

Welcome to the December 6th, 2017 Edition of THE REVENGE HUMP DAY!

Last weekend LibertyCon, Chattacon and HallowCon threw it's combined Christmas Party at the Best Western in East Ridge, Tennessee. I was unable to attend the festivities because, yes, it's back, have a chest infection. I don't know if will ever get rid of this thing.

One thing I have noticed this year is that the entire family mostly shopping online instead of fighting the hoards at the Mall. And you will never guess where they all send their packages. The foyer of my house has been the home of more packages than you could possibly believe. Hmmmmm I wonder if I should take a cut of all the loot coming to the house. Nah, they would just make me pay for it.

So on that "thoughtful note", why don't y'all sit back and relax because here's the best in gossip, jokes and science for your reading pleasure!

Uncle Timmy

P.S. I want to give a shout out to one of our readers this week. Denny Marshall sent me about 6 pin and ink drawings that I have sprinkled in this weeks edition. Thank you Denny, I appreciate the submission. Tim

<G>~<O>~<S>~<S>~<I>~<P>~<S>~<T>~<A>~<R>~<T>~<S>~<H>~<E>~<R>~<E>~<I>



ARTWORK FOR SALE – GREAT DEALS

From: "Blake Powers" laughingwolfone@gmail.com

I've got some unexpected medical and other expenses, so am selling my remaining art. Since previous efforts generated limited response, my price on all is: make an offer. This is not a guarantee that the offer will be accepted, or that you will make the top offer. Shipping is not included, but can be worked out as a separate issue if and as needed. I'm selling:

SNIPER IN THE WINDOW, by the Bryan Gibson, framed dimensions app. 9x14.



late



THE VENUS EXPERIMENT, by Mark Maxwell. Done for Asimov's, framed dimensions app. 32.5x25.

SHOT IN THE DARK, by yours truly. Oil on acrylic via shotgun. Dimensions app. 24x36.



FLOWING IN THE WIND, by Fhigmuth. App. 62" high, currently in custom shipping case in storage.



Could be a great way to get some neat gifts for someone.

<L>~<I>~~<E>~<R>~<T>~<Y>~<C>~<O>~<N>

ANDRÉ RIEU - I WILL FOLLOW HIM

From: "Jim Woosley" jimwoosley@aol.com

This was a "rock and roll" hit in 1961

Here's a bit different rendition.

<https://www.youtube.com/watch?v=ZqN9aS2S3L0>

<L>~<I>~~<E>~<R>~<T>~<Y>~<C>~<O>~<N>

FIVE HAIKU

From: Denny Marshall www.dennymarshall.com

planet X coming
direct path to kill us all
so don't ask Y

wish the aliens
did not rename you
gravy

intelligence wise
equals to space invaders
wings their advantage

e.t. sews zipper
into the sky, as they leave
unzip monster door

wormhole human traps
high capture rate after switch
to smart phones as bait

<T>~<H>~<E>~<J>~<O>~<K>~<E>~<S>~<S>~<T>~<A>~<R>~<T>~<H>~<E>~<R>~<E>



From: "Tim Bolgeo"
tbolgeo@comcast.net

SEE THE CRAZY HOLIDAY
FASHION TREND THAT'S A
BIT JOLTING ... ONE
EXPOSED BOOB
DECORATED AS RED-
NOSED REINDEER

December 4,
2017 | Samantha Chang
<http://www.bizpacreview.com/2017/12/04/see-crazy-holiday-fashion-trend-thats-bit-jolting-one-exposed-boob-decorated-red-nosed-reindeer-571308>

Breast wishes for the Christmas holidays, y'all!



(YourSassyGrandma/Etsy)

Women are decorating their exposed breasts to resemble reindeer as part of a wacky holiday fashion trend modeled after the “ugly Christmas sweater” phenomenon.



Ladies showcase their titillating “ugly Christmas sweaters.” (tiffany_carlo/Instagram)

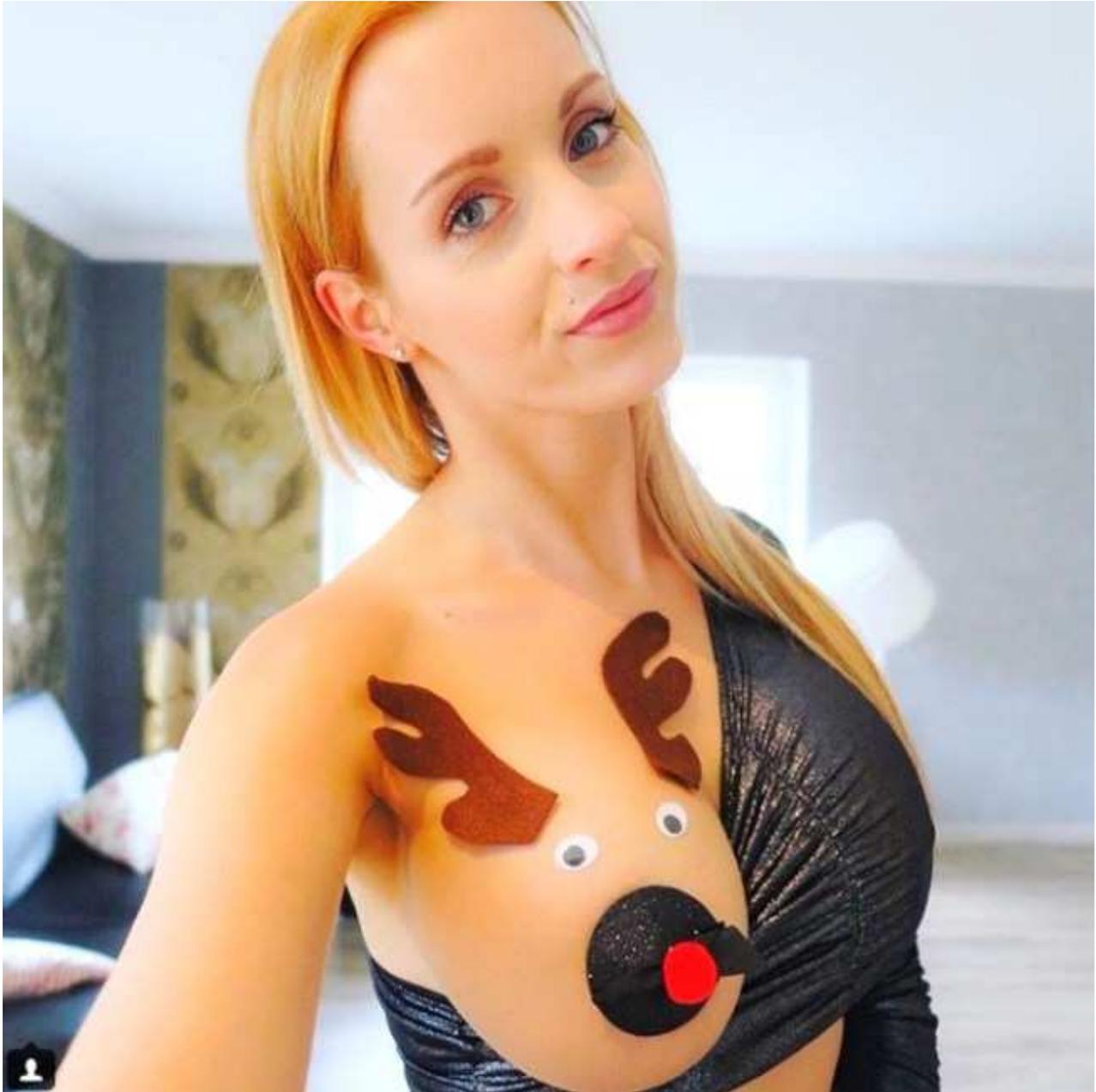
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Pre-made versions of the sweaters (with strategic cut-outs) are being sold on Etsy by Salt Lake-based retailer YourSassyGrandma.

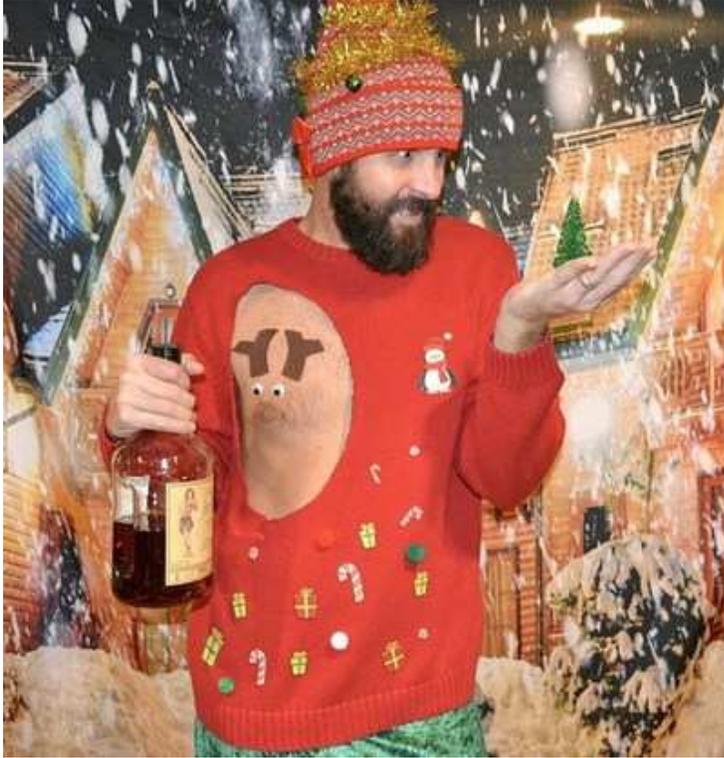
“If you want to stand out at your Ugly Sweater Party, burlesque show or even just to have a fun night in your bedroom, then this reindeer is for you!!” reads one description.

