



Sharing Knowledge to create a Better World!



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Weekly Science Report

December 10, 2022

"We are all explorers, driven to know what's over the horizon, what's beyond our own shores. Yet the more I've experienced, the more I've learned that no matter how far we travel or how fast we get there, the most profound discoveries are not necessarily beyond that next star, they are within us. Woven into the threads that bind us, all of us to each other. The final frontier begins in this hall, let's explore it together."

Star Trek Enterprise

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Introduction

Steve Detwiler created this publication with the support of Graham Hancock and the late John Anthony West to share news and information on various disciplines to include but not limited to paleontology, space sciences, genetics, and archaeology. His goal behind sharing this publication has always been very simple, by sharing knowledge we can make our world a better place. This publication is Mr. Detwiler's contribution to bring people together and share ideas and discoveries with his fellow humans.

I hope you enjoy this publication and that the content challenges and inspires you!

The Weekly Science Report is also on social media at:

- Facebook: <https://www.facebook.com/weeklysciencrpt/>
- Twitter: <https://twitter.com/wklysciencrpt>

News Articles

Paleontology, Evolution and Prehistoric Studies

This 130 million-year-old ichthyosaur was a 'hypercarnivore' with knife-like teeth

https://www.livescience.com/extinct-ichthyosaur-was-hypercarnivore-knife-teeth?fbclid=IwAR2m9wdzEhGjflMFDAxsKmFq4EACUHHfVwTfnCvafbl3qLDj27oqT_S8oYs&utm_campaign=socialflow&fireglass_rsn=true#fireglass_params&tabid=a74114c58faf543e&start_with_session_counter=2&application_server_address=isolation2-eu-central-1.wss.prod.fire.glass

Biggest eagle to ever live plunged headfirst into dead prey to eat the organs

https://www.livescience.com/giant-extinct-eagle-ate-organs?fbclid=IwAR2EO8BSEBy0Z0yzUqFxFxKLTwkVufG-JnXvNiH-PsQZrzyeQh4Lh7yefJo3s&utm_campaign=socialflow&fireglass_rsn=true#fireglass_params&tabid=ac7418b3a26b7515&start_with_session_counter=2&application_server_address=isolation2-us-east-1.wss.prod.fire.glass

Iron integral to the development of life on Earth and the possibility of life on other planets

https://phys.org/news/2021-12-iron-life-earth-possibility-planets.html?fbclid=IwAR2RfslfFtgJQpjZSj9u_FMaR_p4yzh7yRvrNJg0pgueuyUUhascc10hblw

Fleshing out the bones of Quetzalcoatlus, Earth's largest flier ever

<https://phys.org/news/2021-12-fleshing-bones-quetzalcoatlus-earth-largest.html>

Denisovans or Homo sapiens: Who were the first to settle (permanently) on the Tibetan Plateau?

<https://www.sciencedaily.com/releases/2021/12/211207152519.htm>

Study pinpoints timing of Chicxulub asteroid impact

<https://phys.org/news/2021-12-chicxulub-asteroid-impact.html>

Dinosaurs and amber: A new window to the Cretaceous world from 110 million years ago

<https://phys.org/news/2021-12-dinosaurs-amber-window-cretaceous-world.html>

Mammoth Tusk Reveals Ancient Mammal's Travels

<https://www.scientificamerican.com/article/mammoth-tusk-reveals-ancient-mammals-travels/>

History

Survivors gather to remember those lost at Pearl Harbor

<https://apnews.com/article/hawaii-bombings-world-war-ii-cdb9ed8ee50b4de739f6d10b35234c3d>

David Adjaye plans slavery museum in Barbados as new republic severs ties with Britain

<https://www.theartnewspaper.com/2021/12/06/barbados-announces-museum-and-memorial-to-victims-of-western-slavery-as-it-cuts-ties-with-british-monarchy>

Stolen yogini goddess statue, once on sale at Sotheby's, to be returned to India

https://www.cnn.com/style/article/india-stolen-yogini-statue-return-intl-scli/index.html?utm_term=link&utm_content=2021-12-06T05%3A00%3A15&utm_medium=social&utm_source=fbCNN&fbclid=IwAR1WvuoTGVtcXDuDNLpd-nC4iHxbZ9bNA7KBh5Bey5Sumsa6ypcHW54Qox8&fireglass_rsn=true#fireglass_params&tabid=a0274e53cab11bc9&start_with_session_counter=2&application_server_address=isolation2-us-east-1.wss.prod.fire.glass

