

Ode to Happiness for Sunday January 10 2021

NGC 6357: The Lobster Nebula

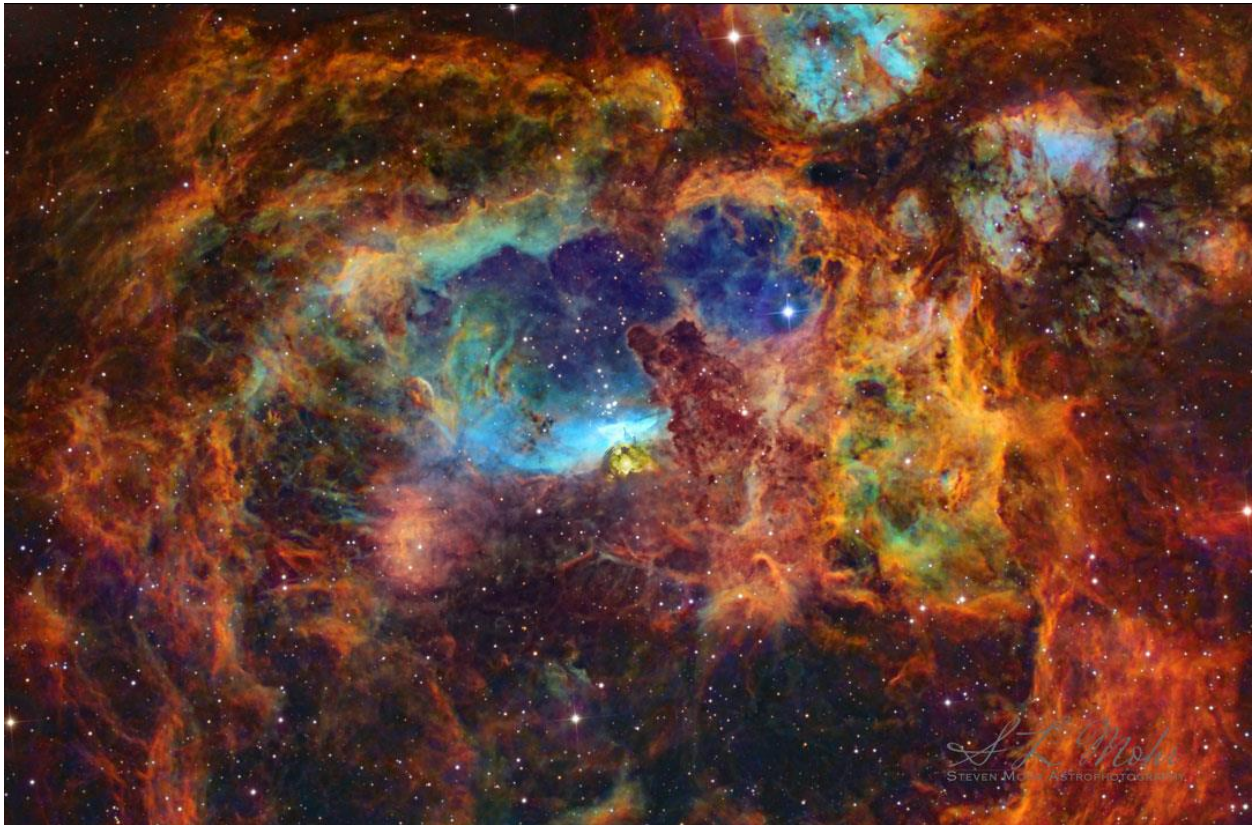


Image Credit & Copyright: Steven Mohr

Why is the Lobster Nebula forming some of the most massive stars known? No one is yet sure. Cataloged as NGC 6357, the Lobster Nebula houses the open star cluster Pismis 24 near its center -- a home to unusually bright and massive stars.

The overall blue glow near the inner star forming region results from the emission of ionized hydrogen gas. The surrounding nebula, featured here, holds a complex tapestry of gas, dark dust, stars still forming, and newly born stars. The intricate patterns are caused by complex interactions between interstellar winds, radiation pressures, magnetic fields, and gravity.

NGC 6357 spans about 400 light years and lies about 8,000 light years away toward the constellation of the Scorpion.

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Strange Bedfellows

A Pelican, a Stray Dog, and an Attentive Parent



The man who photographed this went on to adopt him but he brings him back every day to see his friend, Petey Pelican

A Big Buddy Has Its Advantages



So Does Making Friends While You're Young



This is a Little Harder to Explain



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Every Brand Has Story.

Here are how these 30 famous brands were christened !

1. Nike; Name for the Greek Goddess of Victory. The swoosh signifies her flight.
2. Coca-Cola; the two main ingredients were Coca leaves and Cola berries.
3. Pepsi; from the digestive enzyme 'pepsin'. Although pepsin is not an ingredient in the drink.
4. Google; Derived from 'googul' which means 1 followed by 100 zeros. Signifies owners Larry Page and Sergey Brin's mission to provide innumerable info to all users.
5. Adidas; Named after owner Adolf Dassler whose nickname was Adi. Adi Dassler became Adidas.
6. Intel; Short for integrated electronics
7. Canon; Adapted from Kwanon (Japanese name of Buddhist Bodhisattva of Mercy). It was changed to Canon for easier acceptance worldwide.

