

Featured Stories



"You're not on sabbatical or vacation. It's an unusual situation where you're involuntarily isolating," says Science Writer Jay Thompson.

Facing a Pandemic By Yourself

By Celeste Hoang

Weary of the company in your pandemic bubble? Imagine if the only company were you.

When even those with loved ones feel lonely, when thousands die and thousands more risk their lives to save some, the alone are easily overlooked.

There isn't exactly an ad one can place to seek a friend for what sometimes feels like the end of the world. For the many JPLers living alone through this pandemic, admitting to hardship can feel embarrassing when compared to the struggles of healthcare workers or parents with young children. But while a physical bubble of one is safe and quiet, the mind knows no rest. JPLers have coped in different ways. Some dove into therapy and self-reflection. Some said hello and goodbye to relationships—sometimes doing both during lockdown. Others ran marathons as metaphors to keep moving.

For the most part, they just endured, safely staying within their own homes—and privately navigating the highs and lows on their own—until the world sees this through.

These are a few of their stories.



Eric Oij on a recent solo trip to Lake Mono, California.

Eric Oij

It's no surprise that Eric Oij—jolly, gregarious, and easy to laugh—is a self-described extrovert.

That personality type, of course, has been a source of torment for the 37-year-old software engineer during the pandemic.

“This has been extremely tough and it has been extremely isolating,” he says. “You have a support network of one, at least in real life. Everyone was saying how lucky I am. ‘Oh, you don’t have kids, you don’t have roommates, your life is so easy.’ Well, maybe it’d be great to have kids running around the house. Maybe it’d be great to have someone to talk to.”

For Oij, it can be hard to articulate his pain because half the challenge is feeling as though society doesn’t validate his experience—at least when it’s pitted against the pandemic’s harsher realities of loss and devastation.

“Feeling the way I do, it’s embarrassing,” he says. “I’m embarrassed because I am so lucky and grateful for everything I have—I’m healthy, I have a job. I feel like I shouldn’t be complaining. But this is like the complete flip side of the spectrum. It’s hard to be alone right now, and not being acknowledged is the other side of a different type of struggle.”

Oij has lived alone for four years in Glassell Park and enjoyed the personal space, but the pandemic cast his independence in a harsh light.

“Just because I lived alone didn’t mean I was physically alone every day,” Oij says. “I would see people almost every night [before the pandemic]. I would play hockey three to four times a week, get dinner with friends, and see my team at work every day.”

That social structure quickly collapsed with the pandemic.

In the early months, Oij did what many did: Hung out with friends and family on Zoom. And—just as it did for many—that activity also waned with time.

“There was a lot more support and a lot more willingness to do activities online with friends in the beginning,” he says. “My friends with kids, we would play Settlers of Catan two times a week over Zoom, and all these old friends I haven’t talked to in a while came back into my life. But as time went on, people stopped wanting to Zoom as much.”

A turning point came in July when a JPLer suggested that Oij try the five free therapy sessions through Life Matters, a mental healthcare resource offered by the Lab.

“I called them and I found so much benefit that I kept going. Now I pay for it out of pocket,” he says.

Oij began incorporating weekly therapy sessions into his life, plus meditation and daily walks around his neighborhood.

“It turned into a great period of growth...so much more than I could've ever imagined,” he says. “Realizing that, ‘Hey, I had underlying issues that I wanted to work on still and that’s okay.’ It’s a big positive, but it’s also made it more challenging. It’s not an easy thing to do, examining yourself.”

Oij acknowledges that while he has “better tools in my toolkit now” for dealing with isolation, the pain and discomfort of loneliness can be relentless, especially nearly one year into the pandemic.

“You’d think it would get easier, but it doesn’t,” he says. “It gets harder every week.”

The lack of regular in-person communication has also given way to an insidious new level of anxiety that others living alone might recognize.

“I’m sort of losing my social skills. I find that when I do talk to people in real life, I get a little anxious,” Oij says. “It’s a feeling of unease, of being almost scared to be around people now.”

Early on in the pandemic, Oij ventured into online dating and the new normal of FaceTime first dates “because I got bored with myself pretty quick.” He eventually met and dated someone for seven months, but the two parted ways before the holidays, which pushed Oij into another period of reflection that ultimately helped him come out even stronger on the other side.

“The breakup was a turning point,” he says. “I had a lot of time off [during the holiday break] to heal, analyze, and put things into perspective. I realized I can’t be happy with anyone until I’m happy with myself.”

Oij has come to realize the importance of being gentle on ourselves.

“We’re all experiencing extreme loss right now. Loss of our normal lives, daily interactions, things we do for fun. It will be harder for some than for others,” he says. “As hard a time as I’ve had, I’m glad that other people are doing well and it makes me hopeful. Like, hey, maybe I’ll be that person doing fine in a couple of months.”



Jay Thompson in his Downtown Los Angeles apartment.

Jay Thompson

Jay Thompson entered 2020 feeling free. He was single for the first time in more than 13 years, ready to find himself again after intertwining his identity with another person for more than a decade. His longtime dream of moving to Downtown Los Angeles—drawn by its bustling city vibes, walkable streets, and fountain of night life activities—had come true. He found a studio apartment and moved in at the end of January, prepared to start his new life as a single, independent person.

That new life would soon look far from what he had in mind.

“I had just settled in and hadn’t even unpacked yet in March when the pandemic hit,” Thompson, 42, recalls. “After the split, I was doing a lot of thinking: What does my life look like when it depends on just me? I got here and I was kind of shy to wander around downtown at first. I was trying to settle in and then the pandemic hit and it didn’t matter anymore whether I had the guts to go out and wander.”

In the beginning, Thompson, a writer for JPL’s public engagement team, relished the extra time for solitude and study.

