Ode to E Pluribus Unum for Sunday June 15 2025



Savudrija Star Trails



Image Credit & Copyright: Branko Nadj

Savudrija lighthouse shines along the coast near the northern end of the Istrian peninsula in this well-composed night skyscape. A navigational aid for sailors on the Adriatic Sea, the historic lighthouse was constructed in the early 19th century. But an even older aid to navigation shines in the sky above, Polaris, alpha star of the constellation Ursa Minor and also known as the North Star.

In this scene Polaris forms the shortest bright arc near the North Celestial Pole, the extension of Earth's axis of rotation into space. Of course, the North Celestial Pole lies exactly at the center of all the concentric startrails. The composite image is a digital

stack of 400 exposures, each 30 seconds long, taken with camera and tripod fixed to a rotating planet.



"What, no Okie from Muskogee?" writes Chaz Miller. It was a grave oversight on my part, so here's my mea culpa.

https://youtu.be/68cbjlLFl4U

If Merle ain't enough, how about some help from Willie? https://youtu.be/5feWCmPYFeM

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A police officer came to my house and asked me where I was between 5 & 6. He seemed irritated when I answered: "Kindergarten"

Chords & Riffs

Willie Nelson (1933-)

Reports of his death have been false multiple times, and he has even humorously addressed these death hoaxes in his music



Willie Nelson Wins Best Country Album in 2023 pitchfork.com

Born in Abbott, TX, Nelson became one of the most popular and enduring country music singers of the late 20th and early 21st centuries.

Nelson learned to play guitar from his grandfather and by the age of 10 was performing at local dances. He began writing songs at a young age. He served in the U.S. Air Force before becoming a disc jockey in Texas, Oregon, and California and self-releasing his first recordings during the 1950s.

By 1961 Nelson was playing bass in Ray Price's band. Price was among the first of dozens of country, rhythm-and-blues, and popular singers to achieve hit records with Nelson's 1960s tunes, which included the standards "Hello Walls," "Night Life," "Funny How Time Slips Away," and, most famously, "Crazy," popularized by singer Patsy Cline. By contrast, Nelson achieved only modest success as a singer in that decade, though he became a member of the Grand Ole Opry in 1964.

Freeing himself from the constrictions of the mainstream Nashville milieu, Nelson grew his red hair long and traded in the suit jackets of traditional country stagewear at the time for faded denim outfits, bandannas, and braids. His performances featured a relaxed, behind-the-beat singing style and gut-string guitar were the most distinctive elements.

In addition to his own performance career, Nelson produces annual Fourth of July country music festivals in Texas and elsewhere, and in 1985 he cofounded Farm Aid, which organizes festivals to raise money for farmers. Nelson is a well-known and enthusiastic connoisseur of marijuana, and, after a few states legalized the drug's sale and purchase, he launched (2015) a marijuana supply company, Willie's Reserve.

Always on My Mind https://youtu.be/R7f189Z0v0Y
Blue Eyes Crying in the Rain https://youtu.be/JA644rSZX1A
On the Road Again https://youtu.be/dBN86y30Ufc
Whiskey River https://youtu.be/IPkEmBCZTIA
Riders In the Sky https://youtu.be/nOWjX4BpC24

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FLASHMOB CENTRAL

Flashmob Plaza de Abastos de Pontevedra



youtube

Waltz n2 de shostakovich- https://youtu.be/Q YsMiEex0k?t=629

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How a Biofilm's Strange Shape Emerges from Cellular Geometry

Micro decisions can have macro consequences. A soft matter physicist reveals how interactions within simple cellular collectives can lead to emergent physical traits.



quanta

Video https://bit.ly/449YeUJ

Biofilms are complex communities of microbes that are bound by an extracellular macromolecular matrix produced by the residents. Biofilms are the predominant form of microbial life in the natural environment and although they are the leading cause of chronic infections, they are equally deeply connected to our ability to bioremediate waste and toxic materials. Here we highlight the emergent properties of biofilm communities and explore notable biofilms before concluding by providing examples of their major impact on our health and both natural and built environments.

The term 'biofilm' was introduced in the early 1970s by microbiologist J. William Costerton and colleagues, who were studying the bacterial communities that form on surfaces in aquatic environments. They found that these communities were not simply random aggregates of individual cells, but instead were highly organized structures with specialized adaptive functions, such as nutrient uptake, waste removal and protection from environmental stressors.

