

The November 29th, 2017 Edition of THE REVENGE HUMP DAY!

Page 1 of 26

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

Turkey Day has come and gone and it was memorable. A good portion of the Bolgeo Clan assembled at Casa Spraker and we ate the fatted turkey. Well, most of them did, I love ham a lot more than turkey. Uncle Bobby was up from his Condo in Florida to celebrate the holiday with us. And Cousin Carol was here from Guntersville, Alabama to help prepare the feast and celebrate with us. There is nothing better than being with family over the Thanksgiving Holiday. And no, we didn't discuss politics or professional football. But we did discuss a ton of family gossip and college football. Toward the end of the day, Nickey Durkin Gorley, Ms. Barbara and Mr. Bill's daughter, showed up from Hotlanta and the day get even brighter. It is my fondest hope that you, my readers, had a least half of the good cheer I had over the Thanksgiving Holiday's. You deserve it.

One interesting thing was Black Friday. Would you believe that there was not one darn thing that I really wanted this year. I am surrounded by my family and all the people that I love and am a lucky man. What more can I ask for?

So on that "happy 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

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COMBINED CHATTANOOGA CONVENTION CHRISTMAS PARTY!

From LibertyCon Facebook Post

The Combined Chattanooga Convention Christmas party will be THIS SATURDAY, DEC 2 right after the December LibertyCon Meeting.

At: Best Western, East Ridge, Tennessee

When: Saturday, Dec 2nd, 6pm - until

Everyone is invited.

Rooms are available at the Best Western East Ridge until 11/30 at a discounted rate.

\$89 standard king

\$99 double

\$109 suite.

Call (423) 893-7979 for hotel reservations and ask for the LibertyCon block.

As always, this is a Potluck Dinner. The Conventions will provide the meat course. Please RSVP and let Vonn know what tastiness you will be bringing to vonngants@gmail.com.

Great food, great times, and also a charity auction when you can find those Christmas presents for all those con friends in your life.

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WREATHS ACROSS AMERICA CAMPAIGN FOR LYONS VIEW AND GOV. JOHN SEVIER HWY VETERAN CEMETERIES –KNOXVILLE, TENNESSEE

From: "Steve Clark" clarkcentral@comcast.net

Wreaths across America Campaign for Lyons View and Gov. John Sevier Hwy Veteran Cemeteries

Hello ETMAC Members:

Below please find information from Gold Star Mother Bernie Koprince on this year's placement of the Christmas wreaths at the veterans gravesites at Lyons View and Gov. John Sevier Hwy. I already sent information out separately on Mayor Tim Burchett's Campaign for Knoxville National Cemetery wreath laying and ceremony. The below info is just for the other two cemeteries.

To purchase wreaths please go to this link and locate the cemetery you want to donate to - <http://www.wreathsacrossamerica.org/> or this link <https://wreaths.fastport.com/> If you have any questions on how to order, please contact Bernie Koprince at 865-386-3674.

The program/placement at Lyons view and Gov. John Sevier Highway cemeteries is on 12/16/17 beginning at 12:00 noon. The coordinator for Lyons view is Lee Johnson, and Bernie Koprince is at Gov. John Sevier. We have a Facebook page for our area to keep information on what is happening and what to expect, that Facebook page is Wreaths Across America - Knoxville, TN.

We are expecting to do a motorcycle escort of wreaths to storage date of escort will be determined probably the week of Dec. 10th.

Lyons View needs 5,500 wreaths - 628 have been purchased.

Gov. John Sevier Highway (new cemetery) needs approx. 2,076 wreaths – 548 have been purchased

National Cemetery needs 9,006 wreaths – thus far 983 wreaths have been purchased.

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From: "Frank Brayman" afranklin3@gmail.com

ROY MOORE

For those who don't know us, Rebecca and I are both conservative Republicans. Among other things, that means we respect the US Constitution and the rule of law. And like it or not, the Constitution means what 9 old lawyers in DC say it means.

Rebecca is a church-and-family conservative, I lean libertarian. Despite (or maybe because) of that, we've voted against Roy Moore every time he ran for public office. We plan to do so

again in the special election. We're not alone, even our other Senator Richard Shelby plans to write in a vote for someone else.

Moore is a grand-standing SOB like George Wallace. The way he thumps the Bible, CREAM drummer Ginger Baker could take lessons from him. He showed up to vote on Primary Day on horseback, with cowboy hat and pistol. He's playing to the rubes, assuming that Alabama voters are stupid. Unfortunately, he's been right often enough to win elections.

Aside from the women's allegations, here's a short summary of Moore's career:

* As a judge in Etowah County AL, put up a 10 Commandments placard in his courtroom. Ordered to remove it, he refused, and worked that up into a campaign for AL Chief Justice.

* Elected AL Chief Justice. Put up a giant 10 Commandments display at the courthouse. Violated his oath of office when he refused to have it removed when ordered by the US Supreme Court. Removed from office by the AL Judicial Ethics Commission.

* Again elected AL Chief Justice. Again violated his oath of office when he told AL officials they were free to refuse to issue marriage licenses to same sex couples after the US Supreme Court decision. Again removed from office by the AL Judicial Ethics Commission.

* Meanwhile, created a fake charity/educational foundation. Evangelical Christian chumps who contributed paid his wife a big salary, and him a fat consulting fee, for doing nothing. When it couldn't cover their payroll, they had it mortgage its real property to do so.

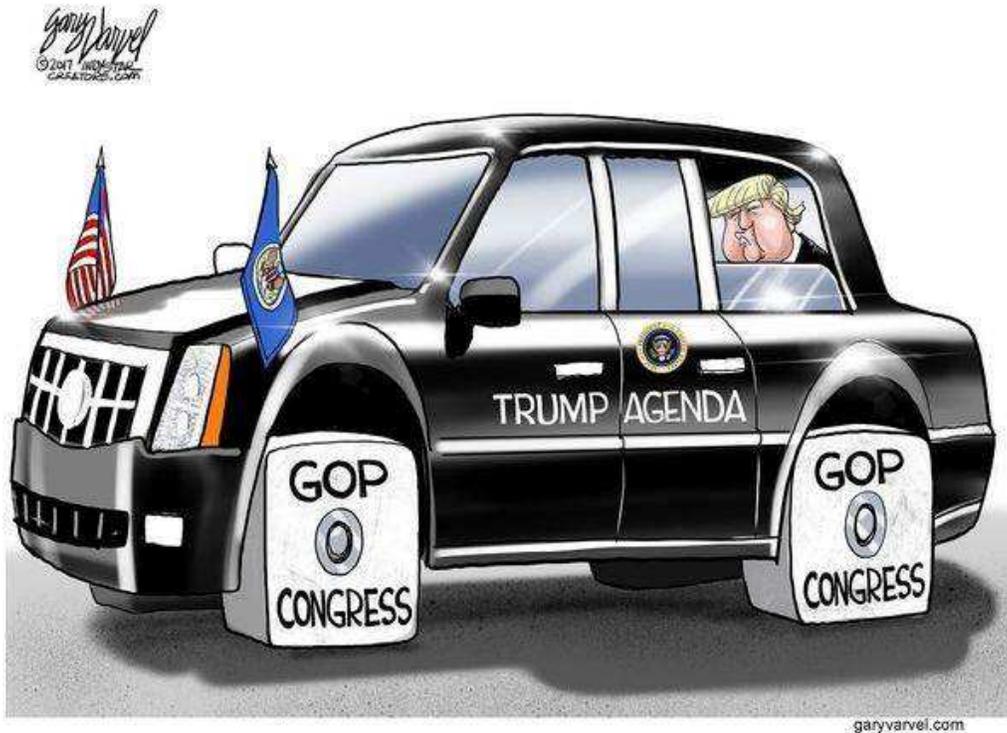
He's bad for the USA, the Senate, Alabama, and the Republican Party. Unfortunately, he'll probably get elected. It makes us want to hurl.

