Ode to Happiness for Sunday May 9 2021

Dark Energy Camera Takes Detailed Images Of Nearby Dwarf Galaxies

By Kasandra Brabaw - Space.com Contributor

An international team of astronomers revealed exquisite images of the Large and Small Magellanic Clouds, taken by a dark energy camera.

New images explore the deepest, widest view we've ever seen of the Large Magellanic Cloud.
(Image credit: CTIO/NOIRLab/NSF/AURA/SMASH/D. Nidever/Travis Rector/Mahdi Zamani/Davide de Martin)

New, stunningly detailed images of the Large and Small Magellanic Clouds may revolutionize our understanding of the stars making up these two dwarf galaxies.

The Large and Small Magellanic Clouds are a pair of dwarf galaxies that neighbor our Milky Way. Their proximity means these satellite galaxies allow astronomers to investigate how such galaxies are formed, particularly since the Magellanic Clouds are still actively and rapidly forming stars.

"These are beautiful multicolor images of the Milky Way's nearest neighboring galaxies," Glen Langston, National Science Foundation program officer, said in a statement from the NSF. "Through the care the dedicated team has taken, they give us a remarkable view of the 13-billion-year history of star formation in these galaxies."

The SMASH survey required about 50 nights of observations completed by an international team of astronomers. The recent release focuses on the central and most complex areas of the Magellanic Clouds. These clouds pose a bit of trouble for astronomers: because the structures are so close to our galaxy, they cover a large area of the sky. DECam's huge field of view broke through the challenge of mapping objects so close to us and captured details from some of the most interesting parts of the Magellanic Clouds.

Among the new dataset is evidence that the pair of galaxies collided with each other in the recent past, sparking a new bout of intense star formation.

Long-term, the SMASH astronomers hope to use the information they find about the history of star formation in the Magellanic Clouds to create a "movie" about how these galaxies evolved over time. The researchers also plan to ask citizen scientists to help find star clusters and measure the metal content of stars in these galaxies.

The second dataset from SMASH will be made available to the astronomical community at large through Astro Data Lab and the Astro Data Archive.

Follow Kasandra Brabaw on Twitter @KassieBrabaw. Follow us on Twitter @Spacedotcom and on Facebook.

==========

Margot Fonteyn, a Documentary

https://www.youtube.com/watch?v=95N4J7B2XWI

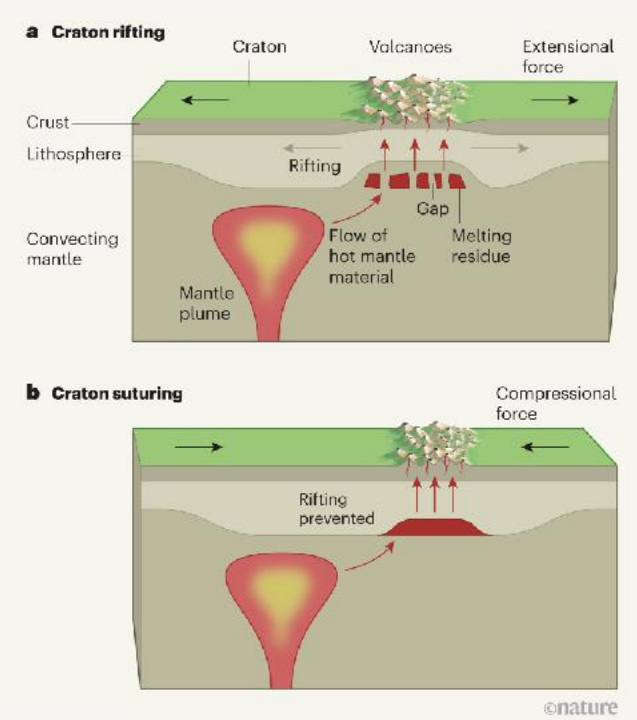
I had the privilege and pleasure of seeing her dance Romeo and Juliet with Rudolph Nuriyev in the early 1960s. She was at the time in her late 40s playing the role of a teenager opposite the man who in his early 30s was the finest male dancer in the known universe. Did she pull it off? You betcha.

This is a retrospective…a bit on the long side, but if you want to see what it takes to be the prima ballerina of her time, block out the time and watch it.

==========

Ancient Continental Blocks Soldered From Below

A study of melting in the mantle under northern Canada more than one billion years ago shows that the oldest blocks of continent not only break apart but can also be repaired by the gluing action of major melting episodes.



