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A bird's-eye view

What perfect early spring days we have enjoyed recently – and when I say “perfect,” I mean perfect for afternoon siestas. Ark!

As I was settling in for just such an exercise recently, I recalled how one writer described such a day. It made its own music, he said. “It was a beauty to see, to hear, to smell, even to be part of. It was so dazzlingly alive, it all but took my breath away.”

We have some days like that around here this time of year, maybe not enough of them before summer starts creeping in but enough to make you grateful just to be around to enjoy them. I call them “dis-n-dat” days. They make you want to lie back and just let your mind wander – you know, about dis and dat. Ark!

That is just what I was doing recently, and one of the things I was wandering around and wondering at was how this beautiful site here started out as not much more than mud, mire and mosquitos. Now, look at it, full of beautiful bloom and color.

Another thing I wandered around this particular day was how very nearly Stennis never had a chance to grow into the virtual garden site it is.

You probably know the story about the uncertainty that surrounded Stennis when the Apollo Program ended early in the 1970s. The site was called Mississippi Test Facility then, but suddenly, it had nothing to test. It was a pretty dark time. It looked like the end of the site just as it was getting itself up and growing.

Of course, you know NASA eventually decided to test the engines for its new space shuttle vehicle here, setting the stage for 34 years of development and flight hot fires. The assignment gave Stennis the time it needed to grow into the federal city it is today. In fact, some have said the space shuttle test decision was the most crucial single event in the center’s history.

It is only natural to think about that decision this time of year; NASA announced the testing assignment on March 1, back in 1971. Whatever the weather was that day, just hearing the news made it feel like spring. Hmm, that being so, maybe we should start a new holiday. Every year, on the first perfect spring day, I tend to stop for a bit to enjoy the beauty of the site and to celebrate the NASA decision to give Stennis a chance to do what it does best and to grow into itself. Then, I find some shade and take a nice, long siesta. Ark!



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A bird's-eye view: The new-look B Test Stand

A pair of recent drone photos (here and on page 1) offer an on-high look from both sides of the B-1/B-2 Test Stand at Stennis Space Center, highlighting modifications made to enable testing of NASA's new Space Launch System (SLS) core stage. The B-2 side of the dual test position stand is shown on the left in the photo on this page. It features the structural steel Main Propulsion Test Article (MPTA) framework, which will support the SLS core stage rocket stage for testing. The existing framework was installed on the stand in the late 1970s to test the shuttle MPTA. However, that framework had to be repositioned and modified to accommodate the larger SLS stage. About 1 million pounds of structural steel was added, extending the framework about 100 feet higher and providing a new look to the Stennis skyline. In addition, the crane atop the test stand had to be strengthened and extended 50 feet in order to lift the SLS core stage into place. NASA is developing the SLS as the largest rocket in the world to carry humans deeper into space than ever before. Later this year, a mockup of the SLS core stage will be delivered to Stennis and installed on the B-2 stand to make sure all is ready for the actual flight stage. NASA then will deliver the flight stage that will be used on the SLS Exploration Mission-1, the first flight of the rocket. Testing of the stage will involve firing all four of its RS-25 rocket engines simultaneously, just as will occur during an actual launch. Phases of stand preparations have been under way for more than three years, with months of studies and evaluations completed prior to that time as well. In addition to the B-1/B-2 Test Stand, the drone photo offers a panorama of the A Test Complex, featuring the A-1 Test Stand (r to l), the A-3 Test Stand and the A-2 Test Stand. The A-1 stand also is part of the SLS effort, testing individual RS-25 engines.





Hubble telescope showcases a remarkable galactic hybrid

This NASA/ESA Hubble Space Telescope image showcases the remarkable galaxy UGC 12591. UGC 12591 sits somewhere between a lenticular and a spiral. It lies just under 400 million light-years away from us in the westernmost region of the Pisces–Perseus Supercluster, a long chain of galaxy clusters that stretches out for hundreds of millions of light-years – one of the largest known structures in the cosmos. The galaxy itself is also extraordinary: it is incredibly massive. The galaxy and its halo together

contain several hundred billion times the mass of the sun; four times the mass of the Milky Way. It also whirls round extremely quickly, rotating at speeds of up to 1.8 million kilometers (1.1 million miles) per hour. Observations with Hubble are helping astronomers to understand the mass of UGC 12591, and to determine whether the galaxy simply formed and grew slowly over time, or whether it might have grown unusually massive by colliding and merging with another large galaxy at some point in its past.