“My thoughts were, ‘OK, this is neat. This is going to be interesting for a few weeks or months. I don’t have a commute now. That will give me more time to read or learn guitar.’”

But then...

“The solitude sinks in and the stress of only communicating with people via phone or video chat sinks in,” he says. “You might think to yourself, ‘Oh, it’s just me so I don’t have to worry about anything related to kids, or a spouse, or a pet. But that also means that it’s just me. You don’t think you’re not going to see someone for six months or a year. You’re not on sabbatical or vacation. It’s an unusual situation where you’re involuntarily isolating.’”

Friends invited Thompson to join game nights via Zoom, but—as someone with generalized anxiety disorder and social anxiety—he quickly found the experience to be more stressful than entertaining.

“I’ve been sweating during these conversations because it stresses me out to adjust to the constant change in volume and the dissonant rhythm of conversation [in video chats],” he says. “When somebody pauses, you think, ‘Is it my turn to talk?’ When you introduce a delay in a video chat and you increase the number of people to say eight or 10, suddenly most people aren’t getting a single word in. Some of the people have stayed in touch but I’m not actively socializing with them. So yeah, it’s been a little rough.”

Instead of virtual parties, Thompson has found more success connecting with friends by sharing weekly virtual movie nights.

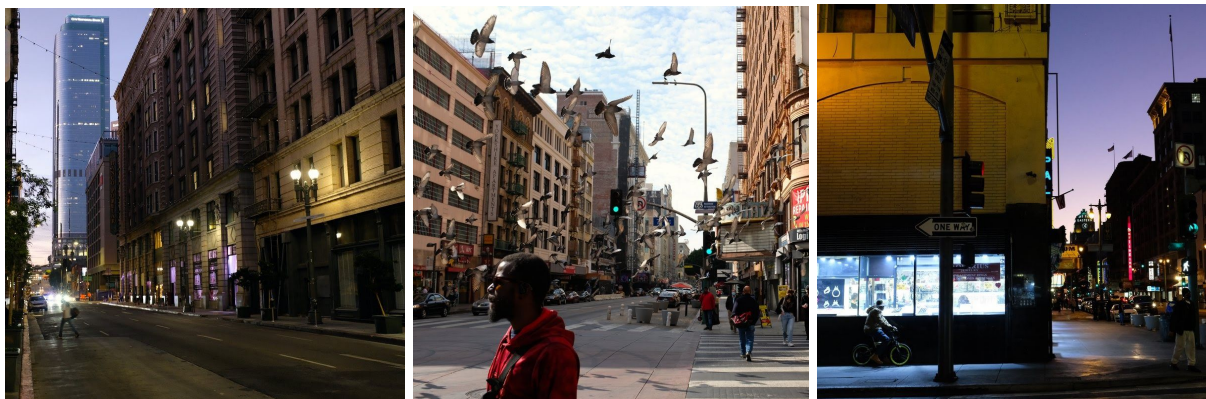
“We all put on our headsets, create a party on Xbox, and we sit there and watch,” he says. “We laugh and we banter, but they’re also artists and writers, so we sometimes also analyze the filmmakers’ storytelling and creative choices. It’s less stressful than a 10-person video call because it’s only me and my three closest friends. The experience is mostly just enjoying hearing each other react—bursts of laughter in certain spots, or gasps in other spots—and most of our conversation is before and after the screening.”

Another activity keeping Thompson sane is the simple act of going for a walk.

“When this all started, I noticed I was feeling more and more lethargic and it was happening fast,” he says. “Now I go for a walk almost every day, and it really helps my morale. When I miss a walk, my mood changes immediately. I live on the fifth floor, and when I go downstairs—the sunlight, the physical activity of walking, and being around people—it’s like I’m being re-socialized.”

Thompson also bought a new Fujifilm camera at the beginning of 2020 and has been challenging himself to take a few photos during his daily walks, sharing over 250 photos from his neighborhood excursions to his Instagram.

“You see life still happening,” he says. “The ice cream man still wants to sell his ice cream on the corner, and the diamond guys are still out there selling diamonds and smoking on the curb. Even though the world has changed, people still want to embrace life and I suspect I unconsciously find that reassuring to see.”



A few of the images Thompson has captured on his digital camera while walking through his neighborhood this past fall and winter of 2020.

One drawback of going outside and seeing others socialize, however, is the reminder that he’s alone.

“There are those moments when you see people together or someone hug someone or hold hands with someone and you think, ‘Oh, I’m a little bit jealous, I’m a little bit annoyed.’ There’s some envy that they’ll be able to watch a movie together or laugh at the same show or sit across each other at the dinner table. It does put a fine point on the solitude that some of us are feeling.”

Still, Thompson is not ready to dive back into the dating pool just yet, and especially not in the middle of a pandemic.

“I would feel like I was violating my principles to get together with somebody I don’t know well at all,” he says. “Maybe a walk in the park, but then what? I’m not cool with dining out during the pandemic, even on a restaurant patio, so what is the next thing? It’s hard to spend time face-to-face with somebody, therefore I’m just trying to get used to being solo, which is good because it’s self-discovery anyway. What does my life look like without external influences? How would I spend my time when I’m not pleasing or adapting to someone else?”

To that end, Thompson has been carefully furnishing his first-ever solo apartment over the past few months, and fills his free time with a weekly science fiction drawing club and science fiction book club. His daily routines and the peace and quiet of his solo life include leisurely making hot breakfasts and spending stretches of his evenings reading.

Once the world opens up again, however, Thompson is eager to see friends and colleagues in person.

“Sometimes I go a whole week without talking to anyone and then when I do, I get hoarse after just a few minutes of speaking,” he laughs. “I still enjoy talking to people and feed off the energy of face-to-face scenarios. I’m looking forward to seeing everyone again.”



Christina Richey in their Playa del Rey apartment.

