



This photo provided by NASA, the James Webb Space Telescope is separated in space on Saturday, Dec. 25, 2021. NASA's new space telescope is on the verge of completing the riskiest part of its mission — unfolding and tightening a huge sunshade - after ground controllers fixed a pair of problems, officials said Monday. (AP)

Space

NASA estimates 'meteor'

NASA's space telescope fine after problems fixed

CAPE CANAVERAL, Fla., Jan 4, (AP) — NASA's new space telescope is on the verge of completing the riskiest part of its mission — unfolding and tightening a huge sunshade — after ground controllers fixed a pair of problems, officials said Monday.

The tennis court-size sunshield on the James Webb Space Telescope is now fully open and in the process of being stretched tight. The operation should be complete by Wednesday.

The \$10 billion telescope — the largest and most powerful astronomical observatory ever launched — rocketed away Christmas Day from French Guiana. Its sunshield and primary mirror had to be folded to fit into the European Ariane rocket.

The sunshield is vital for keeping Webb's infrared-sensing instruments at subzero temperatures, as they scan the universe for the first stars and galaxies, and examine the atmospheres of alien worlds for possible signs of life.

Getting the sunshield extended last Friday "was really a huge achievement for us," said project manager **Bill Ochs**. All 107 release pins opened properly.

But there have been a few obstacles. Flight controllers in Maryland had to reset Webb's solar panel to draw more power. The observatory — considered the successor to the aging Hubble Space Telescope — was never in any danger, with a constant power flow, said Amy Lo, a lead engineer for the telescope's prime contractor, Northrop Grumman.

Operations

They also repositioned the telescope to limit sunlight on six overheating motors. The motors cooled enough to begin securing the sunshield, a three-day process that can be halted if the problem crops up again, officials said.

"Everything is hunky-dory and doing well now," Lo said. Ochs expects the tightening of the sunshield to be dramatic. "The best thing for operations is boring, and that's what we anticipate over the next three days, is to be boring," he told reporters in a teleconference.

If that holds true, the telescope's gold-plated mirror — more than 21 feet (6.5 meters) across — could unfold as soon as this weekend. Webb should reach its destination 1 million miles (1.6 million kilometers) away by the end of January. As of Monday, the telescope was more than halfway there. The infrared telescope should begin observing the cosmos by the end of June, ultimately unveiling the first stars and galaxies formed in the universe 13.7 billion years ago. That's a mere 100 million years after the universe-creating Big Bang.

Launched in 1990, Hubble, which sees primarily visible light, has peered as far back as 13.4 billion years ago. Astronomers hope to close the gap with Webb, which is 100 times more powerful.

In another bit of good news Monday, officials said they expect Webb to last well beyond the originally anticipated 10 years based on its fuel efficiency.

The \$10 billion observatory hurtled toward its destination 1 million miles (1.6 million kilometers) away, or more than four times beyond the moon. It will take a month to get there and another five months before its infrared eyes are ready to start scanning the cosmos.

First, the telescope's enormous mirror and sunshield need to unfurl; they were folded origami-style to fit into the rocket's nose cone. Otherwise, the observatory won't be able to peer back in time 13.7 billion years as anticipated, within a mere 100 million years of the universe-forming Big Bang.

Also:

PITTSBURGH: Scientists have released a size and mass estimate of an exploding meteor believed to have caused a loud boom and shaking of the ground across portions of suburban Pittsburgh on New Year's Day.

NASA's Meteor Watch social media site said a nearby infrasound station registered the blast wave from the meteor as it broke apart, causing sonic booms. The data enabled an estimate of the energy released as equivalent to 30 tons (27,216 kilograms) of TNT.

Officials said a "reasonable assumption" of the speed of the meteor at about 45,000 mph (72,420 kph) would allow a "ballpark" estimate of its size as about a yard in diameter with a mass close to half a ton (454 kilograms).

If not for the cloudy weather, they said, it would have been easily visible in the daytime sky — maybe about 100 times the brightness of the full moon.

National Weather Service meteorologist Shannon Hefferan told the Tribune-Review that satellite data recorded a flash over Washington County shortly before 11:30 a.m. Saturday and officials believed it was due to a meteor "falling through the atmosphere." Hefferan said a similar event occurred Sept. 17 in Hardy County, West Virginia.



