scene with numerous foreground and background shots, worrying that fireflies would be too distracting, keeping the camera dry, and avoiding stepping on a poisonous snake. Behold the result -- captured after midnight in mid-July and digitally stitched into a wide-angle panorama.

The waterfall is the picturesque Zhulian waterfall in the Luoxiao Mountains in eastern Hunan Province, China. The central band of our Milky Way Galaxy crosses the sky and shows numerous dark dust filaments and colorful nebulas. Bright stars dot the sky -- all residing in the nearby Milky Way -- including the Summer Triangle with bright Vega visible above the Milky Way's arch.

After capturing all 78 component exposures for you to enjoy, the photographer and friends enjoyed the view themselves for the rest of the night.

=====

Children's Screen Time Doubled During Pandemic And Hasn't Changed Much Since



SAN FRANCISCO, Calif. — Children's screen time has doubled during the pandemic — and it hasn't gone down since, according to new research. Researchers from the University of California-San Francisco say youngsters are spending almost eight hours a day looking at smartphones, tablets, and televisions, compared to less than four hours before COVID.

Concerningly, this figure does not include the time spent on computers for school work. Researchers focused completely on recreational activities like playing video games, chatting on social media, texting, surfing the internet, and watching or streaming

movies and TV shows. Along with contributing to a more sedentary lifestyle, study authors say this shift is also affecting the mental health of many adolescents.

“As screen time increased, so did adolescents’ worry and stress, while their coping abilities declined,” says corresponding author Dr. Jason Nagata in a university release. “Though social media and video chat can foster social connection and support, we found that most of the adolescents’ screen use during the pandemic didn’t serve this purpose.”

Lockdowns, online learning, and social distancing has led to a reliance on digital media for nearly all facets of adolescents’ lives over the last two years.

The study, published in the journal JAMA Pediatrics, is the first to show an increase using data from across the United States. The findings come from surveys of 5,412 participants between the ages of 10 and 14 who self-reported their screen time both before and during the pandemic.

Is more screen time bad for your diet too?

Results show adolescents are, on average, looking at screens for recreation for 7.7 hours a day. This is higher than pre-pandemic estimates of 3.8 hours from the same group of children. Most of this activity centers around watching or streaming videos, movies, or television shows. Playing multi or single-player video games also contributed to the increase.

Study authors say poorer mental health and greater perceived stress show a link to higher total screen usage. More social support and coping behaviors showed a connection with lower total screen use. Despite the gradual reversal of quarantine restrictions, studies suggest screen time continues to remain high. This can be harmful, not just for mental health, but physical health as well.

“Screen time lends itself to more sedentary time and less physical activity, snacking while distracted, eating in the absence of hunger, and greater exposure to food advertising,” Dr. Nagata explains.

Is this issue affecting minorities more?

“We generally found higher screen time in Black and Latino/a adolescents and in those from lower-income households,” Nagata concludes. “This may be due to structural and systemic factors, such as lack of financial resources to do other kinds of activities or lack of access to safe outdoor spaces.”

The rise in children’s screen time during the pandemic has triggered calls for greater interactivity and outdoor exercise. Previous studies have also linked smartphone and computer use to rising rates of eye health issues and nearsightedness among school children.

South West News Service writer Mark Waghorn contributed to this report.

=====

Diwali: Hindu Festival of Lights Celebrations

Diwali is a festival of lights and one of the major festivals celebrated by Hindus, Jains, Sikhs and some Buddhists, notably Newar Buddhists.

The festival usually lasts five days and is celebrated during the Hindu lunisolar month Kartika (between mid-October and mid-November).

One of the most popular festivals of Hinduism, Diwali symbolizes the spiritual "victory of light over darkness, good over evil, and knowledge over ignorance".

In the lead-up to Diwali, celebrants will prepare by cleaning, renovating, and decorating their homes and workplaces with oil lamps and colorful art circle patterns. During Diwali, people wear their finest clothes, illuminate the interior and exterior of their homes with diyas and rangoli, perform worship ceremonies of Lakshmi, the goddess of prosperity and wealth, light fireworks, and partake in family feasts, where sweets and gifts are shared.



Colombo, Sri Lanka

Hindu devotees gather at a temple to offer prayers during Diwali, the festival of lights

[Photograph: Ishara S Kodikara/AFP/Getty Images]

https://www.theguardian.com/lifeandstyle/gallery/2021/nov/04/diwali-hindu-festival-of-lights-celebrations-in-pictures?utm_source=join1440&utm_medium=email&utm_placement=newsletter

=====

Duran Duran



Duran Duran, a leading band in the MTV-driven Second British Invasion of the US in the 1980s, was formed by keyboardist Nick Rhodes and bassist John Taylor, with the later addition of drummer Roger Taylor, and after numerous personnel changes, guitarist Andy Taylor (none of the Taylors are related) and lead singer Simon Le Bon. These five members featured in the most commercially successful line-up.

Hungry Like the Wolf <https://youtu.be/oJL-lCzEXgI>

Paper Gods https://www.youtube.com/watch?v=GL_ExaJYCVQ

Blackbird <https://www.youtube.com/watch?v=dG6gnJc6XeU>

=====

Hello Blackbird, It's Nice to Have You Around...Again



NASA Blackbird with an F-18 chase plane
NASA

The Lockheed SR-71 "Blackbird" is a long-range, Mach 3+ strategic reconnaissance aircraft that was operated by the United States Air Force.

It was developed as a black project from the Lockheed A-12 reconnaissance aircraft in the 1960s by Lockheed and its Skunk Works division. Renowned American aerospace engineer Clarence "Kelly" Johnson was responsible for many of the design's innovative concepts.

During aerial reconnaissance missions, the SR-71 operated at high speeds and altitudes to allow it to outrace threats. If a surface-to-air missile launch was detected, the standard evasive action was simply to accelerate and outfly the missile.

The SR-71 was designed to have basic stealth characteristics and served as a precursor to future stealth aircraft.

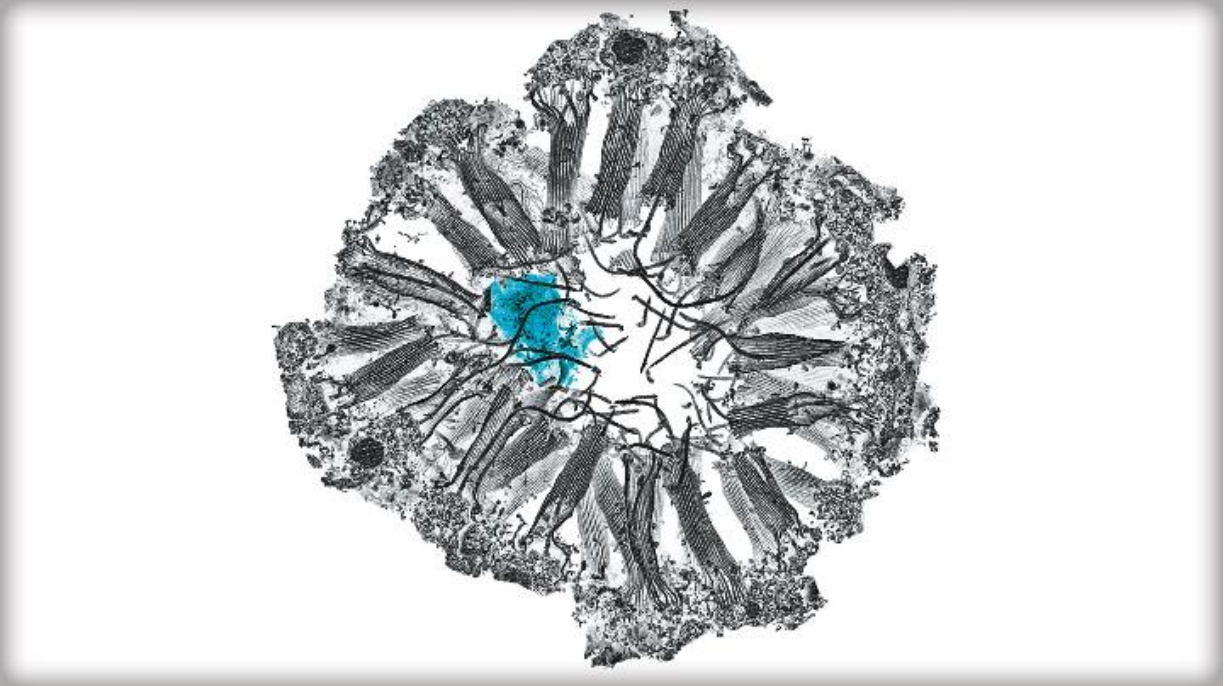
Although the SR-71 was retired by the Air Force in 1999, three of them were given over to NASA for high altitude research. Author/aviator, Barry Schiff tells the story.