Each sweater comes with adhesive “eyes” and glittery reindeer “nose.” Some women modeled their “reindeer boob sweaters” on Instagram, with eye-popping results.



(anike_ekina_official/Instagram)

Men can get in on the nip-tastic action too.



(YourSassyGrandma/Etsy)

These sweaters are not recommended for family Christmas or New Year's parties. Unless you want an eyeful.

(dandydillinger/Instagram)

After Christmas and New Year's, you can recycle your "reindeer boob sweater" for Halloween if it's not too cold where you live.

It must have been a hell-of-a-party they went to. I wonder why I wasn't invited? UT



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<J>~<O>~<K>~<E>~<S>~<of>~<the>~<W>~<E>~<E>~<K>

From: "Jim Hollis" jhollis@northsidesales.com

We have been interviewing for several positions during the last few months but we haven't had one quite like this – close though.

<https://youtu.be/Uo0KjdDJr1c>

<J>~<O>~<K>~<E>~<S>~<of>~<the>~<W>~<E>~<E>~<K>

From: "Mike Waldrip" waldripk@gmail.com



<J>~<O>~<K>~<E>~<S>

Wouldn't This Be a Kick in the Pants



<J>~<O>~<K>~<E>~<S>

It's Only a Matter of Time



<J>~<O>~<K>~<E>~<S>

SOMEWHERE IN IRELAND A TEACHER ASKS HER CLASS:

"CAN ANYONE TELL ME THE NAME OF ROBIN HOOD'S GIRLFRIEND? "

YOUNG SEAN RAISES HIS HAND AND SAYS, "TRUDY GLENN MISS".

"NO SEAN," SAYS THE TEACHER.

"THE ANSWER IS MAID MARION".

"BUT MISS", SAYS SEAN "WHAT ABOUT THAT SONG WE USED TO SING:

'ROBIN HOOD,

ROBIN HOOD,

RIDING TRUDY GLENN”.

<J>~<O>~<K>~<E>~<S>



<J>~<O>~<K>~<E>~<S>

Corny but gave me a laugh...

Two Mexicans are stuck in the desert after crossing into the United States, wandering aimlessly & starving ...

They are about to just lie down & wait for death, when all of a sudden Luis says: "Hey Pepe, do you smell what I smell. Ees bacon, I theenk."

"Si, Luis, eet sure smell like bacon."

With renewed hope, they struggle up the next sand dune, & there, in the distance, is a tree loaded with bacon.

There's raw bacon, there's fried bacon, back bacon, double smoked bacon, every imaginable kind of cured pork.

"Pepe, Pepe, we ees saved! Ees a bacon tree!"

"Luis, maybe ees a meerage? We ees in the desert, don't forget."

"Pepe, since when deed you ever hear of a meerage that smell like bacon? Ees no meerage, ees a bacon tree!"

With that, Luis staggers towards the tree.

He gets to within 5 yards, Pepe crawling close behind, when suddenly a machine gun opens up & Luis drops like a wet sock.

Mortally wounded, he warns Pepe with his dying breath: "Pepe, go back man, you was right, ees not a bacon tree!"

"Luis, Luis mi amigo, what ees it?"

"Pepe ees not a bacon tree. Ees... a ham bush!"

<J>~<O>~<K>~<E>~<S>

AN ACT OF KINDNESS

Sitting by the window of her convent, Sister Barbara opened a letter from home one evening. Inside the letter was a \$100 bill her parents had sent. Sister Barbara smiled at the gesture.

As she read the letter by the window, she noticed a shabbily dressed stranger leaning against the lamp post below.

Quickly, she wrote, "Don't despair. - Sister Barbara," on a piece of paper, wrapped the \$100 bill in it, got the man's attention and tossed it out the window to him.

The stranger picked it up, and with a puzzled expression and a tip of his hat, went off down the street.

The next day, Sister Barbara was told that a man was at her door, insisting on seeing her.

She went down, and found the stranger waiting. Without a word, he handed her a huge wad of \$100 bills.

"What's this?" she asked.

"That's the \$8,000 you have coming Sister," he replied. "Don't Despair paid 80-to-1."

<J>~<O>~<K>~<E>~<S>

DO NOT Wash Parts in Your Washing Machine

<https://www.youtube.com/watch?v=dq6T5BojXc8>

Front Load Washer Total Carnage - Washer goes Chain Chomp on me

<J>~<O>~<K>~<E>~<S>~<of>~<the>~<W>~<E>~<E>~<K>

From: "Chris Cowan" cowanc1028@earthlink.net



<YOU>~<>~<JUST>~<>~<CAN'T>~<>~<MAKE>~<>~<THIS>~<>~<STUFF>~<>~<UP!>

YOU JUST CAN'T MAKE THIS STUFF UP!

From: "Tim Bolgeo" tbolgeo@epbfi.com

POLICE WIDOW HAS PHOTOSHOOT THAT SILENCES COP-HATERS

BY BEN MARQUIS , NOVEMBER 27, 2017 AT 3:40PM

There has been a rash of anti-cop hatred over the past few years that has resulted in many police officers being murdered in the line of duty simply because they serve as law enforcement in their communities.

Sadly, many of these slain officers leave behind grieving widows — whether wives or fiancées — and families, whose loss is typically overlooked and ignored by the cop-haters.

But NBC's Today recently shared the incredibly touching story of a Michigan woman named Nikki Salgot who was engaged to marry a Detroit-area police officer named Collin Rose. In November of 2016, Rose was murdered while on duty.

After her fiancé's death, Salgot reached out to an old friend who happened to be a professional photographer with a special request. Even though the two hadn't spoken in ten years, Rachel Heller was more than willing to fulfill her old friend's wish of a unique photoshoot.



All photos credited to Rachel Smaller Photography

About a month prior to the planned nuptials of Salgot and Rose, the widowed fiancée met with Heller to take part in a special memorial photoshoot, which consisted of a lone Salgot

in her beautiful wedding dress while carrying the folded flag, badge and officer's cap of her murdered fiance.

"I remember being in tears on the way there, thinking, 'How am I going to do this? How am I going to find a way to take photos that will do this justice, not just for her but for him?'" Heller recalled.

"When she got out of the car, it was clear as day. She was the picture of grief and resilience and strength and vulnerability and authenticity, all at once," Heller said. "I thought, I have to take photographs that when people see them, they will feel how I felt when she got out of the car."

Heller noted that even as Salgot obviously still felt incredible grief at her loss, she was also quite capable of smiling and laughing as the two worked out a variety of different poses for the photoshoot.

Salgot declined to comment on the NBC story, but did post a message to her Facebook page which read: "(Heller) captured images that still vividly show the pain left behind; images that show I am still able to laugh, smile and be me; images that show this loss has not and will not destroy me; and my favorite, images that show I am still just as fierce as ever and refuse to let this define me."

Heller agreed wholeheartedly, and stated, "This is a woman who is not broken. This did not break her. To me, she is an inspiration."

As for the murderer of Rose, who was serving as a Wayne State University police officer at the time of his death, he was arrested and charged with the murder of the officer in August, according to the U.K. Daily Mail.

That man, 60-year-old Raymond Durham, had been arrested and charged with attempted murder in March when he opened fire on two other Detroit police officers, who thankfully survived the attack. DNA evidence from that crime was used to link Durham to the murder of Rose.

Unfortunately, Durham has twice been declared incompetent to stand trial for the shootings of the Detroit officers, and has been ordered by a judge to undergo mental evaluation to make an ultimate determination on his competency to stand trial for Rose's murder. He is due back in court in December.

As for Rose, the 5-year veteran and canine officer was posthumously awarded a citation for valor and promoted to sergeant.

The photos of Nikki Salgot are a powerful reminder of those who are left grieving in the wake of an officer cut down in the line of duty, and hopefully will serve to perhaps soften the heart or change the mind of at least some cop-haters.

Please share this on Facebook and Twitter so everyone can see these incredibly powerful pictures of a grieving young woman who lost her police officer fiance prior to their wedding.

<?>~<YOU JUST CAN'T MAKE THIS STUFF UP!>~<?>

LEFT-WING MEDIA BASH TRUMP OVER 'MERRY CHRISTMAS' MESSAGE

Whitney Curtis/Getty Images

by DR. SUSAN BERRY1 Dec 2017

<http://www.breitbart.com/big-government/2017/12/01/left-wing-media-bash-trump-over-merry-christmas-message/>



The Washington Post and other left-wing media are slamming the words of President Donald Trump at the lighting of the national Christmas tree.

Trump followed through with his campaign promise to keep the focus on the Christian message of Christmas.

Donald J. Trump – Tweet - ?@realDonaldTrump

The Christmas Story begins 2,000 years ago with a mother, a father, their baby son and the most extraordinary gift of all—the gift of God’s love for all of humanity.

Whatever our beliefs, we know that the birth of Jesus Christ and the story of his life...

“Melania and I are full of joy at the start of this very blessed season,” Trump said, “the celebration of the birth of our Lord and Savior, Jesus Christ.”

Washington Post columnist Petula Dvorak, however, is protecting the legacy of former President Barack Obama, whom she writes was not a Grinch when it comes to wishing “Merry Christmas” and celebrating the holy day.

“He even signed an executive order giving federal employees Christmas Eve off” in 2012, she defends Obama.

Dvorak continues, complaining as well about Melania Trump's choice of Christmas decorations:

But they're saying it was President Trump who brought "Merry Christmas" back to the White House. Or at least that's the story being peddled by Fox News, a handful of conservative bloggers and the White House itself.

