Featured Stories

JPLers watch a livestream of the release of the first images and data from James Webb Telescope on July 12. Image Credit: PhotoLab

Seeing Stars, Galaxies, Nebulae and More, Like We've Never Seen Before

By Taylor Hill

After two decades of planning, designing, assembling, testing, and waiting, the team responsible for JPL's Mid-infrared Instrument (MIRI)—one of four cameras in the suite of NASA's James Webb Space Telescope's instruments—got its moment in the stars July 12.

The first full-color images and spectroscopic data were unveiled in a livestream event held at NASA's Goddard Space Flight Center, where the space telescope's first observations revealed the capabilities of all four of its scientific instruments.

At JPL, more than 100 members of the MIRI team and others who contributed to JWST gathered in Pickering Auditorium for a watch party—one of more than 40 held across the country—to see the fruits of their labor. Audible gasps and cheers could be heard as the images and data beamed on the screen

overhead, revealing the deepest and sharpest views of distant stars and galaxies to date, and exoplanet analyses of unprecedented detail.

“Today is just dipping our tiniest toe into the science that is possible with JWST,” JPL Director Laurie Leshin said. “It’s incredibly special that we’re doing this together. It’s all of us here at JPL, across the country, and all over the world. This is a global mission. Science doesn’t know these national boundaries. Discovery doesn’t care where you live. And inspiration can happen anywhere with anyone. And that’s what we’re seeing here today. The amazing science begins.”

Webb’s first observations were selected by a group of representatives from NASA, the European Space Agency (ESA), the Canadian Space Agency (CSA), and the Space Telescope Science Institute. They reveal the capabilities of all four of Webb’s state-of-the-art scientific instruments:

Image Credit: NASA, ESA, CSA, and STScI

SMACS 0723: Webb has delivered the deepest and sharpest infrared image of the distant universe so far – and in only 12.5 hours. For a person standing on Earth looking up, the field of view for this new image, a color composite of multiple exposures each about two hours long, is approximately the size of a grain of sand held at arm’s length. This deep field uses a lensing galaxy cluster to find some of the most distant galaxies ever detected. This image only hints at Webb’s capabilities for studying deep fields and tracing galaxies back to the beginning of cosmic time.

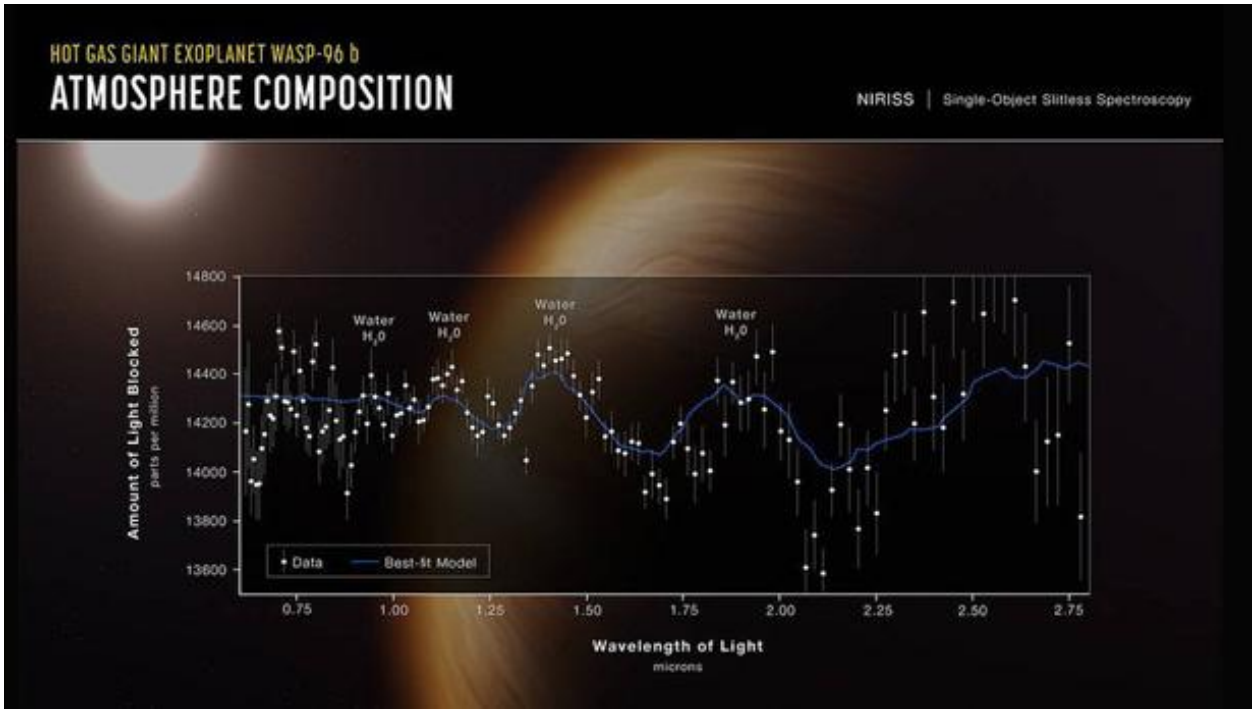

Image Credit: NASA, ESA, CSA, and STScI

WASP-96b (spectrum): Webb's detailed observation of this hot, puffy planet outside our solar system reveals the clear signature of water, along with evidence of haze and clouds that previous studies of this planet did not detect. With Webb's first detection of water in the atmosphere of an exoplanet, astronomers now will set out to study hundreds of other systems to understand alien planetary atmospheres.

