

Ode to E Pluribus Unum for Sunday December 15 2024

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Saturn at Night

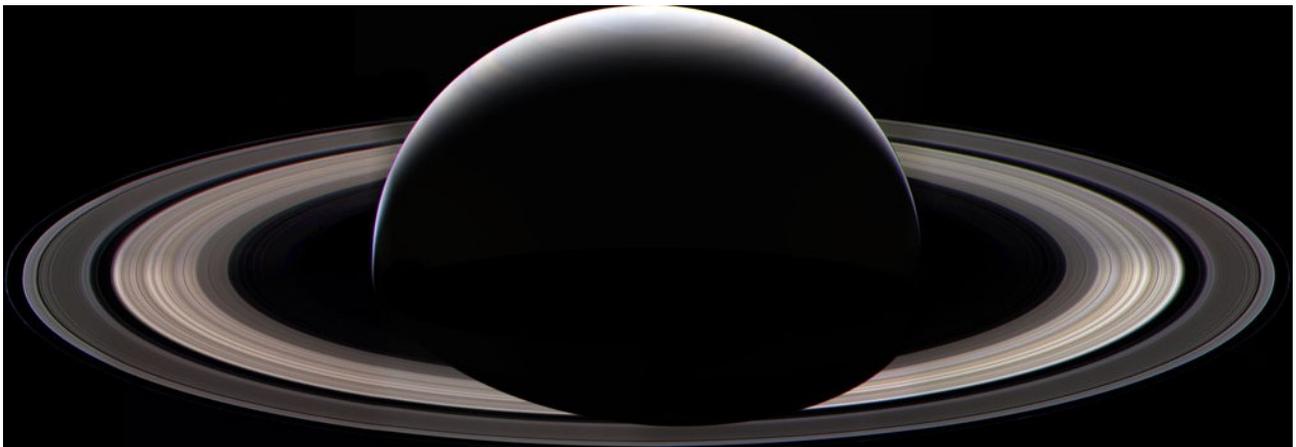


Image Credit: NASA, JPL-Caltech, Space Science Institute, Mindaugas Macijauskas

Saturn is bright in Earth's night skies. Telescopic views of the outer gas giant planet and its beautiful rings often make it a star at star parties. But this stunning view of Saturn's rings and night side just isn't possible from telescopes in the vicinity of planet Earth.

Peering out from the inner Solar System they can only bring Saturn's day side into view. In fact, this image of Saturn's slender sunlit crescent with night's shadow cast across its broad and complex ring system was captured by the Cassini spacecraft.

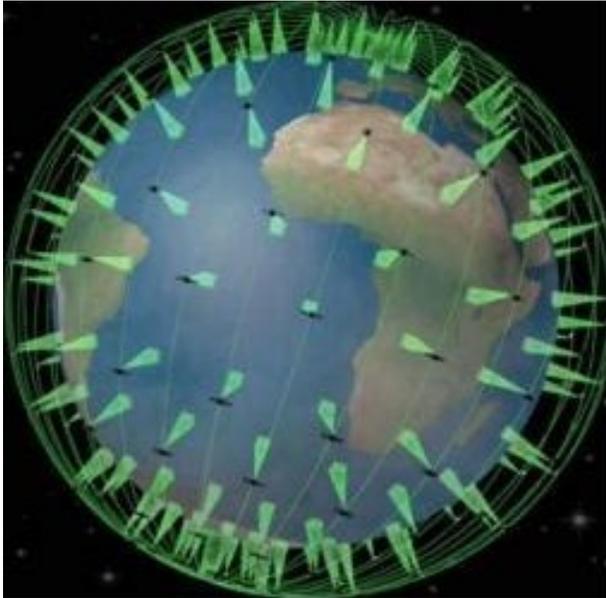
A robot spacecraft from planet Earth, Cassini called Saturn orbit home for 13 years before it was directed to dive into the atmosphere of the gas giant on September 15, 2017.

This magnificent mosaic is composed of frames recorded by Cassini's wide-angle camera only two days before its grand final plunge. Saturn's night will not be seen again until another spaceship from Earth calls.