Rifting and suturing effects of mantle plumes. Liu et al.1 explore how ancient blocks of continent called cratons are influenced by mantle plumes — columns of warm, buoyant material that rise upwards through Earth's convecting mantle. This hot mantle material flows into gaps in the underside of the lithosphere (the rigid layer beneath Earth's crust). It then melts as it approaches the planet's surface, producing abundant volcanism. a, If regional forces related to the large-scale movement of tectonic plates are extensional, the craton can undergo rifting (stretching and thinning of the crust and lithosphere), and the residue from the melting of the hot mantle material cannot plug the gaps in the underside of the lithosphere. b, However, if these tectonic forces are compressional, craton rifting is prevented, and the authors show that the melting residue can plug the gaps and thicken the base of the lithosphere.

Stephen Foley & Craig O'Neill

Billions of years of plate tectonics have destroyed much of the evidence about the nature of the earliest continents. The parts of these continents that remain have survived because their composition makes them buoyant and strong, and they float like driftwood on the convecting mantle that has slowly churned beneath them many times over. These ancient continental blocks, known as cratons, were originally thought to be indefinitely stable owing to their strength and buoyancy. However, in the past few years, many studies have cast doubt on this viewpoint and emphasized the break-up and destruction of cratons. Writing in Nature, Liu et al.1 report that cratons not only break apart but can also be fused back together again.

Mantle plumes are columns of hot, buoyant material that rise upwards through the mantle. On modern Earth, plumes are thought to be responsible for rifting (the splitting apart of tectonic plates) and continental break-up2, and for the erosion of cratons3. A large geological structure called the Mackenzie dyke swarm in a craton of northern Canada constitutes the remnants of an enormous plume. This structure comprises a

massive collection of vertical slabs of solidified molten rock spanning thousands of kilometres and dating back 1.27 billion years4.

High-pressure melting experiments on rocks with similar compositions to those of the Mackenzie dyke swarm have shown that the magma that formed this structure originated from depths of less than 100 kilometres below the planet's surface5. Therefore, this magma must have erupted through a thin plate. However, geophysical images of the area today reveal a thick plate (about 200 km thick)6 that is typical of cratons, showing that the plate must have thickened after the development of the dyke swarm. Radiometric dating of mantle samples from the area indicates that the plate had thickened by 600 million years ago7.

Role of major erosion events in Earth's dynamics

Liu and colleagues combined geodynamic simulations with pressure–temperature calculations for the origin of mantle samples to suggest a mechanism for the thickening of the plate immediately after the dyke swarm formed. They demonstrate in their simulations that the residue from the melting of the plume responsible for the dyke swarm could have helped to repair the damaged craton, essentially filling thin parts of the plate and cementing it from below. This finding indicates that cratons do not simply exist passively for billions of years, but undergo a more complex history than was previously assumed.

Over the past few years, the indestructibility of cratons has been questioned. It has been found that they can be slowly destroyed by chiselling from below by magmas3, and can crumble from the sides as a result of small-scale mantle convection8 or the effects of subduction9 (the process in which one plate dives beneath another). Consequently, in some regions, such as northern China, the cratonic plate has thinned over vast areas10. Cratons had previously been thought to resist the effects of hot mantle material from below, spreading the heat to the sides, much as a frying pan does to the flame beneath. In this scenario, the heat would result in blooms of magmatic activity around the margins of the craton, but it would not affect the base of the craton much.

Lost tectonic history recovered from Earth's deep mantle

However, Liu and colleagues show that mantle melts can repair and thicken cratonic plates in areas where they are thin, even if these areas are disconnected from the main heat source. This finding is consistent with the upward flow of hot mantle material along channels in the base of such plates11. Therefore, this material, which melts as it nears the planet's surface, might preferentially seal the cratons along existing gaps or crevasses in the underside of the continental blocks. If confirmed, this sealing mechanism will change the outlook of many researchers, who have viewed mantle plumes as causing the break-up of continents rather than as a means to stabilize them.

The resealing of continental blocks and thickening of plates also have ramifications for mineral exploration. Many types of mineral deposit are often spatially associated with huge structures known as trans-lithospheric faults that reach from Earth's surface down

to the base of the plates, cutting through both the crust and the upper mantle. These faults provide pathways for fluids and melts, which can form mineral deposits in the upper crust when they stop or encounter rocks that contrast, in their chemical properties, with those from which the fluids or melts originated12. Clearly, trans-lithospheric faults can serve as pathways only if they are open at the bottom. Therefore, when the resealing process occurs, it will close a time window after which no further mineral deposits can form in these large structures.