Did the Vikings Actually Torture Victims with the Brutal 'Blood Eagle'?

https://www.smithsonianmag.com/history/did-the-vikings-actually-torture-victims-with-the-brutal-blood-eagle-180979148/?utm_source=facebook.com&utm_medium=socialmedia&fbclid=IwAR0XkutZDTPFUgzb3-1ijetcmhTSZ1QcRfLIPrzPljaSYrdWdiaTp6MP8

Army Col. Edward Shames, the last remaining officer of World War II's 'Band of Brothers,' dies at 99

https://www.cnn.com/2021/12/04/politics/edward-shames-easy-company-world-war-ii-band-of-brothers/index.html?utm_medium=social&utm_content=2021-12-04T18%3A34%3A54&utm_term=link&utm_source=fbCNNi&fireglass_rsn=true#fireglass_params&tabid=aa0a40134a7ebee5&start_with_session_counter=2&application_server_address=isolation2-us-east-1.wss.prod.fire.glass

Museums for tragedies like 9/11 face a new challenge: Visitors too young to remember

https://www.washingtonpost.com/entertainment/museums/911-memorial-museum-challenges/2021/11/30/91d81364-3807-11ec-8be3-e14aaacfa8ac_story.html

Dorothy Day closer to sainthood after ceremony at St. Patrick's Cathedral

https://abc7ny.com/dorothy-day-st-patricks-cathedral-catholic-church-canonization/11313972/?ex_cid=TA_WABC_FB&utm_campaign=trueAnthem%3A+Trending+Content&utm_medium=trueAnthem&utm_source=facebook

The Story Behind Pearl Harbor's Most Successful Rescue Mission

<https://www.smithsonianmag.com/history/the-civilian-worker-who-spearheaded-pearl-harbors-most-successful-rescue-mission-180979167/>

The Justice Department closes its investigation into the lynching of Emmett Till

<https://www.npr.org/2021/12/06/1061945195/emmett-till-investigation-closed-justice-department?sc=18&f=1001>

Cahokia Mounds historic site offers augmented reality tours

<https://capitolnewsillinois.com/NEWS/cahokia-mounds-historic-site-offers-augmented-reality-tours>

Medieval Scot with strong jawbone wasn't a local

<https://www.livescience.com/blair-atholl-man-scotland>

Previously unrecorded Chilean tsunami identified

<https://www.eurekalert.org/news-releases/937082>

14 biggest historical mysteries that will probably never be solved
<https://www.livescience.com/11361-history-overlooked-mysteries.html>

Archaeology

Pompeii's Ruins to Be Reconstructed by Robot

https://www.scientificamerican.com/article/pompeiiis-ruins-to-be-reconstructed-by-robot/?fbclid=IwAR0TsAgP4NrOppatscn8AVza79vanj0uW6MjWHNuC_DkgNJW1kz_yUO3KHg

Avoiding trial, a former hedge fund manager turns over \$70 million in stolen antiques

<https://www.npr.org/2021/12/07/1062111007/michael-steinhardt-antiquities-prosecutor-seized-hedge-fund>

Skeleton reveals secrets of ancient Roman town obliterated by volcanic eruption

<https://www.nbcnews.com/news/world/skeleton-reveals-secrets-herculaneum-ancient-roman-town-obliterated-ve-rcna7363>

2,700-year-old leather armor proves technology transfer happened in antiquity

<https://phys.org/news/2021-12-year-old-leather-armor-technology-antiquity.html>

Ethiopian monuments 1,000 years older than previously thought

https://phys.org/news/2021-12-ethiopian-monuments-years-older-previously.html?fbclid=IwAR2JE_U-HooykgMRzCzKSg2b5d7_baZfiZJEEOKeIL0tCWozNvkNWZ724jc

Sigiriya: Sri Lanka's ancient water gardens

<https://www.bbc.com/travel/article/20211205-sigiriya-sri-lankas-ancient-water-gardens>

Mysterious metal depositions were 'the most ordinary thing in the world'