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FireSat

How we're using AI to create a breakthrough in wildfire detection



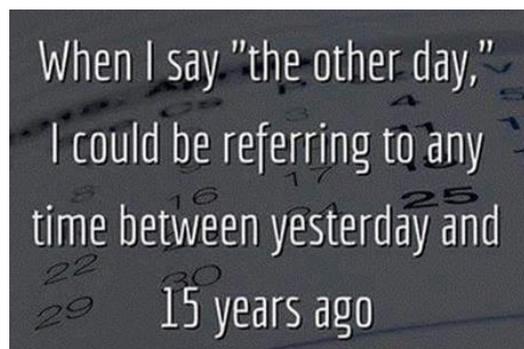
NASA develops new FireSat system to detect wildfires
un-spider.org

FireSat is a constellation of satellites dedicated entirely to detecting and tracking wildfires. After it launches, it will provide global high resolution imagery that is updated every 20 minutes, enabling the detection of wildfires that are roughly the size of a classroom.

Google Research has been partnering with the U.S. Forest Service to expand our existing work on fire simulation and develop FireSat, a purpose-built satellite constellation. FireSat provides highly detailed insights, useful data for ecological intervention, and novel ground truth that will allow scientists and machine learning experts to study fire propagation and risk.

<https://bit.ly/4fFCGIY>

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Combining AI and Crispr Will Be Transformational

The genome-editing technology can be supercharged by artificial intelligence—and the results are already being felt.



Illustration: Lily LK

In 2025, we will see AI and machine learning begin to amplify the impact of Crispr genome editing in medicine, agriculture, climate change, and the basic research that underpins these fields. It's worth saying upfront that the field of AI is awash with big promises like this. With any major new technological advance there is always a hype cycle, and we are in one now. In many cases, the benefits of AI lie some years in the future, but in genomics and life science research we are seeing real impacts right now.

These types of discoveries have real-world applications. For the two examples above, smaller genome editors can help with more efficient delivery of therapies into cells, and predicting heat-stable RNA molecules will help improve biomanufacturing processes that generate medicines and other valuable products. In health and drug development, we have recently seen the approval of the first Crispr-based therapy for sickle cell disease, and there are around 7,000 other genetic diseases that are waiting for a similar therapy.

<https://bit.ly/4g2tIii>

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New CRISPR Pauses Rather Than Turning Genes Off Permanently

Researchers in Lithuania present the molecular structure of a new, more-versatile CRISPR system for gene editing.



Scientists have described the molecular structure of a gene-editing system that can temporarily disable genes.

(Image credit: Ktsdesign/Science Photo Library via Getty Images)

The original CRISPR system works by recognizing a specific sequence of DNA and then cutting that portion of the DNA strand, effectively turning off the gene permanently. Unfortunately, this technique comes with risks, such as "off-target" cuts that slice through the wrong genes.

Now, however, researchers at Vilnius University in Lithuania introduced a new, more versatile genetic toolkit called the type IV-A CRISPR system. Described in a study published Oct. 29 in the journal Nature Communications, the system deactivate genes in an impermanent manner, giving researchers more control over gene activity.

<https://bit.ly/4eRUSHw>

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New Subway in Greece Showcases Archaeological Treasures



An ancient site at the newly built Agias Sofias metro station ahead of its Nov. 30 official opening, in Thessaloniki, northern Greece, Friday, Nov. 22, 2024 – part of the city's long-delayed subway system showcasing archaeological finds from decades of construction. (AP Photo/Giannis Papanikos) Associated Press

Greece's second largest city, Thessaloniki, is getting a brand new subway system that will showcase archaeological discoveries made during construction that held up the project for decades.

Key pieces of what was found have been put on display along the underground network of 13 stations including a section of the marble-paved Roman thoroughfare at the central Venizelou Station.

<https://bit.ly/4fCqLVT>

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New Technologies Halve IDF Battlefield Casualty Rate

New tech, including drones carrying blood, help injured Israeli soldiers survive



A Thor drone used to drop a small box that contains blood packets that can be used in the field by the IDF.

