

## Featured Stories



Laura Cinco, top left, was surprised with farewell signs during a Webex meeting on her last day before retirement on April 3.

## A New Kind of Fond Farewell for JPL Retirees

By Celeste Hoang

Julie Webster knew for some time that 2020 would be a seismic year for her. She had been planning her May 1st retirement for a couple of years, purchased a new home on an acre of land in Texas, and started searching for her replacement as the Juno mission’s chief engineer ahead of the big move. She was so energized for the next chapter in her life, she even had her JPL password at the time set to “2020istheyear.”

Then 2020 arrived.

“My password was just one big jinx,” she says with a laugh. “I had already planned to change my world, and my world changed even more than I had originally planned.”

In mid-March, Webster became one of the thousands of JPLers to pack up their offices and start working from home—except unbeknownst to Webster, it was the last week she would see her colleagues in person

or set foot on Lab as a JPL employee again. She retired on May 1 after spending her final weeks teleworking, and moved to Texas on May 3.

Like weddings and graduations, many life milestones have been forced to look a little different these days, including retiring during a pandemic that has dashed original plans and celebrations that were often months or years in the making. Between March and September, the Lab announced some 30 retirees, many of whom never got the chance to say the in-person farewells they counted on.

“I feel like I snuck out in the middle of the night,” Webster says. “I feel bad that I didn’t get to say goodbye to anybody, and I wasn’t even in town to wave goodbye to anyone from my car. It was like I dropped off the planet.”



*Julie Webster during Cassini’s end of mission in September 2017.*

### **Exit Stage Left**

With nearly three decades at JPL and a career that spanned Magellan, Galileo, Mars Observer, and 20 years as Cassini’s spacecraft operations team manager, Webster had long envisioned her retirement sendoff as a large, proper farewell.

“I thought by May, we would of course be back on Lab,” she says. “I wanted to have a big thing and take over a Roundtable Pizza and say goodbye. I knew a lot of people over those 27 years.”

Instead, she never got to return to Lab and found herself signing off as a JPL employee and making her way to her new home in Texas, where it became a challenge to even get in touch with JPLers. (Once retirement kicks in, you’re no longer in JPL’s directory.)

“Even good friends of mine had only known my JPL email address,” she says. “I had a personal cell phone but my work phone was the number.”

But not to fret—Webster’s colleagues eventually found her and gifted her with a sendoff she’ll always have: a WordPress link where JPLers submitted their farewell messages and fondest memories for her to read.

“People wrote in all kinds of stories,” she says. “There were some where I had no idea I made that kind of impression, and it was very gratifying. Still, I just wanted to come back and have pizza and see everybody.”

### **The Stealth Getaway**

Long before the pandemic, Laura Cinco had planned on an Irish goodbye—or some version thereof. The 18x executive staff coordinator of 17 years didn’t want a big party for her April 3 departure; rather, she wanted to exit quietly and do goodbyes her own way.

“I wanted to have a ‘farewell tour’ where I would have lunches with certain people over the course of a few weeks or stop by people’s offices to say goodbye in a more personal way,” Cinco says.

The in-person goodbyes never happened, but Cinco’s team was able to trick her into a brief but memorable celebration: The day of her retirement, she received a “frantic text” to join a Webex meeting. When she signed on, a group of managers she had worked closely with for years were all on the screen, holding up individual farewell signs for her.

“It was really touching,” she says.

Cinco’s original plan was to hang up her JPL badge and then jet off to Japan to see the cherry blossoms in mid-April.

“That would’ve been so nice, and my husband was so gung-ho,” she says. “I even got a brand new coat for the trip!”

Alas, the vacation was shelved, and Cinco found herself entering retirement feeling out of sorts.

“It was disorienting. I was very discombobulated the first few weeks,” she says. “You also feel so guilty, like you should be doing something but there’s no urgency to what you’re doing.”

So she did what many of us have been doing during isolation: Cleaning, gardening, and catching up with family and friends online.

“My siblings and I are all scattered, and we hardly talk to each other unless there’s an emergency,” she says. “But now we have a video chat every week and talk to each other for an hour, sharing stories and catching up on our family history.”

As for what Cinco is looking forward to most when life returns to normal?

“Call me weird but I want to go to JPL and say a proper goodbye,” she says. “My farewell tour isn’t over, it has just been postponed.”

### **A Drive-by Surprise**

Like Cinco, Chris Cornwell never expected to say farewell to his colleagues on a computer screen after 25 years at JPL.

On June 12, the former OCIO manager marked his last day as a JPLer while sitting in his home office and celebrating with a Webex happy hour, where co-workers took turns sharing funny stories from the past two decades. Cornwell was grateful for the laughs together, but signed off feeling “a little sad as I walked out of the room,” he says.

