



National Aeronautics and Space Administration



LAGNIAPPE

John C. Stennis Space Center

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June 2023

One to go!

See Page 3



The 2023 Hurricane Season opened June 1.

The Hurricane Season Guide appears at the end of this issue.

June marks the middle of the year and a time on the calendar I have especially come to appreciate for a couple of good reasons.

First, the summer solstice is June 21. Since it is the longest day of the year with the most daylight, it provides a perfect opportunity for everyone to make the most of his or her day. The Sun will be directly overhead around noon, so I will certainly be sure to have my Gator screen and shades handy.

The month also marks the midpoint of growing season between planting and harvesting. Planting is nothing more than preparing, just as NASA continues to prepare a future that benefits everyone.

This month at NASA Stennis, the certification series for the newly redesigned RS-25 engine is expected to conclude. The work completed will result in a harvest of critical information of great benefit as Aerojet Rocketdyne prepares for production of new engines to help power future Artemis missions on the SLS (Space Launch System) rocket to the Moon and, eventually, to Mars.

Furthermore, in preparation for the future, NASA Stennis recently hosted the 2023 NASA astronaut candidate class. Some of the very people that

could one day help the agency harvest a wealth of knowledge on the Moon to further inspire the Artemis Generation on its journey to Mars were able

to learn about the great work performed by folks at NASA Stennis. Weather notwithstanding – how “cool” is that? Ark!

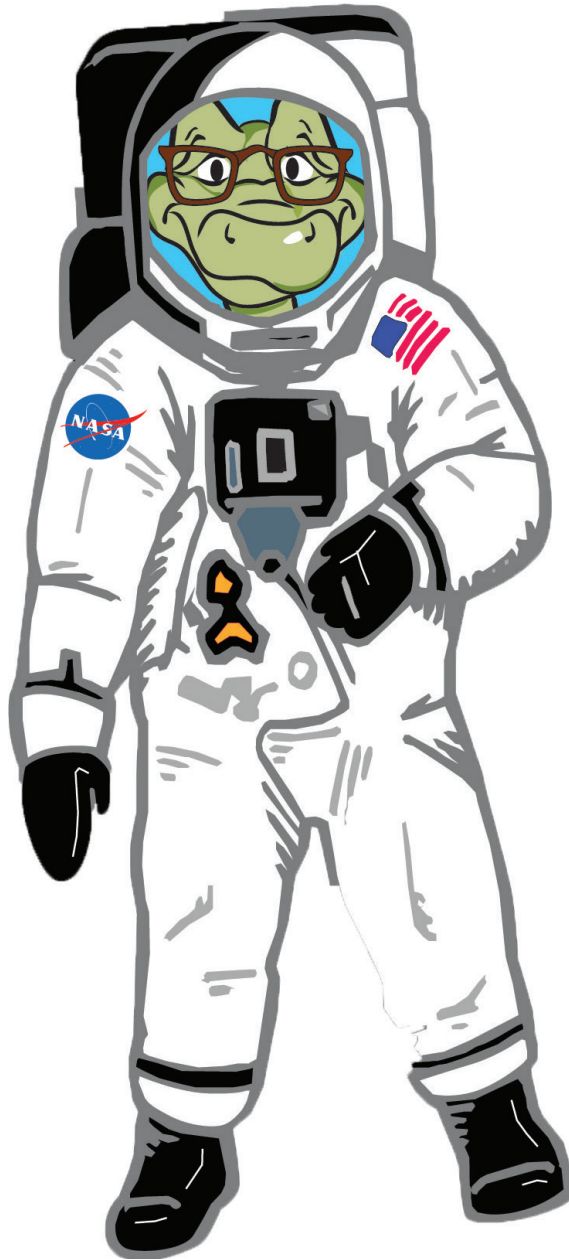
Learning future astronauts were on site inspired me to kick off the dust from my spacesuit and see if it still fits. To my surprise, it does. I was ecstatic. Gator’s still got it, I thought to myself. Ark! Quickly, the grandgators humbled and informed me it was outdated.

“Haven’t you seen the really cool new spacesuits made by Axiom Space,” they asked.

It provided the perfect opportunity to tell the grandgators how NASA is using partnerships such as the one with Axion Space for future success. NASA is using more than 50 years of expertise to define technical and safety requirements for next-generation spacesuits.

When we finished the conversation, the grandgators had a greater appreciation for what it means to work together. “Experience meets innovation,” one of them told me.

In that moment, much like I have an appreciation for the month of June and what it represents, I gained a greater appreciation for a new generation – the Artemis Generation.



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Contact info – (phone) 228-688-3749; (email) ssc-office-of-communications@mail.nasa.gov; (mail) NASA OFFICE OF COMMUNICATIONS, Attn: LAGNIAPPE, Mail code IA00, Building 1111 Room 173, Stennis Space Center, MS 39529

Managing Editor – Lacy Thompson

Editor – Bo Black

Staff Photographer – Danny Nowlin



NASA Nears Completion of Key RS-25 Certification Test Series

NASA completed its penultimate hot fire June 15 in a key test series to certify production of new RS-25 engines for NASA's SLS (Space Launch System) rocket that will help power future Artemis missions to the Moon and continue the agency's efforts to explore the secrets of the universe for the benefit of all.