The unveiling of first lady Melania Trump's Christmas decorations this week — including an oddly stark and ominous hallway of bare, shadowy branches that launched a thousand memes — was hailed as some kind of victory for tradition. As though the Obamas did away with every scrap of Christmas cheer for the past eight years and ate tofurky under a Festivus tree. In kente cloth.

The columnist points to a "delightful montage" of the Obama family saying "Merry Christmas" provided by MSNBC.

In 2016, the New York Post offered a review of Obama's annual Christmas cards, and observed he used the words, "Happy Holidays" or "Season's Greetings" with no mention of the Christian message of Christmas.

In his final official Christmas card as president, Obama used the words, "Happy Holidays."

"We wish you and your loved ones a joyous holiday season and wonderful new year," the card read as it featured a photo of the Obama family in formal dress.

Dvorak claims conservatives have trumped up "the tiresome and ridiculous 'war on Christmas' narrative every time Trump 'needed a quick cheer,'" Not to be confused with the "war on women" narrative the left streams out whenever Planned Parenthood is embroiled in yet another scandal.

"There is no war on Christmas," Dvorak asserts, adding, however, that there is a war on Jews and Muslims, "fueled by our commander in chief."

Interestingly, as the Christian celebration of Christmas approaches, Dvorak fails to mention the genocide of Christians around the world under radical Islamic terrorists, and the rise of anti-Christian sentiment and secularization in the United States that came to a peak during the Obama era.

As Breitbart News reported in January 2015, the year 2014 "saw more global persecution of Christians than any other year in recent history, and can only be compared to the first centuries when Christians were hunted down as criminals in the Roman Empire."

In March 2016 – when Christians in the Middle East were being terrorized and killed at the hands of Islamic State radicals – the Obama administration refused to call this Christian genocide.

"[T]he terror campaign being waged by ISIS and its affiliates against Christians and other religious minorities meets the definition of genocide" in international law, said Carl Anderson, Supreme Knight of the Knights of Columbus.

On the home front in 2012, Obama administration officials and the former president himself cut videos on behalf of Dan Savage and his "It Gets Better Project." Among other

things, Savage was known for his bullying of Christian teens at a national journalism conference.

The Obama administration's HHS contraceptive mandate forced Christian religious groups like the Little Sisters of the Poor – a group that ministers to the elderly poor – to spend years in court fighting to maintain the same religious freedom to live their faith beliefs in the public square as they have always enjoyed under the Constitution – until Obama became president.

The point is for Christians, Christmas is not about the “words” used in greetings, or the glitter and bows on packages and trees. Christians celebrate the birth of Jesus and what that event has meant for the world.

“Americans have known Christmas as a time for prayer and worship, for gratitude and goodwill, for peace and renewal,” said Trump.

“We're thrilled to think of the people, across the nation and all across the continents, whose spirits are lifted by the miracle of Christmas,” the president continued, adding that the birth of Jesus Christ “forever changed the course of human history.”

“There is hardly an aspect of our lives today that his life has not touched: art, music, culture, law, and our respect for the sacred dignity of every person everywhere in the world,” the president said.

<S>~<C>~<I>~<E>~<N>~<C>~<E>~<S>~<T>~<A>~<R>~<T>~<S>~<H>~<E>~<R>~<E>



From: “Tim Bolgeo” tbolgeo@epbfi.com

ISRAEL MOUNTS IRON DOME BATTERY ON WARSHIP: MILITARY

by Staff Writers, Jerusalem (AFP) Nov 27, 2017

http://www.spacedaily.com/reports/Israel_mounts_Iron_Dome_battery_on_warship_military_999.html

Israel mounted a battery of its Iron Dome anti-missile system on a warship Monday, as the vaunted rocket interceptor went

operational at sea for the first time, senior officers said.

Israel Air Force Brigadier General Zvika Haimovitch said the battery fitted to the corvette Lahav underwent a successful “live-fire test” and would be a valuable asset in securing offshore natural gas fields.

“Today the IAF put another operational layer to defend and protect Israel's energy assets in the Mediterranean Sea,” he told journalists in English.

"This is a significant milestone," he added.



An Iron Dome missile defense battery as currently deployed across Israel.

The air force is responsible for Israel's ground-based anti-missile defences.

Israel has major gas fields off its northern coast and is building valuable infrastructure to get the fuel out of the ground and onto land, all within range of rockets from its deadly foe Hezbollah's Lebanon bases.

The Tamar field, discovered in 2009 and which began production in 2013, has estimated reserves of up to 238 billion cubic metres (8.4 trillion cubic feet).

Leviathan, discovered in 2010 and set to begin production in 2019, is estimated to hold 18.9 trillion cubic feet (535 billion cubic metres) of natural gas, along with 34.1 million barrels of condensate.

Israel has invited bids for another 24 offshore oil-and-gas exploration licences it hopes will bring more big finds in the Mediterranean as it strives to become an energy exporter.

In 2006, Israel fought a 34-day war against Iranian-backed Hezbollah in which more than 1,200 Lebanese, mostly civilians, and 120 Israelis, the majority soldiers, died.

Israeli authorities said that in the course of the fighting Hezbollah fired 3,970 rockets into Israel.

In recent weeks cross-border tensions have risen again as part of a row between Saudi Arabia and Iran, which saw Hezbollah accuse the Saudis and Israelis colluding to launch a fresh offensive into Lebanon.

Haimovitch however said that the seaborne Iron Dome process was set up more than 18 months ago.

He added that the Lahav and other ships which would be fitted with Iron Dome in future would not be confined to Israel's northern coast.

"We don't develop specific solutions for a specific threat or direction," he said. "It could be a threat from Lebanon or from Gaza."

He said military planners learned from the 2014 war in Gaza, codenamed Operation Protective Edge.

In that conflict, the army says, the Islamist Hamas and other Gaza-based Palestinian militant groups fired more than 4,500 rockets at Israel, of which Iron Dome intercepted 735.

"It was an operational scenario we saw during Protective Edge that Hamas and other Islamic groups fired missiles at our assets."

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RESEARCHERS TUNNEL TO A NEW LIGHT SOURCE

by Staff Writers, Changchun, China (SPX) Nov 23, 2017



http://www.spacedaily.com/reports/Researchers_tunnel_to_a_new_light_source_999.html

illustration only

With concerns over moving to a clean energy platform worldwide with electric vehicles and renewables, the energy we consume, or should we say do NOT consume, is as important as the green energy we produce. Thus, solid state lighting, more efficient than incandescent and fluorescent bulbs, based upon light emitting diodes (LED) is touted as the solution. However, LEDs struggle to deliver high

brightness for the shorter-wavelength end of lighting needs. And emitted short wavelengths facilitate white light through known phosphor downconverters.

In the October 24, 2017 issue of *Light: Science and Applications*, currently online, the Ohio State University researchers, with scientists at Wright State University and Naval Research Laboratory, describe a promising new semiconductor LED made with GaN-based materials that could boost wallsocket efficiency by reducing energy losses and self-heating.

If this new technology can be harnessed for large light output, the breakthrough could enhance LED solid state lighting without a significant change to the existing LED manufacturing facility.

The new LEDs could provide more light with less voltage and resistance than in conventional GaN LEDs, thereby boosting the overall lumens per watt output and avoiding the efficiency droop that plagues high brightness LEDs.

One way the team overcomes this problem is by completely removing all p-type doping in gallium nitride, which historically is hard to dope and leads to a high series resistance.

The key to the team's discovery is the ability to create "holes" for radiative recombination with electrons by quantum-mechanical tunneling, not by p doping. The tunneling occurs by the Zener mechanism, delivering the holes to the zone of recombination, mitigating the need for clumsy p-type ohmic contacts and resistive p-type semiconductor injectors.

The team includes Paul R. Berger and Tyler A. Growden at Ohio State University; Elliott R. Brown and Weidong Zhang at Wright State University; and David F. Storm and David J. Meyer at the Naval Research Laboratory.

Their discovery was made while advancing resonant tunneling diodes (RTD) in the gallium nitride system for the Office of Naval Research under program manager Dr. Paul Maki. As reported in the August 2016 issue of *Applied Physics Letters*, their effort also established a stable GaN-based RTD platform for high microwave power generation and potentially terahertz sources.

The fundamental science behind this advancement is the utilization of the extremely high electric fields induced by the polarization effects within wurtzite GaN based heterostructures. These high fields allow the new device to not only inject electrons across a classic RTD double-barrier structure in the conduction band, but also simultaneously inject holes by Zener tunneling across the GaN band gap into the valence band. Thus, the new LED uses only n-type doping, but includes bipolar tunneling charges to create the new LED light source.

To be useful for commercialization, the team is working to balance the injected electron and hole ratio to create and therefore deliver up to one emitted photon for each injected electron.

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**BACTERIA 'FROM OUTER SPACE' FOUND ON SPACE STATION, COSMONAUT SAYS:
REPORT**

By Mike Wall, Space.com Senior Writer | November 28, 2017 08:47pm ET

https://www.space.com/38922-extraterrestrial-bacteria-international-space-station.html?utm_source=sd-newsletter&utm_medium=email&utm_campaign=20171129-sdc



The International Space Station, photographed by an astronaut aboard the space shuttle Endeavour on Feb. 10, 2010. Credit: NASA/JPL-Caltech/Space Science Institute

Scientists have detected living bacteria "from outer space" in samples collected from the exterior of the International Space Station (ISS) during spacewalks, cosmonaut Anton Shkaplerov told Russia's state-owned TASS news agency.