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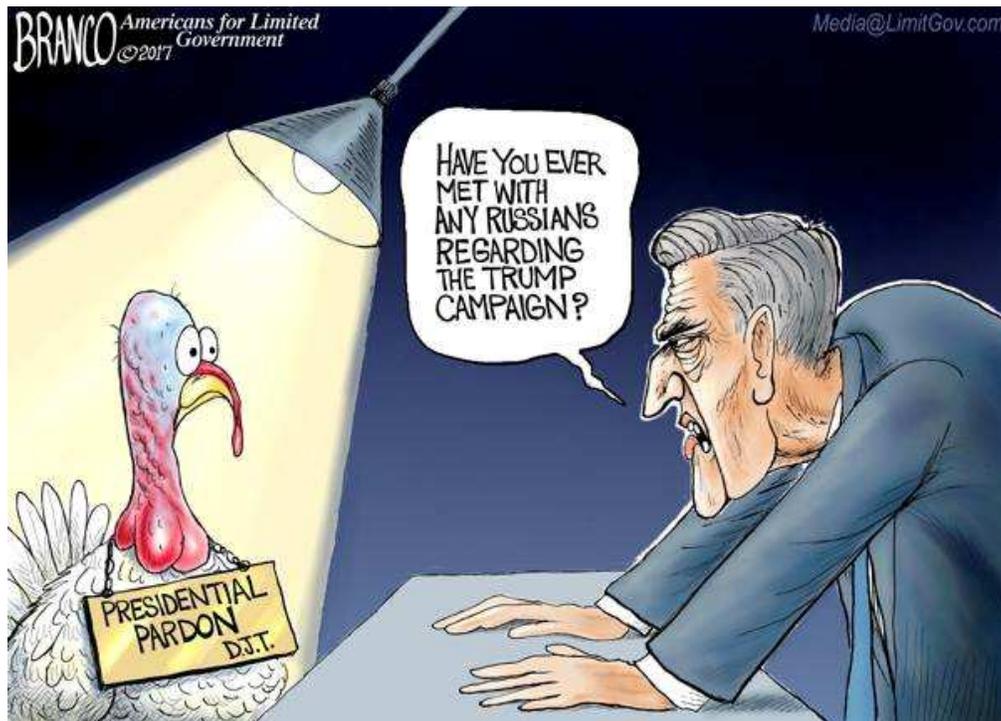
From: "Jim Woosley" jimwoosley@aol.com



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**BREAKING: NINTH CIRCUIT
COURT OF APPEALS
OVERTURNS TRUMP'S
TURKEY PARDONS**

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From: "Mike Waldrip" waldripk@gmail.com

NYMPHOMANIAC CONVENTION

A man boarded an aircraft at London's Heathrow Airport for New York, and taking his seat as he settled in, he noticed a very beautiful woman boarding the plane. He realised she was heading straight toward his seat and bingo - she took the seat right beside him.

"Hello", he blurted out, "Business trip or vacation?"

She turned, smiled enchantingly and said, "Business. I'm going to the annual nymphomaniac convention in the United States ..."

He swallowed hard. Here was the most gorgeous woman he had ever seen sitting next to him, and she was going to a meeting for nymphomaniacs!

Struggling to maintain his composure, he calmly asked, "What's your business role at this convention?"

"Lecturer," she responded, "I use my experience to debunk some of the popular myths about sexuality.."

"Really", he smiled, "what myths are those?"

"Well," she explained, "One popular myth is that African-American men are the most well endowed when, in fact, it's the Native American Indian who is most likely to possess that trait.

Another popular myth is that French men are the best lovers, when actually it is the men of Greek descent.

We have also found that the best potential lovers in all categories are the Irish."

Suddenly the woman became uncomfortable and blushed. "I'm sorry," she said. "I really shouldn't be discussing this with you, I don't even know your name!"

"Tonto," the man said. "Tonto Papadopoulos, but my friends call me Paddy."

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

**When you eat too
much of KFC**



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

I used to date a girl named Lorraine. Then I met a girl that I liked better. Her name was Claire Lee. Well, Lorraine got wind of the fact that I was seeing another woman, so she dumped me. However, I was so happy when she dumped me that I started singing, "I can see Claire Lee now, Lorraine is gone!"

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ONE NOTE BUTT TRUMPET PROBLEMS

This is a story about a couple who had been happily married for years. The only friction in their marriage was the husband's habit of farting loudly every morning when he awoke.

The noise would wake his wife and the smell would make her eyes water and make her gasp for air.

Every morning she would plead with him to stop ripping them off because it was making her sick. He told her he couldn't stop and that it was perfectly natural. She told him to see a doctor. She was concerned that one day he would blow his guts out.

The years went by and he continued to rip them out! Then ne Thanksgiving morning as she was preparing the turkey for dinner and he was upstairs sound asleep, she looked at the bowl where she had put the turkey innards and neck, gizzard, liver and all the spare parts and a malicious thought came to her.

She took the bowl and went upstairs where her husband was sound asleep and, gently pulling back the bed covers, she pulled back the elastic waistband of his underpants and emptied the bowl of turkey guts into his shorts.

Sometime later she heard her husband waken with his usual trumpeting which was followed by a blood-curdling scream and the sound of frantic footsteps as he ran into the bathroom.

The wife could hardly control herself as she rolled on the floor laughing, tears in her eyes! After years of torture, she reckoned she had got him back pretty good.

