

National Aeronautics and Space Administration



# LAGNIAPPE

John C. Stennis Space Center

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October 2019



See  
Page 3

October is one of my favorite months – and not just because I get to dress up as my favorite movie character and collect a pail of candy. Ark! Fall usually manages to wander by even down here in the South – at least for a few days. October also is host to great festivals, and, of course, there is the football. Let me hear a WHO DAT!

October is a big month in space exploration history as well. Sputnik was launched in October 1957, ushering in an age of exploration no longer limited to the reaches of Earth. NASA began operations on Oct. 1, 1958, and the agency announced plans to build a rocket engine test site in south Mississippi on Oct. 25, 1961.

Since 1988, October also has been recognized as National Disability Employment Awareness Month, established to highlight workplace needs and contributions of people with disabilities. The 2019 theme for the emphasis is “The Right Talent, Right Now.”

Most people probably do not know it, but several individuals with disabilities were exactly the right talent needed in the early days of space exploration. They were part of a group known as the Gallaudet Eleven.

As NASA looked to send humans into space, they faced a lot of unknowns, including about how space travel would affect the human body. To learn more, the agency teamed with the U.S. Navy to select 11 men to undergo a range of tests related to motion sickness. Each of the test volunteers was deaf and immune to motion sickness, which offered a unique research opportunity. NASA later would cite the “substantial contributions” the group provided in understanding how the human body reacts and adapts to spaceflight.

The Gallaudet Eleven may not be widely known, but they have not been forgotten. In fact, a Gallaudet University online video highlights and honors these space volunteers. And while they did not serve as actual astronauts, the Gallaudet Eleven were a perfect example of how people with disabilities had just the “right talent” for the moment. As Harry Larson, one of the volunteers, phrased it – “We were different in a way they needed.”

Maybe that could be next year’s awareness month theme – “Different in a Way that’s Needed.” Think about it – but in the meanwhile, anyone know where I can find a Marvin the Martian costume by Oct. 31?



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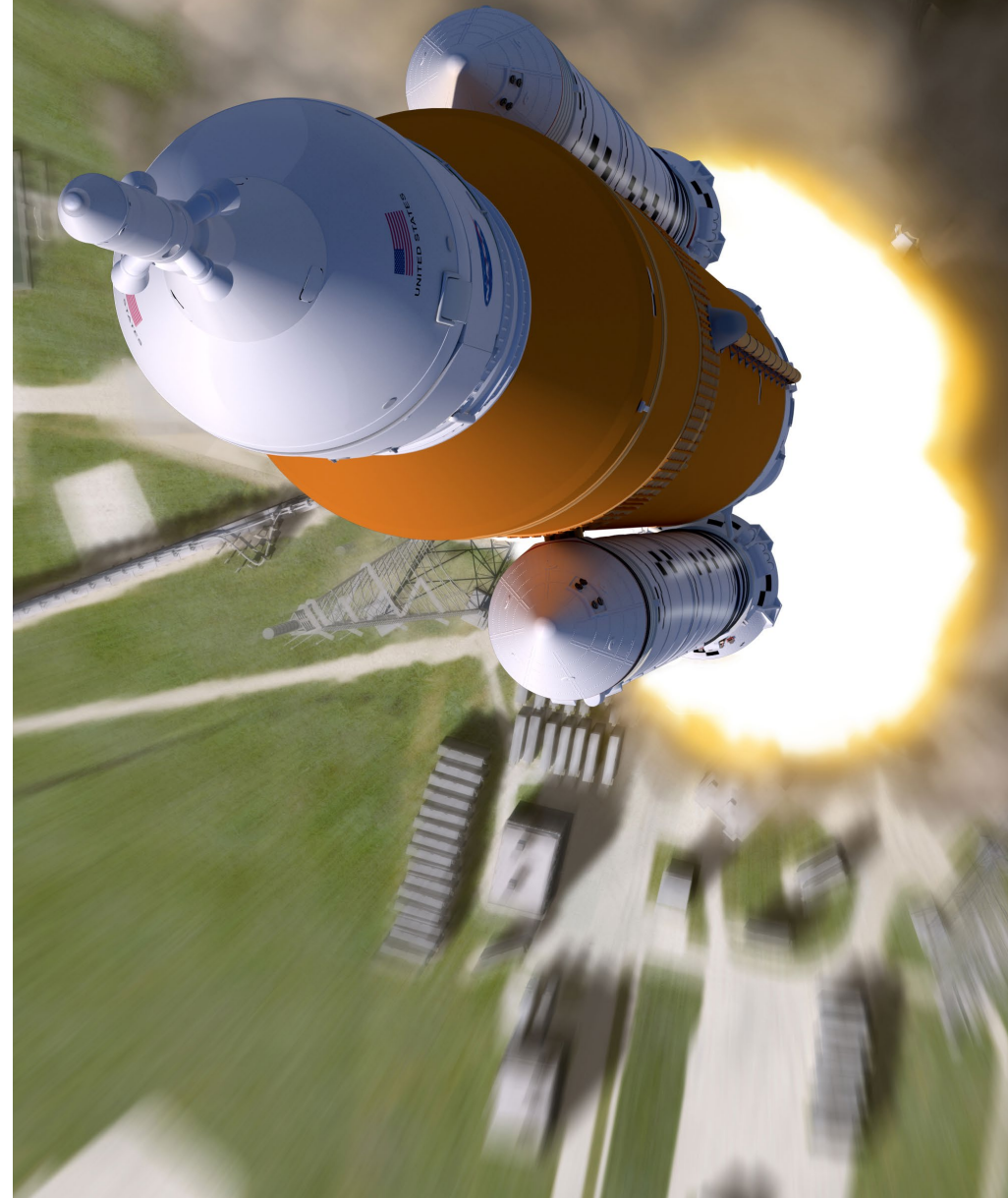
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GO...  
GO...  
GO!



