

Ode to E Pluribus Unum for Sunday February 27 2022



## Peculiar Galaxies of Arp 273



*Image Credit & Copyright: Jason Guenzel*

The spiky stars in the foreground of this backyard telescopic frame are well within our own Milky Way Galaxy. But the two eye-catching galaxies lie far beyond the Milky Way, at a distance of over 300 million light-years. Their distorted appearance is due to gravitational tides as the pair engage in close encounters.

Cataloged as Arp 273 (also as UGC 1810), the galaxies do look peculiar, but interacting galaxies are now understood to be common in the universe. Nearby, the large spiral Andromeda Galaxy is known to be some 2 million light-years away and approaching the

Milky Way. The peculiar galaxies of Arp 273 may offer an analog of their far future encounter.

Repeated galaxy encounters on a cosmic timescale can ultimately result in a merger into a single galaxy of stars. From our perspective, the bright cores of the Arp 273 galaxies are separated by only a little over 100,000 light-years.

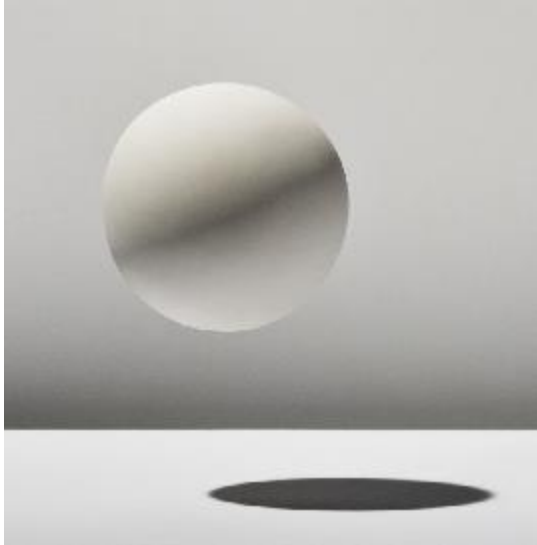
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### **Researchers Levitated a Small Tray Using Nothing but Light**

*One day a "magic carpet" based on this light-induced flow technology could carry climate sensors high in the atmosphere—wind permitting.*



[https://www.wired.com/story/researchers-levitated-a-small-tray-using-nothing-but-light/?utm\\_source=nl&utm\\_brand=wired&utm\\_mailing=WIR\\_PaywallSubs\\_021922\\_Classics&utm\\_campaign=aud-dev&utm\\_medium=email&utm\\_content=WIR\\_PaywallSubs\\_021922\\_Classics&bxid=617fdd8c62717d23af47aa50&cnid=67131721&hasa=4782ace3954582fd7e469974b0c17215&hashb=29b137acc80e1e19b755b18a40d8fd7a9842c1e9&esrc=&source=EDT\\_WIR\\_NEWSLETTER\\_0\\_ENGAGEMENT\\_ZZ&utm\\_term=WIR\\_PaywallSubs\\_Active\\_EXCLUDE\\_DailyTopClickers](https://www.wired.com/story/researchers-levitated-a-small-tray-using-nothing-but-light/?utm_source=nl&utm_brand=wired&utm_mailing=WIR_PaywallSubs_021922_Classics&utm_campaign=aud-dev&utm_medium=email&utm_content=WIR_PaywallSubs_021922_Classics&bxid=617fdd8c62717d23af47aa50&cnid=67131721&hasa=4782ace3954582fd7e469974b0c17215&hashb=29b137acc80e1e19b755b18a40d8fd7a9842c1e9&esrc=&source=EDT_WIR_NEWSLETTER_0_ENGAGEMENT_ZZ&utm_term=WIR_PaywallSubs_Active_EXCLUDE_DailyTopClickers)

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## **A 16-Year-Old From India Beats World Chess Champion**

Bill Chappell



*Indian chess prodigy Rameshbabu Praggnanandhaa, shown here in 2018, has beaten*

*world champion Magnus Carlsen.*  
*Arun Sankar /AFP via Getty Images*

At just 16 years old, Rameshbabu Praggnanandhaa is now the youngest chess player ever to defeat Magnus Carlsen in his long reign as world champion. The two faced off in an online tournament that had featured 16 elite players.

Praggnanandhaa is a grandmaster from India who is commonly referred to simply as Pragg. The chess prodigy said after the game that he was glad to improve on his play from the tournament's first day — and to avoid a draw in his game against Carlsen, which included 39 moves.

"I'm just really happy," he said in an interview from Chennai, India.

Pragg is the youngest person to defeat Carlsen since he became world champion — a streak that extends back to 2013, as World Chess notes.

For Carlsen, it was another disappointing game in a tournament that has seen him make uncharacteristic blunders. The Norwegian said he's feeling the effects of COVID-19, after testing positive for the coronavirus before the tournament.

"It's been pretty bad. I played a couple of decent games, but the rest of them have been poor. I need to do a lot better than that," Carlsen said, according to the International Chess Federation website.

"It's been a little bit better today," Carlsen said Monday, "but the first couple of days I was feeling like I'm OK, but I didn't have the energy, which made it hard to focus because every time I tried to think I blundered. It was a little bit better today, but still pretty bad."

Before running into Pragg, Carlsen had notched three straight wins, showing signs of returning to form after a rough start. In contrast, Pragg was bouncing back from three losses.

Because of the time difference involved in playing the Meltwater Champions Chess Tour 2022 online tournament, the teenager is required to stay up late at night to face the world's best chess players. After his win, Pragg was asked whether he would get some rest or take time to celebrate with a nice dinner.

"It's about just going to bed, because I don't think I will have dinner at 2:30 in the morning," he said.

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## **Diplomat's Dinner**

At a Diplomat's dinner, a waiter tripped and shattered the beautiful plate in which he was carrying a large turkey.

Hushed silence turned into a roar of laughter, when the quick-witted Diplomat announced:

"Ladies and Gentlemen! You have just witnessed 4 major international events happening:

1. Fall of Turkey
2. Breakup of China
3. Spillage of Greece
4. Frustration of Hungary!

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## **The Bandura Instrument Online**



The bandura is a Ukrainian plucked string folk instrument that combines elements of the zither and lute

<https://bandura.ukrzen.in.ua/#vivbandurfest>

This is amazing... Just run your fingers along the strings & play your own music!!

This is really a creative post! To play this instrument touch the letter "I" on top right hand of the screen.

Go ahead and make your own music.

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## **Ancient Indian Trigonometry**

We learned the Pythagoras theorem in 5th grade.



Let us take the three sides of the right-angle triangle to be A, B, and C, where C be the hypotenuse.

Let us take A and B to be horizontal and perpendicular sides respectively.

