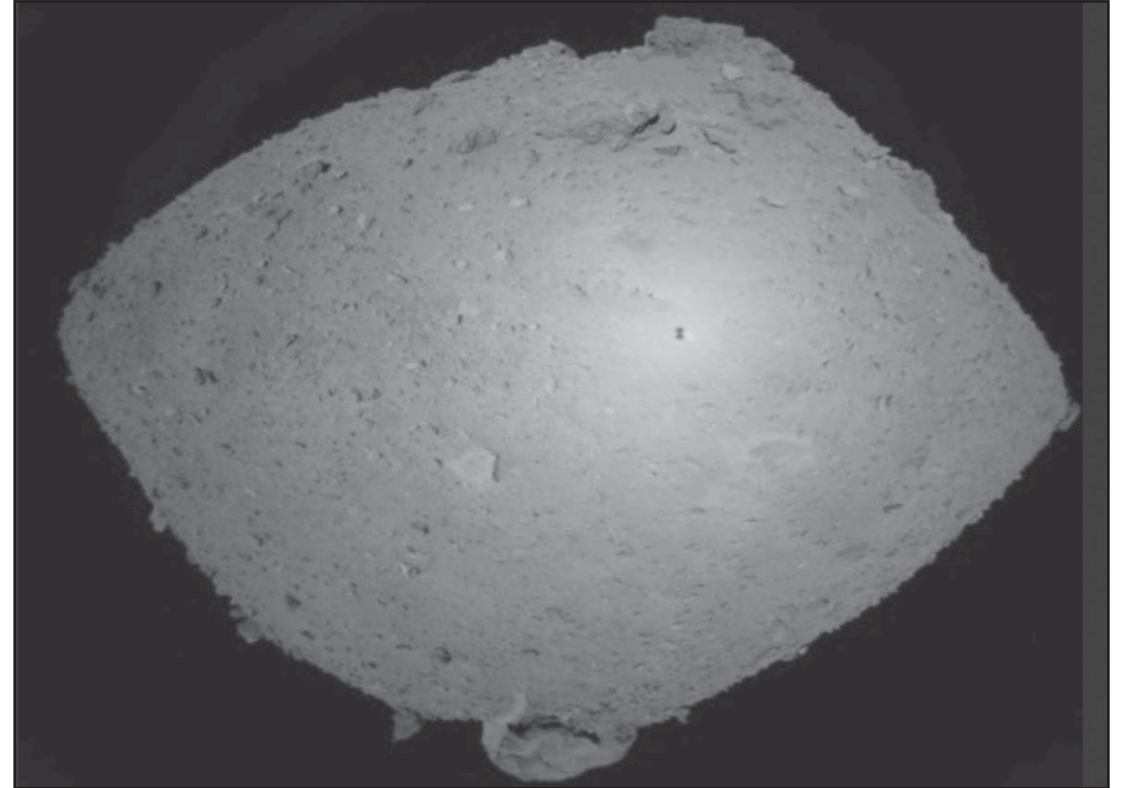
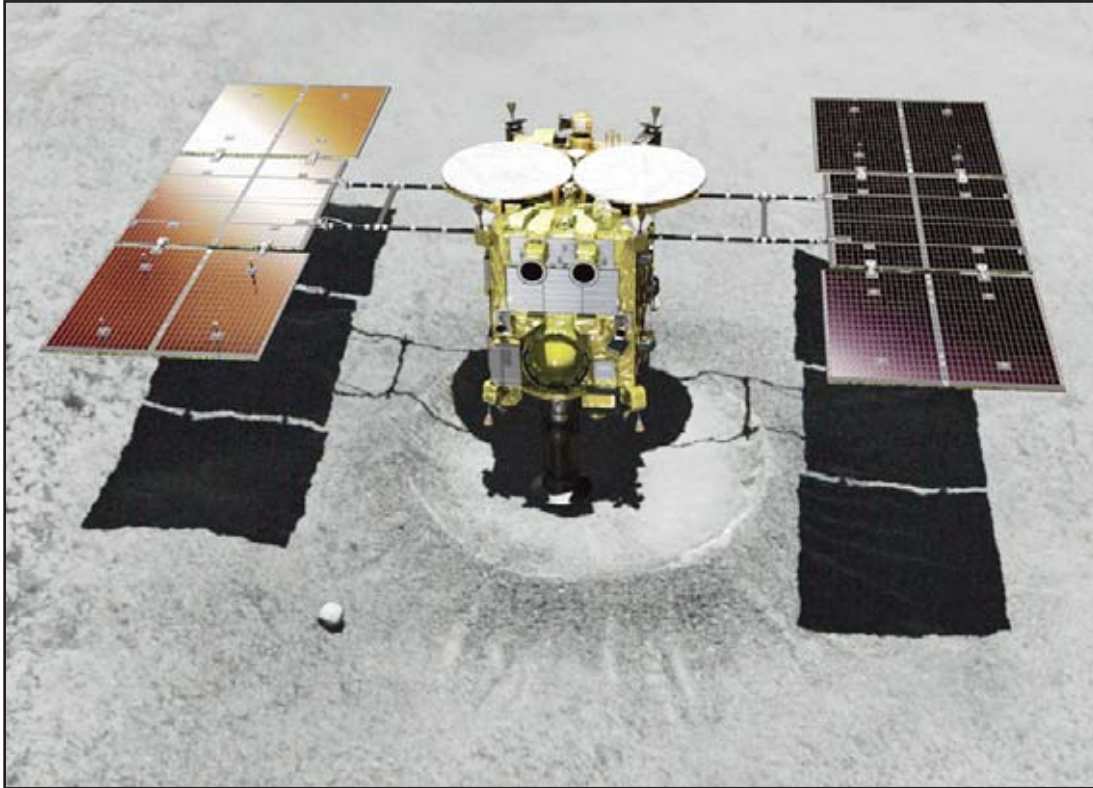