His family tried to cheer him up with a distraction.

“They had set up balloons and happy retirement signs out in the yard, and they said, ‘Let’s go out and take some pictures,’” he recalls. “We went outside and all of a sudden, I heard honking and my immediate team drove by with signs on their cars. It was the last thing I expected, and I was so surprised.”



*Chris Cornwell's team surprised him with a drive-by farewell complete with posters, pictures, and plenty of honking.*

Another unexpected event: becoming close friends with his replacement, Catherine Stringer, who also joined in on the drive-by festivities and met Cornwell for the first time in person.

“She was hired during quarantine, and I trained her primarily through Webex meetings and phone calls, and it was really special how I became really good friends with her,” he says. “We still keep in touch.”

Cornwell’s retirement plans haven’t exactly panned out—there was his “big dream” of spending the summer with his wife at their cabin in British Columbia, Canada, that has yet to materialize. But he’s hardly slowing down, biking 750 miles in one month and going on virtual walking tours to learn more about the history of Los Angeles neighborhoods, including Angelino Heights and Echo Park.

He’s also staying connected to fellow retirees by joining an email list and monthly luncheon run by former JPLers Karen Chan, Pam Distaso, Donna Hoffman, Joe Gleason, Vince Wirth, and Helmut Partma.

“When your email gets turned off, you think, ‘How great,’” Cornwell says. “But then you realize all of a sudden that everything has stopped, including the little things like informational emails and messages from the director on the progress of projects. In one way it’s really nice [to not have emails], but you feel cut off. I know that retirees want a stronger connection to Lab and more JPL visibility.”

### **Let’s Do Lunch (Soon)**

The strong connection that does exist for JPL retirees is owed largely to Chan and Distaso, who are on the committee of an informal group of retirees committed to bridging the gap among retirees with a monthly luncheon. The group has existed for decades, with some members still attending into their late 90s. Chan joined in 2018 after leaving JPL.

“When I retired, I went to that lunch for a year, and now I’m part of the committee,” she says. “I love being able to see everyone.”

Pre-pandemic, the group met at Pasadena’s American Legion Post No. 280 every month. For \$9, retirees could catch up with old colleagues and make new acquaintances while enjoying entrees such as lasagna and meatloaf cooked by veterans, plus salad, bread, dessert, and a cash bar for cocktails or sodas.



*Karen Chan (top row in pink) is one of the organizers of a decades-old monthly luncheon for JPL retirees. The group has been meeting over Zoom since September.*

Their last luncheon was in February, but Chan moved the group meetings over to Zoom in September, where members could sign on and say hello at the same day and time as the lunches used to be.

“Due to COVID, most of our members are of ‘the age’ where you are asked to stay home,” she says. “A lot of them don’t have people they see or communicate with, so we’re just trying to keep an avenue open.”

As for JPLers like Webster, who have retired and gone out of state, the bridges to their local community are up to them to create—but are clearly still rooted in JPL inspiration.

“I’m out in a very rural area, way out of town,” says Webster, who plans to do volunteer outreach activities in her school system once it’s safe, and was recently qualified into the community CERT program to support her local volunteer fire department. “I can help coordinate and tell people where to go, and I have pretty good radio skills. It’s just like what I did in ATLO [for JPL missions]. It’s come full circle.”

*Additional resources for JPLers: To join the monthly JPL luncheon group, please email [jplretireeslunch@yahoo.com](mailto:jplretireeslunch@yahoo.com).. To join the JPL retiree forum, please email [elson3485@gmail.com](mailto:elson3485@gmail.com).*



## One Mega Meatball and a Spruced-up Lab

By Taylor Hill

In case you forget how to locate JPL when we finally do return to Lab, just look for the giant NASA meatball.

The 30-foot insignia covering the side of JPL's High Bay went up on Oct. 17. and can be spotted from the 210 Freeway (by passengers, not drivers!). The idea for the sign came about during NASA Administrator Jim Bridenstine's tour of the Lab in 2018. The job of creating, sizing and placing the sign fell to The Studio, part of 18x DesignLab's graphic design and visual strategy team. Serendipitously, the Spacecraft Assembly Facility won the location sweepstakes.

"We were trying to find a building that worked both in location and was the right size, height, and shape," said Dan Goods, manager of The Studio. "While we were originally just looking for a proper surface, the fact that it's our High Bay was a happy accident that gives it more significance."

The logo is a vinyl covering stretched over an aluminum frame, then fastened to a steel structural ring. Altogether, it weighs 6.5 tons. It was assembled in the parking lot of Building 318 before being lifted up via a 50-ton crane, and fastened onto the side of Building 179. Structural steel beams were welded in place to specifically support the new sign.