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Page 9 of 26

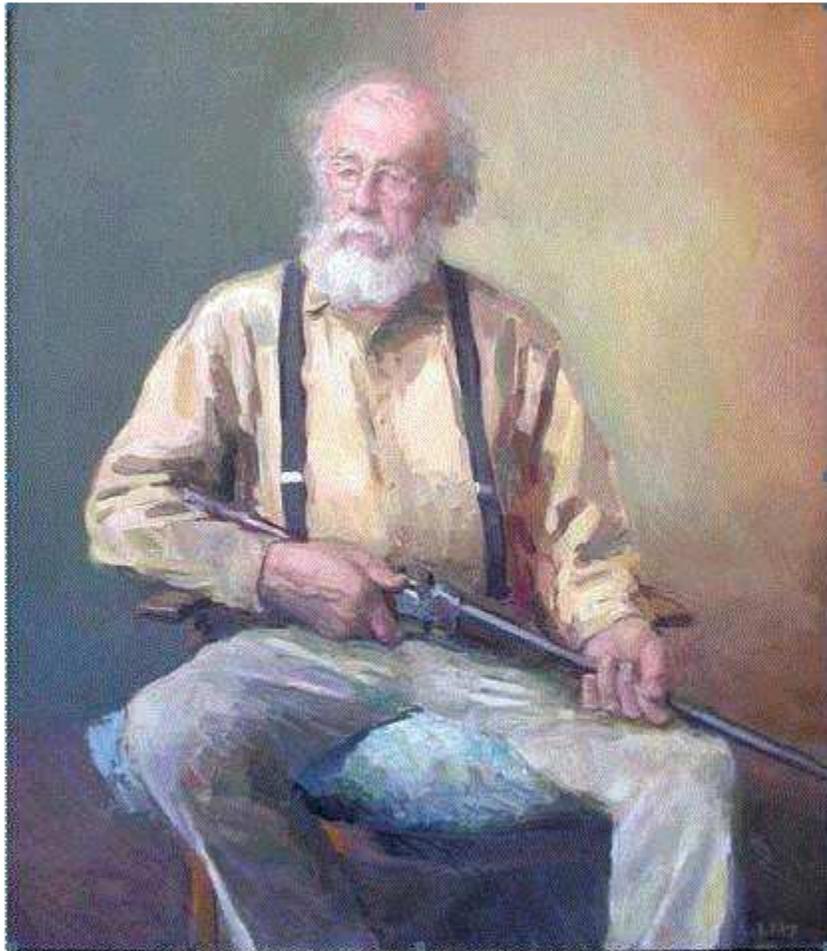
About twenty minutes later, her husband came downstairs in his bloodstained underpants with a look of horror on his face.

She bit her lip as she asked him what was the matter. He said, "Honey, you were right. All these years you have warned me and I didn't listen to you.

"What do you mean?" asked his wife.

"Well, you always told me that one day I would end up farting my guts out, and today it finally happened. But by the grace of God, some Vaseline, and these two fingers, I think I got most of them back in place.

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



Shot my first turkey yesterday. Scared the shit outta everyone in the frozen food section. It was awesome! Getting old is so much fun.

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Those Frightening Health Warnings

I don't understand why prescription medicine is allowed to advertise on TV or why anyone would think of trying one of the medicines after listening to the laundry list of warnings of possible side effects. Suppose the Food and Drug Administration expanded their domain and got to regulate the wine business. Here's a possible outcome of that control.

=====

Do you have feelings of inadequacy?

Do you suffer from shyness?

Do you sometimes wish you were more assertive?

Do you sometimes feel stressed?

If you answered yes to any of these questions, ask your doctor or pharmacist about Cabernet Sauvignon. See below ****

Cabernet Sauvignon is the safe, natural way to feel better and more confident. It can help ease you out of your shyness and let you tell the world that you're ready and willing to do just about anything.

You will notice the benefits of Cabernet Sauvignon almost immediately and, with a regimen of regular doses, you'll overcome obstacles that prevent you from living the life you want.

Shyness and awkwardness will be a thing of the past. You will discover talents you neverknew you had.

Cabernet Sauvignon may not be right for everyone. Women who are pregnant or nursing should not use it, but women who wouldn't mind nursing or becoming pregnant are encouraged to try it.

Side effects may include:

Dizziness, nausea, vomiting, incarceration, loss of motor control, loss of clothing, loss of money, delusions of grandeur, table dancing, headache, dehydration, dry mouth, and a desire to sing Karaoke and play all-night Strip Poker, Truth Or Dare, and Naked Twister.

Warnings:

The consumption of Cabernet Sauvignon may make you think you are whispering when you are not.

The consumption of Cabernet Sauvignon may cause you to tell your friends over and over again that you love them.

The consumption of Cabernet Sauvignon may cause you to think you can sing..

The consumption of Cabernet Sauvignon may create the illusion that you are tougher,

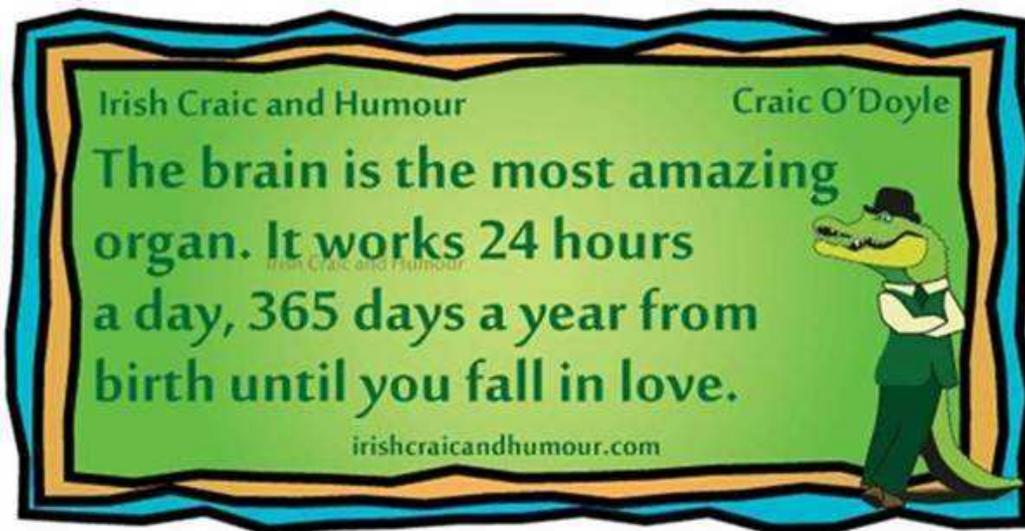
smarter, faster and better looking than most people.

Please feel free to share this important information!

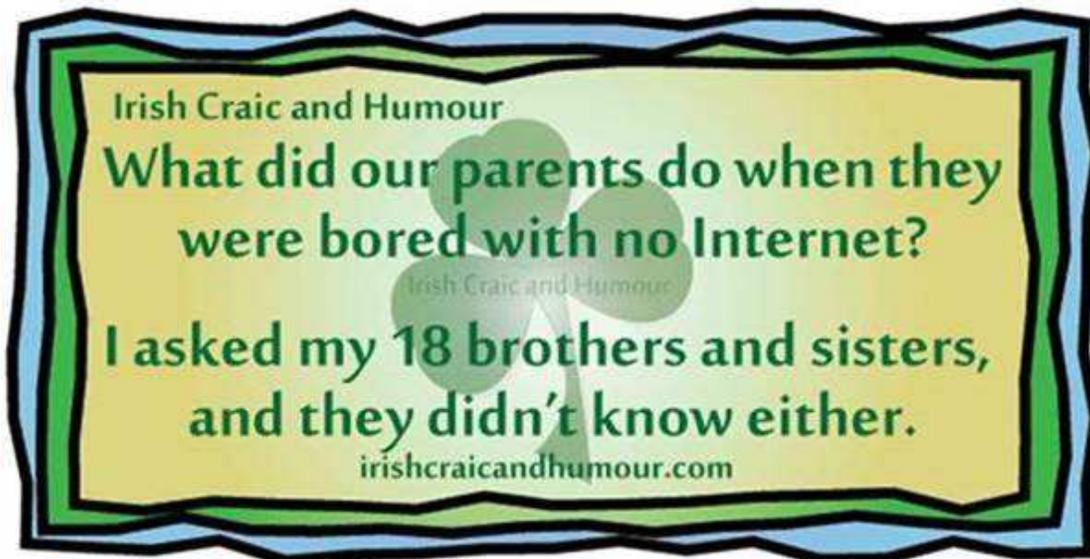
CHARDONNAY, Scotch, Gin, Vodka, Tequila, or Bourbon may be substituted for Cabernet Sauvignon, with similar results!

