

Featured Stories



Wes Walker at JPL (left) and in his Air Force uniform (right)

Wes Walker Finds His Call(s) Of Duty

By: Celeste Hoang

Wes Walker doesn't lead a double life—he leads a triple one.

The 12-year JPLer juggles his work life as a cybersecurity engineer at the Lab; his home life as a husband and father to two young children; and his military life, where he's been an active member of the armed services since early 2000, enlisting in the Air Force at age 19 as a computer operations specialist and now serving in the California Air National Guard as a cyber warfare operator.

"A lot of people who have never served have this impression that we're all trudging through the mud with a gun in a war zone," he says. "But especially in my job, I'm learning cutting-edge technology and doing cyberdefense on a national level. It's not always a '70s war movie; we are professionals in very challenging disciplines sometimes."

As the country observes Veterans Day on Nov. 11, Walker's story is a prime example of the many veterans who have found their way to JPL, bringing their unique skill sets and experiences to the Lab, after having served their country or while continuing to do so.



Walker during a contingency operation in 2007 at Pearl Harbor, Hawaii.

Walker returned just last month from a six-month deployment working in cyberwarfare in three international countries, and jumped right back into his role here: He's part of the Cyber Defense Engineering and Research group for 3x, directly supporting ground systems and operations for JPL missions including Europa Clipper and CSIP, and previously worked on Mars 2020 and MSL. Walker is also part of the Lab's Cybersecurity Improvement Project. Since joining JPL in 2005, he's been deployed, activated for training, and called up for contingency operations for the Air National Guard that totals about two-and-a-half years.

Finding balance between his jobs and his home life have been "my biggest difficulty," Walker says, but his military and operational background have also translated well to his day-to-day on Lab.

"Military values like commitment, integrity and service before self are the cornerstones of how I operate here daily at JPL," he says. "It's about being part of a greater effort and good than just yourself."

Meeting Walker, it's easy to see that he carries a clear sense of dedication, discipline and passion. But to hear his story is to understand the many years—and a few missteps—it took for him to find his place.



Walker, right, during a field exercise for combat communications in 2010 in Malibu.

From Skateboarding To Training Wings

Walker grew up near the "Center of the Universe"—he was raised in Altadena and attended La Canada High School just down the street from JPL—but his perspective was far from infinite back then.

"I had no real guidance and I focused on the wrong things," says Walker. "Skateboarding and hanging out with friends seemed a lot more valuable at the time than schoolwork and worrying about what was coming next. I had a very short-sighted view on life."

By the time graduation came around, he found himself with few options. So he enrolled at College of the Canyons in Santa Clarita, but after a year still didn't know what to do. His family had a history in the Air Force—his uncle was a colonel and his grandfather was a base commander in Nevada—so he rolled the dice and took the aptitude tests and physical exams.

It was a good bet. Walker scored so high that he could essentially have his pick of jobs in the armed services, from aircraft maintenance to nuclear projects. He selected computer operations as his specialty because he wanted "the most tech-savvy job I could find"—something he saw as having the best long-term benefits—and decided to pursue a military career without hesitation.

"I became so frustrated by the fact that I didn't see a future or have much going on for me that I wanted to make a commitment to really make a change in my life and make my life happen," Walker says. "There was structure there that I think I needed. Military discipline was something I didn't fear but thrived on."

The change was swift: He went through basic training and soon found himself stationed in Alaska in late 2000 for five years. There, he was a base network specialist and a member of the Air Expeditionary Forces, deploying for six-month stints to various bases abroad that needed a computer operator.

"Being a Los Angeles kid and having to move to a remote station in Alaska definitely had an impact on me," he recalls. "It was my first time alone without my parents. I had to learn how to make my own way and it forced me to grow up really fast. Getting deployed made me trust in myself and others."

It also taught him another valuable lesson: He was capable of more than he thought.

“I was a kid who didn’t always do well in school and didn’t play by the rules,” Walker says. “The military shaped who I am as an adult. It’s helped me both in realizing my core values and also what I can do to be the best version for myself and for the people I care about. It’s really helped given me an inner strength I didn’t know I had.”



Walker participating in Operation Global Medic in 2008 at Fort Hunter Liggett, California.

Defending His Country and Defending JPL

While stationed in Alaska, Walker was deployed as part of Operation Enduring Freedom to Kuwait in 2002 and then to Afghanistan in 2005. His final assignment with the Air Force was that same year at the Air Intelligence Agency in Texas, where he worked in a network security division with several contractors—one of which was hiring for a contractor job at JPL. Walker was called in for an interview on Lab and, thanks to his extensive computer experience and top secret government clearance, was quickly hired on as a special programs systems administrator.

Around the same time, he transitioned from the Air Force to the California Air National Guard, where he continues to serve to this day, specializing in cyberwarfare operations. Through the Air National Guard, Walker built up an impressive level of cybersecurity training, attending four months of cyberwarfare school and two months’ follow-on courses in cybervulnerabilities and hunt. This was in addition to multiple professional IT security certificates and B.S. in information technology management at Northeastern University he had earned with the Veterans Affairs’ support.