NASA in the News

NASA releases software catalog

NASA has released its 2017-2018 software catalog, which offers an extensive portfolio of software products for a wide variety of technical applications, all free of charge to the public, without any royalty or copyright fees. Available in both hard copy and online, this third edition of the publication has contributions from all the agency's centers on data processing/storage, business systems, operations, propulsion and aeronautics. It includes many of the tools NASA uses to explore space and broaden our understanding of the universe. A number of software packages are being presented for release for the first time. Each entry is accompanied with a plain language description of what it does. NASA published the first edition of its software catalog in 2014. Since then, it has shared thousands of its software programs with students, industry, individuals and other government agencies. For a searchable PDF of the catalog, visit: <http://software.nasa.gov>. To learn more about NASA's Technology Transfer program, visit: <http://technology.nasa.gov>.

NASA highlights women in STEM

In celebration of International Women's Day on March 8 and Women's History Month in March, NASA recently unveiled an educational virtual tour that brings students into the exciting careers of seven women in science, technology, engineering and math (STEM) fields at the agency. Building on NASA's participation with the film *Hidden Figures*, NASA's Modern Figures tour introduces several women who are contributing to America's space program today. It is the first NASA-themed career tour available via the free Google Expeditions mobile app. The virtual tour gives students a three-dimensional experience in a 100,000-square-foot aircraft hangar, simulated Martian landscape, space flight operations facility and other fascinating locations where these women work as materials scientists, launch directors, software engineers, and in other STEM fields. The tours provide virtual field trip experiences that teachers can lead while students view content in 3-D via Google Cardboard viewers. For more information, visit: <http://www.nasa.gov/modernfigures>.



1965 – Beware those bothersome bovines

Note: For more than 50 years, NASA's John C. Stennis Space Center has played a pivotal role in the success of the nation's space program. This month's Lagniappe provides a glimpse into the history of NASA and the south Mississippi rocket engine test center.

In 1965, the then-Mississippi Test Facility (MTF) was having a problem with trespassing bovines. Cows were eating and trampling the new green grass that was just beginning to grow around the new facilities, and they were just generally making a mess of things.

MTF Counsel Edwin Ling described the cows in a memo as “uneducated and/or are willful trespassers paying no attention to the signs erected at the entrances and exits to the facility which proclaim it a restricted area and Government property.” Ling expressed in his memo the need to erect cattle guards at the entrances and exits of the facility. He wished that the cows could be rounded up (he volunteered to help in this endeavor) and impounded for the owners to claim at a later time.

However frustrating the cows were, they did have the legal right to roam around MTF. Ling would have to save

his cattle “round up” skills for another time and place. Hancock and Pearl River counties were “open-range” land, and the animals had the right to roam “at large and on public highways.”

In fact, a notice went out to MTF employees to watch for the cows while driving because there had been several accidents with cars hitting cows.

Several memos and notices went out about the cows during the first couple of years the facility was open with amusing titles, such as “Bothersome Boeotian Bovines” and “The Captious Cow Caper,” as well as memorandums about being cautious of the cows, as if the cows themselves had complained to Manager Jackson Balch about how they were being treated on the roads.

However, the cattle guards and revisions to the “open-range” law prevailed, and people can drive the roads at Stennis Space Center now bovine-free.

Learn more about those conniving cows at the Stennis Space Center History Office in Bldg. 3204.

Hail & Farewell

NASA bids farewell to the following:

Cindy Canady	Exchange Operations Manager	Office of the Director
Randy Canady	AST, Engineer Project Management	Engineering and Test Directorate

NASA welcomes the following:

Robbie Randall	AST, Mechanical Experimental Equipment	Engineering and Test Directorate
Eugene Wiggins	Management and Program Analyst	Office of the Chief Financial Officer

Office of Diversity and Equal Opportunity

Pets are a source of help for disabled individuals

A couple was in their local Lowes store when they noticed a golden retriever sauntered by wearing one of the home improvement store's red-and-blue employee vests. The dog did not seem to be accompanied by anyone at the time. And the vest looked so official.