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From: "Ray Beloate" beerman@rittermail.com



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

YOU JUST CAN'T MAKE THIS STUFF UP!

From: "Tim Bolgeo" tbolgeo@epbfi.com

AFTER 30 YEARS, ALARMISTS ARE STILL PREDICTING A GLOBAL WARMING 'APOCALYPSE'

MICHAEL BASTASCH, 10:44 AM 11/25/2017

<http://dailycaller.com/2017/11/25/after-30-years-alarmists-are-still-predicting-a-global-warming-apocalypse/>

For at least three decades scientists and environmental activists have been warning that the world is on the verge of a global warming "apocalypse" that will flood coastal cities, tear up roads and bridges with mega-storms and bring widespread famine and misery to much of the world.

The only solution, they say, is to rid the world of fossil fuels — coal, natural gas and oil — that serve as the pillars of modern society. Only quick, decisive global action can avert the worst effects of manmade climate change, warn international bodies like the United Nations, who say we only have decades left — or even less!

Of course, human civilization has not collapsed, despite decades of predictions that we only have years left to avert disaster. Ten years ago, the U.N. predicted we only had "as little as eight years left to avoid a dangerous global average rise of 2C or more."

This failed prediction, however, has not stopped the U.N. and others from issuing more apocalyptic statements.

To celebrate nearly three decades of dire predictions, The Daily Caller News Foundation put together this list of some of the most severe doomsday prophecies made by scientists, activists and politicians:

1. APOCALYPTIC WARNINGS ON REPEAT

A group of 1,700 scientists and experts signed a letter 25 years ago warning of massive ecological and societal collapse if nothing was done to curb overpopulation, pollution and, ultimately, the capitalist society in which we live today.

The Union of Concerned Scientists put out a second letter earlier this year, once again warning of the dire consequences of global warming and other alleged ecological ills. Now numbering 15,000, the group warns “soon it will be too late to shift course away from our failing trajectory, and time is running out.”

“We must recognize, in our day-to-day lives and in our governing institutions, that Earth with all its life is our only home,” the scientists and experts warned.

It’s a terrifying warning — if you ignore the fact that none of their 1992 warning has come to fruition.

2. THE PLANET WILL BE “UNINHABITABLE” BY THE END OF THE CENTURY

New York Magazine writer David Wallace-Wells published a 7,000-word article claiming global warming could make Earth “uninhabitable” by “the end of this century.”

Wallace-Wells’s article warned of terrors, like “Heat Death,” “Climate Plagues,” “Permanent Economic Collapse” and “Poisoned Oceans.”

“Indeed, absent a significant adjustment to how billions of humans conduct their lives, parts of the Earth will likely become close to uninhabitable, and other parts horrifically inhospitable, as soon as the end of this century,” Wallace-Wells wrote.

3. PRINCE CHARLES’S GLOBAL WARMING DEADLINE PASSED...AND NOTHING HAPPENED

Prince Charles famously warned in July 2009 that humanity had only 96 months to save the world from “irretrievable climate and ecosystem collapse, and all that goes with it.” That deadline has passed, and the prince has not issued an update to when the world needs to be saved.

Though the recently-released “Paradise Papers” show Charles lobbied U.K. lawmakers to enact policies that benefited his estate’s investment in a Bermuda company that does sustainable forestry. So, there’s that.

4. ‘ICE APOCALYPSE’ NOW

Liberal writer and climate scientist Eric Holthaus claimed manmade global warming would set off the “ice apocalypse” at a pace “too quickly for humanity to adapt.”

Holthaus warned the wholesale collapse of two Antarctic glaciers — Pine Island and Thwaites — could happen sooner than previously believed, resulting in “flooding coastal cities and creating hundreds of millions of climate refugees.” Sounds terrible, but his conclusions aren’t really backed up by the science.

“I think his article is too pessimistic: that it overstates the possibility of disaster. Too soon, too certain,” Tamsin Edwards, a scientist who’s studied Antarctica, wrote in The Guardian about Holthaus’s article.

5. 2015 IS THE ‘LAST EFFECTIVE OPPORTUNITY’ TO STOP CATASTROPHIC WARMING

World leaders meeting at the Vatican issued a statement saying that 2015 was the “last effective opportunity to negotiate arrangements that keep human-induced warming below 2-degrees [Celsius].”

Pope Francis wants to weigh in on global warming, and is expected to issue an encyclical saying basically the same thing. Francis reiterated that 2015 is the last chance to stop massive warming.

But what he should really say is that the U.N. conference is the “last” chance to cut a deal to stem global warming...since last year when the U.N. said basically the same thing about 2014’s climate summit.

6. FRANCE’S FOREIGN MINISTER SAID WE ONLY HAVE “500 DAYS” TO STOP “CLIMATE CHAOS”

When Laurent Fabius met with Secretary of State John Kerry on May 13, 2014 to talk about world issues he said “we have 500 days to avoid climate chaos.”

Ironically at the time of Fabius’ comments, the U.N. had scheduled a climate summit to meet in Paris in December 2015 — some 565 days after his remarks. Looks like the U.N. is 65 days too late to save the world.

7. FORMER PRESIDENT BARACK OBAMA IS THE LAST CHANCE TO STOP GLOBAL WARMING

When Obama made the campaign promise to “slow the rise of the oceans,” some environmentalists may have taken him quite literally.

The United Nations Foundation President Tim Wirth told Climatewire in 2012 that Obama’s second term was “the last window of opportunity” to impose policies to restrict fossil fuel use. Wirth said it’s “the last chance we have to get anything approaching 2 degrees Centigrade,” adding that if “we don’t do it now, we are committing the world to a drastically different place.”

Even before that, then-National Aeronautics and Space Administration Goddard Space Flight Center head James Hansen warned in 2009 that Obama only “has four years to save Earth.”

8. REMEMBER WHEN WE HAD “HOURS” TO STOP GLOBAL WARMING?

World leaders met in Copenhagen, Denmark in 2009 to potentially hash out another climate treaty. That same year, the head of Canada's Green Party wrote that there was only "hours" left to stop global warming.

