Ode to E Pluribus Unum for Sunday June 22 2025

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NGC 6302: The Butterfly Nebula

Image Credit & Copyright: Mike Selby

The bright clusters and nebulae of planet Earth's night sky are often given the names of flowers or insects, and its whopping 3 light-year wingspan, NGC 6302 is no exception. With an estimated surface temperature of about 250,000 degrees C, the central star of the planetary nebula is transforming into a white dwarf star, becoming exceptionally hot, and shining brightly in ultraviolet light.

The central star is hidden from direct view by a torus of dust, but its energetic ultraviolet light ionizes atoms in the nebula.

In this sharp, telescopic view composed with narrowband image data, the ionized hydrogen and doubly ionized oxygen atoms are shown in their characteristic red and

blue-green hues to reveal a stunning complex of knots and filaments within the nebula's wing-like bipolar outflows.

NGC 6302 lies about 4,000 light-years away in the arachnologically correct constellation of the Scorpion (Scorpius).

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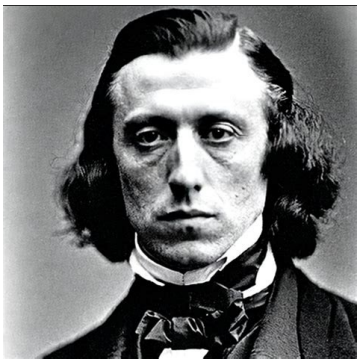
Chords & Riffs

Frédéric Chopin (1810–1849)



huggingface.co

The French composer and pianist of the Romantic period is best known for his solo pieces for piano and his piano concerti. Although he wrote little but piano works, many of them brief, Chopin ranks as one of music's greatest tone poets by reason of his superfine imagination and fastidious craftsmanship.

At eight he made his first public appearance at a charity concert. Three years later he performed in the presence of the Russian tsar Alexander I, who was in Warsaw to open Parliament. Playing was not alone responsible for his growing reputation as a child prodigy. At seven he wrote a Polonaise in G Minor, which was printed, and soon afterward a march of his appealed to the Russian grand duke Constantine, who had it scored for his military band to play on parade

He quickly established ties with many Polish émigrés and with a younger generation of composers, including Franz Liszt and Hector Berlioz and, briefly, Vincenzo Bellini and Felix Mendelssohn. The circles to which Chopin's talents and distinction admitted him quickly acknowledged that they had found the artist whom the moment required, and after a brief period of uncertainty Chopin settled down to the main business of his life—teaching and composing. His high income from these sources set him free from the strain of concert giving, to which he had an innate repugnance.

Chopin's works for solo piano include about 61 mazurkas, 16 polonaises, 26 preludes, 27 études, 21 nocturnes, 20 waltzes, 3 sonatas, 4 ballades, 4 scherzos, 4 impromptus,

and many individual pieces—such as the Barcarolle, Opus 60 (1846); the Fantasia, Opus 49 (1841); and the Berceuse, Opus 57 (1845)—as well as 17 Polish songs.

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16 Ways Chopin Transformed Piano Playing (ft. Garrick Ohlsson)
https://youtu.be/1DUdMi27qWg
Nocturne in F Major, Op. 15, No. 1 https://youtu.be/D5vqDv4GK2U
Ballade n.1 in G Minor Op.23 https://youtu.be/3MgPQ1kh4GE
Chopin's Barcarolle, Op 60 https://youtu.be/vb9g-FwCRvg
Piano Concerto No 1 in E minor Op 11 allegro https://youtu.be/-oSuD8mXJgM
Frederic Chopin Four Mazurkas, Op. 30 https://youtu.be/H3s-NCcC8sM
24 Preludes, Op. 28 https://youtu.be/-SyzafJTid8

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When I was reducing my piano teacher to tears, she would take over and play something… almost always something by Chopin... to recover her wits. That was the 1940s and Chopin was king of the piano roost, but since then his star has faded…

Except in the hands of Garrick Ohlsson who is his principal proponent on the concert stage these days. I mention this because I was recently blessed with the opportunity to spend an evening listening to him rekindle Chopin's flame in me after all these years.