Why some mantle plumes break up continents and others stitch them together remains unknown. Differences in regional tectonic states and local forces might play a part in determining whether a plume is destructive or constructive (Fig. 1). For instance, if a plume is located below a continent that is prevented from breaking up because of the relative movements of the surrounding plates, the resealing effect becomes more probable than it would otherwise be.

Another open question is how the frequency of occurrence of mantle plumes, their melting behaviour and their ability to cement continental blocks together have changed over time13. Many cratons are made up of smaller blocks that were amalgamated during the Archaean eon more than 2.5 billion years ago. Compared with today, the mantle was then hotter, plumes are thought to have been more frequent, and more of these smaller blocks covered the planet's surface. In those times, the suturing mechanism described by Liu and colleagues might have been common, allowing these smaller blocks to weld together and survive the violence of early Earth.

==========

"*Entwined Twins*" Indian Musical Duet:

https://www.youtube.com/watch?v=l2uQWhkdh6M

short video of a flute and vocal duet in Indian music known as Jugal Bandi…entwined twins

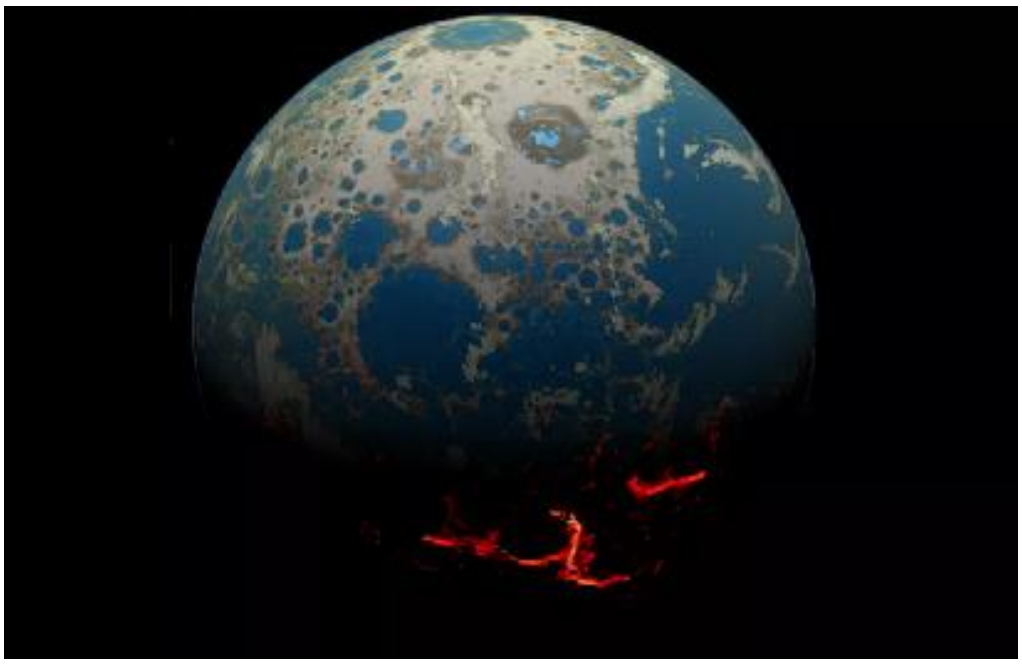
==========

==========

Earth's Crust Is Way, Way Older than We Thought

By Brandon Specktor - Senior Live Science Writer

Earth's continents have been leaking nutrients into the ocean for at least 3.7 billion years, new research suggests.



An artist's conception of the early Earth, showing a surface bombarded by large impacts that result in the extrusion of magma onto the surface.
(Image credit: Simone Marchi/SwRI)

Like a fine French bread, Earth would be nothing without its crust. And like a fine French wine, that crust has aged exceptionally well.

The rigid, rocky continental crust has been a feature of the planet for billions of years (though only a small percentage of today's crust dates back that far). How many billions of years, exactly, is hard to say. To calculate the age of continents, researchers study the decay of ancient chemicals trapped in rocks — typically, in carbonate minerals recovered from the ocean. But those minerals are hard to find, and they are rarely in pristine enough condition to analyze.