# What is Space Launch System?

**O**ne day in the sooner-rather-than-later future, people across the nation will rearrange daily schedules to witness a long-anticipated event – the maiden launch of NASA's new Space Launch System (SLS) rocket.

*A pair of solid rocket boosters and four RS-25 engines will fire at a south Florida launchpad to generate more than 8 million pounds of thrust, lifting the 321-foot SLS rocket into the sky on its way to the Moon and back.*

*The launch will herald the beginning of a new great era of space exploration, one set on establishing a sustainable presence on the Moon and placing human footprints on Mars.*

*In no small part, success of the new era rests on hard work provided by Stennis Space Center, which is testing the rocket engines and SLS core stage that will power the new rocket to unprecedented destinations.*

*In the months ahead, Lagniappe will feature articles under the "Go ... Go ... Go!" heading detailing aspects of NASA's next step into deep space and Stennis' role in making such missions possible. The following represents the first installment.*

When Richard Nixon presented the Presidential Medal of Freedom to the astronauts who first traveled to the surface of the Moon on the Apollo 11 mission in July 1969, he opined, "The sky is no longer the limit."

Within a few years, however, the United States had limited its human space exploration efforts to the near sky of low-Earth orbit. The last humans to travel farther completed their mission to the Moon in the closing month of 1972. NASA now is building its new Space Launch System rocket to change that fact.

## What is the Space Launch System?

NASA's Space Launch System – often simply referred to as SLS – is the largest rocket built since the Saturn V monster that carried humans to the Moon on Apollo missions. It is designed with unprecedented power and capabilities, so it can evolve into larger versions. The initial Block I version will stand 321 feet tall and be capable of carrying 57,000 pounds into deep space. A planned Block IB version will be even more powerful, capable of carrying a crew and about

81,000 pounds to deep space. The workhorse Block II cargo version will feature a 99,000-pound capability.

## What is the history of SLS?

SLS dates back to the NASA Authorization Act of 2010. Following a committee study of the U.S. space program, then-President Barack Obama had ended the effort to build a pair of large rockets for NASA's Constellation Program. His subsequent proposals included a call to study advanced designs and technologies for a new heavy-lift rocket but not to begin construction until after 2015. Congress embraced many of Obama's proposals but balked at the five-year gap for developing a heavy-lift rocket design. Instead, the NASA Authorization Act of 2010 called on the agency to begin building its new rocket immediately, using the current workforce and existing technologies. Work on SLS soon began.

## What is the SLS design?

SLS is built as a multistage rocket that will look – and operate – much like the tall Saturn V rockets of the Apollo era. Its main element is the core stage, which will help launch the rocket on its missions. This element is the largest rocket stage ever built by NASA, measuring more than 27 feet in diameter and standing 221 feet tall. It is a self-contained unit with fuels systems and tanks, sophisticated avionics and four RS-25 engines. While other aspects of the SLS rocket will evolve over time, the core stage will remain the primary propulsion unit. It will carry 733,000 gallons of liquid oxygen and liquid hydrogen to fuel the four RS-25 engines, which will generate a combined 2 million pounds of thrust when fired simultaneously, as they ignite for eight minutes to launch SLS into space. To complement the engines, a pair of solid rocket boosters – which also will evolve over time – will provide more than 6 million additional pounds of thrust, just as a single solid rocket booster worked in conjunction with three main engines to launch space shuttle missions. Additional stages and elements will be added to the core stage to help carry the new Orion crew vehicle being developed for SLS. It will be larger than the Apollo capsule, which could carry three crew members. Orion will be able to carry four to deep space or six to low-Earth orbit.

## Who is building SLS?

SLS is truly what one NASA manager called "America's rocket." More than 1,100 companies in 44 states are involved in its construction, from large, well-known ones to small "mom-and-pop" types. The Boeing Co. is building the SLS core stage at Michoud Assembly Facility in New Orleans. It will be delivered by barge from that facility to Stennis for testing prior to its use on the maiden Artemis I flight.

## What missions will SLS enable?

As designed, SLS will be adaptable for a variety of missions. NASA is focused on using the rocket for a pair of human exploration efforts. Through the Artemis Program, SLS will carry the first woman and next man to the Moon by 2024 and help establish a strategic lunar presence. Once capabilities needed for longer flights have been developed and proven on lunar missions, an evolved version of SLS will carry the first humans to Mars.

## When will it be ready?

Elements of the SLS rocket that will be used for the maiden Artemis I flight already are being delivered. The main element – the massive core stage that will help launch the new rocket – will be completed and delivered to Stennis by year's end for its preflight testing prior to shipment to Kennedy Space Center. NASA plans to launch the maiden Artemis I mission by the end of 2020.

## What is Stennis' role?

As with the Apollo and Space Shuttle programs, NASA has turned to Stennis to provide propulsion testing for SLS. Stennis is using its A-1 Test Stand to test all RS-25 engines that will be used on the SLS core stage. It also has modified its B-2 Test Stand to test the SLS core stage that will fly on the maiden mission. That effort will involve installing and anchoring the flight stage on the stand and testing all of its systems in a coordinated fashion, as must occur during a flight. The final core stage test on the B-2 stand will include firing its four RS-25 engines simultaneously, just as during an actual launch.