If we are to divide A into eight parts and take away one eighth, it would be  $\frac{7}{8}A$ . The half of the vertical side will be  $\frac{1}{2}B$ .

Thus, the result should be:

$$C = \frac{7}{8}A + \frac{1}{2}B$$

Let us give some numbers and try:

\*Firstly\* Say  $A=8$  and  $B=6$

By Pythagoras theorem, C equals  $\sqrt{(8 \times 8 + 6 \times 6)}$  Which is  $\sqrt{(64 + 36)} = \sqrt{100} = 10$ .

Now, according to the quatrain: C should be  $\frac{7}{8}A + \frac{1}{2}B$

$\frac{7}{8}$  of A (8) = 7 and  $\frac{1}{2}$  of B (6) = 3

Together they add up to give hypotenuse to be  $7+3=10$

Second\* let us try with taking  $A=28$  and  $B=21$  then

by Pythagoras theorem  $C = \sqrt{(21 \times 21 + 28 \times 28)}$

$$C = \sqrt{(441 + 784)}$$

which is  $=\sqrt{1225} = 35$

According to quatrain : hypotenuse becomes  $\frac{7}{8}A + \frac{1}{2}B$ .

$\frac{7}{8}A = \frac{7}{8}(28) = 24.5$  and  $\frac{1}{2}B = \frac{1}{2}(21) = 10.5$

Thus  $24.5 + 10.5 = 35$ .

Third let us try with taking  $A= 12$  and  $B= 5$  then:

by Pythagoras theorem  $C = \sqrt{(12 \times 12) + (5 \times 5)} = \sqrt{(144 + 25)} = \sqrt{169} = 13$ .

According to the ancient Tamil quatrain: the hypotenuse becomes  $\frac{7}{8}A + \frac{1}{2}B$

$\frac{7}{8}(12) = 10.5$   $\frac{1}{2}(5) = 2.5$

Thus  $10.5 + 2.5 = 13$

Pothayanar must have been a great mathematician, who got lost like fruit hidden in the foliage of the tree.

The discoveries of the Greek scientists and mathematicians spread far and wide along with their conquests in the world.

Unfortunately, in ancient India, many great intellectuals, and their knowledge / findings were lost to the world owing to various reasons and events.

Our schools teach the Pythagoras Theorem to our children. They should also teach Pothayanar's theorem as an alternate and easier method, as explained above.

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Of course, the way I learned it the second grade was by the story of an aboriginal tribe divided into three clans known as hides in which it was determined that the sons of the squaws of the hippopotamus hide equaled the sons of the squaws of the other two hides. *Really.*

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## **Franz Schubert Symphony 4; The Tragic**



Franz Schubert bridged the worlds Classical and Romantic music. Despite his short lifespan--31 years—he composed a prodigious amount of music, including seven symphonies and more than 600 vocal works. He wrote his 4<sup>th</sup> Symphony at the age of 19, regarded by many as his finest. This is his first symphony in a minor key; and many regard its mood more of yearning and hope than tragedy.

[https://youtu.be/duf\\_3WM2neU](https://youtu.be/duf_3WM2neU)

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## **Artificial Intelligence Challenges What it Means to be Creative**





*This portrait, "Edmond de Belamy," sold in 2018 for \$432,500. It was created by an algorithm.  
Timothy A. Clary/Afp Via Getty Images*

By Richard Moss

When British artist Harold Cohen met his first computer in 1968, he wondered if the machine might help solve a mystery that had long puzzled him: How can we look at a drawing, a few little scribbles, and see a face? Five years later, he devised a robotic artist called AARON to explore this idea. He equipped it with basic rules for painting and for how body parts are represented in portraiture — and then set it loose making art.

Not far behind was the composer David Cope, who coined the phrase “musical intelligence” to describe his experiments with artificial intelligence–powered composition. Cope once told me that as early as the 1960s, it seemed to him “perfectly logical to do creative things with algorithms” rather than to painstakingly draw by hand every word of a story, note of a musical composition or brush stroke of a painting. He initially tinkered with algorithms on paper, then in 1981 moved to computers to help solve a case of composer’s block.

Cohen and Cope were among a handful of eccentrics pushing computers to go against their nature as cold, calculating things. The still-nascent field of AI had its focus set squarely on solid concepts like reasoning and planning, or on tasks like playing chess and checkers or solving mathematical problems. Most AI researchers balked at the notion of creative machines.

Slowly, however, as Cohen and Cope cranked out a stream of academic papers and books about their work, a field emerged around them: computational creativity. It included the study and development of autonomous creative systems, interactive tools that support human creativity and mathematical approaches to modeling human creativity. In the late 1990s, computational creativity became a formalized area of study with a growing cohort of researchers and eventually its own journal and annual event.



*The robotic artist AARON produced this sketch in 1985, which was hand-colored by AARON-creator Harold Cohen.*

*Harold Cohen, Aaron*

Soon enough — thanks to new techniques rooted in machine learning and artificial neural networks, in which connected computing nodes attempt to mirror the workings of the brain — creative AIs could absorb and internalize real-world data and identify patterns and rules that they could apply to their creations.

Computer scientist Simon Colton, then at Imperial College London and now at Queen Mary University of London and Monash University in Melbourne, Australia, spent much of the 2000s building the Painting Fool. The computer program analyzed the text of news articles and other written works to determine the sentiment and extract keywords. It then combined that analysis with an automated search of the photography website Flickr to help it generate painterly collages in the mood of the original article. Later the Painting Fool learned to paint portraits in real time of people it met through an attached camera, again applying its “mood” to the style of the portrait (or in some cases refusing to paint anything because it was in a bad mood).

Similarly, in the early 2010s, computational creativity turned to gaming. AI researcher and game designer Michael Cook dedicated his Ph.D. thesis and early research associate work at Goldsmiths, University of London to creating ANGELINA — which made simple games based on news articles from The Guardian, combining current affairs text analysis with hard-coded design and programming techniques.

During this era, Colton says, AIs began to look like creative artists in their own right — incorporating elements of creativity such as intentionality, skill, appreciation and imagination. But what followed was a focus on mimicry, along with controversy over what it means to be creative.

New techniques that excelled at classifying data to high degrees of precision through repeated analysis helped AI master existing creative styles. AI could now create works like those of classical composers, famous painters, novelists and more.

One AI-authored painting modeled on thousands of portraits painted between the 14th and 20th centuries sold for \$432,500 at auction. In another case, study participants struggled to differentiate the musical phrases of Johann Sebastian Bach from those created by a computer program called Kulitta that had been trained on Bach's compositions. Even IBM got in on the fun, tasking its Watson AI system with analyzing 9,000 recipes to devise its own cuisine ideas.