These spacewalks were conducted by cosmonauts, who collected material from the Russian part of the ISS using cotton swabs, which were sent to Earth for analysis, Shkaplerov said.

"And now it turns out that somehow these swabs reveal bacteria that were absent during the launch of the ISS module," Shkaplerov told TASS. "That is, they have come from outer space and settled along the external surface. They are being studied so far, and it seems that they pose no danger."

In the brief TASS report, Shkaplerov does not elaborate on how the Russian researchers arrived at their extraterrestrial conclusion. As CNET notes, it seems like Earthly contamination would be tough to rule out, given how hardy many microorganisms tend to

be. Some bacteria, and tiny micro-animals known as tardigrades, have demonstrated the ability to survive for extended periods in the harsh conditions of space.

This ad will end in 13 seconds.

And terrestrial organisms may have accidentally made their way to the ISS before, if a controversial 2014 claim by Russian space officials is to be believed. Back then, space station official Vladimir Solovyov announced, also via TASS, that sea plankton and other microorganisms had been spotted in cosmonauts' spacewalk samples.

The sea-plankton claim, and that of Shkaplerov, are based on Russian research, so NASA doesn't have much to say about them. Indeed, a NASA spokesman referred questions about Shkaplerov's space bacteria to Roscosmos, the Russian federal space agency.

Shkaplerov has served two stints aboard the ISS and is set to launch on his third mission next month.

You can read the full TASS story here: <http://tass.com/science/977591>

<S><C><I><E><N><C><E>

NASA AGREES TO FLY ON USED SPACEX FALCON

Nov 29, 2017 Irene Klotz | Aerospace Daily & Defense Report

http://aviationweek.com/space/nasa-agrees-fly-used-spacex-falcon?NL=AW-05&Issue=AW-05-20171130-AW-05-994&sfvc4enews=42&cl=article_4&utm_rid=CPEN1000001477803&utm_campaign=12808&utm_medium=email&elq2=2ac539914cec45998827f1c48da20a8b



Falcon 9: SpaceX

CAPE CANAVERAL—NASA has cleared SpaceX to use a previously flown Falcon 9 first stage for its upcoming cargo run to the International Space Station, a key step in the company's push to make reusable rockets a new status quo.

The Commercial Resupply Services-13 mission is slated for launch no earlier than Dec. 8 from Cape Canaveral, four days later than previously targeted due to ongoing work to return SpaceX's Launch Complex 40 (LC40) into service. The pad was heavily damaged on Sept. 1, 2016, when a Falcon 9 rocket exploded during fueling for what was expected to be a routine preflight static test fire. The CRS-13 mission will be the first use of the pad since the accident.

NASA's agreement to use a previously flown Falcon 9 first stage for CRS-13 does not mean SpaceX has clearance to fly used boosters on future NASA missions, Associate Administrator Bill Gerstenmaier told members of the NASA Advisory Council's Human Exploration and Operations Committee on Nov. 29.

"SpaceX has developed a set of requirements they've placed on their reused booster," Gerstenmaier said. "We went through a detailed review ... and we've assured ourselves that the processes that they've followed to use a booster again are appropriate to the application.

"We get the equivalent reliability of the reused booster than we would have with a new booster," he said, adding that NASA would consider using future previously flown boosters on a case-by-case basis.

CRS-13 also will use a previously flown Dragon capsule to fly to and from the station. NASA agreed to a Dragon reflight for the first time for the CRS-11 mission in June.

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STUDY: SATELLITES SHOW NO ACCELERATION IN GLOBAL WARMING FOR 23 YEARS

MICHAEL BASTASCH, 2:24 PM 11/29/2017

<http://dailycaller.com/2017/11/29/study-satellites-show-no-acceleration-in-global-warming-for-23-years/>

Global warming has not accelerated temperature rise in the bulk atmosphere in more than two decades, according to a new study funded by the Department of Energy.

University of Alabama-Huntsville climate scientists John Christy and Richard McNider found that by removing the climate effects of volcanic eruptions early on in the satellite temperature record it showed virtually no change in the rate of warming since the early 1990s.

"We indicated 23 years ago — in our 1994 Nature article — that climate models had the atmosphere's sensitivity to CO2 much too high," Christy said in a statement. "This recent paper bolsters that conclusion."

Christy and McNider found the rate of warming has been 0.096 degrees Celsius per decade after “the removal of volcanic cooling in the early part of the record,” which “is essentially the same value we determined in 1994 ... using only 15 years of data.”

The study is sure to be contentious. Christy has argued for years that climate models exaggerate global warming in the bulk atmosphere, which satellites have monitored since the late 1970s.

Christy, a noted skeptic of catastrophic man-made global warming, said his results reinforce his claim that climate models predict too much warming in the troposphere, the lowest five miles of the atmosphere. Models are too sensitive to increases in carbon dioxide concentrations in the atmosphere, he said.

“From our observations we calculated that value as 1.1 C (almost 2° Fahrenheit), while climate models estimate that value as 2.3 C (about 4.1° F),” Christy said.

While many scientists have acknowledged the mismatch between model predictions and actual temperature observations, few have really challenged the validity of the models themselves.

A recent study led by Lawrence Livermore National Laboratory climate scientist Ben Santer found that while the models ran hot, the “overestimation” was “partly due to systematic deficiencies in some of the post-2000 external forcings used in the model simulations.”

Christy’s removal of volcanic-driven cooling from satellite temperature data could also draw scrutiny. The study also removed El Nino and La Nina cycles, which are particularly pronounced in satellite records, but those cycles largely canceled each other out, the co-authors said.

Christy said his works shows the “climate models need to be retooled to better reflect conditions in the actual climate, while policies based on previous climate model output and predictions might need to be reconsidered.”

Two major volcanoes — El Chichon in 1982 and Pinatubo in 1991 — caused global average temperature to dip as a result of volcanic ash, soot and debris reflecting sunlight back into space.

Those eruptions meant there was more subsequent warming in the following years, making the rate of warming appear to be rising as a result of man-made emissions or other factors, Christy said.

“Those eruptions happened relatively early in our study period, which pushed down temperatures in the first part of the dataset, which caused the overall record to show an exaggerated warming trend,” Christy said.

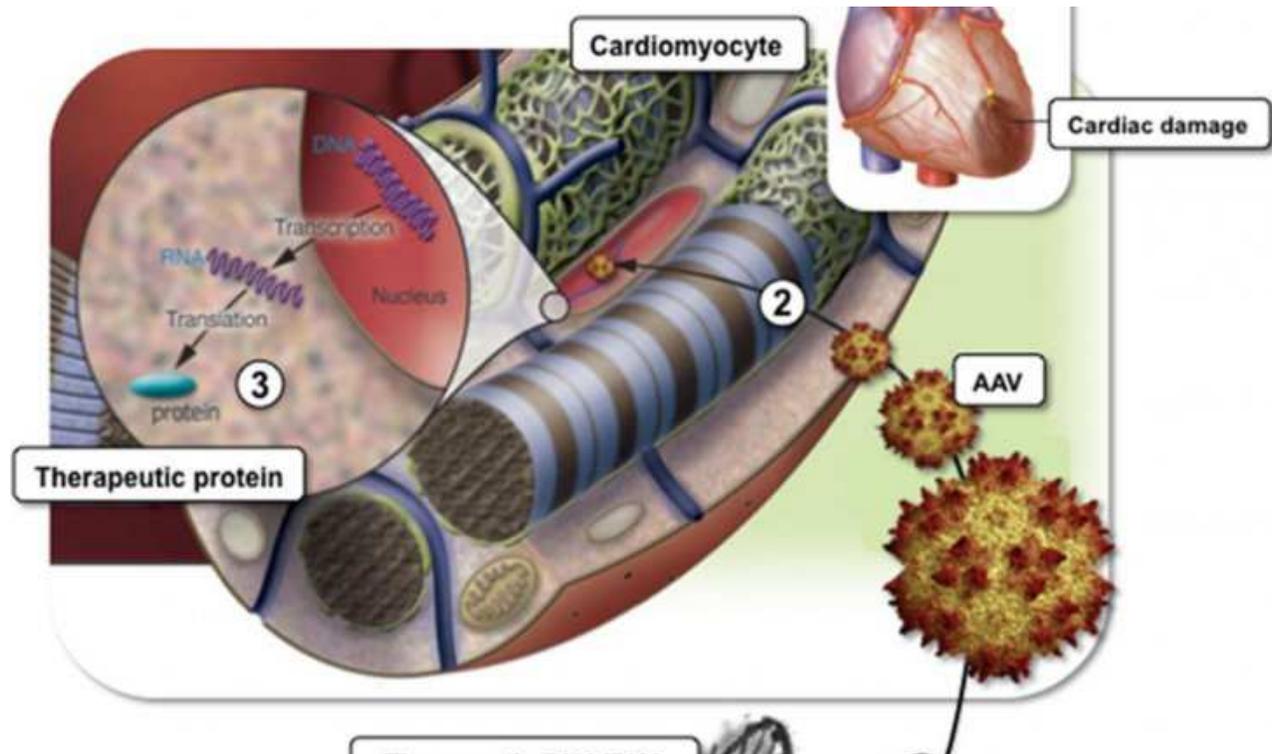
“While volcanic eruptions are natural events, it was the timing of these that had such a noticeable effect on the trend. If the same eruptions had happened near the more recent end of the dataset, they could have pushed the overall trend into negative numbers, or a long-term cooling,” Christy said.