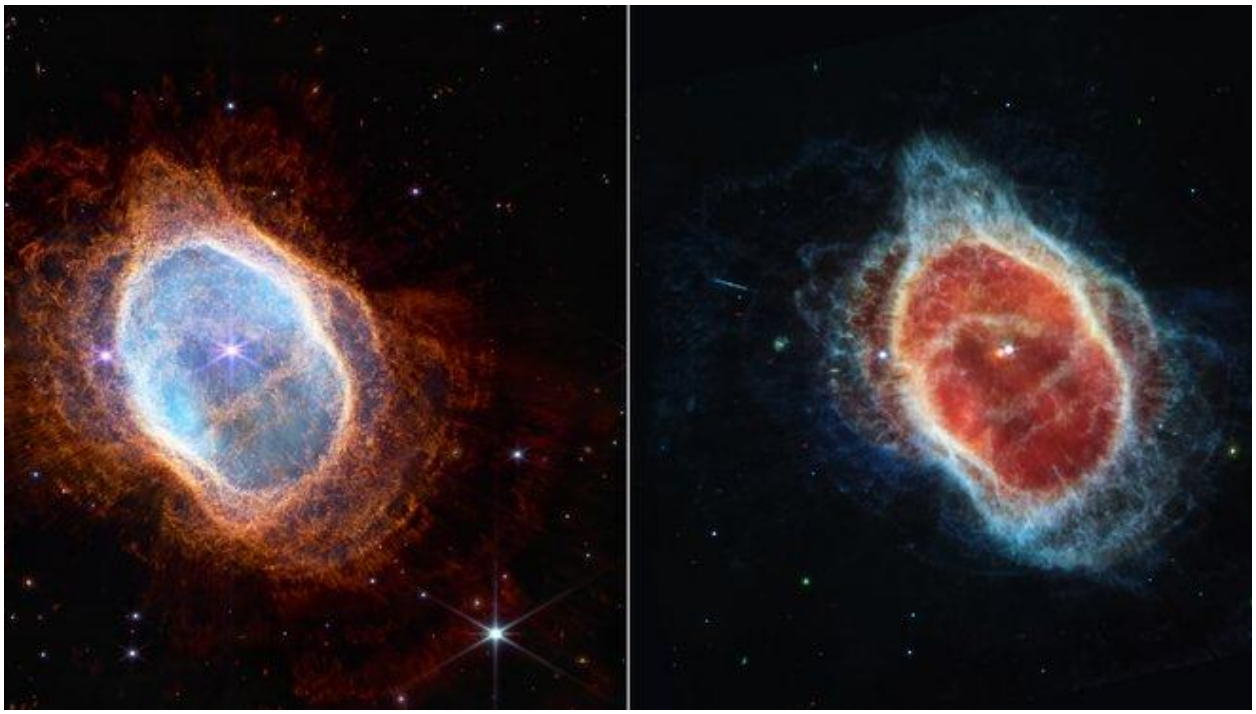

Image Credit: NASA, ESA, CSA, and STScI

Southern Ring Nebula: This planetary nebula, an expanding cloud of gas that surrounds a dying star, is approximately 2,000 light-years away. Here, Webb's powerful infrared eyes bring a second dying star into full view for the first time. From birth to death as a planetary nebula, Webb can explore the expelling shells of dust and gas of aging stars that may one day be swept up in new stars or planets.