Now, a team of scientists has devised a new way to date ancient chunks of crust — and according to their latest research, we've misjudged the age of the continents by half a billion years.

In research presented April 26 at the virtual European Geosciences Union (EGU) General Assembly 2021 conference, the team showed that by analyzing a mineral called barite — a combination of ocean salts and barium released by volcanic ocean vents — they found evidence that Earth's continental crust was around at least 3.7 billion years ago, much older than previous estimates.

That is a "huge" jump back in time, lead study author Desiree Roerdink, a geochemist at University of Bergen, Norway, said in a statement. "It has implications for the way that we think about how life evolved."

Barite minerals form deep underwater, where hot, nutrient-rich water seethes out of hydrothermal vents in the seafloor. So, why are these marine rocks useful for studying continental crust? According to the researchers, continents and oceans have a long history of trading nutrients — and barites record that history extremely well.

"The composition of a piece of barite … that has been on Earth for three and a half billion years is exactly the same as it was when it actually precipitated," Roerdink said. "It is a great recorder to look at processes on the early Earth."

The key process here is weathering. As continents wear down naturally over time, they spill nutrients into the neighboring seas. These nutrients help foster life in the seas; a study published Feb. 11 in the journal Science found that when Earth's continental crust stopped growing for about a billion years during Earth's "middle age," the evolution of life suddenly slowed down, too.

One element that continental crust leaks into the ocean is strontium. By measuring the ratio of two strontium isotopes (or versions of elements) in six different deposits of barite minerals, the researchers calculated the ages of those minerals. The minerals ranged from 3.2 billion to 3.5 billion years old, but the story doesn't end there. From these minerals, the team also inferred how long ago the ancient continents started leaking strontium into the oceans where these barites eventually formed. This continental weathering process likely began about 3.7 billion years ago, the team concluded.

That means there were well-established continents around 3.7 billion years ago — half a billion years earlier than previously estimated based on carbonate minerals.

What does it mean that Earth's continents are much older than previously thought? For one, it means the processes that create continents — such as plate tectonics — have

been active on Earth at least that long. There could also be implications for the evolution of life in the ocean, which thrived on those continental nutrients, the researchers said — however, more research is required to know for sure.

https://www.youtube.com/watch?v=5ps7uuwDeu4

This research has yet to appear in a peer-reviewed journal.

Originally published on Live Science.

==========

Poems for a Spring Sunday

Matthew Arnold, (1822-1888l)

An English Victorian poet and literary and social critic, Arnold was noted especially for his classical attacks on the contemporary tastes and manners of the "Barbarians" (the aristocracy), the "Philistines" (the commercial middle class), and the "Populace." He became the apostle of "culture" in such works as Culture and Anarchy (1869).

His first volume of verse was The Strayed Reveller, and Other Poems. This was followed by Empedocles on Etna, and Other Poems.

The Wish

I ask not that my bed of death
From bands of greedy heirs be free;
For these besiege the latest breath
Of fortune's favoured sons, not me.

I ask not each kind soul to keep
Tearless, when of my death he hears;

Let those who will, if any, weep!
There are worse plagues on earth than tears.
I ask but that my death may find
The freedom to my life denied;
Ask but the folly of mankind,
Then, at last, to quit my side.

Spare me the whispering, crowded room,
The friends who come, and gape, and go;
The ceremonious air of gloom -
All which makes death a hideous show!
Nor bring, to see me cease to live,
Some doctor full of phrase and fame,
To shake his sapient head and give
The ill he cannot cure a name.

Nor fetch, to take the accustomed toll
Of the poor sinner bound for death,
His brother doctor of the soul,
To canvass with official breath

The future and its viewless things -
That undiscovered mystery
Which one who feels death's winnowing wings
Must need read clearer, sure, than he!

Bring none of these; but let me be,
While all around in silence lies,
Moved to the window near, and see
Once more before my dying eyes

Bathed in the sacred dew of morn
The wide aerial landscape spread -
The world which was ere I was born,
The world which lasts when I am dead.

Which never was the friend of one,
Nor promised love it could not give,
But lit for all its generous sun,
And lived itself, and made us live.

There let me gaze, till I become
In soul with what I gaze on wed!
To feel the universe my home;
To have before my mind -instead

Of the sick-room, the mortal strife,
The turmoil for a little breath -
The pure eternal course of life,
Not human combatings with death.