### Returning to a Spruced-up Lab

While the red, white, and blue billboard may be the first thing JPLers notice coming on Lab, improvements and updates are taking place all around, with Facilities and The Studio teaming up to unveil a new, more futuristic JPL. Construction Manager Carl Cristiano—who is overseeing the Mall Renovation, Building 230 upgrades and NASA logo installation—hopes the improvements give JPLers an extra something to look forward to as more employees return to Lab.

"Whenever the majority of the population does return, I think they're going to be pleased to see these improvements, especially the Mall," Cristiano said. "The expanded area for meeting and working, the new deck and landscaping are really great additions to this space. COVID-19 might have slowed us down a bit,

but we're reaching the finish line on a lot of these projects, and we're excited to have everyone back to appreciate them."

Below are a few recently completed, soon-to-be completed, and upcoming projects that have been in the works at JPL while we've been away.



*Image Credit: Courtesy Dan Goods*

### **Phase 1 Mall Overhaul Nearing Completion**

Since February, JPL's Mall has been a construction zone. The demolition and removal of the defunct fountain has made way for a new paved concrete section and a wooden deck, complete with embedded LED lights for nighttime lighting, extra electrical outlets for JPLers to plug in laptops and enjoy working outdoors, and a new succulent garden.

The floor lights are nearing completion, and once the pavers are sealed and polished, the new tables and chairs will be placed. Those on Lab could be enjoying the new Mall amenities by November.



*Phase 1 of the Mall renovation project is nearing completion, with the fountain removed, new decking and pavers in place.*

### **Building 230 Getting Ready for its Closeup**

Before walking into the Space Flight Operations Facility, be sure to look up. The entrance overhang of the historic building includes a newly painted NASA worm logo. As you enter the renovated lobby, the ceiling continues to hold attention, as new fiber optic ceiling tiles depict a starry night sky, complete with intermittent meteor showers. The rest of the lobby includes six floor-to-ceiling digital displays that will depict Deep Space Network data, images, and video clips from JPL-led missions including Curiosity, Voyager, Cassini, Mars Reconnaissance Orbiter, and others.

Updates are also underway upstairs in the viewing gallery, where four new heads-up transparent displays will show data from the Deep Space Network. New chairs will be placed in the viewing gallery area as well, and construction should wrap up by the first week of November.





*A NASA worm logo has been painted on the entrance overhang of Building 230.*

### **You are Here, in 3D**

Visitors and JPLers alike can enjoy a topographic depiction of the Lab, as a new 3D model of JPL now resides next to the Visitor's Center Building. The map, installed on Oct. 9, is machined out of anodized aluminum. Every JPL building is noted and numbered, parking lots identified, the fire department signified, and even the Mesa buildings are etched out high above.



*The new 3D topographic map of JPL near the Visitor's Center Building.*

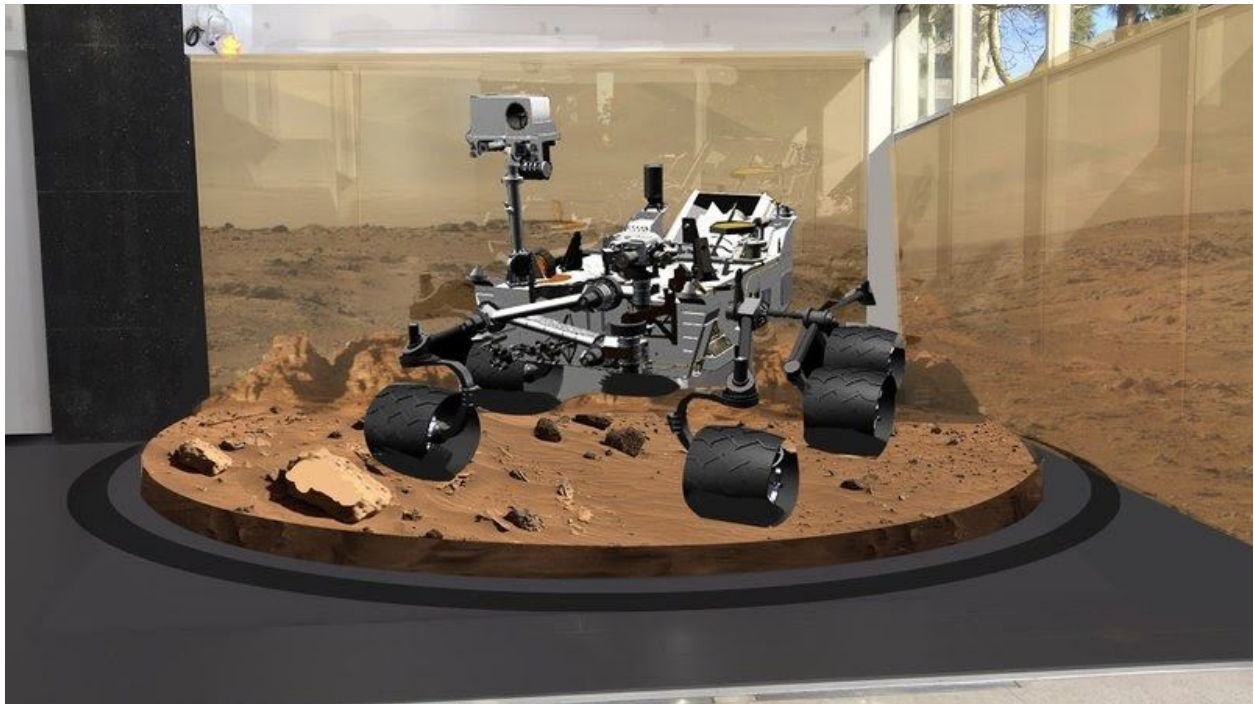
The new map replaces the two-dimensional board map, and is designed to give visitors a clearer sense of the Lab's vastness and varying elevation.

