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Inside Cronus, the hybrid supercomputer built for AI and ModSim

Sandians invited to submit jobs on the new system

By **Troy Rummler**

Sandia is beefing up its high-performance computing capabilities with a new, AI-forward system that recently became available to members of the workforce.

“Cronus is the largest current generation NVIDIA-based, AI-capable system at Sandia,” said Steve Monk, manager of the Labs’ high-performance computing team.

Sandia data centers house 18 computing

clusters, eight of which were ranked in November 2025 as among the fastest supercomputers in the world by the organization Top 500. Put them all together, and Sandia computing facilities can crunch 160 quadrillion calculations per second, also called 160 petaflops.

And while the bulk of these calculations are devoted to high-precision modeling and simulation, researchers across the Labs are increasingly interested in training and using AI models. These

— CONTINUED ON PAGE 4



DEPTH TO CRONUS — AI-forward GPUs and many new interconnects help make Cronus a fast, powerful and versatile addition to Sandia’s computing resources. **Photo by Craig Fritz**

Sandia recreates flightlike heat to support NASA’s Dragonfly mission to Titan



HEATING UP — Hundreds of mirrorlike heliostats concentrate sunlight on a sample of heat shield material at Sandia National Solar Thermal Test Facility. The material, developed by NASA’s Ames Research Center in California’s Silicon Valley for the Dragonfly mission, was subjected to a pulse of heat that exceeded 4,500 degrees Fahrenheit. **Photo by Craig Fritz**

Final solar-tower tests qualify the heat shield system and expand a capability that also supports Sandia’s nuclear deterrence mission

By **Kristen Meub**

When NASA sends Dragonfly to explore Titan, Saturn’s largest moon, the first-of-its-kind rotorcraft must first survive a roughly two-hour plunge through Titan’s dense, nitrogen-rich atmosphere. During that fiery descent, friction and compression will generate intense heat as Dragonfly decelerates toward the surface.

At Sandia’s National Solar Thermal Test Facility, engineers helped NASA prepare for that critical phase by recreating flightlike heating on

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EDITOR'S NOTE: Please send your comments and suggestions for stories or for improving the paper. If you have a column (500-800 words) or an idea to submit, contact the Lab News editor at labnews@sandia.gov.

SRVE-ing employees to serve the nation

By **Lyndsy Ortiz**



OPEN FOR BUSINESS — From left, building-naming contest winner Jeanne Oselio, Infrastructure Operations Associate Labs Director Jeff Heath, Labs Director Laura McGill, Director of Facilities and Infrastructure Planning and Projects Matthew Burger, Lou Kohrs of the Sandia Field Office and Integrated Space Solutions project manager Katie Roberson cut the ribbon to celebrate the official opening of the Sandia Resources for Visitors and Employees building, or SRVE. **Photo by Alicia Bustillo**

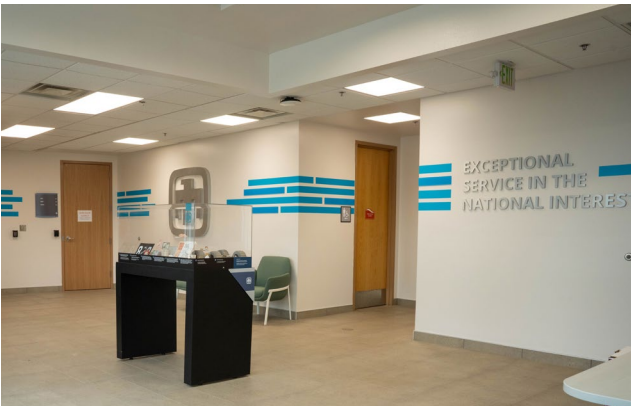
The newly renovated Sandia Resources for Visitors and Employees, or SRVE, is running smoothly and is ready to support the workforce with essential Sandia services.

Located in the Sandia Science and Technology Park, SRVE previously was the Cyber Engineering Research Laboratory but it has been transformed into the new front door to Sandia. On May 6, Sandia held a ribbon cutting to celebrate Sandia's new home base for the services employees use every day. Danny Milo, Director of Labs Strategy, Communications and External Engagements, hosted the event, followed by a speech from Associate Labs Director Jeff Heath. "This building represents more than just a physical space;



BEFORE — The CERL lobby before the renovation.