(Seth J. Frantzman / Breaking Defense)

At a tour of the IDF's Medical Corps and Technological and Logistics Directorate on Monday, an IDF official showed data that reveals the military has managed to reduce by half the number of soldiers who die from their injuries. In the 2006 Lebanon war, the IDF found that this rate was 14.1 percent. That number dropped to 9.2 percent during the 2014 war, and now is 6.9 percent for the Gaza front and 7.1 percent for the Lebanon fronts.

"The average time for a soldier to receive medical treatment in the field is between zero to four minutes, over 90 percent of soldiers injured from close-quarters combat received treatment in the field, approximately 1,600 injured soldiers were evacuated via helicopters," the IDF said in a written statement.

<https://bit.ly/3Orwt0X>

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Chords & Riffs

Eduard Elgar Enigma Variations: Nimrod



jewishnews.timesofisrael.com

Nimrod is described in Genesis 10:8–12 as “the first on earth to be a mighty man. He was a mighty hunter before the Lord. Nimrod is considered the leader of those who built the Tower of Babel in the land of Shinar, although the Bible never states this.

Enigma Variations, series of 14 short musical portraits by Edward Elgar that premiered in London on June 19, 1899. The subjects of these portraits were several of the composer’s friends and family. Nimrod is a tribute to Elgar's editor and publisher Augustus J. Jaeger.

Band

British Household Bands <https://youtu.be/O5sX99HODzg>

The President's Own United States Marine Band <https://youtu.be/jAUIEopJxa4>

Full Orchestra

Queen Elizabeth II Dedication English Symphony Orchestra

<https://youtu.be/Ik0VaT5iXPY>

Bernstein NY Phil Rehearsal <https://youtu.be/18sT5D3bKnc?t=4>

Boston Symphony Anna Rakitina <https://youtu.be/LAhH4Fkahgo?t=21>

Itzhak Perlman Conducts the Juilliard Orchestra <https://youtu.be/TInGigCwhhc>

Organ

Johnathan Scott Organ <https://youtu.be/ygZDI9ISSo>

Andy Brown <https://youtu.be/L0o6uGhJE90>

Voice and Film

Dunkirk <https://youtu.be/vPi8CkQZTRE>

Cello

Sheku Kanneh-Mason <https://youtu.be/O70uVmW4y9Q?t=1>

Brass

Grimethorpe Colliery Band <https://youtu.be/oyb39zUqeq0>

You might guess I could go on and on with this, and I admit it is presumptive of me to force so much of one piece on you, but...

I get teary listening to Nimrod every damn time. I can't help it. It could be played on a Kazoo and the waterworks would function. (*Sadly I could not find such a version*).

It's a short piece, and while I don't expect anyone to listen to all—well I can hope, but... -- I'd like to think you'd pick one or two—three, four, five—to see how universal it is.

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Could Understanding Brain Microbiome Help Prevent Dementia?

Long thought to be sterile, our brains are now believed to harbor all sorts of micro-organisms, from bacteria to fungi. How big a part do they play in Alzheimer's and similar diseases?



Could the brain have a microbiome, in the same way that the gut has?

Illustration: Maxime Sudol/The Guardian

The notion that microbial infection has a role in dementia goes back to Alois Alzheimer who, in 1906, discovered the disease that now bears his name, and Oskar Fischer, who also identified it a year later. Both had suspected that microbes were involved, "but weren't able to follow this up", says Lathe. There is now a raft of research supporting those early hunches. In Denmark, Janet Janbek "has shown that people with multiple

infections are at risk of Alzheimer's disease, and conversely that people with Alzheimer's have an increased risk of infections of all kinds", says Lathe. Other researchers, such as Luis Carrasco in Madrid, have been discovering infections in the brain and nervous system.

When Lathe started looking for evidence of microbial life in samples from brains left to medical science, a clearer picture emerged. His paper, [The Remarkable Complexity of the Brain Microbiome in Health and Disease](#), looked at brains of people who didn't have dementia and compared them with Alzheimer's brains. It found that, while there was a remarkable diversity of species in the control brains, there were often overgrowths of certain bugs in Alzheimer's brains.