While Walker is instrumental in cybersecurity for some of JPL’s major missions, the many calls of duty remain especially challenging.

“It’s hard to leave the Lab, leave my duties and leave my family,” he says. “It’s tough to build up work here and then leave it all and have to come back and pick up where you left off. It’s a difficult aspect of the gig.”

To that end, Walker became one of the founding members of JPL’s Veterans Employee Resource Group, a new group formed in 2017 which aims to connect veterans across Lab, and currently serves on the board. While Human Resources doesn’t share information on the number of veterans at JPL, the group has

between 60 to 100 active members at a time and, anecdotally, knows that a number of JPLers are in the reserves or are currently being deployed.

For Walker, it's important to find other veterans on Lab.

"The group is great because you can talk to people who speak the same language and automatically have a level of understanding about what you've done and where you've been," he says. "It kind of validates you and makes you feel part of a group and understood as an individual."

Over the past two years, the group has come together for social gatherings, volunteer opportunities and college recruitment efforts. Walker was also surprised that the first event drew a number of non-veteran attendees, many of whom have veteran friends or family members.

"Those who support us are an important aspect of our group," he says. "There's a long commonality there."

As for the future, Walker's ambitions aren't slowing down anytime soon. He's looking into pursuing a Master's degree in cybersecurity or getting his MBA.

"I always loved science and space as a kid growing up, and working on these missions is a dream come true for me," he says. "I want to continue working on cutting-edge technology to improve our cyberdefenses and make sure our data and our folks are safe. Being part of that scheme is where I want to be."



JPLers gather in Building 230 Mission Control during the 2019 National Coming Out Day on Oct. 11.

In Their Own Words: JPLers On Coming Out

As the country celebrates National Coming Out Day on Oct. 11, members of Spectrum—the Lab’s LGBTQIA+ Employee Resource Group—share their personal journeys of coming out and what it means to identify openly to friends, family, and colleagues. Below are their stories.

Rolf Danner

I came out in my first year of graduate school. By then, I had left my native Germany for graduate research in astronomy at Caltech. Before I moved, I imagined that accepting myself and finding love was going to be easy in sunny California. I just had to get there. Then I discovered that geography wasn’t the solution and a new start required more. Eventually, I found an LGBT student support group, built a circle of friends, and fell in love for the first time.

A few months later, I fell head-over-heels in love with another student. I decided to come out to my family on my next visit. With my heart in my hand, I started the conversation with my mother the night I arrived. What would she say after I told her that I was gay? Would we still speak after this? In my dazed state, I really didn’t know. My mother’s first words after I concluded my prepared speech were: “I have been 95 percent sure for several years. I concluded that you are my son and I will always love you. But I just didn’t know how to talk to you about this.” She knew me better and earlier than I knew myself.

A few days later, I was about to have a version of this conversation with my older sister. She met me at her front door when I arrived. By the time I sat down at her kitchen table, she had noticed a change. “What happened?” she asked. “You aren’t so uptight anymore.” It was the perfect lead-in to what I had to say.

These and many more conversations happened more than 25 years ago. Even for me it is hard to explain or appreciate how much the world has changed for us since then. My husband and I got married in 2008 when it first became legal for us to do so in California. And yet, even today, there is rarely a week when I don’t have to think about coming out. As a middle-aged man with a wedding band, of course I’m asked what my wife does. Before I correct them—“Well, my husband...”—I check how that will be received. Will I have to make the questioner comfortable with me? Will I have to take care of their reaction to me? Most days, I’m happy to do that work. And yet, I wish I didn’t have to.

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Raymond Francis

Coming out for me began as a matter of self-understanding, then of ethics and honesty. But over time, my experience has been that it’s not an event – it’s a continual process. As I’ve moved around between universities and employers, cities and countries, in each new place I’ve found a new community that has come to know me and my sexual orientation over time. In each new social and professional environment, people slowly find out about my sexuality, with responses ranging from surprise to indifference, from support and interest to (occasionally) conflict. I’ve gotten used to people assuming one thing about me, and eventually learning the opposite as it comes up. That process has become part of how I integrate into new groups, and even old ones, but it has had some rewards. Colleagues have sometimes approached me privately asking for advice, as parents of an LGBT child, or as an LGBT person themselves – and I think I’ve been able to provide some help to people who needed it. I couldn’t have done that if I wasn’t out and open about who I am, nor could I have lived comfortably and honestly.

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Camille Mathieu

In my experience, coming out isn't something you do once, it's something you do every time you meet someone new. I've openly identified as queer for years now, and yet I still feel myself hesitate whenever I first mention "my girlfriend" (now, my fiancée) to someone. It's not shame so much as conditioning—frequently, telling a convenient half-truth is more appealing than trusting someone with your full truth. Being out, in whatever way makes sense for you, is a great way to subvert that conditioning and (re)claim your identity.