<https://youtu.be/dG6gnJc6XeU>

=====

Brainless Sponges Contain Early Echoes of a Nervous System

Cells crawling around digestive chambers might help coordinate feeding



The digestive chambers (one shown) of a sponge (Spongilla lacustris) move water and nutrients through the animal. Neuroid cells (one colored blue in this electron micrograph image) make close contact with cellular tendrils called cilia (thin black tendrils in the center of the image), perhaps to tell them to stop waving, researchers found.

Jacob Musser, Giulia Mizzon, Constantin Pape, Nicole Schieber, Creative Team | EMBL

By Laura Sanders

Brains are like sponges, slurping up new information. But sponges may also be a little bit like brains.

Sponges, which are humans' very distant evolutionary relatives, don't have nervous systems. But a detailed analysis of sponge cells turns up what might just be an echo of our own brains: cells called neuroids that crawl around the animal's digestive chambers and send out messages, researchers report in the Nov. 5 *Science*.

The finding not only gives clues about the early evolution of more complicated nervous systems, but also raises many questions, says evolutionary biologist Thibaut Brunet of the Pasteur Institute in Paris, who wasn't involved in the study. "This is just the beginning," he says. "There's a lot more to explore."

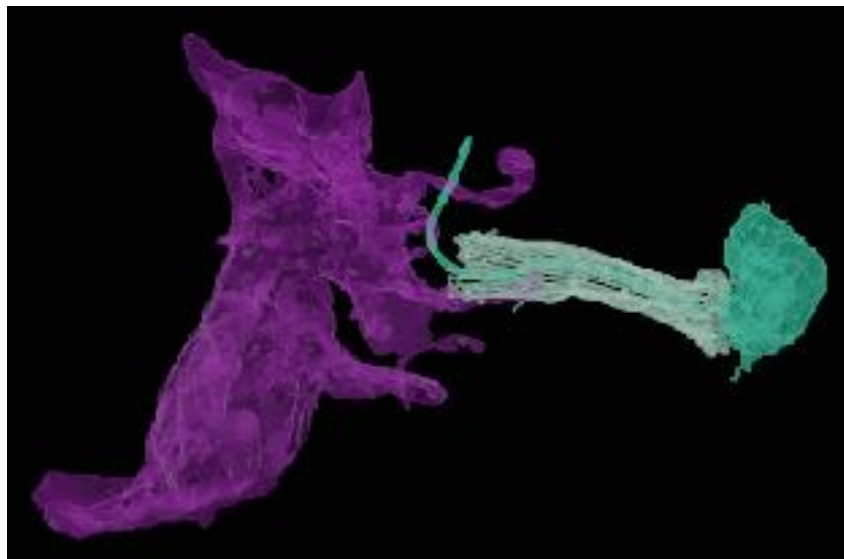
The cells were lurking in *Spongilla lacustris*, a freshwater sponge that grows in lakes in the Northern Hemisphere. "We jokingly call it the Godzilla of sponges" because of the rhyme with *Spongilla*, say Jacob Musser, an evolutionary biologist in Detlev Arendt's group at the European Molecular Biology Laboratory in Heidelberg, Germany.

Simple as they are, these sponges have a surprising amount of complexity, says Musser, who helped pry the sponges off a metal ferry dock using paint scrapers. "They're such fascinating creatures."

With sponges procured, Arendt, Musser and colleagues looked for genes active in individual sponge cells, ultimately arriving at a list of 18 distinct kinds of cells, some known and some unknown. Some of these cells used genes that are essential to more evolutionarily sophisticated nerve cells for sending or receiving messages in the form of small blobs of cellular material called vesicles.

One such cell, called a neuroid, caught the scientists' attention. After seeing that this cell was using those genes involved in nerve cell signaling, the researchers took a closer look. A view through a confocal microscope turned up an unexpected locale for the cells, Musser says. "We realized, 'My God, they're in the digestive chambers.'"

Large, circular digestive structures called choanocyte chambers help move water and nutrients through sponges' canals, in part by beating hairlike cilia appendages (SN: 3/9/15). Neuroids were hovering around some of these cilia, the researchers found, and some of the cilia near neuroids were bent at angles that suggested that they were no longer moving.



A neuroid cell (colored purple in this electron micrograph image) gets close to a digestive cell (aqua) in a sponge's feeding chamber. This proximity offers the chance for the neuroid to send signals to the other cell, scientists say.

Jacob Musser, Giulia Mizzon, Constantin Pape, Nicole Schieber/Embl

The team suspects that these neuroids were sending signals to the cells charged with keeping the sponge fed, perhaps using vesicles to stop the movement of usually undulating cilia. If so, that would be a sophisticated level of control for an animal without a nervous system.

The finding suggests that sponges are using bits and bobs of communications systems that ultimately came together to work as brains of other animals. Understanding the details might provide clues to how nervous systems evolved. "What did animals have, before they had a nervous system?" Musser asks. "There aren't many organisms that can tell us that. Sponges are one of them."

=====

Sir George Shearing...His Special Way to See Music



Blind from birth, pianist George Shearing headed an elite club of British jazz musicians to find fame in the US, his name becoming a byword for 'cool.'

Despite his visual impairment, Shearing had a natural flair for playing the piano (he started lessons at age five) and was able to memorize tunes he learned from listening to the radio. He studied music at Linden College, a residential school for blind children, where he stayed until he was 16, at which point he began working as pub pianist. From there, while still a teenager, he auditioned for a band of all-blind musicians led by Claude Bampton and got a job playing accordion with them.

Once he got to America, Shearing made a few sides for the Discovery and Savoy labels, but his popularity took off with a single he recorded with his quintet for MGM, "September In The Rain." Its sales reached almost a million copies and the song came to define what was called "the Shearing sound."

In his 2004 autobiography, *Lullaby Of Birdland*, Shearing revealed the origins of this style: "It came about by combining two distinct musical elements – the voicing of the Glen Miller saxophone section and the so-called 'locked hands' piano style of a man named Milt Buckner, whom I heard playing with Lionel Hampton's big band on my first visit [to the US] in 1946."

In 1952, Shearing wrote a tune that not only became his signature song but also a bona fide jazz standard. It was called "Lullaby Of Birdland"

Lullaby of Birdland <https://youtu.be/7zJnoQiIqDU> with Neil Swanson, bass

Joe Williams; A Song is Born <https://youtu.be/--3p9KZUFao?t=3>

With Mel Torme <https://www.youtube.com/watch?v=i6hZiN2cUSQ>

In very different ways, Joe Williams and Mel Torme were head and shoulders the best male jazz singers...ever. Take dat, Mr. Sinatra

=====

The Longest Partial Lunar Eclipse of the Century this Week

By Ben Turner

The partial eclipse takes place on the morning of **Nov. 19**



*The moon takes on a dull orangey-red hue during a lunar eclipse
(Image credit: Westend61 via Getty Images)*

The longest partial lunar eclipse of the century is due to take place next week between Nov. 18 and 19, and the gorgeous phenomenon will be visible in all 50 U.S. states.

NASA forecasts that the almost-total eclipse of the Micro Beaver Full Moon will last around 3 hours, 28 minutes and 23 seconds — beginning at approximately 2:19 a.m. EST (7:19 a.m. UTC); reaching its maximum around 4 a.m. EST (9 a.m. UTC); and ending at 5:47 a.m. EST (10:47 a.m. UTC). The Micro Beaver moon is so named because it occurs when the moon is at the farthest point from Earth and in the lead-up to beaver-trapping season.