## NASA's MOON to MARS MISSION

# SLS rocket pathfinders prepare teams for one-of-a-kind hardware



NASA's Pegasus barge arrived Sept. 27 at the agency's Kennedy Space Center in Florida with the core stage pathfinder for NASA's Space Launch System (SLS) rocket. The pathfinder will be used for lift and transport practice techniques inside Kennedy's Vehicle Assembly Building to prepare for the first lunar mission of SLS and NASA's Orion spacecraft, Artemis I.

The core stage pathfinder is one of three pathfinder structures used by NASA to train lift crews on best practices for moving and handling the SLS rocket flight hardware. In addition to the core stage pathfinder, there is an RS-25 engine pathfinder and a solid rocket booster pathfinder. Designed as full-scale mockups of the flight hardware, the three SLS pathfinders each reflect the shape and size of the individual components of the rocket.

The number of pathfinders for the rocket allow multiple teams to use them for different operations and procedures at several locations. After teams at Kennedy practice with the core stage pathfinder, NASA's Exploration Ground Systems (EGS) will begin stacking operations with the booster pathfinder structures to simulate an aft booster assembly and bottom center segment stacking operation. All this practice prepares teams for the same upcoming tasks with the actual flight hardware.

Engineers previously used the core stage pathfinder in August at Stennis Space Center, where crews practiced similar lift and handling procedures at the B-2 Test Stand ahead of the Green Run test series for the core stage.

"After the pathfinder lift operations were complete, the unit was installed into the B-2 Test Stand at Stennis," said Barry Robinson, B-2 Test Stand core stage test project manager at Stennis. "Among other things, the exercise helped us identify minor facility modifications early enough to provide the time needed to make the corrections prior to arrival of the core stage flight hardware."

Equipped with the largest rocket stage NASA has ever produced and the largest twin boosters ever built for flight, the SLS rocket for Artemis missions will be the most powerful rocket in the world, enabling astronauts in Orion to travel to the Moon's south pole.

The two massive propellant tanks in the rocket's 212-foot-tall core stage power the four RS-25 engines at the bottom of the rocket. On either side of the core stage are two, five-segment solid rocket boosters. Together, the engines and the boosters will produce a combined thrust of 8.8 million pounds during launch and flight. The Artemis I rocket will tower at 322 feet.

NASA's Pegasus Barge arrived at the Launch Complex 39 turn basin wharf at Kennedy Space Center in Florida to make its first delivery to Kennedy in support of the agency's Artemis missions. The upgraded 310-foot-long barge arrived Sept. 27, 2019, ferrying the 212-foot-long Space Launch System rocket core stage pathfinder. Weighing in at 228,000 pounds, the pathfinder is a full-scale mock-up of the rocket's core stage and will be used to validate ground support equipment and demonstrate it can be integrated with Kennedy facilities.

"Practicing operations with pathfinders offers teams hands-on experience for managing and handling the immense structures before this one-of-a-kind flight hardware arrives," Robinson said.

Because they replicate the flight hardware, the various pathfinders can validate ground support equipment, and flight hardware access techniques as well as train handlers to transport the equipment on a variety of terrains with different vehicles, like the Pegasus barge and Kennedy's mobile launcher, and demonstrate how the equipment can be integrated within facilities.



"Experience is the best teacher," said Jim Bolton, EGS core stage operations manager. "Pathfinders allow crews to practice lifting, accessing and transporting techniques that we prefer not to do for the first time with the flight hardware. Practicing with a pathfinder reduces risk and builds confidence."

As crews at Kennedy use the SLS booster and core stage pathfinders for the same processes the actual flight hardware will undergo when processed at Kennedy for Artemis I, completed flight hardware for SLS and Orion will also be delivered.

"NASA's first Artemis mission flight hardware has progressed

into final assembly and integration, moving well beyond the early design and manufacturing stages of development," said Mark Prill, SLS core stage pathfinder lead. "Flight hardware for both the SLS rocket and the Orion spacecraft will continue to be delivered to Kennedy as NASA prepares for the launch of Artemis I."

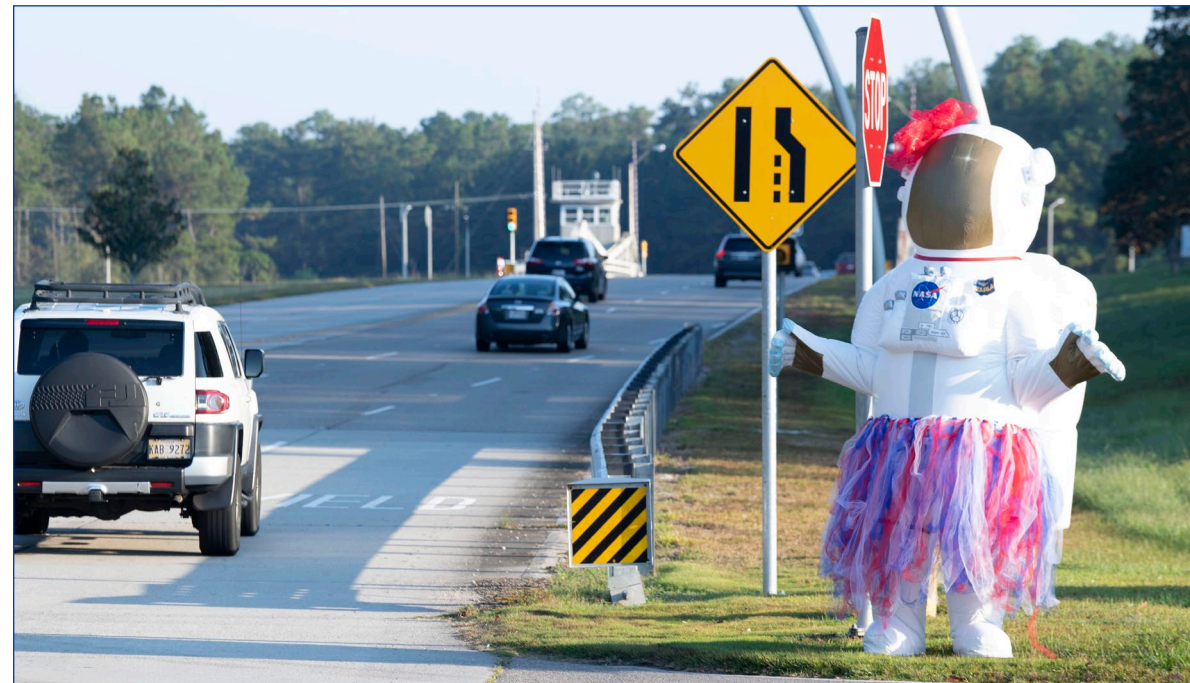
NASA is working to land the first woman and the next man on the Moon by 2024. SLS, along with Orion and the Gateway in orbit around the Moon, are NASA's backbone for deep space exploration. SLS is the only rocket that can send Orion, astronauts and supplies to the Moon on a single mission.