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GENE THERAPY TO FIX FAILING HEARTS WORKS IN PIGS AND WILL BE TRIED IN HUMANS IN 2018

brian wang | November 27, 2017 |

<https://www.nextbigfuture.com/2017/11/gene-therapy-to-fix-failing-hearts-works-in-pigs-and-will-be-tried-in-humans-in-2018.html>



Scientists have been able to reverse heart failure in pigs by delivering a new gene to the heart that makes it better at pumping blood and supplying the body with oxygen. The goal is to reverse heart failure with a single injection. This time around, Dr. Hajjar said, he and his team have reengineered the viral vector to make it more effective at delivering the new gene to the heart.

The gene therapy was safe and reduced heart failure by 25 percent in the left ventricle by 20 percent in the left atrium. Hajjar says most patients with heart failure have problems in the left ventricle. The treatment also reduced the size of the animals' enlarged hearts by 10 percent.

The pig heart and other organs are about the same size of human organs. The researchers plan to begin enrolling people with advanced congestive heart failure in a clinical trial next year.

About 5.7 million adults in the U.S. have heart failure, and about half of those who are diagnosed die within five years, according to the Centers for Disease Control and Prevention. Heart failure currently can't be cured; it can only be managed with medications and behavioral changes like quitting smoking, watching your diet, and getting regular physical activity.

A previous human clinical trial failed because it wasn't getting to enough heart muscle cells. Now the team at Mount Sinai have reengineered the viral vector to make it more effective at delivering the new gene to the heart.

Journal of the American College of Cardiology – Protein Phosphatase Inhibitor-1 Gene Therapy in a Swine Model of Nonischemic Heart Failure.

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ANCIENT ROMAN CITY LOST FOR CENTURIES BELOW THE SEA FOUND PERFECTLY INTACT

THESE incredible images show an ancient Roman town sunken below the surface of the sea.

By Charlotte Ikonen / Published 4th December 2017

<https://www.dailystar.co.uk/news/latest-news/664585/underwater-city-Roman-Baiae-Naples-Italy-diving-pictures-discovery-Julius-Caesar-Pomey>

Baiae was an ancient resort on the west coast of Italy that largely disappeared beneath the waves 1,700 years ago. The town in Naples was the resort of choice for the Roman super-rich and became notorious for its sprawling mansions.

It was a place synonymous with luxury and wickedness, historians claim – a wine-soaked party town. But as the centuries passed, much of it was lost to the sea as volcanic activity caused the coastline to retreat 400m inland.



DISCOVERY: Divers have now been allowed to explore the ancient resort Baiae

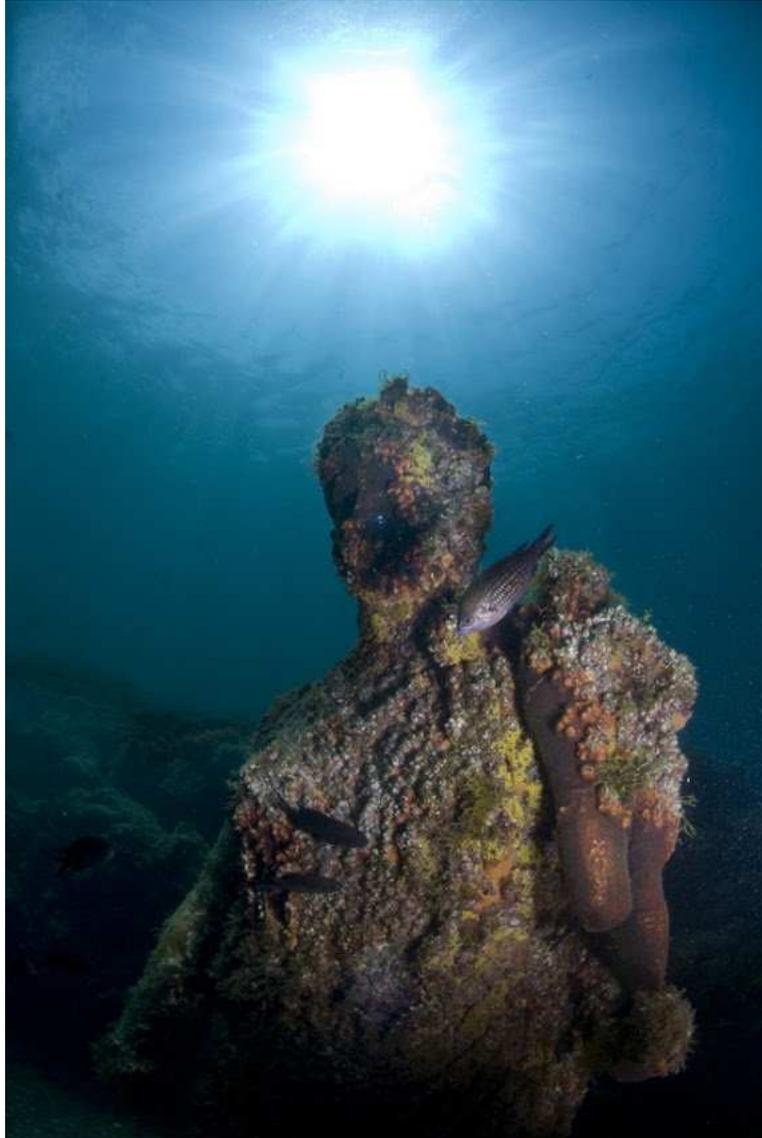


LUXURY: The town was the resort of choice for the super-rich



HISTORY: The town disappeared 1,700 years ago

Now the site in modern-day Italy has been rediscovered and opened to divers – who found many treasures still intact.



Photographer Antonio Busiello, who lives in Naples, photographed the site and found that roads, walls, mosaics and even statues had survived the ravages of time.

The 45-year-old said: “The beautiful mosaics, and the villas and temples that have reemerged or are still underwater show the opulence and wealth of this area.

“It was considered one of the most important Roman cities for centuries.

“Pliny the Younger used to live here and from here, across the gulf, he witnessed and described the 79 AD eruption of Mount Vesuvius that destroyed Pompeii and Herculaneum.”

He added: “Diving here is like a dive into history, looking at ancient Roman ruins underwater is something hard to describe, a beautiful experience indeed.”

The subaquatic wonder was first discovered in 1940 in an aerial photograph, and over the years more and more artefacts have been discovered at the dive site.

REMAINS: The subaquatic wonder was first found in 1940

Photographs of the site are reminiscent of scenes from blockbuster film, *Waterworld*, in which Kevin Costner's merman explores an abandoned city beneath the waves, or the mythical Greek city of Atlantis.

In its heyday, Baiae was frequented by famous Romans including Julius Caesar, Nero, Pompey the Great, Marius, and Hadrian – who died there.



DIVE: Over the years more artefacts have been discovered

The December 6th, 2017 Edition of THE REVENGE HUMPH DAY!

Page 30 of 46

Among the sights now visible are the Pisoni and Protiro villas, where intricate white mosaics as well as residential rooms can be seen.



PRESERVED: Statues remain in place underwater



STUNNING: Two divers visit the underwater city

There's also the Nymphaeum of Punta Epitaffio, where divers swim among the statues of Ulysses and his helmsman Baius, for whom Baiae was named.

Last month, boffins discovered the ruins of a 3,000-year old castle underwater.



REVEALED: Divers swim among the statues of Ulysses and his helmsman Baius

Archaeologists who have been searching Lake Van – the second largest lake in Turkey – for decades have discovered what they believe is a lost city.

The castle is thought to be an Iron Age relic of the Urartu civilisation – also called the Kingdom of Van – which lived in the area from the 6th to the 9th century BC.

The remarkable discovery was made by archaeologists from the Van Yüzüncü Y?l University and a team of divers.

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NASA TESTING ULTRA-SIMPLE SMALL NUCLEAR REACTORS THAT WILL POWER MISSIONS TO MARS AND BEYOND

[brian wang](#) | December 4, 2017

<https://www.nextbigfuture.com/2017/12/nasa-testing-ultra-simple-small-nuclear-reactors-that-will-power-missions-to-mars-and-beyond.html#more-139912>



RBP

[NASA is pushing forward on testing a key energy source that could literally “empower” human crews on the Mars surface, energizing habitats and running on-the-spot processing equipment to transform Red Planet resources into oxygen, water and fuel.](#)

- * A small pill size rod of Boron Carbide will turn on the reactor
- * Beryllium oxide reflectors will enhance the nuclear reaction so less uranium is needed
- * a 6 inch uranium core is used

Well established physics are used for a design targeted at needing almost no control system to safely generate up to 10 kilowatts of power for many years.





The agency's Space Technology Mission Directorate (STMD) has provided multi-year funding to the Kilopower project. Testing is due to start in November and go through early next year, with NASA partnering with the Department of Energy's (DOE) Nevada National Security Site to appraise fission power technologies.

“The reactor technology we are testing could be applicable to multiple NASA missions, and we ultimately hope that this is the first step for fission reactors to create a new paradigm of truly ambitious and inspiring space exploration,” adds David Poston, Los Alamos’ chief reactor designer. “Simplicity is essential to any first-of-a-kind engineering project – not necessarily the simplest design, but finding the simplest path through design, development, fabrication, safety and testing.”

SUN-INDEPENDENT POWER

The pioneering Kilopower reactor represents a small and simple approach for long-duration, sun-independent electric power for space or extraterrestrial surfaces. Offering prolonged life and reliability, such technology could produce from one to 10 kilowatts of electrical power, continuously for 10 years or more, Mason points out. (The average U.S. household runs on about five kilowatts of power). The prototype power system uses a solid, cast uranium-235 reactor core, about the size of a paper towel roll. Reactor heat is transferred via passive sodium heat pipes, with that heat then converted to electricity by high-efficiency Stirling engines. A Stirling engine uses heat to create pressure forces that move a piston, which is coupled to an alternator to produce electricity, similar in some respects to an automobile engine.