World News Roundup



Left: This computer graphic image provided by the Japan Aerospace Exploration Agency (JAXA) shows the Japanese unmanned spacecraft Hayabusa2 approaching the asteroid Ryugu. Hayabusa2 is approaching the surface of an asteroid about 280 million kilometers (170 million miles) from Earth. JAXA said Feb 21 that Hayabusa2 began its approach at 1:15 pm and (right), this Oct 25, 2018 image, provided by JAXA shows asteroid Ryugu. Hayabusa2 is approaching the surface of an asteroid. It began its approach at 1:15 pm and its shadow is seen at (center right) over Ryugu. (AP)

Japanese spacecraft to attempt landing on distant asteroid

A Japanese spacecraft is approaching the surface of an asteroid about 280 million kilometers (170 million miles) from Earth.

The Japan Aerospace Exploration Agency said Thursday that Hayabusa2 began its approach at 1:15 pm. The start was delayed for

about five hours for a safety check, but the unmanned craft is still due to touch down as scheduled on Friday morning. It will attempt to collect

material from the asteroid that could provide clues about the origin of the solar system and life on Earth. The landing will require preci-

sion. Hayabusa2 is aiming for a 6-meter- (20-foot-) wide strip to avoid obstacles on the asteroid's surface. The asteroid is about 900

meters (3,000 feet) in diameter. It is named Ryugu after an undersea palace in a Japanese folktale. (AP)

Pollution

Flow poisoning aquatic life

50 mln gallons of polluted water from US mine sites

By Matthew Brown

RIMINI, Mont, Feb 21, (AP): Every day many millions of gallons of water loaded with arsenic, lead and other toxic metals flow from some of the most contaminated mining sites in the US and into surrounding streams and ponds without being treated, The Associated Press has found.

That torrent is poisoning aquatic life and tainting water supplies in Montana, California, Colorado, Oklahoma and at least five other states.

The pollution is a legacy of how the mining industry was allowed to operate in the US for more than a century. Companies that built mines for silver, lead, gold and other "hardrock" minerals could move on once they were no longer profitable, leaving behind tainted water that still leaks out of the mines or is cleaned up at taxpayer expense.