NASA's MOON to MARS MISSION

# Orbie, Starla promote Stennis' testing role for Space Launch System



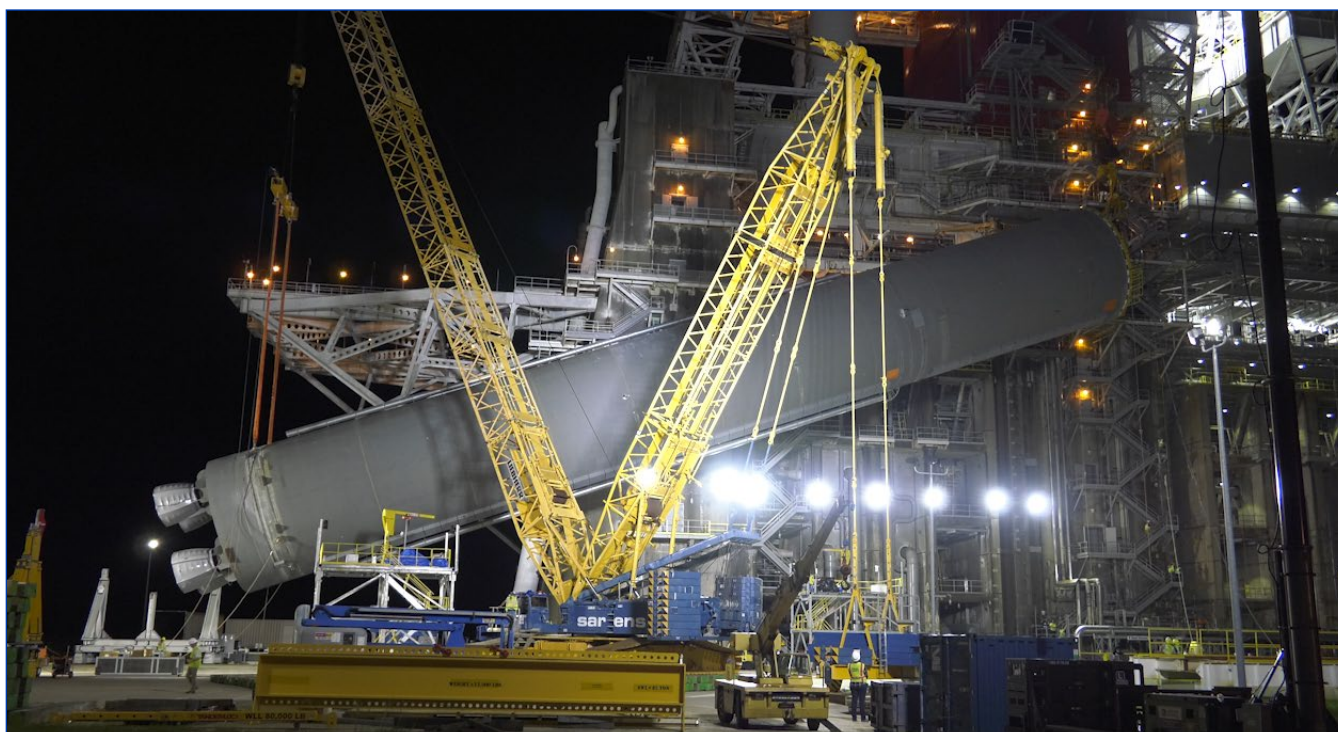
Stennis Space Center mascots Orbie (top right photo) and Starla (bottom middle photo) ventured out Oct. 1 to promote the upcoming Green Run testing of NASA's new Space Launch System (SLS) core stage on the B-2 Test Stand. NASA is building SLS to carry astronauts on deep space missions, to such destinations as the Moon and Mars. The agency already has announced the Artemis Program, which will send the first woman and next man to the Moon by 2024. Stennis is testing all RS-25 engines that will help power the new SLS rocket. Prior to the maiden Artemis I flight, Stennis also will test the actual SLS core stage that will be used on the mission. In addition to Orbie and Starla greeting arriving employees Oct. 1 as a way to promote Stennis' testing role, volunteers handed out information cards highlighting Stennis' new "We Test the Future" slogan.