Coming out is also a surefire way to find your people. Like a lot of LGBTQ+ folks, coming out to my blood relatives severed some of those relationships. That part is painful, for sure. But, amazingly, it strengthened some of my other relationships with friends and siblings. So while I lost something, I also found this whole other network of love and support. Family has always been important to me, but chosen family is on a whole other level. There were and will be hard times – but those are nothing compared to the joy and validation I find in this journey to be more authentic.

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Gabrielle "Rie" Lee

I think Ashley Mardell (more commonly known as Ash Hardell) in her book "The ABC's of LGBTQ+" says it best when they talk about the stereotypes we see in, for example, movies and TV shows:

"Representation of LGBTQIA+ people is grossly imbalanced. While the general public may have a basic understanding of the more common LGBTQIA+ identities like, gay and lesbian, ask a person on the street to explain something more nuanced like, maverique or genderflux, and you will likely be met with a blank stare. ... This lack of knowledge regarding sexual and gender diversity is also largely reflected in today's media . . . Reducing us to these one-dimensional clichés is not only inaccurate, but also harmful. It perpetuates the ideas that . . . [c]ertain behaviors and aesthetics are to be expected from individuals based on their orientation. ... As a result, LGBTQIA+ people who don't fit these stereotypes may not feel valid in their identities. I've heard countless stories of youth remaining closeted and confused because they didn't feel they 'looked' or 'sounded' enough like the 'type' of person who was LGBTQIA+. They didn't believe they were 'allowed' to be gay and worried they'd face rejection from the LGBTQIA+ community."

I came out after having been married to a man for four years. I got married young, and I was raised in a community where it would have been unacceptable for me to be gay, so while I knew that words like "bi" and "pan" existed, I never considered them possibly being applied to me. That was also because I'd heard plenty of narratives like "bisexuality is just a phase" and that bi people were just sexually promiscuous or just lesbians who were too afraid to come out completely as lesbians. I was terrified to acknowledge my own sexuality because I thought I was limited to a lesbian label, and I was petrified that it would mean the end of a four-year marriage to someone I really loved.

I had no idea that it was okay for me to be bisexual in a marriage where I was a ciswoman married to a cisman—no idea. It caused so much fear and anxiety for me over so many years. I denied who I was for at least a decade because I never had an example of bisexuality that didn't involve some sort of divorce or infidelity. After I came out, I found out that at least five or six other female friends of mine also married to men were also bi. And I kept thinking: if we had had an example of that, if we could have seen ourselves represented in healthy relationships on a screen in a fictional story, then we could have seen ourselves in a more nuanced way. We could have navigated the emotional intricacies of our relationships and our identities so much better, and we could have done it together. We talk all the time about how sexuality and gender and sex and everything else is a spectrum, but when we don't see it represented for us, we don't fully understand how to see ourselves in it. With a lack of understanding comes fear of the unknown, and with that fear comes self-denial and isolation and pain. But visible representations of the diversity that

make up human existence provide reassurance and community and safety. Representation lessens the pain points and fear of self-discovery. It makes coming out a joyous experience and not one where people are afraid they're going to lose things—and people—they've held dear for so long. It lets you be happy just being yourself simply by the sheer knowledge of knowing that you're not the only one.

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Annmarie Eldering

My coming out story has many chapters to it. In high school, crushing out on a fellow athlete, the lightbulb went on for me that I was a lesbian. My family was not supportive, so I snuck around as long as I could before a difficult conversation prompted by my Mom's accusatory questions. Thankfully there was a small, underground network of lesbians in the nearby towns (this was 1984 in rural New York State!), and some other supportive adults that I could talk to. I left there for college in New York City (Cooper Union), so when I was not busy with my schoolwork, I connected to the community in Greenwich Village (plenty of gay bars and Act Up events and the politics of the AIDS crisis). I wasn't really out to classmates at that time, just trying to get that degree and not get too distracted. I came to Caltech in 1988, and that was when I really came out, was public about who I was, and found an awesome network of friends and support. I integrated my lesbian self with my professional and personal self, found a way to build a good relationship with my family and really thrived. The community of friends I made lasts to this day and at JPL, I still see many of the folks who help move forward the culture and institutional stance of JPL and Caltech back in the early 1990s. When I tell this story, I feel two things – wow, the world has changed, and hmmm, the younger generation may not realize what work was required for coming out back then. It really felt like there was a risk of losing family and friends and jobs, so it was stressful and it was a huge relief to arrive somewhere like Caltech and find the support and community.

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Sidney Fernandez

I had the pleasure of coming out to my family twice. In high school I came out as bisexual intentionally to all my friends—and quite unintentionally to my parents. My parents found out because I changed my Myspace profile. They were both very accepting, and only joked about finding out through Myspace for a little while. All in all, it was uneventful. The second coming out was much more intentional, and much more stressful. I came out as transgender around four months ago, and this time I had not only friends and family, but also work to tell. I know that I have heard mostly horror stories about coming out as trans, especially once someone has already established themselves in life. I was terrified. I have a wife and a job I love, but my story has been a positive one. My wife is my biggest supporter, my family and friends gave me such an outpouring of love that I have been really comfortable in who I am, and here at work I have been shown nothing but support and respect from both my peers and my supervisors. I know I have a long road ahead, but it has been comforting to know that everyone has my back.