More than 500 NASA Stennis, NASA Shared Services Center, and NASA contractor employees and family members viewed the hot fire on the Fred Haise Test Stand at NASA's Stennis Space Center near Bay St. Louis, Mississippi, which marked the 11th in the 12-test series.

The final test of the series is scheduled June 22 and will set the stage for SLS engines lead contractor Aerojet Rocketdyne to manufacture new RS-25 engines for future deep space missions, beginning with Artemis V.

During the June 15 test, operators powered the RS-25 engine for more than eight minutes (500 seconds). The test duration is the same amount of time needed to help launch the SLS rocket and send astronauts aboard the Orion spacecraft into orbit.

Operators also tested the engine up to 113% power, exceeding the 111% level needed during launch and providing a margin of operational safety.

The SLS mega rocket is powered, in part, by four RS-25 engines, firing simultaneously to produce as much as 2 million pounds of combined thrust.

NASA launched the maiden Artemis I mission last November and is working toward future Artemis missions to return humans, including the first woman and first person of color, to the Moon, with the crew of Artemis II set to begin training soon. The agency will use the Artemis missions to establish a long-term presence on the Moon while preparing technologies and capabilities needed to send humans to Mars.

RS-25 tests at NASA Stennis are conducted by a diverse team of operators from NASA, Aerojet Rocketdyne, and Syncom Space Services, prime contractor for site facilities and operations.



NASA Stennis Hosts Employee Families to View RS-25 Hot Fire



More than 500 NASA Stennis employees, along with family members and guests, visited the south Mississippi site June 15 to participate in RS-25 test viewing activities. Following check-in (top left photo), participants gathered at the viewing location, where they had a chance to visit exhibit tables sponsored by several site companies (top center photo) and enjoy various activities prior to viewing the RS-25 hot fire. Food trucks and comfort services also were provided at the viewing site.

(Top right photo) Eli Conley talks with a NASA Office of Communications representative about his excitement to view the upcoming test. He is joined by his parents. Conley's father, Jack, works as a NASA test conductor at the center.

(Bottom photos) Elsie Lalas (l) of Gulfport, Miss., displays the "stomp rocket" she built as part of a hands-on activity at the RS-25 viewing site. Children had the opportunity to build and "launch" their own paper rockets.



NASA Stennis Hosts Employee Families to View RS-25 Hot Fire



NASA Chief Information Officer Dinna Cottrell and sons.

NASA Shared Services Center employee Benjamin Stevens and children.

SaiTech Information Technology Manager Todd Ladner with wife and guest.

Aerojet Rocketdyne Quality Control Inspector Daniele Simpson and family.

NASA, Rocket Lab Complete Launch of TROPICS CubeSat

The final pair of NASA's TROPICS (Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats) are in orbit after successfully launching May 26, completing the constellation.

TROPICS launched aboard an Electron rocket from Rocket Lab's launch complex in Māhia, New Zealand. NASA will use this mission to study tropical cyclones and aims to improve forecasting for hurricanes and typhoons.

Last fall, Rocket Lab entered into an agreement with NASA Stennis to develop its 24-acre Archimedes Test Complex at the south Mississippi site. The company will use the site to test Archimedes engines that will power Rocket Lab's large, reusable Neutron rocket.

"As a lifelong Floridian, I know firsthand how critical it is for millions of Americans to have timely and accurate forecasts for hurricanes," said NASA Administrator Bill Nelson. "More intense rainfall and increased coastal flooding are devastating livelihoods and taking lives, demonstrating the importance of NASA's cutting-edge science to help answer questions that nobody else can. With missions like TROPICS, NASA continues to lead the way in getting satellite data more quickly to our partners like the National Hurricane Center and Joint Typhoon Warning Center, providing vital forecasts that help our communities before, during, and after landfall."

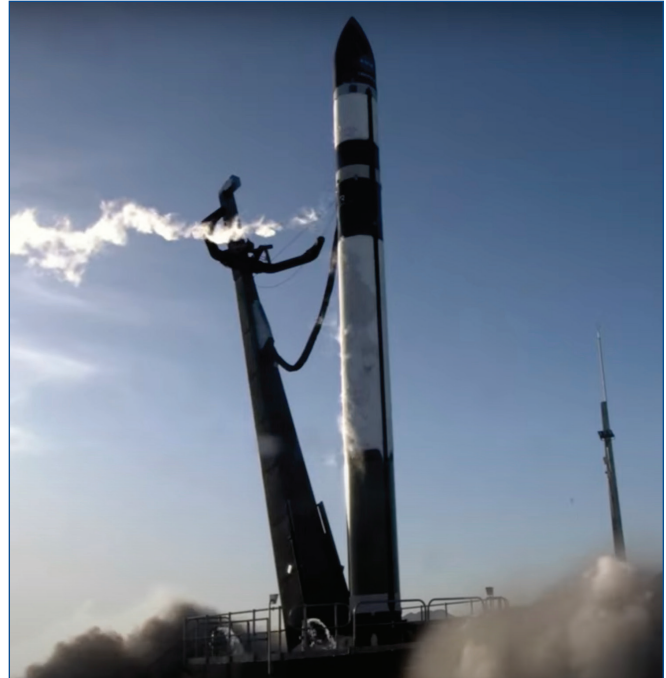
This launch follows a previous successful [TROPICS launch](#) with two other small satellites earlier in May. "As we move into hurricane season for 2023, TROPICS will be in position to provide unprecedented detail on these storms, helping us better understand how they form, intensify, and move across the ocean," said Karen St. Germain, lead of NASA's Earth Science Division.