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Riveting Images from the 2025 UN World Oceans Day

'The ocean is the source of all life and that everything in nature is deeply connected.'

Humpback whales in their thousands migrate along the Ningaloo Reef in Western Australia every year on the way to and from their calving grounds.
Credit: Ollie Clarke (UK) / United Nations World Oceans Day
www.unworldoceansday.org

Now in its twelfth year, the competition coordinated in collaboration between the UN Division for Ocean Affairs and the Law of the Sea, DivePhotoGuide (DPG), Oceanic Global, and the Intergovernmental Oceanographic Commission of UNESCO. Each year, thousands of underwater photographers submit images that judges award prizes for across four categories: Big and Small Underwater Faces, Underwater Seascapes, Above Water Seascapes, and Wonder: Sustaining What Sustains Us.

This year's winning images include a curious leopard seal, a swarm of jellyfish, and a very grumpy looking Japanese warbonnet. Given our oceans' perilous state, all competition participants were required to sign a charter of 14 commitments regarding ethics in photography.

https://bit.ly/3FXUEDx

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FLASHMOB CENTRAL

Flashmob Symphonique - Centre Commercial Auchan Noyelles

youtube

Symphonique https://youtu.be/t-TPdiUyhlQ

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Octopuses Use Microbial Signals to Guide Complex Behaviors

A New Role for Microbes in Animal Sensing

animalia-life.club

A new study published in Cell reveals that octopuses detect microbial cues on surfaces to distinguish prey and eggs from inanimate objects—an astonishing example of how animals can sense their environment through the invisible world of microbiomes.

By combining sensory biology, microbiology, molecular evolution, and structural biology, the study shows how octopuses integrate chemical signals produced by environmental microbes into their decision-making, informing behaviors as distinct as hunting and caring for offspring.

Octopuses are famously curious, exploring the seafloor with their arms to identify food and shelter. Previous work from the Bellono lab characterized a family of sensory receptors found in the octopus's arms that allow them to "taste by touch." These receptors are particularly tuned to detect poorly soluble molecules—chemicals that don't travel far in water and tend to stay near surfaces.

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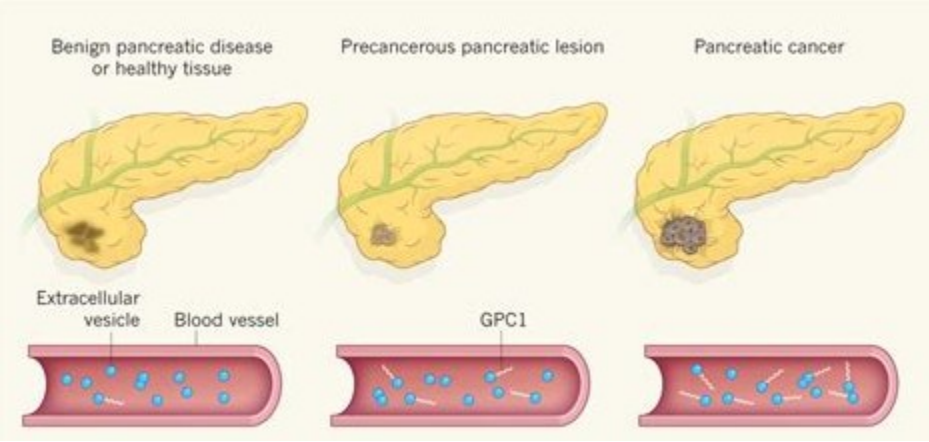
On the Hunt for Hidden Tumor Antigens



Possible diagnostic marker for pancreatic cancer
cancer.gov

Only about 10% of patients with pancreatic cancer survive five years after their diagnosis, making it one of the deadliest forms of cancer. It is also one of the most challenging to treat, in part because scientists have struggled to identify unique proteins—known as antigens—on tumor cells that could serve as targets for immunotherapies.