Thus feeling, gazing, let me grow
Composed, refreshed, ennobled, clear;
Then willing let my spirit go
To work or wait elsewhere or here!

Dover Beach

The sea is calm tonight.
The tide is full, the moon lies fair
Upon the straits; on the French coast the light
Gleams and is gone; the cliffs of England stand,
Glimmering and vast, out in the tranquil bay.
Come to the window, sweet is the night-air!
Only, from the long line of spray
Where the sea meets the moon-blanched land,
Listen! you hear the grating roar
Of pebbles which the waves draw back, and fling,
At their return, up the high strand,
Begin, and cease, and then again begin,
With tremulous cadence slow, and bring
The eternal note of sadness in.

Sophocles long ago
Heard it on the Ægean, and it brought
Into his mind the turbid ebb and flow
Of human misery; we
Find also in the sound a thought,
Hearing it by this distant northern sea.

The Sea of Faith
Was once, too, at the full, and round earth's shore
Lay like the folds of a bright girdle furled.
But now I only hear
Its melancholy, long, withdrawing roar,
Retreating, to the breath

Of the night-wind, down the vast edges drear
And naked shingles of the world.

Ah, love, let us be true
To one another! for the world, which seems
To lie before us like a land of dreams,
So various, so beautiful, so new,
Hath really neither joy, nor love, nor light,
Nor certitude, nor peace, nor help for pain;
And we are here as on a darkling plain
Swept with confused alarms of struggle and flight,
Where ignorant armies clash by night.

==========

Christoph Willibald Gluck (1714-1787)

A composer of Italian and French opera in the early classical period, Gluck brought about the practical reform of opera drama with a series of radical new works in the 1760s, among them Orfeo ed Euridice and Alceste. Gluck introduced more drama by using simpler recitative and cutting the usually long da capo aria. His later operas have half the length of a typical baroque opera.

Orfeo and Euridice: Helene Grimaud, Piano
https://www.youtube.com/watch?v=ypC38sgQojI

Dance of the Blessed Spirits: Alicia Saunders, Flute
https://www.youtube.com/watch?v=4DFzLIKFeQ0

Dance of the Blessed Spirits Bridget Mermikides, Guitar.
https://www.youtube.com/watch?v=zcrvg-aCvDM

==========

Former Circus Elephants Begin to Arrive at Florida Sanctuary

In this Sept. 2019, photo provided by the White Oak Conservation, Asian elephants, Kelly Ann, born Jan. 1, 1996, and Mable, born April 6, 2006, are seen at the Center for Elephant Conservation in Polk City, Fla. A Florida wildlife sanctuary is building a new 2,500-acre home for former circus elephants. The White Oak Conservation Center announced Wednesday, Sept. 23, 2020, that it's expecting to welcome 30 Asian elephants starting next year. (Stephanie Rutan/White Oak Conservation via AP)

YULEE, Fla. (AP) — Former circus elephants are starting to arrive at a new wildlife sanctuary in north Florida.

The White Oak Conservation Center announced Monday that a dozen female Asian elephants have already arrived at the Yulee refuge, located north of Jacksonville. Up to 20 more elephants are expected once more areas are completed at the planned 2,500-acre (1,010-hectare) space.

The pachyderms are coming from the Center for Elephant Conservation in Polk County. Most of the animals previously traveled with the Ringling Bros. and Barnum & Bailey Circus until they were retired in 2016.

Nick Newby, who leads the team that cares for the elephants, has been getting to know the individual elephants and their habits for the past few years.

"Watching the elephants go out into the habitat was an incredible moment," Newby said in a statement. "I was so happy to see them come out together and reassure and comfort each other, just like wild elephants do, and then head out to explore their new environment. Seeing the elephants swim for the first time was amazing."

The elephants will eventually have access to nine interlinked areas that will include a variety of vegetation and habitat types, such as wetlands, meadows and woods, a news release said. The center also is constructing 11 waterholes and three barns with veterinary equipment.

Asian elephants are endangered in the wild, officials said. Fewer than 50,000 remain in the wild in less than 15% of their historic range.

White Oak is owned by philanthropists Mark and Kimbra Walter. The center covers about 17,000 acres (6,880 hectares). It's already home to several endangered and threatened species, including rhinos, okapi, bongos, zebras, condors, dama gazelles and cheetahs.