NASA Selects Blue Origin as 2nd Lunar Lander Provider

NASA has selected Blue Origin to develop a human landing system for the agency's Artemis V mission to the Moon. Through [Artemis](#), NASA will explore more of the Moon than ever, uncovering scientific discoveries and preparing missions to Mars.

Blue Origin will design, develop, test, and verify its Blue Moon lander to meet NASA's human landing system requirements for recurring astronaut expeditions to the lunar surface, including docking with Gateway, a space station where crew transfer in lunar orbit. In addition to design and development work, the contract includes one uncrewed demonstration mission to the lunar surface before a crewed demo on the Artemis V mission. The total value of the firm-fixed price contract is \$3.4 billion.

Blue Origin is an ongoing commercial partner with



Rocket Lab's Electron rocket lifts off from Launch Complex 1 at Māhia, New Zealand at 3:46 p.m. NZST May 26, 2023 carrying two TROPICS CubeSats for NASA. Photo Credit: Rocket Lab

TROPICS is a constellation of four identical CubeSats designed to observe tropical cyclones in a unique orbit that allows them to travel over any given storm about once an hour. "We expect the new observing capabilities from TROPICS will improve our understanding of tropical cyclones and our ability to predict their track and intensity," said William Blackwell, the mission's principal investigator at MIT's Lincoln Laboratory in Lexington, Massachusetts.

For more about NASA's TROPICS, visit [here](#).

NASA Stennis, currently conducting engine component testing in the site's E Test Complex.

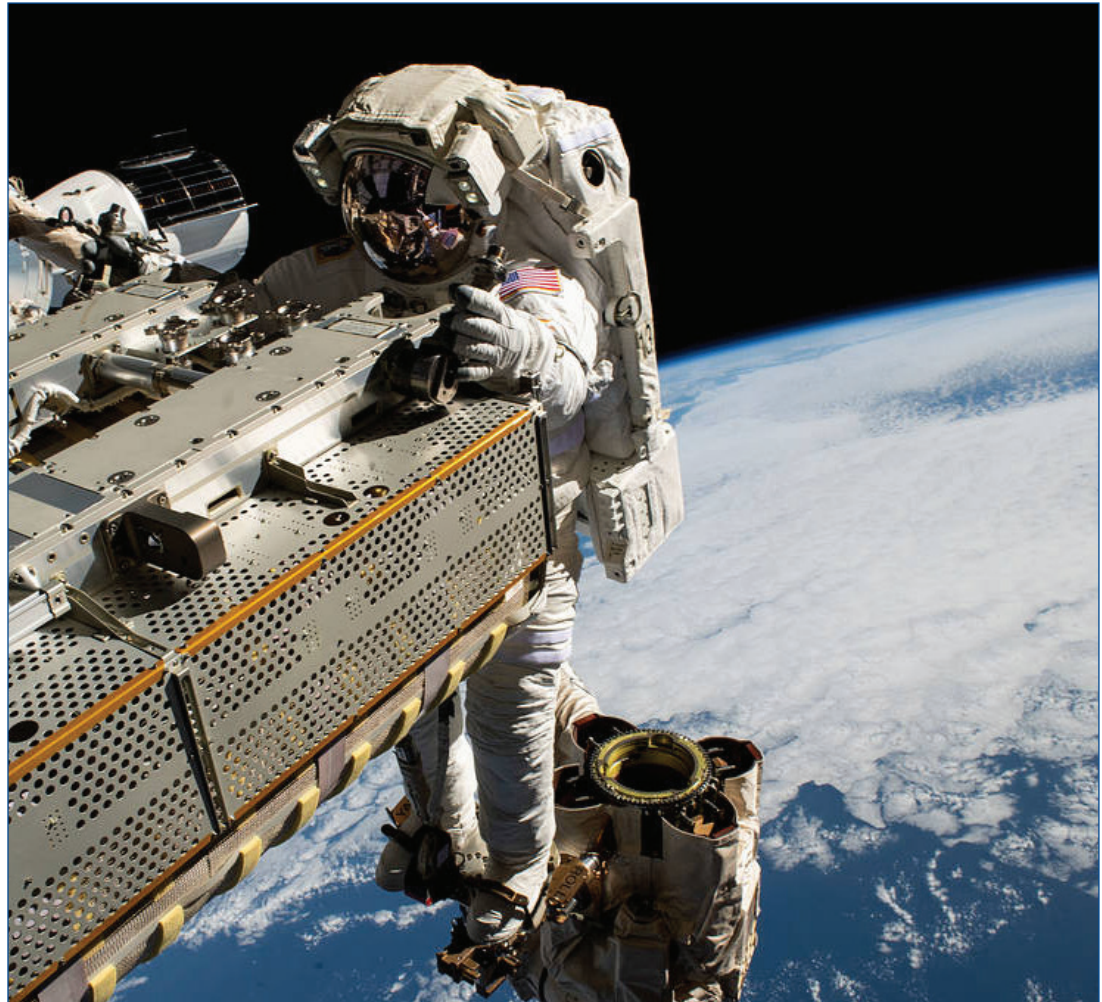
The agency also previously [contracted](#) SpaceX to demonstrate an initial human landing system. "Having two distinct lunar lander designs, with different approaches to how they meet NASA's mission needs, provides more robustness and ensures a regular cadence of Moon landings," said Lisa Watson-Morgan, manager of the Human Landing System Program at NASA's Marshall Space Flight Center in Huntsville, Alabama. "This competitive approach drives innovation, brings down costs, and invests in commercial capabilities to grow the business opportunities that can serve other customers and foster a lunar economy."