Christina Richey

Christina Richey is certain they [singular] got COVID in the early days of lockdown. While they couldn’t get tested at the time, their lungs “were cracking,” they recall, and Richey came down with a fever, painful coughing, and was put on a steroid inhaler.

The program manager for Planetary Science Research and Analysis, 38, who lives alone, quarantined for 28 days straight at their apartment in Pasadena at the time, afraid and unsure of how long they would be contagious.

Once recovered, however, Richey was staring down another unknown: the possibility of isolating for the foreseeable future.

“It was stressful but it felt like, ‘You can do it. It’ll just be a couple of months,’” Richey says. “I had no idea it would be almost a year. Even now, I only leave my house to grab food or work out.”

Working out in particular, as it turns out, became the force behind Richey’s push to stay mentally healthy for months on end by themselves. After Richey recovered, they placed an even higher premium on their physical health and mental wellness.

In the early months, Richey coped with virtual happy hours with friends and long walks to help their lungs recover. But even as Richey began to feel stronger, they worried the virus had taken long-distance running from them forever.

“I thought I had wrecked my lungs, and I didn’t think I would do anything beyond a half marathon again,” they say.

But with each passing day, as Richey laced up their shoes and stepped out the door, they came to a realization: “I couldn’t run very fast, but I could keep going without stopping.”

So Richey didn’t stop.

By May, they had run a 46-miler, was competing in weekly half marathons, and was regularly signing up for fitness challenges, including a virtual 24-hour race, where participants run or walk as many miles as possible within 24 hours. They ran a full marathon two days before Thanksgiving, and the 2021 goal is to run their first-ever 100-mile challenge in June.

Still, as inspired as their 2020 was, it wasn’t without its share of dark days.

“It’s been a roller coaster. I have moments where I’m doing great and I feel strengthened by my communities, and then there are the other days,” they say.

Richey is the co-chair of the Inclusion, Diversity, Equity, and Accessibility (IDEA) Working Group for NASA’s Planetary Science Division Assessment/Analysis Groups. The IDEA Working Group led efforts to organize white papers in response to the Planetary Science Decadal Survey, a massive undertaking to outline and prioritize key scientific goals over the next 10 years. As one of the few single people without children in the group, however, a large amount of responsibilities fell on their shoulders when the pandemic hit.

“I had moments where I was being this resource for everybody else and, at night, having no one,” Richey says.

Richey also worked within the four walls of a studio apartment, but the efficient space rented back in September 2019—an effort to simplify and streamline life pre-pandemic—suddenly felt suffocating. Richey muscled through the spring and summer as best they could, then moved in September 2020 to Playa del Rey, where they now live steps from the beach.

The first night there, Richey parked the car, looked out at the water, and just started crying from relief.

“The ocean is my place to go and be happy,” Richey says.

While the oceanside apartment provided a newfound sense of freedom, Richey’s highs also came with lows. One of those lows was a sleep disorder they had never dealt with before 2020: insomnia.

"I would only sleep two hours a night. Some days, I could work enough to exhaust myself into sleeping, and other days, I would force myself to take naps in the middle of the day. But over Thanksgiving, the insomnia got really bad. Maybe it was the stress of not seeing my family."

One silver lining of enduring the pandemic alone, however, has been the opportunity to bond with other single friends who have helped them "push through the loneliness at night," especially an employee at another NASA center who is in a similar situation.

"We never really talked before the pandemic, and now this person is one of my closest friends," Richey says. "We do fitness challenges together, send each other memes, and talk three times a week. In the middle of all of this, I managed to get a new best friend."

As for dating?

"It's been mostly non-existent," they say. "I've reached a point where I'm not necessarily trying to focus on finding The One, or whatever that is. I have so many people I call friends in my life, and the reconnections and new connections have been far more critical than dating, and I'm super happy. I think I've created many more meaningful connections this year than in previous years."

Most of all, Richey reflects on how critical self-care really is, and that it matters both how you treat others and how you treat yourself.

"You want to be as healthy as you can for you," they say. "If your version of healthy is, 'I got out of bed today,' that's okay. The mental health impact of this pandemic is very real on our society and our community at JPL. We have to recognize that and take care of ourselves. I haven't seen my family in Ohio since January of 2020. That's hard, but I just keep trying to remind myself that if I take care of myself now and they take care of themselves, we'll be able to see each other on the other side of this."

More JPLers share their thoughts on living alone during a pandemic...

Matthias Ellmer, age 35

"Living alone wasn't a factor in my mental health. I was kind of used to that already, being a private person. The transition was really natural...I'm a pretty solo person as it is. I liked living by myself before so it wasn't like, 'Oh, I have so much time to reflect and do hobbies' because I was taking time to myself for that before."

Leina Hutchinson, age 24

"Sometimes the loneliness gets to me. It comes in waves, where I'll have a couple of weeks where I'm feeling pretty good and just enjoying myself to the extent that I can. And occasionally, it will hit me that I'm feeling very lonely and missing that ability to hang out with friends a lot. I have bouts of being kind of sad...When it happens, I just let it happen, and sometimes it'll just be me lying down and being a little too absorbed in my own thoughts. My coping mechanism is to just let myself be sad and spend an evening curled up being a little upset. Once I wake up the next morning, typically I'm feeling better."

Jennifer Miller

"I was actually deployed to Florida in February to work on Mars 2020. When the pandemic hit, no one ended up coming to visit me. We were stuck in Florida with no one we knew and that was difficult for everything. It was more lonely in the evenings, but we still did go into work and I did see my coworkers every day...I came back in August and I would actually say the isolation is starting to hit me now with this second phase. But I've generally been an introvert. Being alone isn't as bad as it is for extroverts used to seeing people all the time."