Photo by Alicia Bustillos



AFTER — The newly renovated SRVE lobby.

Photo by Alicia Bustillos

it's the gateway to our Labs, where careers begin and where every Sandian accesses the important services they need to serve the nation," Jeff said.

SRVE houses the Badge Office, KAFB Defense Biometric Identification System, or DBIDS, New Employee Orientation, Swift IT, the Ethics Office, Sandia Employee Recreation Program and Community Involvement. Whether it's an employee's first day at Sandia, or their last when retirement comes, they will start and end their career here in one convenient location.

In an impressive display of coordination and efficiency, Sandia successfully completed the relocation of key functions from the Innovation Parkway Office Center to SRVE in just one year. This ambitious project involved the transition of employees across 28 departments, with staff moving to new onsite locations on New Mexico's campus, to SRVE or adopting telecommuting status.

The project reached a key milestone in March 2026, when the Integrated Space

Solutions team in the Infrastructure Operations division initiated a four-week transition of functions from IPOC to SRVE. By the end of the month, all services were running smoothly, marking a successful execution of the move. As a result of the collaborative efforts of multiple teams across Sandia, the project was completed on schedule and within budget. This achievement underscores Sandia's commitment to future-ready operations.

"This project was truly a herculean effort and showcased the incredible dedication and collaboration across many teams. Delivering on time and under budget is a testament to the commitment and teamwork that define our organization. I'm proud of

what we've accomplished together, and I'm excited for the positive impact this will have moving forward," said Katie Roberson, project manager of the IPOC exit.



TEAM EFFORT — Members of the project team from several organizations celebrating their accomplishments with Labs Director Laura McGill. From left, Julie Kelly-Smith, Joan Yourick, Nathan Sanchez, Katie Roberson, Krystian Gomez, Josh Cosio, Madison Meenan, Jillian Baloy, Kyle Ruth, Laura McGill, Josh Johnson, Carolyn Barrios, Matthew Brito and Jeanne Oselio.

Photo by Alicia Bustillos

This strategic move is part of Infrastructure Operations' ongoing commitment to optimizing resources, enhancing operational efficiency and meeting the evolving needs of the Labs, which resulted in significant cost savings.

"These financial gains represent a significant win for Sandia while enabling us to use our existing footprint more effectively, assigning space to its highest and best use and meeting mission requirements. Maintaining a balanced, well-optimized space portfolio not only supports our mission but also generates cost savings," said Julie Kelly-Smith, manager of the ISS department.

SRVE also offers spaces for collaboration and team building. Fourteen touch-down spaces are available for reservation, and one open collaboration area is first come, first served. Two conference rooms, as well as the New Employee Orientation space outside of its training times, can also be reserved. For refreshment, SRVE houses a snack shop that offers light snacks and drinks using a cashless, self-pay system.

As Sandia continues to evolve, SRVE will remain the front door to the Labs, ensuring every employee has the support and resources they need to serve the nation with excellence. Visit SRVE at 10700 Research Rd. SE within the Sandia Science and Technology Park, and get an inside look by checking out the [official SRVE video](#).

Cronus

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tools benefit from different kinds of chips than you find in traditional supercomputing powerhouses like Sandia's El Dorado, which was the world's 20th fastest supercomputer when it launched in 2024.

Cronus balances these demands, expanding what's possible for the Labs' AI work and traditional scientific computing on a shared, versatile platform.

New system a response to evolving needs

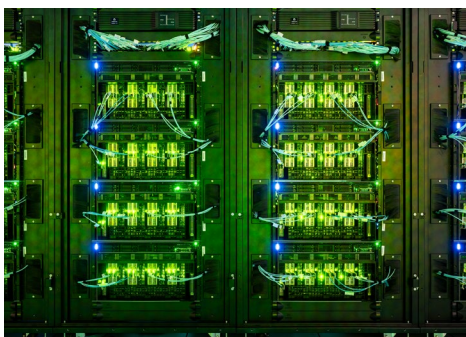
The team modeled Cronus after another Sandia system called Hops. Both perform AI and HPC workloads, but Cronus has newer graphics processing units that accelerate computations, and more of them.