The partial lunar eclipse, when Earth's shadow covers 97% of the full moon, will be the longest of the century by far, dwarfing the duration of the longest total lunar eclipse this century, which took place in 2018 and stretched to 1 hour and 43 minutes. The forthcoming eclipse will also be the longest partial lunar eclipse in 580 years, according to the Holcomb Observatory at Butler University, Indiana.

Lunar eclipses happen when Earth slides between the moon and the sun, so that our planet's shadow eclipses or "falls on" the moon. The shadow can block all, or in the case of a partial eclipse most, of the sun's light and paint the moon a dark, rusty red.

This reddening of the moon happens because light from the sun, despite being directly blocked by Earth's umbra, or the darkest part of its shadow, bends around our planet and travels through our atmosphere to reach the moon. Earth's atmosphere filters out shorter, bluer wavelengths of light and allows red and orange wavelengths through,

Live Science previously reported. After these red and orange wavelengths pass through Earth's atmosphere they continue traveling to the moon, bathing it in deep, mahogany-red light.

To get exact eclipse timings for your location, you can visit timeanddate.com. The eclipse will be visible from North America and the Pacific Ocean, Alaska, Western Europe, eastern Australia, New Zealand and Japan. Though the early stages of the eclipse occur before moonrise in eastern Asia, Australia and New Zealand, eclipse-watchers in these regions will be able to see the eclipse as it reaches its maximum. Conversely, viewers in South America and Western Europe will see the moon set before the eclipse is at its peak.

Unfortunately, none of the eclipse will be visible from Africa, the Middle East or western Asia. Other areas may find clouds blocking the view of the moon, so checking weather reports ahead of a planned viewing is a must.

If you happen to miss this one, fear not, lunar eclipses tend to happen twice a year, and there will be a full lunar eclipse between May 15 and 16, 2022, followed by another one between Nov. 7 and 8, later that year, according to timeanddate.com.

Live Science would like to publish your partial lunar eclipse photos. Please email us images at community@livescience.com. Please include your name, location and a few details about your viewing experience that we can share in the caption.

Originally published on Live Science.

=====

Misleading signs



In an office:

Toilet out of order... Please use floor below

In a laundromat:

Automatic washing machines: please remove all your clothes when the light goes out 😂

In a London department store:

Bargain basement upstairs

In an office:

Would the person who took the step ladder yesterday please bring it back or further steps will be taken

In an office:

After tea break staff should empty the teapot and stand upside down on the draining board

Outside a secondhand shop:

We exchange anything - bicycles, washing machines, etc. Why not bring your wife along and get a wonderful bargain?

Notice in health food shop window:

Closed due to illness

Spotted in a safari park:

Elephants please stay in your car

Seen during a conference:

For anyone who has children and doesn't know it, there is a day care on the 1st floor

Notice in a farmer's field:

The farmer allows walkers to cross the field for free, but the bull charges.

On a repair shop door:

We can repair anything. (please knock hard on the door - the bell doesn't work)

=====

INS Vikrant, India's First-Ever Indigenous Aircraft Carrier

By: Sidharth MP



Courtesy the Indian Navy, WION boarded a Sea King chopper from India's Southern Naval Command Headquarters and headed out of the Coast, over the scenic Kochi city. While large ships and fishing boats dotted the coast for a considerable part, thereafter,

it was a vast expanse of blue. Amid this endless horizon, there emerged a gigantic and distinct mass of grey metal, majestically cruising through, with several smaller Navy vessels flanking it.

Aircraft carriers or floating military airfields are considered the pinnacle of Naval engineering, operations and the most potent form of power projection, far from a country's shores.

India has operated aircraft carriers for nearly five decades, but all of those carriers have been of foreign origin and were later modified for the Indian Navy.

Coinciding with India's 75th year of Independence, in 2022, a made-in-India, made-for-India engineering marvel, known as the Indigenous Aircraft Carrier (IAC-1) will be inducted into the Indian Navy. Notably, this Rs.20,000cr vessel features 76 per cent indigenous components.

<https://youtu.be/dzBFWumZYVQ>

A 'Floating Fortress!'

After an aerial encirclement of the vessel, the Sea King landed on the deck of the Carrier, thereby, revealing in full detail, what a massive structure the IAC-1 has. The carrier is 262 meters long, 62 meters wide and nearly 18 stories tall... Nothing less than a 'Floating Fortress!'

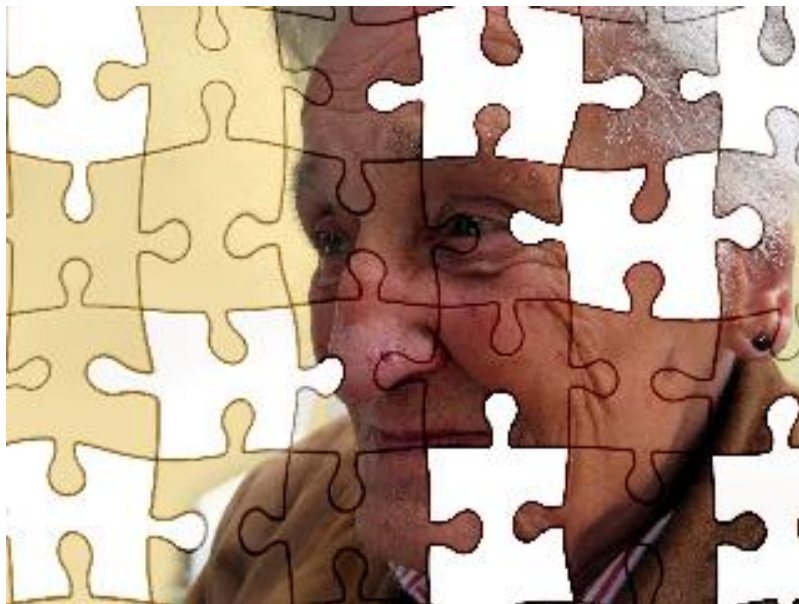
With a displacement of over 40,000 tonnes, the IAC-1 dwarfs all other warships that the Indian Navy operates. Simply put - the IAC-1 weighs nearly 8 times as much as a normal warship. Designed by the Navy's Directorate of Naval Design (DND) and built by India's state-run Cochin Shipyard Limited, the Indigenous Aircraft carrier is the country's most prestigious military project to date.

=====



=====

Battling Alzheimer's: MS Drug Improves Memory in Mice



URMC Home Newsroom Publications NeURoscience

Losing memory is a hallmark of Alzheimer's, a symptom of the disease that depletes a patient's quality of life. Improving memory and slowing cognitive changes caused by the disease is an ongoing challenge for researchers seeking to develop novel therapies. In a newly published paper in *Frontiers in Neuroscience*, researchers at the Del Monte Institute for Neuroscience at the University of Rochester found that glatiramer acetate, a prescription drug currently used to treat patients with multiple sclerosis (MS), improved memory in a mouse model of Alzheimer's disease.

"This research extends our information about glatiramer acetate's potential use in Alzheimer's disease," said M. Kerry O'Banion, M.D., Ph.D., professor of Neuroscience and senior author of the study. "This isn't a cure, but it could be a step in the right direction for a treatment to slow the symptoms of this debilitating disease."

Using a mouse model, researchers found changes in microglia – part of the brain's immune system – and improvements in cognitive behavior when glatiramer acetate was used. These changes were associated with less amyloid plaques and modifications to tau pathology – a protein found in neurodegenerative diseases – in the brain, indicating that molecular hallmarks of Alzheimer's disease had been impacted. Previous studies have found that glatiramer acetate can alter brain pathology in Alzheimer's disease mouse models, but the exact mechanisms that are impacted in the brain are still unknown.

"Overall, these findings provide further evidence that therapies that modify the immune system could be effective in the treatment of Alzheimer's disease," said Dawling Dionisio-Santos, Ph.D., a first-year resident in Neurology and graduate of the Medical Scientist Training Program and co-first author on the paper. "It adds evidence to support trials that test the use of glatiramer acetate in patients at risk for developing Alzheimer's."

Co-authors on this paper include Berke Karaahmet, Elizabeth K. Belcher, Ph.D., Laura D. Owlett, Ph.D., Lee A. Trojanczyk, and John A. Olschowka, Ph.D. The research was funded by the National Institute on Aging.