Claire Marie-Peterson, age 65

“I was suffering from touch deprivation. I wasn’t touching anyone, seeing anyone, hugging anyone. There was nobody. I have nine brothers and sisters. I’m used to getting together with my family a lot: every birthday, Christmas, Easter, Thanksgiving, all of that. None of those meetings were happening...I cope with daily devotions, cooking nice things for myself, watching movies and television, cleaning the house, and playing with my cat.”



Guardian at the Center of the Universe

By Taylor Hill

In non-Covid times, Space Flight Operations Manager Jim McClure is the face outsiders are most likely to see when they visit Mission Control.

He’s one of the first JPLers to meet new hires and interns during Monday orientation. If you’re famous and want to learn about JPL, McClure will guide you to the heart of the control room, formally named the Center of the Universe. Sending a craft to the planets? McClure will facilitate your Mission Support Area needs. When that craft turns on its transmitter, the data will flow through the Dark Room for the Deep Space Network, a corner of Mission Control for which McClure is responsible.

And if that data should come with noise of one type or another—disruptions, messes, tired console operators—McClure makes himself responsible.

“Need a cup of coffee? Trash can emptied? I’m your guy,” McClure says. “If it helps our engineers and scientists get their jobs done, I’ll do it.”

How did JPL's jack of all trades come to be? Not because of any lifelong plan. Born in Jesup, Georgia, McClure grew up in La Canada, attending La Canada High School and thinking of JPL only as the place his father worked at what seemed like all hours of the night.

"Early on in my life, I had no interest in JPL, or really space for that matter, but I've changed my tune," McClure said with a smile.

In a moment of calm before the arrival of another JPL rover at the Red Planet, McClure talked about his winding path to JPL, his "full-service" organization of one, and how Covid has turned his world upside down.

Before we get into your path to JPL, can we talk about your father's role in space exploration and communication?

My father started at JPL in 1968 in the Deep Space Network inside the Dark Room, and he then got into Mission Control, where he was the Flight Director for Magellan and Galileo for launch. He was responsible for all of the mission controllers until he retired in 2000.

And he was actually involved in the start of the Space Race as well. In 1958, when he was 19 in the U.S. Army, he was in Cuba. He was the actual individual that tuned in the signal to the Explorer 1 satellite at the Havana Cuba tracking station. I have a newspaper article with a picture of him doing it. The fact that he ended up at JPL, I think that's kind of cool.



*A newspaper clipping of McClure's father at 19 years old tuning in Explorer 1 in Havana, Cuba in Jan. 1958
Image Credit: Courtesy of Jim McClure*

But your early impressions of JPL were not exactly positive?

My family moved to La Canada in 1968 when my dad started working at JPL. My only thoughts early on were that I hated the place, because it took my dad away from my baseball games. He was always working swing shift, and midnight shift, so I just thought of it as my dad's place of work.

So you have this aversion to JPL as a teenager; where did you head off to?

I went to a small tech school in Missouri actually because my father had taken a job with JPL working on a DoD project in St. Louis. After graduating, I got recruited by a company called Electronic Data Systems run by Ross Perot, the wealthiest man in the world at the time. I worked for him for five years, in Lansing and Detroit at GM and Chevy factories as a computer operator, automating the assembly lines.



Any life lessons come out of working for Ross Perot?

He had all of these little sayings and cliches, and they stuck in my brain. He would say, "You have to sweep the stairs before you climb them." Those things always stuck in my head, and even now at JPL, on tours I lead for interns and new hires, they're all ready to be the next director of JPL, and I just tell them to throttle it back a bit. You gotta sweep the stairs before you climb 'em, and I think it resonates a bit. It definitely did with me.

What brought you back to JPL?

Honestly at my 10-year high school reunion at La Canada, I got homesick. So I quit my job and came back unemployed. My father was back at the JPL campus, working on Magellan and Galileo, and refused to help me get a job. He was so worried about nepotism.

So in 1988, I sent in my own application and got hired by a contractor, who was contracted to handle all of Mission Control at JPL at the time. My first job was commanding the Galileo spacecraft on punched cards. I went to school to learn

about computers, get to JPL, and we're still using punched cards.

So for over a decade you work with the Galileo team, and end up as Galileo Mission Control Team Chief. Did your aversion to JPL change over time?

What changed for me, and where my passion came from, was seeing the passion and excitement from the engineers and scientists working on Galileo. The emotion that was palpable from these scientists when they would see the data coming back, I took pride in being able to provide that data for them. I don't understand the data, and I'm never going to pretend to, but I understand what that brings to them. The excitement from the scientists and engineers—just seeing what they are capable of what they are doing, and the dedication and the pride they get out of it, just doing my little tiny piece, if it helps them at all, that's all I need. And I will do anything to see that excitement on their face, and the thrill and the success. Literally I will do anything it takes.

So how did you turn Mission Control Team Chief into the job you have now?

I got this job because my office was right off the Dark Room, underneath the Viewing Gallery, and I would see our Lab management come in giving tours to VIP guests, and people would look up at the big screens that they were talking about, and the people just had no idea what they were saying. I never interrupted the directors, but I just sort of stood around, and they started kind of asking me questions, and then finally I just started doing it for them, and when they'd come in, they'd call over for me to do it, and then it slowly became more and more a part of my job.

Since 2000, you've been in the Mission Support Area for every critical event—around 65 launches, landings, orbit insertions, end of missions and more. What has changed over the years?

It's grown into a lot of media engagements over the years. Which is funny because I think of myself as one of the most shy people at JPL, but I was sort of thrust into the role over time by managers, and now I've been pretty fortunate to meet some pretty cool people, and do VIP tours at JPL, so it's pretty special.

What are some of your responsibilities during these critical events?