Ochs



Recovered artifacts are displayed at the Iraqi National Museum in Baghdad, Iraq, Dec 30, 2021. Hundreds of Iraqi artifacts from different archaeological sites across the country went on display at the Iraqi national museum in Baghdad on Dec 30. (AP)

Discovery

Warming kills seabirds: The warming of the planet is taking a deadly toll on seabirds that are suffering population declines from starvation, inability to reproduce, heat waves and extreme weather.

Climate-related losses have hit albatrosses off the Hawaiian islands, northern gannets near the British Isles and puffins off the Maine coast. Some birds are less able to build nests and raise young as sea levels rise, while others are unable to find fish to eat as the ocean heats up, researchers have found.

Common murre and Cassin's auklets that live off the West Coast have also died in large numbers from conditions scientists directly tied to global warming.

With less food, rising seas that encroach on islands where birds roost and increasingly frequent hurricanes that wipe away nests, many seabirds have been producing fewer chicks, researchers say.

And tern species that live off New England have died during increasing rain and hailstorms scientists link to climate change. Some species, including endangered roseate terns, also can't fledge chicks because more frequent severe weather kills their young, said **Linda Welch**, a biologist with the US Fish and Wildlife Service.

The warming world is increasingly inhospitable to many seabirds, Welch said. "In the last couple years, they've experienced widespread nesting failure," she said. "I definitely think there's large ramifications of what we're seeing."

It's difficult to precisely determine the population loss to wide-ranging seabirds and how much is attributable to climate change. But one estimate by researchers from University of British Columbia stated that seabird populations have fallen 70% since the mid-20th century. (AP)

Testing teas in south La: A Louisiana State University scientist is testing whether tea plants in south Louisiana do better in full sun or partial shade.

Two New Iberia farmers and one in Amite are trying their hands at tea farming, and an organic farm in the Alexandria area and a New Orleans-area tourist plantation have plans to do so, horticulturist **Yan Chen** of the LSU AgCenter said.

Tea is grown in places like Hawaii, generally as an expensive specialty niche crop. And there are at least two commercial tea farms each in Mississippi, Alabama, Georgia and South Carolina, according to consultant Jordan G. Hardin.

Louisiana's were all started within the last three years, and leaves can't be harvested until the plants are four or five years old, Chen said in an interview.

Part of Chen's studies will compare plants grown in full sun at the AgCenter's Hammond Research Center with partly shaded bushes grown on land owned by David Barron near Amite, less than 20 miles (32 kilometers) from the research station.

Barron's 150 acres (about 61 hectares) are mostly planted in pine, but he has created a clearing for tea, he said in an Ag-

Coronavirus

CDC mulling COVID test for asymptomatic: Fauci

US expands Pfizer boosters for teens

NEW YORK, Jan 4, (AP) — The US is expanding COVID-19 boosters as it confronts the omicron surge, with the Food and Drug Administration allowing extra Pfizer shots for children as young as 12.

Boosters already are recommended for everyone 16 and older, and federal regulators on Monday decided they're also warranted for 12- to 15-year-olds once enough time has passed since their last dose.

But the move, coming as classes restart after the holidays, isn't the final step. The Centers for Disease Control and Prevention must decide whether to recommend boosters for the younger teens. Dr. Rochelle Walensky, the CDC's director, is expected to rule later this week.

The FDA also said everyone 12 and older who's eligible for a Pfizer booster can get one as early as five months after their last dose rather than six months.

FDA vaccine chief Dr. Peter Marks said in a statement the agency made its decision because a booster "may help provide better protection against both the delta and omicron variants," especially as omicron is "slightly more resistant" to the vaccine-induced antibodies that help fend off infection.

Real-world data from Israel tracked more than 6,300 12- to 15-year-olds who got a booster there at least five months after their second Pfizer dose and found no serious safety concerns, the FDA said.

Likewise, the FDA said even more data from Israel showed no problems with giving anyone eligible for a Pfizer booster that extra dose a month sooner than the six months that until now has been U.S. policy.

Vaccines still offer strong protection against serious illness from any type of COVID-19. But health authorities are urging everyone who's eligible to get a booster dose for their best chance at avoiding milder breakthrough infections from the highly contagious omicron mutant.

Children tend to suffer less serious illness from COVID-19 than adults. But child hospitalizations are rising during the omicron wave — most of them unvaccinated.

The vaccine made by Pfizer and its partner BioNTech is the only U.S. option for children of any age. About 13.5 million 12- to 17-year-olds — just over half that age group — have received two Pfizer shots, according to the CDC.

For families hoping to keep their children as protected as possible, the booster age limit raised questions.

The older teens, 16- and 17-year-olds, became eligible for boosters in early December. But original vaccinations opened for the younger teens, those 12 to 15, back in May.