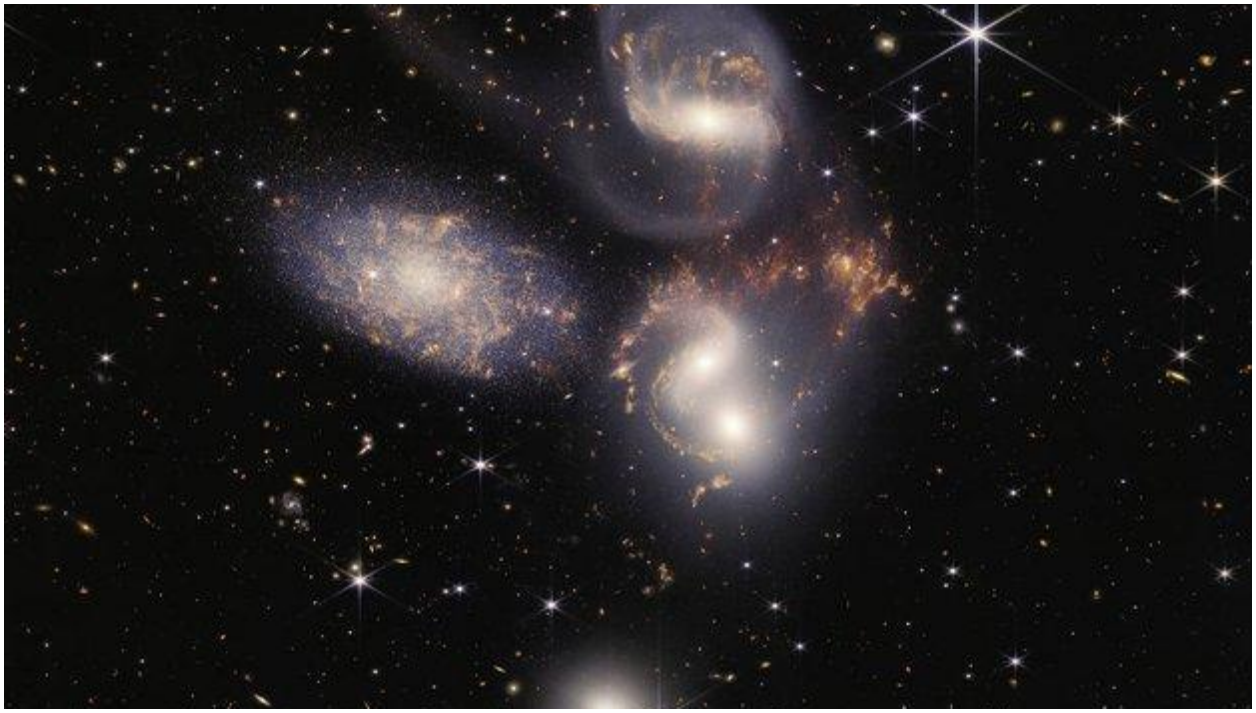

Image Credit: NASA, ESA, CSA, and STScI

Stephan's Quintet: Webb's view of this compact group of galaxies, located in the constellation Pegasus, pierced through the shroud of dust surrounding the center of one galaxy to reveal the velocity and composition of the gas near its supermassive black hole. Now, scientists can get a rare look, in unprecedented detail, at how interacting galaxies are triggering star formation in each other and how the gas in these galaxies is being disturbed.

Image Credit: NASA, ESA, CSA, and STScI

Carina Nebula: Webb's look at the "Cosmic Cliffs" in the Carina Nebula unveils the earliest, rapid phases of star formation that were previously hidden. Looking at this star-forming region in the southern constellation Carina, as well as others like it, Webb can see newly forming stars and study the gas and dust that made them.

New Views and "Skittles"

As he watched the images unveiled during the broadcast, MIRI Project Scientist Mike Ressler searched for clues to which images utilized MIRI's detectors.

"There's some particular optical features of MIRI that are like fingerprints, and you can tell," Ressler said, and if anyone could, it would be Ressler.

In October 1997, Ressler and Senior Research Scientist Gene Serabyn (3262) submitted a mid-infrared instrument proposal to a NASA call for concept studies for instruments on the next generation space telescope.

"From then, I have not been without a JWST-related charge number," Ressler noted. Not that he was counting, but 24 years, five months and 20 days from when he submitted the notice of intent to NASA, Ressler received the first MIRI on-sky image on April 12, 2022: "I was very, very pleased and relieved to see that."

Not long after, Ressler started experimenting with the telescope commissioning data to create a purely MIRI-generated image combining three filters to make a color image—not yet released by the JWST team—that he showed to the audience gathered in Pickering.

"And what do you know? Galaxies look like Skittles!" Ressler exclaimed. "The point is, whenever we look at the sky with a new tool and a new set of eyes, we never know what we're going to get. The thing that excites me most about JWST isn't just better views of the things we already know about, it's actually seeing things that we've never seen before, seeing things we never even knew to think about seeing before. That's what makes it so exciting."

Mike Ressler shows an image of a patch of sky in the Large Magellanic Cloud, developed while collecting data to study the response uniformity of MIRI's detectors. The colors of the galaxies reminded the MIRI team of "Skittles," and thus became a theme. Image Credit: PhotoLab

Worth the Work

Konstantin Penanen, former project manager for MIRI, came to the watch party to witness the fruition of the challenging work he'd been a part of since 2010.

"It was hard to get to this moment," Penanen said. "There were very significant technical challenges as we went along. There were tough times, but I don't think anybody on the team doubted we would make it."

After seeing the compelling images, Penanen could only think of the compelling science and engineering.

"I am just imagining the path that light takes," Penanen said. "From billions of years away, and then thinking about how it actually gets to the detectors that MIRI has, how those detectors need to be cooled down, and the technical work behind trying to get to those images. Not just the optics, but all that makes it possible to have a detector sensitive enough. It's an amazing technological achievement."

Current MIRI Project Manager Analyn Schneider made sure to point out that while the instrument's detectors and electronics may be the most visible JPL-led contributions to JWST, they couldn't function without the JPL-designed cryocooler responsible for keeping heat away from the instrument's detectors, and at an optimal operational temperature of 6.4 kelvins.

"[The cryocooler's tubing system] goes through just about every region of the observatory, so that means our team had to interact with every single partner organization to make sure we got it right at every facet, and that it was compatible every step of the way," Schneider said.

Schneider took many of those steps. Since starting work as a staff engineer in 2006 testing MIRI's detectors, she followed on working on the electronics that run the detectors, then worked on running tests as the different MIRI components were integrated. She went to the United Kingdom to work with partners at the European Space Agency on assembling MIRI, and then she followed the instrument to Goddard for integration and testing.

"I've just been following it wherever it goes," Schneider said. "It's something I really enjoyed experiencing. I got to travel which was great, and for me, it's all about the interaction with the people. I met so many of our European partners and astronomers, and then going to Goddard and partnering with the JWST program people there, that was also a great experience. They're all extended family at this point."

Now, the hardware she shepherded is starting to reach those lofty scientific goals.

"It was incredible, and I got a little bit teary-eyed, because to me, seeing the images and knowing that I literally touched those detectors, tested those detectors, helped align those detectors, and those are the images that the teams were showing, it was just fantastic, and I'm just very proud," Schneider said.