I call myself a full-service organization. I have no employees, but I'm here to help. From clogged toilets to landing on Mars, I'll do my part. Everyone thinks I'm the Building 230 Facilities Manager, but really, I'm just an interface for the projects. If they don't have time to call somebody and get something fixed, I'll take care of it. Whatever it takes.

I've learned from our previous Director for Communications and Education, Blaine Baggett, to make sure the trash cans and food wrappers are out of the camera views. He taught me to think like that. Get the clutter off the top of the consoles, "Hide the ugly," it's something I've picked up over the years. And these little things make a big deal. We're doing these historic things, and how you convey it to the public is important.

Outside of the big mission events, what's your day-to-day look like?

For about five or six years now—pre-Covid of course—every Monday morning when the new hires are getting the orientation tour, Deputy Director Larry James comes and greets the new employees at JPL. And so I spend the first 45 minutes with the new hires, and Larry's got 15 minutes or so. Additionally, I started inviting the summer interns out to the Dark Room floor, and telling them some stories. So now over about 10 or 15 sessions throughout the summer, I end up meeting about 1,000 interns each summer.

A lot of my schedule is really pretty fluid. With the VIP tours from the Director's Office, and managers, I'm really here to facilitate what they want—as long as it helps JPL. And that really allows me to do some pretty cool stuff. It's kind of embarrassing the superstars I've met.

What have been some of your favorite VIP tour moments?

Getting to do an episode of Jay Leno's Garage at JPL. In 2016, Dr. Elachi had laryngitis and couldn't speak the day of the shoot, and he told me to go do it. I said, "Excuse me?" But there I was, walking Jay around the Dark Room floor. Another favorite was Matt Damon. When the Martian was released, he did all of his interviews from the middle of the Dark Room. He did 40 interviews in one day. I thought that was pretty cool.

So you've got these people coming through the Dark Room seeing the Deep Space Network in action. How do you go about conveying that information to a general audience?

You've got people that run the gamut, from youngsters who love the cool lights, the Lucky Peanuts story, and the Center of the Universe plaque, and then you've also got visitors that know 10 times what I'll ever learn, and sometimes they happen to be 10 years old too, and I'm okay with that. JPL isn't the place to have an ego when you're talking to kids.

Since Covid hit, a large portion of your job has shifted—the VIP tours, new hire orientations and public events have been cancelled or moved online. What's life been like for you this past year?



Covid changed everything. I became the Covid coordinator for Building 230 and 264, assigned by Charles Whetsel, and it's my job to educate, enforce and protect Mars 2020 and the Deep Space Network teams, and anybody that comes and goes from these buildings.

So for the Mars 2020 team, they've written their Covid plan, and they've just started this past week testing weekly for Covid on Lab. And anybody who comes in contact with Mars 2020 personnel in the building, we wear N95 masks, and if we're in the room with Mars 2020 team members for readiness tests or during the landing event, we wear two masks (N95 and cloth mask over the top). Our concern is that if someone on Mars 2020 team gets it and potentially infects others, they could have to shut down the building, and then our Mars expertise is incapacitated.

Is it weird being the Covid rules enforcer to your colleagues?

The Mars 2020 team actually took two yard sticks and taped them together, so we've got a six-foot-long stick now. And I'm the bad cop. I walk around enforcing these rules, and I mean, who wants to be that person? But I'll just walk around, point it at em, or whatever, and it's become a joke now. They say, "here he comes with the stick." But they made it, so I use it.

What can we expect from the Mars 2020 landing event in February?

We applied the rules of Covid in the areas that we'll have Mars 2020 team members in, and that includes the Mission Support Area. Typically we would have 44 engineers and 13 managers in MSA, but we've got a max occupancy of 30 people in there right now. We've added robotic cameras to minimize photographers in the space, better air filters are installed in the building now, and we'll be double-masked in there the whole time.

Actually, it'll be the first time I won't be in the MSA in 20 years. And I'm okay with that. I'm not the important part, it's important we get on the surface of Mars, and we've got the right people in the room, that's what's important.

And all of this is taking place in a renovated Building 230?

We've done total reconstruction of Building 230. We took all of the Cassini team space on the second floor and it's been totally remodeled, with the Mars 2020 teams now in place. We redid the Lobby, updated the Viewing Gallery, and built a new wider ramp up to building 230, so we can get people in and out much faster.

So when we do reopen to the public and we're having tours, it's going to be an entirely new experience for our guests. I think you'll have a hard time getting the kids up to the Viewing Gallery, because the Lobby is so cool with the star ceiling and comets across the sky. And then when you do get them up in the Viewing Gallery, and there's the digital heads-up displays in the glass, they're not going to be paying attention to some old tour guide. I'm going to have to come up with some new content, because these visuals are stunning.



JPL on February 3, 1942. This area is just to the north of the current Building 11.

The First JPLers, Part 4: The Founders' Revival

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 October column, we left JPL's founders in 1938, when they'd largely run out of steam. Frank Malina was working part-time on the drawings for an aeronautics text book Caltech's Guggenheim Aeronautical Laboratory (GALCIT), director Theodore von Kármán was writing and part time doing wind tunnel work for the Soil Conservation Service (and part time working on his own graduate studies, too), while Jack Parsons and Ed Forman had gone back to work for powder manufacturers, frustrated at the inability to do further experimenting. Changing geopolitical circumstances during that year would bring them back together again and liberate funds on a much larger scale than they had seen before.

Revival

In August, Frank Malina was invited down to San Diego by the president of Consolidated Aircraft Company, Reuben Fleet, to give a talk about what rockets could provide aircraft. At that meeting, and in a follow-up report, Malina pitched the idea of using rockets to help heavy aircraft take off faster—what would become Jet Assisted Take-Off, or JATO.