"Hops has four GPUs per node," Steve said. "Cronus has eight."

But building and running a supercomputer, according to Jeff Ogden, a software stack engineer on Steve's team, is like getting an orchestra to perform a complicated piece. You don't get better performance just by adding more instruments. "We're trying to make them all play together in tune," he said.

Jeff and the rest of the HPC staff are the conductors, floor managers and repair techs. They integrate hardware, software, networking, storage, schedulers and cybersecurity so the systems run reliably. They also regularly fix components that inevitably misbehave now and then.

Cronus has 16 nodes, each like its own section in the orchestra made of many chips. Sometimes a workload only needs



SHARING THE LOAD — Although their hardware components come from industry, Sandia supercomputers are custom machines designed for the Labs' unique computing needs. Cronus supports mission and enterprise workloads.

Photo by Craig Fritz



TIME-SENSITIVE — The decision to build a high-performance computing system with advanced AI capabilities came in response to growing demand at Sandia for AI model training and inference.

Photo by Craig Fritz

one node, but other simulations require more, which means those nodes must work together.

One of the design goals was better node-to-node performance than earlier systems. On Hops, two cables send information in and out of each node. But on Cronus, "each GPU has a dedicated connection to the high-speed interconnect," Steve said, which helps keep performance high when workloads scale across multiple nodes.

How high? Jeff said he has seen data transfer rates hit a terabyte per second.

"Any time you connect things as fast as possible together, it makes them appear closer" for computation, which can dramatically improve data-heavy workflows like AI and ModSim, Jeff said.

Testing and validation recently completed

Cronus was installed in late 2025. After extensive testing, Steve and Jeff began inviting select groups to use the system in February to benchmark and validate real workflows. In early May, it became available to all members of the workforce.

Sandia's Atlas team, which develops and maintains Sandia's homegrown, locally hosted generative AI tool by the same name, was one of the first users. Two of


their bigger AI models needed more than four GPUs per node to run, exceeding the maximum capacity of Hops.

"State-of-the-art GPUs allow for quick model exploration, greatly increase uptime and ultimately limit supply chain risks by keeping our entire tech stack in-house," said Atlas developer Shane Poldervaart.

Modeling and simulation teams are beginning to use the new nodes as well.

"Though Sierra porting to the new Cronus cluster is in its early stages, we are confident this new machine and its even more powerful H200 GPUs will further accelerate the trend towards real time computational informed decision making across Sandia engineering disciplines," said Nate Crane from the Computational Simulation center.

For now, Steve said, the message from the HPC team is that if your group has an AI workload, a hybrid AI-simulation workflow, or a compute-heavy problem you've been shelving for lack of the right platform, this is your invitation to bring it to the orchestra.

Members of the workforce can [click here](#) for details on the system and how to access it. 



SET UP — Sandia engineers Aaron Overacker, left, Todd Arterburn, and Lockheed Martin engineer Derek Shannon, right, get ready to test heat shield material samples at the National Solar Thermal Test Facility for NASA's Dragonfly mission to Titan.

Photo by Craig Fritz

NASA's Dragonfly mission

CONTINUED FROM PAGE 1

large test articles to qualify Dragonfly's heat shield thermal protection system. Sandia and NASA recently completed the sixth and final solar-tower test campaign at the facility, capping a multiyear effort that began in 2023. The work also expanded a repeatable high-heat testing capability that benefits Sandia's nuclear deterrence mission.

During each visit, the team conducted four to eight tests, evaluating different heat shield segments under flightlike heating conditions. Each test began with the team mounting a heat shield segment at the top of Sandia's 200-foot solar tower on a fixture that allowed engineers to vary its orientation, including the angle at which concentrated sunlight struck the material. Operators then aimed the facility's hundreds of mirror-like heliostats to focus sunlight onto a 24-inch area, delivering a controlled heat

pulse that could exceed 4,500 degrees Fahrenheit, well above the predicted conditions for Dragonfly's Titan entry. The team also flowed inert gas over the heat shield sample to better approximate Titan's atmosphere.