==========

==========

Dreams Fleetwood Mac

https://www.youtube.com/watch?v=Y3ywicffOj4

Dreams was from British rock band, Fleetwood Mac's Rumors album released in 1977. In the US, the single of the piece sold more than one million copies.

==========

Rhetus Periander Perched on a Leaf.

Periander metalmark or variable beautymark, is found in most of Central America and South America. Small—they have a wingspan of less than an inch and a half. The butterfly has a very rapid and erratic flight, but the male often settles to imbibe at wet mud. When it first settles it is very skittish and takes flight instantly if disturbed, but after a few minutes it overcomes it's nervousness and will sometimes remain in one spot for several minutes.

==========

Vatnajökull, Iceland

getty

Home to one of the largest glaciers in the world, Vatnajökull National Park is one of our favorite places to explore ice caves. But there's more than just frozen ice rivers to see at Vatnajökull, which covers much of Iceland's eastern half. It holds two of the island's

most active volcanoes, herds of reindeer around Mt. Snæfell, and a number of breathtaking waterfalls, including Svartifoss, Dettifoss, and Selfoss.

==========

Diego goes to the Doctor

https://www.youtube.com/watch?v=t9Cct58DEVI

In today's contentious environment I've sat on this for several months now, fearing someone might be offended. But the truth is it's funny, and you should never censor funny. If you're offended please let me know and I will hang my head in shame or something like that. There is a whole Diego series worth watching.

==========

How Is Decaf Coffee Made?

By Megan Gannon - Live Science Contributor

Green and brown decaf unroasted and black roasted coffee beans sit in a wooden box.
(Image credit: Shutterstock)

The story of decaf coffee starts, improbably, with Johann Wolfgang von Goethe.

Goethe, who wrote the tragedy "Faust," was one of Germany's most famous authors, but he also dabbled in natural science. In 1819, Goethe saw the chemist Friedlieb Ferdinand Runge demonstrate how deadly nightshade extract could dilate a cat's pupils. Impressed, Goethe gave Runge a small box of coffee beans from Greece and tasked the chemist with figuring out why the stuff kept him up at night.

A couple of years later, Runge became the first scientist to isolate and identify caffeine. (Those who are extra-sensitive to the jittery effects of a cup of strong coffee probably won't be surprised to hear that the discoverer of the stimulant had a penchant for working with deadly substances; his colleagues and students allegedly nicknamed him "Doktor Gift," which means "Dr. Poison" in German.) [Does Medicine Really Expire?]

According to the Max Planck Institute, it took almost another 100 years after Runge's discovery before scientists figured out how to extract caffeine from coffee and still have a beverage that tasted somewhat like the real thing.

Chemical solvents, CO2 and water

Today, decaffeination is an intensive process that takes place at specialized facilities.

"There are a couple [of] very large [coffee] companies that own their own decaf plants, but beyond that every other company either contracts directly with a decaffeination company or they contract through an importer," David Kastle, a senior vice president at the Canada-based company Swiss Water Decaffeinated Coffee, told Live Science.

Generally, decaffeination involves water-logging coffee beans when they're still green (before roasting) so that the caffeine inside can be made soluble, meaning that it can be dissolved. But there are different ways of washing that caffeine out of the beans.

The first commercially successful decaffeination method was invented around 1905, by German coffee merchant Ludwig Roselius. According to Atlas Obscura, one bit of lore about the origins of decaf claims that Roselius received a shipment of coffee beans that was soaked in seawater. Instead of tossing the beans, Roselius decided to process and test them. He found that the coffee had been stripped of its caffeine content but still basically tasted like coffee, albeit a bit salty.

Roselius then figured out he could use benzene — a chemical that, at the time, was also used in paint strippers and aftershave — as a solvent to remove caffeine from coffee beans. His company, Kaffee HAG, was the first to produce instant decaf coffee. The coffee was sold as "Sanka" in the United States by General Foods, and was a mid-20th-century staple — and occasional punchline. (In the 1982 movie "Fast Times at Ridgemont High," a biology teacher pleads with his students, "I'm a little slow today. I just switched to Sanka, so have a heart.")

Benzene is no longer used for decaffeinating coffee because it's a known carcinogen. Instead, companies that use chemical solvents have switched to other substances, predominantly ethyl acetate and methylene chloride, although there has been some controversy about the latter because exposure to high amounts of the substance can be toxic and lead to damage of the central nervous system. The FDA has ruled that

miniscule trace amounts of methylene chloride in decaf coffee are not cause for concern, and residues of more than 0.001% are prohibited.