<https://bit.ly/3ODDMTj>

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More on Cycloidal Propellers: The future of Flight?

In last week's Ode I featured a piece on Cyclotech's cycloidal system. It's a fascinating approach to truly flexible transportation.



wordlesstech.com

Used in precise ship docking, cycloidal systems seem poised for flight. A really interesting possibility.

<https://youtu.be/jiM3u2RDJfk>

<https://youtu.be/nDhlehsYiGc>

https://youtu.be/Lqy_7lr6wuE

How it works <https://bit.ly/4fVyZbE>

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The Vienna Sausage Stand Has a UNESCO Heritage Recognition



Customers line up at a traditional sausage stand (Wuerstelstand), which are named as intangible cultural heritage by the Austrian UNESCO Commission, in Vienna, Austria, Thursday, Nov. 28, 2024.

(AP Photo/Heinz-Peter Bader)

The culture of the humble “Würstelstand” became this week one of the latest additions to the national list of intangible cultural heritage, overseen by the Austrian UNESCO Commission. It joins the Austrian capital's distinctive wine taverns, or “Heurigen,” which have been listed since 2019, and the city's famous coffee house culture, which was honored in 2011.

The Würstelstand, which can now point to a history going back generations, is more than just a source of greasy gastronomic satisfaction.

<https://bit.ly/4ifG0FY>

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First Breakthrough in Asthma and COPD Treatment in 50 Years?

Results of trial of benralizumab injection could be ‘gamechanger’ for millions of people around the world



Treatment for asthma and COPD has been ‘stuck in the 20th century’, says lead author of study.

touchrespiratory.com

Benralizumab is a monoclonal antibody that targets specific white blood cells, called eosinophils, to reduce lung inflammation. It is used as a repeat treatment for severe asthma at a low dose, but the trial found a higher single dose could be very effective if injected at the time of a flare-up.

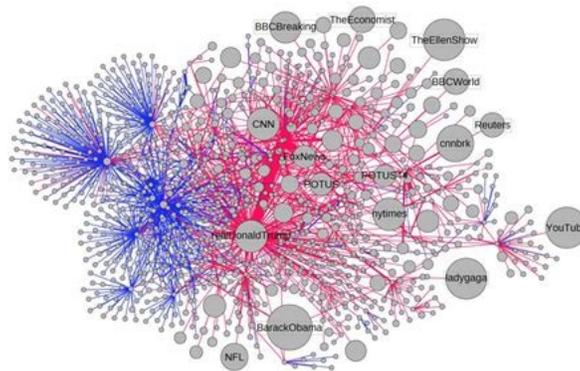
A trial found offering patients an injection was more effective than the current care of steroid tablets, and cuts the need for further treatment by 30%.

The results, published in the Lancet Respiratory Medicine journal, could be transformative for millions of people with asthma and COPD around the world.

<https://bit.ly/4ii0yO4>

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Misinformation Exploits Outrage to Spread Online



Misinformation Spreading
Indiana University

Sex may sell—but so does outrage. And misinformation peddlers are adept at tapping into outrage to spread lies on social media, finds a study in the most recent issue of Science.

To uncover the connection between outrage and the spread of misinformation, researchers conducted a series of studies, eight of which relied on Facebook and Twitter posts from thousands of users in 2017 and from 2020 to 2021, while two were conducted with a little under 1500 participants. Across studies, misinformation elicited more “moral outrage”—a combination of disgust and anger—than trustworthy posts. On Facebook, for instance, misinformation posts garnered more anger reactions and fewer likes. But that didn’t stop them from being shared—quite the opposite, in fact. The team found that the more outrage-inducing a story was, the more likely it was to be passed along—even before being read by the sharer.

And it turned out that feeling moral outrage didn’t actually alter the participants’ ability to discern real from fake news. “Our results are consistent with recent evidence that

social media users sometimes share information that they know is inaccurate to satisfy nonepistemic motives such as signaling their political affiliation or moral stance, despite potential reputational costs,” the team writes. And that means efforts to curb the spread of misinformation by focusing on accuracy—such as reminders to read a story before sharing it—are unlikely to help.

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No water? No problem!