Using data from public records requests and independent researchers, the AP examined 43 mining sites under federal oversight, some containing dozens or even hundreds of individual mines.

The records show that at average flows, more than 50 million gallons (189 million liters) of contaminated wastewater streams daily from the sites. In many cases, it runs untreated into nearby groundwater, rivers and ponds – a roughly 20-million-gallon (76-million-liter) daily dose of pollution that could fill more than 2,000 tanker trucks. The remainder of the waste is captured or treated in a costly effort that will need to carry on indefinitely, for perhaps thousands of years, often with little hope for reimbursement.

The volumes vastly exceed the release from Colorado's Gold King Mine disaster in 2015, when a US Environmental Protection Agency cleanup crew inadvertently triggered the release of 3 million gallons (11.4 million liters) of mustard-colored mine sludge, fouling rivers in three states.

Enlistment

At many mines, the pollution has continued decades after their enlistment in the federal Superfund cleanup program for the nation's most hazardous sites, which faces sharp cuts under President Donald Trump.

Federal officials have raised fears that at least six of the sites examined by AP could have blowouts like the one at Gold King.

Some sites feature massive piles or impoundments of mine waste known as tailings. A tailings dam collapse in Brazil last month killed at least 169 people and left 140 missing. A similar 2014 accident in British Columbia swept millions of cubic yards of contaminated mud into a nearby lake, resulting in one of Canada's worst environmental disasters.

But even short of a calamitous accident, many mines pose the chronic problem of relentless pollution.

AP also found mining sites where untreated water harms the environment or threatens drinking water supplies in North and South Carolina, Vermont, Missouri and Oregon.

In mountains outside the Montana capital of Helena, about 30 households can't drink their tap water because groundwater was polluted by about 150 abandoned gold, lead and copper mines that operated from the 1870s until 1953.

Problems at some sites are intractable.

Among them: ■ In eastern Oklahoma's Tar Creek mining district, waterways are devoid of life and elevated lead levels persist in the blood of children despite a two-decade effort to clean up lead and zinc mines. More than \$300 million has been committed since 1983, but only a small fraction of the impacted land has been reclaimed and contaminated water continues to flow.

■ At northern California's Iron Mountain Mine, cleanup teams battle to contain highly acidic water that percolates through a former copper and zinc mine and drains into a Sacramento River tributary. The mine discharged six tons of toxic sludge daily before an EPA cleanup. Authorities now spend \$5 million a year to remove poisonous sludge that had caused massive fish kills, and they expect to keep at it forever.

Questions over who should pay

To date, the EPA has spent an estimated \$4 billion on mining cleanups. Under Trump, the agency has identified a small number of Superfund sites for heightened attention after cleanup efforts stalled or dragged on for years. They include five mining sites examined by AP.

Former EPA assistant administrator **Mathy Stanislaus** said more money is needed to address mining pollution on a systematic basis, rather than jumping from one emergency response to another.



This Feb 17 photo released by Dakota Snider shows Horsetail Fall in Yosemite National Park, Calif. California's Yosemite National Park is again wowing visitors and photographers with its annual 'firefall'. Every February for a few days, the setting sun illuminates the Horsetail Fall to make it glow like a cascade of molten lava. (AP)



Inger



Pimm

Discovery

Inger elected UNEP chief: The UN General Assembly has elected **Inger Andersen** of Denmark as the new executive director of the United Nations Environment Programme (UNEP), which is based in Nairobi, Kenya.

Andersen's nomination by Secretary-General Antonio Guterres was approved Wednesday by acclamation for a four-year term. She succeeds Erik Solheim of Norway, who resigned in November following widespread criticism of his excessive expenses on official global travel.

Andersen has been director general of the International Union for Conservation of Nature since 2015 and brings more than 30 years of experience in international development economics, environmental sustainability and policy-making to the Nairobi-based organization. She spent 15 years at the World Bank, most recently as vice president of the Middle East and North Africa region from 2011 to 2015. (AP)

■ **Neptune's newest moon:** Neptune's newest and tiniest moon is probably an ancient fragment of a much larger moon orbiting unusually close.