But many in the field, as well as onlookers, wondered if these AIs really showed creativity. Though sophisticated in their mimicry, these creative AIs seemed incapable of true innovation because they lacked the capacity to incorporate new influences from their environment. Colton and a colleague described them as requiring "much human intervention, supervision, and highly technical knowledge" in producing creative results. Overall, as composer and computer music researcher Palle Dahlstedt puts it, these AIs converged toward the mean, creating something typical of what is already out there, whereas creativity is supposed to diverge away from the typical.

In order to make the step to true creativity, Dahlstedt suggested, AI "would have to model the causes of the music, the conditions for its coming into being — not the results."

True creativity is a quest for originality. It is a recombination of disparate ideas in new ways. It is unexpected solutions. It might be music or painting or dance, but also the flash of inspiration that helps lead to advances on the order of light bulbs and airplanes and the periodic table. In the view of many in the computational creativity field, it is not yet attainable by machines.

In just the past few years, creative AIs have expanded into style invention — into authorship that is individualized rather than imitative and that projects meaning and intentionality, even if none exists. For Colton, this element of intentionality — a focus on the process, more so than the final output — is key to achieving creativity. But he wonders whether meaning and authenticity are also essential, as the same poem could lead to vastly different interpretations if the reader knows it was written by a man versus a woman versus a machine.

If an AI lacks the self-awareness to reflect on its actions and experiences, and to communicate its creative intent, then is it truly creative? Or is the creativity still with the author who fed it data and directed it to act?

Ultimately, moving from an attempt at thinking machines to an attempt at creative machines may transform our understanding of ourselves. Seventy years ago Alan Turing — sometimes described as the father of artificial intelligence — devised a test he called "the imitation game" to measure a machine's intelligence against our own. "Turing's greatest insight," writes philosopher of technology Joel Parthemore of the University of Skövde in Sweden, "lie in seeing digital computers as a mirror by which the human mind could consider itself in ways that previously were not possible."

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**James Webb Space Telescope has Locked onto Guide Star**

By Elizabeth Howell

The fine-guidance instrument is key to keeping the space telescope pointed in the right direction.



*An artist's depiction of the James Webb Space Telescope at work.  
(Image credit: Northrop Grumman)*

The James Webb Space Telescope's key pointing instrument is working well in testing, according to two space agencies involved with the observatory's commissioning work.

The Fine Guidance Sensor (FGS), a contribution from Honeywell on behalf of the Canadian Space Agency, successfully "locked on" to a specific guide star in tracking mode on Sunday (Feb. 13), the CSA reported Thursday (Feb. 17).

With FGS working well so far, the instrument will next be used to assist with the ongoing alignment of the 18 hexagonal segments that make up the primary mirror of the telescope, the CSA added. Last week, Webb engineers released a first image of a single star showing many separate views from the different mirror segments, which was expected since alignment is ongoing.

"In the coming weeks, with the help of the FGS, each mirror segment will be carefully adjusted to 'stack' these [individual segment] views and calibrate the rest of the telescope's optical elements, to ultimately create a highly focused image of a single star," the CSA said.

A NASA statement about the milestone posted on Thursday included commentary from both René Doyon (principal investigator of the Canadian-built instruments on Webb) and outreach scientist Nathalie Ouellette of the Université de Montréal. The two scientists discussed the function of FGS and what to expect in the coming weeks.

"To ensure Webb stays locked on its celestial targets, the FGS measures the exact position of a guide star in its field of view 16 times per second and sends adjustments to the telescope's fine steering mirror about three times per second," the scientists said in the statement.

Speaking about the milestone, the scientists said they were "thrilled" that the guiding is working well so far; they are also looking forward to FGS continuing to assist Webb's Near-Infrared Camera (NIRCam) with pointing in the right direction.

"From now on, the alignment process of the telescope mirrors will take place with FGS guiding, while NIRCam images provide the diagnostic information for mirror adjustments," the scientists added.

Webb's commissioning period is expected to take several months, in large part because the instruments are still cooling after its Dec. 25 launch and month-long journey to a Lagrange point deep in space. The instruments are designed to operate at minus 384 degrees Fahrenheit (minus 233 degrees Celsius) as Webb seeks out heat-emitting objects in the universe.

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## **Astronauts Watch Mount Etna from Space Lab**



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## **Florida's Manatees Are Dying in Alarming Numbers Again. Why?**

Emergency feeding and rescue efforts are under way for these gentle aquatic relatives of elephants, weakened by hunger and winter cold.

By Gena Steffens



*A manatee forages for food in a forest flooded with warm spring water. In Florida, winter cold and acute shortages of manatees' staple food—seagrass—are a deadly combination for the herbivorous mammals.*

*flickr.com*

The same pressures that killed more than 1,100 Florida manatees last year are at play again this winter, with Florida wildlife officials reporting 97 dead manatees in January alone. Starvation and cold weather are the culprits. Estimates of the total number of manatees in the state range from 5,700 to 7,500.

Most deaths have occurred in Indian River Lagoon, an estuary stretching more than 150 miles down the middle of Florida's east coast. Here, decades of pollution from farm fertilizers and residential developments have killed off vast swaths of seagrass that are manatees' main food source.

Between mid-January when cold weather hit Florida and the end of the month, the number of manatee carcasses that were found tripled, says state veterinarian Martine de Wit, of the Florida Fish and Wildlife Conservation Commission (FWC).

Biologists monitoring manatees in warm water refuges "are seeing thin animals, emaciated animals," says Andy Garrett, the commission's manatee rescue coordinator.

Last November, Patrick Rose, executive director of Save the Manatee Club, warned that this winter could be catastrophic: "Manatees are going to have to make a horrible life or death choice—between dying sooner by having to go out in the cold or staying warm and starving."

In the past, de Wit says, manatees would easily have survived the winter cold snaps. But now, many sea cows, as these gentle herbivorous mammals are also called, have been weakened by successive years of food shortages and are reaching the breaking point.

"These animals are compromised," she says.

## **Manatees need warmth to survive**

As a subtropical species, Florida manatees are vulnerable when the water temperature drops below 68 degrees. Unlike other marine mammals such as whales and seals, manatees lack abundant insulating blubber—they're round and chubby not because they're fat but because they have such large digestive tracts to process all the vegetation they eat.

To survive cold periods, manatees seek shelter in warm water refuges such as natural springs and the outfalls from power plant cooling systems. At the end of January, nearly 800 manatees were huddled together in outfall from Florida Power & Light's Cape Canaveral Clean Energy Center, in Brevard County. Such havens used to offer abundant food, but now, with so much of the seagrass gone, there's almost nothing for the manatees to eat.

