Ode to E Pluribus Unum for Sunday February 16 2025



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15 Iconic Locations Photographed From Space



Paris at Night NASA

Space is a constant source of wonder and contemplation. Full of stars, moons, planets, cosmic rays, and magnetic fields, what's "up there" can change the way we look at what's "down here" on Earth — and, perhaps, remind us how different things can look when we zoom out.

The images do just that: They capture 15 iconic locations — including the Pyramids of Giza, the Great Barrier Reef, and the Grand Canyon — from the distinctly distant perspective of space. Rather than the massive structures we know them as, the landmarks appear as dots, specks, swirls, and lines.

While many of the shots were taken with powerful lenses and enhanced with technology, a few of the landmarks can reportedly be seen from space with the naked eye. Either way, these images allow us to observe our planet from a new view that can make everything seem bigger or smaller, depending on how you look at it.

https://bit.ly/42ICfnh

Chords & Riffs

Jeff Beal (1963 -



wshu.org

Born and raised in the San Francisco Bay Area, Beal's grandmother gave him Miles Davis'/Gil Evans' Sketches of Spain album that would influence his development as a Jazz trumpet player and composer. In addition to studying both classical and jazz trumpet, Jeff was a self-taught pianist and spent countless hours in the library learning music theory and composition on his own.

Encouraged by conductor Kent Nagano, Jeff composed a trumpet concerto at age 17, which he performed with the Oakland Youth Symphony, as well as a number of large ensemble jazz charts that are still in publication today.

Five-time EMMY winner Jeff Beal's improvisatory method, sense of timing, and sophistication have made him a favorite of directors including Ed Harris (Pollock and Appaloosa), David Fincher (House Of Cards), Oliver Stone (JFK Revisited, The Putin Interviews), Lauren Greenfeld (The Queen Of Versailles, Generation Wealth.) and Rob Reiner (Shock And Awe).

His work on documentaries Blackfish, The Biggest Little Farm, Al Gore's An Inconvenient Sequel, Athlete A, Frank Marshall's Rather and dramatic scores for HBO's Rome, Carnivàle, The Newsroom, USA's Monk, Netflix House Of Cards, AppleTV+'s Raymond & Ray have shown him to be one of the most distinctive and recognizable composers working today

Beal's performing, conducting, and composing worlds converged in 2016 when he led the National Symphony Orchestra at the Kennedy Center in the premiere of House Of Cards In Concert, with further performances in Miami, Denmark, The Netherlands (Concertgebouw) and Jerusalem. This symphonic work was recorded by BIS Records on the double SACD "House of Cards Symphony", which includes Beal's flute and guitar concerti, all conducted by the composer.

House of Cards https://youtu.be/50i7R6BMmG8?t=3

Blackfish https://youtu.be/2PAtaUOn_Jc

An Army of Farmers https://youtu.be/7oh0tzmahqc

Monk Theme https://youtu.be/kXEMxPzxE68

Jeff Beal on the Flugehorn https://youtu.be/hDPtiefDKRI

New York Etudes https://youtu.be/95DwY-724EI

Jesse Stone Series Music

No Remorse <u>https://youtu.be/XCJ1COllVLI</u> Above My Pay Grade <u>https://youtu.be/9KDkbb_GH40</u> Candace <u>https://youtu.be/IHwAiYsOp-w</u> Going Home Again <u>https://youtu.be/mAZRMuKQW1U</u> Saying Goodbye to Boomer https://youtu.be/urI3Zu1IvHY?list=PLbbeOcn1Oxj3jK3bMSPzW9gbSBSEYHwUM&t=6 Paradise (Jesse's Theme) https://youtu.be/7FP1M340UMU?list=PLWIjWYzUneGW_TK40pdogxLjdKxcy3_m

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A Brilliantly Detailed Map of Medieval Trade Routes & Networks



Map created by reedit user martinjanmansson,

Incredibly detailed maps of Medieval Trade Routes & Networks in Eurasia an Africa during the 11th-12th century.

https://bit.ly/4hHhzjz

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FLASHMOB CENTRAL

Ravel's Bolero in the Street Flashmob!



youtube

https://youtu.be/IsF53JpBMlk

Does Solving the 'Grandfather Paradox,' Make Time Travel Possible?



tech.hindustantimes.com

Time travel has long been dismissed as impossible due in part to the infamous "grandfather paradox." This conundrum asks what would happen if someone traveled back in time and prevented their grandfather from having children, thus erasing the traveler's existence. However, a new study may have resolved this issue.