It is now accepted that the hallmark of a biofilm is the embedding of micro-organisms within a matrix of extracellular polymeric substances that is produced by the constituent cells and additionally accumulates material (e.g. metals, salts) from the surrounding environment.

https://bit.ly/430jyuN

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China's '2D' Chip Could Soon Be Used to Make Silicon-Free Chips

Advances in materials and architecture could lead to silicon-free chip manufacturing thanks to a new type of transistor.



2D bismuth transistors are less brittle and more flexible than transistors made using conventional silicon, the scientists said in the new study.

(Image credit: mailsonpignata / 500px via Getty Images)

Researchers in China say they have created a new silicon-free transistor that could significantly boost performance while reducing energy consumption. The team says this development represents a new direction for transistor research.

The scientists said that the new transistor could be integrated into chips that could one day perform up to 40% faster than the best existing silicon processors made by U.S. companies like Intel. This is according to a report in the South China Morning Post (SCMP).

Despite that dramatic increase in power, the researchers claim that such chips would also draw 10% less power. The scientists outlined their findings in a recent study published Feb. 13 in the journal <u>Nature</u>.

https://bit.ly/4iIjuoe

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'Sweating' Keeps Reusable Spacecraft Cool During Reentry

University researchers are developing some innovative heat-shield tech.



The heat shield for NASA's Orion crew capsule is very large but of a traditional design. (Image credit: NASA/Isaac Watson)

A research team from Texas A&M University has partnered with Canopy Aerospace to develop and test a 3D-printed material that releases or "sweats" a coolant gas to protect spacecraft from the intense heat encountered when travelling back to Earth at high speeds.

This innovative design uses a method called transpiration cooling, whereby a layer of gas is released along the vehicle's surface that not only cools the spacecraft but also acts as a barrier preventing direct contact with heat generated by friction and compression of atmospheric gases during reentry.

https://bit.ly/434hodX

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I lost my job at the bank on my very first day! A lady ask me to check her balance so I pushed her over ...

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Best of the Web: Laminar Flow Revolution?

The Phantom 2500 doesn't have any windows in the cabin to ensure smooth airflow over the fuselage.



Otto Aviation

A California company has unveiled its concept for a business jet that burns 62% less fuel than a conventional aircraft of similar size and it does it entirely with improved aerodynamics that maximize laminar flow over the whole airframe. Otto Aviation released this video last week.

https://bit.ly/43lb7ZX

Stunning Video Reveals Jupiter's Roiling Auroras. See It Now.

Scientists are puzzled by its dazzling afterglow.



Researchers used the James Webb Space Telescope and Hubble to study the auroras of Jupiter. Credit: ESA / NASA / CSA / J. Nichols / M. Zamani

Astronomers have zoomed in on Jupiter's poles to get a better look at the gas giant planet's auroras — 100 times brighter than the Northern Lights on Earth.

These alien light shows are not only humongous compared to the ones people are used to seeing in our own skies, but also, they're powered by an extra source. Jupiter's strong magnetic field reels in charged particles from its immediate space environment. That means it's not just grabbing solar wind from the sun to create these luminous displays but particles spewed from nearby Io, one of Jupiter's 97 moons and the most volcanically active world in the solar system.

https://bit.ly/3Z2hlgh

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Is Africa Being Torn Apart by a 'Superplume' of Deep Mantle Rock?



The East African Rift System drives volcanic activity in places like the Erta Ale volcano in Ethiopia (pictured here).

(Image credit: Mike Korostelev via Getty Images)

Geologists have long known that Africa is slowly breaking apart in a region called the East African Rift System (EARS), but the driving force behind this massive geological process was up for debate. Now, a new study has presented geochemical evidence that a previously theorized superplume is pressing up against — and fracturing — the African crust.

Scientists found that gases at the Meengai geothermal field in central Kenya have a chemical signature that comes from deep inside Earth's mantle, likely from between the bottom of the mantle and the core. The signature matches those of gases found in volcanic rocks to the north, in the Red Sea, and to the south, in Malawi, indicating all of these places are sitting on the same deep mantle rock, according to a statement from the University of Glasgow in Scotland.

https://bit.ly/4mBE0Ka

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Would You Wear a Wedding Dress Made of Disposable Paper?