"We have hours to act to avert a slow-motion tsunami that could destroy civilization as we know it," Elizabeth May, leader of the Greens in Canada, wrote in 2009. "Earth has a long time. Humanity does not. We need to act urgently. We no longer have decades; we have hours. We mark that in Earth Hour on Saturday."

9. UNITED KINGDOM PRIME MINISTER GORDON BROWN SAID THERE WAS ONLY 50 DAYS LEFT TO SAVE EARTH

The year 2009 was a bad time for global warming predictions. That year Brown warned there was only "50 days to save the world from global warming," the BBC reported. According to Brown there was "no plan B."

Brown has been booted out of office since then.

10. THE U.N.'S TOP CLIMATE SCIENTIST SAID IN 2007 WE ONLY HAD FOUR YEARS TO SAVE THE WORLD

Rajendra Pachauri, the former head of the Intergovernmental Panel on Climate Change said in 2007 that if "there's no action before 2012, that's too late."

"What we do in the next two to three years will determine our future. This is the defining moment," he said.

Well, it's 2017 and no new U.N. climate treaty has been presented. The only thing that's changed since then is that Pachauri was forced to resign earlier this year amid accusations he sexually harassed multiple female coworkers.

11. ENVIRONMENTALISTS WARNED IN 2002 THE WORLD HAD A DECADE TO GO GREEN

Environmentalist write George Monbiot wrote in the UK Guardian that within "as little as 10 years, the world will be faced with a choice: arable farming either continues to feed the world's animals or it continues to feed the world's people. It cannot do both."

About 930 million people around the world were undernourished in 2002, according to U.N. data. By 2014, that number shrank to 805 million. Sorry, Monbiot.

12. GLOBAL WARMING APOCALYPSE 1980S EDITION

The U.N. was already claiming in the late 1980s that the world had only a decade to solve global warming or face the consequences.

The San Jose Mercury News reported June 30, 1989 that a "senior environmental official at the United Nations, Noel Brown, says entire nations could be wiped off the face of the earth by rising sea levels if global warming is not reversed by the year 2000."

That prediction didn't come true 17 years ago, and the U.N. is sounding the same alarm today.

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

YOU JUST CAN'T MAKE THIS STUFF UP!

From: "Jim Woosley" jimwoosley@aol.com

PROFESSOR DRAWS RAGE FOR TELLING STUDENTS TO WORK HARD AND AVOID PARTYING

By Fox News, November 10, 2017 | 10:19am

<https://nypost.com/2017/11/10/professor-draws-rage-for-telling-students-to-work-hard-and-avoid-partying/>

A Cambridge University physical sciences professor came under fire this week from mental health campaigners and students after he suggested undergraduates will have to work hard and abstain from drinking to pass the course.

Eugene Terentjev drew the fury of students and mental health activists after sending out an email last week to first-year natural sciences undergraduates at the UK's world-famous Cambridge, telling them the course will be difficult and thus they should refrain from drinking and other social activities if they wish to succeed, according to an email leaked to student-run publication Varsity.

"Physical sciences is a VERY hard subject, which will require ALL of your attention and your FULL brain capacity (and for a large fraction of you, even that will not be quite enough)," Terentjev wrote to the students.

"You can ONLY do well (ie achieve your potential, which rightly or wrongly several people here assumed you have) if you are completely focused, and learn to enjoy the course. People who just TAKE the course, but enjoy their social life, can easily survive in many subjects — but not in this one."

He added: "Remember that you are NOT at any other uni, where students do drink a lot and do have what they regard as a 'good time' — and you are NOT on a course, as some Cambridge courses sadly are, where such a behaviour pattern is possible or acceptable."

The professor's comments caused an uproar among activists and students, who called his email "extremely damaging" and neither "appropriate nor acceptable," with one other university vice-chancellor accusing Terentjev of "frightening impressionable undergraduates," the London Times reported.

A mental health campaign at the university, Student Minds Cambridge, said the message sent by the professor "could be extremely damaging to the mental well-being of the students concerned, and potentially others as well," the Times reported.

Anthony Seldon, vice-chancellor of Buckingham University, said the professor's message scaremongers the students rather than helping them to learn to live a balanced lifestyle. "Frightening impressionable undergraduates into believing that work alone is all-important is irresponsible, unkind and wrong-headed," he told the newspaper.

The university's student union welfare officer, Micha Frazer-Carroll, also criticized the content of the email, claiming it criticized "the very premise of having a social life, or any sort of life, outside of study."

"The university believes that all first-year students in all disciplines, having undergone the thorough admissions process that Cambridge requires, have the capacity to succeed academically," a spokesperson for the University told the Times.

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From: "Tim Bolgeo" tbolgeo@epbf.com

LOSING DARKNESS: SATELLITE DATA SHOWS GLOBAL LIGHT POLLUTION ON THE RISE

By Calla Cofield, Space.com Senior Writer | November 22, 2017

https://www.space.com/38872-light-pollution-increasing-globally.html?utm_source=sd-newsletter&utm_medium=email&utm_campaign=20171122-sdc



This image taken from the International Space Station shows artificial lights from Spain and Portugal. Credit: NASA

Around the globe, in both developed and developing nations, Earth's night skies are being filled with artificial light more and more each year, according to a new study.

Using data from an Earth-observing weather satellite called Suomi NPP, the new study shows that between 2012 and 2016, artificially lit regions on Earth increased in brightness by 2.2 percent. In addition, the total area where artificial lighting appeared also increased by 2.2 percent, providing an illustration of humanity's expansion into previously undeveloped areas.

When broken down by country, the results show that in many developing nations, the increases in artificial lighting are well above the global average, as more people gain access to electricity and outdoor lighting equipment for highways, city centers and residential areas.

But even in many developed nations, the output of artificial light may be increasing as well, despite some regional efforts to curb it, the study shows. Light pollution has many side effects, including disrupting the circadian rhythms of plants, animals and humans.



Artificial lights in Calgary have increased noticeably between 2010 to 2015.

Credit: Image courtesy of the Earth Science and Remote Sensing Unit, NASA Johnson Space Center

THE VIEW FROM SPACE

The data for the new study comes from the Suomi NPP satellite, which was designed as an operational testbed for critical hardware components that will go on a next-generation series of weather satellites from the National Oceanic and Atmospheric Administration (NOAA). The first of those satellites launched into space this month. The new additions will help meteorologists develop seven-day forecasts, as well as manage things like wildfire tracking and management, monitoring of storms and natural disasters, disaster relief efforts and a slew of other applications.

One of the instruments aboard Suomi NPP is called the Visible Infrared Imaging Radiometer Suite, which includes a sensor called the Day/Night Band (DNB). The DNB was designed to provide high-resolution images of clouds at night to assist in weather forecasting,

according to Christopher Elvidge, a physical scientist at NOAA who spoke at a telephone news conference held yesterday (Nov. 21).

Suomi NPP orbits the globe from pole to pole, while the planet spins underneath it, so that it captures a view of the entire planet about twice per day. It has a "footprint" of 750 meters square, which means that's about how large each pixel is on the VIIRS images.