In the journal *Nature* on Wednesday, California astronomers shine a light on the 21-mile-wide (34-kilometer-wide) moon Hippocamp, named after the mythological sea horse.

SETI Institute's Mark Showalter discovered Neptune's 14th moon in 2013. Showalter and his research team theorize Hippocamp was formed from debris created when a comet slammed into Proteus, the largest of Neptune's inner moons. The two moons orbit just 7,500 miles (12,000 kilometers) apart and were likely even closer in the past.

Scientists have long believed Neptune's inner moons were repeatedly smashed by comets. Showalter says finding little Hippocamp so close to big Proteus provides "a particularly dramatic illustration of the Neptune system's battered history." (AP)

■ **Tortoise feared extinct found:** A living member of species of tortoise not seen in more than 110 years and feared to be extinct has been found in a remote part of the Galapagos island of Fernandina.

An adult female *Chelonoidis phantasticus*, also known as the Fernandina Giant Tortoise, was spotted Sunday by a joint expedition of the Galapagos National Park and the US-based Galapagos Conservancy, Ecuador's Environment Ministry said in a statement. It said the female is more than 100 years old. Investigators think there may be more

Space

'Flying safely takes precedence over schedule'

SpaceX, Boeing design risks new delays

SEATTLE, Feb 21, (RTRS): NASA has warned SpaceX and Boeing Co of design and safety concerns for their competing astronaut launch systems, according to industry sources and a new government report, threatening the US bid to revive its human spaceflight program later this year.

NASA is paying SpaceX \$2.6 billion and Boeing \$4.2 billion to build rocket and capsule launch systems to return astronauts to the International Space Station from US soil for the first time since America's Space Shuttle program went dark in 2011.

Just ahead of the first scheduled unmanned test flight slated for March 2 under NASA's multibillion-dollar Commercial Crew Program, NASA's safety advisory panel cited four "key risk items" in its 2018 annual report earlier this month.

For Boeing, they include the capsule's structural vulnerability when the heat shield is deployed. For SpaceX, the report mentioned the redesign of a SpaceX rocket canister following a 2016 explosion and its "load and go" process of fueling the rocket with the crew already inside the capsule. "Parachute performance" remained an issue for both companies.

"There are serious challenges to the current launch schedules for both SpaceX and Boeing," the report said.

Two people with direct knowledge of the program told Reuters that the space agency's concerns go beyond the four items listed, and include a risk ledger that as of early February contained 30 to 35 lingering technical concerns each for SpaceX and Boeing. Reuters could not verify what all of the nearly three dozen items are. But the sources familiar with the matter said the companies must address "most" of those concerns before flying astronauts and, eventually, tourists to space.

The NASA risk database is updated routinely during the course of NASA's stringent certification process, which includes data collection, tests and collaboration with SpaceX and Boeing, the people said. The Boeing and SpaceX

systems have already been delayed several times in recent years, which is common in this sector given the complexity of building multibillion-dollar spacecraft capable of shedding earth's gravity.

NASA spokesman Joshua Finch deferred all technical questions on Boeing and SpaceX systems to the companies, citing confidentiality, but said: "Flying safely always takes precedence over schedule."

Boeing spokesman Josh Barrett said the company "closed out" the capsule's structural vulnerability risk when it completed its structural test program in January. While Boeing is working through a number of other issues, they "are not driving any major architectural system changes."

"Our numbers show we are exceeding NASA's safety requirements," said Barrett.

Safest

SpaceX spokesman James Gleeson said the company, working with NASA, has developed "one of the safest, most-advanced human spaceflight systems ever built."

"There is nothing more important to SpaceX than safely flying crew," said Gleeson, calling it "core to our company's long-term goal of enabling access for people who dream of flying to space."

Founded by Tesla Inc Chief Executive Elon Musk, SpaceX has cut the cost of rocket launches with its pioneering reusable rocket technology, while Boeing traces its space business back to the first US human space missions of the 1960s and is also the world's largest planemaker.