These 1960s Brides Donned Them to Save Money—and Make a Daring Fashion Statement



A model wears a paper gown designed by art student Louise Miller for her 1968 wedding.

Daily Mirror / Mirrorpix via Getty Images

Disposable paper dresses enjoyed a brief vogue in the turbulent late 1960s, when young people literally wore their politics and interests on their sleeves—but were prepared to discard them as easily as a piece of Kleenex.

So-called paper dresses were actually made of high-tech, flameretardant synthetic textiles with unromantic names like Kaycel and Dura-Weve; manufacturers euphemistically dubbed them "nonwovens."

As Life magazine observed in 1966, "From any casual distance, it does not look like paper at all—but more like cotton fabric. ... It

rustles slightly in motion but no more audibly than taffeta." The simple A-line

silhouettes and straight sheaths fashionable at the time lent themselves to flat planes of paper. Lightweight and easy to slip into an envelope, paper dresses were tailor-made for mail-order shopping.

https://bit.ly/3FpKueG

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What Really Happened to RadioShack?



abcnews.go.com

Once a tech giant and go-to spot for electronics, RadioShack dominated the retail world. But behind the shelves of gadgets and parts, something went terribly wrong. What led to its rapid decline? From bad business moves to changing technology, we uncover the real story behind RadioShack's fall.

https://youtu.be/bidLW5x_yyk

Somewhere along the line I owned each one of Tandy's computers including its nifty little <u>TRS-80 portable</u>. Tandy never could get its marketing plan to settle down. A shame.

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Inside OpenAI's Stargate Megafactory with Sam Altman



datacenterdynamics.com

Emily Chang visits the Stargate site in Abilene, Texas for an exclusive first look at the historic \$500 billion bet on the future of AI, announced by President Trump the day after his inauguration. She speaks with OpenAI CEO Sam Altman & Softbank CEO Masayoshi Son about why they have partnered, along with Oracle, to build one of the largest AI data centers in the world.

https://youtu.be/GhIJs4zbH0o

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2025 Oscar Mayer Wienie 500



gmauthority.com

Watch the moment history was made as six Oscar Mayer Wienermobiles completed two laps on Miller Lite Carb Day, with the INDYCAR on FOX booth on the call.

https://youtu.be/GVlc0lEpErc

Is Trader Joe's the Most Trustworthy Brand in America?

A survey of 16,000 Americans found that Trader Joe's reputation precedes it.



exydvfupj.blob.core.windows.net

Trader Joe's has gained a loyal following over the years. Its unique selection, high-quality products, and competitive prices are only a few of the reasons why shoppers keep coming back to the national grocery store chain. It's so beloved that a recent survey of thousands of Americans just named Trader Joe's the most trustworthy brand in 2025.

https://bit.ly/4kKJqtw

Sort of depends on the 16,000 people you ask.

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Romanticism

Romanticism is a creative movement that spanned literature, visual art, music, poetry, and architecture in the 18th and 19th centuries. It elevated the role of the artist in society and formed modern ideas of individuality, originality, and personal experience.



Lord Byron exploringyourmind.com

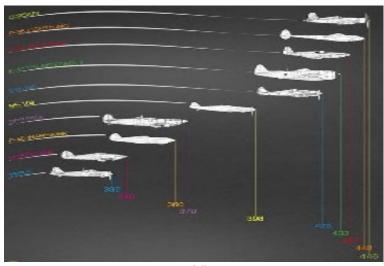
An evolution of the earlier German Sturm und Drang ("Storm and Stress") movement, Romanticism challenged Neoclassicism's emphasis on reason and order, instead favoring the emotions and instincts.

Despite a similarity to the word "romance," Romanticism includes a broad range of positive and negative emotions and subjects beyond romantic love, and ultimately played a significant role in major historical events like the French Revolution, German unification, and many nationalist movements.

https://bit.ly/3HeFQAO

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The Speed Of World War II Aircraft



mungfall.com

A cool speed comparison visualization of World War II aviation. Be sure to watch The Speed Of Animals if you enjoyed this video.

https://youtu.be/rZrPxHzPD7g



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What Is Information? The Answer Is a Surprise.



By Ben Brubaker for Quanta

It's often said that we live in the information age. But what exactly is information? It seems a more nebulous resource than iron, steam and other key substances that have powered technological transformations. Indeed, information didn't have a precise meaning until the work of the computer science pioneer Claude Shannon in the 1940s.