For more about the Blue Origin award, visit [here](#).

NASA in the News

Spacewalk Provides Astronaut Elevated Earth View

During a spacewalk June 9, 2023, NASA astronaut and Expedition 68 Flight Engineer Woody Hoburg rides the Canadarm2 robotic arm while maneuvering a roll-out solar array toward the International Space Station's truss structure 257 miles above the Pacific Ocean. In the rear, is the SpaceX Dragon crew vehicle that docked to the Harmony module's forward port on March 3. The spacewalk with NASA astronauts Steve Bowen and Woody Hoburg lasted a total of 6 hours and 3 minutes. This was the ninth spacewalk for Bowen and the first for Hoburg. Image Credit: NASA/ Frank Rubio



Early Universe Crackled With Bursts of Star Formation, Webb Shows

Among the most fundamental questions in astronomy is: How did the first stars and galaxies form? NASA's James Webb Space Telescope is already providing new insights into this question. One of the largest programs in Webb's first year of science is the JWST Advanced Deep Extragalactic Survey, or JADES, which will devote about 32 days of telescope time to uncover and characterize faint, distant galaxies. While the data is still coming in, JADES already has discovered hundreds of galaxies that existed when the universe was less than 600 million years old. The team also has identified galaxies sparkling with a multitude of young, hot stars. "With JADES, we want to answer a lot of questions, like: How did the earliest galaxies assemble themselves? How fast did they form stars? Why do some galaxies stop forming stars?" said Marcia Rieke of the University of Arizona in Tucson, co-lead of the JADES program. Read more [here](#).

NASA's Perseverance Images May Show Record of Wild Martian River

New images taken by NASA's Perseverance rover may show signs of what was once a rollicking river on Mars, one that was deeper and faster-moving than scientists have ever seen evidence for in the past. The river was part of a network of waterways that flowed into Jezero Crater, the area the rover has been exploring since landing more than two years ago. Understanding these watery environments could help scientists in their efforts to seek out signs of ancient microbial life that may have been preserved in Martian rock. Perseverance is exploring the top of a fan-shaped pile of sedimentary rock that stands 820 feet (250 meters) tall and features curving layers suggestive of flowing water. One question scientists want to answer is whether that water flowed in relatively shallow streams – closer to what NASA's Curiosity rover has found evidence of in Gale Crater – or a more powerful river system. Read more [here](#).

NASA Stennis News

Astronaut Candidate Class Views Engine Test During Visit



(Top photo) NASA's Group 23 [Astronaut Candidate Class](#) stands in view of the Fred Haise Test Stand during an RS-25 engine test May 23 at NASA's Stennis Space Center. NASA Stennis hosted the class and astronaut [Shannon Walker](#), deputy chief for the Astronaut Office, for a center familiarization tour as part of their class training. Astronaut candidates are individuals who have been selected by NASA as candidates for the astronaut corps and are currently undergoing a candidacy training program at NASA's Johnson Space Center in Houston.

(Bottom photo) NASA Stennis leaders welcome the Astronaut Candidate Class and astronaut [Shannon Walker](#), deputy chief for the Astronaut Office to the center. [Click here](#) to learn more about NASA's astronaut program.



NASA Stennis News

Congressional, Legislative Guests Visit NASA Stennis



(Top photo) Mississippi legislative and congressional representatives, along with accompanying family members, pose in the viewing area during an RS-25 test on the Fred Haise Test Stand at NASA's Stennis Space Center on June 8. The group spent the day at NASA Stennis, visiting various locations to learn about site work. Participants included members and representatives of the Mississippi House and Senate, as well as from Mississippi congressional offices. Representatives of the Mississippi Governor's Office also participated in the day's activities.