Now, the authors of a new Science study have discovered that pancreatic cancer cells use parts of the so-called "dark genome," which doesn't directly code for proteins, to produce tiny protein building blocks. Although such "cryptic" peptides have been seen in other cancers, this is the first time researchers have found them in pancreatic tumors. And while these molecules also appear in healthy tissue, the team identified about 500 found only in pancreatic cancer cells— making them attractive targets for future treatments, study co-author William Freed-Pastor explains in a statement. When the researchers trained T cells to recognize some of these cryptic antigens, the engineered cells were able to destroy pancreatic tumor cells and slow cancer growth in organoid and mouse models. "This study identifies an unexpected vulnerability in

pancreas cancer cells that we may be able to exploit therapeutically ," study co-author Tyler Jacks tells MIT News.

As cancer biologist David Tuveson notes in a related Science Perspective, immunotherapies for pancreatic cancer "are notoriously difficult to develop." But the discovery of common tumor antigens, he adds, may be the key to making this "recalcitrant malignancy" vulnerable to attacks from T cells.

https://bit.ly/3YTPSxb

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King Air Makes Rooftop 'Landing'

Two on board exited with minor injuries and climbed to earth via fire ladder.

Fox40 news video

A Beech King Air E90 wound up on the roof of a hangar at New Century AirCenter (KIXD) in Johnson County, Kansas, yesterday (June 16). Both occupants, including the 73-year-old pilot, were able to exit the aircraft safely and suffered only minor injuries, according to news reports. The Kansas Highway Patrol provided information suggesting the left engine of the twin turboprop failed while on approach to Runway 18 at KIXD. No one inside the hangar was injured.

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Measles Leaves Children Vulnerable to Other Diseases for Years

Measles causes more than an acute illness: it suppresses immune memory and increases the risk of complications for years.

bbc.com

Measles is often seen as a routine childhood illness — a fever, a rash, and recovery — but complications are common. Even when it doesn't kill, measles can cause lasting damage. It weakens the immune system, making people vulnerable to other infections for months or years. That means children who seem to recover may still face serious health risks long after the illness is gone.

In some countries, measles has re-emerged in recent years, leading to outbreaks that many thought to be a thing of the past. At the same time, the case for vaccination has come under renewed scrutiny. If measles deaths are rare in high-income countries, why worry?

But evaluating the harm caused by measles isn't just about the number of deaths. It's also about what the disease does to the immune system and the chain of complications it can set off. Preventing measles matters — not only to stop the virus but to protect children from subsequent infections.

https://bit.ly/4lcpmb2

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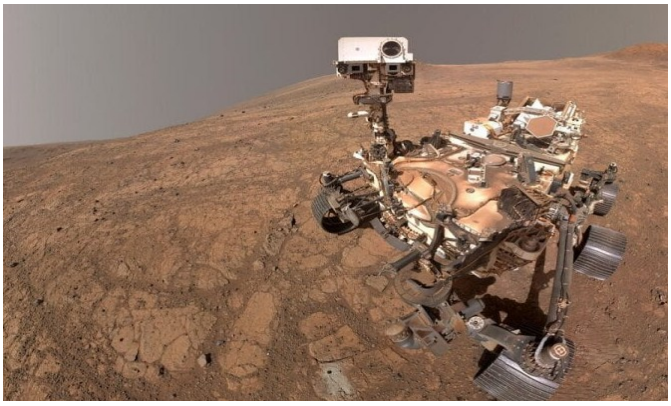
Listen to the Eerie Sounds of Mars recorded by a NASA Rover

Perseverance has two microphones (but no turntable).



Credit: NASA / JPL-Caltech / MSSS

A NASA rover ambling over the red desert planet for the past four years has been recording audio of Mars.

