

GENTLE.NEWS

In Today's Edition

Animals & Wildlife

As Willow Fire approached, a call for help launched a race to save Colorado's native fish

Science & Discovery

NASA Study of Pristine Meteorite Adds to Story of Ancient Asteroids

Nature & Environment

Got a minute? HVO launches weekly “Volcano Minute” audio update

Health & Wellness

AI test predicts breast cancer’s return

Technology & Innovation

America’s Time Capsule ... for 2276

Activity Time

Word Search Puzzle

"A ship is safe in harbor, but that's not what ships are for."

— John A. Shedd

As Willow Fire approached, a call for help launched a race to save Colorado's native fish

As Willow Fire approached, a call for help launched a race to save Colorado's native fish Jul 16, 2026 LEADVILLE, Colo. — Burning pine needles were falling from the sky as Josh Homer finalized evacuation plans for some of Colorado's most important fish from the path of the Willow Fire on June 29. Homer, complex manager for the U.S. Fish and Wildlife Service's Leadville and Hotchkiss national fish hatcheries, was sitting near a pavilion at the Leadville National Fish Hatchery, coordinating with Bryan Johnson, Colorado Parks and Wildlife's Mount Shavano Hatchery manager, to determine where rare cutthroat trout could safely go. While they talked, smoldering pine needles landed around Homer. A firefighter approached and told him his team was getting nervous about conditions and was considering pulling out. The Leadville National Fish Hatchery, Colorado's oldest, had operated since 1889. Homer made the call to evacuate the fish. The Willow Fire had started the previous afternoon about two miles northwest of the hatchery. Homer and Johnson had been watching the rapidly changing fire and preparing to move fish they had spent years working together to protect. Johnson first learned of the fire while driving home from Fort Collins, when a former seasonal employee in Leadville sent him a photograph of smoke. He alerted CPW leadership, lined up drivers and had CPW aquatics trucks disinfected and

prepared. By Tuesday morning, June 30, four CPW aquatics trucks were headed to Leadville. With fire conditions continuing to change and the window to move the fish uncertain, federal hatchery staff and CPW crews began moving fish by hand with dip nets. One person netted fish from a tank. Nets moved down a line of people to a waiting truck, where the fish were transferred into a transport tank. “My big goal was just to get them on trucks,” Johnson said. “Once we had them on trucks, I knew we could take care of them.” Over the next three days, federal and state crews moved more than 148,000 fish, including rare native broodstocks, to CPW hatcheries and waters across Colorado. Image Details Among the fish facing evacuation were Greenback cutthroat, Colorado's state fish, and Hayden Creek cutthroat trout. The greenbacks are a critical broodstock broodstock The reproductively mature adults in a population that breed (or spawn) and produce more individuals (offspring or progeny). Learn more about broodstock used in ongoing recovery work for a fish struggling to survive in the wild. Broodstock are adult fish kept to produce eggs and future generations. Leadville maintains one of only two broodstocks CPW relies on for the recovery effort. Image Details “If we were to lose that stock, it would have been detrimental to the future survival of this species, period,” Homer said. “I trust CPW implicitly to do what's best for these fish.” That trust and the relationships behind the rescue had been built over years. The federal hatchery maintains the greenback broodstock that produces future generations for recovery efforts. Colorado hatchery teams help manage the brood fish, raise their offspring and move fish to

carefully selected waters across the state. The partnership also had helped save the Hayden Creek cutthroat trout before. Those fish trace to a population rescued as wildfire burned through their drainage in 2016. Survivors eventually were moved to Leadville, where hatchery professionals worked to raise the population and return fish to waters in the Arkansas River basin. Now they faced wildfire again. Johnson's history with the greenbacks stretched back even further. "I was there in 2008, the day we picked them up from Bear Creek and brought them into the hatchery," Johnson said. "We've invested a lot of time in this." By Homer's estimate, crews moved roughly 1,500 pounds of greenback cutthroat trout and several hundred pounds of Hayden Creek cutthroat trout by hand. The rainbow trout that followed represented nearly 10,000 more pounds of fish. Crews estimated more than 90 combined hours physically moving fish Tuesday and another 48 hours Wednesday. That does not include driving time nor unloading at their destinations. For hatchery crews accustomed to handling fish, the work itself was familiar. The scale and urgency were not. Image Details Moving the fish also required precision. Multiple age classes of greenbacks and Hayden Creek cutthroat trout had to remain separate to protect genetics that hatchery professionals had spent years preserving. Crews assigned specific groups to individual transport tanks and labeled each movement. "Everything was labeled and everything was moved purposefully to their new homes," Johnson said. At the same time, hatchery managers across Colorado were rearranging fish and searching for isolated space to receive the rescued broodstocks.