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Thomas Ackermann

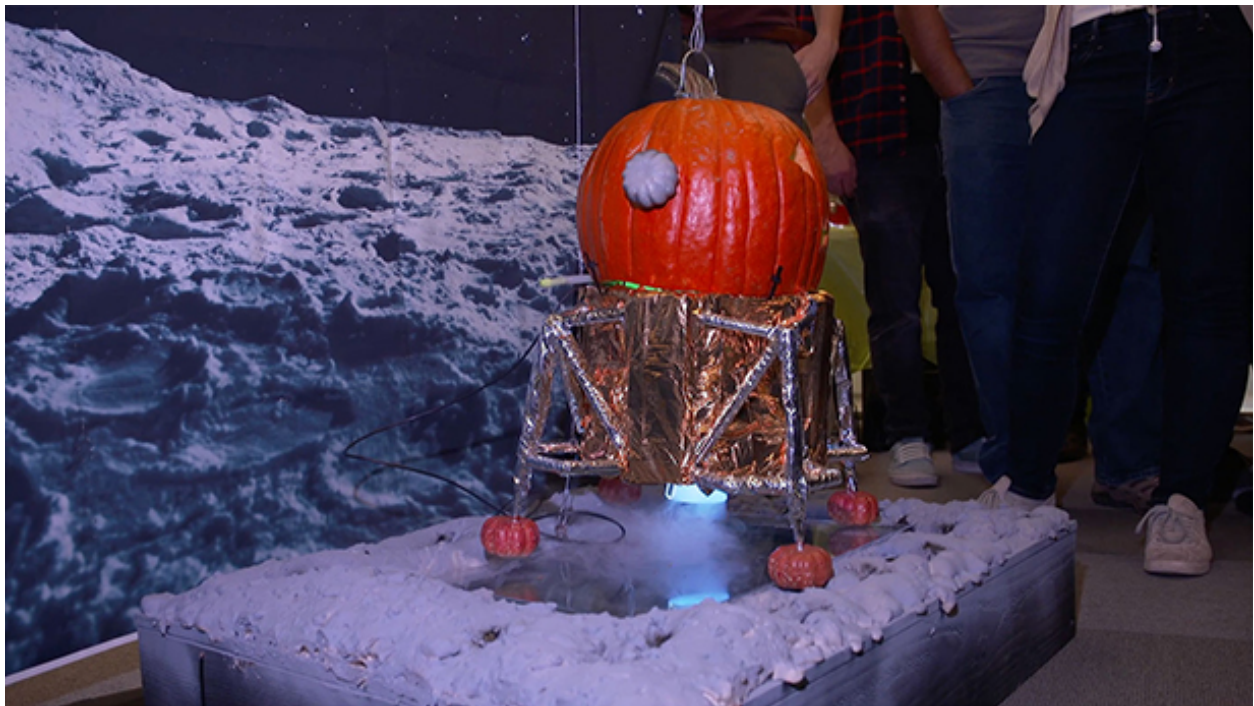
For me, coming out was never a one-time deal. I see the experience romanticized as this pivotal event in a queer person's life—which it is, but the act of coming out is also a constant, daily, and ongoing, reality. Every time I bring up my partner in casual conversation, wear something on the femme side, or discuss any of the Pride events I have attended this year, I am consciously deciding to make my queer identity known to the world. I come out every second of everyday, and I know most members of the LGBTQ+ community face a similar situation. Coming out, or the day I decided to come out for the rest of my life, was a beautiful, freeing, and identifying moment. If I could go back and tell my younger self anything, it would be: Right now, you're afraid of who you are and you're afraid of the people around you finding out

who you are. They may never get to love and appreciate your genuine self but you will. Give it about 10 years but eventually you'll be living in an apartment in Los Angeles with an amazing career, a wonderful partner and a perfect dog named Lola-Victoria. It gets so much better and I am so excited for you to love yourself.

Anyone who is considering coming out: I am so proud of you and I am rooting for you. Coming out was the best decision of my life and I hope it is a beautiful decision for you when the right time comes around and you're ready for it.

If you are interested in learning more about Spectrum, visit their website or send an e-mail to lambda-jpl-reqst@jpl.nasa.gov to be added to the mailing list.

Submissions have been edited for length and clarity.



The pumpkin has landed on the Moon--as part of JPL's annual pumpkin-carving contest.

JPL Pumpkin Carving Contest 2019

Adapted from an article by Arielle Samuelson

Once a year at Halloween, JPL engineers use their skills in a highly competitive pumpkin-carving contest. Now in its ninth year, the contest gives teams only one hour to carve and decorate their pumpkins, though they can prepare non-pumpkin materials--like backgrounds, sound effects and motorized parts--ahead of time. Watch a video that captures highlights from the ninth year of this popular annual contest. JPLers crafted pumpkins into the Apollo 11 Moon landing, the InSight mission, and a Europa lander, as well as aliens and other spooky subjects. Watch the action here:

https://www.youtube.com/watch?v=J_E37dF3oCA&feature=youtu.be



JPLers gather in Building 230 Mission Control during the 2019 National Coming Out Day on Oct. 11.