=====

Ukraine Pop-Up Synagogue: Ingenuity and Muscle



Ukraine unveiled on Friday a synagogue built of wood and designed to unfold like a pop-up book at a site commemorating the victims of one of the single biggest massacres of Jews during the Nazi Holocaust.

<https://youtu.be/74z65DXdN2o?t=1>

=====

Where Was Elon Musk When They Needed a Plumber?



Showing space born peppers, returning astronauts will diaper-up for flight home. So what's the big deal, the Apollo guys got to spend ten times that long between pit stops.

NASA

The astronauts who will depart the International Space Station on Sunday will be stuck using diapers on the way home because of their capsule's broken toilet.

NASA astronaut Megan McArthur described the situation Friday as "suboptimal" but manageable. She and her three crewmates will spend 20 hours in their SpaceX capsule, from the time the hatches are closed until Monday morning's planned splashdown.

"Spaceflight is full of lots of little challenges," she said during a news conference from orbit. "This is just one more that we'll encounter and take care of in our mission. So we're not too worried about it."

After a series of meetings Friday, mission managers decided to bring McArthur and the rest of her crew home before launching their replacements. That SpaceX launch already had been delayed more than a week by bad weather and an undisclosed medical issue involving one of the crew.

French astronaut Thomas Pesquet, who will return with McArthur, told reporters that the past six months have been intense up there. The astronauts conducted a series of spacewalks to upgrade the station's power grid, endured inadvertent thruster firings by docked Russian vehicles that sent the station into brief spins, and hosted a private Russian film crew—a space station first.

They also had to deal with the toilet leak, pulling up panels in their SpaceX capsule and discovering pools of urine. The problem was first noted during SpaceX's private flight in September, when a tube came unglued and spilled urine beneath the floorboards. SpaceX fixed the toilet on the capsule awaiting liftoff, but deemed the one in orbit unusable.

Engineers determined that the capsule had not been structurally compromised by the urine and was safe for the ride back. The astronauts will have to rely on what NASA describes as absorbent "undergarments."

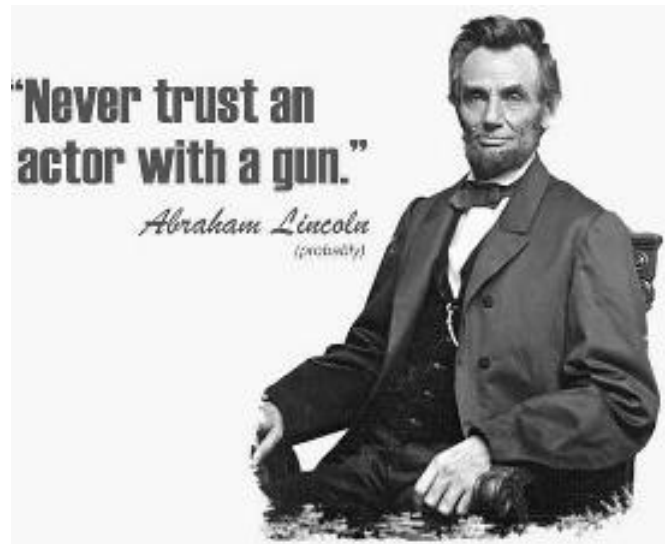
On the culinary side, the astronauts grew the first chile peppers in space—"a nice moral boost," according to McArthur. They got to sample their harvest in the past week, adding pieces of the green and red peppers to tacos.

"They have a nice spiciness to them, a little bit of a lingering burn," she said. "Some found that more troublesome than others."

Also returning with McArthur and Pesquet: NASA astronaut Shane Kimbrough and Japanese astronaut Akihiko Hoshide. SpaceX launched them to the space station on April 23. Their capsule is certified for a maximum 210 days in space, and with Friday marking their 196th day aloft, NASA is eager to get them back as soon as possible.

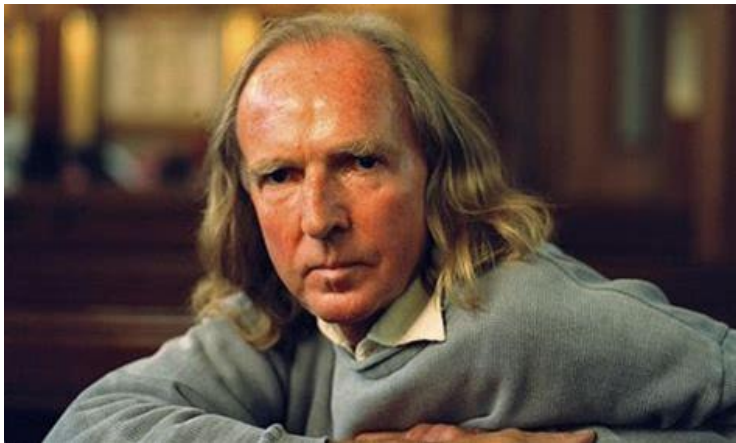
One American and two Russians will remain on the space station following their departure. While it would be better if their replacements arrived first—in order to share tips on living in space—Kimbrough said the remaining NASA astronaut will fill in the newcomers.

=====



=====

John Tavener (1944-2014)



During childhood Tavener showed a deep affinity for elemental sounds and for music, though less for its formal study, preferring to improvise on the piano. As a choirboy at Arnold House he wrote several carols and hymns. These early works show the incipient — and enduring — influence of Stravinsky.

Tavener became an Orthodox Christian, and following his conversion in 1977, he produced a slew of works heavily influenced by Orthodox liturgical texts.

The Lamb <https://www.youtube.com/watch?v=CIMUquOdDT4>

Song for Athene <https://www.youtube.com/watch?v=tK3bIQxMMEg>

Akathist of Thanksgiving <https://www.youtube.com/watch?v=mhErlahGsK0>

=====

You Can't Hide From Your Cat, So Don't Even Try

By Mindy Weisberger

Cats create "mental maps" using audio cues, scientists have discovered.



*Even when they leave, they still are there.
(Image credit: Annie Paddington/Getty Images)*

Your cat is probably keeping track of where you are, even if your feline friend isn't in the same room with you and can't see you.

Scientists recently learned that domestic cats create "mental maps" that tell them where nearby humans are located, based on where sounds are coming from. The researchers tested cats by playing recordings of human voices calling the cats' names; they then played those recordings again, only this time through a speaker in a different place, so that the same sounds came from farther away.

The cats acted surprised when the familiar voice came from a location that they didn't expect, based on what they had already heard. This suggests that cats spatially orient their unseen human companions using audio cues — a cognitive ability that was previously unknown in felines.

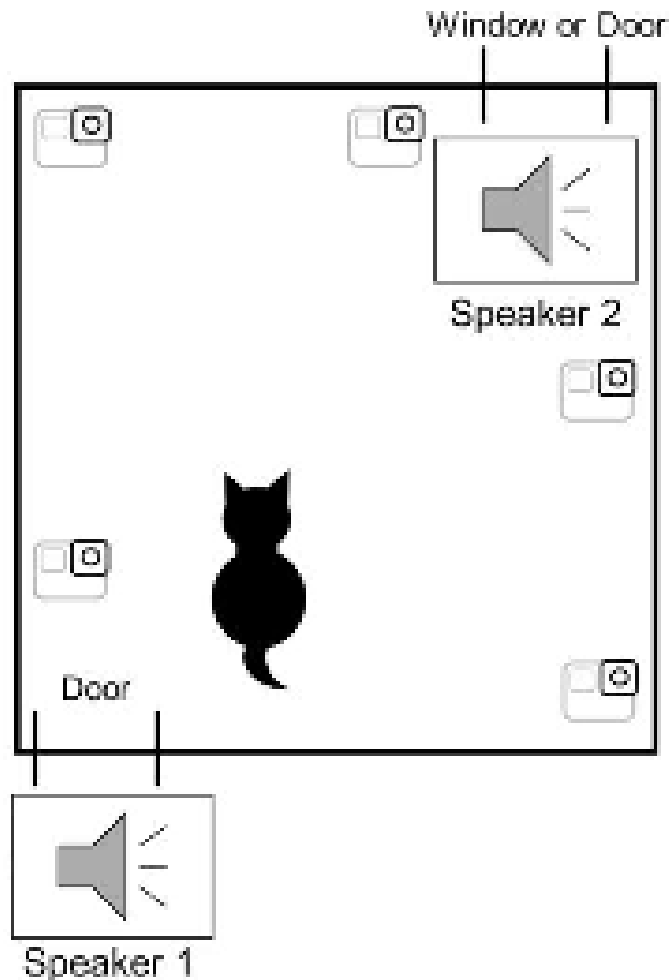
Knowing that something continues to exist even if it's out of sight (as the cats demonstrated in their responses) is called object permanence, and it's a test that researchers use to measure animal intelligence. Human infants typically begin to develop object permanence when they're around 8 months old, and this ability becomes more refined when babies reach 10 to 12 months old; at that stage, babies can find hidden objects, and they begin to realize that their parents and caregivers don't disappear just because they can't be seen, according to the Mayo Clinic.