“You can see the hills, but it’s hard to understand the depth and scale of this place,” said Graphics Designer Lois Kim in The Studio. “It can really orient people, and help them wayfind, and it’s also just beautiful. And helps people appreciate this space better.”

In the future, if a new building is constructed or an old one torn down, the team will be able to add and remove buildings thanks to the detailed 3D file made of the Lab.

### **Perseverance Gets the Spotlight in 180**

Lastly, a full-scale model of the Mars 2020 Perseverance Rover is slated to land in the Building 180 lobby by the end of the month. The Studio team has created a “Martian” platform for the rover to rest on, complete with red-tinged rocks—one of which will include drill marks to highlight the science being done on Mars.



*A rendering of the planned Perseverance rover and platform display to go in Building 180.*



## Join the JPL United Way Drive

With the hindsight of living in a pandemic, it's poignant to recall last year's United Way of Greater Los Angeles (UWGLA) campaign kickoff at JPL. For that event, JPLers swarmed the mall to assemble hygiene kits for homeless people, while inside von Karman Auditorium, Deputy Director Larry James explained how he and his wife participate actively in United Way events, and JPL volunteers mingled with colleagues, sharing snacks and stories about their roles as United Way volunteers.

Although an in-person United Way kickoff event is not possible during the pandemic, the helping and the volunteering have continued virtually, and UWGLA needs your help now, arguably more than ever before. From Nov. 4 through Dec. 6, you'll have [the opportunity to donate](#) and volunteer to fight poverty throughout L.A. County—even, or especially, in current conditions.

The organization has leapt into action to help low-income and homeless communities hit hard by the pandemic. Through its Pandemic Relief Fund, UWGLA has raised nearly \$10 million to provide emergency relief to our most vulnerable neighbors and the organizations that serve them.

Larry James sits on the UGWLA Board of Directors, which he describes as "an agile and effective organization," noting that, "They truly have responded this year to the COVID crisis, to meeting the needs of the homeless, of families, of schoolchildren, and so I just want to encourage you to be a part of that with our giving campaign."

### Helping People During the Pandemic

UWGLA has helped those in need during these especially challenging times in the following ways:

\* Distributed 195,200 fabric masks, 156,180 hand sanitizer bottles, 144,050 surgical masks, 3,800 AAA batteries, 82,200 gloves, 70,600 toilet paper rolls, 2,400 water bottles, and 1,900 thermometers.

\* Bought and distributed a variety of critical emergency medical supplies for unsheltered neighbors and over 100 housing and homeless service providers.

- \* Provided mini-grants to 45 trusted L.A. County community organizations, including faith-based organizations, housing and homeless services, food pantries, and youth services.
- \* Partnered with the Los Angeles Rams and KABC-TV for a virtual telethon that helped to provide 5 million meals for local families.
- \* Partnered with BET (Black Entertainment Television) to support local nonprofits in providing rental assistance and other critical support to African-American communities.
- \* Provided 125 street vendors with \$400 cash cards to take care of basic needs while they cannot work. This contribution was leveraged to raise additional donations serving nearly 600 street vendors.
- \* Supported 12 regional homeless service providers and shelter operators in expanding support for individuals living on the street and bringing more people inside to safety.
- \* A United Way priority is finding housing for unsheltered people. In the last two years, they have helped provide housing for nearly 40,000 people.

### **How Can You Help?**

During last year's drive, JPLers donated nearly half a million dollars. This year, our JPL giving portal will open up beginning Monday, Nov. 2, to allow you to donate to United Way, as well as any other 501c3 designated organizations, through a one-time or recurring payroll deduction.