United Way Campaign Kickoff Draws JPL Crowd

Adapted from an article by Jane Platt

The United Way campaign kickoff on Nov. 12 included food, giveaways, exhibits and real-life stories from JPLers who volunteer for the organization, including Deputy Director Larry James. The von Karman event spilled onto the Mall with live music by JPL's homegrown Shop 300, and an assembly line of JPLers who put together hygiene kits for distribution by Union Station Homeless Services, a United Way community partner.

Last year, more than 1,500 JPLers raised over \$495,000 for the United Way via one-time or recurring donations. In addition to financial contributions, there are many other ways to help.

For example, Larry James described how he and his wife, Susan, read to children at a recent Fall into Literacy campaign in Wilmington. He said it was "an incredible event to really reach young people that frankly don't have the resources that most of us grew up with." James explained that, "My wife and I actually just read books to kids, and a lot of times they don't even have that in their homes." Children were able to take home free books, and a JPL tent helped get them excited about STEM.



Director Larry James read to children at a recent United Way Fall to Literacy event in Wilmington.

Other JPLers shared their United Way volunteer experiences at displays in von Karman. A few examples:

Christopher Balian helped build a pergola and garden during a recent community beautification project at the Boys and Girls Club of Burbank. "When you clean up an area, it really brings the community together."

Amelia Quon helped students become more confident and hone their skills at a recent college essay and resume workshop, getting involved because after moving here from Texas, she was "moved by the alarming number of homeless people I saw under freeways...I like helping people."

Rachel Zimmerman-Brachman helped students envision and plan for a future career during Engineering Week at John Muir High School in Pasadena. "I tell them to start building their resumes now by joining clubs, volunteering and getting experience they can use later on."

Juell Diaz worked with students at the Fall Into Literacy event in Wilmington (the event attended by Larry James and Susan James). "We promoted the 'Name the Rover' contest and helped share JPL's work with the kids...I will continue to participate."

United Way of Greater Los Angeles President Elise Buik sees similarities between JPL and her organization. "We try to defy the impossible. I know there are a lot of people who say you can't do the things that you do, and what I love about JPL, and I think the parallel is—if you can imagine it here, you can make it happen."

She said United Way believes it absolutely is possible to end homelessness, have all kids graduate high school with the option to go to college and maybe work at JPL someday, and retrain people for jobs of the future.

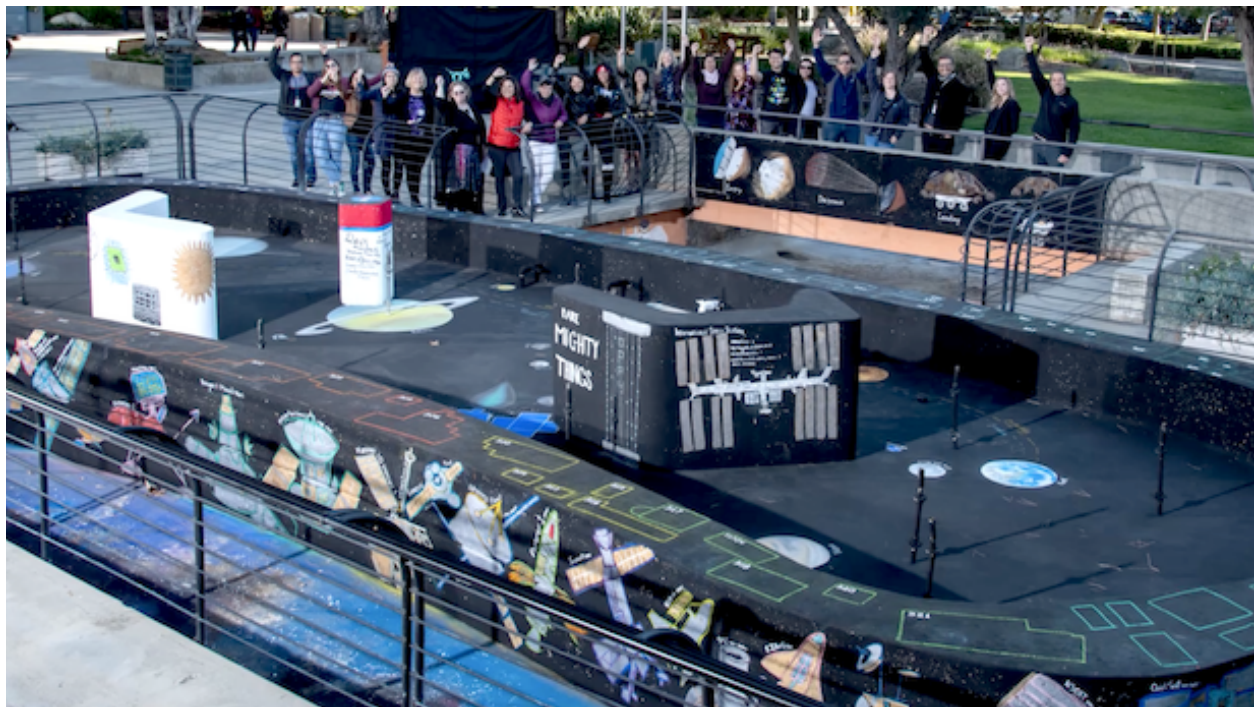
In their quest to end homelessness, United Way partners with Union Station Homeless Services. Dana Bean, senior director for development and community, rattled off some stats: With fewer than 200 people on staff, plus 3,500 volunteers, last year they housed 902 homeless people. They provided access to vital community resources and a safe place to sleep, and they helped find permanent housing for those people, following up to ensure a smooth transition.