8. Lego; Derived from Danish words 'Leg Godt', which means to 'play well'. Lego also means 'put together' in Latin, which they claim is actually a coincidence.
9. Nintendo; Transliterated from Nintendou. Nin in Japanese means 'entrusted' and Ten-dou means 'heaven'.
10. Amazon; CEO Jeff Bezos wanted a name starting with 'A'. He chose Amazon because it is the biggest river in the world, just what he wanted his company to be.
11. Skype; originally the idea was 'Sky peer to peer', which later became Skyper and finally Skype.
12. Adobe; Named after a creek that ran behind the co-founder, John Warnock's house, called Adobe Creek.
13. Nokia; Started as wood-pulp mill, it expanded its business to producing rubber products in a city in Finland called Nokia.
14. Sony; Derived from the Latin word, 'Sonus' (meaning sound) and an American slang word, 'Sonny' (meaning bright youngster).
15. Vodafone; Voice, Data and Telefone.
16. Volkswagen; Means 'People's car' in German. There was a time when only very expensive cars used to ply on German roads. Volkswagen was a revolution.
17. eBay; Originally called Echo Bay. The domain echobay.com was already taken. So it was shortened to eBay.
18. IBM; Founder TJ Watson Sr. wanted to be a step ahead of his former employers 'National Cash Register', so he decided to call his company 'International Business Machines'.
19. Nikon; Short for Nippon Kogaku, which means 'Japanese Optical'.
20. Reebok; Derived from the Afrikaans spelling of an African Antelope, 'Rhebok'.
21. Starbucks; Named after a character in Moby Dick, Starbuck. Originally the name 'Peqoud' was suggested, the name of the ship from the novel. When it got rejected, they settled for 'Starbuck', the chief mate of that very ship.
22. Virgin; Because the business was new and the team members were virgins at business. This was suggested by a girl in Richard Branson's team.
23. Durex; Durable, Reliable and Excellence.
24. Fanta; The head of the German Coca-Cola team asked them to use their 'Fantasie' to come up with the name. That did not take long though.
25. Nivea; Derived from the Latin word 'Niveus', which means snow white.
26. HP {Hewlett Packard}; William Hewlett and David Packard flipped a coin to decide whose name would come first.

27. Toyota; Named after founder Kiichiro Toyoda. The name was changed to Toyota because Toyoda literally means, 'fertile rice paddies'.
28. Microsoft; A combination of the words Microcomputer and Software.
29. Cisco; Not actually an acronym. They just removed San Fran from San Francisco.
30. Budweiser; Beer has been brewed in Budweis, Bohemia, since 1245. Budweiser

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Thangs

Blue- Footed Booby

Art and Poetry by Francie Troy



The Blue-Footed Booby is a curious bird
Seen often on the shores of the Galapagos
His high-pitched whistle is easily heard
And his blue feet are splen'dapagos.

High-strutting his blues is his way to meet
A prospective and like-minded mate.

The Booby likes to dance and show off his feet
And seduce with a rhythmic gait.

Our best foot forward may not be in blue
But we each have a talent to share.
Expressing our thoughts or playing the kazoo,
Or being best-in-show at the fair.
It's all about promoting our most favorable features
And sometimes that's simply caring for our fellow
Creatures.

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Simone, Now Pushing the Century Mark, Still in Fine Fettle



Give a girl an MP-40 and watch out.

Simone Segouin, mostly known by her codename, Nicole Minet, was only 18-years-old when the Germans invaded. Her first act of rebellion was to steal a bicycle from a German military administration, and to slice the tires of all of the other bikes and motorcycles so they couldn't pursue her. She found a pocket of the Resistance and joined the fight, using the stolen bike to deliver messages between Resistance groups.

She was an extremely fast learner and quickly became an expert at tactics and explosives. She led teams of Resistance fighters to capture German troops, set traps,

and sabotage German equipment. As the war dragged on, her deeds escalated to derailing German trains, blocking roads, blowing up bridges and helping to create a German-free path to help the Allied forces retake France from the inside. She was never caught.

