Welcome to the March 29th, 2017 Edition of THE REVENGE HUMP DAY!

This has been a bitch of a week round here as I lost two more friends. Mike Townsend passed away on Saturday, March 25th. Mike has been in bad health for the past few years and I know he was living with his sister in Nashville recently. Mike would have been 73 years old on May 16th. Back in the Day, we used to run around and travel together when we were both hale and hardy. We traveled the USA for many a year and I will have fond memories of our trips. Mike's brother, Frank Townsend, contacted me on Sunday to let me know of Mike's passing. I am sorry to say that I do not have very many details of Mike's passing and the arrangements as of this time from Frank. When I do, I'll let you know.

I found out earlier in the week that New Orleans fan Robert Neagle passed away last Thursday after suffering from a heart attack at his work. Robert was only 61 years old and his abrupt passing has shocked everyone in Southern Fandom. I have known Robert for decades and I tell you he was a standup guy.

Fandom as a whole is still reeling from the loss of so many great people in the past few months. First there was Kerry Gilley, Klon Newell, Angela Howell, and now Robert and Mike. As I see my old friends pass so suddenly, it reminds me of how lucky I am to still have family and friends around me. Don't take what you have for granted. Go and give your family and friends a hug and savory what God has given you. I know this thought is sloppy and sentimental, but I can tell you this, it is very important to appreciate what you have.

So on that "important 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

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

PASSING OF A NEW ORLEANS GIANT - Robert Neagle 1955 - March 23, 2017

From Ann Neagle's Facebook Page

Hi, everyone. This is Ann. Robert, my husband, was at work and had a massive heart attack. Despite very hard work by University Hospital staff, he passed away at around 10:30 this morning. I am doing okay. Robert will be cremated, so no funeral services. Any future arrangements will be announced at a later date.

ANN, I AM SORRY TO HEAR OF THE PASSING OF ROBERT. HE WAS A GOOD MAN WHO ALWAYS DID WELL BY ME. I WILL KEEP YOU AND YOUR FAMILY IN MY PRAYERS. ROBERT WILL ALWAYS BE REMEMBERED IN THE BEST WAY BY ALL WHO KNEW HIM. MAY THE PERPETUAL LIGHTS SHINE ON HIM AS HE RESTS IN THE ARMS OF THE LORD. TIM BOLGEO

~~~~~~

RIP Robert Neagle 1955-2017

Posted by: "R Boudreau" hrhzbig, Thu Mar 23, 2017 5:45 am (PDT)
Published in SouthernFandomClassi Digest Number 3389

Fellow Fen,

For those of you not on Facebook and who may not have heard, Robert Neagle DSC 37 chair and 2001 Rebel Award Winner passed away yesterday following a heart attack suffered at work. Robert served as chair of Crescent City Con for its entire 20-year existence from 1985 to 2005, including 1999 when it hosted DeepSouthCon. He was a pillar of our fannish community here on Gulf Coast Con, indispensable in the history of the now defunct VulCon in the 1970s and 1980s and New Orleans Science Fiction and Fantasy Festival in the 1980s and 1990s, CoastCon which just celebrated its 40th Anniversary and heavily influenced CONtraflow which is now going into its 7th year. CONtraflow selected Robert as our first Fan Guest of Honor and was privileged to have him as Toastmaster for CONtraflow II. If you have a minute, please read 2015 Rebel Award Winner Frank Schiavo's post from the CoastCon Facebook page about his friend:

Friends, Family & Fen….It is my sad duty tonight to let you know of the passing of previous Fan Guest of Honor Robert Neagle from a massive heart attack. He was 61 To talk fully about Robert's impact on regional and national Fandom would take far more words than I could ever use here. What I can say is he was well known and respected for his work as volunteer, staff/department head and convention chair at most of the major conventions around the country. Most of the volunteers running/working for conventions in the South [at least] owe more than just a small bit of their staff, programs, directors, success, and even very existence to his work in our community. Never one to stand in the limelight- he none the less became a legend for his hard work and passionate devotion to the success of the fans and fan run conventions. His work as a teacher and mentor throughout the region helped to groom some of the most well-known convention organizers in the South. Very few people become known by their last name alone in our sub-culture, but if you walked into any convention and asked for "Neagle" most of the people doing the real convention work knew who you were talking about.Robert was also a DJ and a musician who could spend hours talking to people about his favorite bands and classic rock. And he was as devoted and knowledgeable about films, television and books as he was about the hard work of running conventions- which was very passionate indeed.

Robert was also one of the most loving and devoted friends anyone could need. He was someone who would fight and argue with his extended family as fiercely as he could be counted on to fight by their side when they needed him. Personally, I am one of the lucky few who was honored to call him my family- and one of the many, many people in Fandom who owe a great deal to his wisdom, insights and advice. He would hate me saying it, but his passing marks the close of an era and is like the end of an epic novel by a now gone author. Everything else will be of its lineage, but nothing will ever be the same. He will be profoundly missed.
As usual, Frank is absolutely correct about Robert's influence. Gulf Coast fandom is what it is largely because of Robert's influence. One thing I would like to add is that it *continues* today because of his influence. I went from being just a person who went to conventions to a person who puts on conventions because of Robert and so many others involved with our fandom will tell you the same. We, in turn, have brought others in our community and so on. To the extent our fandom is alive today as a community of friends and not just consumers of popular culture is to a large part a result of Robert Neagle's influence, even if the youngest fans may never have known him.

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

PASSING OF A NASHVILLE FAN: MIKE TOWNSEND MAY 16, 1945 – MARCH 25, 2017

From: "Frank Townsend" frank_townsend@comcast.net

I don't know if you heard or if this will even reach anyone. My brother, Mike Townsend, passed away Saturday March 25, 2017. He would have been 73 in May. No arrangements have been made as yet, but let me know by reply if you are interested in any details.

I know Mike had a lot of fun with you and other friends he traveled with. Your's was the only email I knew and I know he kept in touch with you when he was healthy.

INDEED, MIKE TRAVELED WITH US FOR MANY YEARS DURING OUR ADVENTURES AND WE HAD A LOT OF FUN. I HAVEN'T SEEN MUCH OF HIM IN THE PAST FEW YEARS BECAUSE OF HIS HEALTH BUT HE WILL BE MISS. MAY THE PERPETUAL LIGHTS SHINE ON HIM AND MAY HE REST IN THE ARMS OF THE LORD. TIM BOLGEO

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

THIS MUSICAL 'DEADPOOL' FAN PARODY OF 'BEAUTY AND THE BEAST' IS INCREDIBLY WELL DONE

From: "Tim Bolgeo" tbolgeo@epbfi.com

One of those things we never, ever thought we would say: "Deadpool 2" is still in production and maybe, just maybe, the producers should change course and make it a musical.

http://digg.com/video/deadpool-musical-gaston-parody

<L>~<I>~<B>~<E>~<R>~<T>~<Y>

VIDEO: I DID NOT LIVE UNTIL THE DAY I SAW THE MAGICIANS SING LES MISÉRABLES

Beth Elderkin, IO9. March 24, 2017Yesterday 2:50pm
http://io9.gizmodo.com/i-did-not-live-until-the-day-i-saw-the-magicians-sing-l-1793572158

Photo Courtesy Syfy

Flash and Supergirl weren't the only ones breaking out their singing pipes this week. The Magicians went full Les Misérables on Fillory's path to war, and we've got the full song and dance right here. In the latest episode, "Lesser Evils," High King Eliot (Hale Appleman) decided to avoid war (mainly because all his soldiers were deserting) by engaging in one-

on-one combat with the rival king. Being Eliot, he was feeling a bit anxious about a duel to the death... so Margo's solution was to, you guessed it, have the entire castle break out in song. Wait, hold on a second.

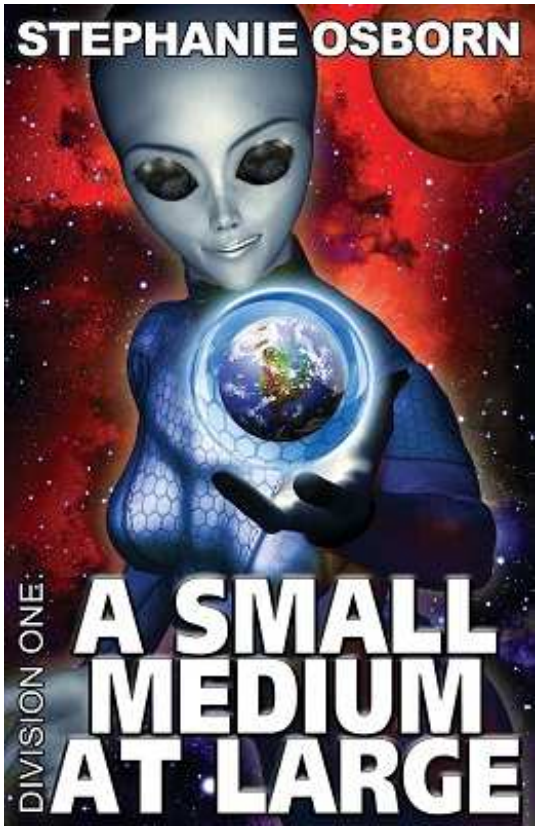
That's right, Margo performed a spell so Eliot and his royal company would inspire the troops with a hearty tune, specifically "One Day More" from Les Misérables. It gave Appleman, a theater veteran, a chance to show off his vocal range, as well as Brittany Curan, who plays Eliot's wife, Fen. In fact, Syfy told us that all the actors sang their own parts, matching what The Flash did earlier this week. And I've got to say, it was a lot of fun to watch, especially given all the doom-and-gloom stuff that was happening elsewhere in the episode. Seriously, can Reynard just super-die already?

While The Magicians' rendition of "One Day More" wasn't as charmingly epic as the Flash and Supergirl's musical crossover (partially thanks to how many more songs The Flash had, including some original numbers), it was still a great moment in the episode. And, given that other shows like Once Upon a Time are working on their own musical crossovers, it's a good time to be a TV actor who also has a hell of a voice. And hey, it looked like everything worked out in the end for Eliot, who made a truce with the king and got a sexy husband out of the deal. Everyone's a winner!

THE VIDEO IS AT THE WEBSITE AND IT DEFINITELY A WINNER! UT

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

Now available for preorder: DIVISION ONE: A SMALL MEDIUM AT LARGE!



Chromosphere Press Announces Book 2 in the Division One Series!

Now Available for Pre-Order: A Small Medium At Large!

27 MARCH 2017
FOR IMMEDIATE RELEASE
HUNTSVILLE, AL

What if Sir Arthur Conan Doyle was right all along, and Harry Houdini really DID do his illusions, not through sleight of hand, but via noncorporeal means? More, what if he could do this because...he wasn't human?

Ari Ho'd'ni, Glu'g'ik son of the Special Steward of the Royal House of Va'du'sha'?, better known to modern humans as an alien Gray from the ninth planet of Zeta Reticuli A, fled his homeworld with the rest of his family during a time of impending global civil war. With them, they brought a unique device which, in its absence, ultimately caused the failure of the uprisings and the collapse of the imperial regime. Consequently Va'du'sha'? has

been at peace for more than a century. What is the F'al, and why has a rebel faction sent a special agent to Earth to retrieve it?

It falls to the premier team in the Pan-Galactic Law Enforcement and Immigration Administration, Division One — the Alpha One team, known to their friends and colleagues as Agents Echo and Omega — to find out...or die trying.

Stephanie Osborn, aka the Interstellar Woman of Mystery, former rocket scientist and author of acclaimed science fiction mysteries, goes back to the urban legend of the unique group of men and women who show up at UFO sightings, alien abductions, etc. and make things...disappear...to craft her vision of the universe we don't know about. Her new series, Division One, chronicles this universe through the eyes of recruit Megan McAllister, aka Omega, and her experienced partner, Echo.

Award-winning author Osborn is a 20+-year space program veteran, with multiple STEM degrees. She has authored, co-authored, or contributed to more than 30 books. She currently writes the critically-acclaimed Displaced Detective Series, described as "Sherlock Holmes meets The X-Files," and the Gentleman Aegis Series, whose first book was a Silver Falchion winner. She "pays it forward" through numerous media including radio, podcasting and public speaking, and working with SIGMA, the science-fiction think tank. Osborn's website is http://www.stephanie-osborn.com.

Division One series Book Two, A Small Medium At Large, will be released in ebook formats on 11 April 2017, and in trade paperback format on 25 April. Book One, Alpha and Omega, was released in January of this year. Additional installments in the ongoing series are anticipated later this year.

ISBN: 978-0-9982888-2-6 (ebook) 978-0-9982888-3-3 (print)

The ebooks are available for preorder at:

Amazon (Kindle/print): https://www.amazon.com/Division-One-Small-Medium-Large-ebook/dp/B06XTQX7GZ/ref=asap_bc?ie=UTF8

Barmes-Noble (print):
http://www.barnesandnoble.com/w/books/1126038430?ean=9780998288833

(Nook format will be available on the release date).

Our mailing address is:

Novelist Stephanie Osborn
P.O. Box 3412
Huntsville, AL 35810

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

Re: the "cyanide bomb" incident in Idaho

From: "Allen Lakner" allen@nehifirearmstraining.com

Hi Uncle Timmy,

I enjoyed this week's excursion from the usual. My grandmother gets a kick out of the jokes; I send them to her by mail, as she isn't on computers.

I did want to comment on the article about the "cyanide bomb" incident in Idaho. The comments by the Bannock County sheriff struck me as somewhat ignorant, if Reuters is to be believed.

Having trapped furbearers as a youngster, I recall reading about the M44 and "getter" traps https://infogalactic.com/info/M44_(cyanide_device). They are a specialty device for predator trapping – typically coyotes and wolves – which use cyanide to kill the animal. Only the feds or authorized persons are allowed to use them, as they are intended to cull destructive predators. Their design is such that they must be pulled up (not pushed down) to trigger, so that they can be somewhat selective; predators might pull with their jaws, while cattle only step on them. Tripping the trap causes a spring to deliver cyanide powder into the predator's mouth.

The other methods of taking destructive predators – hunting and leghold traps – are selective but also labor-intensive. Just wanted to share a little more about the tools available.

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

Re: News Item: "Wireless Phone Charging Picks Up Steam"

From: "Frank Brayman" afranklin3@gmail.com

Now here's an idea I can get behind!

WIRELESS PHONE CHARGING SYSTEM

1. Raise steam in boiler.
2. Connect phone to port (two ports provided.)
3. Open valve to charge phone.

NO FUSS - NO MUSS - NO PESKY CORDS TO FOOL WITH!

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

From: "Mike Waldrip" waldripk@gmail.com

MISSING CIGARETTES

A carpet installer decides to take a cigarette break after completing the installation in the first of several rooms he has to do. Finding his pack of cigarettes missing from his shirt pocket, he begins searching , only to notice a small lump in the recently completed carpet-installation. Not wanting to rip up all the work he had just completed for a lousy pack of cigarettes, he simply walks over and pounds the lump flat. He decides to forget the break and continues to finish the other rooms to be carpeted.

At the end of the day, he is finished with the job, and carries his tools to his truck. Just then two things happen simultaneously; he spies his pack of cigarettes on the dashboard of his truck, and the lady of he house calls our, "Have you seen my parakeet?"

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

A Few Funnies

A lady was selling her pet python on Gumtree. A fellow rang up and asked if it was big.

She said: "It's massive"

He said: "How many feet?"

She said: "None - it's a f**** snake!"**

****

A chap walks into a dentist's surgery and says, "Excuse me, can you help me. I think I'm a moth."

"You don't need a dentist. You need a psychiatrist."

"Yes, I know."

"So, why did you come in here?"

"The light was on."

****

A research group on sea mammals captured a rather odd porpoise on one of its trips.

Its peculiarity was that it had feet. After they had photographed and measured the poor thing, they prepared to set it free.

"Wait a minute," said one of the researchers, "Wouldn't it be a kindness if our ship's doctor here were to amputate the creature's feet so that it would be just like its mates?"

"Not on your life," exclaimed the doctor, "That would be defeeting the porpoise."

****

"Has your son decided what he wants to be when he grows up?" I asked my friend.

"He wants to be a garbage man," he replied.

"That's an unusual ambition to have at such a young age."

"Not really. He thinks that garbage men only work on Tuesdays."

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

JESUS AND MOSES PLAY GOLF WITH AN OLD MAN

Moses, Jesus, and an old man were enjoying a friendly round of golf together.

Moses stepped up to the tee and hit the ball. It went sailing over the fairway and landed in the water trap. Moses then parted the water and chipped the ball onto the green.

Jesus stepped up to the tee and hit the ball. It went sailing over the fairway and landed in the water trap. Jesus just walked onto the water and chipped the ball onto the green.