Hatcheries already had been preparing for possible drought, low-water or wildfire rescues. The Willow Fire changed those plans and made the greenbacks the priority. "When situations like this occur, we prioritize our workload and then we rally to get the job done. This was a prime example of that," said Jeff Spohn, CPW Aquatic Branch deputy assistant director. "I couldn't be more proud of the team's communication, dedication and collaboration with not only our internal CPW staff, but also with our federal partners." Approximately 5,000 greenback cutthroat trout and about 1,500 Hayden Creek brood fish were moved from Leadville. The fish were divided among CPW's Mount Shavano State Fish Hatchery in Salida, Roaring Judy State Fish Hatchery in Almont, John W. Mumma Native Aquatic Species Restoration Facility in Alamosa, and Durango State Fish Hatchery in Durango. Greenbacks no longer needed for the broodstock were moved to Joe Wright Reservoir near Cameron Pass, where they can provide a recreational fishing opportunity. About 200 retired Hayden Creek brood fish were released into the Arkansas River south of the fire zone. Image Details One group remained on a truck Tuesday night while Johnson cared for the fish and hatchery staff searched for appropriate isolation space. On Wednesday, July 1, Johnson drove them to Durango. The rescue also included approximately 142,000 rainbow trout from the Leadville hatchery. Rather than risk losing the fish, crews stocked them earlier than planned into available waters. Just more than three days after the Willow Fire started Sunday afternoon, nearly all fish had been moved from the hatchery. Homer also praised his hatchery

staff, some of whom worked long hours in heavy smoke while worrying whether their own homes might be threatened by the fire. “I couldn't be more proud of them,” Homer said. “They've done a tremendous job working in these adverse conditions.” As of July 9, the Willow Fire had burned approximately 4,463 acres and was 16 percent contained. The Leadville National Fish Hatchery had not had any direct impact by fire at the time, and active fires appear to have skirted the property. In a fire-resistant facility at the center of the property, staff continue to care for the brood year 2022 Hayden Creek Cutthroat Trout with a fish relocation truck at the ready. For CPW hatchery crews, safely evacuating the fish was only the beginning. The rescued brood fish now are spread among CPW hatcheries, where populations and age classes must remain isolated to protect their genetics. Hatchery staff are monitoring their health and caring for brood fish moved in the middle of spawning. Image Details “We're going to do whatever it takes to keep these fish healthy,” Johnson said. When the Willow Fire is no longer a threat and conditions allow, the hope is to return the fish to Leadville. Until then, some of Colorado's most important fish remain in the hands of people Homer knows well. And trusts implicitly. Feature story written in collaboration with Colorado Parks and Wildlife Story Tags Fish hatcheries Fisheries management Partnerships Published Jul 16, 2026 Our Partners Facilities Leadville National Fish Hatchery Mountain-Prairie Region Headquarters Latest Stories Science and Technology Rufa Red Knot Delaware Bay Annual Report Jul 16, 2026 Land Management Safety Comes First Jul 16, 2026

Endangered Species Act Sonoran Pronghorn Recovery Takes a Village Jul 14, 2026

NASA Study of Pristine Meteorite Adds to Story of Ancient Asteroids

6 min read NASA Study of Pristine Meteorite Adds to Story of Ancient Asteroids C1 clasts in Hillsborough: On the left is a back-scattered electron image with two C1 748 clasts circled. On the right, an X-ray map of the same area as (A), indicating Na enrichment in 749 of the C1 clasts relative to the bulk of Hillsborough. Credit: NASA/SETI A meteorite recovered immediately upon its fall to Earth on July 16, 2024, is helping NASA scientists uncover new clues about ancient water, the chemical evolution of primitive asteroids, and the ingredients that may have helped make life possible throughout the early solar system. This rapid recovery began when an amateur astronomer in New Jersey quickly recognized that a newly fallen meteorite had landed on his property. Recognizing its scientific value and wearing protective gloves, he collected the fragments and stored them in aluminum foil and glass containers, which preserved delicate minerals and organic compounds that are often altered by moisture, weather, and contamination. As the meteorite fell to Earth, cameras across New Jersey captured its fiery passage through the atmosphere. Scientists used these observations to reconstruct the fireball's trajectory and, after recovering the meteorite, combined this data with laboratory analyses to determine where in the solar system the rock most likely originated. In a study published Wednesday in the journal *Science Advances* , researchers found evidence that ancient salty water altered