Larry James has witnessed one of those success stories. A few years ago at a local Starbucks he and his wife frequent on weekends, they met and often spoke with a very nice man who was homeless through unfortunate life circumstances. The Union Station team found him an apartment, and, James said, "We saw this life change. He moved a little bit farther away from the Starbucks, so we didn't see him anymore, because we knew he had a place to live."

James wrapped up the official kickoff with a message to his fellow JPLers: "I hope you feel that it's time to give back because we have been extremely blessed here at the Lab."

The Annual Giving Campaign runs through Friday, Dec. 6. If you'd like to donate, you can do so at a special website that is available externally: <https://www.unitedwayla.org/en/give/jpl/>.

Learn more about United Way [here](#). Questions? Contact unitedway@jpl.nasa.gov.



Colorful Connection: Fountain Mural Brings Lab Together

By Taylor Hill

The fountain on JPL's Mall once sparkled as the dynamic focal point for the Lab, with water cascading down its geometric shapes and into the basins below. But since California's historic drought, the landmark has endured only as a static concrete mass, untouched and off-limits.

That changed at dawn Sunday, Oct. 27, when artistically inclined JPLers descended into the fountain to transform it into a work of art once again. But instead of water, they brought chalk. Lots of chalk.

For three straight days—sunup to sundown—more than 40 JPLers tirelessly painted, chalked, traced and sketched out the history, accomplishments, quirks and aspirations of JPL, creating a mural that will eventually wash off—but won't soon be forgotten.

The project grew from a “Call for Ideas” by the Communications and Education Directorate to increase outreach and engagement on and off-Lab.

The idea—use the concrete eyesore taking up space on the Mall and turn it into something beautiful—sounded simple. The execution was anything but.

A Team with Dream

Sarah Flores, a JPL software engineer by day and traveling chalk artist by weekend, had led a team of eight JPLers experienced in drawing chalk murals at events such as the Pasadena Chalk Festival. But they had never embarked on anything as ambitious as covering the 50-foot by 24-foot fountain.

“Typically, we’re dealing with a flat surface in square or rectangle shapes,” Flores said. “Here, we were looking at geometric shapes, walls, curves—everything.”

Before the chalking began, the team had to map out a plan. They started meeting at the fountain and envisioning how they could best represent the broad scope of projects and missions, and the heritage of JPL.

“We wanted to figure out what feelings we could convey, and what we wanted to show in it,” said Ocean McIntyre. “It wasn’t the same idea from start to finish, it changed over time as more ideas were brought up.”

After weeks of brainstorming, the team had melded a design that incorporated Earth, planetary, Mars, and interstellar missions, drawings of spacecraft dating back to JPL’s Explorer 1 satellite, the Deep Space Network, outlines of every JPL building, and of course, deer. Now they had to figure out how to execute it. The ambitious design called for more bodies, so a call was put out for more volunteers to test their artistic acumen and help chalk the fountain.

In the end over 40 JPLers ended up putting chalk to concrete to complete the project by JPL’s anniversary celebration on Oct. 31.

Flores said volunteers ranged from experienced artists to newbies interested in learning about the medium.

“There’s a lot of directing and managing people, but when people were settled, and everybody was working, it would get quiet: everybody’s concentrating and in their zones, and it’s almost like art therapy,” Flores said. “It’s part of why I do chalk festivals. I get asked ‘how could you be out there for so long,’ and to me it’s meditative. It’s relaxing to get away from everything, and you’re just looking at colors and shapes.”

Chalk team member Luz Maria Martinez Sierra said she enjoyed working with and teaching the volunteers—and sometimes being taught herself.

“Some volunteers would come and say that they worked on a particular mission or had a favorite historic mission and wanted to chalk it,” Sierra said. “I would ask some of them if they needed a reference image to draw the spacecraft, and they would reply, ‘no no, I know they spacecraft well enough.’”