Things started to pick up in September. Von Kármán was invited to Washington to a meeting of the National Academy of Science's Committee on Air Corps Research, which General Arnold had asked to be set up to advise him on research directions. One of the problems he wanted solved was the JATO problem, and the committee awarded GALCIT \$1,000 to work on it.

Back in Pasadena, Frank Malina would be torn about working on weapons, but believed a war was coming soon. He liked his work on wind erosion for the U.S. Agricultural Service but was being pressured to go full-time on rockets.

Japan had expanded its empire in China during 1937. Germany had conquered Austria in May 1938, and then was given a piece of Czechoslovakia, the Sudetenland, at the end of September, which, in turn, led to the dismantlement of Czechoslovakia by other bordering nations. Malina, who like many other Americans in the Depression, thought the American capitalist order was in need of reform, quoted his fellow rocketeer Qian Xuesen in a letter to his parents in January 1939: "Still, as [Qian] says, we must fight Fascism with the present U.S. capitalists so better armaments are needed."

He agreed to half-time on rocketry in 1939 and hired Parsons and Forman full-time. In June 1939, the National Academy expanded their grant to \$10,000.

Getting the Boot (again)

The little team restarted work on the Caltech campus, doing their testing on a platform outside the GALCIT building. They tested both liquid and solid propellants and motor designs, but started turning away from solids. Their problem was that the solid motors kept exploding, so the liquid-fueled motors seemed more attractive.

The exploding motors problem in 1939 was bad enough that von Karman interceded in early 1940, demanding theoretical evidence that a long-burning solid motor was even possible. He and Malina worked out a set of equations that proved it was, provided the surface area of the propellant being burned didn't change. What would cause it to change? Cracking of the propellant would cause the surface area being burned to grow. The burning area would also increase if the flame front got in between the propellant and the casing.

Solid propellants had to bond to the case and not crack while burning. They'd struggle with solving this problem into 1942.

In July 1940, the Army Air Corps took over the grant from National Academy of Sciences and a little more than doubled it, to \$22,000. The name of the effort changed too, becoming the Air Corps Jet Propulsion Research Project.

After another explosion buried a piece of motor in a GALCIT wall near a spot where Frank Malina normally sat, testing was banished to the Arroyo Seco. They chose a new spot inside the Laboratory's current East Gate, put up their first building, a workshop, and dug test pits into the hillside. [Photo]

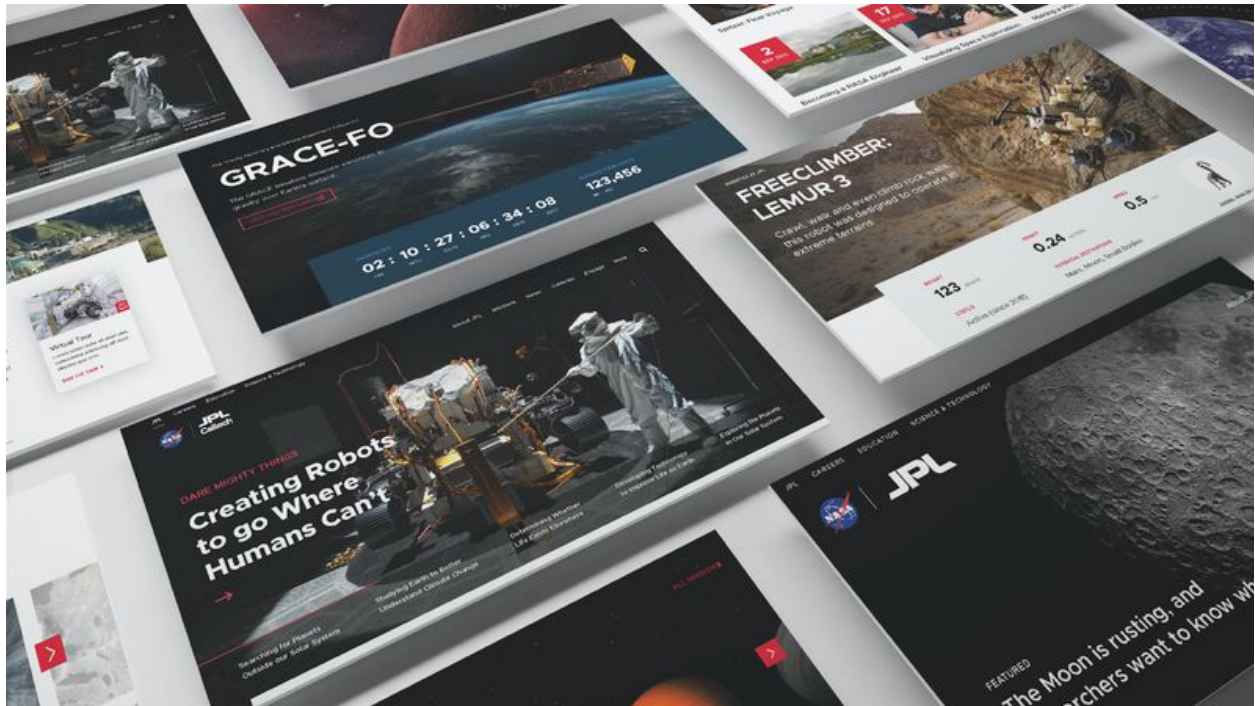
Expansion

The Army's funds enabled Malina to hire more people to help his small team. But he wasn't able to hire Qian Xuesen, whom he'd worked with in 1938 on rocket theory, as his theoretician because Qian wasn't a U.S. citizen. He couldn't (yet) get a security clearance, and their work was becoming classified. Malina hired a GALCIT instructor for that job instead, a Midwesterner named Homer J. Stewart.

Malina also split Parsons' role as their propellant researcher in two, hiring his former roommate and Caltech chemical engineering student, Martin Summerfield, to take over liquid propellant research. Malina

also hired the first woman computer onto the project, Barbara Canright, to help with data reduction and analysis. Her husband, Richard, was also hired, initially as a technician and driver, and later an engineer.