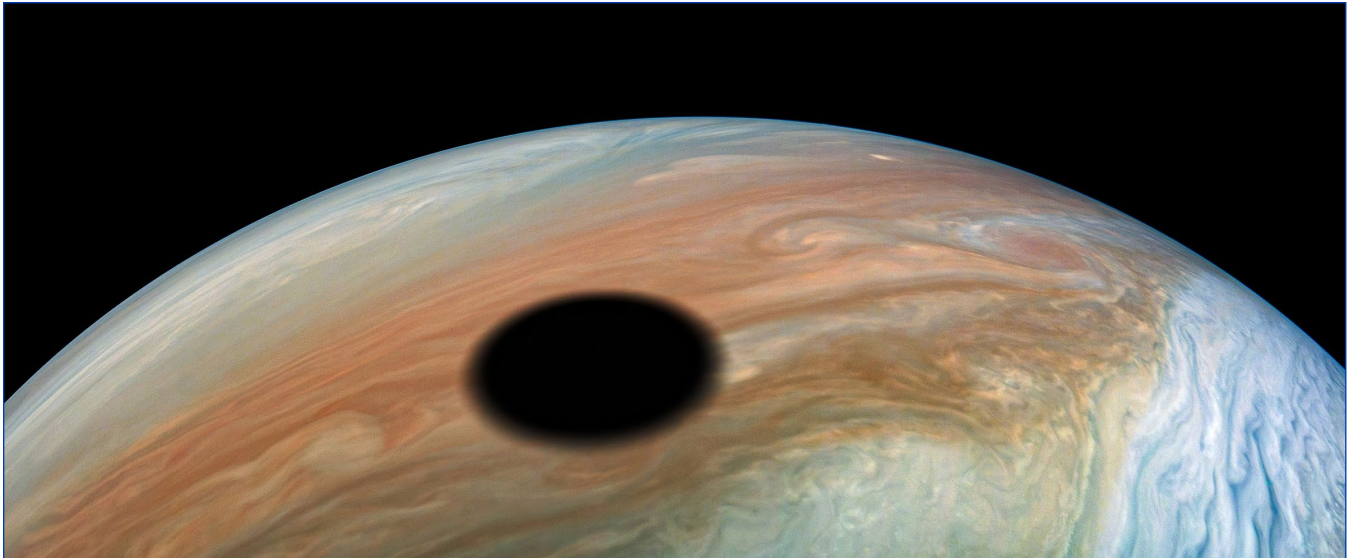


NASA's MOON to MARS MISSION

# New Artemis-related resources posted

Stennis Space Center recently unveiled a pair of web features that highlight NASA's Artemis Program, as well as the center's preparation for testing to support Artemis missions. A new *NASA's Artemis Program* page offers several related resources, including videos and fact sheets. NASA has launched the Artemis Program to return humans, including the first woman and next man, to the Moon by 2024. The program will help humans establish a sustainable presence on the Moon, as well as develop and test capabilities needed for missions to other deep space destinations, including Mars. The deep space missions will launch using NASA's new Space Launch System (SLS) rocket, being built as the most powerful rocket in history. Stennis already is testing engines for the new rocket and will test the core stage for the first Artemis mission in 2020. A new [time-lapse video](#) highlights preparations for that test project. The video shows Stennis teams lifting and installing the SLS core stage pathfinder on the B-2 Test Stand. As a size and weight replica of the SLS core stage, the pathfinder allows crews to practice techniques that will be needed when the flight stage arrives later this year.





## Juno spacecraft captures Io shadow on Jupiter

Jupiter's volcanically active moon Io casts its shadow on the planet in this dramatic image from NASA's Juno spacecraft. As with solar eclipses on the Earth, within the dark circle racing across Jupiter's cloud tops, one would witness a full solar eclipse as Io passes in front of the Sun. Such events occur frequently on Jupiter because it is a large planet with many moons. In addition, unlike most other planets in the solar system, Jupiter's axis is not highly tilted relative to its orbit, so the Sun never strays far from Jupiter's equatorial plane. This means Jupiter's moons regularly cast their shadows on the planet throughout its year. Juno's close proximity to Jupiter provides an exceptional fish-eye view, showing a small fraction near the planet's equator. The shadow is about 2,200 miles wide, approximately the same

width as Io, but appears much larger relative to Jupiter. A little larger than Earth's Moon, Io is perhaps most famous for its many active volcanoes, often caught lofting fountains of ejecta well above its thin atmosphere. Citizen scientist Kevin M. Gill created this enhanced-color image using data from the spacecraft's JunoCam imager. The raw image was taken on Sept. 11, 2019 as the Juno spacecraft performed its 22nd close flyby of Jupiter. At the time the image was taken, the spacecraft was about 4,885 miles from the cloud tops. JunoCam's raw images are available to peruse and process into image products at <https://missionjuno.swri.edu/junocam/processing>. Additional information about Juno is at <https://www.nasa.gov/juno> and <https://missionjuno.swri.edu>.

## NASA in the News

### InSight records the sounds of Mars

Put an ear to the ground on Mars and one will be rewarded with a symphony of sounds. Granted, one will need superhuman hearing, but NASA's InSight lander comes equipped with a very special "ear." The spacecraft's exquisitely sensitive seismometer, called the Seismic Experiment for Interior Structure (SEIS), can pick up vibrations as subtle as a breeze. SEIS was designed to listen for marsquakes. Scientists want to study how the seismic waves of the quakes move through the planet's interior, revealing the inner structure of Mars. SEIS has recorded 100 events to date, and about 21 are strongly considered to be quakes. Using headphones, one can listen to the quakes at: <https://soundcloud.com/nasa/quake-sol-173> and <https://soundcloud.com/nasa/quake-sol-235>. Each quake is a subtle rumble. SEIS also has picked up other sounds, such as InSight's robotic arm moving, wind gusts so-called "dinks and donks" as the delicate parts within the seismometer expand and contract as temperature changes, similar to how a car engine "ticks" after it's turned off and begins cooling. One can listen at: <https://soundcloud.com/nasa/dinks-and-donks-sample>.