<https://phys.org/news/2021-12-mysterious-metal-depositions-ordinary-world.html>

Evidence of a Roman crucifixion found in Cambridgeshire

<https://www.cam.ac.uk/stories/romancrucifixion>

Oldest ink pen in Ireland is discovered by archaeologist during excavation in Burren

<https://www.independent.ie/irish-news/news/oldest-ink-pen-in-ireland-is-discovered-by-archaeologist-during-excavation-in-burren-41132749.html>

Ancient cultural relics found in Beijing

http://www.china.org.cn/arts/2021-12/09/content_77920700.htm

Egyptology

Israel Returns Smuggled Artifacts to Egypt

<https://www.archaeology.org/news/10227-211210-egypt-israel-repatriation>

Mummies With Gold Tongues Found Inside 2,500-Year-Old Tombs in Egypt

<https://www.smithsonianmag.com/smart-news/mummies-gold-tongues-in-2500-year-old-tombs-found-in-egypt-180979185/>

General Science

Nothing to Report

Physics, Earth and Space Sciences

How would we give aliens directions to Earth?

https://www.space.com/earth-directions-for-aliens?fbclid=IwAR3Dbv57o8gQpQz3wVtf-IGq3I7ObwoRaOa-h2uJXnLCd59Uk1U1f2rOXrw&utm_campaign=socialflow&fireglass_rsn=true#fireglass_params&tabid=abb3051c6ca0a005&start_with_session_counter=2&application_server_address=isolation2-us-east-1.wss.prod.fire.glass

Elusive Neutrino Candidates Detected in Breakthrough Physics Experiment

<https://www.scientificamerican.com/article/elusive-neutrino-candidates-detected-in-breakthrough-physics-experiment/?fbclid=IwAR2EO8BSEBy0Z0yzUqFxFkLTKwVufG-JnXvNiH-PsQZrzyeQh4Lh7yefJo3s>

'Potentially hazardous' asteroid worth nearly \$5 billion will skim past Earth this week, NASA says

https://www.livescience.com/nereus-asteroid-to-pass-by-earth?fbclid=IwAR2VjAthCiTCH2pPKFPxQVW1aLqED0DE8edHnCeZOXxJM3NmhdYID1QvZM&utm_campaign=socialflow&fireglass_rsn=true#fireglass_params&tabid=a4b034172e977ffa&start_with_session_counter=2&application_server_address=isolation2-us-east-1.wss.prod.fire.glass

NASA visitor complex to open immersive 'Gateway' to deep space in 2022

https://www.space.com/nasa-kscvc-gateway-deep-space-launch-complex?fbclid=IwAR2vsqORA9u8CDp4ZRkKALWzECPXuYTYeqdRpV18jIJaJFISrRzbvhrhoff4&utm_campaign=socialflow&fireglass_rsn=true#fireglass_params&tabid=ac0b790d5fe12e6a&start_with_session_counter=2&application_server_address=isolation2-us-east-1.wss.prod.fire.glass

Extreme space weather: Predicting and protecting against solar storms

https://astronomy.com/news/2021/06/extreme-space-weather-predicting-and-protecting-against-solar-storms?utm_source=asyfb&utm_medium=social&utm_campaign=asyfb&fbclid=IwAR2vsqORA9u8CDp4ZRkKALWzECPXuYTYeqdRpV18jIJaJFISrRzbvhrhoff4

Soil without detectable life discovered in Antarctica

https://www.science.org/content/article/soil-without-life-discovered-first-time-earth?utm_campaign=ScienceNow&utm_source=Social&utm_medium=Facebook&fireglass_rsn=true#fireglass_params&tabid=a8af6637841b0618&start_with_session_counter=2&application_server_address=isolation2-us-east-1.wss.prod.fire.glass

China's Yutu 2 rover spots cube-shaped 'mystery hut' on far side of the moon

https://www.space.com/china-yutu-2-moon-rover-cube-shaped-object-photos?utm_source=facebook.com&utm_medium=social&utm_content=livescience&utm_campaign=socialflow&fbclid=IwAR29F3aztBH0DH9x-D1Jq3erIdJfISFxC-ocU5NFT6-69gMCVI6rPCs7c&fireglass_rsn=true#fireglass_params&tabid=a772f20ece021421&start_with_session_counter=2&application_server_address=isolation2-us-east-1.wss.prod.fire.glass