"The way that I characterize it often is that the [VIIRS] day-night band allows us to work kind of at the neighborhood level," Christopher Kyba, a postdoctoral researcher at the German Research Centre for Geosciences and lead author on the new paper, said during the news conference.

The observations showed a decrease in lighting usage in a few places, including Syria and Yemen, which have both been undergoing intense warfare. The paper notes that "with few exceptions, growth in lighting occurred throughout South America, Africa, and Asia."



Images of Calgary, Alberta, Canada, taken from the International Space Station. On the left, an image taken on December 23, 2010. Residential areas are mainly lit by orange sodium lamps. On the right, an image taken Nov. 27, 2015. Many areas on the outskirts are newly lit compared to 2010, and many neighborhoods have switched from orange sodium lamps to white LED lamps.

Credit: NASA

BLUE LIGHT

The study has an important caveat that is introduced by the VIIRS instrument: The data that the study was based on did not include all wavelengths of light that are visible to the human eye. Specifically, the data does not include "blue" light. Traditional light bulbs (like sodium lamps and most halogen lights) emit mainly in yellow, orange and red wavelengths of light, but many LED light bulbs emit high levels of blue light.

As a result, the total increase in light pollution visible to the human eye is actually higher than what's reported in the paper, the researchers said. And, while some cities may appear to reduce their light output year after year in the data, those cities may just be switching over to LEDs; the apparent reduction is simply a shift of the light into the blue wavelength, they said. In an email to Space.com, Kyba said it would be extremely difficult to try and estimate how much blue light each country emits, because that varies widely among all kinds of light bulbs.

The authors noted that photographs of the Earth taken from the International Space Station provide a means of seeing the full spectrum of light pollution from space. In the study, they compared those images to the Suomi NPP satellite data to provide "color information ... that can help us to understand, at least for specific cities, where the lights are changing color," Kyba said. Milan, for example, switched many of its yellow-light sodium lamps to white-light LEDs, and that change is visible in ISS images, he said.

While LEDs can in some cases help to reduce light pollution, the increased use of LEDs also leads to something called the "rebound effect," Kyba said. As LED lights become more efficient and cheaper, people tend to use them more, rather than holding on to the energy savings.

Kyba compared it to a person buying a hybrid car to reduce his or her carbon footprint, but then ultimately feeling free to drive more because of that decision, and in the end producing the same level of carbon emissions that the individual would have created with a regular car. So while the study suggests that many large cities may be stabilized in their light output (because they aren't adding any major new sources of artificial light), that stabilization may be offset by nearby, smaller cities that are adding more lights to roads and parking lots that were previously unlit, Kyba said.

THE NEED FOR NIGHT

"The biological world is organized, to a large extent, by natural cycles of variation in light," Franz Hölker, a scientist at the Leibniz-Institute of Freshwater Ecology and Inland Fisheries and a co-author on the study, said during the teleconference. "And this variation triggers a wide range of processes, from gene expression to ecosystem functions."

Artificial light, and the subsequent loss of nighttime darkness, is "a very new stressor" that many organisms have not had time to adapt to, according to Hölker. Thirty percent of vertebrates and more than 60 percent of invertebrates are nocturnal, he said, so artificial lighting can directly affect the life and sleep cycles of those organisms, and there have been many studies documenting this phenomenon.

That can also have a ripple effect on the ecosystem, he said. For example, a recent study showed how street lamps affect insects that pollinate plants at night, thus impacting the plants as well.

"[Light pollution] threatens biodiversity through changed night habits, such as reproduction or migration patterns, of many different species: insects, amphibians, fish, birds, bats and other animals," Hölker said. "And it can even disrupt plants by causing ... late leaf loss and extended growing periods, which could of course impact the composition of the floral community."

High levels of artificial light may also impact health in humans by reducing the body's production of melatonin, a hormone that can affect things like the body's immune system, mental health and fertility. It also reduces people's ability to see stars and celestial objects, which astronomers and social scientists argue has a negative impact on culture and science.

It's estimated that about one-third of the world's population cannot see the band of the Milky Way galaxy at night, due to light pollution. That includes 80 percent of people living in North America. The researchers said they hope their research can be used in efforts to initiate policy changes that combat light pollution. Kyba is involved with the International Dark-Sky Association, which is taking steps to fight this problem.

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NASA REINVENTS THE WHEEL FOR PLANETARY ROVERS

David Szondy, November 25, 2017

<https://newatlas.com/shape-memory-alloy-rover-wheel-nasa/52344/>



Constructing a test mesh tire(Credit: NASA)

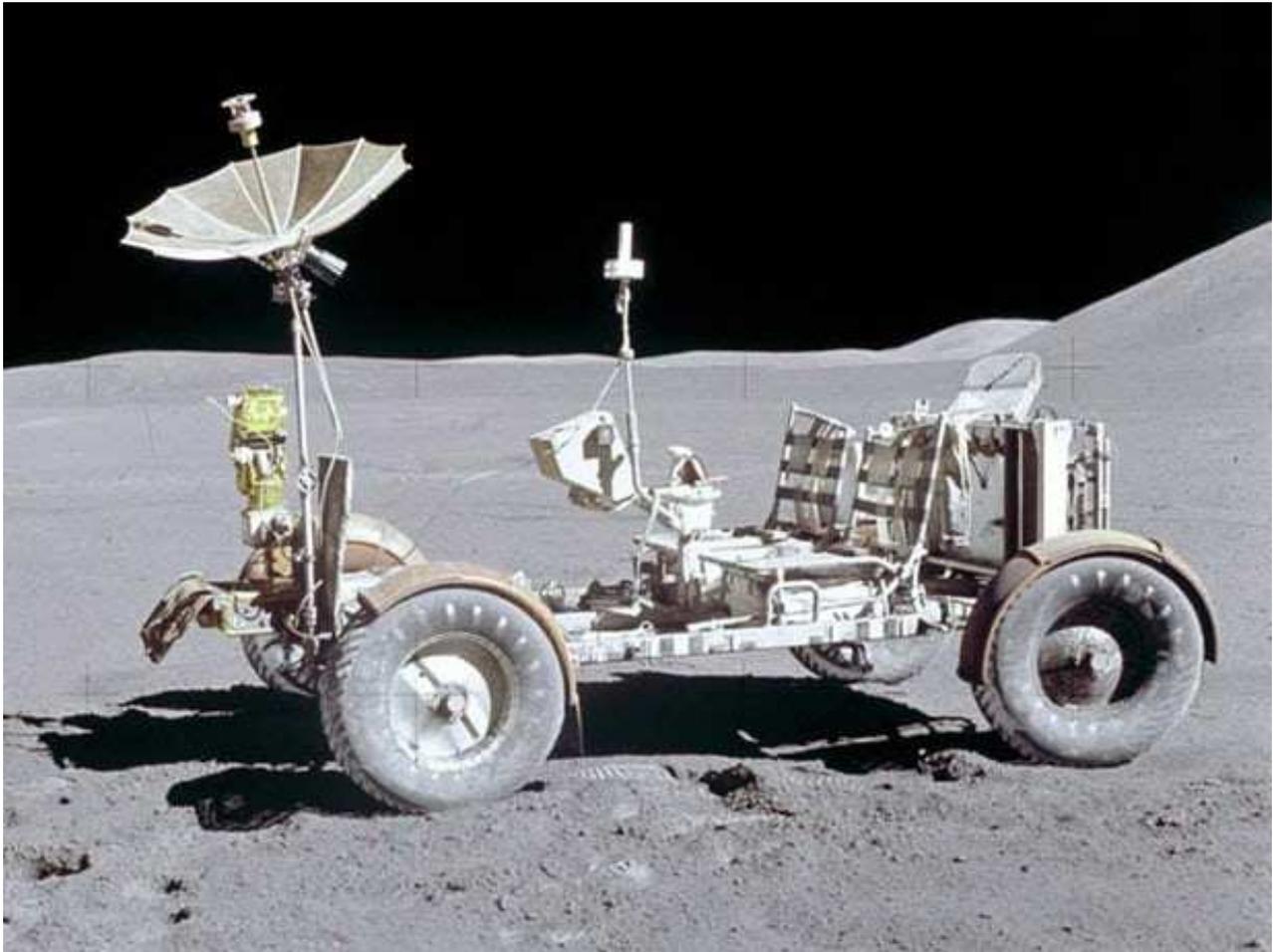
The November 29th, 2017 Edition of THE REVENGE HUMP DAY!