Shannon was inspired by a practical problem: What's the most efficient way to transmit a message over a communication channel like a telephone line? To answer that question, it's helpful to reframe it as a game. I choose a random number between 1 and 100, and your goal is to guess the number as quickly as possible by asking yes-orno questions. "Is the number greater than zero?" is clearly a bad move — you already know that the answer will be yes, so there's no point in asking. Intuitively, "Is the number greater than 50?" is the best opening move. That's because the two possible answers are equally likely: Either way, you'll learn something you couldn't have predicted.

In his famous 1948 paper "A Mathematical Theory of Communication," Shannon devised a formula that translated this intuition into precise mathematical terms, and he showed how the same formula can be used to quantify the information in any message. Roughly speaking, the formula defines information as the number of yes-or-no questions needed to determine the contents of a message. More predictable messages, by this measure, contain less information, while more surprising ones are more informative. Shannon's information theory laid the mathematical foundation for data storage and transmission methods that are now ubiquitous (including the error correction techniques that I discussed in the August 5, 2024, issue of Fundamentals). It also has more whimsical applications. As Patrick Honner explained in a 2022 column, information theory can help you win at the online word-guessing game Wordle.

In a 2020 essay for Quanta, the electrical engineer David Tse reflected on a curious feature of information theory. Shannon developed his iconic formula to solve a real-world engineering problem, yet the underlying mathematics is so elegant and pervasive that it increasingly seems as if he hit upon something more fundamental. "It's as if he discovered the universe's laws of communication, rather than inventing them," Tse wrote. Indeed, Shannon's information theory has turned out to have unexpected connections to many different subjects in physics and biology.

What's New and Noteworthy

The first surprising link between information theory and physics was already present in Shannon's seminal paper. Shannon had previously discussed his theory with the legendary mathematician John von Neumann, who observed that Shannon's formula for information resembled the formula for a mysterious quantity called entropy that plays a central role in the laws of thermodynamics. Last year, Zack Savitsky traced the history of entropy from its origins in the physics of steam engines to the nanoscale "information engines" that researchers are developing today. It's a beautiful piece of science writing that also explores the philosophical implications of introducing information — an inherently subjective quantity — into the laws of physics.

Such philosophical questions are especially relevant for researchers studying quantum theory. The laws of quantum physics were devised in the 1920s to explain the behavior of atoms and molecules. But in the past few decades, researchers have realized that it's possible to derive all the same laws from principles that don't seem to have anything to do with physics — instead, they're based on information. In 2017, Philip Ball explored what researchers have learned from these attempts to rebuild quantum theory.

Physics isn't the only field influenced by ideas from information theory. Soon after Shannon's paper, information became central to the way researchers think about genetics. More recently, some researchers have brought principles from information theory to bear on some of the thorniest questions in biology. In a 2015 Q&A with Kevin

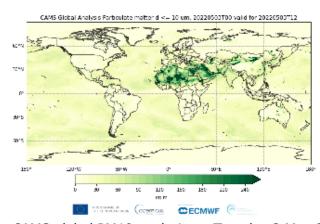
Hartnett, the biologist Christoph Adami described how he uses information theory to explore the origins of life. In April, Ball wrote about a new effort to reframe biological evolution as a special case of a more fundamental "functional information theory" that drives the emergence of complexity in the universe. This theory is still speculative, but it illustrates the striking extent of information theory's influence.

As the astrobiologist Michael Wong told Ball, "Information itself might be a vital parameter of the cosmos, similar to mass, charge and energy." One thing seems certain: Researchers studying information can surely expect more surprises in the coming years.

You may want to read James Gleich's <u>The Information</u>, A History, a Theory, a Flood published in March 2011 that covers the genesis of the current Information Age.

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Desert Dust and Its Impact on the Atmosphere and Air We Breathe



CAMS global PM10 analysis on Tuesday 3 May 2022 showing intense activity across the Dust Belt.

Credit: CAMS/ECMWF

Hazy skies, warm-coloured sunsets, dirty cars and poor air quality are some of the most visible signs of the dust transport episodes. In recent years Europe and the Caribbean have experienced some remarkable Saharan dust events sparking many questions about the influence of climate change in its frequency or intensity, and moreover about its effects on our health.

It is probably less known that long-range dust transport is a key variable of the atmosphere playing a role in weather, climate and atmospheric composition.