Having a space-rated fission power unit for Mars explorers would be a game changer, Mason adds. No worries about meeting power demands during the night or long, sunlight-reducing dust storms. “It solves those issues and provides a constant supply of power regardless of where you are located on Mars. Fission power could expand the possible landing sites on Mars to include the high northern latitudes, where ice may be present,” he points out.

POWER OPTIONS

NASA has flown a number of missions powered by radioisotope thermoelectric generators (RTGs) over the past five decades, such as onboard the two Viking Mars landers, the Curiosity rover now at work on the Red Planet, the Apollo expeditions to the moon, the two Voyager spacecraft, and the New Horizons probe to Pluto and beyond, as well as the just-concluded Cassini mission at Saturn. RTGs produce electricity passively with no moving parts, using the heat from the natural decay of their radioisotope heat source.

“What we are striving to do is give space missions an option beyond RTGs, which generally provide a couple hundred watts or so,” Mason says. “The big difference between all the great things we’ve done on Mars, and what we would need to do for a human mission to that planet, is power. This new technology could provide kilowatts and can eventually be evolved to provide hundreds of kilowatts, or even megawatts of power. We call it the Kilopower project because it gives us a near-term option to provide kilowatts for missions that previously were constrained to use less. But first things first, and our test program is the way to get started.”

The novel energy-providing technology also makes possible a modular option for human exploration of Mars. Small enough in size, multiple units could be delivered on a single Mars lander and operated independently for human surface missions.

BREADBOARD TEST

In step-wise fashion, with safety as a guiding principle, Mason says the Kilopower hardware will undergo a full-power test lasting some 28 hours.

Moving the power system from ground-testing into a space system is an achievable objective, says Don Palac, Kilopower project manager.

Lead Researcher Marc Gibson adds, "The upcoming Nevada testing will answer a lot of technical questions to prove out the feasibility of this technology, with the goal of moving it to a Technology Readiness Level of 5. It's a breadboard test in a vacuum environment, operating the equipment at the relevant conditions."

Looking into the future, Mason suggests that the technology would be ideal for furthering lunar exploration objectives too. "The technology doesn't care. Moon and or Mars, this power system is agnostic to those environments."

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From: "Chris Cowan" cowanc1028@earthlink.net

ARCHAEOLOGISTS DISCOVER WHERE JULIUS CAESAR LANDED IN BRITAIN

A large camp along Pegwell Bay is the likely spot where 20,000 Romans landed in 54 B.C.
By Jason Daley, SMITHSONIAN.COM, NOVEMBER 30, 2017

<https://www.smithsonianmag.com/smart-news/archaeologists-discover-where-julius-caesar-landed-britain-180967359/#x0FrxcFAVqfTF6rO.03>



Some of the Roman defenses at Pegwell Bay (University of Leicester) image: [https://thumbs-prod.si-cdn.com/IhLhYzi7uNrrDyoP9UDd1GM3OZA=/800x600/filters:no_upscale\(\)/https://public-media.smithsonianmag.com/filer/c8/d7/c8d7f89c-450e-4214-8c2f-7fb705380d30/defenses.jpeg](https://thumbs-prod.si-cdn.com/IhLhYzi7uNrrDyoP9UDd1GM3OZA=/800x600/filters:no_upscale()/https://public-media.smithsonianmag.com/filer/c8/d7/c8d7f89c-450e-4214-8c2f-7fb705380d30/defenses.jpeg)

Between 58 and 50 B.C., Julius Caesar led his Roman legions through present-day France, Belgium and German lands west of the Rhine in a campaign called the Gallic War. It was a huge success, with a victorious Caesar gaining the wealth, status and

expanded borders that came with conquering a new province. But the thing that cinched his legend as a military commander was crossing the English Channel and landing legions in Britain, at the time considered by the Romans to be past the edge of the "known" world. He invaded Britain twice, in 55 B.C., and once again the following year. Now, reports Ian Sample at The Guardian, University of Leicester archaeologists believe they have discovered the landing site of the 54 B.C. expedition.

Sample reports that archaeologists discovered the remains of a very large Roman encampment near Ebbsfleet, a village on the Isle of Thanet in the southeastern county of Kent. The camp is about half a mile inland, but it's believed in Caesar's day it would have been a wide, flat site nearby the beach. The 50 acre area would have been large enough to accommodate the 800 ships and five legions consisting of an estimated 20,000 soldiers at minimum and 2,000 horses who landed on the island in 54 B.C.

According to a press release, researchers uncovered a defensive ditch similar to those built by Caesar's army in France, and pottery fragments in the ditch dated the ditch to the first century B.C., the time of Caesar's invasions. The presence of iron weapons, including a Roman javelin and bones showing signs of battle wounds, also confirm that this was a very early Roman encampment.

"This is the first archaeological evidence we have for Julius Caesar's invasion of Britain," Andrew Fitzpatrick, a researcher at the University of Leicester, tells Sample. "It's a large defended site that dates to the first century B.C."

The site was never considered by archaeologists as a potential site for Caesar's landing, mainly because Iron Age Thanet was an island; a body of water called the Wantsum Channel separated it from the mainland at the time of the invasion. However, Fitzpatrick points out that the channel was not much of a barrier for Stone Age Britons, so it was likely not much of a barrier for the sophisticated engineers of the Roman legions either. The geography of the area, including the wide flat beach and high ground with chalk cliffs also align with Caesar's description of the site in his first-hand account in his book, *The Gallic War*.

According to a timeline reconstructed by the researchers, it is believed Caesar initially led an army consisting of almost 10,000 men across the sea and landed in Kent on August 22-23, 55 B.C. Caesar stayed about a month, long enough to fight a battle and receive the surrender of a local tribe. It wasn't really about conquest; Caesar did not leave an army of occupation behind. But the credit he received in Rome was enormous—entering Britain was viewed by his contemporaries akin to the discovery of the New World some 1500 years later.

Caesar returned to Britain in July 54 B.C. after Mandubracius, prince of the Trinobantes in south-eastern Britain, asked for his help in subduing a faction led by Cassivellaunus that had killed his father. Caesar agreed, a decision scholars believe was motivated more to improve his prestige than to help Mandubracius.

The fleet left the French coast from somewhere between Boulogne and Calais on July 4, 54 B.C. About midnight on the night of the crossing, the wind failed and the fleet was carried with the tide toward the east. At daylight, the ships sighted land to the west and began rowing, likely landing at Pegwell Bay around midday on July 5.

A group of Britons were waiting for the fleet, but when they saw the size of the force, they retreated. The Romans landed on the beach and left the equivalent of a legion behind to build a defensive fort. He took the rest of his men on a march into Kent. After overrunning an army of Britons, Caesar received word that a bad storm had damaged his ships at anchor. He marched back to the shore and ordered the ships be moved ashore for repairs. Caesar soon returned inland, leading his troops to fight Cassivellaunus, who was now in charge of a federation of all British tribes. After Caesar's legions defeated the

federation, he oversaw a peace treaty with the Britons. From there, Caesar and his legions sailed back to France on September 6. He did not leave a Roman garrison behind.

Even though Rome would not officially conquer Britain until Emperor Claudius invasion that began in 43 A.D., the researchers say Caesar's visits laid the ground work for the later invasion by setting up communication and Roman "client kingdoms" in Britain. When Rome eventually took over, they write, the conquest was swift likely because many local rulers were already allied with the empire, perhaps for a generation or more.

Javelin tip found at the site (University of Leicester)

image: <https://public-media.smithsonianmag.com/filer/2b/75/2b7569f0-95af-4dae-8c71-c5d3586a5b28/spear.jpeg>



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FAULTS IN TEXAS, LEADS TO EARTHQUAKES

For 300 million years faults showed no activity, and then wastewater injections from oil and gas wells came along

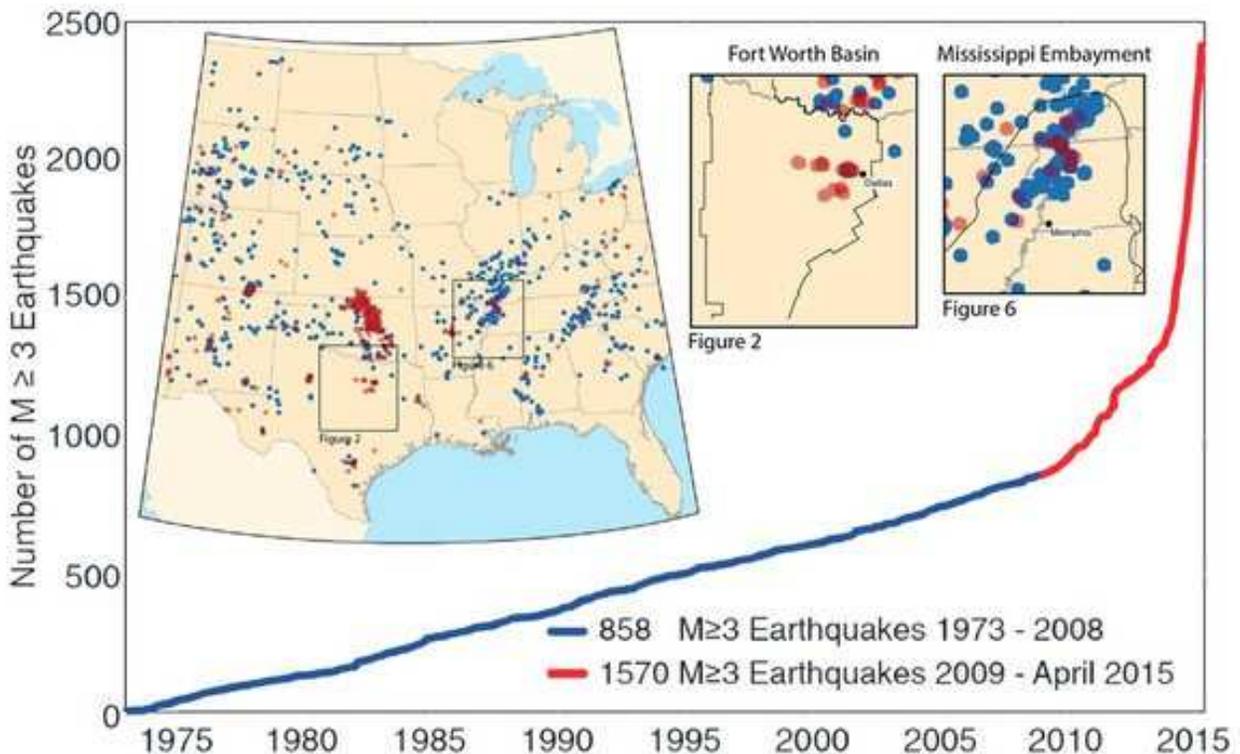
By Anna Kuchment on November 24, 2017

https://www.scientificamerican.com/article/drilling-reawakens-sleeping-faults-in-texas-leads-to-earthquakes/?WT.mc_id=send-to-friend