Prior research has demonstrated object permanence in primates such as chimpanzees (*Pan troglodytes*), bonobos (*Pan paniscus*), gorillas (*Gorilla gorilla*) and orangutans (*Pongo pygmaeus*); and in nonprimates such as Eurasian jays (*Garrulus glandarius*), bears (*Melursus ursinus* and *Helarctos malayanus euryspilus*), dogs (*Canis lupus familiaris*) and cats (*Felis catus*), scientists reported Nov. 10 in the open-access journal PLOS One.

For the new study, they decided to test cats using audio signals because cats are known for their exceptional hearing and are capable of finding hidden prey under

conditions of low visibility. "Indeed, cats appear to be good at inferring physical and social presence from sounds," the authors wrote.

Previously, study lead author Saho Takagi, a doctoral candidate at Kyoto University in Japan, found that when cats heard the sounds of their owners' voices, they then expected to see their owners' faces. In other studies, cats have also shown that they can distinguish between familiar and unfamiliar human voices and that they can locate hidden objects. So "it seems plausible that cats should be able to mentally map others' locations based on vocalizations," the scientists said in the study.



Scientists placed one speaker outside the test room and another speaker inside the test room close to another door or window, and they recorded video of the cats' responses to the sounds.

(Image credit: S. Takagi et al./PLOS One)

For their experiments, they placed cats into three groups; each group was split in two depending on where the cats lived, either at cat cafés or in domestic homes. Cat groups listened to a different combination of sounds: Group one heard recordings of caregivers or strangers calling their names; group two listened to sounds of other cats; and group three heard random electronic noises.

The researchers then played the sounds in two passes: first through a speaker near a door that was close to the cats, and then through a speaker next to a door or window that was farther away. Observers noted how surprised the cats seemed by the seemingly unexplained "teleportation" of the sounds from one place to another, rating their level of surprise on a scale of 0 (not at all surprised) to 4 (very surprised). Signs of their surprise included staring toward the voice's "original" position, moving their ears and heads, looking around them or moving about the room, according to the study.

Overall, the cats showed the most surprise when their owner's familiar voice appeared to "teleport." This suggests that the cats formed a mental image of their unseen owners and mapped their locations based on where they first heard the voice, "showing evidence of socio-spatial cognition," the researchers reported.

Being able to form a mental picture of the outside world "is an important feature in complex thinking," and these findings offer new insights that could inform future studies of feline cognition, the study authors concluded.

Originally published on Live Science.

=====

Is Nuclear Fusion (Finally) Here?

When it comes to clean and abundant energy, nuclear fusion tops many people's wish list.



The science hasn't been cracked yet, though, and the running joke is that nuclear fusion has been 30 years away for 50 years.

Things may soon change: Helion Energy just raised \$500m to bring the fusion technology to market, per CNBC.

How does nuclear fusion work?

The existing nuclear industry is built on fission, where an atom is split into 2 smaller atoms and energy is released.

Conversely, fusion creates energy by smashing 2 smaller atoms into a larger one. (There's one salient example of this type of energy creation: It's called the sun.)

According to CNBC, Helion will use the funding to build a nuclear facility in Washington state that can "demonstrate net electricity production by 2024."

Nuclear fusion has a number of advantages...

... according to ITER, an international nuclear fusion research:

- Abundant: Fusion can produce 4x as much energy as nuclear fission
- Sustainable: Fusion fuels are available and renewable (e.g., deuterium can be distilled from water)
- No CO2: Fusion doesn't emit carbon dioxide or other greenhouse gases
- Limited risk of proliferation: Fusion doesn't require uranium or plutonium, which are needed for fission reactors (and have the dual-use case of nuclear weapons)
- No meltdown risk: The fuel used at any time to operate a fusion reactor isn't enough for a runaway chain reaction

How is Helion different from previous fusion efforts?

The startup's CEO David Kirtley says its approach applies advances in electronics, fiber optics, and computers not used in older reactors. The result: smaller systems that are easier to iterate on.

One big believer: Sam Altman -- the former president of startup incubator YC and co-founder of OpenAI -- personally put \$350m into the funding round.

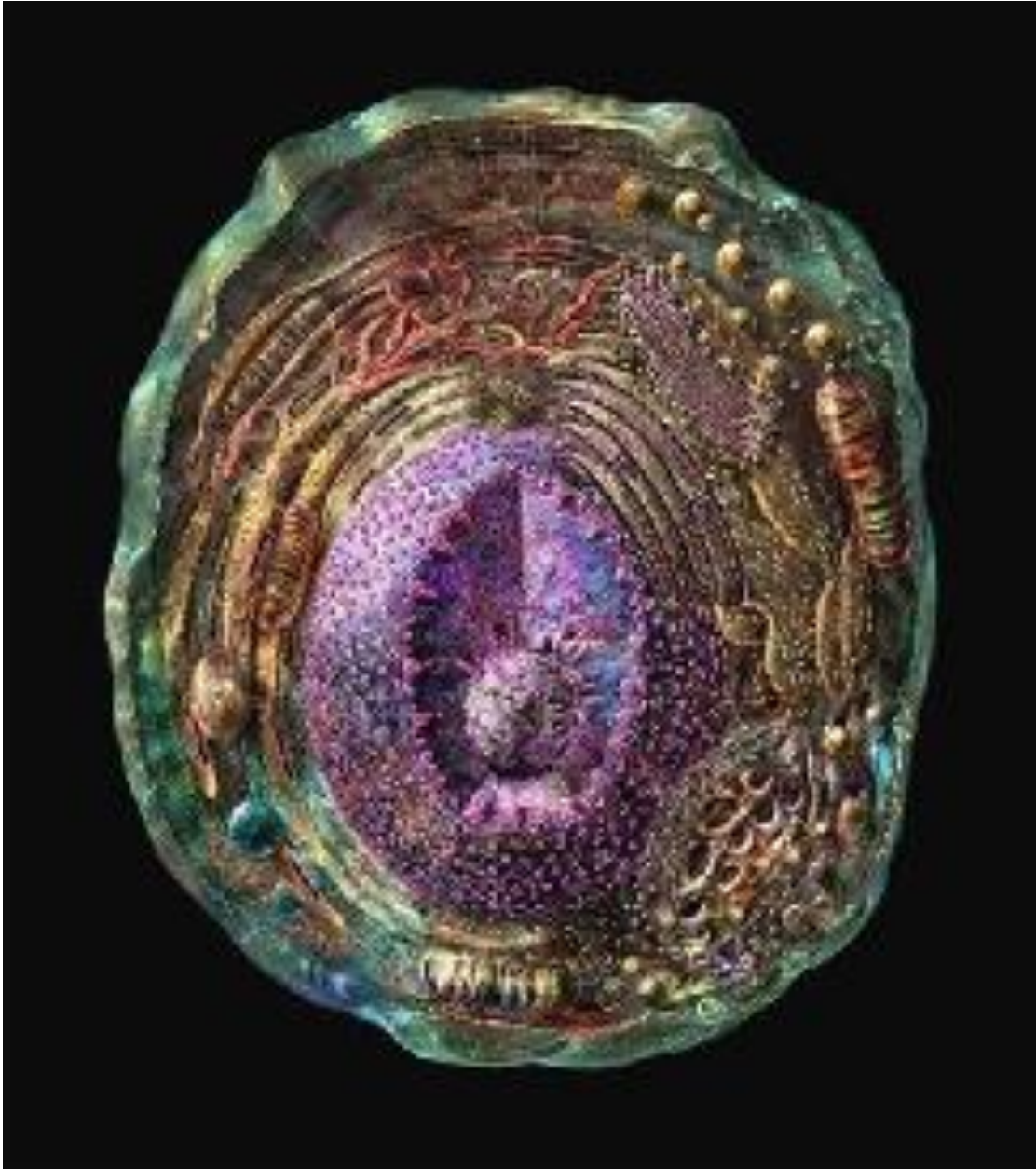
If it works, we can finally put the "30 years away for 50 years" joke to rest.