Contributions from JPLers will help people during the pandemic and beyond by providing housing to more people, preparing students for success in college and careers, and helping families stabilize their incomes.

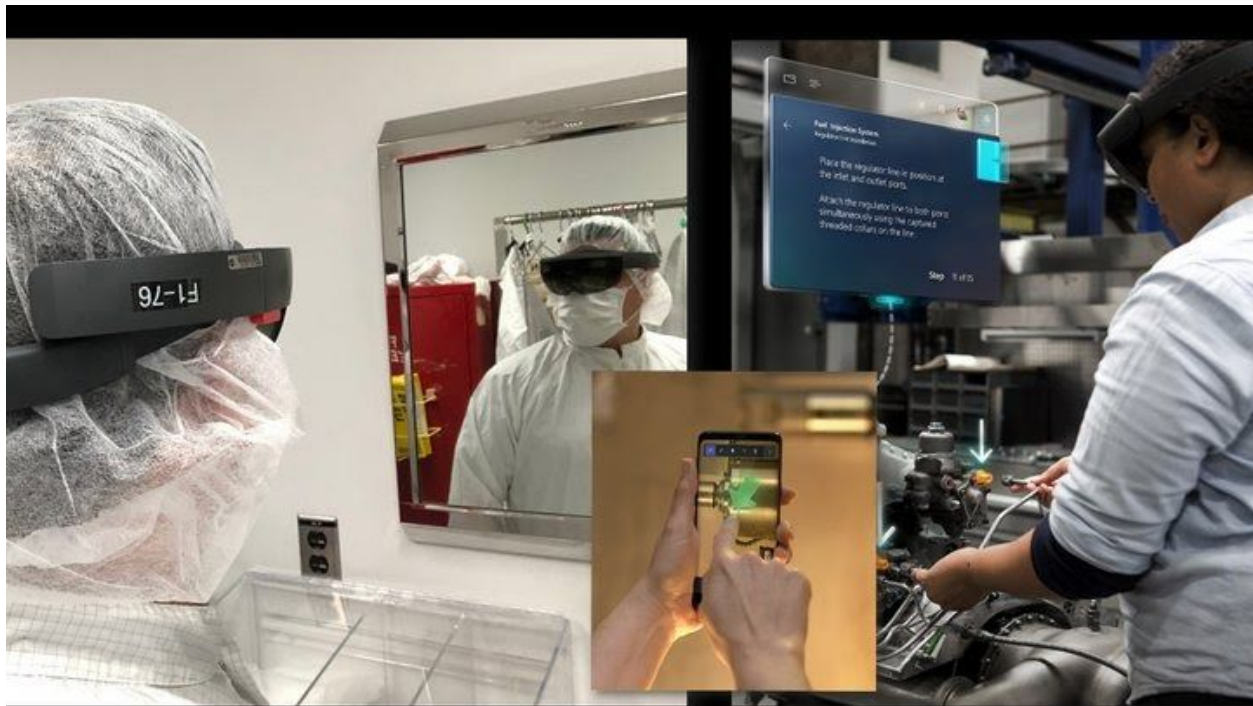
James says, "You will make a difference, you will have an impact."

In addition, you can volunteer to join or support the first-ever virtual family HomeWalk, on Nov. 14, to end homelessness in L.A. County. Join Larry James and JPL's Team Voyagers by spending the day doing your own 5K run/walk, sharing photos and videos of your walk or run using the #HomeWalkAtHome hashtag, then coming back for a 5 p.m. virtual program with live entertainment featuring the Los Angeles Rams cheerleaders, players, Coach McVay and much more. Click [here](#) to join the team.

[Watch a video](#) on how United Way of Greater Los Angeles is unlocking the power and potential of people.

You can make your JPL donation to United Way here: <https://www.unitedwayla.org/en/give/jpl/>

For questions, contact James Ramirez at [james.a.ramirez@jpl.nasa.gov](mailto:james.a.ramirez@jpl.nasa.gov) or 818-354-9922.



## Using Mixed Reality to Keep JPL's Missions on Schedule

By Taylor Hill

Pre-COVID-19, one could typically find around eight to 12 JPLers in the Electronics Fabrication Shop's cleanroom in Building 103. The engineers and technicians would be collaborating in real time, discussing electronic boards and cabling components for Europa Clipper, Psyche, EMIT, WFIRST, and other missions.

Today, to keep team members safe, the lab is operating the same space with just one engineer and two technicians, but the missions still need their parts on time. Mechanical Engineer Heather Stefanini in group 356E said the group has been trying to figure out how to work efficiently under the new constraints.

"It's a real problem," Stefanini said. "Before, we would do a lot of collaboration throughout the day on the hardware. We would talk to quality assurance, other engineers, and subject matter experts, and now, very few people can be in the lab, because of the safety we needed to protect people from the virus."