minerals within the meteorite's parent asteroid, preserving unique minerals and a rich inventory of organic compounds. "When we have both a documented fireball and a quick recovery of its meteorite, we can learn not only what the rock is made of, but where it came from in the asteroid belt," said Peter Jenniskens, meteor astronomer at both NASA's Ames Research Center in California's Silicon Valley and the SETI Institute, and lead author of the study. Combined radar detections from the Hillsborough meteorite fall. The green line shows the fireball's projected path, while colored radar signatures show falling meteorite fragments drifting east-northeast with prevailing winds. Credit: NASA/Marc Fries

Named for the township where it was recovered, the Hillsborough meteorite belongs to a class of carbon-rich meteorites known as CM carbonaceous chondrites. These primitive rocks preserve some of the oldest materials in the solar system, recording the chemical processes that shaped asteroids more than 4.5 billion years ago. While examining the unusually pristine meteorite, researchers found a mosaic of tiny broken-up rocks and noticed that some contained unusually high concentrations of sodium — an unexpected finding for this type of meteorite. The surprising signal prompted a closer investigation using powerful electron microscopes that allowed scientists to examine the meteorite from the millimeter scale down to individual atoms. By combining observations across multiple scales, researchers reconstructed the history of the minerals and the fluids that once flowed through them. These analyses revealed microscopic fractures filled with sodium-rich material left behind by ancient brines. Unlike pure water,

brines contain dissolved salts that allow them to transport elements and chemically alter the rocks they move through. In the case of the Hillsborough sample, those ancient fluids altered the asteroid's minerals and left behind chemical evidence that remained preserved for billions of years. Scientists were also able to detect fragile sodium-carbonate salts that normally react with moisture in Earth's atmosphere before they can be studied. Jangmi Han, a paper co-author and mineralogist at NASA's Johnson Space Center in Houston, identified evidence of ancient brines preserved within microscopic fractures. Similar salts were identified in samples returned from the asteroids Bennu and Ryugu by NASA's OSIRIS-REx mission and JAXA's (Japan Aerospace Exploration Agency) Hayabusa2 mission. However, Hillsborough marks the first time the salts have been identified in a CM carbonaceous chondrite meteorite, offering a new glimpse into the surfaces of the primitive asteroids that produced these meteorites. Together, these findings suggest that ancient, salt-rich brines were more widespread among primitive asteroids than previously recognized, and provide scientists with new opportunities to compare how water altered different asteroid bodies across the early solar system. "The chips of the most salt-rich bits of this meteorite are quite comparable to the samples returned by the Hayabusa2 and OSIRIS-REx missions," said Mike Zolensky, a meteorite researcher at NASA Johnson and co-author of the study. "They're not identical. They're different in some very interesting ways, but they've seen very similar processes." Following the history of water through the solar system is an essential part of

understanding the origin of life. Mike Zolensky Meteorite Researcher Scientists expected Hillsborough to contain a rich suite of organic compounds because it is a CM carbonaceous chondrite. What made the meteorite exceptional was how quickly it was recovered, allowing researchers to study those compounds before prolonged exposure to Earth's environment could contaminate the sample. "One of the big surprises for me when we analyzed a small chip of the Hillsborough meteorite was the complexity of amino acids and other organic compounds," said Danny Glavin, senior scientist in the Astrobiology Analytical Laboratory at NASA's Goddard Space Flight Center in Greenbelt, Maryland, and co-author of the study. Its diversity of amino acids and other organic compounds is, comparable to the Murchison meteorite, a nearly 100-kilogram carbonaceous chondrite that fell in Australia in 1969 and became the benchmark for extraterrestrial organic chemistry. "It's just more proof that the chemical building blocks of life could have been delivered — and are still being delivered — to Earth today by these carbonaceous asteroid fragments," said Glavin, who was a co-investigator on OSIRIS-REx, leading an international team that studied the organic composition of the samples delivered to Earth from asteroid Bennu in 2023. Understanding the Hillsborough meteorite required expertise from multiple scientific disciplines. Astronomers reconstructed the meteorite's journey through space, finding evidence that it may have originated from the Erigone asteroid family in the inner asteroid belt, home to the asteroid Donaldjohanson , which was visited in 2025 by NASA's Lucy spacecraft.