Page 22 of 26

The Curiosity Mars rover has been a remarkable success except in one area – its wheels are falling apart faster than expected. To prevent this from happening to future rover missions, NASA's Glenn Research Laboratory is developing a new wire mesh tire made out of special memory alloy that is much tougher than previous designs, and may pave the way for larger, more robust rovers and vehicles.

A common criticism leveled at NASA is that it has a tendency to reinvent the wheel, and there was some justification for this charge. The space agency was notorious in its early years for completely redesigning every new series of satellites from a blank sheet rather than exploiting a proven design. And then there was the notorious story of developing a complex gas-charged pen that would write in zero gravity, rather than trying off-the-shelf mechanical pencils or ink sticks.

But one area where NASA has spent half a century literally trying to reinvent the wheel has been with, well, wheels. On Earth, wheels with pneumatic tires have proven very effective and efficient, but the Moon and Mars are different and not very friendly to the average steel-belted radial with tiger paw grip. Worse, the engineers were faced with the problem of how to design a wheel for someplace where no one knew what the surface was like.



From the 1960s on, NASA came up with all sorts of wheels, tires, and things that did what a wheel and tire do. There were weird, screw-like things for plowing through lunar dust as

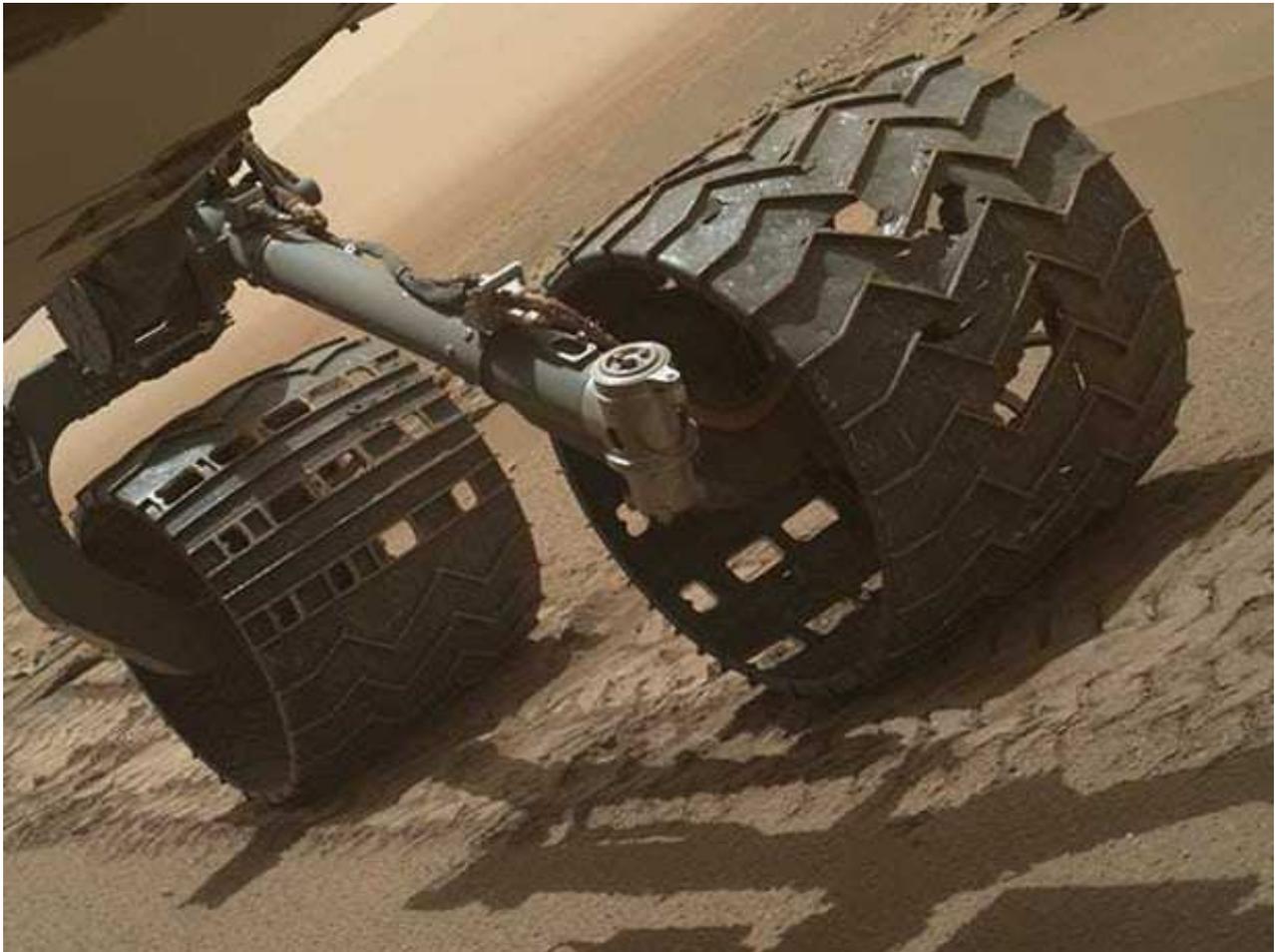
The November 29th, 2017 Edition of THE REVENGE HUMP DAY!

Page 23 of 26

fine as talcum powder, vehicles that were one large caterpillar track, and others dominated by giant donut wheels like something off a sand and snow cruiser.

When the first manned Lunar Rover set out during the Apollo 15 mission in 1971, it had large, flexible wire mesh wheels with soft inner frames and titanium strips to handle the soft lunar soil. So successful was this design that Glenn engineers used it as the model for similar mesh wheels for future lunar rovers that would be the size of an RV, which resulted in the award-winning Spring tire.