At the Cape Canaveral facility, an unprecedented emergency feeding effort is under way. Normally, feeding wild manatees is prohibited by state and federal laws, but with so many animals at risk of starvation this winter, wildlife officials have chosen to intervene. Since December 7, FWC staff have been throwing heads of romaine lettuce and cabbage into the water for the ravenous sea cows. To prevent the animals from learning to associate humans with free meals, they do this hidden behind tarps.

Algae-covered rib bones of manatees lie along the shore of Merritt Island, in Indian River Lagoon. Last year, more than 1,100 manatees died in Florida, most of them in the 150-mile-long lagoon. Nearly a hundred deaths have been reported this year.

## **Rescue efforts**

Rescue teams from the FWC are standing by, ready to swoop in to net and haul out manatees in need of medical treatment. The stricken animals are trucked to rehabilitation facilities such as SeaWorld and ZooTampa's Manatee Critical Care Center.

Last year, the influx of sick manatees was overwhelming. In anticipation of another perilous winter, SeaWorld, which had 28 manatees in its care in late January, is building five additional rehabilitation pools for up to 20 more.

At ZooTampa, the work of the Manatee Critical Care team seems endless, says Jaime Vaccaro, supervisor of animal care at the zoo's manatee hospital. Patients include orphaned calves; victims of cold stress, hunger, pneumonia, and other ailments; and manatees injured by motorboats.

"We've all been pulling extra shifts for the past nine months," Vaccaro says.

After kneeling to bottle-feed two toddler-size babies, Vaccaro helps other caretakers guide a young male named Flapjack into a "medical pool." He lies blinking in the sunlight as a plastic tube is inserted through his nose and into his stomach to deliver a nutrient-rich mix and various medications.

When Flapjack arrived last October, he was so emaciated that some caretakers thought he might not survive. But after more than a hundred days in intensive care, he's

plumping up again. If he makes a full recovery, he'll be released back into the wild, and a new patient immediately will take his place.

Manatees—like their closest living relatives, elephants—have sharp memories. Because they're known to visit the same waters throughout their lives, rescuers are careful to release each manatee where it was captured. If that's not possible because sites now are food deserts, manatees are rewilded where vegetation is abundant, such as at Blue Sprng State Park, in Orange City.

### **Conservation groups sue over manatee deaths**

As more manatees succumb to starvation and cold weather, a coalition of conservation groups, including Save the Manatee Club, the Center for Biological Diversity, and Defenders of Wildlife, is taking legal action. On February 1, the group filed a lawsuit against the U.S. Fish and Wildlife Service, accusing the agency of failing to expand "critical habitat" for manatees.

In their complaint, the groups say the agency acknowledged the need to revise and update manatee critical habitat areas more than a decade ago but has failed to do so. Their hope is that the lawsuit will push the Fish and Wildlife Service to redesign critical habitat regulations in ways that will address the loss of natural warm-water refuges, the poor water quality that causes harmful algae blooms, and the ongoing losses of seagrass in Indian River Lagoon and elsewhere.

Restoring seagrass beds is crucial, conservationists say. Seagrass sustains not only manatees but also fish, shrimp, crabs, seahorses, and turtles, as well as human economies based on tourism, fishing, real estate, and recreation.

Until pollution is reduced and seagrass is restored, manatees will continue to suffer and die. "The seagrass issue is not going to be solved by next year," says Tom Reinert, the Florida Wildlife Commission's regional director. "So we're anticipating we may have to repeat [the emergency measures] again next winter using the lessons we've learned from this winter to help guide us."

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### **How Tough Were You at Age 50?**





*Pvt. Paul Douglas, age 50, performs a rifle inspection with his drill instructor aboard Marine Corps Recruit Depot S.C., 1942. Douglas, at age 50 was the oldest recruit in the history of Parris Island, and went on to become a purple heart recipient and Chicago senator. (Marine Corps photo.)*

Even among the extraordinary generation of Americans that won World War II, Paul Douglas stands out as a legend.

At 50 years old, Douglas arrived at Marine Corps Recruit Depot Parris Island in 1942 to begin boot camp. The economics professor was more than twice as old as the average Marine recruit and Douglas remains the oldest recruit to pass through Parris Island.

"I found myself able to take the strenuous boot camp training without asking for a moment's time out and without visiting the sick bay," Douglas later wrote about his experiences.

Initially, Douglas was assigned to the personnel classification section of Parris Island after becoming a Marine, but he was not content with the idea of writing training manuals for the rest of the war, so with the help of his good friend Frank Knox, who was serving as Navy Secretary, Douglas became an infantry officer.

Douglas was commissioned as a captain after spending just seven months as an enlisted Marine and then he shipped out to the Pacific, where he fought in some of the bloodiest battles of the war.

In late 1944, Douglas served with the 3rd Battalion, 7th Marine Regiment during brutal combat on the small Pacific island of Peleliu. Commanders expected the island to be captured in a matter of days, but the bitter fighting lasted more than two months, providing a preview of how tenacious the Japanese resistance would be in later battles.

Douglas, who was serving as a division adjutant, had been allowed to take part in the invasion on the condition that he stay away from combat, yet he routinely volunteered to be a stretcher bearer to evacuate wounded and fallen Marines from the frontlines,

Howard Shuman wrote in a 1979 profile of Douglas for Challenge, an economics magazine.

During one of his trips to the front, Douglas saw that the Marines desperately needed a flamethrower and ammunition for rocket launchers, so he grabbed what was needed and braved heavy mortar and small arms fire to deliver it to the front lines.

He was eventually awarded the Bronze Star for his actions helping those Marines, but the battle went on and Douglas also received his first Purple Heart after being wounded by shrapnel.

At one point in the battle for Peleliu. Douglas killed a Japanese sniper hiding in a cave, after the shooter had killed two fellow Marines. He described his thoughts afterward in his 1972 autobiography, "In the Fullness of Time."

"As I came out, covered with mud and blood, the thought went through my head that perhaps the fellow was a professor of economics at the University of Tokyo," Douglas wrote. "What a world it is that causes each of us to seek the other's life."

By the end of the battle, 1,336 Marines had been killed and another 5,450 were wounded. The Army's 81st Infantry Division also lost 196 soldiers who were killed in action.

As a leader, Douglas was credited with putting his men first. Shuman wrote how during one battle, a Navy corpsman refused Douglas' order to treat wounded Marines who were under heavy fire.

"He said he was a Harvard Medical School graduate with training too valuable to risk his life," Shuman wrote. "Incensed by his refusal, Douglas took out his weapon, pointed it at the doctor's head, and marched him to the front lines. Years later he told me he still shuddered when he thought about it: he had been so outraged that he had been prepared to shoot the man if he refused again."