Mineralogists identified evidence of ancient brines preserved within microscopic fractures, while organic chemists analyzed the meteorite's inventory of amino acids and other organic compounds. "Together, those complementary studies are helping scientists build one of the clearest pictures yet of how primitive asteroids such as the asteroid Erigone evolved chemically over billions of years," said Jenniskens. Researchers continue to study the Hillsborough meteorite, revealing new details about how water transformed primitive asteroids and shaped the early solar system. By tracing the history of water on primitive asteroids, scientists are learning how water and the chemical ingredients for life were distributed throughout the early solar system. "If you follow the water through the solar system, you're actually following life," Zolensky said. "Following the history of water through the solar system is an essential part of understanding the origin of life." For more information on NASA's astromaterials research and exploration, visit: <https://science.nasa.gov/astromaterials> Karen Fox / Molly Wasser Headquarters, Washington 240-285-5155 / 240-419-1732 karen.c.fox@nasa.gov / molly.l.wasser@nasa.gov Victoria Segovia NASA's Johnson Space Center, Houston 281-483-5111 victoria.segovia@nasa.gov About the Author Victoria Segovia Share Details Last Updated Jul 16, 2026 Related Terms Astromaterials Ames Research Center Asteroids Goddard Space Flight Center Johnson Space Center Meteors & Meteorites Explore More 6 min read NASA's Webb Discovers Hidden Planet in Famous Star System Article 1 day ago 5 min read NASA's Hubble Discovers First of Star

Cluster's Missing Black Holes Astronomers using archival data from Hubble and supportive observations from Webb have located their first...
Article 3 days ago 6 min read NASA Webb Uncovers Unusual Galaxy Shaped by Cosmic Collision Article 1 week ago Keep Exploring Discover More Topics From NASA Missions Humans in Space Climate Change Solar System

Got a minute? HVO launches weekly “Volcano Minute” audio update

Got a minute? HVO launches weekly “Volcano Minute” audio update

Listen to the "Volcano Minute" By Hawaiian Volcano Observatory July 16, 2026 The USGS Hawaiian Volcano Observatory (HVO) has been publishing weekly “Volcano Watch” articles for over 30 years. Now, we are launching another weekly feature, the “Volcano Minute,” a brief audio update for radio stations and available online! HVO’s weekly “Volcano Watch” articles are short and featured in many local print and online news outlets. The articles are a way to keep communities on the Island of Hawai‘i informed about recent unrest or eruptive activity at active volcanoes in Hawaii, associated volcano-related hazards, or ongoing scientific research. The “Volcano Minute” is meant to be a distilled audio version of the weekly “Volcano Watch” article, geared to Hawaii residents and visitors who wish to hear the latest happenings in Hawaiian volcanism. It will be no more than two minutes long and provide weekly information about eruptions, earthquakes, or ongoing volcano science in Hawaii. Like “Volcano Watch,” the “Volcano Minute” will be available on the HVO website. When the weekly audio update is published, it will be featured in the News section of the website, and an archive of all the past “Volcano Minute” updates will be available on a separate webpage (<https://www.usgs.gov/observatories/hvo/volcano-minute>). If you operate a local radio station and are interested in featuring the weekly

HVO “Volcano Minute” audio update, email us at askHVO@usgs.gov , and we’ll add you to our weekly email distribution list. Both the “Volcano Watch” and “Volcano Minute” are a small piece of the larger suite of products that HVO staff and our collaborators provide to communicate about volcanic activity in Hawaii. Communication is a key piece of the HVO mission, and we have various strategies for reaching our diverse audiences. In addition to the “Volcano Watch” and “Volcano Minute,” you can subscribe to receive written timely updates via email about volcanic activity and earthquakes as they occur using the Volcano Notification Service at <https://volcanoes.usgs.gov/vns/> . These notices include Updates, Information Statements, Status Reports, and Volcanic Activity Notices written by scientists at HVO. Some of them are scheduled (for example, Kīlauea Daily Updates that are published each morning and summarize the past 24 hours of activity) while others are written in response to changes in volcanic activity or earthquakes in Hawaii. Volcano Notification Service messages are also available on the HVO website, along with photos, videos, and maps that provide a snapshot of what Hawaii’s volcanoes and recent eruptions look like, as well as their impacts. If you prefer to get information on social media, we also frequently update the USGSVolcanoes accounts on Facebook, Instagram, and X, with similar information and multimedia. The USGS Publications Warehouse website (<https://pubs.usgs.gov/>) is another useful resource if you are interested in more detailed scientific summaries. This online repository includes various USGS publications, such as Fact Sheets, General Information