Upgraded Downlink to the Rescue

For Mission Interface Manager Sandy Kwan, seeing the JWST images successfully make their way from the spacecraft in L2 orbit to the Deep Space Network was a win years in the making. With JWST's high data requirements, Kwan was aware as far back as 2007 that the space telescope would require more bandwidth than the DSN could handle. So, NASA upgraded three different antennas at Canberra, Australia, Goldstone, Calif., and Madrid, Spain by adding in Ka-band downlink capabilities, giving JWST the support it would need to get the high-resolution images, data and science down to the ground.

"This was one of the most challenging missions that we've had," Kwan said. "Initially we didn't have the capabilities in the DSN for what Webb's demands were, but we were able to develop all of the operations plans and all of the configurations required to be able to support Webb in all its glory."

And on Tuesday, Kwan saw that glory on the projector in Pickering.

“Our team’s focus up to this point was all about fixing problems, and all of the issues and challenges that we faced were sometimes non-trivial, requiring a lot of work, but seeing the end product—these amazing photos—just makes it all worth it.”

Now with the space telescope fully operational, the teams who have longingly waited for these science images and spectroscopic data will quickly have their hands full, as JWST’s imaging capabilities and data downlink frequency are expected to far outpace those of a previous agent of astonishment: the Hubble Space Telescope.

Webb’s first images and spectra, including downloadable files, can be found at https://www.nasa.gov/webbfirstimages.

A SpaceX Falcon 9 rocket lifts off from NASA’s Kennedy Space Center in Florida on July 14, 2022, with a Cargo Dragon spacecraft aboard for SpaceX's 25th resupply mission to the International Space Station. Image Credit: NASA TV

EMIT Takes Flight to Study Earth From Space

By Celeste Hoang and Erik Conway

A NASA instrument designed to study the role that dust plays in Earth's weather and climate systems successfully soared into space on the evening of Thursday, July 14, 2022.

The instrument, called EMIT—which stands for Earth Surface Mineral Dust Source Investigation—launched on a SpaceX Dragon resupply spacecraft from Florida’s Kennedy Space Center, and will be installed on the International Space Station to study the makeup and movements of dust around the world.

“Being there and seeing it was just so awesome,” said EMIT Project Manager Charlene Ung, who attended the Florida launch with her two daughters and watched the rocket take off from a viewing zone 3 miles away from the launchpad. “You can hear it, you can see it, you can feel it. It’s the experience of a lifetime. There was no cloud, no wind—that was the perfect launch.”

For Ung—who oversaw the development, design, integration, and test of the instrument to launch beginning in 2019, and guided it through multiple pandemic-related delays—being able to witness the successful launch in person was the culmination of years of dedication to the project.

“I was next to my mission manager, Diane Hope, and just before launch, we were so nervous,” she recalled. “All these years we’ve been working on this—this is it, this is the moment. Now it’s happening. Afterward, I was holding [Diane’s] hand, saying, ‘We did it, we did it!’ Seeing your instrument in space and it’s on its way—it’s beyond words.”

EMIT’s state-of-the-art imaging spectrometer, developed at JPL, will collect more than a billion dust-source-composition measurements around the globe over the course of a year—and in doing so, significantly advance scientists’ understanding of dust’s influence across the Earth system.

Below, catch up on the crucial role EMIT will play in Earth science.

The EMIT extended team, family and friends post-launch. The banner is being held by project manager Charlene Ung, left, and principal investigator Rob Green, right. Image Credit: Erik Conway

Why EMIT Is Important

Scientists have long studied the movements of dust. The fact that dust storms can carry tiny particles great distances was reported in the scientific literature nearly two centuries ago by Charles Darwin as he sailed across the Atlantic on the HMS Beagle. Still a mystery all these years later: what that dust is made of, how it moves, and how that movement affects the health of our planet.

For example, we now know that dust deposited on snow can speed up snow melt in the absence of warm air, by trapping solar radiation and conveying that heat to the snow underneath.

Dust can affect air temperatures as well. For example, dust with more iron absorbs light and can cause the air to warm, while dust with less iron reflects light and is responsible for local cooling. Iron in dust can also act as a fertilizer for plankton in oceans, supplying them with nutrients needed for growth and reproduction.

Floating dust potentially alters the composition of clouds and how quickly or slowly they form, which can ultimately impact weather patterns, including the formation of hurricanes. That's because clouds need particles to act as seeds around which droplets of moisture in the atmosphere can form. This process of coalescing water particles, called nucleation, is one factor in how clouds form.

Thanks to EMIT, Earth scientists will take the first steps in understanding how the movements of dust particles contribute to local and global changes in climate, by producing "mineral maps." These mineral maps will reveal differences in the chemical makeup of dust, providing essential information to help model the way dust can transform Earth's climate.

EMIT's data will improve the accuracy of climate models

In the absence of more specific data, scientists currently characterize mineral dust in climate models as yellow—a general average of dark and light. Because of this, the effects that mineral dust may have on climate—and that climate may have on mineral dust—are not well represented in computer models.

Color and composition information gathered by EMIT will change that. When the instrument's data is incorporated, the accuracy of climate models is expected to improve.

EMIT will help scientists predict how future climate scenarios will affect the type and amount of dust in our atmosphere

As global temperatures rise, arid regions may become even drier, possibly resulting in larger (and dustier) deserts. To what extent this might happen depends on several factors, including how much temperatures rise, how land use changes, and how rainfall trends change.