From discovery to data: How astronomers track near-Earth asteroids

https://astronomy.com/news/2018/07/tracking-asteroids?utm_source=asyfb&utm_medium=social&utm_campaign=asyfb&fbclid=IwAR2KIjYIFUtg6pwXOY4btk_b5h1HcSsutjx0Bs-2cTJqsQsHMuQarMyo9YY

This Creepy Cosmic Radio Burst Repeats Every 157 Days. Where Is It Coming From?
https://www.popularmechanics.com/space/deep-space/a32801737/fast-radio-bursts-repeat-cycle/?utm_medium=social-media&utm_campaign=socialflowFBPOP&utm_source=facebook&fbclid=IwAR3PrTBEJh6cWf0T13pgdwBreKs5HivfehNTpVHmp7CZdT2y_2UaC8ETwhE&fireglass_rsn=true#fireglass_params&tabid=a629e59af6a5d147&start_with_session_counter=2&application_server_address=isolation1-us-east-1.wss.prod.fire.glass

NASA's next-generation asteroid impact monitoring system goes online
<https://phys.org/news/2021-12-nasa-next-generation-asteroid-impact-online.html>

Japanese tourists dock at International Space Station
https://apnews.com/article/soyuz-spacecraft-yusaku-maezawa-fd928c5713a48757d59e0ca04625befb?utm_medium=AP&utm_source=Facebook&utm_campaign=SocialFlow&fbclid=IwAR27GljyReHljKCgJu-qUY2F-EoNmKHY6LZm0MXJ5HWrchjCbATOxym4n_E&fireglass_rsn=true#fireglass_params&tabid=a44cbef4371acb1d&start_with_session_counter=2&application_server_address=isolation1-us-east-1.wss.prod.fire.glass

NASA launches laser demo that could revolutionize space communication
https://edition.cnn.com/2021/12/07/world/nasa-laser-relay-communications-demonstration-launch-scn/index.html?utm_term=link&utm_medium=social&utm_content=2021-12-07T17%3A31%3A11&utm_source=fbCNNi

Massive planet 10 times bigger than Jupiter discovered orbiting pair of giant stars
<https://www.nbcnews.com/science/science-news/massive-planet-10-bigger-jupiter-discovered-orbiting-pair-giant-stars-rcna8085>

NASA names 2021 astronaut candidates as it plans for moon missions
<https://www.npr.org/2021/12/06/1061868944/nasa-new-astronaut-candidates-moon-missions>

Researchers capture the fastest optical flash emitted from a newborn supernova
<https://phys.org/news/2021-12-capture-fastest-optical-emitted-newborn.html?fbclid=IwAR3yUzwEKOD9Xxk2kdx0dkvZ6i56URZeSLvCvq7m8GAn1CXb-PszZhFL9Ag>

High-tech sleeping bag could solve vision issues in space
<https://www.eurekalert.org/news-releases/936908>

A young, sun-like star may hold warnings for life on Earth
<https://www.eurekalert.org/news-releases/937013>

Citizen scientists find young-Jupiter-like object missed by previous exoplanet searches
<https://www.eurekalert.org/news-releases/937463>

Planetary scientist suggests loss of water to space on Mars may be tied to lower atmospheric factors
<https://phys.org/news/2021-12-planetary-scientist-loss-space-mars.html>

Visualizing the propagation path of electromagnetic waves from space to ground
<https://phys.org/news/2021-12-visualizing-propagation-path-electromagnetic-space.html>

Exotic six-quark particle predicted by supercomputers
<https://phys.org/news/2021-12-exotic-six-quark-particle-supercomputers.html>

"Newer, nimbler, faster:" Venus probe will search for signs of life in clouds of sulfuric acid
<https://phys.org/news/2021-12-nimbler-faster-venus-probe-life.html>

Environment, Climate Change and Alternative Energy Sources

Earth is getting a black box to record our climate change actions, and it's already started listening
<https://www.abc.net.au/news/science/2021-12-06/climate-change-earth-black-box-recorder/100621778>

Climate cycles create California precipitation uncertainty
<https://phys.org/news/2021-12-climate-california-precipitation-uncertainty.html>

Researchers develop advanced catalysts for clean hydrogen production
<https://phys.org/news/2021-12-advanced-catalysts-hydrogen-production.html>

New understanding of plant nutrient response could improve fertilizer management strategies
<https://phys.org/news/2021-12-nutrient-response-fertilizer-strategies.html>