But when the Mars rovers touched down beginning with Sojourner in the 1990s, they had solid aluminum wheels instead of mesh. These worked fine for Sojourner and the later Opportunity and Spirit rovers, but things changed when Curiosity set down in 2012. Curiosity is the size of a 4x4 and the surface of Mars turned out to be much rougher than expected. Within a year, the soft metal alloy of the unmanned explorer's wheels was showing obvious signs of wear as treads came loose and holes started to appear.



According to NASA, the Glenn engineers considered using an advanced form of the Spring tire for future Mars missions to provide better traction and durability, but the tight spring steel mesh couldn't handle the rough terrain of a simulated Mars. In going over sharp rocks and other obstacles, the mesh would deform under pressure and lose its shape.

Then a chance meeting between Engineer Colin Creager and Materials Scientist Santo Padula provided a solution. On hearing of the problem, Padula suggested using a shape memory alloy, which is a special alloy with crystals that deform and snap back at an atomic level. When new wheels were fabricated from nickel titanium alloy, they could deform right down to the axle and then return to their original shape.

Though still under development, NASA sees great promise for the new alloy mesh tires. They are not only more durable, but they conform to the terrain without sinking and they can carry heavier payloads at moderate to high speeds. The hope is that one day they will not only improve the lifespan of unmanned rovers, but will be used on manned vehicles as well. See them in action below.

Source: NASA

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JAPAN REFINES DESIGN FOR INDIGENOUS FUTURE FIGHTER

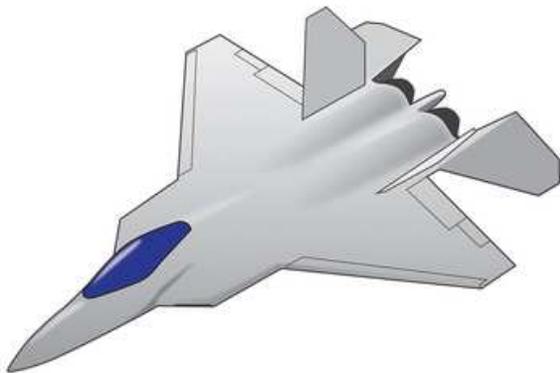
A Japanese combat aircraft may have become more conventional

Nov 23, 2017 [Bradley Perrett](#) | Aviation Week & Space Technology

http://aviationweek.com/defense/japan-refines-design-indigenous-future-fighter?NL=AW-05&Issue=AW-05_20171128_AW-05_707&sfvc4enews=42&cl=article_7_4&utm_rid=CPEN1000001477803&utm_campaign=12773&utm_medium=email&elq2=7b87a8fe991748e3b1db4b3e897136d6

The latest concept design of Japan's proposed indigenous fighter may have moved a little away from the bias toward long-range and endurance over flight performance that marked the previous preliminary design. The latest design exhibited is evidently 26DMU, the one prepared in the Japanese fiscal year beginning March 2014 as the last of a series of preliminary concepts.

Japan has planned to decide in mid-2018 whether to proceed with an indigenous or possibly internationally developed, aircraft as an alternative to a foreign design for its Future Fighter requirement. The aim is to replace the [Mitsubishi Heavy Industries](#) F-2 in the 2030s, [but the defense ministry is leaving open the possibility of a delay.](#)



Glimpses of 26DMU have appeared over the past year, but drawings revealed by the defense ministry at its annual technology seminar in November have made the design much clearer. The main change relative to the fiscal 2013 design 25DMU appears to be a reduction in the span of the wing and, as a result, its unusually high aspect ratio, or slenderness. The difference is difficult to judge from the low-resolution pictures, however.

26DMU, the latest design for a Japanese indigenous fighter, has a wing with a more conventionally low aspect ratio. Credit: Colin Thom/AWST

The leading-edge sweep of 26DMU looks unchanged, but the trailing edge is different: It now has a forward instead of rearward sweep. Associated with that change, the chord at the wing roots looks longer, again implying a reduction in aspect ratio. Higher aspect ratio improves range and endurance but worsens drag in supersonic flight.

Despite the change in planform, the ministry is unlikely to have backed off much on its requirement for range and endurance, if it has at all. Doi Hirofumi, manager of the Future Fighter program at the ministry's Acquisition, Technology and Logistics Agency (ATLA), told Aviation Week in 2016 that 26DMU, then unrevealed, preserved the 25DMU concept of long endurance and moderate flight performance ([AW&ST Oct. 24-Nov. 6, 2016, p. 59](#)).

That concept was chosen for 25DMU because analysis found that if a group of fighters had long range and endurance, then more would be on station at the time of combat, improving the exchange ratio. This effect more than offset the loss of combat flight performance.

Another part of the formula in 25DMU, almost certainly preserved in 26DMU, is an internal load of six long-range missiles such as MBDA Meteors, and two short range. The pilot of an indigenous Future Fighter would want to engage at long range. 25DMU also had a gun.

Conceivably, improved structural or propulsion efficiency in 26DMU has offset the lower aerodynamic efficiency in cruise implied by the wing changes. In one of the research efforts preparing the technological ground for an indigenous Future Fighter, engineers expect to reduce structural weight relative to the F-2 by about 10% [thanks to extensive use of adhesives instead of fasteners](#).

The fins of 26DMU are pointier than before and may be taller; the tail planes have changed in shape as well. The mainplane now has two movable surfaces on the trailing edge on each side; previously there was only one.

A wind-tunnel model shown in 2016—thought at the time to represent 26DMU—is now known to represent 25DMU. The numbers in the designations are regnal years of Emperor Akihito, 26 being 2014. “DMU” stands for “digital mockup.”

Meanwhile, the X-2 technology demonstrator that Japan built to help prepare the way for the fighter program has exceeded goals in tests, a program official says. Manufacturer MHI first flew the X-2 in April 2016 before handing it over to ATLA, which put it to work in test flights beginning the following November. At first, 50 test flights were planned—but data from many was so good that later excursions could be skipped, says the official, speaking at the seminar. The data was accumulated in only 34 flights, each about 1 hr. in duration.

Radar signature was one area of outperformance, the official says, declining to elaborate. The IHI XF5 engines also did better than expected under the adverse conditions of high angles of attack.

The X-2 was designed mainly to demonstrate stealth, high agility and low-speed handling. It has thrust-vectoring engine nozzles. At the maximum angle of attack, challenging the XF5s with turbulent airflow, the engines showed no sign of surging, says the official. Their thrust

was a little higher than expected. In other conditions, they produced much more thrust than expected.

The maximum angle of attack achieved by the X-2 is not disclosed, but the official says it was almost as high as the 70 deg. demonstrated by the U.S.-German X-31 experimental aircraft in 1992. An aircraft flying at such an angle of attack will rapidly lose kinetic energy, possibly putting it at a disadvantage against an opponent, but a pilot could use the extreme maneuver to dodge a missile or perhaps to break the track of a radar using Doppler techniques.

Maximum speed achieved in X-2 testing was Mach 0.8 at 6,000 m (20,000 ft.). The official declined to divulge the minimum speed. The X-2 was at first called the [ATD-X](#).

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