The old man stepped up to the tee and hit the ball. It went sailing over the fairway and headed for the water trap. But, just before it fell into the water, a fish jumped up and grabbed the ball in its mouth.

As the fish was falling back down into the water, an eagle swooped down and grabbed the fish in its claws. The eagle flew over the green where a lightning bolt shot from the sky and barely missed it.

Startled, the eagle dropped the fish.

When the fish hit the ground, the ball popped out of its mouth and rolled into the hole for a hole-in-one.

Jesus then turned to the old man and said:

"Dad, if you don't stop fooling around, we won't bring you next time."

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

AT THE CLUB

Several men are in the locker room of a golf club. A cellular phone on a bench rings and a man engages the hands-free speaker function and begins to talk. Everyone else in the room stops to listen.

MAN: "Hello"

WOMAN: "Hi Honey, it's me. Are you at the club?"
MAN: "Yes."

WOMAN: "I'm at the shops now and found this beautiful leather coat. It's only $2,000; is it OK if I buy it?"

MAN: "Sure, go ahead if you like it that much."

WOMAN: "I also stopped by the Lexus dealership and saw the new models. I saw one I really liked."

MAN: "How much?"

WOMAN: "$90,000."

MAN: "OK, but for that price I want it with all the options."

WOMAN: "Great! Oh, and one more thing... I was just talking to Janie and found out that the house I wanted last year is back on the market. They're asking $980,000 for it."

MAN: "Well, then go ahead and make an offer of $900,000. They'll probably take it. If not, we can go the extra eighty-thousand if it's what you really want."

WOMAN: "OK. I'll see you later! I love you so much!"

MAN: "Bye! I love you, too."

The man hangs up. The other men in the locker room are staring at him in astonishment, mouths wide open.
He turns and asks, "Anyone know who's phone this is

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

VIDEO: CATS DO NOT LIKE LEASHES

https://www.youtube.com/watch?v=okZW3_5Gr4s&feature=youtu.be&app=desktop

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

From: "Ray Beloate" beerman@rittermail.com

POLE DANCING...Short and Sweet!

Gotta love this one....bet it'll make you chuckle ..

First Grade Drawing - PRICELESS!

A first grade girl handed in the drawing below for her homework assignment.

The teacher graded it and the child took it home. She returned to school the next day with the following note:

Dear Ms. Davis,

I want to be perfectly clear on my child's homework illustration. It is NOT of me on a dance pole, on a stage, in a strip joint surrounded by male customers with money.
I work at Home Depot and had commented to my daughter how much money we made in the recent snowstorm.

This drawing is of me selling a shovel.

Sincerely,
Mrs. Harrington

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

From: "Jerry Tollett" haleja@epbfi.com

OLDEST COMPUTER

THE OLDEST COMPUTER CAN BE TRACED BACK TO ADAM AND EVE.

SURPRISE, SURPRISE, IT WAS AN APPLE BUT WITH EXTREMELY LIMITED MEMORY.

JUST 1 BYTE AND EVERYTHING CRASHED!!!!!!!!!!!!!

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

NO JEWS IN MEXICO

Two old Jewish men, Sid and Abe, are sitting in a Mexican restaurant one day. Sid asks Abe, "Do you know if any people of our ancestry were ever born and raised in Mexico ?"

Abe replies,"I don't know, let's ask our

When the waiter arrives, Abe asks, "Are there any Mexican Jews?"

The waiter says, "I don't know senor, I ask the cooks. " He returns from the kitchen after a few minutes and says, "No senor, the cook say no Mexican Jews."

Abe isn't satisfied and asks, "Are you absolutely sure?"

The waiter, realizing he is dealing with "Gringos" replies, "I check once again, senor," and goes back into the kitchen.

While the waiter is away, Sid says, "I find it hard to believe that there are no Jews in Mexico .

Our people are scattered everywhere."

The waiter returns and says, "Senor, the head cook Manuel, ... he say there is no Mexican Jews."

"Are you certain?" Abe asks again."I just can't believe there are no Mexican Jews!"

"Senor, I ask EVERYONE," replies the exasperated waiter.

"All we have is Orange Jews, Grape Jews, Prune Jews, Tomato Jews and Apple Jews, ... but no Mexican Jews."

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

This ain't engineering, this is a way of life in the Appalachian Mountains.

YA GOTTA LOVE REDNECKS...

To keep your groceries from falling over

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

From: "Jim Woosley" Jimwoosley@aol.com

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

YOU JUST CAN'T MAKE THIS STUFF UP!

From: "Tim Bolgeo" tbolgeo@epbfi.com

NEW REPORT: NASA SPENDS 72 CENTS OF EVERY SLS DOLLAR ON OVERHEAD COSTS

Report suggests NASA should become a customer, just like the US Air Force.

ERIC BERGER - 3/27/2017, 9:33 AM

https://arstechnica.com/science/2017/03/new-report-nasa-spends-72-cents-of-every-sls-dollar-on-overhead-costs/

After President George W. Bush announced a plan to return to the Moon and move on to Mars in 2004, NASA began to consider how best to carry out that vision. Although there were some promising private-sector rockets even then, administrator Michael Griffin set the agency on the course of building its own rockets and spacecraft. Those programs have evolved into the Space Launch System rocket and Orion spacecraft.

An artist's conception of an SLS launch. NASA

Since then, according to a new report published by the nonpartisan think tank Center for a New American Security, NASA has spent $19 billion on rockets, first on Ares I and V, and now on the SLS. Additionally, the agency has spent $13.9 billion on the Orion spacecraft. The agency hopes to finally fly its first crewed mission with the new vehicles in 2021. If it does so, the report estimates the agency will have spent $43 billion before that first flight, essentially a reprise of the Apollo 8 mission around the Moon.

These costs can then be compared to the total cost of the entire Apollo program, which featured six separate human landings on the Moon. According to two separate estimates, the Apollo program cost between $100 billion and $110 billion in 2010 dollars. Thus just the development effort for SLS and Orion, which includes none of the expenses related to in-space activities or landing anywhere, are already nearly half that of the Apollo program.

OVERHEAD COSTS

The new report argues that, given these high costs, NASA should turn over the construction of rockets and spacecraft to the private sector. It buttresses this argument with a remarkable claim about the "overhead" costs associated with the NASA-led programs. These costs entail the administration, management, and development costs paid

directly to the space agency—rather than funds spend on contractors actually building the space hardware.

For Orion, according to the report, approximately 56 percent of the program's cost, has gone to NASA instead of the main contractor, Lockheed Martin, and others. For the SLS rocket and its predecessors, the estimated fraction of NASA-related costs is higher—72 percent. This means that only about $7 billion of the rocket's $19 billion has gone to the private sector companies, Boeing, Orbital ATK, Aeroject Rocketdyne, and others cutting metal.

By comparison the report also estimates NASA's overhead costs for the commercial cargo and crew programs, in which SpaceX, Boeing, and Orbital ATK are developing and providing cargo and astronaut delivery systems for the International Space Station. With these programs, NASA has ceded some control to the private companies, allowing them to retain ownership of the vehicles and design them with other customers in mind as well. With such fixed-price contracts, the NASA overhead costs for these programs is just 14 percent, the report finds.

"The government should leave the design work and ownership of the product to the private sector," the report recommends. "NASA engineers and administrators in turn might be very skilled, but their priorities tend to focus on management and regulation. If NASA or the Air Force require a service they should request it from the private market, becoming a customer like everyone else. This will result in increased competition and performance at a lower cost."

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

YOU JUST CAN'T MAKE THIS STUFF UP!

From: A Friend

PHOTO: WOMAN IN HEAD SCARF CHECKS PHONE WHILE WALKING PAST TERROR VICTIM

BY KYLE OLSON, MARCH 22, 2017
http://www.theamericanmirror.com/photo-woman-head-scarf-checks-phone-walking-past-terror-victim/

This photo taken by UK parliament today after the London terrorist attack could end up being one of the most iconic of our time #westminster 4:13 PM - 22 Mar 2017

In what is perhaps one of the most stunning images to come out of today's

terrorist attack in London, a photo shows a woman in a head scarf walking past a victim laying on the ground as she's be attended to.

The image shows the victim, covered by a blanket laying on her back on Westminster Bridge with the Parliament building in the background.

She's surrounded by five individuals, including a woman on her knees talking on a phone. Another is assisting with the victim's head.

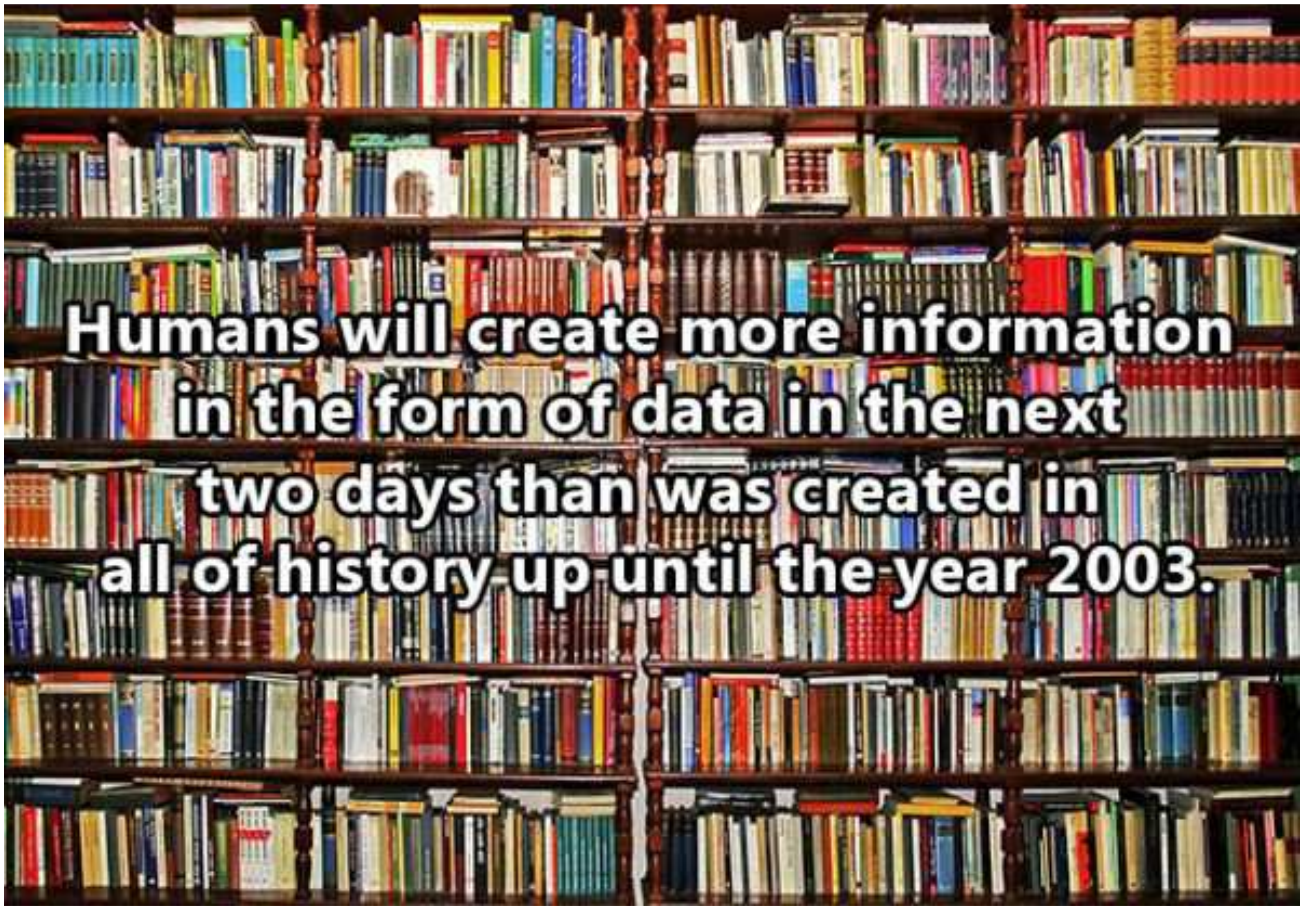
Feet away, the woman in a tan head scarf is walking by, browsing her phone — seemingly unaware or indifferent to the sickening scene.

WORDS CAN SAY ANYTHING BUT THERE IS PURITY SOMETIMES IN A CANDID PICTURE. UT

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

YOU JUST CAN'T MAKE THIS STUFF UP!

From: "Douglas Dudash"



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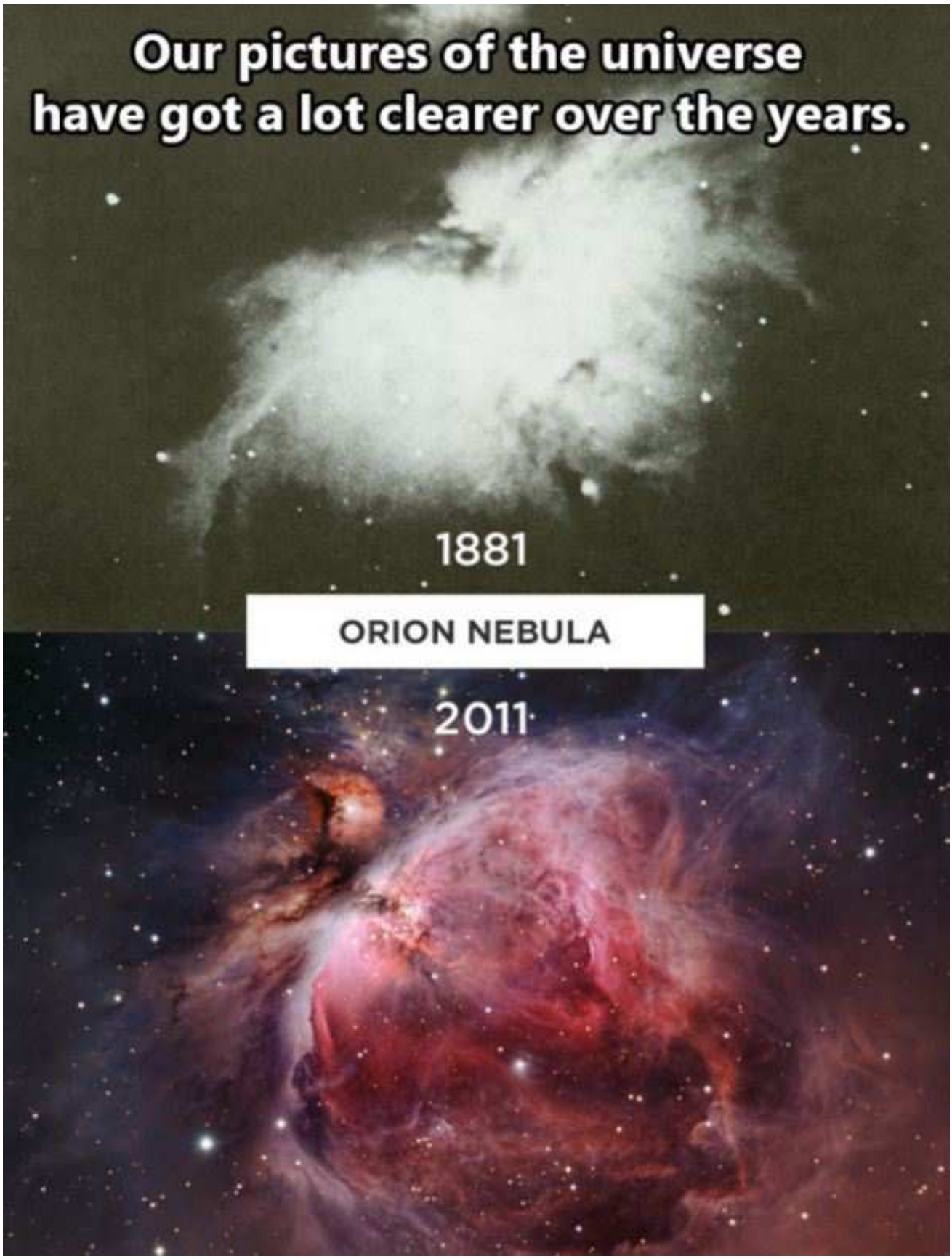
Our pictures of the universe
have got a lot clearer over the years.
1881
ORION NEBULA
2011

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

YOU JUST CAN'T MAKE THIS STUFF UP!

From: "Chris Cowan" cowanc1028@earthlink.net

THE MYSTERY OF WHY CHATTANOOGA RAISED ITS DOWNTOWN BY A LEVEL

There's a hidden layer of Chattanooga underneath the current city.