Neglected for a long time by science, mineral dust is now known to be one of the key drivers in the atmosphere, playing a role in weather, solar radiation and climate. Some

studies suggest its concentrations and importance have long-time been underestimated. The main direct effect of dust suspended in the atmosphere is blocking the sun's radiation.

Dust aerosol acts as shades for sunlight with a cooling effect for the Earth's surface. However, absorption of infrared radiation within the dust layer can lead to a localised warming effect. The question of whether dust has a warming or cooling net contribution is still open.

https://bit.ly/3ZBi5JB

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MY GRANDMA
REACHED 100
YESTERDAY.
THAT IS THE
LAST TIME I RIDE
WITH HER
WHEN SHE IS
LATE FOR BINGO.

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Is That a Cockatoo Sipping from a Water Fountain? Yes, It Is



narvikk/ iStock

At a water fountain in Sydney, Australia, you might catch a glimpse of a group lining up and waiting their turns to drink from a water fountain — but this isn't a group of kiddos, it's a <u>flock of clever cockatoos</u>.

"These birds, they constantly surprise me," Barbara Klump, the lead author of a new study on the brainy behavior, told National Geographic. If you're reading this and thinking drinking water is a simple task, think again. While humans may use fingers to activate water fountains, the cockatoos have to rely on their talons, bills, and a delicate shift in body weight to get a sip of H20. It's a tricky enough dance that although 70% of the birds tracked in the study attempted to use the fountain, fewer than half were successful.

Some experts think the birds that were able to take a drink may have learned the behavior from watching humans and giving it a go themselves. It wouldn't be the first time cockatoos in this area proved they have tricks up their sleeves (or wings), as they previously made headlines for flipping open garbage bins.

But no matter how they figured it out, it's quite a feat. As Louis Lefebvre, an emeritus professor of biology and avian researcher at McGill University in Montreal, put it: "Whenever we talk about tool use in birds, we have to remember how improperly attired they are toward this kind of behavior, how clumsy they are. So it's all the more amazing when birds can do these complicated things." Watch the cockatoos use the water fountains.

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New Drone Footage of Operation 'Spiderweb'

Ukraine's security service has released new drone footage of its operation "Spiderweb" on Wednesday, showing how exactly Kyiv struck 41 Russian heavy military bombers. Meanwhile, Zelenskyy said Kyiv would not have launched its drone strike if Moscow had accepted Kyiv's calls for a ceasefire.



ukranews.com

Ukraine's security service (SBU) released new drone footage of Operation "Spiderweb", showing how exactly Kyiv struck 41 Russian heavy military bombers last Sunday

https://bit.ly/45tedy3

USS Harry S. Truman Returns Home: Deployment Recap



Sailors assigned to the Nimitz-class aircraft carrier USS Harry S. Truman (CVN 75) return to Naval Station Norfolk, following an eight-month deployment with the Harry S. Truman Carrier Strike Group (HSTCSG).

(U.S. Navy Photo by Mass Communication Specialist Troy Davis)

Upon beginning its deployment, it was already expected that the USS Harry S. Truman would likely come to face hostile

fire and launch live combat sorties. Departing the U.S. in September 2024, the carrier traveled to Europe and took part in exercises in the North Sea before relieving the USS Abraham Lincoln (CVN 72) in the Eastern Mediterranean and the Red Sea.

The Lincoln had been deployed to the region to counter Iranian threats against Israel, but ultimately turned its attention towards Houthi forces in Yemen who continued to attack shipping with missiles and drones. Counter strikes launched from the carrier saw the F-35C Lightning II fly its first ever combat missions.

https://bit.ly/4jzuTY1

This sums up a deployment that saw the skipper relieved. Worth your time to see why.

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Why Are Tropical Animals So Colorful?



Parrots, like many other animals, tend to use color to communicate. (Ricardo Lopez)

From the striking rainbow colors of parrots in the rainforest to the brilliant flashes of yellows, oranges and blues in coral reefs, vibrantly colorful wildlife abounds in tropical ecosystems. But what is it about these environments that has driven their animal inhabitants to evolve such eye-catching hues?

Broadly speaking, animals tend to use color to communicate, said Oscar Puebla, a fish ecologist at the Leibniz Centre for Tropical Marine Research in Germany. "It could be communication with members of your species — for example, to attract a mate," he told Live Science. "It could be communication to predators to make the point that you're <u>venomous</u>. It could be camouflage to escape predators."