In this alien world 156 million miles away in space, even the everyday whispers of wind and mechanical parts are exotic to human ears. Scientists say that's because the Martian atmosphere is about 1 percent as dense as Earth's, which alters the volume, speed, and characteristics of sound.

https://bit.ly/3SxP9hy

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Pentagon Disinformation Fueled America's UFO Mythology.

hero.fandom.com

The UFO report released by the Defense Department last year left out a key truth: The U.S. military itself fabricated evidence of alien technology and stoked rumors for decades to cover up real secret-weapons programs.

Government efforts to propagate UFO mythology have involved false documents, deception of military personnel and a bizarre hazing ritual, report Joel Schectman and Aruna Viswanatha in the first of a two-part investigation. Pentagon investigators have

yet to determine whether the disinformation was the act of individuals or a more centralized effort.

What, no Little Green Men?

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A Game-Changing Way to Treat Stroke

Researchers at Stanford have developed a new technology for removing blood clots that is more than twice as effective as current techniques. It could significantly improve success rates in treating strokes, heart

Close-up of the milli-spinner, which consists of a long, hollow tube that can rotate rapidly, with a series of fins and slits near the clot that help create a localized suction. Through its innovative design, the milli-spinner can shrink blood clots without rupturing them.
Andrew Brodhead

Researchers at Stanford Engineering have developed a new technique called the milli-spinner thrombectomy that could significantly improve success rates in treating strokes, as well as heart attacks, pulmonary embolisms, and other clot-related diseases. In a paper published June 4 in Nature, the researchers used both flow models and animal studies to show that the milli-spinner significantly outperforms available treatments and offers a new approach for fast, easy, and complete clot removal.

Currently, blood clot removal typically involves using a catheter or wire mesh. But because clots are often thread-like, pieces can slip out and migrate to other hard-to-reach areas. This new method instead focuses on compressing and shrinking the clots to make them easier to remove via suction.

https://bit.ly/3HNtjEs

Response from Charles Kerber, MD

I cannot believe this will work. Having said that, I'd love to try it in my laboratory… and in a pig.

The problem with rotation in a brain artery is that to get to the clot one must pass through four and often six compound curves. Then rotation applied say, at the groin, tends to build up, and then the device distally overcomes friction and then spins rapidly.

The real risk is damaging the epithelium, the delicate internal lining of the artery, which abrades ever so easily. And when the underlying Arterial tissue is exposed, a large amount of prothrombin – which starts the clotting process – is released.

I hope they get more grants.

https://profiles.ucsd.edu/charles.kerber

https://www.ajnr.org/content/ajnr/20/6/1178.full.pdf

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"Buttercup recognized your car coming and ran off."

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The World's Most Educated Countries

clipartcraft.com

https://www.visualcapitalist.com/charted-the-worlds-most-educated-countries/

That is if you hold to the belief that a college degree is synonymous with education.

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Honda's Reusable Rocket

Honda's reusable rocket takes off and lands using four retractable legs.
Image: Honda

Honda successfully tested a reusable rocket prototype on the northern Japanese island of Hokkaido this week. The surprise announcement marked the carmaker's first space-related update since late 2021, when Honda said it was exploring space technology.

Honda said it launched its 20-foot-tall device to an altitude of nearly 1,000 feet Tuesday, with the rocket flying for nearly one minute before landing within 14 inches of its target (watch the test flight here). The experiment moves Japan's second-largest carmaker closer to its goal of achieving suborbital spaceflight by 2029. Honda says it has not finalized a commercialization plan but cites a growing need for satellites; Goldman Sachs estimates the market will grow sevenfold by 2035, from $15B to at least $108B.

SpaceX is the leader in commercialized reusable rockets, though other companies—including Blue Origin and startups in China and Europe—have entered the field. Toyota, the world's biggest carmaker by sales, announced this year it is working to mass-produce launch vehicles.

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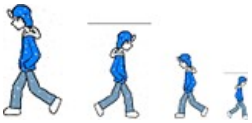
My Walking Thoughts



For Sunday June 22 2025

When Once I Was a Super Successful Trash Manager

When I returned to Vietnam for a second thirteen month tour in the Spring of 1969 I was immediately assigned the title of "Base Development Officer" for the Marine portion

of the sprawling Chu Lai Airbase--a hastily constructed enclave on the South China Sea 100-or-so miles south of the city of Hue. What was I to do in this new assignment?