Segouin was present at the liberation of Chartres on August 23, 1944, and then the liberation of Paris two days later. She was promoted to lieutenant and awarded several medals, including the Croix de Guerre. After the war, she studied medicine and became a pediatric nurse. A street in Courville-sur-Eure, where she currently lives, was named for her. In response to the honour, Segouin said:

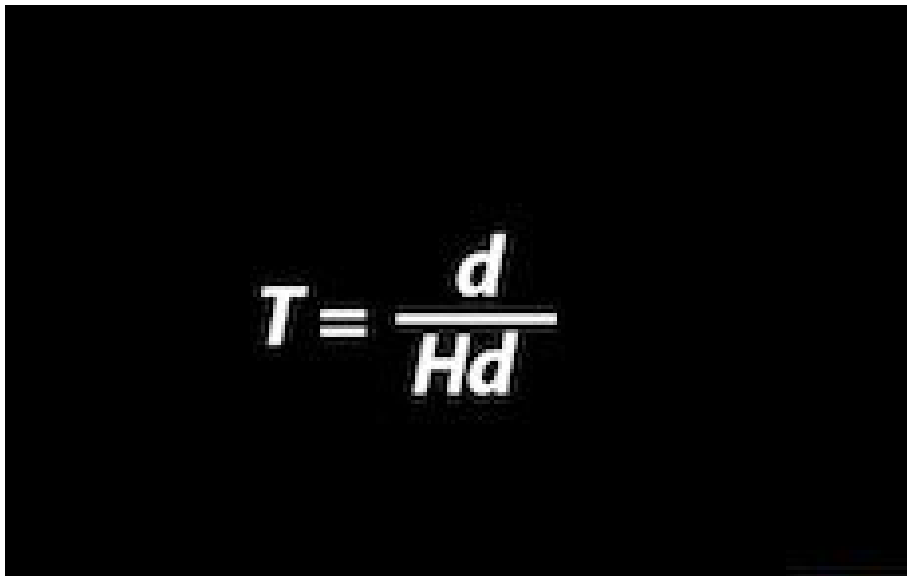
I'm very glad to know that people are not indifferent to this period of my life

In 2020, the Village Hall in Thivars was named for Segouin. She is still going strong, and this October (2021) she will turn 96.

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Astronomers Agree: Universe Is Nearly 14 Billion Years Old

By Linda B. Glaser | January 4, 2021



*Based on estimates from two decades ago, at the present rate of inflation, I figure 10 years from now the age of the universe will have increased by another billion.
Do we live in great times or not?*

From an observatory high above Chile's Atacama Desert, astronomers have taken a new look at the oldest light in the universe.

Their observations, plus a bit of cosmic geometry, suggest that the universe is 13.77 billion years old – give or take 40 million years. A Cornell researcher co-authored one of two papers about the findings, which add a fresh twist to an ongoing debate in the astrophysics community.

The new estimate, using data gathered at the National Science Foundation's Atacama Cosmology Telescope (ACT), matches the one provided by the standard model of the universe, as well as measurements of the same light made by the European Space Agency's Planck satellite, which measured remnants of the Big Bang from 2009 to '13.

The research was published Dec. 30 in the Journal of Cosmology and Astroparticle Physics.

The lead author of "The Atacama Cosmology Telescope: A Measurement of the Cosmic Microwave Background Power Spectra at 98 and 150 GHz" is Steve Choi, NSF Astronomy and Astrophysics Postdoctoral Fellow at the Cornell Center for Astrophysics and Planetary Science, in the College of Arts and Sciences.

In 2019, a research team measuring the movements of galaxies calculated that the universe is hundreds of millions of years younger than the Planck team predicted. That discrepancy suggested a new model for the universe might be needed and sparked concerns that one of the sets of measurements might be incorrect.

"Now we've come up with an answer where Planck and ACT agree," said Simone Aiola, a researcher at the Flatiron Institute's Center for Computational Astrophysics and first author of one of two papers. "It speaks to the fact that these difficult measurements are reliable."

Read the full story of this research on the Arts and Sciences website.

<https://www.artsandscience.org>

Linda B. Glaser is the news and media relations manager for the College of Arts and Sciences

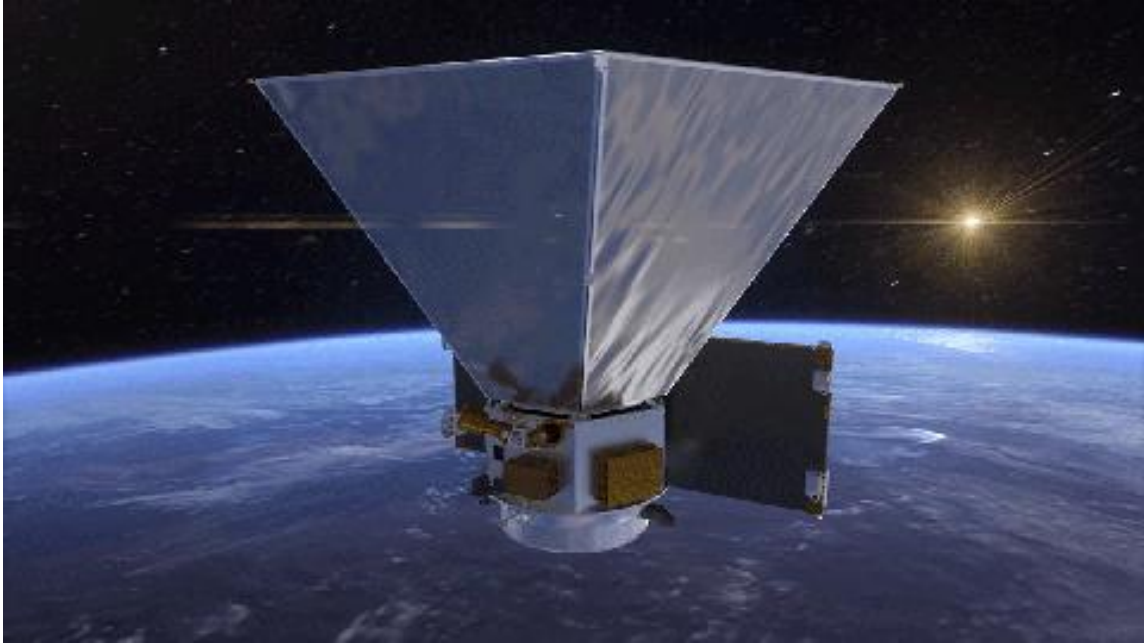
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Was there ever any doubt?