by Daniel Jackson, December 19, 2016
http://www.atlasobscura.com/articles/the-mystery-of-why-chattanooga-raised-its-downtown-by-a-level

the north side of the Loveman's Building leading to a retaining wall. Daniel Jackson

Walk the streets of downtown Chattanooga, Tennessee, today and you'll find little evidence that the town's residents of yesteryear conducted business in first floors that are now below sidewalks and parking meters. For that, you have to go underground.

"So this is Loveman's," says Cheri Lisle-Brown, property manager for the 130-year-old Loveman's Building, which was originally a department store, in the heart of Chattanooga's downtown. She walks through a pair of metal doors. "This is the original freight elevator. Watch your step."

Below, the basement of the 19th-century building is made from a mix of cinderblock, brick walls and Tennessee limestone. It has the feel and smells of other old basements. Unlike other basements, however, the northern outer wall has openings in the brick—doorways or large windows—framed with wood leading to an alcove. What looks like a place to enter the building or let in light sits underground.

A view across Chattanooga. Jeff Gunn/CC BY 2.0

At some point in time, possibly between 1875 and 1905, Chattanooga built up its roads and abandoned the first stories of the buildings in the downtown of the city, turning them into basements. Today, no one knows exactly why or how it happened. The popular theory is that Chattanooga raised its city a story to escape the devastating flooding the Tennessee River wrought every few years. Evidence also points to an attempt to escape the diseases of the day, cholera and yellow fever.

Cities build upon themselves. For example, they pave over cobblestones that were once dirt paths. For Chattanooga, located a few miles from the Tennessee-Georgia state line, the foundations of the buildings echo the story of a construction project more unusual than most.

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From: "Tim Bolgeo" tbolgeo@epbfi.com

WHO ARE CONTENDERS FOR THE OA-X LIGHT-ATTACK DEMO?

Lara Seligman | Aviation Week & Space Technology, Mar 22, 2017
http://aviationweek.com/defense/who-are-contenders-oa-x-light-attack-demo#slide-0-field_images-1598761

A-29 Super Tucano (Embraer and Sierra Nevada Corp.)

This turboprop light-attack aircraft is designed for counterinsurgency, close air support and aerial reconnaissance missions in low-threat environments.

Designed to operate in high temperatures and extremely rugged terrain, the A-29 is highly maneuverable and has a low heat signature. It is in service with the Brazilian, Colombian, Chilean, Dominican and Ecuadorian air forces as well as the Afghan air force. The first of 30 Afghan A-29 pilots have graduated from training at Moody AFB, Georgia, and returned to Afghanistan. The full fleet of 20 A-29s will be in place by 2018.

Max. Speed: 367 mph
Combat Radius: 300 nm fully loaded
Endurance: 8 hr. 24 min.
Fuel Capacity: 3,300 lb.
Hard Points: 5 external, 2 under each wing, 1 under centerline fuselage

Scorpion (Textron Airland)

This is a bit of a dark-horse candidate. The Scorpion made its first flight in 2013 but has not yet signed any customers. Textron recently withdrew the Scorpion from the Air Force's T-X Advanced Pilot Trainer competition because it cannot meet the stringent requirements.

The Scorpion is a light jet rather than a turboprop, with the operating costs to prove it.

Max. Speed: 518 mph
Ferry Range: 2,200 nm (with auxiliary fuel)
Fuel Capacity: 6,000 lb.
Hard Points: 6 (6,200-lb. capacity)

Internal Weapon Capacity: 3,000 lb.

OV-10X (Boeing) Photo: U.S. Air Force

The original founders of the OA-X concept, which dates back to 2007 as the surge in Iraq reached its peak, were inspired by the Vietnam War-era North American Rockwell OV-10 Bronco, an observation aircraft that was repurposed as a light-attack bird. The Air Force even went so far as to evaluate two OV-10G+ aircraft—on loan from NASA—for the OA-X as part of the Combat Dragon II program. In 2009, Boeing put together plans internally to build a modernized version of the Bronco, dubbed the OV-10X, for a possible light-attack aircraft.

Although the original OA-X and following Light Attack and Armed Reconnaissance programs were both canceled, Boeing may revive the OV-10X concept for the new OA-X plan.

Max. Speed: 288 mph
Range: 700 nm (with internal fuel) 1,200 nm (with drop tank)
Hard Points: 7

The U.S. Air Force will take its first step toward potentially fielding a low-cost, light-attack aircraft this summer with a flight demonstration at Holloman AFB, New Mexico. The service is looking to choose up to four industry partners to bring one or two off-the-shelf aircraft to Holloman for a capability assessment in which Air Force aircrew will evaluate each aircraft's ability to perform light attack and armed reconnaissance missions and operate from austere locations.

For industry, the stakes are high—the selected designs will likely have an advantage if the Air Force moves forward with a 300-aircraft buy. Since affordability is a main driver, Embraer and Sierra Nevada Corp.'s A-29 Super Tucano is an obvious front-runner. Already in service with the Afghan air force through the U.S. Light Air Support (LAS) program, the turboprop is a proven asset, with historically low operating costs.

Textron also has a shot, with either its turboprop AT-6 Wolverine or light jet Scorpion. However, the AT-6 lost out to the A-29 in the 2011 LAS competition. Meanwhile, the Scorpion has never quite found its niche. Its performance is not up to par with most true fighters, and its reported $3,000-per-hour operating costs might be too expensive for an OA-X capability.

Other less obvious options will likely start appearing as the OA-X effort gains traction. Here is a look at some of the possibilities.

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WITH RAYTHEON OUT, LEONARDO DRS TOUTS LOWER-COST T-100

Mar 23, 2017Lara Seligman | Aerospace Daily & Defense Report
http://aviationweek.com/defense/raytheon-out-leonardo-drs-touts-lower-cost-t-100?NL=AW-05&Issue=AW-05_20170324_AW-05_485&sfvc4enews=42&cl=article_3&utm_rid=CPEN1000003019593&utm_campaign=9234&utm_medium=email&elq2=d3373cb29c384499a911deb209f2594f

T-100: Leonardo

With Leonardo's North American arm replacing Raytheon as prime, the T-100 bid for the U.S. Air Force's coveted $16 billion T-X contract will come in at a lower price, according to a top company executive.

Consolidating the T-100 integrator and airframe manufacturer under one roof streamlines the proposal's management structure, said Bill Lynn, CEO of Leonardo DRS, formerly DRS Technologies. Meanwhile, a smaller company means fewer layers of bureaucracy and less overhead, he noted.

"I think that with DRS as the prime, we will have a leaner cost and overhead structure than a bigger company might have," Lynn said. "I think this bid will be more cost-competitive as a consequence of the team and the structure that we're bidding it under."

Leonardo DRS is the new U.S. face of the T-100 bid, which has been on shaky ground in recent months. Reports emerged late last year of disagreements between Raytheon and Leonardo, and Raytheon officially dropped out earlier this year. Leonardo announced that U.S.-based DRS would take the helm in February.

Leonardo DRS plans to stand up a new U.S. facility to build the T-100, which is based on the Alenia Aermacchi—now Leonardo—M-346 trainer. Building a new facility from scratch creates construction and manufacturing jobs, Lynn stressed.

T-100 final assembly as well as some component manufacturing will take place at the U.S. facility, he said.

Lynn declined to say where the facility will be, but anticipates an announcement later this month. Raytheon planned to build the T-100 in Meridian, Mississippi.

Lynn touted the T-100 as a "customer-proven system," noting that the M-346 has been selected over the competing Lockheed Martin-Korea Aerospace Industries (KAI) T-50 in four out of five recent international trainer competitions: Israel, Singapore, Poland, and the United Arab Emirates. The fifth was Indonesia, which selected the T-50. Leonardo has already delivered 30 aircraft for the Israeli air force, which is using the aircraft to train future F-35 pilots.

"Given the opportunity to choose, the customers have overwhelmingly chosen the M-346," Lynn said.

The T-100's training system is also proven, Lynn stressed. The company has been successfully using live, virtual, constructive (LVC) training—in which real and simulated aircraft fly together—for years.

"We don't believe any of our competitors have an operational, proven LVC training capability," Lynn said.

Bids are due to the Air Force in the next few weeks, with a contract award for 350 aircraft expected by year's end. Boeing and Saab are offering a clean-sheet design, while Lockheed Martin is partnered with Korea Aerospace Industries on the T-50A.

While Leonardo is focused on winning the T-X competition, the company will also look at offering a variant of the M-346—likely the M-346 fighter trainer—for the Air Force's OA-X light attack flight demonstration, which could lead to a 300-aircraft buy.

Proposals are due in April.

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'BABY BOOM' TO TAKE OFF IN 2020: RICHARD BRANSON-BACKED MINI-CONCORDE THAT CAN FLY FROM LONDON TO NEW YORK IN 3.5 HOURS GETS FUNDING

*** The subscale XB-1 Supersonic Demonstrator prototype will be created by aerospace firm Boom**
*** The jet is nicknamed 'Baby Boom' and will be scaled up as a passenger plane for 45 passengers**
*** The Virgin Galactic tycoon already has options to buy 10 of the new supersonic Boom jets**
*** They will reach 1,451mph - 100mph faster than Concorde - and travel from New York to London in 3.5 hours**
*** The prototype jet was built in Colorado by former Amazon executive and Boom CEO Blake Scholl**

By Ellie Zolfagharifard for MailOnline, 23 March 2017
http://www.dailymail.co.uk/sciencetech/article-4342370/Baby-Boom-supersonic-jet-tipped-off.html#ixzz4cADMmajB

A futuristic supersonic passenger airliner has got the funding it needs to take off on a test flight this year.

Boom Supersonic said it received $33million (£26million) in funding and was ready to build its XB-1 jet prototype.

Backed by Virgin tycoon Richard Branson, the 'Baby Boom' jet could usher in a new era of affordable supersonic travel.

Claimed to be the 'world's fastest civil aircraft ever made', the XB-1 Supersonic Demonstrator is due to take off on its first test flight later this year and could take passengers from London to New York in 3.5 hours, its maker claims.

The company said the jet, which will cost more than $200 million (£160 million) to build, may carry passengers by the early 2020s.

+12 A futuristic supersonic passenger airliner has got the funding it needs to take off on a test flight later this year. Boom Supersonic said it received $33million (£26million) in funding and was ready to build its XB-1 jet prototype

XB-1 SUPERSONIC DEMONSTRATOR SPECS
- Crew: Two (pilot + optional flight test engineer or passenger)
- Length: 68 feet (20m)
- Wingspan: 17 feet (5.2m)
- Maximum Takeoff Weight: 13,500 lb (6,120kg)
- Powerplant: 3X General Electric J85-21, non-afterburning; proprietary variable-geometry intake and exhaust
- Aerodynamics: Chine, refined delta wing with swept trailing edge
- Cruise: Mach 2.2 (1,451mph, 2,335 km/h)
- Nose Temperature: 307°F (345°F on ISA+20 day)
- Range: > 1,000 nautical miles (1852km)

The subsonic flight test will be conducted near Edwards Air Force Base in Southern California in partnership with Virgin Galactic's The Spaceship Company.

The prototype was unveiled in November at Centennial Airport in Denver.
The XB-1 is a technically representative ?-scale version of the future Boom Airliner.

'I have long been passionate about aerospace innovation and the development of high-speed commercial flights,' said Richard Branson, founder of Virgin Group.
'As an innovator in space, Virgin Galactic's decision to work with Boom was an easy one.'

The airline tycoon has confirmed that Virgin has options to buy 10 of the recently revealed supersonic Boom jets, which will be capable of flying at 1,451mph (2,335 km/h) - about 100mph (160km/h) faster than Concorde - and reaching New York from London in three and a half hours.

'Sixty years after the dawn of the jet age, we're still flying at 1960s speeds,' said Blake Scholl, a former Amazon executive and CEO and founder of Boom.

'Concorde's designers didn't have the technology for affordable supersonic travel, but now we do.

'Today, we're proud to unveil our first aircraft as we look forward to its first flight.'

+12 The XB-1 Supersonic Demonstrator is due to take off on its first test flight in late 2017 and could take passengers from London to New York in 3.5 hours. The jet is designed to carry two crew members

The XB-1 Supersonic Demonstrator features engines developed by General Electric, avionics from Honeywell and a carbon fibre shell from Tencate, with composite structures fabricated by Blue Force.

The Boom jet was created by top aviation experts with collective experience working at NASA, SpaceX and Boeing.

Learning from the Concorde, they combined advanced aerodynamics, efficient engine technology and new composite materials to produce a 'safe and affordable' supersonic aircraft 2.6 times faster than current jetliners.

+12 The subscale XB-1 'Baby Boom' jet (pictured top) is set to pave the way for the larger Boom Passenger Airliner (pictured bottom)

The prototype has been subjected to more than 1,000 simulated wind tunnel tests and features a tapered carbon fibre fuselage, and efficient turbofan jet engines.

Unlike Concorde, the Boom design requires no afterburner, which should significantly improve fuel efficiency.

In March, Virgin told MailOnline Travel: 'Richard has long expressed interest in developing high speed flight and building high-speed flight R&D through Virgin Galactic and our manufacturing organisation, The Spaceship Company.

'We can confirm that The Spaceship Company will provide engineering, design and manufacturing services, flight tests and operations and that we have an option on the first 10 airframes. It is still early days and just the start of what you'll hear about our shared ambitions and efforts.'

Scholl said: 'We're thrilled to be working with Virgin. It's hard to imagine a better partner for bringing supersonics to market.'

When created Boom will have 45 seats - with a ticket costing $5,000 (£4,020).
Speaking to Bloomberg earlier this year, Scholl said: 'The idea is for a plane that goes faster than any other passenger plane built before, but for the same price as business class.'

According to the simulations, Boom's design is quieter and 30 per cent more efficient than the Concorde.

It will be split into two single-seat rows, so everybody has a window and an aisle.

To reduce weight, the seats are of the standard domestic first-class variety, so no lay-down beds.

To cut flight time, Boom's plane will cruise at 60,000 feet, where passengers will be able to see the curvature of the earth, while going 2.6 times faster than other passenger planes.

Scholl said about 500 routes fit the craft's market, including a five-hour trip from San Francisco to Tokyo and a six-hour flight from Los Angeles to Sydney.

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MYSTERIOUS 'ROBOT' IS SPOTTED ON TOP OF ELON MUSK'S SPACEX DRONE SHIP IN PORT CANAVERAL

* **Equipment was captured from a helicopter by Florida resident Stephen Marr**
* **Could be 'Optimus Prime'-style robot used to send rockets into space**
* **It's rumoured it will work alongside SpaceX's Falcon 9 to launch the Dragon**

By Daisy Dunne For Mailonline PUBLISHED: 09:17 EDT, 23 March 2017
http://www.dailymail.co.uk/sciencetech/article-4342350/SpaceX-robot-spotted-Florida-drone-ship.html#ixzz4cAFKKSQR

A mysterious piece of equipment, believed to be a robot that will work alongside Elon Musk's Falcon 9 rocket, has been spotted atop of a SpaceX drone ship.
The SpaceX equipment was captured from a helicopter by space enthusiast Stephen Marr.

The equipment is believed to be SpaceX's highly anticipated 'Optimus Prime'-style robot that is rumoured to be working alongside Falcon 9.

SEE THE VIDEO OF THE SPACEX MYSTERIOUS ROBOT AT THE WEBSITE.

Falcon 9 is a two-stage-to-orbit launch vehicle designed to transport satellites and send the Dragon spacecraft into orbit.

The rocket launched a series of Iridium satellites into orbit in January - then landed back down on a drone boat.

The SpaceX Dragon is a reusable spacecraft that is currently used to send supplies to the International Space Station.

Elon Musk hopes passengers will one day in a redeveloped model called the Dragon V2.

Falcon 9 is a two-stage-to-orbit launch vehicle designed to transport satellites and send the Dragon spacecraft into orbit.

+4 A mysterious 'robot' (pictured) was spotted on top of Elon Musk's SpaceX drone ship in Florida. Equipment was captured from a helicopter by space enthusiast Stephen Marr

+4 The equipment, pictured from a helicopter on SpaceX's drone ship, is believed to be in its trial phase. It is rumoured that it will work alongside Falcon 9

The rocket launched a series of Iridium satellites into orbit in January - then landed back down on a drone boat. The SpaceX Dragon is a reusable spacecraft that is currently used to send supplies to the International Space Station.

Ricky Lim, senior director of launch operations for SpaceX, told Florida Today the device is 'in the testing phase' and is a 'future capability' that SpaceX plans to introduce as soon as it passes the necessary tests.

'I don't think it's very far away from being used. But it's new,' he said. He added that the device has not yet been named and did not disclose information about its functionality or special features.

It's rumoured that the autonomous machine could one day attend to rockets after they land on SpaceX's Port Canaveral spaceport drone ship.

Stephen Marr, he photographed the mysterious equipment on SpaceX, said: 'I knew there was something different there.' He captured the device using a telephoto lens during a six-minute helicopter tour of the area.