That means those first in line in the spring, potentially millions, are about as many months past their last dose as the slightly older teens.

As for even younger children, rolled out more recently, in November — and experts say healthy youngsters should be protected after their second dose for a while. But the FDA also said Monday that if children that young have severely weakened immune systems, they will be allowed a third dose 28 days after their second. That's the same third-dose timing already recommended for immune-compromised teens and adults.

Pfizer is studying its vaccine, in even smaller doses, for children younger than 5.

As the COVID-19 omicron variant surges across the United States, top federal health officials are looking to add a negative test along with its five-day isolation restrictions for asymptomatic Americans who catch the coronavirus, the White House's top medical adviser said Sunday.

Guidelines

Dr. Anthony Fauci said the Centers for Disease Control and Prevention is now considering including the negative test as part of its guidance after getting significant "push-back" on its updated recommendations last week.

Under that Dec. 27 guidance, isolation restrictions for people infected with COVID-19 were shortened from 10 days to five days if they are no longer feeling symptoms or running a fever. After that period, they are asked to spend the following five days wearing a mask when around others.

The guidelines have since received criticism from many health professionals for not specifying a negative antigen test as a requirement for leaving isolation.

"There has been some concern about why we don't ask people at that five-day period to get tested," Fauci said. "Looking at it again, there may be an option in that, that testing could be a part of that, and I think we're going to be hearing more about that in the next day or so from the CDC."

Fauci, the nation's top infectious diseases expert, said the U.S. has been seeing almost a "vertical increase" of new cases, now averaging 400,000 cases a day, with hospitalizations also up.

"We are definitely in the middle of a very severe surge and uptick in cases," he said. "The acceleration of cases that we've seen is unprecedented, gone well beyond anything we've seen before."

Fauci spoke he's concerned that the omicron variant is overwhelming

the health care system and causing a "major disruption" on other essential services.

"When I say major disruption, you're certainly going to see stresses on the system and the system being people with any kind of jobs ... particularly with critical jobs to keep society functioning normally," Fauci said. "We already know that there are reports from fire departments, from police departments in different cities that 10, 20, 25 and sometimes 30% of the people are ill. And that's something that we need to be concerned about because we want to make sure that we don't have such an impact on society that there really is a disruption. I hope that doesn't happen."

While there is "accumulating evidence" that omicron might lead to less severe disease, he cautioned that the data remains early. Fauci said he worries in particular about the tens of millions of unvaccinated Americans because "a fair number of them will get severe disease."

He urged Americans who have not yet gotten vaccinated and boosted to do so and to mask up indoors to protect themselves and blunt the current surge of U.S. cases.

The Food and Drug Administration last week said preliminary research indicates at-home rapid tests detect omicron, but may have reduced sensitivity. The agency noted it's still studying how the tests perform with the variant, which was first detected in late November.

Fauci said Americans "should not get the impression that those tests are not valuable."

"I think the confusion is that rapid antigen tests have never been as sensitive as the PCR test," Fauci said. "They're very good when they are given sequentially. So if you do them like maybe two or three times over a few day period, at the end of the day, they are as good as the PCR, but as a single test, they are not as sensitive."

A PCR test usually need to be processed in a laboratory. The test looks for the virus's genetic material and then reproduces it millions of times until it's detectable with a computer.

Fauci said if Americans take the necessary precautions, the U.S. might see some semblance of more normal life returning soon.

"One of these things that we hope for is that this thing will peak after a period of a few weeks and turn around," Fauci said. He expressed hope that by February and March, omicron could fall to a low enough level "that it doesn't disrupt our society, our economy, our way of life."

Fauci spoke on ABC's "This Week" and CNN's "State of the Union."



Welch



Chen

tannins are noticeable. Tannins shouldn't be noticeable unless tea has steeped too long, she said. The AgCenter is in Hammond, about 40 miles (64 kilometers) from New Orleans. Chen said Louisiana gets more intense sunlight and heat than some other areas where tea is grown. Moreover, while the plants can acclimate to extreme heat or cold, quick swings between the two can cause significant damage. (AP)

Center news release. About 1,500 plants grown there from seedlings are being compared with about 500 grown from seedlings at the AgCenter's Hammond Research Station, Chen said. Both plots are a variety from the Republic of Georgia. The leaves will be tested for the amounts of caffeine, sugar and three amino acids, and tea from those plants, brewed at a standard heat and steeping time, will be tasted to see whether bitter