Douglas would also routinely pick up garbage so that enlisted Marines would not have to do so, and he refused to skip ahead to the front of the chow line, according to the Marine Corps.

When Douglas was shot in his left forearm during the battle of Okinawa, he took off his rank insignia so that corpsmen would not see that he was a major and prioritize him over the enlisted troops who were wounded.

"If I live to be 100 years old, I will never forget this scene," Marine Pfc. Paul E. Ison later recalled. "There, lying on the ground, bleeding from his wound was a white-haired Marine major. He had been hit by a machine gun bullet. Although he was in pain, he was calm, and I have never seen such dignity in a man. He was saying 'Leave me here. Get the young men out first. I have lived my life. Please let them live theirs.'"

Following his second combat injury, Douglas spent 14 months in hospitals and left the Marine Corps in 1946 as a lieutenant colonel. His wound at Okinawa cost him the use of his left hand, which he described as a "paperweight."

After the war, Douglas served in the U.S. Senate for 18 years, where he was a champion of Civil Rights legislation. He is credited with bypassing the chairman of Judiciary Committee from Mississippi to allow the Senate to vote on a 1957 civil rights bill.

He died in 1976 at the age of 84. The year after his death, the Douglas Visitors Center at Parris Island opened in his honor.

“Later in his life many honors came to my husband,” his widow Emily Douglas said at the time. “But there is none that would have so touched him, made him so astonished as well as thrilled, as having his name associated here at Parris Island.”

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## Some Amazing Flying Machines



<https://youtu.be/-sUqJ9bId70>

Our desire to 'break the surly bonds of Earth' is in dominatable.

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## Your Uber Driver is Here



<https://youtu.be/YECeEGBE-kY>

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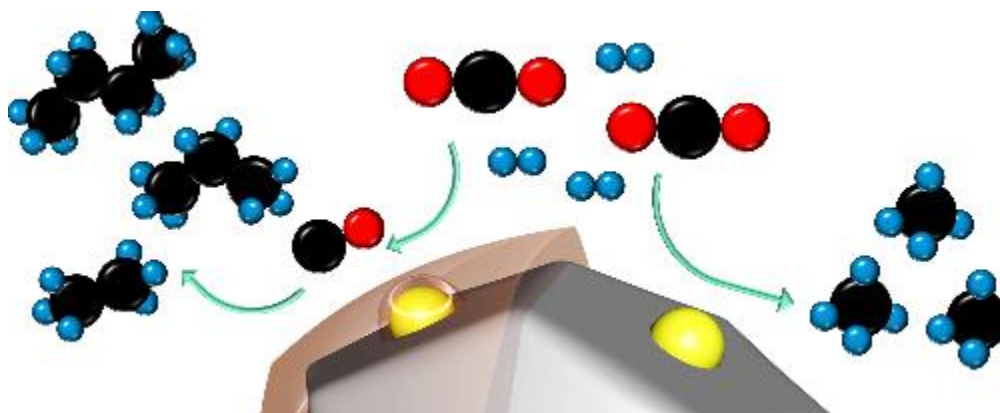
## Some Precision Flying



<https://youtu.be/5L4d5E3dQUQ>

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## Catalyst Can Turn Carbon Dioxide into Gasoline



*CO<sub>2</sub> (black and red) and hydrogen molecules (blue) react with the help of a ruthenium-based catalyst. On the right, the uncoated catalyst produces the simplest hydrocarbon, methane. On the left, the coated catalyst produces longer chain hydrocarbons, like butane, propane and ethane.*

*(Image credit: Chih-Jung Chen)*

Captured CO<sub>2</sub> can be turned into carbon-neutral fuels, but technological advances are needed. In new research, a new catalyst increased the production of long-chain hydrocarbons in chemical reactions by some 1,000 times over existing methods.

By Andrew Myers

Engineers working to reverse the proliferation of greenhouse gases know that in addition to reducing carbon dioxide emissions we will also need to remove carbon dioxide from power plant fumes or from the skies. But, what do we do with all that captured carbon? Matteo Cargnello, a chemical engineer at Stanford University, is working to turn it into other useful chemicals, such as propane, butane or other hydrocarbon fuels that are made up of long chains of carbon and hydrogen.

“We can create gasoline, basically,” said Cargnello, who is an assistant professor of chemical engineering. “To capture as much carbon as possible, you want the longest chain hydrocarbons. Chains with eight to 12 carbon atoms would be the ideal.”

A new catalyst, invented by Cargnello and colleagues, moves toward this goal by increasing the production of long-chain hydrocarbons in chemical reactions. It produced 1,000 times more butane – the longest hydrocarbon it could produce under its maximum pressure – than the standard catalyst given the same amounts of carbon dioxide, hydrogen, catalyst, pressure, heat and time. The new catalyst is composed of the element ruthenium – a rare transition metal belonging to the platinum group – coated in a thin layer of plastic. Like any catalyst, this invention speeds up chemical reactions without getting used up in the process. Ruthenium also has the advantage of being less expensive than other high-quality catalysts, like palladium and platinum.

Cargnello and his team describe the catalyst and the results of their experiments in their latest paper, published this week in the journal *Proceedings of the National Academy of Sciences*.

**Seven-year hitch**

Cargnello and his team took seven years to discover and perfect the new catalyst. The hitch: The longer the hydrocarbon chain is, the more difficult it is to produce. The bonding of carbon to carbon requires heat and great pressure, making the process expensive and energy intensive.

In this regard, the ability of the new catalyst to produce gasoline from the reaction is a breakthrough, said Cargnello. The reactor in his lab would need only greater pressure to produce all the long-chain hydrocarbons for gasoline, and they are in the process of building a higher pressure reactor.

Gasoline is liquid at room temperature and, therefore, much easier to handle than its gaseous short-chain siblings – methane, ethane and propane – which are difficult to store and prone to leaking back into the skies. Cargnello and other researchers working to make liquid fuels from captured carbon imagine a carbon-neutral cycle in which carbon dioxide is collected, turned into fuel, burned again and the resulting carbon dioxide begins the cycle anew.

### **Perfecting the polymer**

The key to the remarkable increase in reactivity is that layer of porous plastic on the ruthenium, explained lead student author Chengshuang Zhou, a doctoral candidate in Cargnello's lab, who conducted the search and experimentation needed to refine the new coating. An uncoated catalyst works just fine, he said, but only produces methane, the shortest chain hydrocarbon, which has just a single atom of carbon bonded to four hydrogens. It's not really a chain at all.

"An uncoated catalyst gets covered in too much hydrogen on its surface, limiting the ability of carbon to find other carbons to bond with," Zhou said. "The porous polymer controls the carbon-to-hydrogen ratio and allows us to create longer carbon chains from the same reactions. This particular, crucial interaction was demonstrated using synchrotron techniques at SLAC National Laboratory in collaboration with the team of Dr. Simon Bare, who leads Co-Access there."