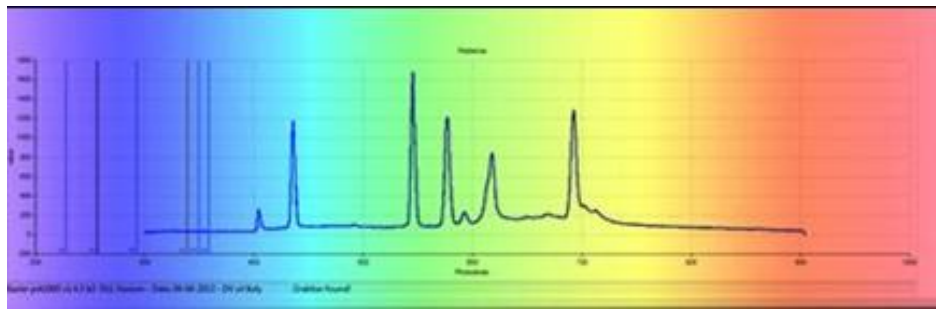
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A New NASA Space Telescope, SPHEREx, Is Moving Ahead



The observatory will map the entire sky to study the rapid expansion of the universe after the big bang, the composition of young planetary systems, and the history of galaxies.

NASA's upcoming space telescope, the Spectro-Photometer for the History of the Universe, Epoch of Reionization and Ices Explorer, or SPHEREx, is one step closer to launch. The mission has officially entered Phase C, in NASA lingo. That means the agency has approved preliminary design plans for the observatory, and work can begin on creating a final, detailed design, as well as on building the hardware and software.



Managed by NASA's Jet Propulsion Laboratory in Southern California, SPHEREx is scheduled to launch no earlier than June 2024 and no later than April 2025. Its instruments will detect near-infrared light, or wavelengths several times longer than the light visible to the human eye. During its two-year mission, it will map the entire sky four times, creating a massive database of stars, galaxies, nebulae (clouds of gas and dust in space), and many other celestial objects.

About the size of a subcompact car, the space telescope will use a technique called spectroscopy to break near-infrared light into its individual wavelengths, or colors, just like a prism breaks sunlight into its component colors. Spectroscopy data can reveal what an object is made of, because individual chemical elements absorb and radiate

specific wavelengths of light. It can also be used to estimate an object's distance from Earth, which means the SPHEREx map will be three-dimensional. SPHEREx will be the first NASA mission to build a full-sky spectroscopy map in near-infrared, and it will observe a total of 102 near-infrared colors.

"That's like going from black-and-white images to color; it's like going from Kansas to Oz," said Allen Farrington, the SPHEREx project manager at JPL.

Before entering Phase C, the SPHEREx team successfully completed a preliminary design review in October 2020. During this multiday process, the team had to demonstrate to NASA leadership that they can make their complex, cutting-edge mission design a reality. Usually, the review is done in-person, but with COVID-19 safety precautions in place, the team had to adjust their presentation to a new format.

"It felt like we were producing a movie," said Beth Fabinsky, SPHEREx's deputy project manager at JPL. "There was just a lot of thought put into the production value, like making sure the animations we wanted to show would work over limited bandwidth."

Three Key Questions

The SPHEREx science team has three overarching goals. The first is to look for evidence of something that might have happened less than a billionth of a billionth of a second after the big bang. In that split second, space itself may have rapidly expanded in a process scientists call inflation. Such sudden ballooning would have influenced the distribution of matter in the cosmos, and evidence of that influence would still be around today. With SPHEREx, scientists will map the position of billions of galaxies across the universe relative to one another, looking for statistical patterns caused by inflation. The patterns could help scientists understand the physics that drove the expansion.

The second goal is to study the history of galaxy formation, starting with the first stars to ignite after the big bang and extending to present-day galaxies. SPHEREx will do this by studying the faint glow created by all the galaxies in the universe. The glow, which is the reason the night sky is not perfectly dark, varies through space because galaxies cluster together. By making maps in many colors, SPHEREx scientists can work out how the light was produced over time and start to uncover how the first galaxies initially formed stars.