By combining general relativity, quantum mechanics, and thermodynamics, the study demonstrates that time travel might be feasible without leading to these logical contradictions.

The physics of time loops

Our everyday understanding of time is rooted in Newtonian physics, where events progress linearly from the past to the future. But Einstein's general theory of relativity, completed in 1915, challenges this intuitive assumption. It reveals that the fabric of space-time can behave in ways that defy common sense, as evidenced by phenomena like black holes. One of its most fascinating predictions is the potential existence of closed timelike curves — paths through space-time that loop back on themselves, theoretically allowing a traveler to revisit the past.

https://bit.ly/40gtJcg

"Huh. Could it be I'm my own Grampa?"

Cancer Rates Fall



The American Cancer Society's latest <u>report</u> reveals a significant shift in cancer trends. The overall cancer mortality rate in the US declined by 34% from 1991 to 2022, preventing approximately 4.5 million deaths.

However, cancer rates are rising among women and younger adults, with women under 50 now having cancer rates 82% higher than men, up from 51% in 2002. Pancreatic cancer remains a concern, with increasing incidence and mortality rates and an 8% five-year survival rate for pancreatic exocrine tumors. Cancer incidence among children (ages 14 and younger) has declined after decades of increases but continues to rise among adolescents (ages 15 to 19). See all statistics here.

Cancer remains the second-leading cause of death in the US and the primary cause for those under 85. In 2025, the ACS estimates there will be 2,041,910 new cancer diagnoses in the US, with 618,120 cancer deaths. Researchers attribute these shifts to environmental influences, lifestyle changes, and potential genetic factors.

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Computer-Designed Proteins Thwart Cobra Neurotoxins



So-called binder proteins (right), designed by AI, protected cells and mice from lethal doses of 3-finger toxins better than the antibodies used in conventional antivenom (left). Timothy Jenkins

So-called binder proteins (right), designed by AI, protected cells and mice from lethal doses of 3-finger toxins better than the antibodies used in conventional antivenom (left). Timothy Jenkins

Cobras and their relatives are notorious for their deadliness. That's because their venoms are packed with paralytics, especially 3-finger neurotoxins. In addition to being potently lethal, these compounds have a habit of evading animal immune systems, which means it's hard to make antivenoms with conventional means, by injecting the toxins into animals and harvesting antibodies capable of neutralizing them. But they can't hide from AI: new mini-proteins, designed by the program RFDiffusion, bind to these terrible toxins, and could one day be developed into cheaper, more effective antivenoms.

https://bit.ly/4gY6quW

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In Every Living Thing, There Ticks a Clock.

"Lodged in all is a set metronome," wrote W. H. Auden: when May comes round, birds "still in the egg, click to each other 'Hatch!" and "October's nip" is the signal for trees to release their leaves.



Illustration by Ibrahim Rayintakath

Biological clocks that evolved an exact synchronization over millions of years are falling out of sync: the beat does not fall where it should; syncopation becomes dissonance. Failing wild clocks are resulting in misalignments in time between predators and prey, herbivores and plants, or flowers and pollinators. The results can be catastrophic, as breeding seasons fail and the long-held relationships that weave species together around shared needs fray.

And wild clocks don't tick with the steady pulse of a Swiss watch, they swing. Assembled together, they form a vast polyrhythmic score, an impossibly complex arrangement of syncopated beats and pulses, tempo layered upon tempo, in a rich, immersive cross-rhythm that drives life forwards day by day, year by year, season to season.

https://bit.ly/42vh1Jb

A Brief History the Aircraft of the Blue Angels



Four pilots from the United States Navy Blue Angels flight demonstration team fly in a tight formation during the Chicago, IL Air and Water show in 2015. (Image credit: Wikimedia Commons)

The United States Navy Blue Angels Aerobatic Flight Demonstration Team has been thrilling audiences since 1946, pushing the fighter aircraft they fly to the limits of machine and man.