Hibernating squirrels go months without getting thirsty



If rudely woken during its winter slumber, this little ground squirrel will refuse water, because neurons in its brain are suppressing feelings of thirst.

Courtesy of the Gracheva lab

The thirteen-lined ground squirrel, which resembles an adorable cross between a gopher and a chipmunk, spends the winter curled up inside an underground burrow. For six to eight months, these fuzzy critters exist in a state of torpor, body temperatures dropping to just above freezing and heart rates slowing to a few beats a minute. And although the squirrels occasionally stir during their long hibernation, they don't eat or drink until spring.

Now, scientists are beginning to understand how these peculiar rodents survive for so long without water. Previous research has revealed that, during hibernation, ground squirrels [dilute their blood](#) by sequestering salt and other ions elsewhere in the body. Certain hormones also inhibit urination, allowing the animals to retain more water and helping them stay hydrated.

Even when scientists woke hibernating squirrels up and offered them water, the animals refused to drink it. In a new study, researchers took a closer look at protein expression and neural activity in the squirrels' brains. They discovered that neurons in brain structures known as the circumventricular organs, which play a key role in triggering

thirst, are suppressed during winter hibernation—preventing the squirrels from feeling thirsty even when their bodies are in desperate need of water.

This strategy may prove advantageous, the scientists suggest, because leaving the burrow to look for water in the middle of winter could expose squirrels to the twin threats of cold and hungry predators. “We don’t know for sure,” senior study author Elena Gracheva tells [Popular Science](#), “but this is a logical explanation we’ve come to.”

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Quantum Computing on the March

Google Advance Brings Quantum Computing Closer to Reality

Google unveiled an experimental machine capable of tasks that a traditional supercomputer could not master in 10 septillion years. (That’s older than the universe.)



nytimes

Researchers at [Google Santa Barbara AI Campus](#) reached a major milestone in the race to build practical quantum computers, revealing a device with an error rate that gets lower as the number of qubits increases. The company says the breakthrough could allow it to build a commercially viable quantum computer by the end of the decade.

Quantum computers rely on individual qubits, which harness the power of quantum mechanics but are highly susceptible to things like temperature fluctuations, potentially introducing errors. Google's Willow chip effectively spreads the quantum information

across more than 100 qubits—making one, single "logical" qubit. See a deep dive here ([w/video](#)).

To demonstrate, researchers performed a benchmark calculation using Willow in about five minutes. In contrast, a supercomputer would take 714 trillion times longer than the age of the universe, which is about 14 billion years old, to perform the same computation. Researchers will now work to scale up multiple logical qubits connected together.

Learn about the basics of quantum computing and see the best resources on the topic from across the internet.

<https://bit.ly/3D4veCe>

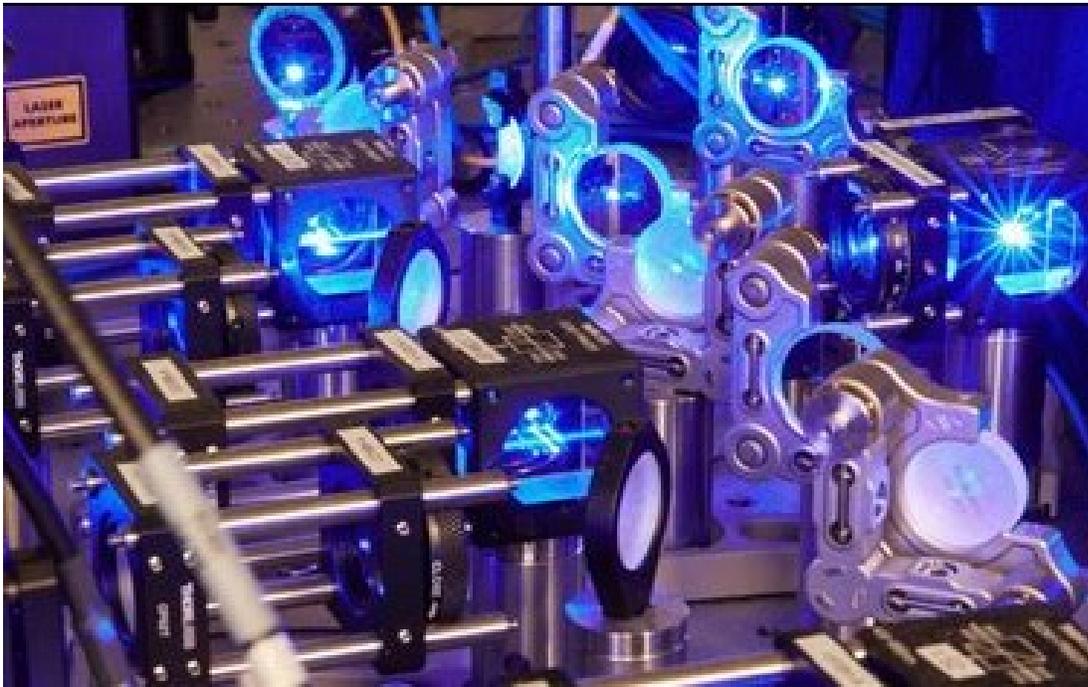
Want more?