Another method for decaffeinating coffee also originated, somewhat accidentally, in Germany. Chemist Kurt Zosel was working with supercritical carbon dioxide at the Max Planck Institute for Coal Research in Ruhr. Zosel discovered that when the gas is heated and put under a lot of pressure, it enters a supercritical state that can be useful for separating different chemical substances — including separating caffeine from coffee when it's pumped through the beans.

The chemist patented his decaffeination method in 1970; it's still widely used today. According to NPR, crude caffeine can be salvaged during the supercritical carbon dioxide decaffeination process, which is used in sodas, energy drinks and other products.

Yet another method, dubbed the Swiss Water Process, was first used commercially in the 1970s. Kastle explained that first, a batch of green coffee beans is soaked in water. That water becomes saturated with all the soluble components found in coffee — including chlorogenic acid, amino acids and sucrose; the caffeine is then filtered out with carbon. This uncaffeinated liquid, called green coffee extract, is then added to columns of new, rehydrated, green coffee beans that still have their caffeine. Kastle said that caffeine migrates from the beans to the green coffee extract as the beans and liquid seek equilibrium, until the beans are almost entirely caffeine-free.

According to Consumer Reports, it can be difficult to figure out the process by which your decaf coffee has been made; there are no specific labeling rules that require companies to disclose this information. Some coffee companies do, however, advertise their methods. (The high-end coffee company Blue Bottle, for instance, flaunts its use of the Swiss Water Process in making its decaf.)

And the FDA says that decaffeinated coffee might still contain small amounts of caffeine, warning consumers that an 8-ounce cup of decaf typically has 2 to 15 milligrams of caffeine. But that's still much lower than a caffeinated cup of joe; for comparison, the same amount of regular coffee usually has about 80 to 100 mg of caffeine.

==========

Restorative Moment for Audience-Starved Zoo Critters

https://www.youtube.com/watch?v=gQrnimFBBb4

Thelonius Herrmann takes time to let the Cologne Zoo folks know they're not forgotten. These elephants think masks are more dangerous than the flu.

==========

IKEA; Chinese Style

https://www.youtube.com/watch?v=Q95e_F53bdE

Products for when you share your residence with 8,000 others.

==========

==========

==========

Spacex Crew Dragon Makes 1st Nighttime Splashdown with US Astronauts Since Apollo Era

https://www.space.com/spacex-crew-1-astronaut-dragon-capsule-splashdown?utm_source=Selligent&utm_medium=email&utm_campaign=SDC_Newsletter&utm_content=SDC_Newsletter+&utm_term=3058026&m_i=%2B9R%2Bp76%2BUzkzNbzyg3PberaLSfBeUwZUMScQ%2BuDpOqE%2Bl_0lOPcaJ6RCaADGK8UPiDVFYjPIhfFno2Kio9Oj1WcQEkldxEEybUjRKJR%2B%2Bd&lrh=16e68eab1fa466b4c4366719dfd124176e273780e94dbaef91a3d1721bb61936

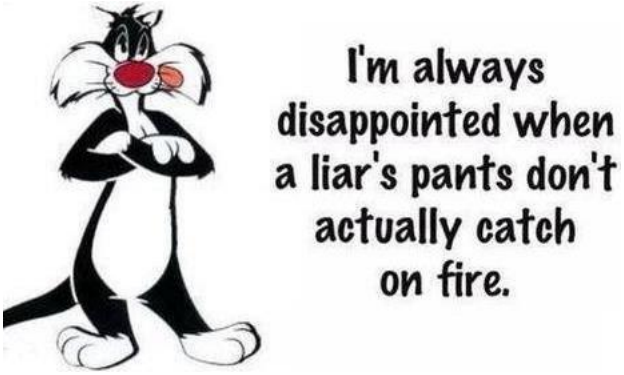
I suggest you run it forward to 2:13 and then watch from there.