By incorporating EMIT's global dust source composition data into models and predictions, scientists will gain a better understanding of how the amount and composition of dust in arid regions may change under different climate and land-use scenarios. They'll also gain a better understanding of how these changes may impact climate in the future.

With the instrument on its way to the ISS, one chapter ends for the EMIT team as another begins.

"It's in space now, so we can't fix it and we can't check it," said Ung. "But now we can do great science."

The team won't have to wait long. Once attached to the space station, EMIT will begin collecting data at the end of this month.

Portions of this story previously appeared in 5 Things to Know About NASA's New Mineral Dust Detector, How NASA Plans to Dig Up the Dirt on Climate Change, and EMIT's official website.

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FIVE SURPRISING THINGS I LEARNED ABOUT ATTENDING THE EMIT LAUNCH AT KSC

The moment of ignition for CRS-25. Image Credit: Erik Conway

Curious what it's like to be on the ground at a launch? Go behind the scenes of EMIT's big day with JPL Historian Erik Conway, who shares what it was like to witness the landmark event in person.

I was fortunate to be invited to the launch of JPL's Earth Surface Mineral Dust Source Investigation (or EMIT) mission to the International Space Station on July 14 by Principal Investigator Robert Green of Section 382B. I've never been invited to a JPL launch before, so I jumped at the chance.

Despite a forecast threat of thunderstorms on the evening of July 13, the skies over Kennedy Space Center were clear and the Falcon 9 launch of CRS-25 went off without issue. The launch was at dusk, so we were treated to sunlit vehicles and contrail against a dark background once the rocket was airborne—practically ideal photographic conditions.

Below, five things I didn't know or expect from the experience:

1. A Perk

One benefit of being a VIP guest at a Kennedy Space Center Launch is that the VIP viewing area is on the fifth floor balcony of Operations Support Building 2, about 3.5 miles from Pad 39A, which SpaceX now uses for Florida launches. Pad 39A was originally the primary Apollo launch pad. OSB2 has a clear, unobstructed, and elevated view of Pad 39A, as well as several pads belonging to Cape Canaveral Space Force Station, to the south.

2. The Sound

I've done hobby and sport rocketry for many years, but still wasn't prepared for the sound. The first bit of weirdness was the delay—about 16 seconds between ignition and the first sound waves reaching

us—though it felt much longer. The second was the intensity. The sound shakes you, and it isn't a constant tone. It crashes and recedes like waves on a beach.

3. The Future

Two things I probably should have known but didn't: SpaceX is building a "Starship" pad right next to Pad 39A. Starship is supposed to serve as the basis for NASA's Human Landing System for the Artemis program, as well as SpaceX's lunar and Martian crew vehicle. NASA's Space Launch System is supposed to have its first flight later this year from Pad 39B, which was first used by Apollo 10 and hosted 53 space shuttle launches.

4. The Past

I didn't know Kennedy Space Center's Visitor Complex has one of the three remaining "stacks" of Juno I/Explorer hardware from the 1950s.

5. The Organizers

The Public Services Office's Kim Lievense and Joey Williams were the organizers of JPL's guest operations and photo ops at Kennedy Space Center this time out. But CRS-25's cargo trunk carries other experiments for the ISS besides EMIT, so there were guests from other organizations being wrangled by other guest ops folks, too. It was a multi-center collaboration that seemed to go smoothly.

Gamifying CubeSats

By Taylor Hill

As the countdown clock starts, I see that I'm outfitted in an all-white, head-to-toe bunny suit (except for a pair of blue booties). "Go!" the screen exclaims, and I'm immediately tasked with assembling, testing, and