McIntyre saw scientists' and engineers' attention to detail come out artistically through the project. When they were chalking the Curiosity rover, a volunteer knew to draw the pattern of the wheels in a certain way, so that it would spell out 'JPL' correctly," McIntyre said. "If you have a connection with something, you pay attention to those little details. There's a little bit of art in everybody. What makes people outstanding in their technical and scientific abilities is having that balance of an artistic side. I haven't met a single engineer or scientist yet that doesn't have some creative outlet as well.

As the project neared completion, Flores reflected on the team's accomplishment—creating a colorful, engaging piece of art aimed at connecting the Lab.

"It was just such a grassroots effort," Flores said. "The design was grassroots, a total team effort, inclusive and funky—and I think there's something very 'JPL' about that."

Lab Love

On Halloween, following the Lab's costume contest, JPLers were invited to chalk their own designs and jot down memories around the perimeter of the fountain. Notes included "Happy birthday JPL," "This art is inspiring," "We Love JPL", and one chalked by a rogue dinosaur that wandered over from the costume contest that read, "T-rex was here."

Hannah Kang, a South Korean masters student on Lab as part of JPL's Visiting Student Research Program, chalked her own message: "Thank you JPL!"

"Since I got here, I've been very focused on the work, but today, it was fun to see everybody in costume loosening up," Kang said. "I've been watching the chalk mural every day, and whenever I would pass by, it was just a great encouragement to see the accomplishments in an art form, and it was a motivator for me. I think it was natural to participate and add my own chalk art. It's encouraging me to join here. JPL's a far distance from home, but it feels that I'm becoming a part of the community here."

Farewell to the Fountain

The fountain was constructed in 1967 and originally connected to a mirror pond that stretched across the Mall to Building 264. Over the years, the ponds were removed and replaced with grass areas, and the fountain was shut down as water concerns grew during the record-breaking drought that started in 2011.

Today, plans are underway for renovations to the Mall area, and the Lab will soon bid farewell to the waterless feature.

By popular demand, the chalk mural was left on display until Friday, Nov. 8.

Events



Trailer: The Pathfinders; JPL and the Space Age

Saturday, Nov. 16

7 p.m.

Caltech's Beckman Auditorium

It started with JPL agreeing to land something on Mars — cheaply — and do it in a radically different way. This is how the era NASA called “Faster, Better, Cheaper” began. The documentary film “The Pathfinders” tells the story of a small group of JPLers who did not heed warnings that the audacious challenge of landing on Mars with airbags would likely not be a career-enhancing move.

Caltech's Beckman Auditorium will host the documentary's screening on Saturday, Nov. 16, at 7 p.m. It is the first of four documentaries about JPL missions to the Red Planet, in advance of the much-anticipated launch of Mars 2020, the next rover to Mars next summer. Watch a trailer above.

With a parachute that could not be tested in a way to match the Martian atmosphere, to the late addition of an unwanted rover that would not have looked out of place in a toy store, the Mars Pathfinder mission was a doubter's dream, taken on by a mostly young group of engineers and scientists guided by a grizzled manager known for being a maverick. “The Pathfinders” retraces the journey of this daring mission to Mars that captured the hearts and minds of people around the world with its dramatic landing and its tiny rover — the first wheels ever to roll on Mars — becoming a cultural icon, as well as a record-breaking phenomenon on the brand new World Wide Web.

Produced, written and directed by JPL Fellow and Emmy Award-winner Blaine Baggett, “The Pathfinders” is the first of four documentaries about JPL-led missions to Mars that will be screened at Caltech over the next four months. “Together they make up a quartet that traces the classic story arc of rising, falling and rising again,” Baggett says of the films.

The film screening will be preceded by a short, informal panel discussion consisting of Baggett, Pathfinder mission team members/ JPL Fellows Rob Manning and Jennifer Troser, former JPL director Ed Stone, and moderator Preston Dyches.

Caltech requests online reservations for the free screening via this Eventbrite [page](#).



Songs of Autumn Concert with JPL Chorus

Sunday, Nov. 17

4 to 6 p.m.

Glendale City Church, 610 E. California, Glendale 91206

The JPL Chorus and the Donald Brinegar singers present “A Portrait of Fall” choral concert at 4 p.m. on Sunday Nov. 17 at Glendale City Church. Pasadena Symphony conductor and cellist David Lockington will make a special guest appearance.

Join your JPL colleagues in envisioning the changing of the seasons, its colorful leaves and shortening days, and reflecting on the experience of autumn in this vocal journey. The performance includes a premiere of David Saldana’s “A Mild Sweet-Smelling Night.”



When Apollo 12 Visited Surveyor 3

Tuesday, Nov. 19

2 to 3 p.m.

The Hub - Building 111

Retired JPL employee Justin (Jay) Rennilson will come to the JPL Library to talk about an important space event in US History: when Apollo 12 visited Surveyor 3.