ELON MUSKS' 'INTERPLANETARY TRANSPORT SYSTEM'

Last year, Elon Musk unveiled his most ambitious project yet - an 'Interplanetary Transport System' to take mankind to Mars in 80 days and build a sustainable human colony of a million people there.

'What I want to achieve is make Mars seem possible, to show that we can do it in our lifetimes, and you could go,' he said at the International Astronautical Congress in Mexico.

Elon Musk said the Interplanetary Transport System (ITS) would be powerful enough to fly between Mars and Earth outside of its orbital period of 26 months if there was an emergency (artist's impression)
However, he warned the trip was likely to be dangerous - and said candidates for the first missions 'must be prepared to die'.

The Interplanetary Transport System will use a giant rocket booster with a 39 foot (12m) diameter and 49 engines, and a special shuttle with a 56 foot (17m) diameter, making the entire rocket stack 400 feet (122m) high.

They will launch with empty fuel tanks and refuel in orbit.

Once on Mars, they would make more methane fuel for the return journey.

VIDEO OF SPACEX INTRODUCES INTERPLANETARY TRANSPORT SYSTEM AT THE WEBSITE.

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JAPANESE COMPANY DEVELOPS A SOLAR CELL WITH RECORD-BREAKING 26%+ EFFICIENCY

A group of researchers funded by a Japanese government program develops "industrially compatible" cells.

MEGAN GEUSS - 3/22/2017, 12:28 PM
https://arstechnica.com/science/2017/03/japanese-company-develops-a-solar-cell-with-record-breaking-26-efficiency/?mbid=synd_digg64

A solar cell with 26.3 percent efficiency. Photovoltaic & Thin Film Research Laboratories (Kaneka corporation)

Solar panels are cheaper than ever these days, but installation costs can still be considerable for homeowners. More efficient solar panels can recapture the cost of their installation more quickly, so making panels that are better at converting sunlight into electricity is a key focus of solar research and development.

The silicon-based cells that make up a solar panel have a theoretical efficiency limit of 29 percent, but so far that number has proven elusive. Practical efficiency rates in the low-20-percent range have been considered very good for commercial solar panels. But researchers with Japanese chemical manufacturer Kaneka Corporation have built a solar cell with a photo conversion rate of 26.3 percent, breaking the previous record of 25.6 percent. Although it's just a 2.7 percent increase in efficiency, improvements in commercially viable solar cell technology are increasingly hard-won.

Not only that, but the researchers noted in their paper that after they submitted their article to Nature Energy, they were able to further optimize their solar cell to achieve 26.6 percent efficiency. That result has been recognized by the National Renewable Energy Lab (NREL).

In the Nature Energy paper, the researchers described building a 180.4 cm2 cell using high-quality thin-film heterojunction (HJ)—that is, layering silicon within the cell to minimize band gaps where electron states can't exist. Controlling heterojunctions is a known technique among solar cell builders—Panasonic uses it and will likely incorporate it into cells built for Tesla at the Solar City plant in Buffalo, and Kaneka has its own proprietary heterojunction techniques.

For this record-breaking solar cell, the Kaneka researchers also placed low-resistance electrodes toward the rear of the cell, which maximized the number of photons that collected inside the cell from the front. And, as is common on many solar cells, they coated the front of the cell with a layer of amorphous silicon and an anti-reflective layer to protect the cell's components and collect photons more efficiently.

After describing the architecture of the solar cell, Kaneka researchers analyzed the energy losses that prevented the cell from reaching that 29-percent efficiency ideal, which could help future solar cell builders optimize their cells to get closer to the limit. Kaneka researchers estimated that overall efficiency was reduced by 0.5 percent due to resistive loss, 1 percent due to optical loss (the way the cell receives light), and 1.2 precent due to extrinsic recombination loss—where a free electron recombines with a positively charged hole rather than going on for current collection.

The paper noted that this solar cell was created using "industrial applicable" processes, like plasma-enhanced chemical vapor deposition (PECVD), which deposits thin films onto a solid wafer from a gas state. While the solar cell may be vapor-ware in the sense that chemical vapor helps create them, the industry-friendly process reduces the likelihood that the high-efficiency architecture will end up as something we'd call vaporware more colloquially. (Thanks folks, I'll be here all night.)

That said, the authors note that "further work is required before the individual cells can be assembled into a commercially available solar panel." But further work seems likely. Kaneka's research was funded by Japan's New Energy and Industrial Technology Development Organization, abbreviated to NEDO, and according to IEEE Spectrum, the company will continue to work with NEDO to bring the levelized cost of solar cells down to $0.06 per kilowatt-hour by 2030.

Nature energy, 2017. DOI: 10.1038/nenergy.2017.32 (About DOIs).

Listing image by Photovoltaic & Thin Film Research Laboratories (Kaneka corporation)

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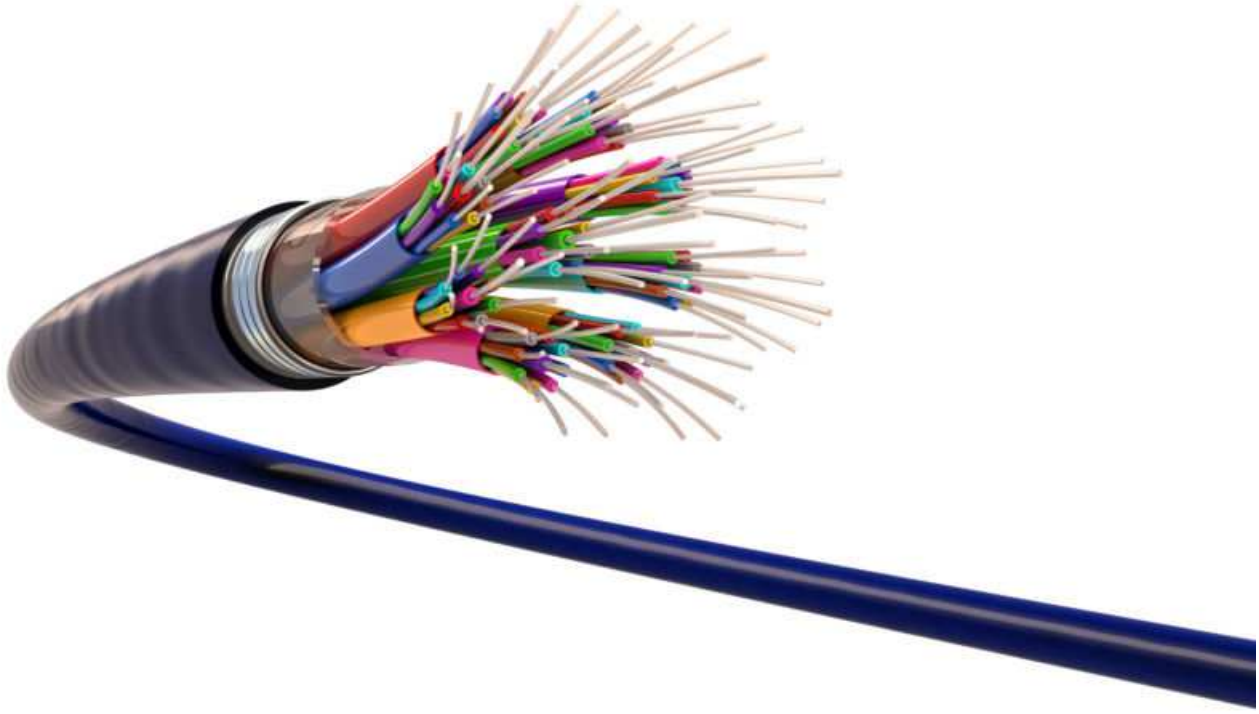
"DIG ONCE" BILL COULD BRING FIBER INTERNET TO MUCH OF THE US

Unlike net neutrality, "dig once" puts Democrats and Republicans on same side.

JON BRODKIN - 3/22/2017, 1:38 PM

https://arstechnica.com/information-technology/2017/03/nationwide-fiber-proposed-law-could-add-broadband-to-road-projects/



Getty Images | tiero

Years in the making, a proposal to mandate the installation of fiber conduits during federally funded highway projects might be gaining some new momentum.

If the US adopts a "dig once" policy, construction workers would install conduits just about any time they build new roads and sidewalks or upgrade existing ones. These conduits are plastic pipes that can house fiber cables. The conduits might be empty when installed, but their presence makes it a lot cheaper and easier to install fiber later, after the road construction is finished.

The idea is an old one. US Rep. Anna Eshoo (D-Calif.) has been proposing dig once legislation since 2009, and it has widespread support from broadband-focused consumer advocacy groups. It has never made it all the way through Congress, but it has bipartisan backing from lawmakers who often disagree on the most controversial broadband policy questions, such as net neutrality and municipal broadband. It even got a boost from Rep. Marsha Blackburn (R-Tenn.), who has frequently clashed with Democrats and consumer advocacy groups over broadband—her "Internet Freedom Act" would wipe out the Federal Communications Commission's net neutrality rules, and she supports state laws that restrict growth of municipal broadband.

Blackburn, chair of the House Communications and Technology Subcommittee, put Eshoo's dig once legislation on the agenda for a hearing she held yesterday on broadband deployment and infrastructure. Blackburn's opening statement said that dig once is among the policies she's considering to "facilitate the deployment of communications infrastructure." But her statement did not specifically endorse Eshoo's dig once proposal, which was presented only as a discussion draft with no vote scheduled. The subcommittee

also considered a discussion draft that would "creat[e] an inventory of federal assets that can be used to attach or install broadband infrastructure."

DEMOCRATS AND REPUBLICANS AGREE—BUT WILL THEY VOTE?

Dig once legislation received specific support from Commerce Committee Chairman Greg Walden (R-Ore.), who said that he is "glad to see Ms. Eshoo's 'Dig Once' bill has made a return this Congress. I think that this is smart policy and will help spur broadband deployment across the country." Like Blackburn, Walden is an opponent of the FCC's current net neutrality rules and a supporter of state laws that limit municipal broadband.

At the FCC, dig once has support from Democrats and Republicans. Former Chairman Tom Wheeler, a Democrat, endorsed the policy, and so has the current chairman, Republican Ajit Pai. Pai said last year that "government officials should adopt 'dig once' policies so that broadband conduit is deployed as part of every road and highway construction project."

We asked Blackburn's office if she supports the dig once legislation and whether she plans to schedule a vote on it, and we'll provide an update if we get one. Specifically, the dig once bill requires states to evaluate the need for broadband conduit any time they complete a highway construction project that gets federal funding. Conduit must be installed if the evaluation, done in consultation with local and national telecom providers and equipment makers, "reveals an anticipated need in the next 15 years for broadband conduit." Projects should include enough conduits "to accommodate multiple broadband providers," the bill says.

Dig once doesn't have to be just for state and federal projects, as cities such as Boston and San Francisco already require it locally.

BIG BENEFIT FOR A "TINY COST"

TechFreedom, a libertarian think tank that has often criticized Democratic telecommunications policies, is also on board with dig once.

"Failure to implement Dig Once means more construction, more disruption, and much higher costs for private providers—who may simply decide not to deploy in an area where the economics don't work," TechFreedom and other groups wrote in a letter to lawmakers. "The tiny cost of installing conduit (about 1 percent in added costs) pales in comparison to the taxpayer burden of unnecessary digs, traffic congestion, and the opportunity cost of not having high-speed networks that both help support public services and grow the economy."

Last year, the dig once proposal was dropped from a larger broadband bill. At the time, community broadband consultant Stephen Blum offered some speculation on why the legislation stalled.

"Dig once requirements are often opposed by deep pocketed incumbent telephone and cable companies, who build their own infrastructure and would prefer that smaller competitors not have access to cheap and freely available conduit," he wrote. "Transportation agencies and public works people will also tend to oppose dig once rules

on occasion, because it adds costs and extra hassles to road projects that are already expensive and complicated."

But if the Republican-led Congress decides to implement dig once legislation, it can point to public support from some ISPs and broadband industry lobbyists. CTIA, which represents the nation's largest mobile carriers including AT&T and Verizon Wireless, supported dig once in a letter yesterday, pointing to government data that suggests the policy "can cut broadband costs by up to 90 percent." Dig once also got support from CenturyLink, which said conduit deployment requirements "could be especially helpful where fiber upgrades must cross bottleneck facilities, such as bridges or tunnels, where only one practical route is available."

Competitive Carriers Association CEO Steven Berry, who represents nearly 100 smaller wireless carriers, told lawmakers yesterday that it's time to "establish 'dig once' policies, once and for all."

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MARS SPACESUITS: DESIGNING A BLUE-COLLAR SUIT FOR THE RED PLANET

By Leonard David, Space.com's Space Insider Columnist, March 23, 2017
http://www.space.com/36172-mars-spacesuit-design-class.html

The MarsSuit Project is underway at UC Berkeley, led by professor Lawrence Kuznetz (right). Credit: Lawrence Kuznetz

The first explorers on Mars will need a new kind of spacesuit, and a university-based team has taken a novel approach to design the equipment.

Researchers have set up a "collaboratory" at the University of California, Berkeley, to come up with a spacesuit that will allow expeditionary crews to work effectively on Mars.

"The kind of suit that we're talking about is a blue-collar suit. You've got to be able to be out and about on Mars 7 to 8 hours a day, seven days a week," said project leader Lawrence Kuznetz, a UC Berkeley professor and former NASA engineer with a long history of investigating Mars spacesuit concepts

"It's not like the spacesuits of the past, those used in Apollo, for the space shuttle or to carry out spacewalks from the International Space Station," Kuznetz told Space.com. "So it's a fresh sheet of paper for a planetary suit to use on Mars. You are talking about a planet. You're not talking about space or the moon, where the environment is always the same."
SPACESUIT DESIGN CLASS

About 50 Berkeley students are now taking part in this MarsSuit Project, via a design class that began in mid-January. That core group, Kuznetz said, is one slice of a larger, interactive talent pool that includes the University of Helsinki, Texas A&M University, the Massachusetts Institute of Technology, and students at the Technical University of Ljubljana in Slovenia and at other institutions, along with several NASA centers, nonprofits and private organizations, such as Paragon Space Development Corporation in Tucson, Arizona.

Teams have been established to delve into everything from hardware, soft goods and software to boots, gloves, thermal control and waste management.

"The long-range vision is to have this course semester after semester," Kuznetz said, "with each semester building upon the work of the prior semester … all intent on maturing the MarsSuit design."

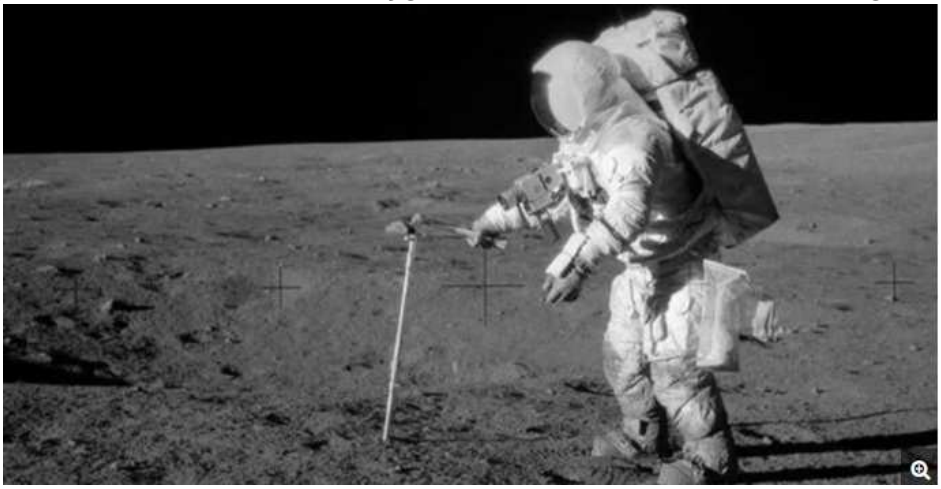
NON-TRADITIONAL APPROACH

The MarsSuit Project draws from earlier work done by Kuznetz: the "K suit," which separates the helmet from the torso in a hybrid dual system.

"Mars is more like Antarctica … and it has an atmosphere," Kuznetz said. "What you can get from the Mars environment is carbon dioxide, and that it's cold and it's dry. Those three things give you a real leg up."

The MarsSuit Project team is focused on a two-suits-in-one concept, Kuznetz said. The helmet contains pressurized oxygen, and the Mars atmosphere pressurizes the rest of the suit. A neck dam separates the two components, Kuznetz said. Taking that approach, he said, means the suit won't need heat exchangers, fans, pumps or liquid-cooled garments, and this will reduce the weight of a Mars explorer's portable life-support system.

"Another big plus is that if you have a puncture in a traditional suit, you've got 11 seconds of useful consciousness to fix the problem," Kuznetz said. "If you have a puncture in this suit, you are losing carbon dioxide. You don't give a damn, and you have got extended survival time to fix the puncture. You don't lose oxygen. That's what makes this design so different."