This situation resulted in the few engineers in the lab having to work on multiple projects and sending emails full of pictures, documents, and questions to other engineers and team members working from home, and then waiting until they heard back.

"We needed to figure out a way to view the physical hardware, even when we were not physically present. We wanted to be able to show people what we were talking about, and discuss it, without them having to be there."

That's where a set of mixed reality smartglasses comes in. By piloting the HoloLens glasses in combination with Office 365, the E-Fab team has been able to bridge the gap between manufacturing engineers on Lab and engineers working remotely, allowing multiple team members to "see" and discuss hardware issues in or outside of the clean room, in real time.

In a video, Stefanini and fellow Manufacturing Engineer Eriberto Rodriguez demonstrate how the system works, with Eriberto using the HoloLens headset on Lab, and Stefanini connecting with him from her home

office. The HoloLens is a fully untethered, head-mounted, easy-to-wear Windows 10 computer. It allows an individual to see everything in a physical space while overlays are visible on screen to show data or images, and allows others to view what the wearer is seeing through mounted, high definition cameras. The mixed-reality display allows Rodriguez to work in the lab, while beaming back the view he sees of particular hardware to Stefanini at home. Through Microsoft's Dynamics 365 software, entire teams can connect and see the same view of hardware currently being worked on at JPL, allowing teams to take pictures, take notes, pull up drawings and communicate in real time.

At \$3,500 a unit, the HoloLens devices aren't cheap, but could be worth the investment by adding flexibility, enabling efficiency, and allowing teams to stay safe at home and remain on schedule.

"We have hardware that needs to be built and delivered, and any delay due to an issue is a delay to the schedule and costs the project time," Stefanini said. "The fact that we can use this really helps us get our work done, and helps us keep the schedule we need to maintain for these projects."

To acquire their unit, the E-Fab team partnered with the Enterprise Operations and Transformation Office, the Information and Technology Solutions Directorate, and JPL Spark team members.

The idea was then added to Spark's "Improving Teams in a Remote Working Environment" campaign, where other JPLers could support and find the idea.

"This project and team are a perfect example of JPLers trying to improve the way we work," said Process and Assessment Specialist Leilani Schelstrate. "Utilizing HoloLens was an idea that engineers and technicians really needed while we have an extended work-from-home period. This solution may work for many different groups across the Lab, and the HoloLens team is actively trying to share what they've learned and how they've been so successful."

Other teams on Lab interested in using the technology include the Cable Fabrication group, the Planetary Protection and Contamination Control group, and the Quality Assurance section. The HoloLens system could also be used to connect JPL to other teams across NASA centers, pending NASA Headquarters approval.



## The First JPLers, Part 2: The Arroyo Tests

By Erik Conway

*Welcome to the Historian's Corner, a new JPL Space column that explores the origins, mysteries, and curiosities of our Lab. I'm Erik Conway, JPL's historian, and I'll be your guide as we travel through time together. In the second part of the series, we go back to the origins of the Laboratory, and the early Arroyo Seco tests during late 1936 and early 1937.*

*Part of this column was previously published as part of a video feature on the search for the location of the first rocket test. Watch "X Marks the JPL Spot."*

October 31 is the date JPL celebrates as its birthday each year. We trace our origins to Halloween 1936, a Saturday, when Frank Malina, a Caltech graduate student, Jack Parsons, a local explosives enthusiast, and two anonymous students spent the morning hauling tanks of oxygen, cans of alcohol for fuel, hoses, check valves, fuses, a force balance, and their experimental rocket motor out to the Arroyo Seco.

Four others joined them for some of the tests that afternoon: Carlos Wood and William C. Rockefeller, both graduates of Caltech's Guggenheim Aeronautical Laboratory (GALCIT), brought cameras, and William Bollay, who had given the talk that had resulted in Parsons and Malina meeting, brought his wife to watch.

Malina and Parsons tried four times to ignite the motor. The first three times, the oxygen flow blew out the fuse. The final time, fuel on the outside of the motor caught fire and ignited the rubber oxygen hose. Malina recalled in a letter home: "We all tore out across the country wondering if our check valves would work." Their photographers, Wood and Rockefeller, had already left by the fourth test so (sadly for us) there is no film of their scattering.

They tried again on November 15 with a different crew and a new ignition system—a spark plug instead of a fuse. This test is the source of our "nativity scene" photo featuring Rudolph Schott, Amo Smith, Malina, Forman, and Parsons that illustrates this piece. There were three trials that day, with ignition on the second and third attempts but still no data. The oxygen hose burned away quickly in both cases. Parsons

commented in his notes: “when fuel floods motor some seeps into [the] O2 line. Mixture ignites in line and burns.” Malina wrote home, “We are understanding to some extent the fact that [Robert F.] Goddard has spent almost 20 years without achieving what many would call success.”