By mid-1941, the little group thought they had made enough progress to try flight tests. Next month, we'll look at their first flight experiments.



A New Look for JPL Online

By Taylor Hill

Head over to [JPL's main website](https://www.jpl.nasa.gov), and you're likely to notice a fresh new look gracing the front page.

The website redesign depicts a more holistic view of the Lab, emphasizing JPL's identity as an elite hub of robotic space exploration while also highlighting the culture, people, and history that make it unique.

JPL's DesignLab, Digital News and Media team, Public Services Group, and Information Technology Solutions Directorate (ITSD) collaborated on the effort, starting with external audience research studies and internal stakeholder interviews to gain a better understanding of the site's functionality for the public and for JPLers.

"The need for a redesign was really two-fold," said Web Producer Randal Jackson. "First, we wanted to move to a more modern, Python-based Web platform; and second, we needed to do a better job of informing people who come to [jpl.nasa.gov](https://www.jpl.nasa.gov) who we are, and what it is we do."

One of the main takeaways from external audience studies was a lack of awareness of exactly what JPL is. To do that, Digital News and Media Manager Veronica McGregor said the team has reprioritized real estate on the front page to tell a more complete story of JPL, as opposed to simply putting news of the latest missions on the top of the homepage.

“We want people to see the faces of our employees, have easy access to the job opportunities site and education pages, easily view active missions and our historical accomplishments,” McGregor said. “We don’t want people walking away from our homepage without knowing what JPL is, and what we are about.”

Some of the most obvious changes to the new site come at the top of the home page. The “hamburger” expanding menu on the top right corner of the page is replaced by tabs along the top and right side that allow for more direct navigation options to JPL’s Careers, Education, and Science & Technology sites, along with links to the Lab’s “About JPL” section, Missions pages, News and Features, and image and video galleries.

A dashboard with real-time data of active missions, upcoming landings/launches, Deep Space Network transmissions and more run just below the top story section, with the latest news section residing below that.

DesignLab Creative Director David Rager said his team approached the redesign with an eye toward showcasing the Lab’s incredible stories, graphics, and photos in ways that would be easily accessible and readily understood by visitors.

“Overall we hope that the new design feels a little more effortless, and that our visitors are encouraged to fall down the content ‘rabbit holes’ we’ve dug,” Rager said.

Visiting JPL Virtually



The new virtual tour of JPL gives users a chance to explore key destinations on Lab in 360-degree images.

Scroll down the homepage, and you’ll be treated to a quick introduction of JPL, and an option to take [JPL’s new virtual tour](#)—where users can explore the Lab through 360-degree panorama views of Mission Control, the Spaceflight Assembly Facility, von Karman Auditorium, and the Visitor Museum.

The virtual tour brings a completely new option for the public to see and experience what JPL is without stepping foot on Lab. The idea is years in the making, but became a key project for the Public Services group during the pandemic, as public access to JPL has been suspended, including tours.

JPL partnered with an outside vendor that specializes in virtual tours to create a program that allows users to navigate in and through a few of the typical tour hotspots, click on models to learn about specific missions, and see the latest spacecraft under development in High Bay 1 all from the comfort of their home.

In non-Covid times, the Public Services Office ran public tours of JPL—a popular attraction that was often booked out six months in advance. With the new program, the group is planning to use the tour to schedule and operate live virtual tours led by JPL tour guides.

“Prior to the pandemic, we would get more requests than we could possibly handle,” said Public Services Manager Kim Lievense. “With this new tool, we think it can make us a bit more accessible to people who want to see the Lab, and really opens up a JPL tour option to any school in the country—not just locally.”

Once the virtual tour is off and running, the team plans to start adding more locations to the tour, such as the Mars Yard, Microdevices Laboratory (Building 302), Earth Sciences Center (Building 264), and the In-Situ Instrument Laboratory (Building 317).

What Else Is New at jpl.nasa.gov

- [Virtual tour](#), with interactive 360 degree views of key JPL locations.
- A new gallery on [robots at JPL](#).
- Updated [mission pages](#) featuring 3D spacecraft models and real-time data.
- The 12-episode documentary series, “[JPL and the Space Age](#),” available online for the first time.
- An updated “[Asteroid Watch](#)” dashboard, showing the next five closest approaches to Earth.

New Overview Pages Highlighting JPL Research

- [At Work on Mars](#)
- [Our Planet](#)
- [Exploring Exoplanets](#)
- [Exploring the Solar System](#)
- [Understanding Climate Change](#)
- [Understanding Weather](#)
- [Stars and Galaxies](#)
- [Technology](#)
- [JPL Life](#)

'JPL and the Space Age' Documentary Series Now Live

The site also includes the documentary series, “[JPL and the Space Age](#),” written, produced and directed by JPL Fellow and Emmy Award winning documentarian Blaine Baggett. Ten years in the making, the 12-episode series is being made available to the public online for the first time.

New Campaign Section

Scroll down to the bottom of the homepage, and you'll see a new campaign created by DesignLab called “JPL is a place for _____,” with the blank filled in by a revolving list of words that reflect some of what makes JPL unique. The campaign links out to a new topic page called “[JPL Life](#)” which will aggregate current and future articles that represent the incredible and diverse Lab population.

Events



Von Karman Lecture Series: Planetary Protection

Thursday, Feb. 4

7 to 8 p.m.

Webcast:

YouTube link: <https://www.youtube.com/watch?v=nPC1IJ5QgsA&feature=youtu.be>

Ustream link: <http://www.ustream.tv/nasajpl2>

Protecting the Earth from the scum of the universe... and the universe from the scum of Earth. Planetary Protection Lead Moogega Cooper (Mars 2020, Europa Clipper) talks about preventing contamination during missions around the solar system and making sure they don't bring anything dangerous back with them.