What will a Mars spacesuit look like in the future? To maximize an explorer's productivity on the Red Planet, different types of suits are needed from those used by Apollo moonwalkers, experts said. Credit: NASA

PERSONAL MISSION CONTROL

Those taking part in the MarsSuit Project have come up with a number of other ideas. The team has scoped out a lightweight, integrated radiation-protection device, for example. Then there's alert, caution and suggestion software that would serve as a personal mission control while an individual worked on Mars, far from Earth. Also under consideration are suit layers that could be peeled off and put back on, as needed depending on the Martian weather.

"What we're doing here is not letting engineers dictate the design of a spacesuit, of having a suit become a slave to engineering," Kuznetz said. "Rather, let's have science and the Mars environment dictate the design of the spacesuit. And that's where we are."

Kuznetz said a potential human landing on Mars in 2032 would require NASA to release a request for proposals for a Mars suit 10 years prior, in 2022.

"It's now 2017, and in five years, I want to have an integrated, university-industry expert team [ready] to actually make a bid on that suit," he said.

Leonard David is author of "Mars: Our Future on the Red Planet," published by National Geographic. The book is a companion to the National Geographic Channel series "Mars." A longtime writer for Space.com, David has been reporting on the space industry for more than five decades.

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5D STORAGE TECHNOLOGY MADE FROM NANOSTRUCTURED GLASS

By: David Russell Schilling | March 22nd, 2017
http://www.industrytap.com/5d-storage-technology-made-nanostructured-glass/41526?utm_source=Industry+Tap&utm_campaign=978a2f1dc1-Industry_Tap_Volume_4013_23_2017&utm_medium=email&utm_term=0_05d6224fe0-978a2f1dc1-44124953

Data Storage Solutions (Image Courtesy Cisco https://goo.gl/images/1aFO0B)

As the world moves headlong into the digital age, the importance of storing, managing, and protecting digital information is becoming more important than ever. The question is: how long can our digital information be kept? Companies now consider digital information as a form of wealth – information must not only be secured from hackers, but it must survive the ravages of time.

Some current advanced storage technology includes cloud-to-cloud backup, high-capacity flash drives, containers, NVMe, 32-Gig FC, and software-defined storage. Intel Storage Technology products and services are now being used to replace legacy storage solutions. And the Storage Networking Industry Association (SNIA) – a great resource – is working to advance storage and information technology solutions. See the SNIA website for videos, webcasts, blog posts, and white papers. SNIA members include Cisco, DDN Storage, Dell, Fujitsu, Hewlett-Packard Enterprise, Microsoft, Huawei, Lenovo, and others.

NEW 5D STORAGE TECHNOLOGY LASTS FOREVER

According to the University of Southampton, "scientists at the Southampton University have made a major step forward in the development of digital data storage that is capable of surviving for billions of years. Using nanostructured glass, scientists from the University's Optoelectronics Research Centre (ORC) have developed the recording and retrieval processes of five dimensional (5D) digital data by femtosecond laser writing."

A femtosecond is one quadrillionth of a second. Information is written to quartz instead of plastic typically used for CD-ROMs. CD-ROM information is coded in plastic on bumps of a certain length, width, and height, but the new 5D storage technology uses self-assembling nanostructures. For more on how this is done, see the video below.

THE VIDEO AT THE WEBSITE EXPLAINS 5D STORAGE.

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SOLAR-POWERED SYNTHETIC SKIN COULD GIVE PROSTHESES A SENSE OF TOUCH

Nick Lavars March 23, 2017
http://newatlas.com/solar-power-synthetic-skin-touch/48574/

Next, Ravinder Dahiya will explore how some of the energy captured by the skin can be stored in batteries for later use (Credit: University of Glasgow)

For years Ravinder Dahiya has been developing thin and flexible electronics, the kind that could be used for synthetic skin, and for years the material scientist has wrestled with various obstacles. These include making sensors that are small enough and electronics that can

bend enough, not to mention how such things could be powered. His team is now reporting a breakthrough in which it has integrated solar cells into a graphene-based electronic skin, raising the possibility of prosthetic limbs that are both sensitive to touch and entirely self-powered.

Electrically conductive, just a single atom thick and stronger than steel, graphene has all sorts of advantages. But it hasn't always been so cheap. Back in 2015 Dahiya, who works at the University of Glasgow's School of Engineering, discovered a method of production that made graphene around 100 times cheaper than before. This was good news for any scientist working with graphene and its myriad applications, whether flexible displays for phones or medical patches for drug delivery. But for Dahiya, it made using the material as the basis for synthetic skin a whole lot more feasible.

For years, scientists have been trying to recreate the complex neural systems that enable human skin to sense touch by building pressure sensors into various materials. We have seen piezoelectric transistorsincorporated into synthetic skins making them sensitive enough to read fingerprints, other approaches that use multipurpose sensors to detect temperature and humidity in addition to pressure, and others that use pressure-sensitive materials made from inorganic semiconductors to only use a small amounts of power. The issue with them all is that they need to be powered.

For their latest project, Dahiya and his team used single-layer graphene with a transparent polymeric protective layer on top, which is also pressure sensitive and enables the skin to detect minimum pressures of 0.11 kPa. Conveniently, graphene itself happens to be highly transparent and allows 98 percent of the light that hits its surface to pass through. Dahiya's team took advantage of this by placing a power-generating photovoltaic cell underneath, which provides it with the 20 nanowatts of power per square centimeter that the tactile skin needs to operate.

The next steps for the researchers involve exploring how some of that energy can be captured by batteries for later use, or perhaps even used to power an entire prostheses. One day, this could make for a self-powered prosthetic hand that can better handle soft materials. It could carry a cup of tea, for example, and even sense whether or not it is too hot to drink.

"We've already made some encouraging progress in this direction and we're looking forward to presenting those results soon," says Dahiya. "We are also exploring the possibility of building on these exciting results to develop wearable systems for affordable healthcare."

The team's latest research was published in the journal Advanced Functional Materials.

Source: University of Glasgow

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VACCINE THAT DOES NOT NEED REFRIGERATION COULD SAVE 500,000 LIVES EACH YEAR FROM FATAL DIARRHOEA

Positive outcome of trials in Niger fuels hope that vaccine can protect children in sub-Saharan Africa and beyond from infection that causes often fatal diarrhoea.

March 23, 2017
http://www.nextbigfuture.com/2017/03/vaccine-that-does-not-need.html

A vaccine capable of enduring scorching temperatures for months at a time could strike a decisive blow in the fight against rotavirus, preventing nearly half a million children around the world from dying of diarrhoea each year.

Médecins Sans Frontières (MSF) has hailed successful trials of the BRV-PV vaccine in Niger as a "game changer" in tackling rotavirus infection, which is the leading cause of severe diarrhoea globally and claims the lives of an estimated 1,300 children daily, most of them in sub-Saharan Africa.

According to results published in the New England Journal of Medicine, the vaccine has proven as effective as those currently used to treat severe gastroenteritis. Trials in Niger's Maradi region successfully treated 4,000 children under the age of two.

A nurse administers a rotavirus vaccine to a baby in Port-au-Prince, the Haitian capital, as part of a 2014 public health initiative. Photograph: Hector Retamal/AFP/Getty Images

Unlike existing vaccines, the BRV-PV vaccine does not require refrigeration and can remain stable for up to one year at 37C or six months at 40C. It is particularly effective against the strains of rotavirus found in sub-Saharan Africa, as well as affordable: at only $2.50 (£2), the vaccine could potentially be rolled out quickly in routine immunisation programmes.

"This is a game-changer," said Dr Micaela Serafini, MSF's medical director. "We believe that the new vaccine can bring protection against rotavirus to the children who need it most."

Diarrhoea is the second largest cause of death in infants and children worldwide, primarily in low-income countries where access to clean water and sanitation is limited. Rotavirus is highly contagious, particularly among babies and young children, and can be spread by contaminated hands, objects such as toys and surfaces, and water and food.

Children in the world's poorest countries account for 82% of rotavirus deaths, but vaccines make a significant difference. In Mexico, diarrhoeal deaths among children under five declined by as much as 50% after rotavirus vaccines were introduced.

The World Health Organization recommends that rotavirus vaccines should be included in all national immunisation programmes, and considered a priority in south and south-east Asia and sub-Saharan Africa. The BRV-PV vaccine is awaiting pre-qualification from the WHO before it can be rolled out.

Licensing the product could take up to 18 months, said Anna-Lea Kahn, a WHO technical officer looking at innovations for facilitating vaccine supply and delivery. During that period, WHO scientists evaluate data supporting the vaccine's quality and safety, drawing on independent specialist help when needed.

Most difficulties with vaccine delivery tend to arise during the "last mile" of the vaccine supply chain, said Kahn. "That's where it goes wrong the most: where being able to maintain the cold chain is hardest; where constraints are most pronounced, be it due to lack of electricity or lack of resources, or inability to maintain a cold fridge. There may be geographical barriers, too, presenting a logistical challenge.

"In these scenarios, not having to depend on the cold chain … can make a valuable difference in getting vaccines to those who otherwise might not receive it."

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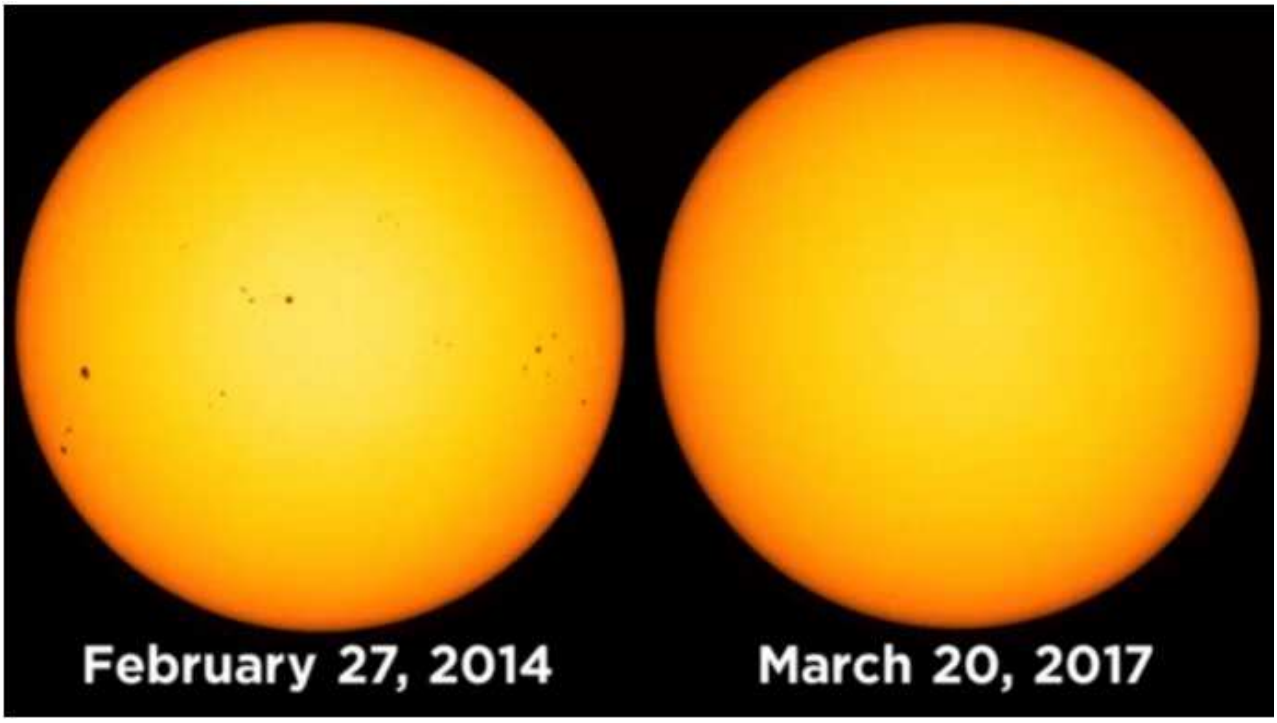
THE SUN IS NEARLY SPOTLESS, HINTING AT SOLAR LULL

By Tariq Malik, Space.com Managing Editor | March 23, 2017 06:48pm ET
http://www.space.com/36188-spotless-sun-has-no-sunspots.html?utm_source=sp-newsletter&utm_medium=email&utm_campaign=20170324-sdc

This side-by-side animation shows sunspots on the sun on Feb. 27, 2014 (left) and the sunspot-less day of March 20, 2017 as seen by NASA's Solar Dynamics Observatory. Credit: Joy Ng/NASA's GSFC/SDO

Talk about spick and span! The sun was nearly spotless for more than two weeks this month, a clue that the star may be nearing its next lull in activity, according to NASA.



No sunspots on the sun's surface were visible during a 15-day stretch that began on March 7, despite constant observation by NASA's powerful Solar Dynamics Observatory spacecraft.

"This is the longest stretch of spotlessness since the last solar minimum in April 2010, indicating the solar cycle is marching on toward the next minimum, which scientists predict will occur between 2019—2020," NASA officials wrote in a statement.

Sunspots are regions of the sun that appear dark because they are cooler than their surroundings, but they are still superhot — with temperatures that are about 6,380 degrees Fahrenheit (3,527 degrees Celsius). Even so, that's about 3,140 degrees F (1,727 degrees C) cooler than the rest of the sun.

The sun's recent lack of sunspots is abundantly clear in a new side-by-side animation of the sun from two different days: March 20 of this year (when the sunspots were missing) and Feb. 27, 2014, when there was a flurry of activity on the star.

Activity on the sun follows an 11-year cycle that shifts from solar maximum — a time of peak activity — to a quiescent solar minimum. The recent drop in visible sunspots is a sign that the sun may be approaching that low point in the cycle, NASA officials said.

"Sunspots are dark regions of complex magnetic activity on the sun's surface, so the number of sunspots at any given time is used as an index for solar activity," NASA officials wrote in the March 22 statement. "Solar maximum is characterized by intense solar activity and the greatest sunspot number. Conversely, during solar minimum, the sun is least active and sunspot number is at its lowest."

A lack of sunspots does not mean the sun's activity stops altogether. Other solar activity, such as coronal holes that unleash streams of solar material out into space, can amplify the auroras at Earth's poles, NASA officials added.

NASA's Solar Dynamics Observatory is one of a fleet of spacecraft watching the sun to track space weather events. During peak solar activity, major solar storms can interfere with satellites in orbit and pose a risk to astronauts, NASA officials have said.

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ESA TURNS TO SOIL TO KEEP LUNAR MISSIONS WARM AT NIGHT

David Szondy March 24, 2017
http://newatlas.com/esa-lunar-soil-heat/48597/

The ESA system will allow lunar exploration equipment to survive the lunar night without nuclear power or batteries (Credit: ESA/JAXA/NHK)

ESA is developing a new heating system to help future missions to the Moon survive the freezing, fortnight-long lunar night. Currently, landers and rovers rely on nuclear or electric heating systems to keep their electronics warm, but the space agency is looking at ways to turn the lunar surface itself into a cheap, sustainable heat source that can be tapped after the Sun sets.

Because it's an airless desert exposed to the vacuum of space and the full fury of the Sun, the Moon is a world of extremes. During the 14-day-long nights, the surface temperature reaches –170° C (–274° F), and without special heating systems the electronics and other systems of rovers, experiments, spacecraft, and habitats would soon freeze into inoperability.

This has happened to more than one lunar mission, including the Soviet Lunokhod-2 when its nuclear heater died after four months in May 1973 and the unmanned rover failed to survive the long, cold night as its systems shut down for good. Even the manned missions were vulnerable to this, which is one reason why all six of the Apollo landings were made during the lunar day and left long before nightfall.

What ESA is looking at is a low-cost alternative to the expensive nuclear power units and large batteries, both with limited lives, now used by lunar landers and rovers to stay warm. The idea is to use the extremes of the lunar climate to heat spacecraft at night by using the Sun to heat the soil around landers or other equipment, then tapping that heat at night.

The surface of the Moon isn't just freezing cold at night, it's also boiling hot during the day with the thermometer topping out above 100° C (212° F) at the equator. So if the Sun can be concentrated on a patch of lunar soil, it could be turned into a heat sink like heating up a stoneware pot in a slow cooker to cook food.

Currently, the system ESA is working on comes in two versions. A simple one suitable for rovers and small spacecraft that uses reflectors to heat patches of the lunar soil to form "thermal wadis," or hot spots, that can then be tapped at night to keep the devices warm enough to function. The second one uses multiple reflectors and heat pipes to collect solar energy to run machinery directly during the day and to store excess heat to keep large installations, like a habitat, warm. In addition, schematics indicate that the heat pipes could be linked to cold spots, perhaps produced by shading the ground, to increase the efficiency of the heat engine.