Finally, scientists will use the SPHEREx map to look for water ice and frozen organic molecules - the building blocks of life on Earth - around newly forming stars in our galaxy. Water ice gloms onto dust grains in cold, dense gas clouds throughout the galaxy. Young stars form inside these clouds, and planets form from disks of leftover material around those stars. Ices in these disks could seed planets with water and other organic molecules. In fact, the water in Earth's oceans most likely began as interstellar ice. Scientists want to know how frequently life-sustaining materials like water are incorporated into young planetary systems. This will help them understand how common planetary systems like ours are throughout the cosmos.

Multiple mission partners are beginning construction on various hardware and software components for SPHEREx. The telescope that will collect near-infrared light will be built by Ball Aerospace in Boulder, Colorado. The infrared cameras that capture the light will be built by JPL and Caltech (which manages JPL for NASA). JPL will also build the sun shields that will keep the telescope and cameras cool, while Ball will build the spacecraft bus, which houses such subsystems as the power supply and communications equipment. The software that will manage the mission data and make it accessible to scientists around the world is being built at IPAC, a science and data center for astrophysics and planetary science at Caltech. Critical ground support hardware for testing the instruments will be built by the Korea Astronomy and Space Science Institute (KASI), a science partner on the mission in Daejeon, South Korea.

The SPHEREx team is scheduled to spend 29 months building the mission components before entering the next mission phase, when those components will be brought together, tested, and launched.

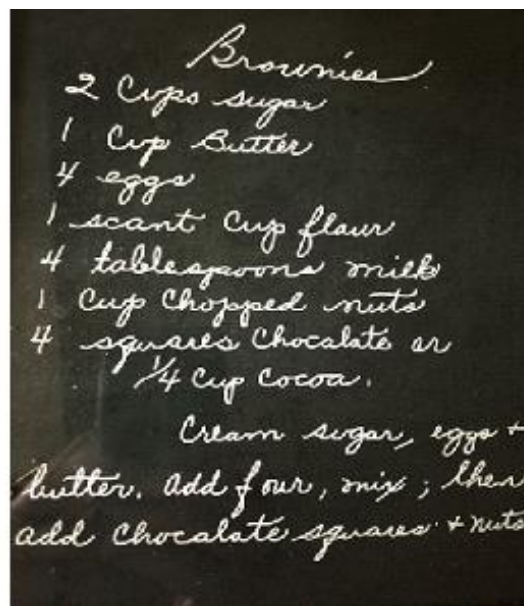
SPHEREx is managed by JPL for NASA's Astrophysics Division within the Science Mission Directorate in Washington. The mission's principal investigator, James Bock, has a joint position between Caltech and JPL. The science analysis of the SPHEREx data will be conducted by a team of scientists located in 10 institutions across the U.S., and in South-Korea.

For more information about the SPHEREx mission visit <https://www.jpl.nasa.gov/missions/spherex/>

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George Smith Shares Mother Brownie's Brownie Recipe

For Christmas 2020 my daughter Mattie Somer Cummins gave me a priceless gift: A framed copy of a hand-written recipe for my mother's brownies.

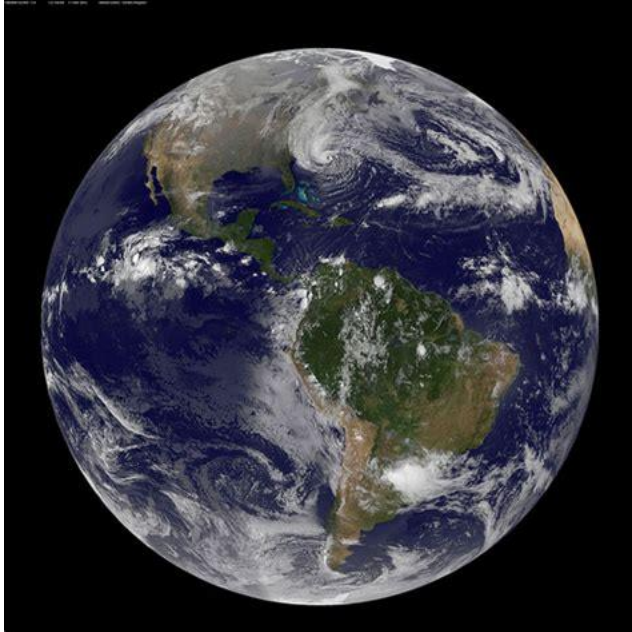


The beauty of this gift is evident ... but my mother birth name was Mildred Brownie Andres (Smith). She had beautiful handwriting and this recipe is perfect...from the (scant cup flour item) to no time or temperature recorded. Why? She KNEW that ... 350 at 25-30 minutes.

For the record, the first batch was perfect...with tears included.

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Earth During a Total Solar Eclipse



Video Credit: GOES-16, ABI, NOAA, NASA

<https://apod.nasa.gov/apod/astropix.html>

What does the Earth look like during a total solar eclipse? It appears dark in the region where people see the eclipse, because that's where the shadow of the Moon falls. The shadow spot rapidly shoots across the Earth at nearly 2,000 kilometers per hour, darkening locations in its path -- typically for only a few minutes -- before moving on.