The Abilene, Texas, couple was told the dog belonged to a store employee, a disabled veteran who had been hired for a part-time job a couple months before. Around the corner, they spotted the employee in question. The dog, Charlotte, had since returned to his side.

A Lowe's spokeswoman said that hiring Luthy, the dog's owner, along with Charlotte, was simply a matter of accommodating a qualified employee. The store was interviewing people for the position, and Luthy was one of the applicants; he showed up for the interview and he had Charlotte with him.

According to the Mississippi Public Broadcasting station, Luthy asked during the interview process if having Charlotte at work with him every day would be a problem. The people at Lowe's said no, then offered him the job weeks later.

Luthy noted that he had multiple deployments with the Air Force, once to Uzbekistan and twice to Qatar, and had to have multiple knee surgeries. Instead of medications, he had Charlotte.

Disabilities come in many forms. Some may be obvious but others are hidden and can be hard to detect. Post-traumatic stress disorder (PTSD) can be one of those not easily detected but very real in the lives of those affected.

It appears pets can make all the difference for people who suffer from PTSD or other mental illnesses. Unfortunately, many who suffer from the disorder are veterans.

Any pet owner will tell you that their animal companions comfort and sustain them when life gets rough. This may be especially true for people with serious mental illness, a study finds. When people with schizophrenia or bipolar disorder were asked who or what helped them manage the condition, many said it was pets that helped the most.

"When I'm feeling really low they are wonderful because

they won't leave my side for two days," stated one study participant with two dogs. "They just stay with me until I am ready to come out of it."

Many people with serious mental illness live at home and have limited contact with the health care system, says Helen Brooks, a mental health researcher at University of Manchester in the United Kingdom. Many felt deep emotional connections with their pet that were not available from friends and family.

Brooks and her colleagues interviewed 54 people with serious long-term mental illnesses.

Twenty-five of them considered their pets to be a part of their social network.

The participants were then given a diagram with three consecutive circles radiating out from a square representing the participant. They were asked to write the people, places and things that gave them support into the circles, with the circles closest to the

center being the most important.

Sixty percent of the people who considered pets to be a part of their social networks placed them in the central, most important circle, the same place many people put close family and social workers. Twenty percent placed pets in the second circle.

People with mental illnesses often see their social groups shrink and find themselves alienated from their friends. For many of these people, says Brooks, animals can break through the isolation. They give affection without needing to understand the disorder.

The pets provided more than just emotional support and companionship, participants explained. The animals also could distract them from their illnesses, even from severe psychosis. Another said that walking the dog helped them get out of the house and with people. "That surprised me, the amount of people that stop and talk to him, and that cheers me up with him."

"The routine these pets provide is really important for people," Brooks says. "Getting up in the morning to feed them and groom them and walk them, giving them structure and a sense of purpose that they won't otherwise have."