"The principle has been worked out in detail," says ESA's Moritz Fontaine. "The next step, being undertaken through ESA's General Studies Programme, is to perform numerical and simulation studies to put values on the heat storage and electricity provision the system would enable. The results should then allow the construction of a small demonstrator to test the concept in practice."

Source: ESA

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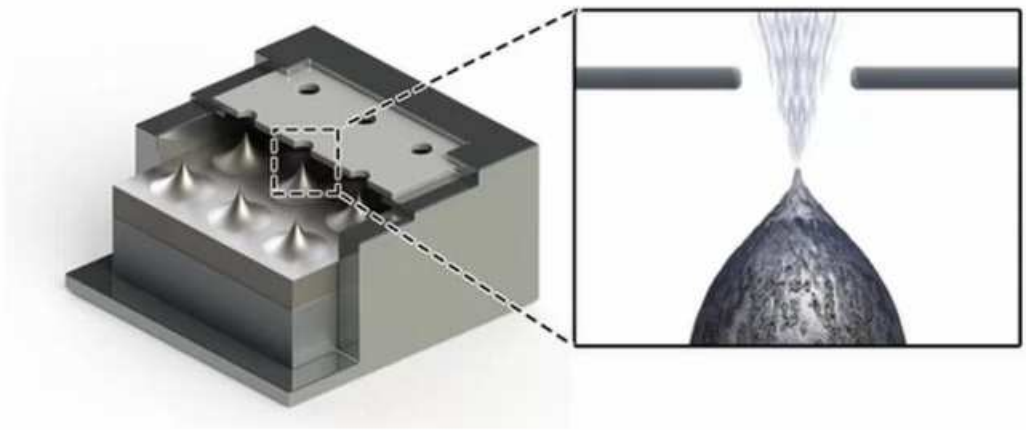
DIME-SIZE THRUSTERS COULD PROPEL SATELLITES, SPACECRAFT

By Tracy Staedter, Space.com Contributor | March 23, 2017 07:20am ET
http://www.space.com/36180-dime-size-accion-thrusters-propel-spacecraft.html



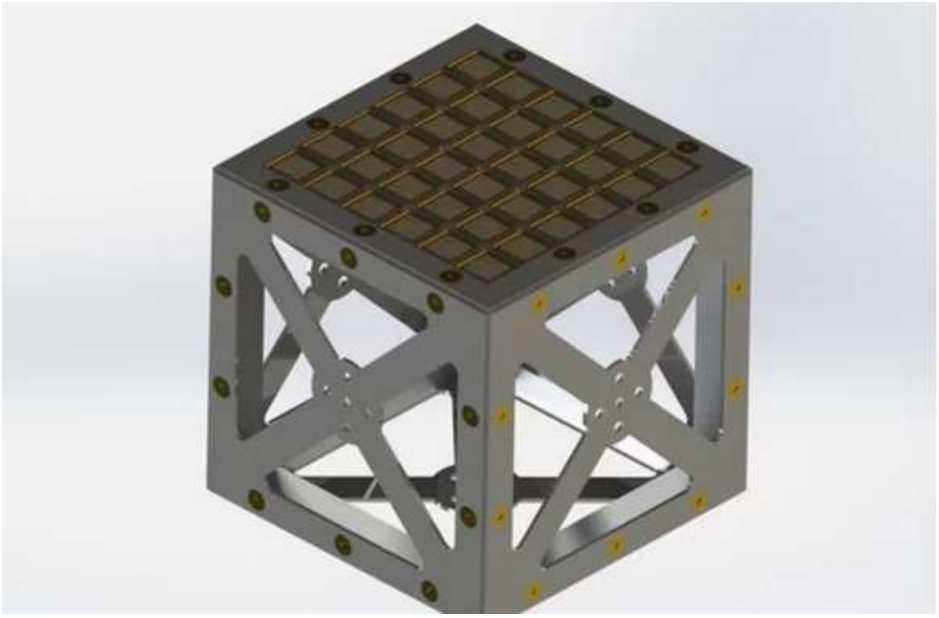
A "thruster chip" designed by Accion Systems is smaller than a quarter, but contains hundreds of microscopic emitters that

emit beams of ions. A single TILE thruster engine brings together 36 thruster chips. Credit: Accion Systems

CAMBRIDGE, Mass. — A new propulsion engine with dime-size thrusters could be used to propel a host of spacecraft, from small satellites to crewed ships designed for interplanetary exploration.

The new propulsion engine, called TILE, which stands for Tiled Ionic Liquid Electrospray, could serve as an efficient and lightweight way to keep constellations of small satellites in orbit. Spaceflight companies — including OneWeb, Boeing and SpaceX — want to launch hundreds of thousands of these small satellites to provide broadband internet to everyone around the globe. And because several TILEs can be connected to produce more power, the engine has the potential to propel astronauts to Mars, according to Accion Systems, the company that designed TILE.

"Our technology starts on a nanometer scale, and then we can array that and scale that up to serve satellites," said Natalya Bailey, CEO of Accion Systems.



Bailey described the propulsion engine to an audience here at the New Space Age Conference at the Massachusetts Institute of Technology's (MIT) Sloan School of Management on March 11.
[Superfast Spacecraft Propulsion Concepts (Images)]

Bailey developed the underlying propulsion system with Accion co-founder Louis Perna while they were Ph.D. students at MIT.

The TILE engine uses a method called ionic liquid electrospray propulsion. The system draws from a decades-old technology for thrusting satellites, called electric propulsion, which uses electromagnetic fields to shoot charged atoms, or ions, out the back of a satellite to push it forward.

But these engines, known as Hall-effect thrusters, have some major downsides. First, they use compressed-gas propellants that have to be stored in large, pressurized containers. Hall thrusters also require electric power in a couple of different places, first to charge the particles to create an ionized gas, and then to accelerate that plasma to propel the satellite. All of these things add bulk and weight to the engines, which make them way too big to serve as propulsion systems for small satellites, Bailey said. And thanks to the laws of plasma physics, the engines are just plain impossible to shrink down.

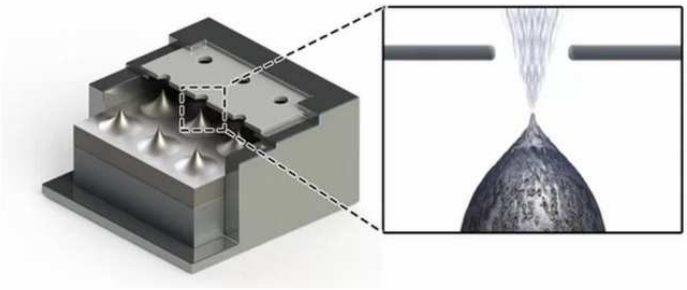
"Essentially, you end up running into some problems with really hot electrons and melting the device," she said.

A schematic of an Accion Systems TILE thruster engine. Credit: Accion Systems

In contrast, the TILE's ionic liquid electrospray propulsion system has more in common with a computer chip than a huge, bespoke engine, Bailey said. In fact, Accion calls the dime-size propulsion device a "thruster chip." It's made of hundreds of emitters that produce beams of ions generated from a nontoxic and nonexplosive propellant that's a salt-based solution.

An array of 36 thruster chips make up the outward-facing surface of a TILE module, which measures about 4 inches by 4 inches by 5 inches (10 by 10 by 12.5 cm) — about the size of a grapefruit. Beneath the top layer of the module are other components stacked in a particular order, including the salt-based propellant, which is stored in tiny tanks, and the system's power electronics, which run off of the satellites' solar panels and batteries. When the power is on, the battery creates an electric field that draws ions up from the salty propellant and pulls them through the tanks to the thruster chips, which funnel them into a beam and eject them for propulsion.

A schematic of an Accion Systems TILE thruster engine. Credit: Accion Systems



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One to four TILEs could propel a small satellite weighing anywhere from 100 to 440 lbs. (50 to 200 kilograms), Bailey said. Arranging more modules together in a larger array could steer larger satellites, without the added bulk, she added.

Bailey and Perna founded Accion Systems in 2014 to commercialize the Til technology. In 2015, the company received a $3 million contract from the U.S. Department of Defense (DOD) to develop their technology. This summer, the company will test the TILE to see how well it can withstand temperature extremes, the vacuum of space, and the shock and vibration of a launch.

After it passes those tests, Accion plans to integrate a TILE with a customer satellite, Bailey said. "We're definitely going to space," she added.

In another 10 to 15 years, Accion Systems hopes to have the technology refined to make the long journey to Mars. According to the company's estimates, if a crewed spacecraft were to rely on conventional engines, the journey would require so much fuel that the ship would have to support 4,000 Hall thrusters. The fuel tanks alone would equal the size of the International Space Station. But if the trip were made using Accion's TILE propulsion, the engine and fuel system would take up the space of shoebox, Bailey said.

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SPACEX SCHEDULED RELAUNCH OF A RECOVERED BOOSTER IS SCHEDULED FOR THIS THURSDAY

March 27, 2017
http://www.nextbigfuture.com/2017/03/spacex-scheduled-relaunch-of-recovered.html

SpaceX is now targeting 6 p.m. Thursday for its first re-launch of a used Falcon 9 rocket booster, a mission that aims to loft a commercial communications satellite to orbit from Kennedy Space Center.

Launch teams on Monday aimed to fuel the two-stage rocket during a practice countdown culminating in a short test-firing of nine Merlin main engines at Launch Complex 39A.

Delays completing the test over the weekend pushed a planned Wednesday launch of the SES-10 satellite back a day.

There's a 70 percent chance of acceptable weather during the window, according to the Air Force's 45th Weather Squadron. The odds drop slightly to 60 percent "go" on Friday, the mission's backup launch day.

'Flight proven' SpaceX Falcon 9 rocket poised for second launch

Meanwhile, United Launch Alliance continues to troubleshoot a hydraulic issue on an Atlas V rocket's main engine, an issue that has delayed its planned launch of an Orbital ATK Cygnus cargo craft to the International Space Station.

The mission won't fly from Launch Complex 41 at Cape Canaveral Air Force Station until after the Falcon 9's upcoming attempts.

The first stage of the Falcon rocket being tested today launched an ISS resupply mission nearly a year ago. SpaceX landed the booster on a ship in the Atlantic Ocean and has refurbished it for a second flight — the company's first attempt to launch a used, or "flight proven," booster.

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MILK THAT LASTS FOR MONTHS

Ultra-heat-treated milk is a shelf staple, especially in tropical climes where milk easily spoils. BBC Future investigates its special properties.

By Veronique Greenwood, 27 March 2017
http://www.bbc.com/future/story/20170327-the-milk-that-lasts-forever

In general, milk is not known for a spectacular shelf life. Even milk that's been pasteurised, so a good many of the bacteria naturally present are dead, will go off after about 10-15 days in the fridge, and that's being generous. But for the last 50 or 60 years or so, milk that lasts not days, not weeks, but months and months without refrigeration has taken up a place on grocery store shelves. The ubiquitous waxed-paper boxes contain milk that's had an interesting treatment, with some effects that are obvious and others that you may find more surprising.

The process that leads to this UHT, or ultra-heat-treated, milk is incredibly brief, compared to normal pasteurisation. Named after Louis Pasteur, who pioneered the idea, pasteurisation is aimed at killing tuberculosis bacteria and a few others that cause disease. It involves heating milk to 72C (161F) for about 15 seconds, then cooling it down. It doesn't kill everything, and many bacteria that aren't particularly harmful as long as the milk is refrigerated and consumed quickly remain. Most of the milk drunk in the United States, Australia, and New Zealand is of the pasteurised variety, says Hilton Deeth, a dairy expert recently retired from University of Queensland.

The milk can be stored for many months thanks to the sterilising effect of heat (Credit: iStock)

However, in many European nations, UHT milk is the norm. This milk is heated to double the temperature – 140C – for a mere three seconds. The high heat does its work almost instantly, killing all bacteria and most of the bacterial spores that can stand up to lesser

temperatures. Because it's nearly sterile, as long as it is packaged in a container that's aseptic, it will last and last. No bacteria means no spoilage, at least as long as the package is closed.

You can't do just anything to UHT milk, cautions Deeth. It's designed to last at about 20-30C, so if it's shipped across the equator on a sweltering ship, or languishes on a dock somewhere in the tropics for a while, some of those remaining spores may come active and cause problems. And peculiar things do happen sometimes to that everlasting milk in its cloistered existence. It can form a gel inside the package, so when you open it and try to pour it, "it looks a bit like a yoghurt or a custard, or it has lumps," says Deeth.

UHT milk has more or less conquered the milk market in many places in the world

The reason that happens can be found in the chemistry that goes on during its treatment and which contribute to some of its odd qualities. With that brief, intense heat comes a change in the milk's proteins. The whey proteins become unravelled, turning into limp strands. The Maillard Reaction, famous for creating the delicious flavours of caramel, perfectly browned toast, and bacon, as well as many other foods, occurs between the milk's proteins and sugars. An array of enzymes also fall apart, although not, crucially, an enzyme called plasmin, unless the milk is pre-treated to eliminate it. A variety of sulphur compounds are created, giving the newly treated milk an eggy stench that almost entirely dissipates after about a week.

Cheeses like these are impossible to make with the heat-treated milk (Credit: iStock)

If plasmin stays active, it will go around slicing up various proteins, releasing them from whatever they were doing before and allowing them to form attachments to each other. This seems to be what generates the gel-like agglomerations. The Maillard Reaction is likely behind the fact that UHT milk is noticeably sweeter than its pasteurised cousin. UHT milk is

also usually whiter than pasteurised, in fact, Deeth notes. This seems to stem from the way that the unfurled whey proteins and other substances reflect the light. And the sulphur molecules do give it a certain cooked tang to many palates.

While not everyone loves the flavour, UHT milk has more or less conquered the milk market in many places in the world. For instance, it is omnipresent in China, where the appetite for milk has been growing by leaps and bounds. "There's been something like a 10% increase per year for several years now," says Deeth. "The amount of UHT milk in China is huge." Milk industry growth in places like Australia, New Zealand, and Germany has been driven in part by exporting shelf-stable milk to China.

One downside, however, to this long-lived beverage: it is impossible, pretty much, to make cheese from the stuff. Cheese is a two-step process, with proteins being sliced up by rennet enzymes and then agglomerating to make the curd. It seems, Deeth says, that the relaxed whey proteins, straggling all through the mixture, get in the way of the curd coming together (pasteurised milk, where only 5-10% of whey is denatured, has no such problem). Not that Deeth hasn't tried. He and a post-doc have tested all sorts of conditions, to little success.

"I went in one morning," Deeth recalls, "and he said, 'I got some curd from that cheese...[but] I left at 1 am.' Cheese normally sets after a couple of hours, but that one took 11 hours get anywhere close. "I think there's room for research to make UHT milk cheese," he reflects. But it would likely be something like cottage cheese, with a great deal of moisture.

And it would not, thanks to its lack of working enzymes, grow more delicious with age.

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From: "Jim Woosley" Jimwoosley@aol.com

VIDEO: WATCH THE NAVY'S RAILGUN FIRE FROM EVERY ANGLE

The railgun takes the first shot of its commissioning series.

By Eric Limer, Mar 21, 2017
http://www.popularmechanics.com/military/weapons/a25759/electromagnetic-cannon-railgun-test-fire-commissioning-series/

The Navy ushered in the railgun future way back in 2012 with the first shots of its electromagnetic cannon. But although the concept has been proven and the cannon is functional, its road to deployment has been a bit rocky. Between enormous energy requirements, and non-explosive shells that offer limited in-air guidance, electromagnetic weapons are proving a bit unpractical compared to some of the conventional alternatives. At least for now.

But that hasn't stopped the Navy from pressing on with the research, and this recently released video of a test fire from November 2016 shows cannon just blasting away with astonishing ferocity, and from any angle you could ever want:

The railgun was originally scheduled for testing at sea on the USNS Trenton this year, but that seems to have been delayed until 2017 at the earliest. Meanwhile, the USS Zumwalt—which boasts the robust power plant necessary to actually take one of these weapons into service—is having some trouble with its conventional guns and their wildly expensive ammo. Only time will tell if the two will actually pair up any time in the near future, but in the meantime it sure is clear that the electromagnetic cannon isn't kidding around.