While long-chain hydrocarbons are an innovative use of captured carbon, they are not perfect, Cargnello acknowledges. He is also working on other catalysts and similar processes that turn carbon dioxide into valuable industrial chemicals, like olefins used to make plastics, methanol and the holy grail, ethanol, all of which can sequester carbon without returning carbon dioxide to the skies.

"If we can make olefins from CO<sub>2</sub> to make plastics," Cargnello noted, "we have sequestered it into a long-term storable solid. That would be a big deal."

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### **Michael Flatley: The Final Riverdance**



<https://youtu.be/FoHlrQScWl0>

When you're the best...you're the best.

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## Backyard Squirrel Maze 1.0- Ninja Warrior Course



man v squirrel 1.0-- <https://www.youtube.com/watch?v=hFZFjoX2cGg>

2.0-- <https://www.youtube.com/watch?v=DTvS9lvRxZ8>

Think you're a pretty good problem-solver? Check out these guys.

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### **Baby Boomer Memory Test...**

There are 20 questions. Average score is 12.

This one will be difficult for the younger set.. (DUDE!)

Have fun, but no peeking! *The answers are at the very bottom of the Ode.*

Good luck, youngsters!

1. What builds strong bodies 12 ways?

- A. Flintstones vitamins
- B. The Buttmaster
- C. Spaghetti
- D. Wonder Bread
- E. Orange Juice
- F. Milk
- G. Cod Liver Oil

2. Before he was Muhammed Ali, he was...

- A. Sugar Ray Robinson.
- B. Roy Orbison..
- C. Gene Autry.
- D. Rudolph Valentino.
- E. Fabian.
- F. Mickey Mantle.
- G. Cassius Clay.

3. Pogo, the comic strip character said, 'We have met the enemy and...

- A. It's you.
- B. He is us.



- C. It's the Grinch.
- D. He wasn't home.
- E. He's really me and you.
- F. We quit.
- G He surrendered.

4. Good night, David..
- A.. Good night, Chet
  - B. Sleep well.
  - C. Good night, Irene.
  - D.. Good night, Gracie.
  - E. See you later, alligator.
  - F. Until tomorrow.
  - G. Good night, Steve..

5. You'll wonder where the yellow went...
- A. When you use Tide
  - B. When you lose your crayons
  - C. When you clean your tub.
  - D. If you paint the room blue.
  - E. If you buy a soft water tank.
  - F. When you use Lady Clairol.
  - G. When you brush your teeth with Pepsodent.

6. Before he was the Skipper's Little Buddy, Bob Denver was Dobie's friend...
- A. Stuart Whitman.
  - B Randolph Scott.
  - C. Steve Reeves..
  - D. Maynard G. Krebs.
  - E. Corky B. Dork.
  - F.. Dave the Whale.
  - G. Zippy Zoo.

7. Liar, liar...
- A. You're a liar.
  - B.. Your nose is growing.
  - C. Pants on fire.
  - D.. Join the choir
  - E. Jump up higher.
  - F. On the wire.
  - G. I'm telling Mom.

8. Meanwhile, back in Metropolis, Superman fights the never-ending battle "for truth, justice and.....
- A. Wheaties.
  - B. Lois Lane .

- C. TV rating.
  - D. World peace..
  - E. Red tights.
  - F. The American way.
  - G. News headlines.
9. Hey kids! What time is it?
- A. It's time for Yogi Bear
  - B It's time to do your homework.
  - C. It's Howdy Doody Time.
  - D. It's time for Romper Room.
  - E. It's bedtime.
  - F.. The Mighty Mouse Hour..
  - G. Scoopy Doo Time..
10. Lions and tigers and bears..! ..
- A.. Yikes.
  - B. Oh, no..
  - C. Gee whiz.
  - D. I'm scared...
  - E. Oh my.
  - F.. Help! Help!
  - G. Let's run
11. Bob Dylan advised us never to trust anyone....
- A. Over 40.
  - B. Wearing a uniform.
  - C.. Carrying a briefcase.
  - D. Over 30.
  - E. You don't know.
  - F. Who says, 'Trust me'..
  - G. Who eats tofu.
12. NFL quarterback who appeared in a television commercial wearing pantyhose...
- A. Troy Aikman
  - B. Kenny Stabler
  - C. Joe Namath
  - D. Roger Staubach
  - E. Joe Montana
  - F Steve Young
  - G. John Elway
13. Brylcream....
- A. Smear it on.
  - B You'll smell great.
  - C. Tame that cowlick.
  - D. Grease ball heaven.

- E. It's a dream.
- F. We're your team.
- G. A little dab'll do ya.

14. I found my thrill...
- A. In Blueberry muffins.
  - B. With my man, Bill.
  - C. Down at the mill.
  - D. Over the windowsill.
  - E. With thyme and dill.
  - F. Too late to enjoy.
  - G. On Blueberry Hill.

- 15.. Before Robin Williams, Peter Pan was played by...
- A. Clark Gable.
  - B. Mary Martin.
  - C. Doris Day.
  - D. Errol Flynn.
  - E. Sally Fields.
  - F. Jim Carrey.
  - G. Jay Leno.

16. Name the Beatles...
- A. John, Steve, George, Ringo
  - B. John, Paul, George, Roscoe
  - C. John, Paul, Stacey, Ringo
  - D. Jay, Paul, George, Ringo
  - E. Lewis, Peter, George, Ringo
  - F. Jason, Betty, Skipper, Hazel
  - G. John, Paul, George, Ringo

17. I wonder, wonder, who.
- A. Who ate the leftovers?
  - B. Who did the laundry?
  - C. Was it you?
  - D. Who wrote the book of love?
  - E. Who I am?
  - F. Passed the test?
  - G. Knocked on the door?

18. I'm strong to the finish...
- A. Cause I eats my broccoli.
  - B. Cause I eats me spinach.
  - C. Cause I lift weights.
  - D. Cause I'm the hero.
  - E. And don't you for get it.

- F. Cause Olive Oyl loves me.
  - G. To outlast Bruto.
19. When it's least expected, you're elected, you're the star today.
- A. Smile, you're on Candid Camera.
  - B. Smile, you're on Star Search.
  - C. Smile, you won the lottery.
  - D Smile, we're watching you..
  - E. Smile, the world sees you.
  - F. Smile, you're a hit.
  - G. Smile, you're on TV.
20. What do M & M's do?
- A. Make your tummy happy.!
  - B. Melt in your mouth, not in your pocket.
  - C. Make you fat.
  - D.. Melt your heart.
  - E... Make you popular.
  - F. Melt in your mouth, not in your hand.
  - G. Come in colors.