<https://bit.ly/4gjq43M>

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New Quantum Computing Milestone in Entanglement

Atom Computing's researchers have made significant progress in the quest for scalable and fault-tolerant quantum computers after entangling the most logical qubits on record.



chemistry.berkeley.edu

Unlike the binary 1s and 0s of traditional computer bits, qubits operate on an entirely different set of mechanics — quantum mechanics, to be precise. While qubits can exist as 1s and 0s, they can also exist as both at the same time, a phenomenon known as superposition. This makes measuring qubits a major challenge.

Scientists successfully entangled their record-breaking 24 logical qubits using Atom Computing's "neutral-atom quantum processor," which processes and stores quantum information by manipulating individual atoms with lasers, and Microsoft's "qubit-virtualization system," a software platform that helps manage and stabilize qubits by detecting and correcting errors in real time.

While 24 may not seem like a huge number, the ability to entangle this many logical qubits represents a key milestone toward creating scalable, fault-tolerant quantum systems, the researchers said.

<https://bit.ly/3OWyiTz>

It appears the time for quantum computing is nigh at hand.

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Here's What the Pizza Hut of the Future Looks Like

Your next visit to a Pizza Hut might remind you of Chipotle.



Inside a redesigned Pizza Hut opening in Plano, Texas.
Pizza Hut

The chain unveiled a new design concept that features a pizza-making station at the center of the restaurant, allowing customers to see employees make their orders. It's part of broader changes Pizza Hut is showing off at a remodeled location as the chain contends with sluggish sales and increasing competition.

Also at the Plano, Texas, restaurant is a modernized interior that has touchscreen kiosks for customers to place orders and heated cabinets for pick-up. The exterior has a

drive-thru lane with serving a new "Hut 'N Go" menu, which features new digital menu boards and serves its most popular foods in an attempt to reduce wait times.

<https://bit.ly/4eVEjus>

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17 Year Olds Try to Use a Rotary Phone



youtube.com

<https://youtu.be/1OADXNGnJok>

Do you think if he turned his cap around, all might be revealed?

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Octopus Tentacles Inspire "a New Generation of Dentures"



tane-mahuta/ iStock

The world of octopuses is colliding with that of dentistry. In a first-of-its-kind study, scientists mimicked octopus suckers to create 3D-printed dentures that fit more comfortably and securely than current models, which often move out of place while wearers are speaking, laughing, or coughing.

"I first had the idea to replicate sticky surfaces in nature while biting into a peach. I noticed how the furry skin stuck to the palate of my mouth and decided to investigate other sticky surfaces in nature. Octopus suckers seemed like the perfect place to start," lead author Dr. Sherif Elsharkawy said in a press release.

The researchers theorized that the "suction cups" on octopus tentacles could be applied to dentures, allowing them to stay put on the palate. Their removable models not only showed twice the amount of retention as traditional dentures, but also didn't affect the look of the artificial teeth.