Source: usnavyresearch

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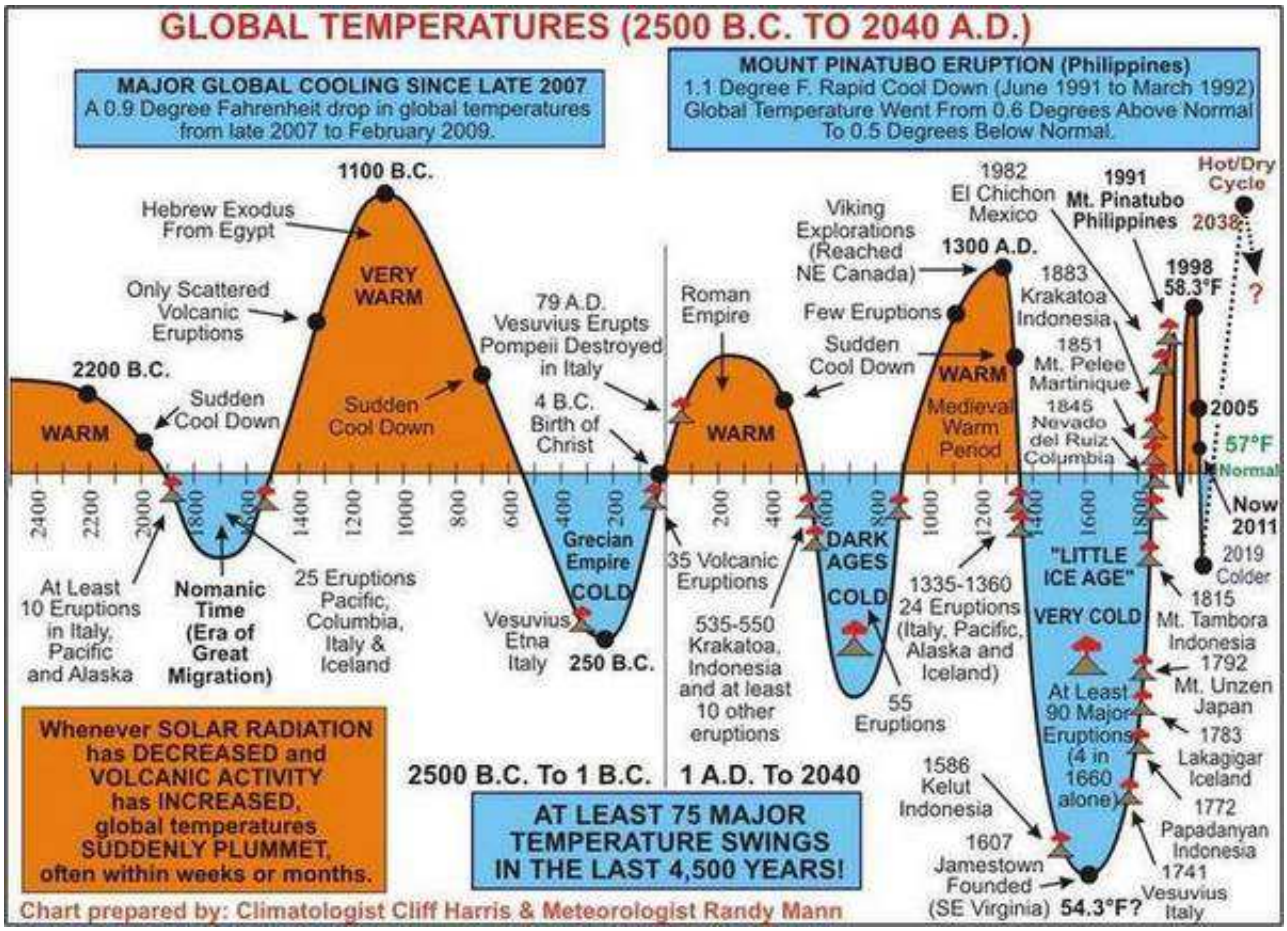
SIMPLE CHART DESTROYS THE LIBERAL CLIMATE CHANGE SCAM

By TFPP Writer
http://thefederalistpapers.org/us/simple-chart-destroys-the-liberal-climate-change-scam



Analytical Economist reports predictions from climate change alarmists go awry so often that at this rate the only way they'll be able to save themselves from embarrassment is if they make their doomsday predictions so far out in the future that they'll be dead before we can check them on it.

Here are, in our opinion, the top 10 biggest climate alarmist predictions gone spectacularly wrong:

Biologist Paul Ehrlich predicted in the 1970s that: "Population will inevitably and completely outstrip whatever small increases in food supplies we make," and that "The death rate will increase until at least 100-200 million people per year will be starving to death during the next ten years."

In January 1970, Life reported, "Scientists have solid experimental and theoretical evidence to support…the following predictions: In a decade, urban dwellers will have to wear gas masks to survive air pollution…by 1985 air pollution will have reduced the amount of sunlight reaching earth by one half…."
In January 2006 Al Gore predicted that we had ten years left before the planet turned into a "total frying pan." We made it.

In 2008, a segment aired on ABC News predicted that NYC would be under water by June 2015.

In 1970, ecologist Kenneth E.F. Watt predicted that "If present trends continue, the world will be about four degrees colder for the global mean temperature in 1990, but 11 degrees colder by the year 2000, This is about twice what it would take to put us in an ice age."

AS A STUDENT OF GLOBAL HISTORY, I HAVE ALWAYS BEEN INTERESTED AND FACINATED IN THE CYCLES OF TEMPERATURE THAT OCCUR DURING THE RISE AND FALL OF CIVILIZATIONS. THIS CHART PRETTY MUCH DESCRIBES WHAT I HAVE BEEN TAUGHT OVER THE YEARS. THE PERIODIC CYCLES OF THE SUN ARE FACINATING. ONE OF MY FAVORITE THINGS I HAVE FOUND THROUGH MY STUDIES IS THAT "THOSE WHO DO NOT STUDY HISTORY ARE BOUND TO RELIVE IT." THIS CAN BE PARAPHRASED AS "THOSE WHO DON'T STUDY CLIMATE HISTORY ARE BOUND TO BE LED AROUND BY THEIR NOSES". THE CHART IS PRETTY EASY TO UNDERSTAND AND MIGHT PAY ALL OF YOU TO REALLY STUDY IT. UT

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From: "Chris Cowan" cowanc1028@earthlink.net

For a MERE $14,000 a year.

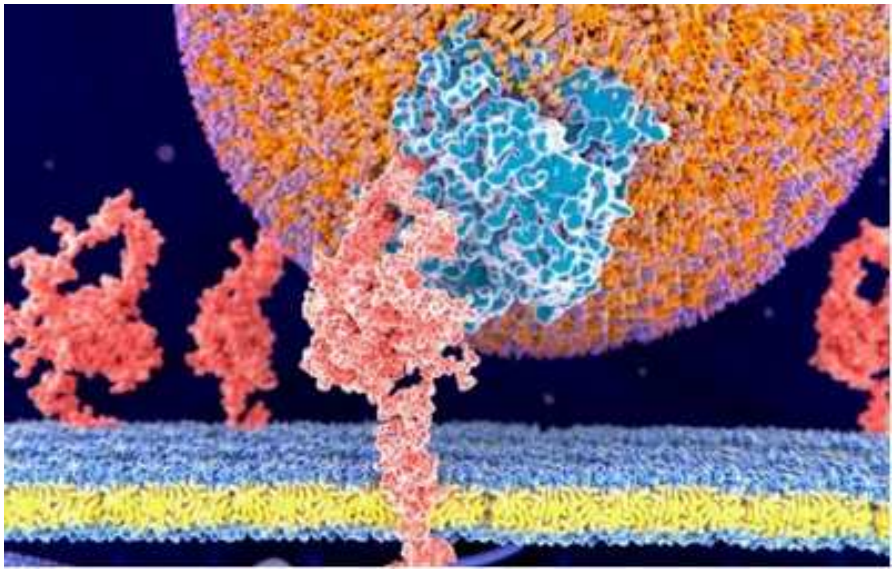
NEW CHOLESTEROL DRUG LOWERS RISK OF HEART ATTACK AND STROKE

It remains to be seen whether the treatment, which was effective in a large clinical trial, will live up to its promise

By Heidi Ledford, Nature magazine on March 17, 2017
https://www.scientificamerican.com/article/new-cholesterol-drug-lowers-risk-of-heart-attack-and-stroke/

For years, medical researchers have hoped that a burgeoning class of cholesterol drugs targeting a protein called PCSK9 could be the next generation of blockbuster treatments. Now, a large clinical trial has demonstrated that this approach can lower the risk of heart disease. But it's still unclear whether these drugs—which attempt to mimic a beneficial

genetic mutation—will be the breakthrough that scientists and pharmaceutical companies had imagined.



An LDL, or "bad" cholesterol molecule (round) binds to an LDL receptor protein (pink) in this illustration. Credit: Juan Gaertner Getty Images

The results, published in the New England Journal of Medicine and presented at the American College of Cardiology conference in Washington DC on March 17, show that a drug called evolocumab (Repatha) reduced the risk of cardiovascular death, heart attack and stroke by about 20% in patients who were already taking other cholesterol-controlling drugs called statins. This reduction in risk is roughly the same magnitude as patients might see from taking statins alone. On another measure that also included hospitalizations for conditions that cause reduced blood flow to the heart, evolocumab reduced the risk by 15%.

The US Food and Drug Administration (FDA) approved evolocumab in 2015 for use in some patients with high cholesterol, based on data showing that the drug could lower levels of 'bad' low-density lipoprotein (LDL) cholesterol circulating in the blood by approximately 60%. But researchers didn't have evidence then that the drug could also protect against heart attacks or strokes.

"It is an exceptionally important study," says Harlan Krumholz, a cardiologist at Yale University in New Haven, Connecticut. "The promise of these drugs has been very clear. Whether they would deliver on that promise was suspected, but not known."

The new results—from a trial with more than 27,500 participants—vindicate the concept that inhibiting PCSK9 can control cholesterol and heart-disease risk. The question now is whether physicians and health-care payers will consider that benefit great enough to warrant the annual price tag of roughly US$14,000.

ROUGH ROAD

The PCSK9 protein helps to control the amount of bad cholesterol in the blood by regulating the number of LDL receptor proteins on cell surfaces, which take LDL out of circulation. People with naturally occurring mutations in the PCSK9 gene have unusually low levels of bad cholesterol—and up to an 88% lower risk of developing heart disease.

Turning that information into a successful treatment, however, has been a challenge. Several drugs that target PCSK9 are either in development or have been approved, but evolocumab is the first to report results from such a large trial.

Pfizer, based in New York City, abandoned a PCSK9-blocking drug called bococizumab last year after running into problems during patient trials. Bococizumab, like evolocumab, is an antibody that binds to the PCSK9 protein. But participants who received bococizumab tended to form an immune response against the drug, which interfered with the treatments.

And the FDA approved evolocumab, made by Amgen in Thousand Oaks, California, only for certain patients, such as those with a hereditary condition that causes extremely high levels of LDL.

WORTH ANY PRICE?

Now that the data on evolocumab are in, some health-care payers such as insurance companies and government programmes might be more willing to shoulder the treatment's steep cost. But any new cholesterol drug faces stiff competition from cheaper statins, which have been used to control LDL levels for decades.

Some analysts say that demonstrating a statistically significant heart-health benefit would not be enough to ensure the PCSK9 drug's status as the next big thing. "The more important hurdle is the one that payers have imposed restricting access to these medicines," wrote analysts at the investment bank Leerink Partners in New York City, in a report released 15 March.

To cross that threshold, Leerink's analysts estimated that evolocumab would need to reduce cardiovascular risks by 25% or more.

Overall, the risk reduction was less than what might have been expected based on how much evolocumab reduces the amount of LDL cholesterol in the body, says Krumholz. But the evidence of a benefit is strong enough that he will discuss the drug as an option with his patients, he adds.

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HIDDEN HIV RESERVOIRS EXPOSED BY TELLTALE PROTEIN

The discovery may help doctors identify elusive infected cells in the body

By Amy Maxmen, Nature on March 16, 2017
https://www.scientificamerican.com/article/hidden-hiv-reservoirs-exposed-by-telltale-protein/?WT.mc_id=send-to-friend

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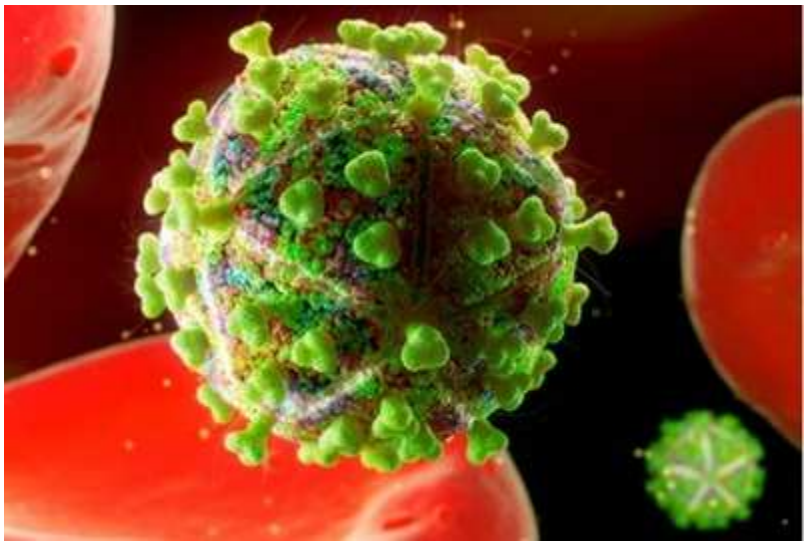
*** Hidden HIV Reservoirs ***
****

Attempts to cure HIV have been thwarted by a particular type of immune-system cell that can hide the virus. These long-lived infected T cells can evade detection by the body for years, and are hard to find, study and kill. Reliably identifying these covert reservoirs is top of the wish-list for HIV researchers, but they've had limited success.



Credit: Ian Cuming Getty Images

That may soon change with the identification of a protein called CD32a. It sits on the surface of T cells that are infected, but lie dormant. Researchers reported their findings on 15 March in Nature1. Like a police sketch of a criminal, the protein provides a way to distinguish these sleeper T cells from other immune-system cells. And it provides hope that scientists could target these silent, infected cells and destroy them.

Antiretroviral drugs prevent the virus from spreading throughout the body and the immune system targets cells that are actively transcribing viral DNA. But because a small fraction of infected T cells lie dormant, the viral genome within remains silent and neither the drugs nor the immune system detects the intruder. Known as the 'latent reservoir', these cells become a problem if a patient stops taking antiretroviral therapy. They can slowly awaken, allowing the virus to replicate freely.

SHOCK AND KILL

“Since 1996, the dream has been to kill these nasty cells in hiding, but we had no way to do it because we had no way to recognize them,” says Monsef Benkirane, a virologist at the University of Montpellier in France, and lead author on the study.

In 2012, HIV researchers attempted a new approach to targeting dormant, infected T cells. Called 'shock and kill', the therapy was supposed to kick-start viral replication in these latently infected T cells. In theory, the immune system and HIV drugs should then be able to locate and attack the cells. However, Deeks says that results up to now have been unimpressive in patients, perhaps because the drugs used to shock the cells have failed to stimulate enough of the HIV reservoir to show itself.

Virologists lack even basic knowledge of the reservoir, because latently infected cells are exceedingly hard to find in the body. It was Benkirane’s quest to solve that problem that led him and his team to the CD32a protein marker. The researchers exposed resting T cells to fluorescently tagged HIV in the lab, and searched for differences in gene expression between cells infected by the marked virus, and those that weren’t. A subset of the quiescent infected cells turned on a gene, which coded for CD32a, that was almost undetectable in uninfected cells. The researchers also determined that the protein is not expressed at significant levels in cells actively producing HIV.

Using an antibody that sticks to CD32a, the researchers then pulled cells expressing the protein out of human blood samples from HIV-infected people. As expected, these were quiescent T cells harbouring HIV. “You absolutely could not have done that before now,” Benkirane says.

EXPOSURE

Steven Deeks, a virologist at the University of California, San Francisco, hopes that the new protein target, or biomarker, accelerates research on a cure, in the same way that tests to measure the amount of virus in a sample helped to develop antiretroviral therapy in the late 1990s.

The next steps will be to replicate the findings by screening blood from patients of different genders, ethnicities, ages and stages of the disease, says Tony Fauci, director of the US National Insitute of Allergies and Infectious Disease in Bethesda, Maryland. Scientists will also test tissues that HIV usually infects, including the gut and lymph nodes. The ultimate goal, if CD32a turns out to be a reliable marker, is to use it to target drugs to the latent cells.

For now, Fauci is excited but cautious about the potential of CD23a. His hesitancy comes from two decades of research searching for a cure that has proved elusive. "I really hope this is correct," he says. "The fact that this work has been done by such competent investigators, and the data looks good, makes me optimistic."