Since 2008, Texas, Oklahoma, Kansas and a handful of other states have experienced unprecedented surges of earthquakes. Oklahoma's rate increased from one or two per year to more than 800. Texas has seen a sixfold spike. Most have been small, but Oklahoma has seen several damaging quakes stronger than magnitude 5. While most scientists agree that the surge has been triggered by the injection of wastewater from oil and gas production into deep wells, some have suggested these quakes are natural, arising from faults in the crust that move on their own every so often. Now researchers have traced 450 million years of fault history in the Dallas-Fort Worth area and learned these faults almost never move. "There hasn't been activity along these faults for 300 million years," says Beatrice Magnani, a seismologist at Southern Methodist University in Dallas and lead author of a paper describing the research, published today in Science Advances. "Geologically, we usually define these faults as dead."

Magnani and her colleagues argue that these faults would not have produced the recent earthquakes if not for wastewater injection. Pressure from these injections propagates underground and can disturb weak faults. The work is another piece of evidence

implicating drilling in the quakes, yet the Texas government has not officially accepted the link to one of its most lucrative industries.



Quakes have been common in Texas and Mississippi since 2008. But Texas jolts are on faults that had been silent for millions of years, unlike Mississippi, indicating recent human activity set them loose. Credit: Magnani et al., *Sci. Adv.* 2017;3: e1701593

Magnani and her colleagues studied the Texas faults using images of the subsurface similar to ultrasound scans. Known as seismic reflection data, the images are created by equipment that generates sound waves and records the speeds at which the waves bounce off faults and different rock layers deep within the ground. Faults that have produced earthquakes look like vertical cracks in a brick wall, where one side of the wall has sunk down a few inches so the rows of bricks no longer line up. Scientists know the age of each rock layer—each row of bricks—based on previous studies that have used a variety of dating techniques.

The seismologists compared images of faults in north Texas with images of other faults that have been active throughout geologic history. These active cracks are in the New Madrid Seismic Zone that encompasses parts of Missouri, Arkansas, Kentucky and Tennessee along the Mississippi River. New Madrid-area faults produced earthquakes as large as 7 or 8-magnitude in the early 1800s and have produced smaller quakes since then.

When Magnani and her colleagues examined the New Madrid faults, they saw evidence of earthquakes—the horizontal rows of bricks were offset at the fault line—from the distant past into the present. But images of the north Texas faults showed zero disturbances in the last 300 million years.

The scientists then took another step to refine their results. Their seismic reflection data cannot pick up vertical offsets smaller than 15 meters, or about 49 feet. Yet the recent north Texas earthquakes were so small they caused offsets of just a fraction of a centimeter. The seismologists wanted to be sure these faults had not been producing this kind of tiny earthquake all along. They were able to do this because the offsets representing rock moved by quakes are cumulative: each new quake adds more distance. The researchers took the 300-million-year time span and calculated the maximum number of small to medium sized quakes it would take to produce a cumulative offset just shy of 15 meters.

That fell into the range of 3,800 to 6,000 earthquakes – or, roughly, an earthquake every 50,000 to 79,000 years. Even if temblors occurred that frequently, the probability of a natural earthquake sequence occurring in north Texas in the previous 10 years was only one in 6,000 and the probability of two sequences was one in 60 million. Since north Texas has had five earthquake sequences during that 10-year span, the scientists write that it is “exceedingly unlikely” that the recent quakes were natural.

Mark Zoback, an expert on induced seismicity at Stanford University, says he agrees with the paper’s conclusions that the recent Texas quakes are likely tied to oil and gas production. But he would not describe the faults as completely dormant. A fault that produces earthquakes every 60,000 years is still an active fault, just one that ruptures very rarely, Zoback says. He also notes that the energy released in an induced earthquake comes from the earth – the result of tectonic stresses building up at the fault over geologic time – and not from the wastewater injections themselves. “The injections can’t put energy into the ground,” said Zoback. “The energy has to be there already and the injection just triggers its release.”

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ODD “BLOBS” BENEATH EARTH’S SURFACE FINALLY EXPLAINED

These mysterious regions slow down seismic waves from earthquakes and may give rise to volcanic hotspots

By Dan Robitzski, LiveScience on November 29, 2017

https://www.scientificamerican.com/article/odd-ldquo-blobs-rdquo-beneath-earth-rsquo-s-surface-finally-explained/?WT.mc_id=send-to-friend

The boundary between the Earth’s outermost layer, the crust, and the underlying mantle is speckled with mysterious, blob-like regions. Scientists have long known about these odd pockets, which are called ultralow-velocity zones. They slow down the seismic waves caused by earthquakes and may be the culprit for deep mantle plumes, which can lead to volcanic hotspots like those that created Yellowstone National Park or the Hawai’ian Islands.

Researchers have postulated a number of explanations for what these ultralow-velocity zones are made of and how they’re formed. But none of those ideas quite fit the data, especially given how differently some of the zones behave from one another.

Now, a team of scientists is proposing a new model that includes not only a feasible composition but also a plausible origin story for ultralow-velocity zones. Even so, the scientists behind the study concede that there could be different or even individual

variations for other types of these mysterious, subterranean regions beyond their new findings



Ultralow-Velocity Zones can give rise to volcanic hotspots, like Wyoming's Yellowstone National Park. Credit: Gerard Ruiters Getty Images

The core-mantle boundary in which ultralow-velocity zones reside is incredibly hot and pressurized—enough so that when the tectonic plates push beneath the crust via subduction, they are melted down and recycled into the mantle. Pressure levels reach 900,000 times what we experience at sea level and temperatures can exceed 3,000 degrees Fahrenheit (1,649 degrees Celsius).

When the team of geologists from Stanford University re-created these conditions in a lab to try to duplicate an ultralow-velocity zone, they found that iron—one of the more abundant minerals on Earth and a likely candidate material that might explain the zones—reacted with the seawater to create a form of iron peroxide that was saturated with hydrogen atoms, according to the new research.

This additional hydrogen makes the iron peroxide stable under extreme conditions and denser than surrounding minerals, giving rise to the distinct zones that behave differently than the rest of the mantle. The scientists then conducted a theoretical analysis based on the current body of scientific knowledge about Earth's mantle, ultralow-velocity zones and their best assumptions, finding that hydrogenated iron peroxide would interfere with earthquake shockwaves as expected. Without the added hydrogen, that wouldn't be the case.

"The low sound speeds we calculated for our compound match very well what is observed seismically in ULVZs [ultralow-velocity zones]," said Jin Liu, a geologist who worked on the research.

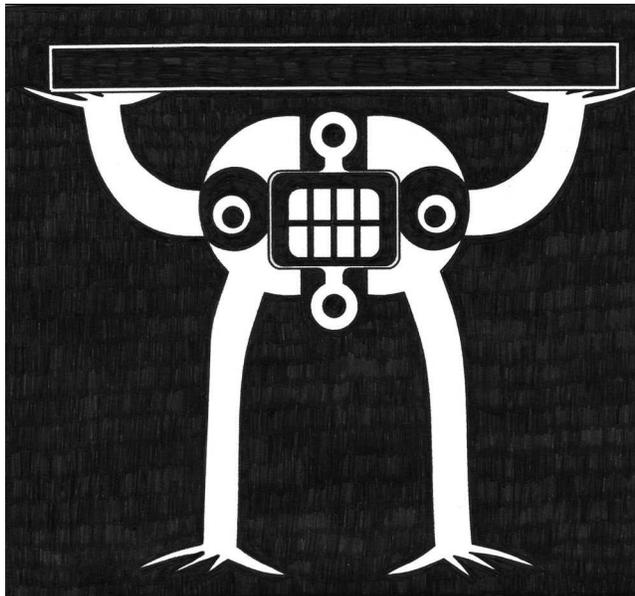
The researchers conducted their experiment on a piece of iron foil submerged in water that was then pressurized and heated with lasers, but they argue that natural conditions beneath Earth's crust can also give rise to the iron peroxide that they think makes up ultralow-velocity zones.