There may be a few of us left around who remember when a Southern California home builder (Pressley Homes) announced a little box that produced more energy than it consumed, and the Stock Market went nuts. Ditto when the University of Utah claimed to have achieved a breakthrough with cold fusion. They did come out of it with a championship basketball team as a consolation for the failure.

Hope springs eternal, and I for one will leap with joy (figuratively these days) if Helion Succeeds, but if I were to put my two-bits anywhere, it would be on thorium fission for the near term.

=====

A Human Cell



The most detailed representation of a human cell to date, obtained by radiography, nuclear magnetic resonance and cryoelectronic microscopy.

=====

Poetry for Today

The Highwayman By Alfred Noyes



The wind was a torrent of darkness among the gusty trees.
The moon was a ghostly galleon tossed upon cloudy seas.
The road was a ribbon of moonlight over the purple moor,
And the highwayman came riding—

Riding—riding—

The highwayman came riding, up to the old inn-door.

He'd a French cocked-hat on his forehead, a bunch of lace at his chin,
A coat of the claret velvet, and breeches of brown doe-skin.

They fitted with never a wrinkle. His boots were up to the thigh.

And he rode with a jewelled twinkle,

His pistol butts a-twinkle,

His rapier hilt a-twinkle, under the jewelled sky.

Over the cobbles he clattered and clashed in the dark inn-yard.

He tapped with his whip on the shutters, but all was locked and barred.

He whistled a tune to the window, and who should be waiting there
But the landlord's black-eyed daughter,
 Bess, the landlord's daughter,
Plaiting a dark red love-knot into her long black hair.

And dark in the dark old inn-yard a stable-wicket creaked
Where Tim the ostler listened. His face was white and peaked.
His eyes were hollows of madness, his hair like mouldy hay,
But he loved the landlord's daughter,
 The landlord's red-lipped daughter.
Dumb as a dog he listened, and he heard the robber say—

“One kiss, my bonny sweetheart, I'm after a prize to-night,
But I shall be back with the yellow gold before the morning light;
Yet, if they press me sharply, and harry me through the day,
Then look for me by moonlight,
 Watch for me by moonlight,
I'll come to thee by moonlight, though hell should bar the way.”



He rose upright in the stirrups. He scarce could reach her hand,
But she loosened her hair in the casement. His face burnt like a brand
As the black cascade of perfume came tumbling over his breast;
And he kissed its waves in the moonlight,
 (O, sweet black waves in the moonlight!)
Then he tugged at his rein in the moonlight, and galloped away to the west.

Part Two

He did not come in the dawning. He did not come at noon;
And out of the tawny sunset, before the rise of the moon,
When the road was a gypsy's ribbon, looping the purple moor,
A red-coat troop came marching—
 Marching—marching—
King George's men came marching, up to the old inn-door.

They said no word to the landlord. They drank his ale instead.
But they gagged his daughter, and bound her, to the foot of her narrow bed.
Two of them knelt at her casement, with muskets at their side!
There was death at every window;
 And hell at one dark window;
For Bess could see, through her casement, the road that *he* would ride.

They had tied her up to attention, with many a sniggering jest.
They had bound a musket beside her, with the muzzle beneath her breast!
"Now, keep good watch!" and they kissed her. She heard the doomed man say—
Look for me by moonlight;
 Watch for me by moonlight;
I'll come to thee by moonlight, though hell should bar the way!



She twisted her hands behind her; but all the knots held good!
She writhed her hands till her fingers were wet with sweat or blood!
They stretched and strained in the darkness, and the hours crawled by like years
Till, now, on the stroke of midnight,
 Cold, on the stroke of midnight,
The tip of one finger touched it! The trigger at least was hers!

The tip of one finger touched it. She strove no more for the rest.
Up, she stood up to attention, with the muzzle beneath her breast.
She would not risk their hearing; she would not strive again;
For the road lay bare in the moonlight;
 Blank and bare in the moonlight;
And the blood of her veins, in the moonlight, throbbed to her love's refrain.

Tlot-tlot; tlot-tlot! Had they heard it? The horsehoofs ringing clear;
Tlot-tlot; tlot-tlot, in the distance? Were they deaf that they did not hear?
Down the ribbon of moonlight, over the brow of the hill,
The highwayman came riding—
 Riding—riding—
The red coats looked to their priming! She stood up, straight and still.

Tlot-tlot, in the frosty silence! *Tlot-tlot,* in the echoing night!

Nearer he came and nearer. Her face was like a light.
Her eyes grew wide for a moment; she drew one last deep breath,
Then her finger moved in the moonlight,
Her musket shattered the moonlight,
Shattered her breast in the moonlight and warned him—with her death.

He turned. He spurred to the west; he did not know who stood
Bowed, with her head o'er the musket, drenched with her own blood!
Not till the dawn he heard it, and his face grew grey to hear
How Bess, the landlord's daughter,
The landlord's black-eyed daughter,
Had watched for her love in the moonlight, and died in the darkness there.



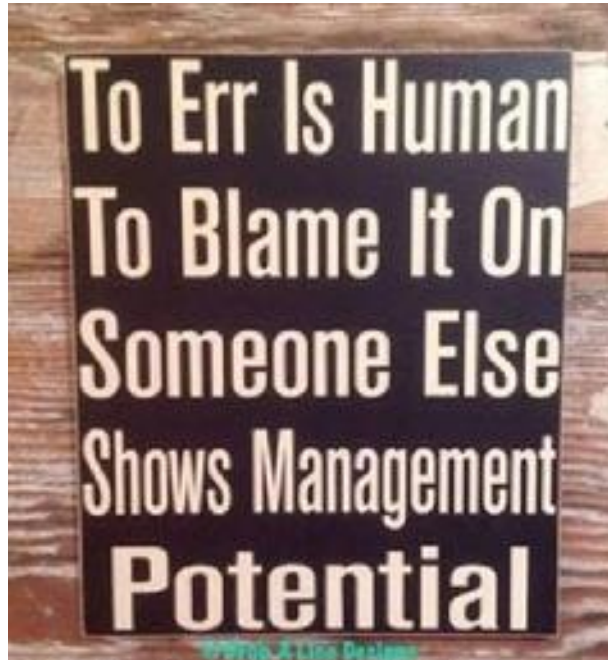
Back, he spurred like a madman, shrieking a curse to the sky,
With the white road smoking behind him and his rapier brandished high.
Blood red were his spurs in the golden noon; wine-red was his velvet coat;
When they shot him down on the highway,
Down like a dog on the highway,
And he lay in his blood on the highway, with a bunch of lace at his throat.

*And still of a winter's night, they say, when the wind is in the trees,
When the moon is a ghostly galleon tossed upon cloudy seas,
When the road is a ribbon of moonlight over the purple moor,
A highwayman comes riding—
Riding—riding—
A highwayman comes riding, up to the old inn-door.*

*Over the cobbles he clatters and clangs in the dark inn-yard.
He taps with his whip on the shutters, but all is locked and barred.
He whistles a tune to the window, and who should be waiting there*

*But the landlord's black-eyed daughter,
Bess, the landlord's daughter,
Plaiting a dark red love-knot into her long black hair.*

=====



=====

Alma Deutscher's Piano Concerto...an Ode to the 19th Century?



In a recent column, investment counselor, Vitaliy Katsenelson, shared a piano concerto performed by then-eleven-year-old Alma Deutscher from Britain.

"I was glad to see this young virtuoso, but with shows like America's Got Talent and Britain's Got Talent, child prodigy performers are now a dime a dozen," he pointed out. "However, when I started listening to Alma's piano concerto, I did not recognize the music. As I paid closer attention to the video, I realized that this eleven-year-old girl was not just playing this concerto, she had composed it.