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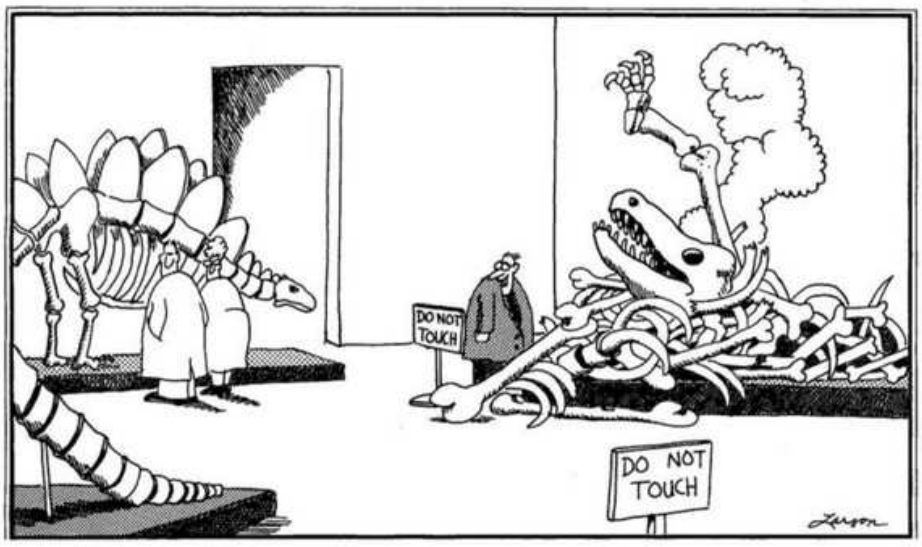
WHAT?! A MASSIVE DINOSAUR FAMILY TREE REWRITE

By Gemma Tarlach | March 22, 2017 1:00 pm
http://blogs.discovermagazine.com/deadthings/2017/03/22/what-a-massive-dinosaur-family-tree-rewrite/?utm_source=SilverpopMailing&utm_medium=email&utm_campaign=News0_DSC_170323_000000_Final%20A&utm_content=&spMailingID=28362795&spUserID=MTE2MDc4NjczNTgxS0&spJobID=1003297187&spReportId=MTAwMzI5NzE4NwS2#.WNU3JjsrJPY



A new study about the relationships between species just knocked down our basic understanding of the dinosaur family tree. (Credit: Gary Larson/The Far Side)

Ask any obsessive dino-phile above kindergarten age to explain the dinosaur family tree and it's likely the first thing you'll hear is that all dinosaur species fall into one of two groups. It's a core concept upon which our entire understanding of dinosaurs is built. But according to a new study, we got that most fundamental aspect of dinosaur evolution completely wrong. Oops.

For more than a century, the dinosaur family tree was understood as having a very early split into two branches: Saurischia and Ornithischia. While science has not yet nailed down exactly when dinosaurs evolved, conventional thinking put the big saurischian-ornithischian split at least 230 million years ago, soon after the Dawn of Dinosaurs itself.

The saurischians, or "lizard-hipped," then split into sauropodomorphs (mostly quadrupedal, long-necked, long-tailed herbivores) and theropods (mostly carnivorous, bitey bipeds of all shapes and sizes and degrees of bitey-ness). The ornithischians ("bird-hipped") went on to diversify into some of the whackier herbivore dinosaurs, from horned and frilled ceratopsians to bipedal duck-billed dinos.

Despite being "bird-hipped," by the way, the ornithischians have nothing to do with modern birds, which evolved from a theropod lineage. The word Ornithischia comes from the structure of the pelvis. In saurischians, the pubis bone points forward; in ornithischians, it points backward, much like in modern birds, an example of convergent evolution (when unrelated species happen to evolve the same trait).

(Sidenote: that's a fun fact to trot out when you want your non-dino-loving friends to reply with comments such as "I can't believe you're still into dinosaurs. At your age," and "This is why you're still single." Then again, if you have non-dino-loving friends, ditch them. You don't need that kind of negativity in your life.)

In addition to birdy hips, the ornithischians are also unique for their predentary, a pointy bone at the front of the lower jaw likely used to crop vegetation for noshing.

THE BIG DINOSAUR FAMILY TREE SHAKE-UP

A study published today in Nature, however, has reshuffled the dinosaur family tree in a new and rather shocking way. Comparing more than 450 traits across a range of dinosaurs and their nearest non-dino relatives, researchers kicked the saurischian-ornithischian split to the curb. Instead, they propose dividing dinosaurs into a revised, more exclusive Saurischia club and Ornithoscelida.

According to the paradigm-shifting (shattering?) new study, Ornithoscelida includes ornithischians and theropods, the latter previously part of Saurischia.

For dinosaur enthusiasts this is an epic shift in thinking, so if your head is exploding right now, take a deep breath and take some comfort: the term "Ornithoscelida" at least is nothing new.

The official Dead Things mascot, a headless theropod I photographed in 2010 in a disused mini-golf course in Auckland, New Zealand, kind of sums up how I feel right now about this new study.

The great early evolution champion and dino-curious biologist Thomas Henry Huxley proposed Ornithoscelida in 1870 as

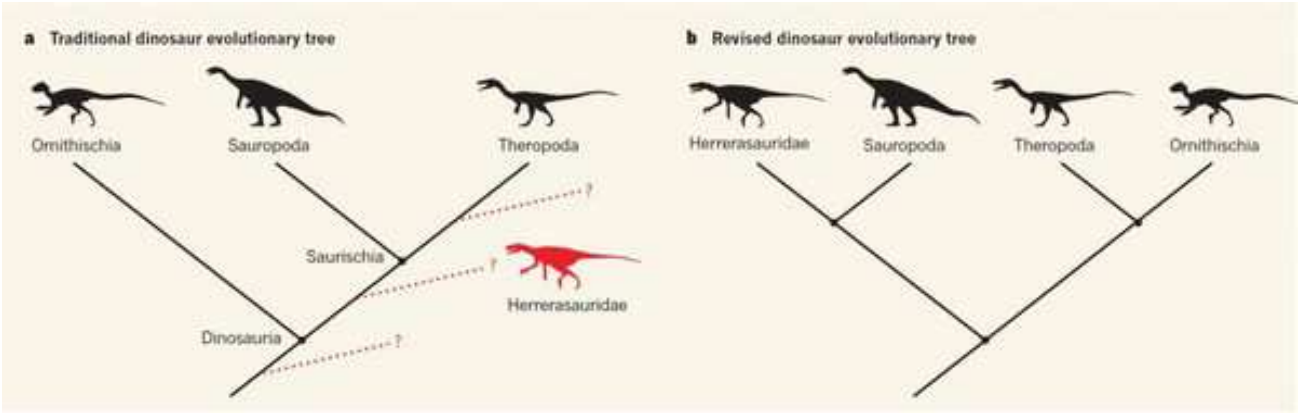
an umbrella for a handful of dinosaurs with notably bird-like hind limbs.

The new research puts some very un-bird-like dinosaurs, such as Triceratops, into Ornithoscelida. But it does so based on identifying 21 strongly supported traits called synapomorphies: these are characteristics that can be traced from an ancestor only to its descendents or, in other words, characteristics unique to that particular lineage.

WHERE DOES THAT LEAVE THE REST?

The sauropodomorphs, along with theropods, were previously grouped in Saurischia. Now, they're still there, but they're on their own — though the new research points to Herrerasauridae as a "sister clade" to the sauropodomorphs.

This is a tougher argument than some of the others advanced in today's paper, because Herrerasauridae are small, bipedal, full-on carnivores with grasping hands; sauropodomorphs, remember, are herbivorous and mostly quadrupedal (though bipedalism is seen in the earliest members of the lineage).



The dinosaur family tree, before and after new research results published today in Nature. The early division between Ornithischia and Saurischia has been abandoned, upsetting one of the longest-held notions about how species can be classified. (Credit Nature)

AN EARLY START?

One thing that hasn't changed in the new research: Dinosaurs in general are placed in the archosaur lineage, which today includes crocodilians and birds. The researchers included dinosauromorphs, archosaurs closely related to dinosaurs but not quite in the fold, in their study. Crunching all that data, says the team, places the emergence of dinosaurs earlier than previously thought.

The rise of Dinosauria, according to the new paper, occurred about 247 million years ago. While the new date doesn't exactly contradict the conventional chronology of dinosaurs evolving "before 230 million years ago," it does push the event further back in time.

…OH, AND ANOTHER THING

Not content to drop just one bomb into the field, the researchers also suggest that their data points to the Northern Hemisphere as the cradle of dinosaur evolution. Although a

casual observer familiar with famous dinos from the United States, Canada and China might think that makes sense, the assertion is another shake-up because the earliest and most primitive dinosaurs found so far hail from South America.

As noted in a commentary that accompanied today's study, the new research is indeed a "revolutionary proposal" and "provocative reassessment," but also a notion that will need a lot of additional data-crunching before we rewrite the paleontology textbooks.

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From: Stephanie Osborn

LONG BEFORE TREES OVERTOOK THE LAND, EARTH WAS COVERED BY GIANT MUSHROOMS

24 feet tall and three feet wide, these giant spires dotted the ancient landscape

By Colin Schultz, SMITHSONIAN.COM, JULY 17, 2013
http://www.smithsonianmag.com/smart-news/long-before-trees-overtook-the-land-earth-was-covered-by-giant-mushrooms-13709647/#Erh2d7iusQjpb1I4.99

Digging up a Prototaxites fossil. Photo: University of Chicago

From around 420 to 350 million years ago, when land plants were still the relatively new kids on the evolutionary block and "the tallest trees stood just a few feet high," giant spires of life poked from the Earth. "The ancient organism boasted trunks up to 24 feet (8 meters) high and as wide as three feet (one meter)," said National Geographic in 2007. With the

help of a fossil dug up in Saudi Arabia scientists finally figured out what the giant creature was: a fungus. (We think.)

The towering fungus spires would have stood out against a landscape scarce of such giants, said New Scientist in 2007.

"A 6-metre fungus would be odd enough in the modern world, but at least we are used to trees quite a bit bigger," says Boyce. "Plants at that time were a few feet tall, invertebrate animals were small, and there were no terrestrial vertebrates. This fossil would have been all the more striking in such a diminutive landscape."

Fossils of the organisms, known as Prototaxites, had peppered the paleontological findings of the past century and a half, ever since they were first discovered by a Canadian in 1859. But despite the fossil records, no one could figure out what the heck these giant spires were. The University of Chicago:

For the next 130 years, debate raged. Some scientists called Prototaxites a lichen, others a fungus, and still others clung to the notion that it was some kind of tree. "The problem is that when you look up close at the anatomy, it's evocative of a lot of different things, but it's diagnostic of nothing," says Boyce, an associate professor in geophysical sciences and the Committee on Evolutionary Biology. "And it's so damn big that when whenever someone says it'ssomething, everyone else's hackles get up: 'How could you have a lichen 20 feet tall?'"

That all changed in 2007 when a study came out that concluded the spires were a fungus, like a gigantic early mushroom.

But not everyone was sold on the idea that Prototaxites was an early fungus. No one's questioning the spires' existence—people just have trouble trying to imagine that such a huge structure could be a fungus. Researchers trying to refute the fungus idea thought that Prototaxites spires were gigantic mats of liverworts that had somehow rolled up. But in a follow-up study, the scientists who had proposed the fungus idea doubled down on their claim. So science is messy, and despite more than a century of digging, we still don't really know, for sure, what these huge spires that dominated the ancient Earth really were.

But even though the spire-like mushrooms of yore—or whatever they were—are long gone, don't feel too bad for funguskind. The largest organism on Earth, says ABC, is still a huge fungal mat, a single organism spread over 2,200 acres of forest in eastern Oregon.

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

From: "Jim Woosley" Jimwoosley@aol.com

SCOTT ADAMS' BLOG

Trump and Healthcare

Posted March 25th, 2017 @ 9:04am

http://blog.dilbert.com/post/158812654486/trump-and-healthcare

Today we are witnessing one of the most important events in political history. But you probably can't see it because the news is talking about healthcare, and how Ryan and Trump totally failed to get enough votes.

The real story is happening in parallel with the healthcare story, and that's what renders it invisible. Something enormous is happening that has nothing to do with anything you are seeing in the news. In fact, you'll probably read it here for the first time.

I'm dragging this out to see if you can guess the big news before I tell you. It is something I predicted would happen. It is something the country needs MORE than healthcare. It was, until yesterday, perceived as the biggest problem in the United States, if not the entire world.

And that problem almost totally went away yesterday. The smell might linger, but the problem has ended. We should be celebrating, but instead we will be yammering about healthcare.

Do you know what problem just got solved? It's invisible for now, but later everyone will be able to see it.

Don't see it?

Okay, I'll just tell you.

With the failure of the Ryan healthcare bill, the illusion of Trump-is-Hitler has been fully replaced with Trump-is-incompetent meme. Look for the new meme to dominate the news, probably through the summer. By year end, you will see a second turn, from incompetent to "Competent, but we don't like it."

I have been predicting this story arc for some time now. So far, we're ahead of schedule.

In the 2D world, where everything is just the way it looks, and people are rational, Trump and Ryan failed to improve healthcare. But in the 3D world of persuasion, Trump just had one of the best days any president ever had: He got promoted from Hitler to incompetent. And that promotion effectively defused the Hitler-hallucination bomb that was engineered by the Clinton campaign.

In all seriousness, the Trump-is-Hitler illusion was the biggest problem in the country, and maybe the world. It was scaring people to the point of bad health. It made any kind of political conversation impossible. It turned neighbors and friends against each other in a way we have never before seen. It was inviting violence, political instability, and worse.

In my opinion, the Trump-is-Hitler hallucination was the biggest short-term problem facing the country. Congress just solved for it, albeit unintentionally. Watch the opposition news abandon the Trump-is-scary concept to get all over the "incompetent" theme.

No one wants an incompetent president, but calling the other side a bunch of bumblers is routine politics. We just went from an extraordinary risk (Trump=Hitler) to ordinary politics (The other side=incompetent). Ordinary politics won't spark a revolution or make you

punch a coworker. This is a good day for all of us. It just doesn't look that way because the news is distracting you with the healthcare issue, which is also important, but a full level down in importance from electing Hitler (in your mind).

Speaking of healthcare, I predicted on Periscope here several days ago that the only way to get a bill passed was to let Ryan fail hard on the first attempt while scaring the left at the same time. That softens both sides to the middle. There was literally no other path to the middle. You couldn't get there without the first step being a major failure by the majority party. This necessary step toward success is, of course, being reported as total failure.

Today I'm getting a lot of what I call the "November 7th effect." That's where my critics are prematurely celebrating my wrongness because the Ryan version of healthcare failed. I hope to see my critics again toward the end of the year. Don't be strangers.

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'WOMEN'S MARCH' ORGANIZER IS LEAVING THE COUNTRY—AFTER BEING CAUGHT FOR LYING ABOUT TERRORISM

BY VICTORIA TAFT, March 24, 2017
http://ijr.com/2017/03/832055-womens-march-organizer-leaving-country-caught-lying-whole-terrorism-thing/

One of the "Women's March on Washington" and "Day Without a Woman" organizers, is being kicked out of the United States.

Rasmea Yousef Odeh failed to disclose on her U.S. visa form 20 years ago that she was convicted of murdering two Israeli students in a supermarket bomb attack and for an attempted bombing of the British Consulate in 1969.

SPONSORED VIDEO: Opinion Journal: Palestinians Celebrate Terrorism Duration Time 3:08

After a 10-year prison term, Odeh was freed in a prison swap with Palestinians.
William Jacobsen, a Cornell University law professor who runs the website "Legal Insurrection" says that the terror group Black September agitated for her release:

While she was imprisoned, the PFLP [People for the Liberation of Palestine] formed the "Rasmea Odeh Brigade" to try to free her and others by taking hostages, and Rasmea was on the list of prisoners whose release was sought by the Black September terrorists who took Israeli athletes hostage (and killed them) at the 1972 Olympics

For the last 20 years, Odeh has lived in Chicago. But in 2014, she was tried and convicted for immigration fraud for lying on her U.S. visa application.

The Washington Times reports that this week, Odeh found out that she'd lost her appeal. The court gave her two choices, get out of the country or go to jail:
Odeh, a resident of Chicago who has lived in the U.S. for about 20 years, plans to plead guilty to unlawful procurement of naturalization in a deal that will allow her to leave the United States rather than face the possibility of an 18-month prison sentence, according to Justice for Rasmea.

Odeh's critics are gloating that the Woman's March and "Day Without a Woman" organizer is leaving the country:

The mothers of the two Israeli students murdered by Rasmea Odeh, whom @llaarsour has defended, do not appear to have rights worth protecting. protecting. pic.twitter.com/nllwoz8hHt 2:28 PM - 14 Mar 2017

The Washington Times reports that the organized group supporting Odeh says that leaving the country was probably the best thing:

"The prosecution team is now under the regime of racist Attorney General Jeff Sessions, and a new superseding indictment re-frames this as a case about 'terrorism' rather than immigration," said a Thursday statement on the websites Justice for Rasmea and the U.S. Palestinian Community Network.

The convicted terrorist is scheduled to have one more court date in Detroit in April before she leaves the country.