Biological, Genetics and Medical Sciences

Potential new gene editing tools uncovered

https://phys.org/news/2021-12-potential-gene-tools-uncovered.html?fbclid=IwAR07A80Hfp1Pchp5Fup66VJRDN-KRIO_WzrgJbPrDNp28HUMAmkDvrhH6g

Meet Rosalind Franklin, a sidelined figure in the history of DNA science

https://www.pbs.org/newshour/science/meet-rosalind-franklin-a-sidelined-figure-in-the-history-of-dna-science?fbclid=IwAR1aJiX53DqD_JuEtFVDoPeggJJdICUcl2owis8LNaG95Pw6zHVEmc1DGW8

On the Great Pacific Garbage Patch, scientists find a surprise: Coastal life

<https://www.nbcnews.com/science/environment/great-pacific-garbage-patch-scientists-find-surprise-coastal-life-rcna7292>

Test feeding plan in the works for starving Florida manatees

<https://www.nbcnews.com/news/animal-news/test-feeding-plan-works-starving-florida-manatees-rcna7977>

How do dolphins learn to live along the coast?

https://phys.org/news/2021-12-dolphins-coast.html?fbclid=IwAR1qzOozauCB0CYNlqaCCFR6RRT3PWRz_bo3wZGLZk4XYJVxpL4PWb3RL9k

Atomic structure of antifungal drug confirms unusual mechanism, opens door to less-toxic derivatives

<https://www.eurekalert.org/news-releases/937459>

Experimental mRNA HIV vaccine safe, shows promise in animals

<https://www.eurekalert.org/news-releases/937170>

New prime editing system inserts entire genes in human cells

<https://phys.org/news/2021-12-prime-inserts-entire-genes-human.html>

A longer-lasting COVID vaccine? Study points the way

<https://medicalxpress.com/news/2021-12-longer-lasting-covid-vaccine.html>

Orangutan mothers help offspring to learn

<https://phys.org/news/2021-12-orangutan-mothers-offspring.html>

Other

Nothing to Report

Additional Informational

A Framework for Global Science

<https://council.science/publications/risk-informed-sustainable-development-planetary-health/>

TED Talks, How to end the Pandemic- and prepare for the next

https://www.ted.com/talks/maria_van_kerkhove_how_to_end_the_pandemic_and_prepare_for_the_next?utm_campaign=social&utm_medium=social&utm_source=t.co&utm_content=2021-12-07&fireglass_rsn=true#fireglass_params&tabid=ada3ca34f44ba4f0&start_with_session_counter=3&application_server_address=isolation1-us-east-1.wss.prod.fire.glass

TED Talks, Three ways to build resilience and change the world

https://www.ted.com/talks/sister_true_dedication_3_questions_to_build_resilience_and_change_the_world?utm_content=2021-12-06&utm_medium=social&utm_source=t.co&utm_campaign=social&fireglass_rsn=true#fireglass_params&tabid=a857eb748ca563ac&start_with_session_counter=3&application_server_address=isolation1-us-east-1.wss.prod.fire.glass

TED Talk, Community investment is the missing piece in Climate Action

https://www.ted.com/talks/dawn_lippert_community_investment_is_the_missing_piece_of_climate_action?content=2021-12-06&campaign=social&medium=social&utm_source=t.co&fireglass_rsn=true#fireglass_params&tabid=a156d30a4fec909d&start_with_session_counter=3&application_server_address=isolation1-us-east-1.wss.prod.fire.glass

TED Talk, Super speed, Magnetic levitation, and the vision behind the Hyperloop

https://www.ted.com/talks/josh_giegel_super_speed_magnetic_levitation_and_the_vision_behind_the_hyperloop?utm_source=t.co&utm_medium=social&utm_campaign=social&utm_content=2021-12-06-cutdown&fireglass_rsn=true#fireglass_params&tabid=a4ce802b6c91099c&start_with_session_counter=3&application_server_address=isolation1-us-east-1.wss.prod.fire.glass

Mengele and the Need for Holocaust Education

<https://medium.com/memory-action/mengele-and-the-need-for-holocaust-education-67f09be1f447>

Top 10 Discoveries of 2021

<https://www.archaeology.org/issues/451-2201/features/10183-top-10-discoveries-of-2021>