Well for starters, I was told by the air group commander that I should figure out what to do with a 12-acre compound containing almost three year's worth of accumulated trash that threatened to overwhelm its boundaries.

Uncoordinated piles of shipping containers, dunnage, cannibalized vehicles and construction equipment, unserviceable aircraft parts, the barely recognizable carcasses of wrecked aircraft, and ton-upon-ton of every imaginable kind of trash made further dumping all but impossible. In fact, it was common practice to send a bulldozer in to clear enough space by the gate to allow for a few more truckloads to be dumped. The sergeant-in-charge of the bomb dump figured fences could hold about three-day's capacity.

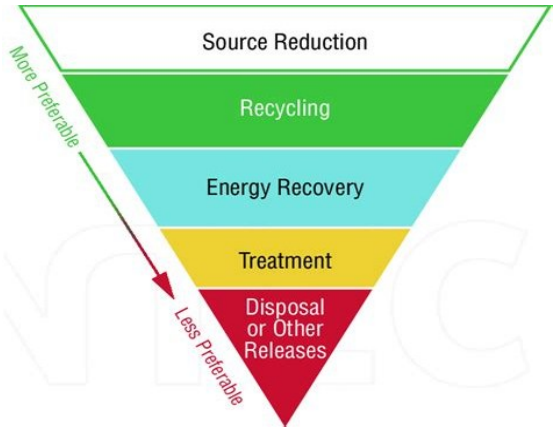
Filled with misgivings that my first assignment was going to end in dismal failure, I returned to the headquarters to find that what I had deduced to be a trash pile of my own in the corner of the S-4 tent. It turned out to be my newly assigned desk, complete with unanswered correspondence--some of which bore the date/time stamp of the previous year. "Oh, well," I figured, "maybe I'll get smothered by the pile and someone else will have to worry about the dump."

But sometimes you find buried treasure in the strangest places, and barely had I started than I came upon a memorandum stating that all material and equipment not essential to US operations were to be made available to the Vietnamese for their use in what was termed the "Vietnamization Process." Then (as well as now) grand strategies go right past me, but whatever impact this process was going to have on the outcome of the war, I recognized it was--so far as I personally was concerned--my passport to salvation.

Access for our contribution to Vietnamization was afforded by the simple expedient of bulldozing a hole in the perimeter fencing of the trash dump and scrubbing off a path parallel to the main service road all the way out to the gate. Before I had time to develop an action plan to help the Vietnamese move some of the heavier items, I was informed that there was nothing left in the dump but shards of useless wood and packing material. The Vietnamese had removed far and away the lion's share of the material with virtually no effort on our part. When the group commander asked at the next morning's staff meeting, "What are you going to do with the remaining 15%?" I hadn't a clue. But here again I was going to get a lesson in divine providence.

That night we were treated to a rather spectacular rocket attack launched from well within the base's outer defense perimeter. Three of the dozen or so missiles landed smack in the dump, reducing the remains to a very acceptable mulch--Ho Chi Minh

Tooth Picks was the proper designation for the material--that was easily scooped up and used as a road stabilizer.



But with the dawn came the realization that while mulching and recycling were grand results, the element of reuse had been present as well. Among the goodies the North Vietnamese had acquired were several four-shot 5-in. Zuni rocket pods (the rockets themselves not included) that while unsuitable for flight were well up to the task of holding and providing initial guidance to a raft of Russian made 122 mm rockets.

While I'm not sure medals were quite in order, the NVA were certainly to be congratulated on their observance of the emergent waste hierarchy.

The moral, of course, is never give up hope. But suspecting that future ventures into the world of waste-diversion might not meet with such spectacular success—I took the credit and used it to wangle my way into a cockpit where I belonged.