Products, and Scientific Investigations Reports. HVO scientists also frequently publish articles in scientific journals but many of these publications require access fees. If you prefer to review HVO's volcano monitoring data directly, most of it is directly available in near real-time on the HVO website. Use the monitoring map at the top of the HVO home page (<https://www.usgs.gov/observatories/hvo>) to click on individual monitoring instruments to view plots of data over different timespans. Webpages summarizing Kīlauea and Mauna Loa monitoring are also provided at the links below, and links on the right side of those webpages provide access to other webpages summarizing Kīlauea and Mauna Loa monitoring datasets over the past week, month, year, and 5 years. <https://www.usgs.gov/volcanoes/kilauea/science/monitoring-data-kilauea> <https://www.usgs.gov/volcanoes/mauna-loa/science/monitoring-data-mauna-loa>

HVO provides this range of information, in different formats and on different timescales, to try reaching as wide of an audience as possible. Our primary audience is Island of Hawai‘i and State of Hawaii residents, who can be directly impacted by volcanic activity and earthquakes here. However, because our volcanoes erupt so frequently, we often also capture the attention of national and international volcano enthusiasts, as well as fellow scientists. We hope you’ve got a minute to listen to the new weekly “Volcano Minute” audio update, which will catch you up on the latest volcano or earthquake activity in Hawaii. If you have questions or ideas for future topics, please let us know at askHVO@usgs.gov.

AI test predicts breast cancer's return

Researchers have developed an AI test to predict the recurrence of breast cancer. In recent years, notable advances have been made in diagnosing and treating breast cancer. However, its recurrence continues to plague thousands—deepening the need to find ways to better predict the likelihood of return. In a paper in the journal *Nature Communications*, a team of researchers reports the creation of an AI test that predicts the risk of breast cancer recurrence—one that does so more quickly and more inexpensively than current methods, which involve genomic testing. “Breast cancer is not a single disease, and decisions about how aggressively to treat it are often difficult,” explains Krzysztof J. Geras, a visiting scholar at New York University’s Center for Data Science and an adjunct assistant professor at NYU Grossman School of Medicine, who led the work. “This research shows that an AI test can read the same tumor slides pathologists already examine and, combined with basic clinical details, accurately estimate how likely a patient’s cancer is to return.” “The model’s accuracy doesn’t come from hand-labeled data alone,” adds Yann LeCun, a professor of computer science and data science at New York University and one of the paper’s authors. “It comes from self-supervised pretraining that lets it learn rich representations first, which then translate into strong downstream performance—a recipe that should generalize far beyond breast cancer and, more broadly, is the kind of new AI science these hard

problems demand.” Genomic tests used today assess how likely a patient’s hormone-receptor-positive breast cancer is to recur and whether that patient is likely to benefit from chemotherapy. However, this costly method can take weeks to generate results. Moreover, this testing requires examining, and then discarding, the tissue samples extracted as part of a lumpectomy or mastectomy—thereby preventing them from being used for future testing. In seeking an alternative predictive tool, the authors developed and evaluated a multi-modal AI test by drawing from 15 patient populations across seven countries. They built the AI test by considering pathology slides—microscopic tissue samples on glass used to spot diseases—combined with routine clinical data such as tumor stage, patient age, and hormone-receptor status. The researchers then evaluated the test’s efficacy using data from more than 3,500 patients. They used standard statistical methods to gauge its accuracy: the C-Index, which assesses how well a predictive model discriminates between patients, and a Hazard Ratio, which compares the risk of an event (in this case, breast cancer) occurring in one group compared to another over time. Overall, the AI test reliably separated higher- from lower-risk patients. It also performed well in evaluating the probability of recurrence in two types of breast cancer—triple-negative and HER2-positive—that currently have no reliable genomic test. The researchers emphasize the need for evaluation in completed randomized clinical trials to build confidence in using the AI test to assess future breast-cancer risk and to guide treatment. However, they see the work as a meaningful progress toward using AI to help