### NASA awards Orion production contract

NASA is setting in motion the Orion spacecraft production line to support as many as 12 Artemis missions, including the mission that will carry the first woman and next man to the Moon by 2024. The agency has awarded the Orion Production and Operations Contract (OPOC) to Lockheed Martin. Spacecraft production for the Orion program will focus on reusability and building a sustainable presence on the lunar surface. OPOC is an indefinite-delivery/indefinite-quantity contract that includes a commitment to order a minimum of six and a maximum of 12 Orion spacecraft, with an ordering period through Sept. 30, 2030. Production and operations of the spacecraft for six to 12 missions will establish a core set of capabilities, stabilize the production process, and demonstrate reusability of spacecraft components. With this award, NASA is ordering three Orion spacecraft for Artemis missions III through V for \$2.7 billion. The agency plans to order three additional Orion capsules in fiscal year 2022 for Artemis missions VI through VIII, at a total of \$1.9 billion. For more information about Orion, visit: <https://www.nasa.gov/orion>.

# Long journey leads employee to dream job

It is a long way from Seattle, Washington, to Stennis Space Center in south Mississippi, especially when one travels via North Carolina. Yet, that is exactly the path that led Elizabeth Calantoni to the test site and the front lines of the next great era of space exploration.

A native of Seattle, Calantoni grew up watching Carl Sagan's *Cosmos* series, which inspired her to study physics at the University of Washington and led to a teaching post at North Carolina State University in Raleigh. She excelled in that role and even was named a member of the school's Academy of Outstanding Teachers.

After 12 years, however, she had an ambition for something new. "I think every physics major, at some point, dreams of working for NASA," she said. "Certainly, it was a dream of mine from childhood."

Such an opportunity arose when her then-fiance, Joe Calantoni, accepted a position with the Naval Research Laboratory at Stennis. The couple married and moved to Mississippi, where the former teacher enrolled in the master of business administration program at the nearby University of Southern Mississippi.

Calantoni soon met a fellow student who worked at Stennis. He encouraged her to apply for an administrative assistant position with a Stennis contractor in 2010. Once at Stennis, Calantoni found herself shuffled between roles, wherever support was needed, before joining the company's pressure systems engineering group.

"Moving through multiple roles over the first few years was tough, but I got to know a lot of great people and gained an understanding of Stennis that has helped me to this day," Calantoni said.

Calantoni joined NASA in 2016 as a member of the Safety and Mission (SMA) Directorate team. That role has placed her squarely on the front lines of propulsion testing for the new Space Launch System (SLS) rocket

that will return humans to the Moon and, ultimately, carry them to Mars.

Calantoni's work includes providing SMA support for the SLS core stage Green Run Test Project on the B-2 Test Stand. NASA has spent several years modifying the stand to test the SLS core stage prior to its maiden mission.

The core stage is set to arrive at Stennis by year's end, with testing to follow in 2020. Once testing is complete, the stage will be shipped to Kennedy Space Center for launch on the Artemis I mission.



Elizabeth Calantoni serves on NASA's safety and mission assurance team at Stennis Space Center, a role that includes ensuring safe work practices for crews at the B-2 Test Stand (seen in background).

NASA has launched the Artemis Program to return humans, including the first woman and next man, to the Moon by 2024. A series of Artemis missions will help the United States to establish a strategic lunar presence and to develop and test capabilities that will be needed for missions elsewhere, including Mars.

Calantoni is part of a team that oversees a range of activities at the B-2 stand, from reviewing design packages to establishing safety and quality plans to monitoring construction and activation work to identifying project risks and controls. "Basically, safety and mission assurance is involved in every stage of the project and works in any capacity necessary to ensure the safety of personnel and the successful achievement of project objectives," Calantoni explained.

Calantoni is proud to support the NASA mission. "Having the opportunity to work directly 'up close and personal' with hardware that will take us into space is inspiring," she said.

Calantoni also is grateful for the chance to serve alongside the dedicated, highly skilled people at Stennis. "One of the things I really like about working here is the underlying sense that we're all part of a family," she pointed out. "Folks here do their jobs and look out for each other."



## 2004 – Stennis plans to build science center



*Note: NASA's John C. Stennis Space Center has played a pivotal role in the success of the nation's space program. The following offers a glimpse into the history of the rocket engine test center.*

In January 2004, Stennis Director Thomas Donaldson V, U.S. Navy rear admiral retired, announced an overall strategic plan for Stennis Space Center that included developing a national science, technology and education center on Interstate 10 near the Mississippi Welcome Center.

The science center would bring science, technology, engineering and mathematics to the people of south Mississippi and Louisiana, with a primary focus on the schoolchildren of the area.

The project eventually became known as INFINITY Science Center.

It grew into a multimillion dollar project planned by Mast, Inc., a public-private partnership between NASA and a group of Mississippi business people, to develop and build the education facility, which also would operate as the Stennis visitor center.

On Nov. 20, 2008, the development and planning of INFINITY Science Center reached its first milestone, the official ground breaking. "At a time when our nation faces a critical need for scientists, engineers, and technicians, INFINITY is designed to spark an interest in thousands of students of all ages," Apollo 13 astronaut Fred Haise explained at the ceremony.

On April 11, 2012, the ribbon was cut and INFINITY Science Center opened its doors to the public. Through exhibits, school field trips, and camps, the 70,000-square-foot center inspires people of all ages, more than 60,000 of them since the center opened.