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## Great Books...Thoughts, Our Greatest Heritage



[https://aeon.co/essays/why-the-great-books-still-speak-for-themselves-and-for-us?utm\\_source=Aeon](https://aeon.co/essays/why-the-great-books-still-speak-for-themselves-and-for-us?utm_source=Aeon)

While STEM education is the # 1 fashion these days, we should not ignore Great books!

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## How Do Court Recorders Keep Straight Faces?



These are from a book called Disorder in the American Courts and are things people actually said in court, word for word, taken down and published by court reporters that had the torment of staying calm while the exchanges were taking place.

ATTORNEY: What was the first thing your husband said to you that morning?

WITNESS: He said, 'Where am I, Cathy?'

ATTORNEY: And why did that upset you?

WITNESS: My name is Susan!

---

ATTORNEY: What gear were you in at the moment of the impact?

WITNESS: Gucci sweats and Reeboks.

---

ATTORNEY: Are you sexually active?

WITNESS: No, I just lie there.

---

ATTORNEY: What is your date of birth?

WITNESS: July 18th.

ATTORNEY: What year?

WITNESS: Every year.

---

ATTORNEY: How old is your son, the one living with you?

WITNESS: Thirty-eight or thirty-five, I can't remember which.

ATTORNEY: How long has he lived with you?

WITNESS: Forty-five years.

---

ATTORNEY: This myasthenia gravis, does it affect your memory at all?

WITNESS: Yes.

ATTORNEY: And in what ways does it affect your memory?

WITNESS: I forget..

ATTORNEY: You forget? Can you give us an example of something you forgot?

---

ATTORNEY: Now doctor, isn't it true that when a person dies in his sleep, he doesn't know about it until the next morning?

WITNESS: Did you actually pass the bar exam?

---

ATTORNEY: The youngest son, the 20-year-old, how old is he?

WITNESS: He's 20, much like your IQ.

---

ATTORNEY: Were you present when your picture was taken?

WITNESS: Are you shitting me?

---

ATTORNEY: So the date of conception (of the baby) was August 8th?

WITNESS: Yes.

ATTORNEY: And what were you doing at that time?

WITNESS: Getting laid

---

ATTORNEY: She had three children , right?

WITNESS: Yes.

ATTORNEY: How many were boys?

WITNESS: None.

ATTORNEY: Were there any girls?

WITNESS: Your Honor, I think I need a different attorney. Can I get a new attorney?

---

ATTORNEY: How was your first marriage terminated?

WITNESS: By death..

ATTORNEY: And by whose death was it terminated?

WITNESS: Take a guess.

---

ATTORNEY: Can you describe the individual?

WITNESS: He was about medium height and had a beard

ATTORNEY: Was this a male or a female?

WITNESS: Unless the Circus was in town I'm going with male.

---

ATTORNEY: Is your appearance here this morning pursuant to a deposition notice which I sent to your attorney?

WITNESS: No, this is how I dress when I go to work.

---

ATTORNEY: Doctor , how many of your autopsies have you performed on dead people?

WITNESS: All of them. The live ones put up too much of a fight.

---

ATTORNEY: ALL your responses MUST be oral, OK? What school did you go to?

WITNESS: Oral...

---

ATTORNEY: Do you recall the time that you examined the body?

WITNESS: The autopsy started around 8:30 PM

ATTORNEY: And Mr. Denton was dead at the time?

WITNESS: If not, he was by the time I finished.

---

ATTORNEY: Are you qualified to give a urine sample?

WITNESS: Are you qualified to ask that question?

---

And last:

ATTORNEY: Doctor, before you performed the autopsy, did you check for a pulse?

WITNESS: No.

ATTORNEY: Did you check for blood pressure?

WITNESS: No.

ATTORNEY: Did you check for breathing?

WITNESS: No..

ATTORNEY: So, then it is possible that the patient was alive when you began the autopsy?

WITNESS: No.

ATTORNEY: How can you be so sure, Doctor?

WITNESS: Because his brain was sitting on my desk in a jar.  
ATTORNEY: I see, but could the patient have still been alive, nevertheless?  
WITNESS: Yes, it is possible that he could have been alive and practicing law.  
These are from a book called "Disorder in the Courts"! Hilarious! :D We believe  
"Disorder in the Court: Great Fractured Moments in Courtroom History" you can find on  
Amazon! From my understanding these were some of the funnier ones! :

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### **What Could 14 Wolves Do for Yellowstone Park? A Lot**



<https://youtu.be/rSzQ9w5TCqc>

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### **Millennial International...A Cause Whose Time Has Come**



<https://youtu.be/RGvrmltfMrA>

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KAHLIL GIBRAN

—  
*On Children*

Your children are not your children.  
They are the sons and daughters of Life's longing for itself.  
They come through you but not from you,  
And though they are with you yet they belong not to you.

You may give them your love but not your thoughts,  
For they have their own thoughts.  
You may house their bodies but not their souls,  
For their souls dwell in the house of tomorrow,  
which you cannot visit, not even in your dreams.  
You may strive to be like them,  
but seek not to make them like you.  
For life goes not backward nor carries with yesterday.

You are the bows from which your children as living  
arrows are sent forth.  
The archer sees the mark upon the path of the infinite,  
and He bends you with His might  
that His arrows may go swift and far.  
Let your bending in the archer's hand be for gladness;  
For even as He loves the arrow that flies,  
so He loves also the bow that is stable.

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**Inside the Nuclear Powered Submarine USS Florida**



[https://abcnews.go.com/Nightline/video/rare-inside-nuclear-powered-submarine-uss-florida-66757899?fbclid=IwAR1mWsbQorMemw00udKCcy-dJDo\\_TQqGC1Jas9tdF7eERqaK1eM\\_Cf-hOwHI](https://abcnews.go.com/Nightline/video/rare-inside-nuclear-powered-submarine-uss-florida-66757899?fbclid=IwAR1mWsbQorMemw00udKCcy-dJDo_TQqGC1Jas9tdF7eERqaK1eM_Cf-hOwHI)

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## Some of Used to Know Mike Gehring



In the Marine Corps, you have to know there'd be a lot of back and forth between rotor heads and Fighter/Attack Types. Especially when you had separate bases right close to each other. One year, 3rd MAW was having a rash of accidents. The Wing Commander called a meeting at the base theater for all Group and Squadron C.O.'s... Plus all the Safety Officers and Assistants.

The General gave a collective "ass chewing" to all... In fact he went on so long, his audience was getting pissed. Instead of getting the "message", lots of groans, shifting in seats, and sniffs occurred. Finally the General concludes with... "Is there anyone out there who doesn't understand what I said or has any questions". Total silence... But our Skipper was fearless, his name was Mike Gehring and then I see his right arm starting to ascend!? WTF?