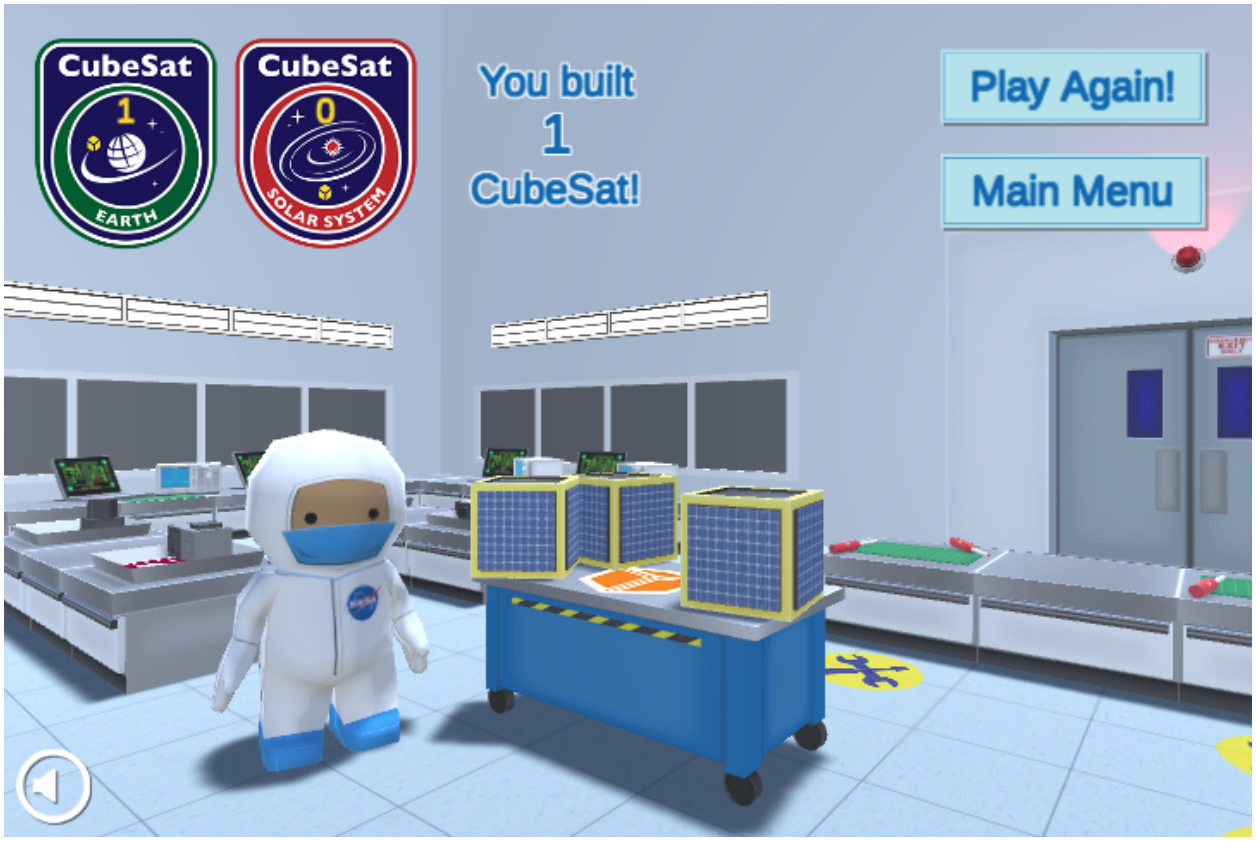
shipping out two CubeSats—one called “Earth-SAT 2908” and one dubbed “Space-SAT 2040.” I’ve got four minutes.

I’m scrambling around the clean room, testing and installing computer parts, communications components, power packs, navigation systems, and science payloads. The clock is ticking. With two minutes and thirty seconds remaining, my first CubeSat is apparently on its way to the launch pad. I almost forgot to include the science payload, which looked to be a weather-sensing device—but there’s no time to analyze, only time for integration.

With one minute left, my second CubeSat is starting to come together. Its mission is outside Earth orbit, so it requires a propulsion system. I grab one, place it on the testing station, and wait. A green check mark appears in the sky above it. It’s ready—at least, I think so. Twenty seconds left. I race over to the weighing station to make sure I’m meeting my mass budget. Ten seconds. Time to put it on the conveyor belt and ship this baby out. But wait—I’ve missed a step. A giant exclamation point with subsequent text informs me that my CubeSat hasn’t been to the vacuum chamber for environmental testing. I’m sunk. Time’s run out on Space-SAT 2040.

Luckily for JPL, my failure is within the confines of NASA Space Place’s CubeSat Builder—a fun, interactive, educational (and sometimes stressful!) video game available online for all to play at spaceplace.nasa.gov.

CubeSat builder is the brainchild of Enterprise Applications Software Engineer Kyle Mansfield, who wanted to develop an interactive spacecraft assembly-style game modeled after “Overcooked,” a cooking simulator game where users play as chefs in the kitchen, attempting to prepare, cook, and serve up cuisine.



A despondent engineer after failing to complete the second CubeSat mission in the allotted time.

“The mechanics of the game sparked an idea I thought could work for how we build spacecraft at JPL,” Mansfield said.

At first, the idea was for basic spacecraft assembly, but trying to formalize the vast array of mission types into a simplified gaming configuration seemed a tall task. That's where CubeSats came in.

"We liked that CubeSats—no matter the mission they're built for—have a standardized design, while also acting as a microcosm of what goes into bigger spacecraft," Mansfield said.

To get the specifics, the Space Place team turned to Environmental Test Lab Group Supervisor Shannon Statham. Since starting at JPL in 2011, Statham's been involved in one JPL-led CubeSat mission or another, including RACE (Radiometer Atmospheric CubeSat Experiment), RainCube (Radar in a CubeSat), MarCO (Mars Cube One), and most recently Lunar Flashlight.

"At JPL's Open House, I normally work the Earth Science booth or CubeSat booth, and there will be kids looking at the CubeSat models and their first question is, 'What's the size of this thing in real life?' since they're used to seeing 1:10 scale models of rovers or large satellites like SMAP," Statham said. "It takes them a moment to wrap their head around the fact that this toaster oven-sized box is the actual size of a satellite in space, and then they get really excited."

For the CubeSat game, Statham wanted to make sure an accurate depiction of what goes inside the tiny, yet powerful satellites was conveyed, while keeping it simple and fun. First task was making sure the core subsystems would be accounted for, and make sense for the players.

"An easy analogy I use when discussing what a satellite needs at the basic level is a car," Statham said. "If you are going somewhere by car, you'll need power from the battery, you'll need a steering wheel to point the car in the correct direction, you'll need a GPS to figure out how to get there, and so on. We can correlate those relatable elements to the components of satellites and CubeSats."

In the game, players are tasked with gathering, testing, and assembling different parts, or subsystems, needed for either an Earth-orbiting mission or a solar system mission. To make them easily identifiable, simplified icons are linked to each component:

- A CubeSat computer is given a brain icon.
- The power system is noted by the battery icon.
- Communications components, such as radio and antenna, are signified by a satellite dish icon.
- The navigation subsystem, which can include star trackers, is noted by a compass icon.
- The directional controls, or reaction wheels, are signified by a steering wheel icon.
- For CubeSats headed out of Earth orbit, a propulsion system is noted by a rocket icon.