The latest wonder at INFINITY is the massive Saturn V first stage rocket booster that was designated to launch Apollo 19 before the mission was canceled in 1970. INFINITY visitors can now see the massive rocket booster up close and get a better understanding

of how the United States put a human on the Moon.

The Saturn V display helps tell the story of the Apollo missions and how, "if you wanted to get to the Moon, you had to go through south Mississippi."



Community leaders from Mississippi and Louisiana break ground for the new INFINITY at NASA Stennis Space Center facility during a Nov. 20 ceremony. Groundbreaking participants included (l to r): Gottfried Construction representative John Smith, Mississippi Highway Commissioner Wayne Brown, INFINITY board member and Apollo 13 astronaut Fred Haise, Stennis Director Gene Goldman, Studio South representative David Hardy, Leo Seal Jr. family representative Virginia Wagner, Hancock Bank President George Schloegel, Mississippi Rep. J.P. Compretta, Mississippi Band of Choctaw Indians representative Charlie Benn and Louisiana Sen. A.G. Crowe. The shovel and hard hat in the foreground were placed in memory of Seal, a Mississippi bank executive who served as chair of INFINITY Science Center Inc. from 2001 until his recent death.

### Hail & Farewell

#### NASA welcomes the following:

Brittany Bouche

Ronald Good

AST, Experimental Facilities Techniques

AST, Facility Systems Safety

Center Operations Directorate

Office of Safety and Mission Assurance

## Office of Diversity and Equal Opportunity

# Beware of unconscious bias in workplace

People make endless decisions throughout the day without even realizing it. They make those decisions by using various skills, including cognitive skills, which can be based on their own learning and experiences.

Since people all come from different backgrounds, it is important to embrace diversity and inclusion and become more aware of how these benefit work environments. Acceptance and respect for individual differences improves working environments for everyone and directly contributes to success.

In striving to create an inclusive workplace, one area of concern is the potential negative impact that implicit bias poses. Implicit bias, also known as unconscious bias, refers to the attitudes and stereotypes that affect one's understanding, actions and decisions in an unconscious and unintentional manner.

The brain has to handle a lot of information every day. In order to manage it all, the brain takes the liberty of looking for patterns and filtering what it sees as the most important bits of information. In other words, the brain takes shortcuts. Without these shortcuts, people would have to stop and think through too much information.

However, brain shortcuts have a downside because they see patterns that are based on the cumulative effect of everything one has been exposed to throughout his/her life. This all happens in the back of the mind, which means the person is not even aware of it, and can cause behavior that is biased.

An extensive body of research over the past few decades has shown that implicit bias can affect nearly every aspect of life. Social psychologists have identified over 100 biases, a few of which are listed below:

- Affinity bias occurs when one can easily identify with someone based on personal affinities, such as attending the same college, growing up in the same neighborhood or having similar professional experiences. Another example would be gender bias, which is a preconception based on common societal gender stereotypes that filter one's processing of information.
- Racial bias can be based on personal experiences or beliefs, but in most cases reflects societal messages. In studies by Yale University, more people

would select the resume of Candidate A even though the qualifications were exactly the same as Candidate B. Why? Because of the person's name. White sounding names received 50 percent more callbacks than African-American sounding names.

- Conformity bias relates to bias caused by group peer pressure. If one feels the majority of a group is leaning in a certain direction, the person may go along with what the group thinks rather than voicing his/her own opinions.
- Confirmation bias is when one makes a judgment about another person and subconsciously looks for evidence to back up the opinion of that person. Once a person has an initial hunch about something, the brain naturally looks for information that confirms the hunch and ignores everything else. The information one learns first about another person disproportionately shapes the person's understanding of them afterward.

Unconscious bias cannot be eliminated but, with self-awareness, it can be addressed. Here are a few things that can mitigate the negative impact of biases:

- Become aware of perceptions, stereotypes and attitudes and the impact they may have on reasoning.
- Deliberately slow down decision making and reconsider the reason for the decision.
- Engage in thoughtful conversations to increase knowledge and reduce negative perceptions, stereotypes and attitudes.
- Question cultural stereotypes and monitor each other for unconscious bias. If a bias is perceived, address it.

Whether people consider themselves to be in a majority or minority category, it is important to know that they all have implicit biases. It is a part of human nature. In fact, one's implicit biases may be at odds with what the person consciously believes and knows to be correct.

By being aware of and reflecting on one's own implicit biases, a person can become better-rounded and open to new ways of thinking. This can lead to a more diverse and inclusive workforce and, ultimately, to greater achievement.

# Employee continues life of 'firsts' with Stennis work

Venetia Gonzales had never been to NASA's Stennis Space Center prior to landing a job at the site. After all, she grew up in Simi Valley, California, a considerable distance from the coast of south Mississippi.

She did not even visit Stennis when applying for the job – her hiring interview was conducted via Skype when Gonzales was working as a civil servant in Hawaii. The interview went well, and Gonzales joined the Strategic Integration and Communications Office with the NASA Shared Services Center (NSSC) at Stennis in 2012. "The position was a great opportunity for me, and I gladly accepted it as an opportunity to expand my talents in communication," she said.

As a communications specialist, Gonzales is at the forefront of telling the NASA and NSSC story. She is responsible for developing communication plans and strategies and for disseminating information about NSSC services to customers and stakeholders.

NASA announced plans to establish NSSC at Stennis in 2005. The center was designed to consolidate a range of activities in such areas as human resources, procurement, financial management and information technology then being performed at individual sites across the agency. The center became operational in 2006 and cut the ribbon on its new facilities at Stennis in 2008. Since then, it has been credited with streamlining NASA services and implementing innovative service strategies, at considerable cost savings for the agency.