The featured video shows the Earth during the total solar eclipse earlier this month. The time-lapse sequence, taken from a geostationary satellite, starts with the Earth below showing night but the sun soon rises at the lower right. Clouds shift as day breaks over the blue planet. Suddenly the circular shadow of the Moon appears on the left and moves rapidly across South America, disappearing on the lower right. The video ends as nightfall begins again. The next total solar eclipse will occur next December -- but be visible only from parts of Antarctica.

Here's another shot with the moon in Earthlight surrounded by energy spires.

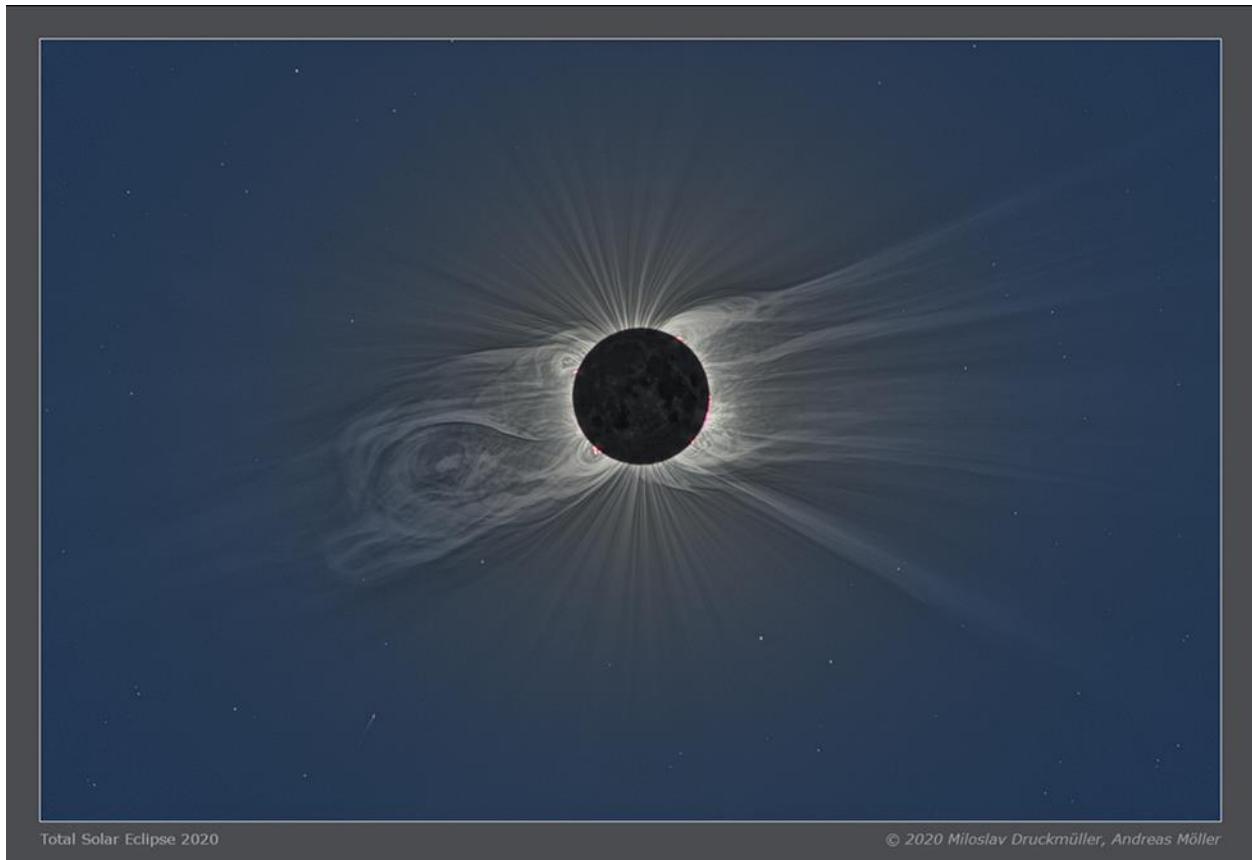


Image Credit & Copyright: Miloslav Druckmüller, Andreas Möller, (Brno University of Technology),

Along a narrow path crossing southern South America through Chile and Argentina, the final New Moon of 2020 moved in front of the Sun on December 14 in the year's only total solar eclipse.

Within about 2 days of perigee, the closest point in its elliptical orbit, the New Moon's surface is faintly lit by earthshine in this dramatic composite view. The image is a processed composite of 55 calibrated exposures ranging from 1/640 to 3 seconds.