The final component to drop in is the science payload.

"Think back to the car analogy, and you ask, 'Why are we driving this car?'" Statham said. "You're trying to get someone somewhere. For our missions, we're trying to get a science instrument somewhere in space for a specific scientific purpose, and the hope is the kids playing are absorbing that."

The game's target audience is in the 9- to 12-year-old range, so CubeSat Builder could be the first exposure many kids have to the idea of suitcase-sized satellites. As more universities prioritize CubeSat mission work and opportunities for engineering and science students, early exposure to the mini satellites could spark interest in elementary-grade kids.

"They're learning the basics of what goes in each CubeSat, and how just one missing part means the satellite won't work, or it can't complete the mission" Statham said. "Hopefully this is a fun way for kids to gain an awareness of these satellites and start asking questions about why NASA flies these types of missions, and how we all benefit from them."

For Mansfield, Statham's input was invaluable.

“When we’re making these games, it can be hard for the scientists or engineers to really boil things down to a level that can be gamified,” he said.

After seeing the final product, Statham was impressed with the game’s ability to show very simply what she’s spent most of her career doing: testing and assembling CubeSats.

“We have the CubeSat Lab [often referred to as CubeSat SAF] in Building 189 where there are various work stations and workbenches, and you’ll be at different stations each day, soldering, testing, or assembling different spacecraft parts,” Statham said. “And in a very cute and [cartoon-like] way, the game really represents what we do.”

Looking back at my CubeSat misadventures, I chalk it up to the game developers’ penchant for targeting today’s youth, kids equipped with fast-twitch fingers and lightning-speed ability to absorb new technology. Maybe one day I’ll catch up, or maybe I should’ve watched the tutorial before playing. No matter. My shortcomings shed light on JPL’s latest victory: building fun and intrigue around the future of satellite development for the next generation of space explorers.

CubeSat Builder was developed at JPL by the NASA Space Place team, consisting of Mansfield, Graphics Designer Alexander Novati, Web Producer Jessica Stoller-Conrad, and Manager Heather Doyle.

The team has created and developed many games, crafts, and activities targeting upper elementary-age students. Check out their list of games at https://spaceplace.nasa.gov/menu/play/.

A Cosmic Design Connection for JPL and KSC

By Celeste Hoang

If imitation is the sincerest form of flattery, then Kennedy Space Center (KSC) just paid JPL a welcome compliment: The Florida NASA center installed six "Line of Sight" robotic signs—each one pointing to the location of a NASA mission in the cosmos—originally designed by Visual Strategist Lois Kim of DesignLab's Studio at JPL. Deputy Director Larry James was also on hand at KSC during the installation.

"My original thought was to have Line of Sight at various locations around the world, and hopefully this is just a start," said Kim, who designed and installed the signs on JPL's Mall in 2017.

The Studio and KSC have a long history of working together, so a natural conversation arose when KSC began building their new Visitor's Center, said Dan Goods, manager of DesignLab's Studio. When the Visitor Center asked if they could have their own installation, JPL pointed them to their contractor.

"KSC paid our vendor to make new ones and we gave some lightweight support," said Goods. "The people in the DSN made a new feed for them, which focused on what is important to their center. And if you look at the sign, they gave JPL credit. It's exciting to see the team's work permanently installed at other NASA centers."

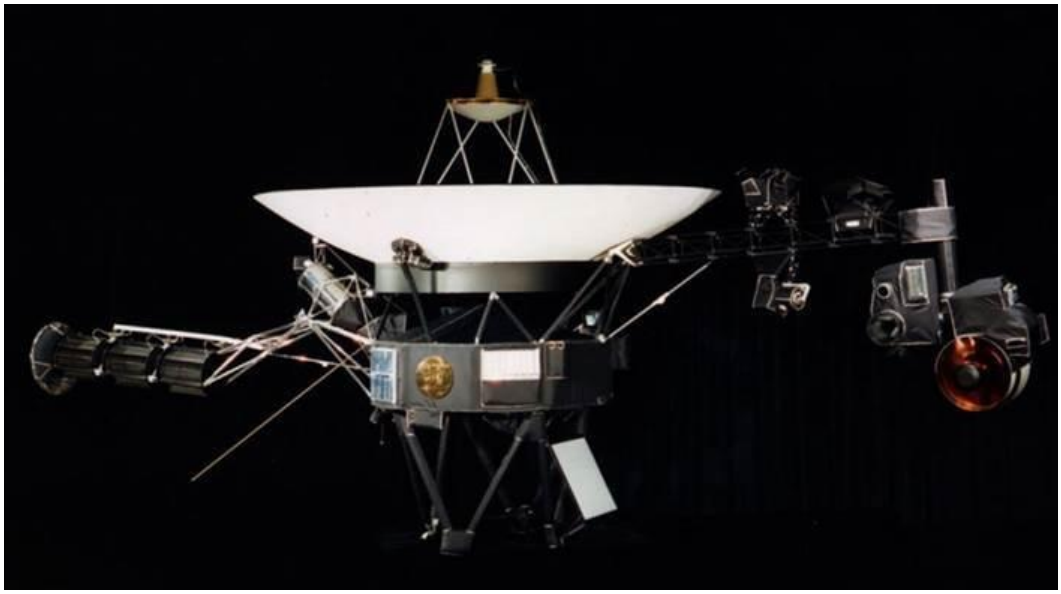
Events

NASA Downlink Livestream Q&A Event with ISS Astronaut Jessica Watkins

Tuesday, Aug. 9
9:55 to 10:15 a.m.
Viewing available on NASA TV or NASA Live

Watch as NASA Astronaut Jessica Watkins answers prerecorded questions during a live downlink event hosted by JPL and Caltech about her role as a mission specialist on NASA's SpaceX Crew-4 mission to the International Space Station, which launched on April 27, 2022.