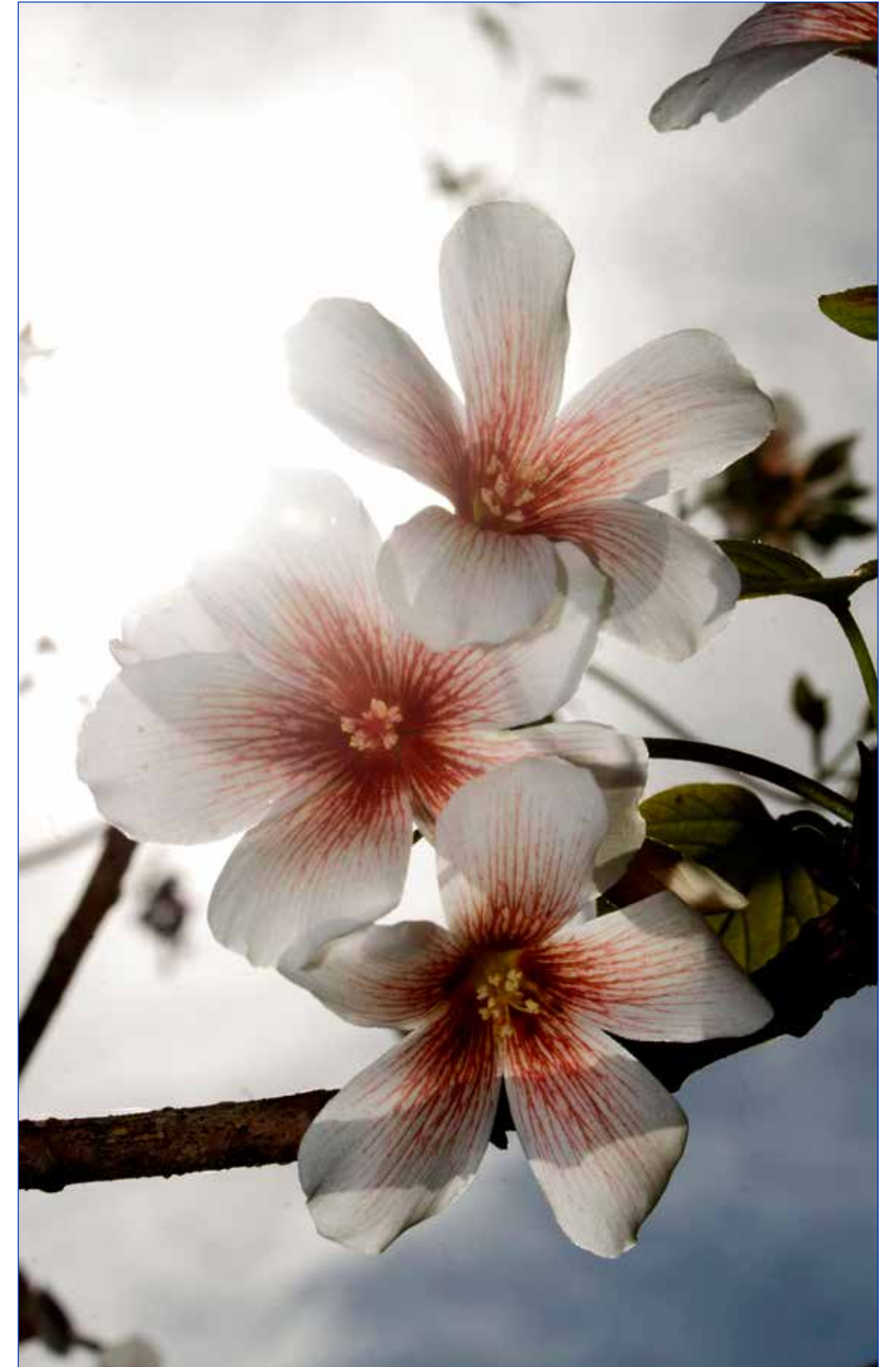
(Parts of this article came from Mississippi Public Broadcasting)



Stennis in bloom

I've banished Winter, saith the Spring / Awake! arise, ye flowers! /
Brisk breezes blow / Bright sunshine glow / And rouse the young year's powers

Henry James Slack





Faces of Stennis

Each month, Lagniappe will feature employees at Stennis Space Center whose work enables the center to fulfill its mission as the nation's largest rocket engine test center. This month's employee is highlighted on the following page.



Diane Sims



Diane Sims' earliest space memory is a good one – the Apollo 11 mission that carried humans to the moon for the first time. “I was too young to understand the philosophical statement, ‘That’s one small step for a man, one giant leap for mankind,’” she recalls. “I do, however, remember the astronauts leaving an American flag on the surface of the moon.” Sims also was too young to know what the future held for her – an 18-years-and-counting career with NASA and a chance to meet and be photographed with Buzz Aldrin, one of the Apollo 11 astronauts she watched step onto the moon years earlier. A Louisiana native, Sims and her family moved to Mississippi in 1995. She soon landed a position with Johnson Controls World Services Inc. at Stennis Space Center, supporting onsite NASA directorates. Sims joined the NASA Office of the Chief Counsel as legal

technician in 1998. She provides a full range of paralegal duties, as well as administrative and office management support, to the chief counsel and four office attorneys. She also serves as gatekeeper for the Stennis ethics program and as manager of the internal Space Act Agreements Program. She enjoys working with the professionals and the sense of community at Stennis. “In my 20 years, it has always felt like family,” she says. Through those years, Sims has witnessed three space shuttle launches, as well as the close of that program with the wheel stop of shuttle Atlantis in July 2011. “Each launch, each mission, reminded me of the direct link with Stennis Space Center that made it possible,” she says. Sims now is excited about new breakthroughs to come in understanding Earth and space and in the new technologies that will emerge as a result.