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China's Fusion Reactor Generate Steady Plasma For 1,000 Seconds

A nuclear fusion reactor in China, dubbed the "artificial sun," has broken its own record to bring humanity one step closer to near-limitless clean energy.



The Experimental Advanced Superconducting Tokamak EAST) nuclear fusion reactor on Jan. 15, 2025 in China (Zhang Dagang/VCG via Getty Images)

East is a magnetic confinement reactor, or tokamak, designed to keep the <u>plasma</u> <u>continuously burning</u> for prolonged periods. Reactors like this have never achieved ignition, which is the point at which nuclear fusion creates its own energy and sustains its own reaction, but the new record is a step towards maintaining prolonged, confined plasma loops that future reactors will need to generate electricity.

https://bit.ly/42voQ1s

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Decoding the Chemistry of the Microbiome

Scientists zoom in on microbial messages at the molecular level to understand how the microbiome shapes health



Image: Jori Bolton; courtesy of Sloan Devlin (Devlin)

Each human body is home to trillions of microbes, whose combined cells may outnumber human cells. There's no question that these microbiomes — the ecosystems of bacteria, fungi, and other microbes residing on and inside us — shape our health. But how, exactly, do they do it?

It's still an open question. But as more chemists enter the field, they've helped propel microbiome research into a new phase: from raising suspicions that the microbial ecosystems within us profoundly influence our health to understanding the mechanisms through which they do it. What they're discovering will be key to developing therapies that target the microbiome to improve health

https://bit.ly/40uW92j

Bonobos Consider What Humans Know

And try to influence our behavior, study says



USO/Istock

Scientists have long debated: Are humans the only species who wonder what others are thinking? According to a new study from Johns Hopkins University researchers, the answer is no. <u>Their experiment</u> revealed that not only did bonobos actively try to communicate with a human, but they also seemed to consider what that person was thinking — and even tried to change his behavior.

To figure this out, co-author Luke Townrow enlisted three male bonobos and asked another person to hide a treat under a cup, sometimes when Townrow wasn't looking. If Townrow could locate the treat, the ape sitting across from him could have it. He found that when it was clear to the bonobos that Townrow hadn't seen where the treat was hidden, they would repeatedly point to the correct cup, at times quite insistently.

"It's quite surreal. I mean, I've worked with primates for quite some years now and you never get used to it," Townrow told NPR. "We found evidence that they are tailoring their communication based on what I know."

The apes' behavior in a controlled setting demonstrated a capability that scientists had previously only observed in wild chimps warning each other about threats. "There are debates in the field about the capabilities of primates, and for us it was exciting to confirm that they really do have these rich capacities that some people have denied them," co-author Chris Krupenye added in a <u>statement</u>.

Big-Names Back Startups Aimed At Increasing Battery Lifecycles

Amazon and Honda contributed to multimillion-dollar funding rounds for battery startups.



Coffeekai/Getty Images

The big battery innovation boom doesn't just mean companies are discovering new ways of manufacturing batteries: It also includes startups figuring out how to make existing batteries last longer.

Two startups that increase the lifecycle of large-scale batteries each received more than \$10 million in venture capital funding this month. Sonocharge Energy, which uses acoustics to make batteries last longer and charge quicker, secured \$23.5 million from Honda and investors Cycle Capital, Temasek, and Khosla Ventures. And Moment Energy, a Canadian large-scale battery repurposer, got \$15 million to build the world's first second-life battery factory from the Amazon Climate Pledge Fund and Voyager Ventures

https://bit.ly/3WuzvFR

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'Super Pod' of More Than 1,500 Dolphins Off California Coast

Whale watchers capture rare footage of miles-long cluster of dolphins 'just having a great time'



theinfo,me

A miles-long cluster of dolphins has been filmed leaping and gliding across Carmel Bay off the central coast of California, forming an unusual "super pod" of more than 1,500 of the marine creatures.