Bio:
Formerly a Chair's Postdoctoral Scholar in Caltech's Division of Geological and Planetary Sciences (GPS) and California Alliance for Graduate Education and the Professoriate (AGEP) Fellow, Jessica Watkins is making history as the first Black woman on the ISS crew. As a graduate student, Watkins participated in several internships at JPL, including analysis of near-Earth asteroids discovered by the NEOWISE mission in 2011, tactical and strategic planning for the Curiosity mission in 2013, and system design testing for the upcoming Mars 2020 and Mars Sample Return missions the following year. In addition, she participated in the NASA Planetary Science Summer School at JPL in 2016.



Von Karman Lecture Series: Voyager - 45 Years in Space

Thursday, Aug. 18
7 to 8 p.m.
YouTube: https://www.youtube.com/c/NASAJPL

As the twin Voyager spacecraft approach their 45th anniversary, Project Manager Suzanne Dodd takes a look at where the mission has been, what the spacecraft have taught us, and where they go from here. In this conversation with Suzanne Dodd, they'll discuss how Voyager came to be, highlight some of the major discoveries, and hear stories about this mission that has captured the public's attention for years.

Speaker: Suzanne Dodd, Voyager Project Manager, NASA/JPL

Host: Brian White, Public Services Office, NASA/JPL

JPL Family News

Retirees

The following JPL employees recently announced their retirements:

40+ Years:

Tomas A. Komarek, Section 1600, 48 years

Reed E. Wilcox, Section 1004, 42 years

30+ Years:

Laurann Lafoca, Section 5115, 36 years

Lawrence Hernandez, Section 348F, 34 years

Patricia J. Reed, Section 2802, 32 years

20+ Years:

Leonard J. Reder, Section 348C, 27 years

Stefan Martin, Section 383A, 23 years

Clint Kwa, Section 5139, 23 years

10+ Years:

Mark B. Indictor, Section 394G, 14 years

JPL Awards & Honors

JPLers often Dare Mighty Things, and nearly as often earn awards or professional designations. JPL Space will periodically feature a roundup of recent honorees. Please join us in congratulating your accomplished colleagues.

Deputy Director Larry James
NASA Outstanding Public Leadership Medal

“awarded to a Government employee who, by distinguished service, ability, or vision has personally contributed to NASA's advancement of United States' interests."

Bernie Bienstock
International Planetary Probe Workshop

The IPPW International Organizing Committee (IOC) is instituting an award to recognize the workshop's most outstanding presentation and naming it after JPL's Bernie Bienstock, to recognize his years of service to the organization. Full story.

JPL's Ingenuity Mars Helicopter Team
National Space Society (NSS) Awards

"recognize those individuals and teams whose accomplishments have helped to open the space frontier, and who have made significant contributions in different fields of endeavor to develop a spacefaring civilization that will establish communities beyond the Earth." Full story.

Ingenuity Mars Helicopter
IEEE Spectrum Emerging Technology Award

Award honors "exceptional achievements and outstanding contributions that have made a lasting impact on technology, society, and the engineering profession." Full story.

Mars Helicopter Ingenuity Team
Vertical Flight Society Howard Hughes Award

"in recognition of an outstanding improvement in fundamental helicopter technology brought to fruition in the previous 18 months, is the Mars Helicopter Ingenuity Team for accomplishing the first powered flight on another planet on April 19, 2021, with a 39.1 sec. flight of the 4-lb (1.8-kg)." Full story.

2022 U.S. CIO 100 winners: Celebrating IT innovation and leadership
JPL Named a 2022 CIO 100 Honoree

JPL has been selected by Foundry’s CIO as a 2022 CIO 100 Honoree under the U.S. CIO 100 awards program celebrates 100 organizations who apply innovative methods to IT and drive business value. Considered by many to be a mark of enterprise excellence, this is JPL’s eleventh consecutive selection to the prestigious list. Full story.

Robert J. Collier Trophy
NASA/JPL Ingenuity Mars Helicopter Team

"... the greatest achievement in aeronautics or astronautics in America, with respect to improving the performance, efficiency, and safety of air or space vehicles, the value of which has been thoroughly demonstrated by actual use during the preceding year." Full story.

Laura Kerber
NASA's Planetary Science Program, Early Career Award

Dr. Kerber will develop a series of lectures and targeted field experiences designed to cultivate both knowledge and passion for planetary science amongst early career engineers. Full story.

American Astronautical Association (AAS) Fellow
Ryan Park

"...recognized as an international authority on the dynamics and physics of solar system objects and the characterization and calibration of radiometric and optical measurements." Full story.

Dr. Dan Goebel
Stuhlinger Medal for Outstanding Achievement in Electric Propulsion

For his outstanding contributions to the development of Ion and Hall thruster technologies and dissemination of EP knowledge. Full story.