"And what a concerto it was! It had the lightness of Mozart, the delicacy of Chopin, the dynamism of Mendelssohn, and the Hollywood (modern) flair of Korngold. It is terrific!"

Alma Elizabeth Deutscher (born 19 February 2005) is a British composer, pianist, and violinist. Deutscher composed her first piano sonata at the age of five. At seven, she completed a short opera *The Sweeper of Dreams*. Aged nine, she wrote a concerto for violin and orchestra. At the age of ten, she wrote her first full-length opera, *Cinderella*, which had its European premiere in Vienna in 2016 under the patronage of conductor Zubin Mehta.

<https://youtu.be/bWIAgksUQyo>

Not impressed? Then perhaps you need to listen to her Violin Concerto in G minor, performed by Miss Deutscher herself on violin. This time, perhaps an Ode to Johann Sebastian Bach.



srf.ch

<https://youtu.be/Os8fFmEmRZE?t=8>

In January 2017, following the premiere of Deutscher's opera, *Cinderella*, in Vienna, an article entitled "Alma and the dangerous love of melody" appeared in the Viennese newspaper *Der Standard*, which expressed the hope that Deutscher's melodious music

may help to change the prevailing attitudes in contemporary classical music and inject a new life into the world of opera, by steering it back towards melody

=====

Some Puns...Intended

- Two silk worms had a race. They ended up in a tie.
- A hole has been found in the nudist-camp wall.
- The police are looking into it.
- Time flies like an arrow. Fruit flies like a banana.
- Atheism is a non-prophet organization.
- Two hats were hanging on a hat rack in the hallway. One hat said to the other:
- 'You stay here; I'll go on a head.'
- I wondered why the baseball kept getting bigger. Then it hit me.
- A sign on the lawn at a drug rehab center said:
- 'Keep off the Grass.'
- The midget fortune-teller who escaped from prison was a small medium at large.
- The soldier who survived mustard gas and pepper spray is now a seasoned veteran.

=====

Church Bulletins From Another Time and Place

They're Back! Those wonderful Church Bulletins! Thank God for the church ladies with typewriters. These sentences actually appeared in church bulletins or were announced at church services:

The Fasting & Prayer Conference includes meals.

Scouts are saving aluminum cans, bottles and other items to be recycled Proceeds will be used to cripple children.

The sermon this morning: 'Jesus Walks on the Water. 'The sermon tonight: 'Searching for Jesus.'

Ladies, don't forget the rummage sale. It's a chance to get rid of those things not worth keeping around the house. Bring your husbands.

Don't let worry kill you off - let the Church help.

Miss Charlene Mason sang 'I will not pass this way again,' giving obvious pleasure to the congregation.

For those of you who have children and don't know it, we have a nursery downstairs.

Next Thursday there will be try-outs for the choir. They need all the help they can get.

Irving Benson and Jessie Carter were married on October 24 in the church. So ends a friendship that began in their school days.

A bean supper will be held on Tuesday evening in the church hall. Music will follow

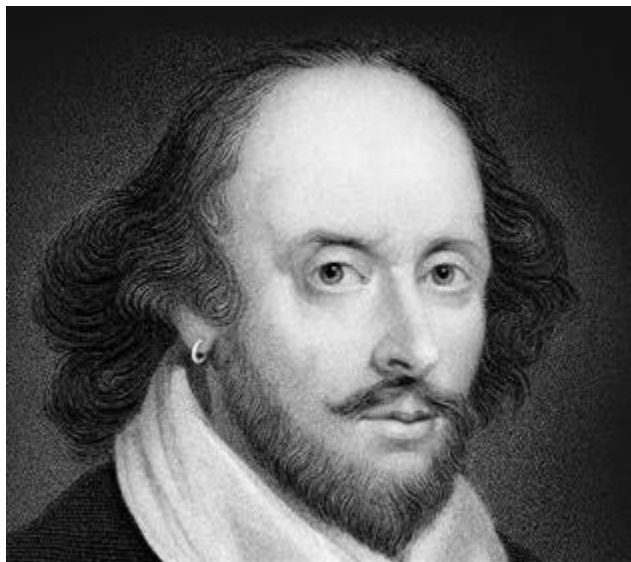
=====



"Here's the last entry in Carlson's journal: 'Having won their confidence, tomorrow I shall test the humor of these giant but gentle primates with a simple joy-buzzer handshake.'"

=====

Some More Things You Can Blame on Shakespeare



Good Riddance

Not just a Green Day song – the word "riddance" was used in the 16th century to describe getting rid of something. A good riddance, as spoken by Portia in Merchant of Venice, refers to happily eliminating something from your life. Or as in the play, someone, like the Prince of Morocco.

Kill With Kindness

Modern musicians have found great inspiration in Shakespeare's turns of phrase. Before Selena Gomez crooned about killing 'em with kindness, so did Petruchio when describing his tactics to win over the prickly Katherine with a dollop of "headstrong humor" in Taming of the Shrew.

As Good Luck Would Have It

We've since dropped the good, but this idiom about a serendipitous event comes from The Merry Wives of Windsor, when Falstaff mentions meeting Mistress Page and gaining some useful information.

Love Is Blind

Chaucer coined it back in 1405, but Shakespeare popularized this phrase. In The Merchant of Venice, Jessica wistfully explains, "But love is blind, and lovers cannot see the pretty follies that they themselves commit."

The Game Is Afoot

Speaking of famous misattributions – Shakespeare originated Sherlock Holmes' most famous catchphrase, not Sir Arthur Conan Doyle. It pops up in Henry V, spoken by the king himself as part of a motivational battle speech.

Knock, Knock! Who's There?

[Congrats, Shakespeare! You are the father of the knock-knock joke. While used to cheesy effect today, when uttered by the Porter in Macbeth, Shakespeare is demonstrating a deft sense of cleverness.

=====

MIT Private Pilot Ground School 2019, F-22 Flight Controls



This is an hour class at MIT about the Raptor and what makes it so special. If you haven't got the time to watch it now, grab the URL for another time. This is really great stuff.

A special guest lecture in our January 2019 class.

<https://www.youtube.com/watch?v=22u4qxm1YjY>

=====

Hope, Cagney, and a Moonwalk Before Michael Jackson Learned to Toddle



A comedian, a gangster, a table top and an appreciative audience: What else do these guys need

[Http://videos2view.net/Hope-Cagney.htm](http://videos2view.net/Hope-Cagney.htm)

=====

Root 66



The Thrill of Breezy Hill

On the third day of our Macon visit, Tom and I relocated ourselves to Breezy Hill, a section of land my father had bought in the 1940s, but to tell the truth I'm not quite sure just why...other perhaps so the family would have a place to relax, fly kites, eat hot dogs, and squirt watermelon seeds...snipping is what we called the practice back then.

Legend has it that being the highest point within sight, it was a valued lookout point for the local Cherokee tribe, though I have nothing beyond the word of my father on that. Mostly it was a wooded area looking principally to the north and west with what memory tells me was a 10- to maybe 20-acre clearing that allowed for games of all sorts except for frisbees, which hadn't been invented when we were there...a definite pity.

The only building at the time we encamped was a partially burned party cabin with a refrigerator, electric stove, and running water. Just beyond the back entrance was the outhouse that enjoyed a nice breeze during periods of good weather...perhaps the source of the tract's name.

My mother sold the property in 1980 (or so) and it is now home to a mall, hospital, and apartment complex, but then it was a secret retreat for family, friends, and maybe a few interlopers like Tom and me.

Anyway, the two of us took up residence for the remainder of our visit in order to spare the relatives from our becoming the proverbial three-day-old fish.

There was a Piggly-Wiggly market a half mile to the northwest next to the Southern Railway track that answered all our breakfast and snack needs. A little farther on lay

Wesleyan College where my father had given the commencement address ten years earlier. He brought me along in response to pleadings from my mother who did not want to put up with me for the three weeks he would be gone.

One both weekends we were there, we along with the family and friends enjoyed the pleasant late June weather, Tom and I dividing our time well in favor of the little folks who seemed to rejoice in the company of their California visitors.