(Bottom photo) NASA Stennis Deputy Director John Bailey (r) and NASA Stennis Safety and Mission Assurance Director Gary Benton speak to visiting legislative and congressional representatives prior to an RS-25 test on June 8.



NASA Stennis News

NASA Speaks to Artemis Generation in North Carolina



(Above Photo) NASA Stennis Public Affairs Specialist Trevor Brownlow speaks to students at Bitz Intermediate School at Camp Lejeune, North Carolina. The Artemis Generation students (grades 3-5) learned about NASA's ongoing Artemis mission and how astronauts live and work in space aboard the International Space Station. Through Artemis, NASA will land the first woman and first person of color on the Moon and collaborate with commercial and international partners to establish the first long-term presence on the Moon. The agency will use what it learns on and around the Moon to then send the first astronauts to Mars.

(Left Photo) NASA astronaut Christina Koch, mission specialist for Artemis II, surprised students with a video message. Koch grew up in Jacksonville, North Carolina, which is less than 10 miles from Camp Lejeune. Artemis II, targeted for late 2024, is the first Space Launch System and Orion test flight of a mission around the Moon with crew. In addition to Koch, Artemis II crew members include Reid Wiseman, commander; Victor Glover, pilot; Jeremy Hansen, Canadian Space Agency astronaut. Photo Credits: Bitz Intermediate School

NASA Stennis Celebrates Employees during May's Heritage Month Emphasis

NASA STENNIS & NSSC CELEBRATE ASIAN AMERICAN, NATIVE HAWAIIAN & PACIFIC ISLANDER HERITAGE MONTH



David Carver
Deputy Branch Chief,
Electrical Operations
Branch
NASA Engineering & Test
Directorate

What do you want others to learn about your heritage?

The term "heritage" means different things to different people. For me, my Japanese heritage is all about hard work, discipline, and family.

What does Asian American, Native Hawaiian, & Pacific Islander Heritage Month mean to you?

I consider it an honor to have a month dedicated to AANHPI observance. It provides an opportunity to highlight the many AANHPI people who have, throughout history, made important contributions to NASA programs in fields related to science, technology, engineering, and mathematics.

NASA Stennis & NSSC are proud to celebrate Asian American, Native Hawaiian, & Pacific Islander Heritage Month and recognize the diversity of the workforce contributing to the success of America's premier rocket propulsion test site.

NASA STENNIS & NSSC CELEBRATE ASIAN AMERICAN, NATIVE HAWAIIAN, & PACIFIC ISLANDER HERITAGE MONTH



Huy Nguyen
Electrical Operations
Engineer
NASA Engineering &
Test Directorate

What do you want others to learn about your heritage?

If anything, what I would like others to learn about my heritage as a Vietnamese-American is that it is a culture steeped in community and family. From how we honor our ancestors to how we address each other, the culture shows both our respect for and relation to each other. At the core of our hard-working people is genuine care for each other's well-being and support for each other in whatever way we can.

What does Asian American, Native Hawaiian, & Pacific Islander Heritage Month mean to you?

AANHPI Heritage Month has always been a month that enlightens me as to the many different AANHPI cultures that are so similar to - yet different from - my own culture. While various AAPI groups came to America at vastly different times as immigrants or are generational immigrants like myself, we share many similar struggles while carrying much of the same cultural mindsets.

NASA Stennis & NSSC are proud to celebrate Asian American, Native Hawaiian, & Pacific Islander Heritage Month and recognize the diversity of the workforce contributing to the success of America's premier rocket propulsion test site.

June 11, 1987 – Mississippi Technology Transfer Center Opens

The state of Mississippi wanted to benefit from technology NASA developed at NASA's Stennis Space Center, formerly known as the National Space Technology Laboratories. The state wanted a way to transfer new technology to state government and schools, so it committed \$4 million to open the Technology Transfer Center at the NASA center in south Mississippi. The initial plan was to have satellite technology help farmers and emergency planners. The technology transfer center also helped private companies and medical institutions. NASA received the building on June 11, 1987, during a dedication ceremony to open the technology center.



Hail & Farewell

NASA welcomes the following:

Armando Delgado
William Wascom

Aerospace Technology
Aerospace Technology

Engineering and Test Directorate
Rocket Propulsion Test Program Office

NASA Employee Helps Agency Move Forward through Procurement Work

NASA auditor Amy Langdale is proof someone from a small place can move forward to make significant contributions.

The Atkins, Arkansas, native grew up in a town that has a population of less than 3,000 people and now works at NASA's Stennis Space Center, a federal city with a sitewide workforce approaching 5,000.

The work Langdale performs ensures NASA remains in compliance with federal regulations for contract administration and auditing services.

Additionally, Langdale works as a price analyst to identify contractors that can deliver top products and services for the best price to perform NASA missions.

Bottom line – Langdale knows about making things count at NASA. “I am proudest when I can identify that I have helped to achieve the mission while being a good steward of taxpayers’ dollars,” she said.

The Ocean Springs resident marks 10 years working as a NASA civil servant in August, following 20 years of work with the U.S. Department of Defense.