The heat shield material charred and smoked under the intense heat. Infrared cameras and other instruments recorded how heat moved across curved shoulders, edges and gaps in the material.

"We are able to simulate the heating profile on a physical scale and time scale



WOW FACTOR — Lockheed Martin engineer Derek Shannon checks a sample of heat shield material before a test at Sandia's National Solar Thermal Test Facility.

Photo by Craig Fritz


that's meaningful for flight, using concentrated sunlight to deliver repeatable tests, independent validation and opportunities to iterate," said Ken Armijo, Sandia's lead engineer and test director for the campaign. "These tests help build confidence in the heat shield system before it ever flies."

Dragonfly's heat shield system is part of the spacecraft's entry, descent and landing assembly, designed to protect it during atmospheric entry. The heat shield is made of PICA-D, or Phenolic Impregnated Carbon Ablator-Domestic, a material developed by NASA's Ames Research Center in California's Silicon Valley.

NASA used the Sandia tests to examine how the heat shield material performed in multiple configurations, including flat segments, rounded shoulder segments and gap fillers. The team also tested pristine and intentionally marred samples to confirm the system can protect the spacecraft even if there are minor imperfections.

The NASA team said it selected Sandia's National Solar Thermal Test Facility because it is the only ground qualification facility that can reproduce the predicted amount of heat Dragonfly will face on a test article large enough to generate flightlike stresses in the material. The team will use data from the tests to complete qualification work for Dragonfly's heat shield system.

For Sandia, the Dragonfly campaign is more than a customer test series. As part of the NASA work, the team refined a test method that combines controlled solar heating, detailed diagnostics and inert gas flow to recreate entrylike environments at scale. The work expands Sandia's options for evaluating materials and components for national security programs, including nuclear deterrence.

"This test series for NASA is not just leveraging Sandia's engineering capabilities; it's bolstering them," Armijo said. "We've created new testing possibilities that also benefit our core nuclear deterrence mission as well as the commercial aerospace industry." 



WATCH A TIMELAPSE OF THE HEAT SHIELD TEST

Sandia showcases trusted AI solutions at AI+ Expo

Secure, mission-ready AI tools accelerate engineering and decision-making workflows

By **Andrea Mackay**

Sandia's AI for Nuclear Security and Genesis teams recently showcased mission-ready artificial intelligence capabilities at the AI+ Expo 2026 in Washington, D.C., May 7-9, 2026. The event drew 20,000 government officials, academic experts and industry leaders to explore breakthroughs in AI, cybersecurity, robotics, energy and more, highlighting the nation's commitment to technological advancement.

As part of the DOE's national lab presence, Sandia demonstrated how trusted AI can speed engineering and decision workflows while protecting sensitive data. The team delivered talks and demos on AI-driven design using natural language prompts, automated computer-aided design and 3D-printing workflows, federated large language models that keep NNSA data secure, and immersive AI that brings function-calling LLMs into virtual reality.

Sandians fielded thoughtful questions that underscore the growing demand for secure, deployable AI solutions that can be integrated into real-world mission workflows.

Sandia's participation supports the broader Genesis initiative's mission to accelerate national security outcomes by embedding secure AI into practical tools and workflows. By focusing on enabling faster, safer execution of critical tasks, Sandia is helping turn advanced AI research into impactful capabilities that serve the nation's security needs. [f](#)



IMMERSIVE AI — Sandia computer scientist Samantha Brozak hosts a demonstration titled the Immersive AI: Function-Calling LLMs in Virtual Reality at AI+ Expo. **Photo by Heidi Komkov**



AI-DRIVEN DESIGN — Sandia AI researcher Nathan Brown presents AI-Driven Design: Optimizing Products with Natural Language Prompts at AI+ Expo. **Photo Anthony Garland**



Employee Recognition Awards take the big screen

SHOWTIME — Project manager Savannah Torres, left, and program communications specialist Lyndsy Ortiz snag front row seats at the annual New Mexico Employee Recognition Awards on May 14. This year, Sandians gathered at Regal Winrock Stadium 16 in Albuquerque for a movie theater-style experience celebrating Sandia’s best work from 2025 and honoring the staff who made it happen. Watch Lab News for full coverage of the New Mexico and California events, to be published this summer. **Photo by Craig Fritz**

Making an impact

Sandia staff volunteer across the Bay Area during National Volunteer Month

By **Amelia Harrison**

Sandians in California recognized National Volunteer Month in April by participating in multiple community service opportunities at four nonprofit organizations, each addressing a variety of important local needs.