The real benefit of Breezy Hill was it allowed me an opportunity to reflect on what we were experiencing on the trip. By then there was so much to be learned and appreciated in the venues, customs, and approach to life of the people who were so willing to spend time with us. I found, contrary to my previous belief, that Southern California was not the center of the universe, that the people who were our hosts enjoyed a quieter lifestyle that allowed for meaningful comfort...something foreign to my experience...then, and to a lesser extent even today

Next week: More of the Fried Chicken Dance.

=====

My Walking Thoughts

November 14, 2021

Veterans Day 2021

I did quite a lot of thinking during my meanders this past Thursday. It was, of course, Veterans Day, and it occurred to me that we've lost sight of what that day as well as Memorial Day, and the Fourth of July are really about...in a word, Freedom.

Allow me to cast my thoughts in a perspective as presented by columnist, Elmer Davis, my memory of whom is couched in his oft-quoted statement:

*" This will remain the land of the free
so long as it is the home of the brave."*

As people have found time and again in the past, Freedom is not something we get as a birthright, it is something every generation, every individual has to earn.

Freedom is ephemeral, gone in the twinkling of an eye if it is not cultivated through knowledge and nourished when called upon by blood. And that's why veterans deserve not just occasional tips of the hat, but genuine recognition for their role in purchasing for us the freedom we so casually proclaim.

Every aspect of our lives in a free society is crucial to its character, and over time my walking thoughts will rest on more of them, but for today I want to touch on one—our responsibility to those we send into harm’s way in our behalf—and our stewardship in the discharge of this obligation.

To this end I have lifted this article from Boston College’s publication, The Brink (September 10, 2021) because I think it tackles a topic—Veteran Suicide--that is neither well understood nor creatively managed. If you are concerned this is not a proper subject for the Ode, I hope you will forgive me, for I know it is not a happy one. On the other hand, it is one we need to think about and discuss, particularly because the responsibility lies with each us.

In 20 Years since 9/11, Military Suicides have Risen Sharply. Why?

A sociologist explains how unique factors of the War on Terror are impacting the mental health of active troops and veterans

By Kat J. McAlpine for Boston University’s The Brink, September 10, 2021



In the 20 years since September 11 terror attacks, four times as many deaths among members of the military have been caused by suicide compared to those killed in action. That’s 30,177 active-duty personnel and veterans of the post-9/11 wars who have taken their own lives.

While these high suicide rates can partially be attributed to the mental health toll of participating in war—exposure to trauma, stress, access to guns, difficulty returning to civilian life after duty—a Boston University researcher says there are additional factors, one of the biggest being traumatic brain injury, unique to the wars stemming from 9/11, that are contributing to the rising suicide rates among military members.

“Among the demographic of veterans aged 18 to 34, who most likely served in post-9/11 conflicts, the suicide rate per 100,000 was 25.5 in 2005,” says Thomas “Ben” Suitt, who earlier this year earned a PhD from BU’s Graduate Program in Religion, specializing in the sociology of religion in the military and social ethics. “Today, that rate is 45.9 per 100,000.”

While pursuing his doctorate, Suitt was studying moral injury and the role of faith in 9/11 veterans. Talking with them for his research, he was struck by their stories of trauma.

“I was looking at Veteran Affairs (VA) and Department of Defense (DoD) data, and I saw that no one had put it in terms of how bad suicide rates are getting,” Suitt says. “Rates are getting worse and worse.”

Historically, he says, data indicate that suicide rates typically go down among members of the military during wars. But military suicides have gone up during the War on Terror, meeting and surpassing the suicide rate among civilians.

Suitt decided to look into factors specific to post-9/11 combat that might be contributing to the rise. He published a report on his findings in June.

First, he points out that there’s been an increase in military sexual trauma, which he says can be complexly traumatizing because victims often have to continue working alongside their attacker.

“Military sexual trauma affects 55 percent of women and 38 percent of men,” he says. “Seventy-one percent of female veterans are seeking therapy to treat [post-traumatic stress disorder (PTSD)] from military sexual trauma.”

Suitt says the military’s historically masculine, machismo culture impacts how women are received by their peers in the military.

Another rising trend since September 11 has been the exposure of soldiers to more and more improvised explosive devices (IEDs), which has led to a significant increase in the number of soldiers and veterans experiencing traumatic brain injuries, known in shorthand as TBIs.

“On one hand, [soldiers] have the stress burden of knowing that [while deployed in combat zones] there are IEDs everywhere,” Suitt says. “Then, people involved in an IED explosion get TBIs—these have become the signature injury of the War on Terror.”

Some soldiers, he says, have experienced between 15 and 20 IED explosions and subsequent brain injuries. “The crazy thing is that because of medical advances, people are surviving [explosions] and being redeployed. You want soldiers to survive—but they are being redeployed so many times, contributing to chronic pain, PTSD, and TBI.”

Those three factors add up to create what's known as polytrauma, a condition that Suitt says became common among post-9/11 veterans. On top of that, there's another issue awaiting veterans when they finally do return home to the US.

"What makes the War on Terror unique is that a poll in 2018 showed that 42 percent of voting Americans didn't know we were still at war," Suitt says. Although the recent US troop withdrawal from Afghanistan helped thrust the war back into the spotlight, he says veterans of post-9/11 wars have for the most part been returning home to a disinterested public.

To help prevent military suicides, Suitt says focusing on how to better receive veterans back into civilian communities is a good place to focus energies.

"Civilians should really care," he says, "and the first step is inviting veterans to talk with you, building relationships with them and actively making sure that veterans are invited to be a part of the community."

That reintegration into civilian life—and acknowledgment from the public of what veterans have been through—could help to counterbalance the effects of moral injury. Suitt says the term "moral injury" was first coined in the 1990s by a psychologist who worked with Vietnam veterans. What they described wasn't PTSD, but a sense of betrayal by their higher-ups, the government—or, in a religious sense, divine betrayal by a higher power.

"They thought God would protect them, or their best friend, but when terrible experiences happen or your best friend gets killed, it destroys their sense of faith and goodness in the world," Suitt says.

Veterans can also feel a sense of injury from the perpetration of killing someone in combat, and then they may no longer view themselves as good people, which makes it so that they can't participate in their communities or continue living their lives, as their sense of self has been destroyed.

"I recently spoke with a veteran who experienced moral injury because he witnessed enemy forces killing women and children," Suitt says. "If he and his troops were forced to make difficult choices as a result of that? At its simplest, it's a betrayal of what's right—a rupture in your self-narrative that you're a good person."

The military relies heavily on their chaplains to do a lot of counseling, but Suitt believes those efforts could be bolstered by incorporating social workers and mental health counselors more holistically into debriefing troops after combat missions.

As much as Suitt says he does not want to be critical of Veterans Affairs and the Department of Defense, he does want to hold the government to task, to make sure they are doing everything in their power to take care of troops.

"In the last few months, I've been trying to talk to as many people as possible about what my report has found," Suitt says. "I've been interviewed for news stories, documentaries."

He was also able to speak directly with the head of suicide prevention at the VA, a conversation in which they discussed the VA's new campaign that is focused on gun prudence and safety, based on an idea of creating a large triangle between guns, ammunition, and a veteran who may be struggling with suicidal ideation. "You want to increase the lengths of the legs between those triangles," Suitt says, which could mean removing guns from the house, or keeping guns in a locked safe with ammunition stored separately.

Above all, Suitt wants to raise awareness about the new challenges that the post-9/11 wars have presented to American troops, and to crush stereotypes that prevent progress being made in caring for veterans' mental health.

"There's a prevailing stereotype that veterans are simultaneously heroes and broken people because of the traumatic experiences they have endure—which makes it easy to conclude, oh, well of course suicide rates are bad among veterans," he says.

That's why, he says, military leadership needs to bake today's new research and resources around suicide prevention into military culture.

"If [soldiers] are going to clean their weapons and take care of their physical health, then their mental health has to be a primary factor too. We have to be preventative, not reactionary," he says.

It is up to us explore the roots of the problem and assess what can be done to bring an end to this soul-sickening trend among a national treasure.

Is this a topic worth pursuing?

Please share your thoughts on what you and I can do to address the issue.

Thank you.

=====