The high diversity and good visibility within tropical environments provide strong evolutionary pressures for colorful appearance, but there's also a physiological explanation for this abundance of color in animals that live near the equator, Arbore said. The production of color, whether through pigments or microstructural features, requires an investment of energy — something in short supply in harsher environments such as the tundra or desert.

https://bit.ly/442Xjou

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New Robotic Technology Brings Hope to Prostate Problems



David Fleming was "delighted" to be one of the first men to have this treatment in Northern Ireland BBC

Difficulty peeing, a frequent need to go to the toilet and trouble emptying their bladder - those are just some of the problems living with an enlarged prostate can bring men.

If left untreated, an enlarged prostate can lead to more severe symptoms such as acute urinary retention and infections - which is why getting that waiting list down is so important. Fortunately a new treatment - or more specifically, a new robotic technology - is offering hope that those men can be treated sooner rather than later.

Fortunately a new treatment - or more specifically, a new robotic technology, aquablation, - is offering hope.

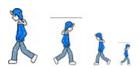
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My Walking Thoughts



For Sunday June 15 2025

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Additional Thoughts on Landfills...Not That You Care to Hear Them.

My guess is that unless you are in the solid waste business you haven't visited a landfill in a while and seen what massive construction projects they've become as they undergo continuous upgrades to meet emerging regulatory requirements. So let me take you back 70 or so years to see what's been happening.



sunshinecanyonlandfillclaims.com

At the end of WWII, most municipalities operated operated waste facilities that fit the mold of what we would call "dumps." These were fenced and gated areas that allowed the public to get rid of its useless stuff either by personal visits (which I loved) or through private waste collectors who roamed the streets before the sun made its appearance. Repairable or reusable items were picked up by private scrap dealers, while glass items such as milk, beer, and soda bottles were taken back by their suppliers. Putrescibles were burned in home incinerators, or at dumps.

As most Angelenos, I was genuinely amazed when after a weather front moved through the area we were able to see the San Gabriel Mountains as they burst from the grasp of the smog for a day or two before returning to their atmospheric purgatory. But in was in 1957 that Los Angeles County grabbed the bull by the horns by banning residential incinerators. This was followed by the creation of the EPA and its Clean Air Act in 1970, focusing on the air quality issues. Together they changed everything.

During the 1980s, EPA developed plans for what became known as its prescriptive 'dry tomb' landfill where trash of all sorts was incapsulated in lined landfill cells. The assumption at the outset was that they would solve once and for all the air quality problem... but dream on, folks. Dry tombing' merely exacerbated the problem and extended the consequences.

Sooner or later the liners were bound to fail allowing moisture to penetrate the waste, allowing the vetch would cook off and produce prodigious quantities of leachate and landfill gas—the latter being an aerosol of equal parts of methane and carbon dioxide with a few dozen trace elements tossed in to sweeten the concoction.

Methane is a viable fuel for industrial powerplants and as I pointed out last week, Sunshine Canyon's waste to energy facility provides enough power to run 25,000 homes, but on the flip side the costs for dealing (often unsuccessfully) with odors and other air quality issues is staggering... one of the major reasons LA City's Local Enforcement Agency (LEA) has been tasked to deal with these issues, and why Sunshine Canyon is the focal point for an effort that over time will find their way into landfilling practices throughout the rest of the waste world.

What's the upshot? I don't know. As in the past there will be shouts for getting rid of all landfills and handling a variety of wastes by means of highly technical means such as gasification, but not only will these prove to be expensive, the need for landfills will still exist... if for no other reason than dealing with disaster debris. (I'll have more to say on this at a later date.)

As I made plain throughout my 25 years as editor of <u>MSW Management Magazine</u>, solutions to solid waste issues do not lie in shortrange 'quick fixes.' What's required is a process- approach whose end-horizons will necessarily be beyond the lifespans of those now facing the problems.

The first step as incorporated in the LEA program is to review the situation in its entirety, take emergency actions, then challenge the public to consider what kind of world they want to leave for their children, their grandchildren, even their great grandchildren.

Then it's a matter of putting one foot in front of the other, overcoming obstacles—perhaps two steps forward, one back, two to the side—and working the process until there's nothing left to do.

Process thinking, not political trickstering... it's a matter of locking eyes always on the task ahead.