The large mix of adult and juvenile dolphins was likely the result of several pods coming together and swimming south.

https://bit.ly/4hvlf7Y

James Bond and The Queen London 2012 Performance



bbc.co.uk

Daniel Craig reprises his role as British secret agent James Bond as he accompanies Her Majesty The Queen to the opening ceremony of the London 2012 Olympic Games. The Ceremony also featured appearances from Mr. Bean, Monty Python and a re-imagining of the British Industrial Revolution.

https://youtu.be/1AS-dCdYZbo

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5 Organs Your Body Can Live Without



Original photo by ABO Photography/ Shutterstock

he human body is a complex biological system, and it can't function without certain vital organs such as the brain, heart, and lungs. But not all organs are essential; in fact, some can be removed with limited complications or drawbacks. These organs are sometimes vestigial remnants from our ancestors that have evolved to have little to no use today. Other expendable organs provide some benefits, but can still be removed or replaced without causing harm. Here are five organs the human body can live without.

https://bit.ly/3Q1bzGJ

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Are Atlantic Ocean Currents Weakening?

A new study suggests the Atlantic Meridional Overturning Circulation has not weakened since the 1960s — but there's no doubt the circulation will slow in the future, some experts say.



The Atlantic Meridional Overturning Circulation is a system of ocean currents that brings heat to the Northern Hemisphere. (Image credit: NOAA)

Scientists say there is a high chance that key Atlantic Ocean currents will weaken over the coming decades due to climate change — but whether they have already slowed is hotly debated. Now, a new study finds that Atlantic circulation has remained stable since the 1960s, suggesting the system may be more resilient to warming than scientists thought.

But the results are controversial. Previous studies show mixed results, with some papers concluding that the Atlantic Meridional Overturning Circulation (AMOC) is weaker now

than at any point in the past millennium, and others finding little to no evidence for a decline in current strength.

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Pilot/Olympian Iris Cummings Critchell Dies at 104

Iris Cummings Critchell, Olympic swimmer turned pioneering aviator, broke barriers in aviation and mentored future pilots over a 75-year career.



Iris Cummings Critchell, an aviation pioneer and the last known surviving U.S. Olympic swimmer from the 1936 Berlin Games, passed away at age 104 last week.

According to the New York Times, after competing in the games where she finished fourth in her 100m breaststroke heat in Berlin, Critchell turned her attention to another passion—aviation.

In 1941, during World War II, she became one of the first women to pilot U.S. military aircraft, flying more than 25 types as part of the Women Airforce Service Pilots (WASPs). She was one of only 21 women to fly the P-38 Lightning and among just four to pilot the P-61 Black Widow.

After the war, Critchell and her husband cofounded the aeronautics program at Harvey Mudd College, where she mentored future pilots and astronauts. She also helped develop curricula for the FAA and advocated for women in aviation through her involvement with the Ninety-Nines organization. With a flying career spanning more than 75 years, Critchell was inducted into the National Flight Instructors Hall of Fame in 2000 and received numerous accolades.



Paralyzed Man Flies Virtual Drone with Thought-Controlled Finger Movements



singularityhub.com

In a demonstration of "mind over matter," a 69-year-old man with C4 AIS C spinal cord injury — whose remaining movement was largely restricted to low-amplitude muscle twitching — has piloted a virtual quadcopter merely by thinking about moving his paralyzed fingers. This achievement stems from an intracortical brain-computer interface (iBCI) primarily developed and tested at Stanford University through the BrainGate2 clinical trials program.

In 2016, two 96-channel microelectrode arrays were placed in the anatomically identified "hand knob" area of his left precentral gyrus, enabling real-time decoding of his neural signals to drive the drone's maneuvers.