Rennilson writes that 50 years ago, on Nov. 19, 1969, the Apollo 12 crew visited a spacecraft that the Jet Propulsion Laboratory and Hughes Aircraft had landed on the moon 2 ½ years earlier. This was the first time anyone from the planet Earth had gone back and visited robotic landers that we earthlings had put on the Moon. In this talk, Rennilson will briefly describe the Surveyor 3 mission that landed on the Moon in the Oceanus Procellarum area in a crater about 200 meters in diameter. When Apollo 12 was planned the site chosen was very close to that of the crater where Surveyor had landed. There were two main reasons for that choice: One was to prove that Apollo missions could pick a site and then go to exactly where they wanted. The second was to photograph that Surveyor spacecraft, bring back parts and evaluate what the lunar environment had done in 2 ½ years. Rennilson will have a brief summary of what we did to those parts and what we discovered. Stories from both missions and their historic photographs complete the talk.

Speaker Bio:

Justin (Jay) Rennilson is a former JPL employee and Senior Research Fellow at Caltech from 1961 to 1974. Rennilson was involved at the Lab when it was just beginning to

expand from 500 employees to 4,000, and trailers and new buildings were being constructed. He was an original co-investigator on the Surveyor Television Experiment and a member of the Lunar Geology Investigative Team on all the Apollo landed missions. He was also involved in the analysis of the returned parts from Apollo 12.

For questions, email the JPL Library at library@jpl.nasa.gov, or call us at 4-4200.



Spitzer's Final Voyage: The Trials

Thursday, Nov. 21

Noon to 1 p.m.

von Karman Auditorium

Spitzer's Final Voyage: The Trials

Presented by: Joseph Hunt, Sean Carey, Wayne Evenson and Mike Warner

The Spitzer Space Telescope has far exceeded its nominal mission requirements of five years. It is scheduled to end operations on Jan. 30, 2020, after more than 16 years of supporting astronomical inquiry. Engineering changes and challenges that were encountered in operating a space observatory in a solar orbit three times longer than its designed lifetime will be highlighted. Changes to operations to produce science, like the discovery of the TRAPPIST-1 system of seven exoplanets, that was not envisioned when the telescope was designed and built will be discussed. Spitzer may be on its final voyage but its accomplishments will be long-lived.

JPL Family News

Retirees

The following JPL employees recently announced their retirement:

Alberto Mercado, Section 2832, 22 years; David Oberhettinger, Section 3030, 15 years; Lois L Berumen, Section 3410, 11 years; Loni Osmond, Section 2298, 46 years; Robert N. Brooks, Section 394E, 39 years; usan K. Lavoie, Section 3980, 47 years .

Passings

Robert J. (“Bob”) Mackin Jr., PhD, died Oct. 17, 2019 at the age of 93. He was employed at JPL for 33 years, starting in 1962. His most recent work was as Program Director for Technology; Technology and Applications (TAP) Office.

Mackin began his career at JPL heading the Physics Division and later, Space Sciences. He wrote the book “Current Knowledge of the Moon and Planets,” and co-edited another, “The Solar Wind,” which also was translated into Russian. He authored numerous articles and held two patents. He was involved with programs in biomedical and energy technologies, and in military research and development as Assistant Director of the Arroyo Center.

He also served on the Board of Directors of Huntington Medical Research Institutes (appointed to this role by Dr. William Pickering) and SRO Housing, which creates homes for the homeless in downtown Los Angeles.

Mackin is survived by his wife, Merrilee Fellows (who works for NASA at JPL); his daughter Dana Pilchik, her husband, Evan, and their daughter, Evie; daughter Suzanne Goulding, and his sister, Beverly Baetge.

Awards



John Schumacher, USA, VP IAA, V-President Aerojet Rocketdyne; Francisco Mendieta, Mexico, VP IAA, Head of the Mexican Space Agency; Charles Elachi, Von Karman Award 2019; Ambassador Peter Jankowitsch, Austria; President IAA, Marius-Ioan Piso, Romania, VP IAA, Head of the Romanian Space agency; Jean-Michel Contant, France, Secretary General IAA.

Top IAA Award for Former Director Charles Elachi

The International Academy of Astronautics has presented former JPL Director Charles Elachi with its premier honor, the Theodore von Karman Award.

Elachi retired from JPL in 2016, after working at the Lab for 45 years, which included 15 years as director—from 2001 to 2016.

The IAA presents the von Karman award annually to recognize outstanding lifetime achievements. In particular, the citation for Elachi honors him "For a lifetime of scientific and engineering leadership that enabled breathtaking advances in knowledge of Earth, Solar System and Universe. Synthetic aperture radar which he invented has been utilized for study of Earth and every major body in the Solar System. As Director of the Jet Propulsion Laboratory, he led the creation of 24 NASA space science missions, all with significant international participation. His nurturing of three generations of scientists and engineers has paved the way for decades of continuing advances in the space sciences."

Elachi accepted the award at a ceremony on Oct. 20 attended by more than 210 participants, including astronauts Buzz Aldrin and Thomas Stafford, both members of the academy.

The von Karman Award was established in 1982 and honors the memory of the Academy's founder and first President. Previous recipients include former Lab directors Edward Stone and William Pickering—Pickering in 1990, and Stone in 2003.