Since the NASA Stennis Office of Procurement merged with all other NASA centers to form the NASA Office of Procurement, Langdale has helped establish policies and procedures for its newly minted Cognizant Federal Agency.

She also has continued to support NASA Stennis efforts.



NASA auditor Amy Langdale is most proud when the work she performs helps achieve the NASA mission while being a good steward of taxpayers' dollars.

Langdale performs analysis related to the procurement of materials and services associated with maintaining the site and with testing of RS-25 engines. Likewise, she supported Green Run testing of the Space Launch System core stage at NASA Stennis prior to the successful launch of Artemis I.

“As a member of the Office of Procurement at NASA Stennis, I have experienced a wonderfully inclusive workforce that always overcomes any obstacle to achieve the

mission goals,” Langdale said.

“It has been my experience that NASA Stennis seeks to ensure all individuals are valued for their ideas and unique perspectives,” she noted. “While not all these ideas and perspectives are deemed by the group to be the solution, all are encouraged to provide input and participate so that discussions can take place and decisions can be made.”

Langdale is most excited about NASA moving forward in its pursuit of establishing the Moon as a base for moving on to Mars and beyond.

Through Artemis, NASA will send the first woman and first person of color to the Moon. The agency will use what is learned on and around the Moon to take the next giant leap – sending astronauts to Mars.

Langdale’s work along the way will help NASA’s Office of Procurement fulfill its responsibility to explore and execute innovative, effective, and efficient acquisition business solutions to optimize operations and enable mission success.

Office of Diversity and Equal Opportunity

Celebrate Pride Month by Learning About Pride Flag History and Common Pronoun Practice

LGBTQIA+ Pride Month is celebrated throughout the month of June. There are several LGBTQIA+ observances throughout the year; however, June is recognized nationally because the Stonewall Riots, which kicked off the LGBTQIA+ civil rights movement, occurred on June 28, 1969. Pride Month was federally recognized in 1999 when Bill Clinton signed Presidential [Proclamation 7203](#).

Pride Month provides an opportunity for allies to stand with and celebrate the achievements of people who identify as LGBTQIA+. Pride Month works to achieve equal justice and opportunity for LGBTQIA+ Americans. Recent federal initiatives that support diversity, inclusivity, and support for the LGBTQIA+ community include Executive Order (EO) 14035 “Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce,” NASA’s FY 2022-2026 Diversity, Equity, Inclusion, and Accessibility Strategic Implementation Plan, and EO 13988 “Preventing and Combating Discrimination on the Basis of Gender Identity or Sexual Orientation.”

Pride Month is typically marked with an increase in pride flag visibility. The flag has been a symbol of the LGBTQIA+ community since its inception in 1978. It has undergone several iterations in past decades.

The first iteration was created by Gilbert Baker, an American artist and activist. The flag was originally requested of Baker by Harvey Milk, the first openly gay elected official in California. The flag had eight colored rows, which descended down the flag in stripes.

Baker gave each color specific meanings. Pink represented sex, red represented life, orange represented healing, yellow represented sunlight, green represented nature, turquoise represented magic, blue represented harmony, and violet represented spirit. This specific design is similar to the modern pride flags except for the exclusion of pink and turquoise. These colors were excluded to help make production easier.

In 2017, Philadelphia created a “People of Color Inclusive Flag.” The flag is like Baker’s original flag, but adds a black and brown stripe to represent LGBTQIA+ people of color. Additionally, in 2018, Daniel Quasar created the “Pride Progress Flag.”

This iteration includes five new colors: black, brown, light blue, pink, and white. The new colors are shaped in a right-facing arrow, with the original-colored stripes next to it. Moreover, there are also flags to represent specific identities within the LGBTQIA+ community, with each flag having different-colored stripes with different meanings.

The LGBTQIA+ community is more than sexuality; it is also inclusive of different gender identifications. Gender identity refers to one’s innermost concept of self as a man, a woman, a blend of both, or neither. One’s gender identity could align to an individual’s sex, which refers to chromosomes in the body. This could include male, female, or intersex, or one’s gender could be different than the sex assigned at birth.

This is often seen with individuals who identify as transgender, meaning the individual’s gender identity does not align with the sex assigned at birth, or with gender nonconforming/non-binary individuals who identify with more than one gender, no gender, or have a fluctuating gender identity.

Pronouns can be useful and significant to one’s gender identity. Pronouns are used daily to refer to each other or objects not called by name. There are gender specific pronouns like he/him/his or she/her/hers. However, there are also pronouns like they/them/theirs used by individuals who identify as non-binary.

Here are three simple ways to navigate identifying someone’s pronoun:

1. Listen to the pronouns others use when referring to the individual. People who know the person well may likely use the correct pronoun.
2. Introduce yourself as a way to be proactive. By introducing yourself with your name and desired pronouns, others can share their own name and pronouns, if they desire.
3. Ask an individual how they would like to be addressed.

June is a time for the LGBTQIA+ community to have visibility and for individuals and allies to fellowship and celebrate. This Pride Month, learn about the symbols and common pronoun practices among the LGBTQIA+ community.