These electrodes record neural signals when T5 attempts to move distinct groups of fingers. Using the 4D decoder, initially, "the mean acquisition time was 1.98 ± 0.05 s, target acquisition rate was 64 ± 4 targets/min, and 98.7% of trials were successfully completed." After becoming more accustomed to the task in the final 4 blocks, performance improved to " 1.58 ± 0.06 s (a target acquisition rate of 76 ± 2 targets/min), and 100% of trials were completed."

https://bit.ly/4hC0I1E

Woman Injected Herself with Venom from a Black Widow Spider

Most exposures to black widow spider venom are accidental, but in a rare medical case, the exposure was intentional.



The venom of black widow spiders can cause an array of symptoms in humans. (Image credit: Kimberly Hosey/Getty Images)

A 37-year-old woman in California visited the emergency room with severe cramps and muscle pain, primarily in her back, abdomen and thighs. She also reported having a headache and feeling anxious. Her pulse, respiratory rate and blood pressure were elevated, and she had a temperature of 99.5 degrees Fahrenheit (37.5 degrees Celsius), a little below the typical threshold for a fever.

Upon admission to the ER, the patient — who had a history of heroin use — told her doctors that she had tried to get high by grinding up a black widow spider (Latrodectus genus), mixing it with 0.35 fluid ounces (10 milliliters) of distilled water, and then injecting it intravenously. Her symptoms appeared one hour later. Several hours after arriving at the hospital, the woman began to have trouble breathing. Her wheezing became so severe that she was moved to the intensive care unit (ICU).

https://bit.ly/4aEdevr

California? Well yeah. What'll she do to actually win a Darwin Aware.

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My Walking Thoughts

21 X X

For Sunday February 16 2025

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Snagging an Instrument Card

There still some challenges before I could don those cherished Naval Aviator wings, but when the instrument checkpilot told me to 'pop the hood,' I swear I could taste the goal.



Successfully completing the seemingly interminable instrument syllabus—18 challenging flights in which the external world was reduced to a feeble construct of the mind—was every bit as much a right of passage as throwing bullets at a banner or snagging wires on that little bobbing and weaving flattop out there on some bounding main.

Nor was that all. Had I felt the need to do so at the moment, I could have gone into the nearest FAA office and walked out with a Commercial Pilot's License, endorsed with an instrument rating. Quite an achievement for a rookie.

If that last instrument training flight was not special enough by itself, the check ride was conducted by the squadron's executive officer, Commander Skon, a quiet, courtly, WWII fighter pilot, considered almost reverentially by instructors and students alike to possess 'The Right Stuff.'

So how did this fateful flight go?

I arrived for the briefing more pumped up than I could ever recall, prepared for all manner of challenges to my mind, body and soul. Commander Skon went over all that we would accomplish in the flight, after which we preflighted the bird, strapped in, launched, and after an hour and forty minutes in which we completed all that we had briefed with no popped circuit breakers, no tricks.

Oh, maybe one. After I popped the hood, he asked it I had landed the Cougar from the rear cockpit. I hadn't. "You want to try it?" You bet, so I did. Not a difficult task other than I had to pay attention to finding and holding the runway centerline, but the visibility was surprisingly good.

Back at the hangar, he went point-by-point over the entire flight, evaluating my performance in each of its elements, suggesting improvements from time to time, but in no case a judgmental manner. It was invigorating. It made me feel... well I felt as if I had passed a threshold.

"Look," he said, "I know a lot of the instructors feel it necessary to throw everything at students on the C-18 check ride, but I think that's wrong. You wouldn't have gotten this

far if you haven't shown the ability to handle all kinds of things, so my approach is to see how smoothly you handle the basic nuts and bolts of instrument flight."

When I thought about this later—indeed even as I sat down wondering what to write about today—I realized that in truth that was the bottom line of what flight training was/is about. I had shown I could handle all the wifferdills the instructors could throw at me, but never had I had the opportunity in all the other hops to develop an ordinary flight plan, then go out and accomplish it... something I did pretty darn close to `right on the button.'

That evening, I went to the O'Club where, after an adult libation or two, regaled my buddies who had yet to finish C stage with tales of my mighty achievement. And it was true, at least to the extent that I had wrestled that canvas blackout curtain monster to a standstill. A third beer and I figured I had beat him to a pulp.