==========

Japanese Trash Samurais…Littering is Dame-Dame (no-no)

https://www.youtube.com/watch?v=sRuHr_O6RyQ

==========



==========

Disney Imagineers Reveal New Robotic 'Baby Groot'

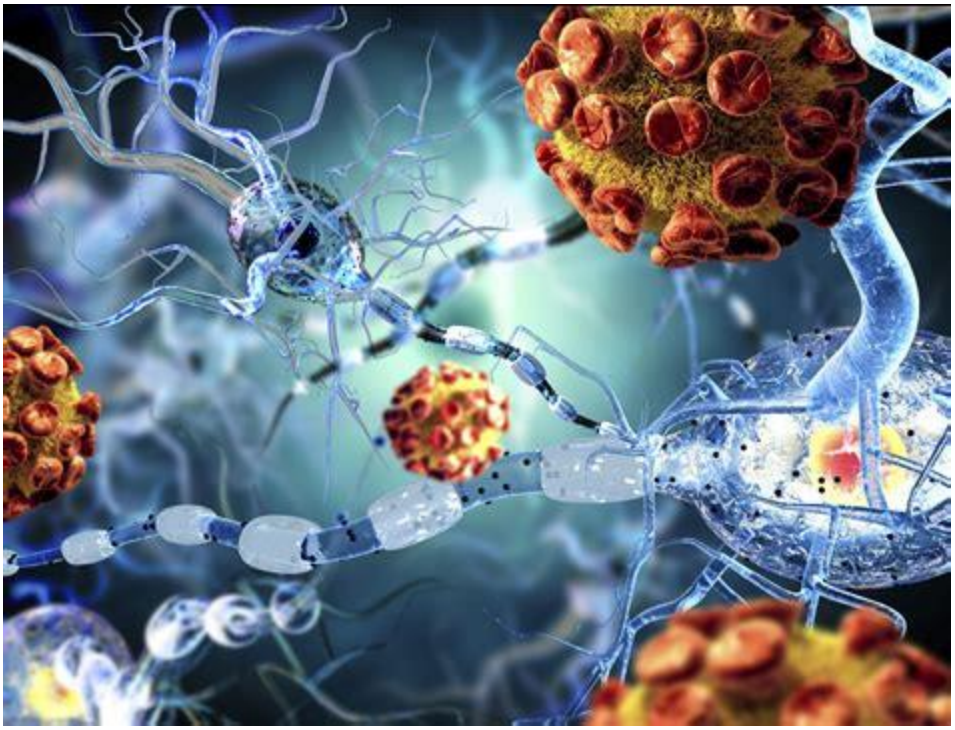
https://youtu.be/EdDJ77uDwWQ

Next time my back goes out, I'll just go to the Disney folks for a slight rebuild

==========

Game Changer? I Sure Hope So

Vaccine Maker BioNTech Reports Potential Multiple Sclerosis Breakthrough



ibtimes.co.uk

BioNTech, the German biotechnology company that paired with Pfizer to develop the first COVID-19 vaccine approved in the U.S., reports in the journal *Science* that a new vaccine using the same mRNA technique has proved effective in treating or stopping

multiple sclerosis in lab mice. MS is caused not by a virus but by the immune system malfunctioning and attacking the protective covering of nerve cells in the brain and spinal cord, disrupting signals between those cells and their targets in the body, causing neurological, sensory, and motor issues.

BioNTech said it successfully encoded MS-specific autoantigens that, when delivered via its experimental vaccine, stopped MS symptoms in mice bred with a condition mirroring MS in humans, and prevented further deterioration in mice with early signs of MS. Mice given a placebo showed typical MS symptoms. (1/12)

In mice with autoimmune encephalomyelitis, a model for human MS, the team found that the vaccine was processed by lymphoid antigen-presenting cells without triggering a systemic inflammatory immune response, even when delivered at very high antigen concentrations. It did not impair the animals' ability to launch a protective immune response. The vaccine blocked all clinical signs of MS in mice, while control animals experienced the typical symptoms of the disease. (Liu, 1/7)

Existing treatments typically "work by systemically suppressing the immune system," Angus Liu writes in Fierce Biotech. "That can control MS, but it also leaves patients vulnerable to infections." BioNTech's vaccine did not compromise normal immune function. The researchers said their findings suggest that mRNA vaccines, which can be developed quickly, could soon be used to treat "disease-causing antigens of individual patients."(Schladebeck, 1/12)

With the MS vaccine, the mRNA technology stops the body's immune system from attacking neurons in the brain and spinal cord which can lead to the loss of bodily function. Clinical trials on mice revealed the jab not only stopped the disease from progressing but restored some motor skills which had been lost. (Riaz, 1/13)

==========