Online Resources

View coverage from NASA Stennis Media Day

Click the links below.

- [AP: NASA Tests Redesigned Moon Rocket Engine](#)
- [WDAM: NASA Tests Engine for Artemis Mission](#)
- [WDSU: NASA Crews in Southern Mississippi Work on Future Space Flights](#)
- [WGNO: NASA Tests Engines for Future Artemis Flights](#)
- [WLOX: Stennis Space Center Engine Test Takes Next Step Toward Space Travel](#)



NASA Stennis Artemis Resources

*Click the above photo for
NASA Stennis Artemis resources.*



SuperTalk Mississippi Interviews NASA Engineer Bradley Tyree

Click the above photo for the interview.



NASA Moon To Mars

*Click the above photo to learn more about
NASA's Moon to Mars Strategy and Objectives Development.*

2023 Hurricane Guide

The 2023 hurricane season has arrived, and NASA's John C. Stennis Space Center has prepared this guide as a resource for Stennis employees. The guide offers interesting and valuable information, including a contraflow evacuation map and contact numbers for emergency situations. It also serves as an important reminder for every Stennis employee to be prepared and alert for whatever the 2023 season may deliver.

NASA Stennis WILL NOT serve as a shelter to any workers or families (including families of ride-out personnel).

As part of their hurricane season preparation, individuals are urged to contact county/parish offices and identify available shelters in their areas.

In Mississippi and Louisiana, persons are reminded they may call 211 to obtain information about health and human services available. It offers information on various services, including food, clothing, shelters, and transportation assistance.



SSC Site Status
App Icon

NASA Stennis employees are reminded to discuss their evacuation plans with supervisors so they can be contacted after a storm or to acquire their company/agency policy on contacts after a storm.

Employees should download and monitor the **SSC Site Status mobile app** for updated information. The app offers notification alerts and is available for use on phones and tablets.

NOTE: If NASA employees cannot contact the site due to downed communications after a storm, they should call 877-776-4654 to report their status.

Protect Your Plan From Changes

Prepare early and double-check details

Everyone is encouraged to double-check details related to a hurricane preparation plan. Public shelters may have changed, and evacuation destinations may not be so easily accessible. Travel could be more difficult, so it is critical to review and check preparation details to ensure they remain viable. Stores and pharmacies might be closed, so residents should plan accordingly.

Check your emergency kit

Individuals are urged to ensure all supplies are current. A good approach is to gather and organize food, water, medicines, and medical supplies into a kit for at home and on the go. A kit for on the go consists of three days of supplies, including backup batteries and chargers for electronic devices (cell phone, CPAP machine, powered wheelchair, etc.). A kit for home consists of enough supplies for two weeks.

Stay informed

Check informational lines and numbers to make sure they are still operable. Use apps, including the **FEMA mobile app**, and websites to receive the latest information.

Facts and Information

- The Atlantic Ocean hurricane season extends from June 1 through November 30 each year, hitting its peak from mid-August to late October. Of the 64 major hurricanes (Category 3-5) that made landfall in the United States during the 20th century, 36 hit in September. The next busiest month was August with 15 storm strikes.
- The terms “hurricane,” “typhoon” and “cyclone” all refer to the same storm tropical cyclone phenomenon. Storms in the Atlantic and eastern Pacific Oceans are called “hurricanes.” Western Pacific Ocean storms are referred to as “typhoons.” Storms in the Indian Ocean and Bay of Bengal are “cyclones.” Australians refer to a tropical cyclone as a “willy-willy.”
- The word “hurricane” comes from “Hurican” or “Huracan,” the name of an evil Caribbean god. It also has roots to Hunraken, the Mayan god of wind, fire and storm who is said to have caused a great flood on Earth as an act of divine retribution against humans.
- A hurricane has remarkable power. It can reach as high as 40,000 to 50,000 feet into the sky, stir up millions of miles of air and produce more than 2.4 trillion gallons of rain a day. During its lifespan, a hurricane produces as much energy as several thousand atomic bombs.
- Hurricanes spin around a low-pressure center known as an “eye.” The eye may be 20-30 miles wide and remains calm and without clouds. It is surrounded by a thick “eye wall,” which represents the strongest part of the hurricane, while spiral rain bands extend out from the wall to represent the largest portion of the storm. A hurricane makes landfall when its eye crosses a coastline, not when the spiral rain bands arrive.
- The right side of a northern hemisphere hurricane is typically stronger in terms of winds, tornado potential and storm surge.
- **Storm surge** – an abnormal rise of sea/gulf water along a shore as the result, primarily, of storm winds
- **Watch notice** – issued notice that adverse conditions are possible in the specified watch area, usually within 48 hours. A watch may apply to thunderstorms, tornadoes, floods or hurricanes.
- **Warning notice** – issued notice that adverse conditions are expected in the specified warning area, usually within 36 hours. A warning may apply to thunderstorms, tornadoes, floods or hurricanes.
- Evacuated residents may choose to seek refuge in designated public shelters. Such designated shelters are operated by trained individuals and are designed to ensure the safety, security, and basic needs of sheltering residents are met.
- **What to bring to a shelter:** Residents should bring a change of clothing, a blanket, and a pillow for each person. Residents also should bring their disaster supply kit, including food, medications, comfort items and needs for infants or elderly persons.
- **What not to bring to a shelter:** No weapons, illegal drugs, alcohol, or pets are allowed (service animals are permitted).
- Hurricanes/typhoons/cyclones kill more people than any other type of natural storm. By one estimate, the storms have killed almost 2 million people worldwide during the past two centuries.
- For hundreds of years, hurricanes either were not named or were named on a local and random basis. The United States began using female names for storms in 1953, adding male names in 1979. Separate lists are maintained for Atlantic, Eastern North Pacific and Central North Pacific storms. The lists rotate each year, with listed names in alternating (male/female or female/male) and alphabetical order.
- Names of powerful or destructive hurricanes are permanently retired (by decision of a world committee) from the naming lists and replaced as needed. Since the 1950s, 94 names have been retired, including three in 2020 (Eta, Iota, and Laura), one in 2021 (Ida), and two in 2022 (Fiona and Ian).
- Names for 2023 Atlantic hurricanes are – Arlene, Bret, Cindy, Don, Emily, Franklin, Gert, Harold, Idalia, Jose, Katia, Lee, Margot, Nigel, Ophelia, Philippe, Rina, Sean, Tammy, Vince, and Whitney. The rotating lists can be viewed at: <https://www.nhc.noaa.gov/aboutnames.shtml>