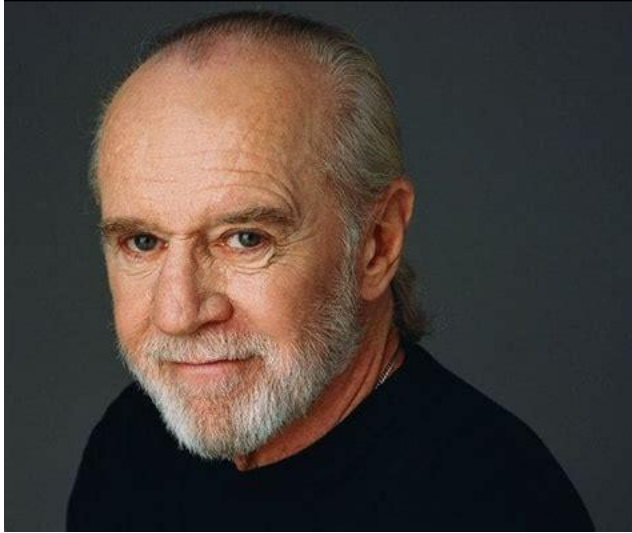
Covering a large range in brightness during totality, it reveals the dim lunar surface and faint background stars, along with planet-sized prominences at the Sun's edge, an enormous coronal mass ejection, and sweeping coronal structures normally hidden in the Sun's glare.

Look closely for an ill-fated sun grazing Kreutz family comet (C/2020 X3 SOHO) approaching from the lower left, at about the 7 o'clock position.

In 2021 eclipse chasers will see an annular solar eclipse coming up on June 10. They'll have to wait until December 4 for the only total solar eclipse in 2021 though. That eclipse will be total along a narrow path crossing the southernmost continent of Antarctica.

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George Carlin "Daytime Television" on The Ed Sullivan Show

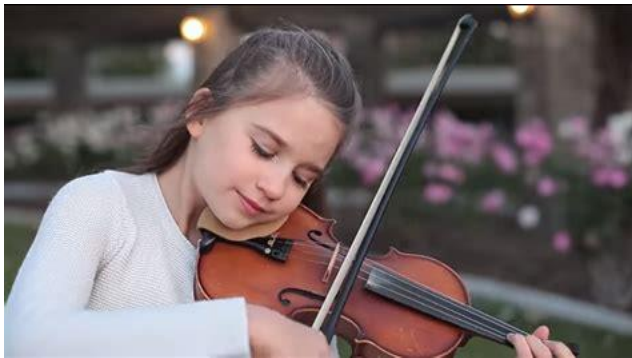


credit amanewyork

<https://www.youtube.com/watch?v=Hfip34ikb4k>

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Hallelujah - Mother Daughter Duet - Karolina Protsenko



<https://www.youtube.com/watch?v=9GOPiLzAPmg&feature=youtu.be>

Greg Sitek sent me the URL to Karolina Protsenko singing and playing violin "Hallelujah" (original by Leonard Cohen) accompanied by her mother.

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Desalination Breakthrough Could Lead to Cheaper Water Filtration



e4e

The density of filtration membranes, even at the atomic scale, can greatly affect how much clean water can be produced. (Enrique Gomez/Penn State)

AUSTIN, Texas — Producing clean water at a lower cost could be on the horizon after researchers from The University of Texas at Austin and Penn State solved a complex problem that had baffled scientists for decades, until now.

Desalination membranes remove salt and other chemicals from water, a process critical to the health of society, cleaning billions of gallons of water for agriculture, energy production and drinking. The idea seems simple — push salty water through and clean water comes out the other side — but it contains complex intricacies that scientists are still trying to understand.

The research team, in partnership with DuPont Water Solutions, solved an important aspect of this mystery, opening the door to reduce costs of clean water production. The researchers determined desalination membranes are inconsistent in density and mass distribution, which can hold back their performance. Uniform density at the nanoscale is the key to increasing how much clean water these membranes can create.

“Reverse osmosis membranes are widely used for cleaning water, but there’s still a lot we don’t know about them,” said Manish Kumar, an associate professor in the Department of Civil, Architectural and Environmental Engineering at UT Austin, who co-lead the research. “We couldn’t really say how water moves through them, so all the improvements over the past 40 years have essentially been done in the dark.”

The findings were published today in Science.

<https://utexas.app.box.com/s/ixylq7383cndhqbpvfr4pv0usdefkxo>

The paper documents an increase in efficiency in the membranes tested by 30%-40%, meaning they can clean more water while using significantly less energy. That could lead to increased access to clean water and lower water bills for individual homes and large users alike.

Reverse osmosis membranes work by applying pressure to the salty feed solution on one side. The minerals stay there while the water passes through. Although more efficient than non-membrane desalination processes, it still takes a large amount of energy, the researchers said, and improving the efficiency of the membranes could reduce that burden.

“Fresh water management is becoming a crucial challenge throughout the world,” said Enrique Gomez, a professor of chemical engineering at Penn State who co-led the research. “Shortages, droughts — with increasing severe weather patterns, it is expected this problem will become even more significant. It’s critically important to have clean water availability, especially in low-resource areas.”

The density of filtration membranes, even at the atomic scale, can greatly affect how much clean water can be produced. (Enrique Gomez/Penn State)

The National Science Foundation and DuPont, which makes numerous desalination products, funded the research. The seeds were planted when DuPont researchers found that thicker membranes were actually proving to be more permeable. This came as a surprise because the conventional knowledge was that thickness reduces how much water could flow through the membranes.