The clock is ticking. The US has been paying Russia about \$80 million per ticket for a ride to the International Space Station, a \$100 billion orbital research laboratory that flies about 250 miles (402 km) above Earth.

There are no seats available for US crew on the Russia spacecraft after 2019 given production schedules and other factors. NASA said last week it was

considering paying for two more seats to the space station for this fall and spring 2020 to ensure US access.

The NASA plan for extra seats came a week after its safety panel said Congress should come up with a "mitigation plan" in case delays threaten US access to the space station – echoing earlier concerns from the US Government Accountability Office.

NASA is set to conduct a flight readiness review on Friday for SpaceX's mission without a crew on March 2. NASA will decide whether to approve the test flight without a crew, while SpaceX addresses the issues raised for a human mission.

Three people familiar with the project say the US space agency has identified some design discrepancies between earlier SpaceX capsules designed to haul cargo to the International Space Station, and a newer version designed to carry humans.

Some of the risks – such as those identified in the designs of the enormous parachutes that deploy when the capsule plummets back to Earth at supersonic speeds – are uncommon given how close SpaceX is to test flights, two of the people said.

The timing of deployment of the SpaceX parachutes and the interaction of the parachutes themselves have raised concerns about parachute performance, and potentially whether they will be able to slow down the capsule enough to ensure the crew's safety, two people said.

SpaceX has completed 17 parachute tests for the Commercial Crew Program so far, with an additional 10 tests planned prior to Crew Dragon's second demonstration mission, Gleeson said. He also said its parachute systems are designed with redundancy so the vehicle can still safely splashdown in the event that one parachute fails.

NASA's safety panel said in its report that SpaceX may be required to redesign its parachute system. A re-design would likely trigger more testing and potentially weeks or months of extra delays, two of the people said.

members of the species on the island because of tracks and scat they found. The team took the tortoise to a breeding center for giant tortoises on Santa Cruz Island where it will stay in a specially designed pen.

The International Union for Conservation of Nature has the Fernandina Giant Tortoise listed as critically endangered and possibly extinct.

The only other living member of the species was found in 1906, the group said. Since then, expeditions have encountered tortoise

scat and bite marks on cacti, and there was a possible unconfirmed sighting in 2009. But Sunday's discovery was the first confirmed sighting and together with the possibility of finding more members of the species has raised the possibility of breeding.

"They will need more than one, but females may store sperm for a long time," said **Stuart Pimm**, a professor of conservation ecology at Duke University. "There may be hope."

Fernandina is the third largest Galapagos



This photo released by the Galapagos National Park shows a *Chelonoidis phantasticus* tortoise at the Galapagos National Park in Santa Cruz Island, Galapagos Islands, Ecuador on Feb 20. Park rangers and the Galapagos Conservancy found the tortoise, a species that was thought to have become extinct one hundred years ago. (AP)

island and features the La Cumbre volcano, one of the most active in the world. The archipelago lies in the Pacific Ocean about 1,000 kilometers (620 miles) off Ecuador's mainland.

In listing the Fernandina tortoise as possibly extinct, the conservation group said on its website that the species may have succumbed to "the frequent volcanic lava flows that nearly cover the island."

The Galapagos archipelago hosts unique species and wildlife whose characteristics helped Charles Darwin develop his theory of evolution. It was declared a UNESCO World Heritage site in 1979. (AP)

■ **Czechs clean human bones:** Restoration experts in the Czech Republic have been set an unusual task – to dismantle four towering pyramids made up of centuries-old bones from more than 40,000 human bodies, clean them up and then reconstruct them as before.

The restoration project, expected to last two years, is aimed at preserving the bones, the chief attraction at the Sedlec ossuary church, a site on the outskirts of the medieval mining town of Kutna Hora in the central Czech Republic.

The project also aims to restore and strengthen the church building which houses the bones and skulls.

The site, which draws half a million visitors every year, not only features the four large pyramids of bones – it also boasts a chandelier, a coat of arms and various other decorations made from every bone in the human body.

"Many people find it weird today and come to see this as some dark spectacle, a house of horrors," said Radka Krejci, in charge of operations at the local parish. (AP)