On Saturday, Nov. 28, Malina and crew returned to the Arroyo for a third set of tests. Parsons and their machinist, Ed Forman, had replaced the rubber hoses with copper tubing, and the team was rewarded with relatively stable burning. The longest run was 20 seconds. “We crawled from behind our trenches and let out a cheer,” Malina wrote.

The final tests of the alcohol motor in the Arroyo were on Jan. 16, 1937. The second and last run lasted 44 seconds and generated a chamber pressure of 75 psi.

### **The Suicide Squad on Campus**

After this, Malina and company were allowed to experiment on the Caltech campus, gaining the label “suicide squad” after a leak from their equipment in the GALCIT building released a fine mist of methyl alcohol and nitrogen tetroxide. After the leak, they were forced to do their work on the lawn in front of GALCIT. Instead of the small, vertical force balance they had used in the Arroyo to gather data, they attached their motor to a pendulum hung off the GALCIT building. These more public efforts attracted an unexpected donor in March, a meteorology student named Weld Arnold, who promised to collect \$1,000 (about \$18,000 today) for the effort, and handed over the first installment within a few days. Decades later, Malina recounted with some obvious glee that when he asked GALCIT professor Clark Millikan how to deposit the money in a research account at Caltech, Millikan was flabbergasted.

In addition to the experimental work, Malina worked on publications with his fellow graduate students Amo Smith and Qian Xuesen. With Smith, he carried out a theoretical analysis of the performance of a sounding rocket, based on the claimed efficiencies of motors developed by Robert Goddard and by Eugen Sänger in Austria. The main finding of this paper was that motor efficiency was the key to reaching high altitudes. An inefficient motor would run out of fuel while still low in the atmosphere, where still-dense air would prevent it from coasting very high. Doubling motor efficiency would more than double peak altitude. The two also calculated that a “step rocket,” using what we would call staging, could achieve even higher altitudes. At GALCIT Director Theodore von Kármán’s arrangement, Malina presented this work at an Institute of Aeronautical Sciences meeting in New York in January 1938. This gained them extensive, and not necessarily desirable, media attention.

Qian led a different analysis with Malina during 1937 focused on understanding sounding rocket performance if it were powered by a motor that, instead of burning continuously, fired in bursts. The idea was to have some kind of quick-acting mechanism, like that of a machine gun, feed pellets of high-performance gunpowder into the motor. Quian’s analysis would be published in 1938, but while Parsons and Forman tried to build a motor like this during the late 1930s, they were never able to get it to work.

### **Burnout**

Despite the frenetic activity and even sponsorship during 1937, the project went moribund in 1938. Bollay graduated and moved to Harvard, and Malina took over one of Bollay’s tasks at GALCIT: helping von Kármán with the drawings for a textbook. He also took on wind tunnel work for the Soil Conservation Service, testing the effects of tree belts on wind erosion—far removed from rocketry, but of immediate significance when billions of tons of soil were being blown from the southern Great Plains to Washington and New York. Malina also found the conservation work personally satisfying. Arnold left for the East Coast and vanished, reappearing only decades later. And Smith graduated in 1938 too, taking a job at Douglas Aircraft Corporation.





This live broadcast is designed for K-8 classrooms and students. Teachers and parents who register will receive information about how to submit questions during the broadcast. Note: Registrants must be at least 18 years old.

This event is presented by Learning Space With NASA at Home, which provides K-12 students, their families, and educators with standards-aligned STEM activities, tutorials, and resources for home learning. Learn more and explore resources at <https://go.nasa.gov/learningspace>.



## Teaching Space With NASA: Exploring Earth's Oceans

Wednesday, Nov. 11  
3 to 4 p.m.

Watch online: <https://go.nasa.gov/teachingspace>

While many look to space as the ultimate frontier for discovery, mysteries still abound on our own planet, especially within Earth's oceans. In this one-hour education webinar, experts from NASA and the E/V Nautilus research vessel will discuss how scientists are exploring the unknowns of Earth's largely unmapped oceans while bringing together fields such as chemistry, geology, and more. NASA-JPL Education Specialist Brandon Rodriguez will be joined by the manager of educational programs for the Ocean Exploration Trust, Megan Cook, for this special live stream connection to the E/V Nautilus, currently at sea.

The live broadcast will also include a Q&A for registered participants. All audiences are welcome. The presentation will conclude with a short discussion for educators about

how the content aligns with the Next Generation Science Standards (NGSS) and related educational resources from NASA.