Gonzales is proud to have the chance to tell the ever-evolving NSSC success story. "Communication is essential to our overall mission," she noted. "The projects I work on are challenging and critical to building enthusiasm for new ideas, people and activities. Being a part of a community that thrives on innovation is exciting for me, and I am honored to share the experience here at Stennis."

Such innovative and cost-saving efforts by NSSC workers have a direct impact on advancing NASA's Artemis Program, which will return humans, including the first woman and next man, to the Moon by 2024. Multiple Artemis missions will enable the United States to establish a strategic presence on the Moon and to develop and test strategies needed for additional deep space missions, including to Mars.

"To be a part of that gives me a feeling of being part of history," said Gonzales, who grew up fascinated about space. "The Moon is a natu-

ral stepping-stone to Mars. I look forward to seeing how NASA will demonstrate new technologies, capabilities and business approaches needed for exploration farther into the solar system."

In the meanwhile, Gonzales focuses on telling the NSSC and NASA story and her role in it. She has been featured on several agency websites, highlighted through the Latina Women@NASA and NASA@Work platforms. She also was recognized for her submission to the "Explore as One" Video Challenge, which asked NASA employees to share their vision for the agency in the next 60 years. In her video, Gonzales imagined an agency that had discovers signs of ancient life on Mars, uses artificial intelligence to explore the solar system and

beyond, builds lunar stations that allow people to vacation on the Moon and makes life-changing advances regarding the weather and environment.

As if that is not enough, Gonzales also serves as a Stennis Special Emphasis Program manager for the Hispanic program at Stennis, helping the site focus on groups that historically have been absent or under-represented in the federal workplace.

"Stennis Space Center cultivates a diverse and innovative workforce," she said. "Stennis employees possess varying perspectives, education levels, life experience and

backgrounds, yet work together seamlessly and remain fully engaged in our missions."

As a special emphasis manager, Gonzales works with the NSSC Diversity and Equal Opportunity Office and the sitewide Diversity Council to plan various programs and activities that promote and advance equal employment opportunity, workplace diversity and inclusion.

Gonzales well understands the importance of such efforts to open doors and opportunities for others. She has been a trailblazer in her own right. Joining NASA was yet another in a string of "first" achievement for Gonzales. Before arriving at Stennis, the Bay St. Louis resident was the first in her immediate family to graduate high school, receive a college degree and serve in the military (as a member of the U.S. Navy for eight years). Later this year, she will add to the list by receiving a master's degree in strategic communication from Michigan State University.

"I hope to become a strong female Hispanic role model for my family and the younger generation that seek out higher education and better opportunities in life," she said.



Venetia Gonzales serves as a communication specialist with the NASA Shared Services Center at Stennis Space Center and as a Special Emphasis manager for the Hispanic program on site.

# Stennis hosts annual G.E.M.S. event



Almost 200 high school girls from Mississippi and Louisiana visited Stennis Space Center on Sept. 19 to attend the eighth annual Girls Excited about Math and Science (G.E.M.S.) event. The event is designed to encourage girls to consider and pursue studies and possible career in STEM (science, technology, engineering and mathematics)-related fields. The Sept. 19 event featured a workshop on engineering design, a mentoring opportunity, an interactive educational activity and a Dress for Success fashion show. Event sponsors included A<sup>2</sup>Research, Aerojet Rocketdyne, Bastion, Lockheed Martin, NAVAR Inc., SaiTech Inc. and Science Applications International Corp.



# Stennis hosts Pearl River Community College outreach activities



Stennis Space Center representatives visited Pearl River Community College in Poplarville on Sept. 26 to host a variety of outreach activities prior to a school football game. Community members attending the game were able to talk with Stennis engineers and others, learn about rocket engine test work at the center and enjoy various hands-on activities. They also could sign a "Stennis is Go for Green run" banner highlighting the site's critical testing for the new Space Launch System (SLS). NASA is building SLS to return humans to deep space missions, to such destinations as the Moon and, ultimately, Mars. Before the rocket flies on its first mission, Stennis will perform a Green Run test of its core stage, which will involve installing the stage on the B-2 Test Stand and testing its systems and engines just as they must operate during an actual launch.

# Stennis hosts variety of site activities

Stennis hosted several employee and agency activities in recent weeks:

(Top photo) The annual Hispanic Heritage Awareness Day Program on Oct. 8 featured a panel discussion with a trio of employees discussing their histories, cultures and on site work. The panelists and program participants included (l to r): Stennis Deputy Director Randy Galloway, Venetia Gonzales with the NASA Shared Services Center (NSSC), panelist Jesus Mercado with the Naval Small Craft Instruction and Technical Training School (NAVS-CIATTS), panelist Remigio Davila with NAVSCIATTS, panelist Mabel Gerrard with NSSC, Stennis Office of Diversity and Equal Opportunity Manager Katrina Emery and Capt. Greg Emery with the Naval Meteorology and Oceanography Command.



(Center photo) Representatives from centers across NASA participated in the annual NASA Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Solicitation Development workshop, hosted by Stennis Space Center on Sept. 30-Oct. 3.



(Bottom photos) Stennis employees, including Sheila Arrington with the NASA Shared Services Center (right photo) gathered energy-related information during the annual Energy Awareness Day at Stennis on Oct. 8. Various area companies and organizations visited Stennis for the day, providing an opportunity for employees to learn about various energy-related topics, such as conservation, energy efficiency, controlling energy costs and renewable energy.