Seawater is regularly forced beneath Earth's crust, along with subducting tectonic plates, where it interacts with an abundance of iron. The scientists calculated that about 2.2 trillion pounds (1 trillion kilograms) of water are pushed into the mantle every year. Most of that returns to the surface via volcanic activity, but about 640 billion pounds (300 billion kg) of water continue into the deeper mantle, where it can react with iron. Assuming this process has been going on for all 4.5 billion years of Earth's existence, the researchers say that all known ultralow-velocity zones could have been formed in this manner, even if just 100 billion pounds (45 billion kg) of water—one-tenth of all the oceanic water on Earth—reacted with iron each year.

This newly unearthed mechanism, detailed Nov. 22 in the journal Nature, could give rise to a better understanding of how the planet works deep beneath the surface.

"ULVZs could hint at much greater cycling between the core, mantle and surface of Earth than we thought," said Wendy Mao, the Stanford geologist who led the research team.

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ABSOLUTELY & TOTALLY POLITICALLY INCORRECT & AS FAR TO THE RIGHT AS YOU CAN GO!

From: "Tim Bolgeo" tbolgeo@epbfi.com

DERSHOWITZ: 'YOU CANNOT CHARGE A PRESIDENT WITH OBSTRUCTION OF JUSTICE FOR EXERCISING HIS CONSTITUTIONAL POWER'

by JEFF POOR4 Dec 2017

<http://www.breitbart.com/video/2017/12/04/dershowitz-cannot-charge-president-obstruction-justice-exercising-constitutional-power/>

Monday on Fox News Channel's "Fox & Friends," Harvard law professor Alan Dershowitz batted down the merit of obstruction of justice charges aimed at President Donald Trump for what he said was exercising his constitutional power and authority regarding the firing of then-FBI Director James Comey and instructing the Department of Justice what to and not to investigate.

“If Congress were to ever charge him with obstruction of justice for exercising his constitutional authority under Article 2, we’d have a constitutional crisis,” he explained. “You cannot charge a president with obstruction of justice for exercising his constitutional power to fire Comey and his constitutional authority to tell the Justice Department who to investigate, who not to investigate. That’s what Thomas Jefferson did. That’s what Lincoln did. That’s what Roosevelt did. We have precedents that clearly establish that.”

“When George Bush, the first, pardoned Caspar Weinberger in order to end the investigation that would have led to him,” Dershowitz continued. “Nobody suggested obstruction of justice. For obstruction by the president, you need clearly illegal acts. With Nixon — hush money paid, telling people to lie, destroying evidence. Even with Clinton, they said that he tried to influence potential witnesses not to tell the truth. But there’s never been a case in history where a president has been charged with obstruction of justice for merely exercising his constitutional authority. That would cause a constitutional crisis in the United States.”

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From: "Jim Woosley" jimwoosley@aol.com



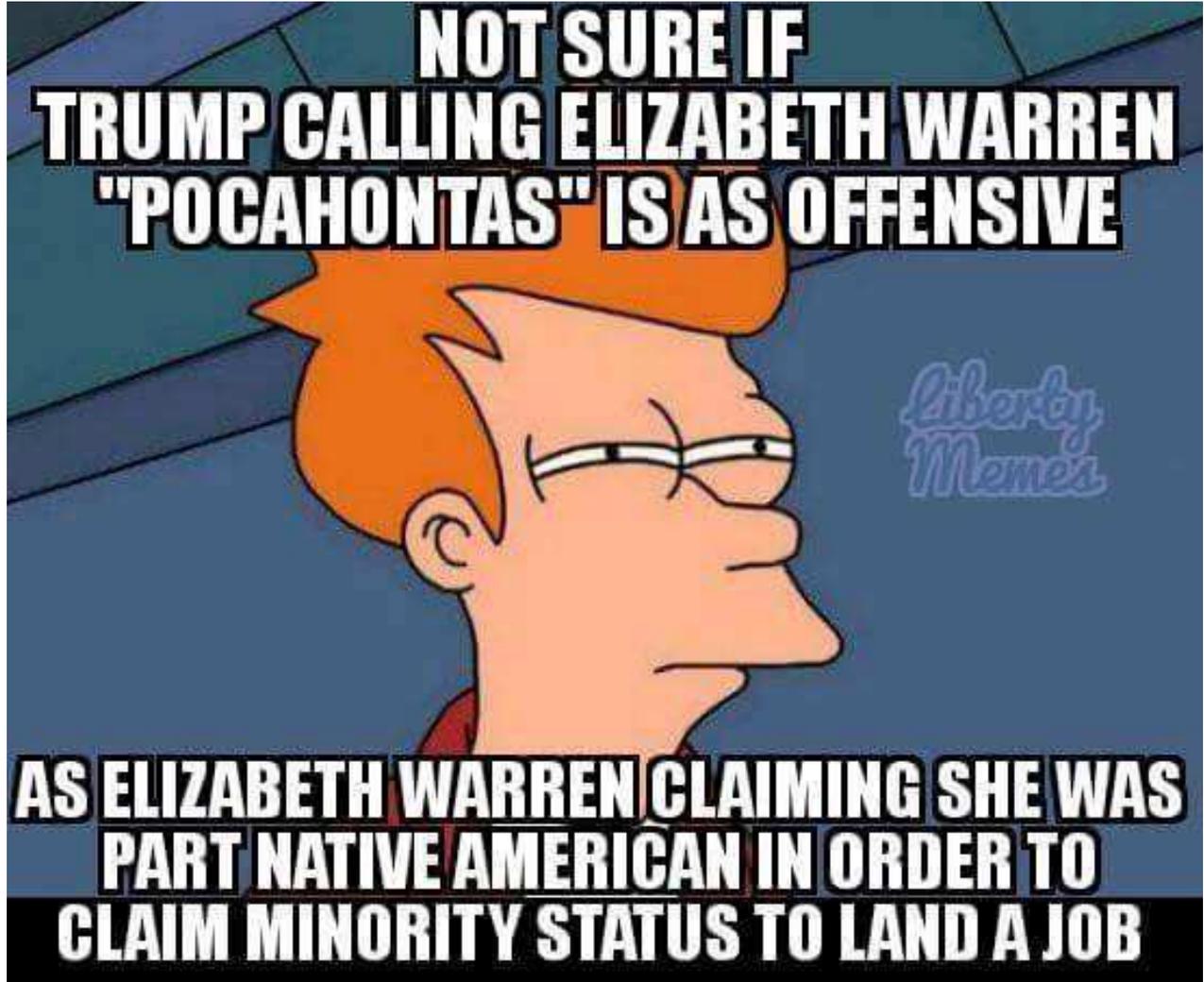
**IF MEXICO REQUIRES A
VOTER ID, WHY DO
DEMOCRATS SCREAM
RACISM OVER VOTER ID?**

[facebook.com/OverpassesForAmerica](https://www.facebook.com/OverpassesForAmerica)

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ABSOLUTELY & TOTALLY POLITICALLY INCORRECT & AS FAR TO THE CENTER AS YOU CAN GO!

From: "Tim Bolgeo" tbolgeo@epbf.com

SCOTUS MAKES HEROIC STAND FOR SOUTHERN HISTORY, DEFENDS FLAG

Supreme Court Makes Stand for States' Rights

BY KIM SMITH, NOVEMBER 29, 2017 AT 12:31PM

https://conservativetribune.com/scotus-heroic-southern-history/?utm_source=Email&utm_medium=newsletter&utm_campaign=dailypm&utm_content=conservative-tribune

In a bold stand for states' rights, the United States Supreme Court this week rejected a case that challenged the use of a Confederate symbol on the Mississippi state flag.

Lawyer Carlos Moore, who is black, said the symbol on the Mississippi flag was "an official endorsement of white supremacy" and sought to have the flag declared unconstitutional, The Associated Press reported.

The Mississippi state flag, which has been in use since 1894, features the Confederate battle flag in its upper left corner.

Moore's lawsuit argued that the flag, which hangs in state buildings, courts and schools, was an oppressive symbol.

"The message in Mississippi's flag has always been one of racial hostility and insult and it is pervasive and unavoidable by both children and adults," Moore's appeal read, according to the AP.

"The state's continued expression of its message of racial disparagement sends a message to African-American citizens of Mississippi that they are second class citizens," it said.

Moore filed his lawsuit in February 2016, but a lower court refused to hear the suit because Moore did not have standing to sue, the AP reported.

ABC News reported that attorneys for Mississippi argued that a lawsuit must show an "allegation of discriminatory treatment," and Moore's lawsuit did not do that.

Republican Gov. Phil Bryant has called Moore's lawsuit "frivolous," according to ABC. Bryant maintains that if the flag's design is to be changed, it should be done by a statewide vote.

In 2001, Mississippi residents voted to keep the flag. In 2015, Bryant declared that he would not call the state's legislature into special session to debate the removal of the Confederate flag.

The Supreme Court did not issue a comment with its decision. However, under the Supreme Court's rules of procedure, the votes of only four justices are needed to accept a case.

That means not even all the court's liberals — Justices Ruth Bader Ginsburg, Stephen Breyer, Sonya Sotomayor and Elena Kagan — could agree to get involved.

"We always knew it was a long shot," Moore told the AP, adding that he was still hopeful that the flag would one day come down.

With this decision, the high court is leaving the matter up to the state. By limiting its own federal power, the court has taken a stand for not only states' rights, but against the witch hunt against Confederate culture that has taken place in recent years.

Critics might claim that the court's decision somehow endorses the use of a racist symbol on the flag, but they would be wrong.

Such matters should be left up to the states. Some states have already banned Confederate symbols and monuments, and it is within their right to do. In fact, according to ABC, Mississippi is the only remaining state that still boasts the symbol of the Confederacy on its flag.

The court's decision not to hear Moore's suit showed that it recognizes there are limits on federal power.

And that's always good news.

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