Louisiana-Mississippi Interstate Contraflow Plan

To assist Louisiana during a mandatory hurricane evacuation, the Mississippi Department of Transportation will implement contraflow (lane reversal) for I-59 and I-55 when requested by Louisiana and approved by the Mississippi governor.

- A contraflow decision is not automatic and will only be used when absolutely necessary. Citizens should not delay evacuation plans in anticipation of contraflow.

- I-59 contraflow will begin in Louisiana, extend into Mississippi and end at mile marker 55.

- I-55 contraflow will begin in Louisiana, extend into Mississippi and end at mile marker 31.

- Exits within the contraflow sections of the interstate highways will remain open as conditions allow. Law enforcement officers will assist with traffic control.

- Shoulders of both Interstates 59 and 55 should be kept clear for emergency vehicles. Motorists needing to stop should use the next available exit.

- Motorists traveling west into Louisiana on I-10 will be routed north onto I-59 at the I-10/I-12 split.

- Tune in to public broadcasting radio stations for emergency information and road conditions.

- The following procedures will be enforced in the Hattiesburg area to avoid severe congestion:

- Northbound traffic on Hwy. 49 may not be allowed to exit at either Hwy. 98 or I-59.
- Northbound traffic on I-59 can only exit at Hwy. 11 (Exit 60) or west onto Hardy Street/Hwy. 98 (Exit 65).
- Westbound traffic on Hwy. 98 will not be allowed to exit onto Hwy. 49, but directed to merge onto I-59 instead.



National Resource Information

American Red Cross

www.redcross.org/hurricane 800-REDCROSS (733-2767)

Federal Emergency Management Agency

www.fema.gov 800-621-FEMA (3362)

NOAA National Hurricane Center

www.nhc.noaa.gov nhc.public.affairs@noaa.gov

National Weather Service Forecast Office

New Orleans: www.weather.gov/lix 985-649-0429 or 504-522-7330

Jackson: www.weather.gov/jan 601-936-2189

U.S. Coast Guard – 8th District (Gulf of Mexico region)

www.atlanticarea.uscg.mil/Our-Organization/District-8/

Mississippi Resource Information

Mississippi Emergency Management Agency

www.msema.org 24 hours: 866-920-6362 800-222-6362

Mississippi Department of Transportation

www.mdot.ms.gov www.mdottraffic.com 866-521-6368

Mississippi Highway Safety Patrol

www.dps.ms.gov/highway-patrol 601-987-1212

Mississippi Insurance Department

www.mid.ms.gov 800-562-2957

Mississippi Power

www.mississippipower.com 800-487-3275

Coast Electric Power

www.coastepa.com 877-769-2372

Louisiana Resource Information

Office of Homeland Security and Preparedness

www.gohsep.la.gov www.getagameplan.org 225-925-7500

Louisiana Department of Transportation

www.sp.dotd.la.gov/Pages/default.aspx 877-4LA-DOTD (452-3683)

Louisiana State Police

www.lsp.org 800-469-4828 *LSP (*577) to report road emergencies

Louisiana Traveler Information

www.511la.org dial 511 in state 888-762-3511 outside state

Louisiana Department of Insurance

www.lidi.louisiana.gov 800-259-5300 or 225-342-5900

Cleco Corporation

www.cleco.com 800-622-6537

Entergy (www.energy-louisiana.com)

800-ENTERGY (368-3749) Power outages: 800-9OUTAGE (968-8243)

Washington-St. Tammany Electric Cooperative

www.wste.coop 985-839-3562 Power outages: 866-672-9773