For educational resources related to the workshop, visit:

<https://go.nasa.gov/teachingspace#resources>



## Women United EmpowerHER

Thursday, Nov. 12

5:30 to 7 p.m.

Register here:

<https://www.eventbrite.com/e/women-united-empowerher-wine-down-tickets-125938843471>

Join the ladies of the Women United to learn how to use your power to empower change around equity and inclusion within your organizations. Hear from thought leaders and participate in breakout discussions.

**Moderator:** Qiana Patterson, Vice President, HopSkipDrive

**Panelists:**

-Annette Walker, Board President, Hayward Unified School District

-Giovanna Brasfield, Vice President of Diversity & Inclusion, Flatiron Construction and LINXS JV Inclusivity Manager

-Kimberly Freeman, Assoc. Dean & Chief Diversity Officer, USC College of Letters and

Sciences

-Sabrina Burris, Associate Vice President, Natural History Museum

**Donations:**

All donations will go toward supporting United Way's Creating Pathways out of Poverty fund. The communities hardest hit by the pandemic are the same communities fighting for access to housing, pathways out of poverty, and high-quality education. The ongoing protests and recent homeless count results – which show homelessness increased 13% in L.A. County – underscore that these persistent gaps are the result of structural racism that succeeds in depriving communities of color access and opportunity.

**Your contribution will help secure:**

- Housing for our unsheltered neighbors
- Financial assistance for low-wage & unemployed workers
- Education resources & technology for students

**About Women United:**

Women United is a community of advocates whose mission is to lift women and girls out of poverty through their support of United Way's three pillars of Housing, Education and Economic Mobility.

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## Von Karman Lecture – How Failure Helps us Succeed: The Agony and Inspiration of Defeat

Thursday, Nov. 12

7 to 8 p.m.

Watch live on Youtube: <https://www.youtube.com/watch?v=8087ojGqPPI>

Watch live on Ustream: <http://www.ustream.tv/nasajpl2>

**Speaker:** Rob Manning, Systems Engineer/Engineering Fellow, JPL

**Hosts:** Brian White and Nikki Wyrick, Public Services Office

There are lessons in defeat. This month's show will discuss several notable failures in the course of JPL's history of exploration and the incredibly valuable lessons from them. Did you know the loss of a Mars spacecraft led to a new system that lets us never lose contact during critical maneuvers? Or that a failed spacecraft antenna helped make better mobile phones? Space is hard – join us to hear how JPL turns setbacks into motivation.

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## HomeWalk 2020

**Saturday, Nov. 14**  
**5 to 6 p.m.**

Join United Way of Greater Los Angeles and fellow JPLers on Saturday, Nov. 14 for the first-ever virtual HomeWalk. Spend the day doing your own 5K run/walk, share photos and videos of your walk or run using the #HomeWalkAtHome, then come back at 5 p.m. for the virtual program as UWGLA brings you live entertainment with the Los Angeles Rams cheerleaders, players, Coach McVay, stories from our formerly homeless neighbors and much more.

United Way has also teamed up with the Rams cheerleaders and Rampage to bring you activities for the whole family to enjoy. That week leading up to HomeWalk, all registered participants will receive access to a variety of activities including kids yoga, dancing, stretching and your very own playlist with DJ Mad.

Registration fee is waived for the first 15 to sign up to run, walk, skip, or jog! To register, please use code: JPL2020.

Visit JPL's Team Voyagers page to get started:

<https://secure.ggiv.com/event/homewalk2020/team/869960/>

“See you” at #HomeWalkAtHome!

# JPL Family News

## Retirees

The following JPL employees recently announced their retirements:

### 50+ Years:

William Snyder, Section 329D, 53 years

### 40+ Years:

Carl F. Ruoff, Section 3800, 42 years

Joe Dominguez, Section 1443, 41 years

Richard J. Springer, Section 397B, 41 years

### 30+ Years:

Jan M. Ludwinski, Section 394C, 35 years

Charles Kyriacou, 31 years

### 20+ Years:

Elmain Martinez, Section 398A, 29 years

Judith S. Pons, Section 9010, 28 years

Michael A. Gregory, Section 1844, 20 years

## Passings

Leon David Strand died on Oct. 7, 2020. Strand was born in Milan, Minnesota, and lived there until graduating from the University of Minnesota with a master's degree in mechanical engineering. In 1962, he located to Pasadena to work at JPL. He retired in 1997 and gained a master of divinity from Fuller Theological School, where he was ordained a minister in the United Methodist Church. Strand spent 11 years as the minister of Friendly Valley Community United Methodist Church in Newhall, California. He is survived by his wife of 56 years, Margaret; his son, Alan, and his wife, Kathy, and two grandsons, Rohan and Rory. Strand leaves a brother, Peter, his wife, Colleen, son, Jason, and family in Minnesota.