"This research bridges nature and technology to tackle a long-standing challenge for denture wearers," said Elsharkawy. He added: "Our findings pave the way for a new generation of dentures that can transform the quality of life for millions worldwide." [See the design.](#)

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Marlene Dietrich: Where Have All the Flowers Gone?



thefamouspeople.com

<https://youtu.be/kveooWmqqr8>

Did I tell you Miss Dietrich lived down the street from us during WWII? Well, she did, though I had no idea who she was and don't recall ever laying eyes on her. Instead, it was my father, who in the performance of his duty as the area Air Raid Warden, charged with making certain no photons were allowed to guide enemy bombers to our neighborhood, who made her acquaintance.

As he was making his nightly rounds, he saw the offending glare of an uncloaked doorway, emanating from her house. While he was not a timid man, still he had to 'suck it up' in order to do his duty. To his happy surprise, he found the actress -- reputed for her swinging nature -- to be a kind, generous, and in this case a most apologetic neighbor, whose luminance thereafter remained behind closed doors and drawn drapes.

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Cigarette Taxes and Regulations Fuel a Thriving Black Market

Burdensome taxes and red tape produce the same results as outright prohibitions.



The rattler

If you want to create a black market in a perfectly legal product, just make regulations and taxes so onerous that many people prefer to buy from illegal vendors to escape being hassled and mugged by the powers that be. As a new study reveals, that's certainly the case with cigarettes, which remain available for sale across the United States but with much of the trade continuing to involve smokes smuggled from one jurisdiction to another.

Since busybody politicians refuse to learn from the ongoing trade, this is a tempting business opportunity for risk-tolerant entrepreneurs as well as low-tax jurisdictions.

<https://bit.ly/3BhK8EM>

Do you think leaders in NY and CA are in on the take? What an opportunity.

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Jill Biden's Final White House Christmas Decorations



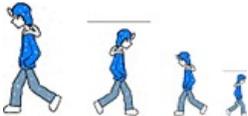
The State Dining Room.
Roberto Schmidt/AFP/Getty Images

Jill Biden unveiled her final White House Christmas decorations as first lady. The theme of the decor was "A Season of Peace and Light." The decorations feature tributes to fallen soldiers, a gingerbread White House, and paper doves.

<https://yhoo.it/3D8xWqh>

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My Walking Thoughts



For Sunday December 15 2024

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Into the Air Again, Junior Birdman

I arrived back at NAS Kingsville at 11 a.m. on New Years Day, 26 hours since I left Los Angeles and just in time for lunch. Imagine my happiness in finding not only had I not changed, neither had my compadres still eager to talk about such things as fingertip, echelon, diamond and combat spread... none of which had anything to do with what the people from whom I had just departed had in mind.

Heading for the BOQ where I intended to take a little nap in the wake of my all-nighter, I heard someone call my name, and saw it was Lieutenant Crayton, who wanted to talk about tomorrow's flight... the one that was to become my first in the Cougar.

"It's the dawn patrol," he explained, "the one that begins with a Zero-Dark-Thirty brief.

"Things can get a little hectic on a Fam-1 flight, so I'd like to go over what to me are the most important aspects of this evolution... first of which is your need to adapt to a different frame of reference from the one you're used to from your time in the T-28."

'*Yeah, it's faster,*' I thought, but that was only part of where he was heading.

"At cruise in the T-28, the distance between where you are at the moment and where you'll be in three seconds is about a football field." He paused to allow this vision to sink in.

"In the Cougar, you have to multiply the distance by three, and if you're fiddling around in the cockpit for an extra couple of seconds... well you see where I'm headed... you're going to have to expand your mental horizons a whole lot."

'*Well, yeah,*' I agreed with the principle, but in truth I was kidding myself... something I would start to learn for real on the morrow.

He went on to explain how the hop would go... the preflight, the launch and climb to 20 thousand feet, the exploration of the Cougar's flight characteristics, descent to the landing pattern, and a couple of touch-and-goes before heading for the barn.

"I'm there in case things get a little hairy—like for instance you get us into a spin or develop too high a sink rate on your first landing—but mostly I'm going to leave it up to you to play with the bird and figure out how to deal with things. Ok?"