combat an affliction that plagues millions. “In testing on thousands of patients, our AI test matched or outperformed a widely used genomic test,” says Geras, who is also co-founder and chief scientific officer of Ataraxis AI, a company that uses AI to develop cancer treatments and diagnoses. “Because it relies on existing slides, it could deliver answers in hours instead of weeks, at lower cost, while sparing tissue for future testing.” Editor’s Note: Some of the paper’s authors are equity holders of Ataraxis AI, and NYU maintains financial and intellectual property interests in Ataraxis AI. Source: New York University The post AI test predicts breast cancer’s return appeared first on Futurity .

America's Time Capsule ... for 2276

-This is a guest post by Brett Zongker and Deb Fiscella, both of the public affairs section in the Office of Communications. It also appears in slightly different form in the May/June issue of the Library of Congress Magazine. The nation's oldest federal cultural institution is using some of the newest technology to preserve digital copies of historical collection items for the next 250 years. As part of America's 250th anniversary celebrations, the Library made a trailblazing contribution to America's Time Capsule : a tiny metal pellet holding synthetic DNA encoded with digital copies of items from the Library's collections. The capsule itself – a 900-pound stainless steel cylinder covered by a 1,100-pound stainless steel bell jar – was ceremonially buried 10 feet underground on July 4th at Independence National Historical Park in Philadelphia. Maintained by the park and the National Park Service, it is not to be opened until July 4, 2276. Hundreds of other items – letters, memorabilia and documents, all helping tell the story of the nation's history and culture – were all tucked in the capsule, including from all three branches of government, the Supreme Court and all states and territories. The Library's experts helped determine which items could survive two and a half centuries. (A bottle of Coca-Cola, an I-Phone, and the starting lineup of the Philadelphia Phillies all made the cut.) For the Library's tiny, data-packed cylinder, the Library initiated a molecular data storage feasibility study in response to a request from

Congress in 2024. As a result, the Library has been examining the storage capabilities of a new medium, synthetic DNA. An entirely manufactured molecule, synthetic DNA is designed to replicate the exceptional information density of nature's best storage medium: DNA itself. Working with the University of Washington's Molecular Information Systems Lab, the Library has converted selected digital data into synthesized DNA strands encased in a metal vial about the length of a pencil eraser. The synthetic DNA includes, among other Library collection items, digital copies of: Thomas Jefferson's rough draft of the Declaration of Independence; "The Star-Spangled Banner" lyrics written in Francis Scott Key's hand; the 1791 L'Enfant plan for Washington, D.C.; digitized 1890 Native American audio recordings in Passamaquoddy; the canvas drawing of the Blackwell's Kinfolk family tree, depicting more than 1,500 names; and the Annals of the Congress of the United States, covering congressional proceedings, including the making of the Constitution, from 1789 to 1824. Despite its vast storage space, the metal cylinder, or pellet, is only about as tall as a U.S. quarter. Photo: Shawn Miller. Synthetic DNA can store about nine terabytes of digital data in one cubic millimeter, approximately 1,000 to 100,000 times greater than the capacity of conventional digital storage methods like hard drives, tape drives and cloud storage. It also is highly durable, lasting thousands of years with little to no maintenance or power consumption. The encasement includes a small chip containing decoding instructions, ensuring the synthetic DNA sequence can be reassembled

into its original digital data when the time capsule is opened 250 years from now. Subscribe to the blog— it's free!

Activity Time - Word Search

Find the words below in the puzzle. Words go across or down only.

Words to Find:

T	J	X	J	U	K	S	M	P	S	F
F	M	N	C	R	E	P	Q	K	V	F
U	V	S	W	X	S	S	H	C	V	U
R	L	D	R	M	N	V	J	Z	V	F
D	O	X	I	X	N	Z	Q	L	F	K
W	H	H	Q	N	G	P	U	Y	L	C
U	F	B	H	X	H	Z	N	G	K	P
E	R	R	A	Y	D	Q	R	X	D	B
S	P	D	I	T	B	X	U	Q	G	B
G	J	S	T	Z	A	Y	M	F	B	U
R	Q	E	D	Y	D	X	R	O	E	J