A group of 40 managers volunteered with three of these nonprofits during a

morning of team building. At Fertile Groundworks in Livermore, Sandians gleaned, weeded and prepared two garden beds. They expanded and connected irrigation lines to support the garden’s growth and sustainability. Fresh produce harvested from these gardens will be donated to local food banks and nonprofits to support families facing food insecurity.

Ten managers visited Little Miracles in Pleasanton, where they assembled strollers and baby kits for mothers and young children facing economic instability. The kits include clothing, diapers, blankets, toiletries and



GOOD EGGS — Manager Anetha Lue sorts through eggs to remove damaged ones at Tracy Interfaith

.Photo by Michelle Walker-Wade

other essentials.

Volunteers at Tracy Interfaith Ministries in Tracy sorted clothes and food donations. They used egg cartons collected in the




TEAMWORK — Managers and staff pose at Little Miracles after assembling baby supply kits for distribution to mothers and infants.
 Photo courtesy of Meagan Brace

December donation drive to package eggs. Tracy Interfaith supports low-income individuals and families, many of whom are unhoused, by providing free services.

In a separate effort, a team of office management assistants volunteered at Open Heart Food Bank in Livermore. Open Heart is dedicated to making a positive impact in the Tri-Valley community by addressing food insecurity. Volunteers aided this mission by sorting potatoes and onions into smaller bags for distribution to families across the Bay Area.

Celebrate Sandia’s 70th anniversary by volunteering for future **community events**. Staff participation helps strengthen Sandia’s ties to the community and highlight its Labswide commitment to service and innovation. From participating in the Livermore

parade to hosting an activity for Kids Day, Sandians make a meaningful impact. 



HELPING HANDS — California staff sort potatoes at Open Heart Food Bank.
 Photo by Amelia Harrison

Dragon Lady lands at nuclear museum



FULLY ASSEMBLED — The Lockheed U-2 Dragon Lady is on display in Heritage Park at the National Museum of Nuclear Science & History in Albuquerque after days of rebuilding by Worldwide Aircraft Recovery, a team based in Bellevue, Nebraska, that provides such services as plane disassembly and reassembly. The Dragon Lady is a single-engine, single-seat aircraft that has been used for intelligence-gathering from altitudes above 70,000 feet since the 1950s.

Photo by Lyndsee Cantly, National Museum of Nuclear Science & History



A LONG JOURNEY — A semitruck carries the fuselage of the U-2 plane into Heritage Park at the National Museum of Nuclear Science & History on May 22, after a lengthy trip from Beale Air Force Base in Yuba County, California.

Photo by Lyndsee Cantly, National Museum of Nuclear Science & History



EASY, EASY — An aircraft engineer from Worldwide Aircraft Recovery monitors as the U-2 plane is lifted into the air via crane during the May 22 unloading in Albuquerque. **Photo by Lyndsee Cantly, National Museum of Nuclear Science & History**



ASSEMBLY REQUIRED — A member of the Worldwide Aircraft Recovery team holds up the wing of the U-2 Dragon Lady as it's attached to the fuselage during assembly of the plane in Albuquerque on May 22.

Photo by Lyndsee Cantly, National Museum of Nuclear Science & History

Mileposts



Nicole Ballard 25



Tim Covert 25



Janet Lovato 25



Shauna Moore 25



Albert Hunnel 20



Erik Zeek 20



Marlene Barela 15



Joni Davis 15



Robbin Hinojos 15



Warren Hunt 15



Greg Thoreson 15



Cole Yarrington 15

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