'*Piece of cake,*' I told my *less-than-convinced* self as we parted, but since it was by then too late for a nap, I decided to go over to the Training Building and practice 'flying' the cockpit simulator until time for dinner.

The Day of Reckoning

South Texas or no, it was cold as we walked out to the aircraft (Bureau No. 146368 was the one that had drawn the short straw). Still an half-hour shy of sunlight, not only was it cold, but sullen looking in the predawn cloak of gristly grey. While swift, my preflight inspection (including a recitation as to the purpose for each item on the checklist) was thorough, earning me an approving nod on its completion.

The next step--strapping into and configuring the cockpit of F-9--was far more complicated than it had been the T-28. Not only were there a plethora of controls for systems and sub-systems, there were even more for dealing with combat contingencies and (lord, forbid) emergencies.

In ground school practice, I had honed the execution time down to fewer than three minutes (and in the future compress it to two) but on this occasion I went through the process twice just to make sure. I sensed Lieutenant Crayton's patience nearing the end of its tether, but he said nothing.

Start up seemed comparatively simple, rooted in one of the dozen or so checklists that governed the operation of the bird. To wit:

- Throttle CLOSED
- Fuel Master Switch ON
- Start Master Switch ON
- Fuel Selector Switch RESET PRIMARY (hold for two seconds), then START/PRIMARY
- Cranking Switch START (momentarily)

When engine begins to crank

- Hold throttle outboard to START until 5-6% rpm
- Throttle to IDLE DETENT
- Monitor tailpipe temperature below 780 degrees
- Allow engine to STABILIZE for 30 SECONDS between 33-35% rpm and below 565 degrees
- ADVANCE Throttle to 100% then check EMERGENCY FUEL SYSTEM
- RETARD throttle to idle

With a slight rumble that gave way to a comforting ringing song, the engine came to life, coaxing a half-dozen cockpit instruments to attest to its health.

'You see,' I told myself with a sigh of relief, *'it's a piece of cake.'*

Once you have the J-48 singing its beautiful idle song, things get a lot busier--like being the master of a great pipe organ—as you set the various switches and controls to the positions specified by the POST START Checklist, just one of a series of such guides you are required to use throughout the flight.

Checklists, Flight Safety, and Good Housekeeping

Prior to flight training, my experience with checklists was virtually nonexistent. I did things because... well... that's the way I did them. If I left something out, no big deal, I just did it later. My guess that I was not alone in this approach, but is not acceptable in flying where simple mistakes tend to have catastrophic consequences.

Now in my dotage, I've found that while checklists play less of a life-extension role, they become an increasingly important face-saving practice.

Onward Toward Destiny

With the POST START items complete and a ground control taxi clearance in hand, I signaled the line crewman to pull the chocks and guide me onto the taxiway

It takes but a small scootch of the throttle to commence taxiing, and once in motion little else is needed to maintain progress except for when you have to use the brakes for directional control.

As it happened, ours was the first bird of the morning to arrive at the runway throat where it was time for the TAKE OFF Checklist. Are you ready for this?

Flying Tail CHECK...*Row the stick and watch deflections in the mirror.*
Hydraulic System Valve ON...*Look and touch.*
Wings LOCKED...*Check the switch and look for the beer cans on each wing.*
Flaperette Switch AUTO...*Look and touch.*
Flaps DOWN...*Check the indicator display and the handle down.*
Stabilizer Trim SET...*to 2.5 degrees nose up*
Wing & Rudder Trim NEUTRAL...*Check movement with the trim button.*
Fuel CHECK...*Look to make sure what should be there really is there.*
Fuel System Selector PRIMARY...*Look and touch.*
Sliding Nose LOCKED...*Look and touch the control switch.*
Oxygen ON...*Check the pressure and operation.*
Shoulder Harness LOCKED...*Check seat lock and wiggle to confirm.*

"Take off checklist complete," I informed Lieutenant Crayton over the intercom.

"Tell tower you're ready to go."

I was, so I did.

"Kingsville Tower, One Kilo 168 ready for takeoff."

"One-six-eight, cleared takeoff runway 15...straight ahead climb until clear of the airfield boundary."