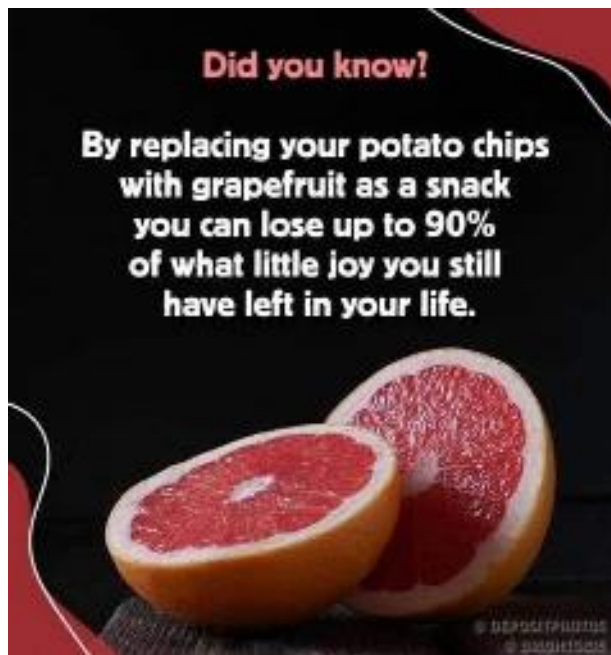
The General sees it and says, "State your name and question". Mike doesn't miss a beat... "LtCol. Mike Gehring Sir... I'm sick of all the preferential treatment the fighter pilots are getting around here... Something needs to be done about it".

The General, along with all the others present were stunned! Finally the General comes back with; "What the hell are you talking about"? Mike never skipped a beat... He says, "General, YOU might not have noticed... but believe me the rest of us have. Anywhere we go on base... every Primo parking spot is reserved for fighter Pilots! The Club, the Exchange, the Dispensary, even the Wing Headquarters"! The best, closest parking spot is always reserved for the jet Drivers! You have HAD to have seen them General.

The General then replied, "No, I don't think I have seen them, how are they labeled?" Mike, with a small smirk on his face replied, "Well sir, they're marked.....'HANDICAPPED'".

For about 10 seconds there was total silence... the General smiled, then total pandemonium. The General didn't say another word. The theater then emptied.

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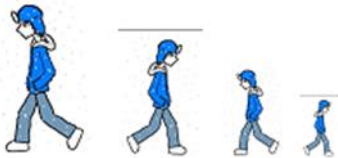
**Sir Isaac Newton, 1689, Brought to Life**



<https://youtu.be/wGFBsPHGNHE>

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## My Walking Thoughts February 27 2022



### Change

Friend Joe Horton sent me the above video clip. Now as I slosh across a ford on the Ventura River on my way into Matilija Canyon, it brings to mind all the exciting changes to our perceptions of the *very large* and the *very small* over the last 100 years causing me to wonder what this means to my life.

Throughout my life I've grown and operated in the comfortable environment of Newtonian physics. Now in my dotage I'm forced to consider a universe messed up by quantum physics and space/time gobbledygook. What if I don't know where a particular electron, quark, or boson is at any given moment or that this whatchamacallit we've named space is really a gigantic trampoline. Does it matter?

That's the question for today's walk...whether I really need to know or care about these challenges as I embark on a two-hour walk in the hills near Matilija Dam.

My first thought is 'maybe,' but how about if I worry about them at some later date...perhaps when it's 110 degrees and I'm better off at home contemplating dark matter?

But no, I can't do that because the world in which we live is not static. Rather, it is subject to laws that before we had the tools to uncover them, only the seers among us could imagine their existence.

Today's increasingly powerful telescopes and microscopes take us ever deeper into the mysteries that surround us. Likewise, the increasing power and ability of computers allow us to peer into the depths or push back the far horizons of our knowledge. These are exciting times that demand we move beyond our comfort zones and accept such heretical theses as those introduced by, for instance, chaos theory...things impacted by time, scale, and chance that obey laws not accessible by the bounds of (say) Newtonian physics, or the usual belief that ultimately all equations have closed-form solutions. Good luck with that. Chaos theory has pushed mathematics into the realm of an experimental science. This was totally unthinkable when I was in college.

As I round a bend in the trail and flush a covey of quail from the undergrowth, I realize how far these new (to me) perceptions will plunge the world we live in into journeys I can't even imagine.

I who have devoted a large part of my life to flying, suddenly see more in that feathered rush from hiding than I will ever comprehend. Beyond the immediacy of my impact on the covey, how might they, like ripples in a quiet pond, affect the local habitat...or the universe even to its farthest limits?

I may not be able to fathom the possibilities lying in wait within such thoughts, but in line with my previous two essays, I am drawn to wonder how the education community will meet such challenges, particularly since inroads to them will most probably take us through the very understandings they are bound to displace.

You may ask how many of those educated in the 'Post-Stull Bill' age championing behavioral objectives in favor of scholarship are prepared to meet such challenges? Continue that concern perhaps to mid-century, where if the focus of education remains in the hands of behavioral objectivists, you might ask yourself 'what then.'

In next week's Walking Thoughts, I intend to share findings from my previous requests for comments on education, and I think you'll find they paint a pretty clear picture of where we are today and some steps that must be taken if we are to avoid the mid-century 'what then.'

Unless we make hard decisions in the immediate future, we will be facing a new episode of Dark Ages...an age in which we see a flight from reason accompanied by the

emergence of a new witchcraft championed by those incapable of reasoned argument and permitted by a misguided group unwilling to stand up to such insanity.

In other words, we're looking at a re-emergence of what went on in Weimar Germany, where a small but vocal group stole the podium and inflicted a horrendously awful philosophy on everyone else. We all know the destruction that ensued and that it's sure to come if we fail to derail that train.

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### **Below are the Answers to the Baby Boomer Memory Test**

1. D - Wonder Bread
2. G - Cassius Clay
3. B - He Is us
4. A - Good night, Chet
5. G - When you brush your teeth with Pepsodent
6. D - Maynard G. Krebs
7. C - Pants on fire
8. F - The American Way
9. C - It's Howdy Doody Time
10. E - Oh my
11. D - Over 30
12. C - Joe Namath
13. G - A little dab'll do ya
14. G - On Blueberry Hill
15. B - Mary Martin
16. G - John, Paul, George, Ringo
17. D - Who wrote the book of Love
18. B - Cause I eats me spinach
19. A - Smile, you're on Candid Camera
- 20.. F - Melt in your mouth not in your hand

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