Speaker:

Moogega Cooper, Planetary Protection Lead, Mars 2020

Hosts:

Brian White, Public Services Office
Nikki Wyrick, Public Services Office



The Thrill and Terror of Landing a Spacecraft on Mars

Wednesday, Feb. 17

7 to 8 p.m.

Register below:

https://caltech.zoom.us/webinar/register/WN_Vv50mjP4TrOB18alc95Z1Q

Speaker: Rob Manning - Chief Engineer, JPL

Abstract:

So far, half of all human attempts to land robots on Mars have ended in failure. In the past 20 years the success rate has improved to about 70% but even the experience gained from building on a string of 5 successful U.S. Mars missions in a row can't prepare us enough to guarantee success. From the beginning, we have learned from both success and failure to "load the dice" to help improve the odds of success. On Feb. 18, 2021, Mars 2020 with the Perseverance rover will try again. This time we will be aiming for an even smaller landing area on Mars that is littered with exciting surface science but also with danger. Over the last several years, the Mars 2020 team built on past Mars mission experiences and inventions to develop new tricks that will improve the odds to stack the deck in favor of a safe landing and an exciting start for a Mars Sample Return mission.

Manning will explain the challenges and some of the stories and lessons that have led to the Entry, Descent, and Landing (EDL) design of this newest Mars mission.

Speaker's Biography:

Rob Manning is chief engineer for NASA's Jet Propulsion Laboratory (JPL) as well as chief engineer for JPL's Engineering and Science Directorate. An engineering fellow, he has been designing, testing, and operating robotic spacecraft for 40 years including Galileo to Jupiter, Cassini to Saturn, Magellan to Venus, and many Mars missions.

In the early 1990s, Manning became the Mars Pathfinder chief engineer where he also led the Entry Descent and Landing (EDL) team. After successfully landing and operating the first airbag lander and rover on another planet, he co-conspired the idea to modify the Pathfinder and Sojourner Rover designs to become the Mars Exploration Rovers (MER), Spirit, and Opportunity. On MER he led the rover system engineering team as well as the EDL team. At this time, he co-conceived the idea of sky crane landing that was later used by Mars Science Laboratory (MSL).

After MER he became the Mars Program chief engineer where he helped plan and integrate the various Mars missions like Phoenix Lander, Mars Reconnaissance Orbiter, MSL, and beyond.

In 2007, Manning became the chief engineer for the MSL Project that successfully landed Curiosity Rover on Mars on Aug. 5, 2012. Manning was responsible for ensuring that the design, the test program, and the team, working together, would result in a successful landing and a productive rover. Manning wrote about his experiences in a book called "Mars Rover Curiosity: An Inside Account from Curiosity's Chief Engineer."

Most recently Manning helped create a team to design and build an emergency use ventilator specifically for the Covid-19 pandemic.

As a result of his luck at JPL, Manning has received four NASA medals, is in the Aviation Week Magazine Space Laureate Hall of Fame in the Smithsonian Air and Space Museum, has received two honorary PhDs, has a minor planet named after him, and is an Associate Fellow of the American Institute of Aeronautics and Astronautics. In 2004, SpaceNews magazine named him as one of 100 people who made a difference in civil, commercial, and military space since 1989.

Manning is a graduate of Caltech and Whitman College where he studied math, physics, computer science, and control systems. He makes his home in Pasadena, CA with his wife Dominique and their daughter, Caline.

This lecture is sponsored by the Keck Institute for Space Studies.

JPL Family News

Awards



A JPLer Becomes a New IEEE Fellow

The Institute of Electrical and Electronics Engineers (IEEE) has elected Alan Kleinsasser as a Fellow. The institute's Council on Superconductivity selected Kleinsasser "for contributions to superconducting electronic devices, circuits, and systems."

He is JPL's Group Supervisor for the Superconducting Materials and Devices Group, 389I.

Kleinsasser has spent his career developing, characterizing, and understanding superconducting microelectronic devices for use in integrated circuits for application as electromagnetic sensors, in communications, and in classical and quantum computing. For the past three years, he has served as the supervisor of about 30 R&D personnel, both JPL employees and affiliates.

Kleinsasser says, "I am happy, and looking over the list of past honorees, humbled at being selected to join the ranks of CSC IEEE Fellows."

More information is at: [IEEE CSC Fellow recipients 2021](#)

Retirees

The following JPL employees recently announced their retirements:

40+ Years:

Annie Richardson, Section 1865, 44 years

30+ Years:

Robert W. Johnson, Section 2511, 38 years

Georg Siebes, Section 313X, 37 years

Wesley P. Schmitgal, Section 3820, 33 years

Stephen A. Townes, Section 9000, 32 years

Michael W. Werner, Section 7000, 31 years

20+ Years:

Pim W. Vosse, Section 355H, 27 years

Cruzita Abellana, Section 9010, 26 years

Scott H. Nolte, Section 382B, 25 years

Neil E. Bucknam, Section 333H, 20 years

10+ Years:

Dellon Strommen, Section 357B, 19 years

David Kato, Section 252F, 19 years

Letters

I wish to thank my JPL family and friends for your kind words and condolences after the sudden passing of my beloved mother. A special thank you to my Section 331 team who has been so supportive during this incredibly difficult time. Thank you, also, to the JPL Hospitality Group for the beautiful plant in remembrance. — **Edna Villareal**

Congratulations to new father, Sean Ricketts, program schedule analyst for Europa Clipper. Warren Hugo Ricketts was born on Wednesday, Jan. 27 at 1:23 p.m., at 7 lbs. 7 oz. and 21" to Sean and Aurelia Ricketts. — **Division 25x and the Europa Clipper Team**