The team connected with Dow Water Solutions, which is now a part of DuPont, in 2015 at a “water summit” Kumar organized, and they were eager to solve this mystery. The research team, which also includes researchers from Iowa State University, developed 3D reconstructions of the nanoscale membrane structure using state-of-the-art electron microscopes at the Materials Characterization Lab of Penn State. They modeled the path water takes through these membranes to predict how efficiently water could be cleaned based on structure. Greg Foss of the Texas Advanced Computing Center helped visualize these simulations, and most of the calculations were performed on Stampede2, TACC’s supercomputer.

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Sprite Lightning at 100,000 Frames Per Second



https://youtu.be/zS_XgF9i8tc

What causes sprite lightning? Mysterious bursts of light in the sky that momentarily resemble gigantic jellyfish have been recorded for over 30 years, but apart from a general association with positive cloud-to-ground lightning, their root cause remains unknown. Some thunderstorms have them -- most don't.

Recently, however, high speed videos are better detailing how sprites actually develop. The featured video, captured in mid-2019, is fast enough -- at about 100,000 frames per second -- to time-resolve several sprite "bombs" dropping and developing into the multi-pronged streamers that appear on still images. Unfortunately, the visual clues provided by videos like these do not fully resolve the sprite origins mystery. High speed videos do indicate to some researchers, though, that sprites are more likely to occur when plasma irregularities exist in the upper atmosphere.

Observational and modelling results show solid evidence of pre-existing plasma irregularities in association with streamer initiation in the D-region ionosphere. The video observations show that before streamer initiation, kilometer-scale spatial structures descend rapidly with the overall diffuse emissions of the sprite halo, but slow down and stop to form the stationary glow in the vicinity of the streamer onset, from where streamers suddenly emerge. The modelling results reproduce the sub-millisecond halo dynamics and demonstrate that the descending halo structures are optical manifestations of the pre-existing plasma irregularities, which might have been produced by thunderstorm or meteor effects on the D-region ionosphere.

For a detailed discussion of this, go to <https://www.nature.com/articles/ncomms4740>

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Change Makers

Franz Joseph Haydn



'Papa' Haydn (March 1732 – 31 May 1809) was an Austrian composer of the Classical period. His contributions to musical form have earned him the epithets "Father of the Symphony" and "Father of the String Quartet."

Haydn spent much of his career as a court musician for the wealthy Esterházy family at their remote estate. Until the later part of his life, this isolated him from other composers and trends in music, yet his music circulated widely, and for much of his career he was the most celebrated composer in Europe.

In 1761, Haydn was offered an appointment as vice kapelmeister by Prince Paul Anton, head of the immensely wealthy Esterházy family. Haydn wore livery and followed the family as they moved among their various palaces. Haydn had a huge range of responsibilities, including composition, running the orchestra, playing chamber music for and with his patrons, and eventually the mounting of operatic productions.

Haydn's work was central to the development of what came to be called sonata form. His practice, however, differed in some ways from that of Mozart and Beethoven, his younger contemporaries who likewise excelled in this form of composition. Haydn was particularly fond of the so-called monothematic exposition, in which the music that establishes the dominant key is similar or identical to the opening theme. Haydn also differs from Mozart and Beethoven in his recapitulation sections, where he often rearranges the order of themes compared to the exposition and uses extensive thematic development.



Perhaps more than any other composer's, Haydn's music is known for its humor exemplified by the sudden loud chord in the slow movement of his "Surprise" symphony.

J. Haydn [Symphony No. 94 in G major "Surprise"](https://www.youtube.com/watch?v=PhxZhDV9KHM)
<https://www.youtube.com/watch?v=PhxZhDV9KHM>

If you don't like this one you've got 107 more to choose from.

Tracing Haydn's work over the six decades in which it was produced (roughly from 1749 to 1802), one finds a gradual but steady increase in complexity and musical sophistication, which developed as Haydn learned from his own experience and that of his colleagues.

In his later years as a wealthy man, Haydn had the luxury of taking his time and writing more for posterity than wealth. It was during this period that he wrote *The Creation* (1798) and *The Seasons* (1801), which address such weighty topics as the meaning of life and the purpose of humankind and represent an attempt to render the sublime in music, a change in direction that influenced the works of his pupil, Beethoven.

Haydn The Creation in English Christopher Hogwood Academy of Ancient Music
<https://www.youtube.com/watch?v=bH5KM700AIQ>

Haydn's output is unequalled in European music. Consider the following:

Symphonies	108	Four Part Divertimentos	56
Overtures	16	String Trios	26
Three Part Divertimentos	11	String Quartets	83

Instrument Concerti	29
Marches	12
Dances	34
Divertimento with Keyboard	13
Piano Trios	45
Piano Sonatas	61
Keyboard Pieces	58
Sacred Works	40

Are you tired yet? I am and the list goes on to more than double what's here, so you get the picture as to just how prolific Haydn was.

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