universe

JPL

September 2023

Featured Stories

Charles Whetsel's pin collection represents over three decades of JPL missions and memories.

JPL Pins, Part I: A Little Point of Pride

By Vincent Robbins

In the 1960s, a space enthusiast wrote letters to space agencies around the world seeking information. His request: topographical maps of the Galilean satellites of Jupiter and anything else about space missions and science they were willing to provide.

JPL wrote back to the space enthusiast, who was in fourth grade. They didn't have the maps he wanted, but that didn't stop the kid from probing Lab personnel with more questions. To which JPL kindly responded.

Some years and several letters later, he received an envelope containing something a little bulkier than the usual response memo.

“In addition to answering my questions, somebody sent me a pin,” says Marc Rayman, who grew up to become JPL’s chief engineer for mission operations and science and, since February 2023, chief engineer for Psyche.

Rayman has since amassed a vast collection of information and documentation about the science and engineering of space exploration from around the world. But the pins, small and symbolic as they are, have stuck with him.

“JPL is responsible for much of the history of space exploration, it continues into the present, and clearly will into the future,” says Rayman. “I think it's wonderful to capture that with these beautiful pins…they are a fun way to display support and enthusiasm for the missions.”

A Cast of Collectors

Within months of starting at JPL, all new employees experience the curious excitement of receiving a big white envelope that has a little heft to it. Peeling it open, they find their very first JPL pin — maybe they even stick it in the black shadow box that is provided to new hires. Over time, their collection grows — glimmering as a miniature display of the accomplishments achieved at the Lab during their tenure.

It’s no surprise, then, that the most extensive collections belong to those JPLers who have been on Lab the longest.

Europa Clipper Deputy Science Manager and REASON Investigation Scientist Trina Ray, who has been at the Lab since 1989, has an extensive collection of pins but is selective about which ones she wears on her lanyard. Around her neck, she shows off a few pins from her first mission, Voyager; a couple of pins from her current mission, Clipper; an unofficial pin from the “Quiltonauts” — the team that helped put together the welcome quilt that hangs in Director Leshin’s office; and finally, her lanyard boasts two pins from the mission that she spent decades working on and still captures her heart: Cassini.

Trina Ray proudly displays some of her favorite pins on her lanyard.

Ray has saved every pin, button, and badge that was given to her over the course of the Cassini mission, including one from the Cape that initially evaded her. When she realized she was missing it, she reached out to Spacecraft Manager Julie Webster.

“[Webster] says, ‘Trina, I'm almost certain I have an extra one somewhere, and if not, in my will, I will give you my pin,’” says Ray. Fortunately, at the end of the mission, inside a box of Cassini swag, an extra Cassini Cape pin turned up, completing Ray’s collection.

“My plan is to hire somebody who will design a pinboard that looks like Saturn,” says Ray.

A display case full of over 100 neatly-arranged pins sits on the desk of Charles Whetsel, outgoing director for engineering and science, who started at JPL in the summer of 1989.

“There's such amazing science and understanding [at JPL] — understanding the universe, understanding our planet,” says Whetsel. “And the pins always come out with a little description of science — what it is we're doing — whenever they get sent around.”

Whetsel says it was this cataloging of JPL’s accomplishments that moved him to keep them and put them on display. “I felt valuable to be part of an organization like JPL.”

Charles Whetsel keeps all his pins nicely displayed in a shadow box on his desk.

Then there’s Randii Wessen, project manager for Science Understanding from Data Science (SUDS), HEX-P proposal manager, and A-Team lead study architect, who is an avid collector of historically important space memorabilia and information. Wessen held onto all of the pins that came his way since he started at the Lab as an intern in 1980.

“One of my philosophies in life is the most important thing you own is not stuff — it's time,” says Wessen. “And if time is the most important thing you own, then the most important thing to collect at the end of the day is frozen time — your memories. These [pins] are frozen memories.”

Randii Wessen shows off some of his pins, along with other space memorabilia displayed in his office.

One of Wessen's favorite pins was designed by his twin brother, Robbii, a graphic artist. The pin commemorates Voyager 2's Neptune fly-by, and Wessen explains how it cleverly portrays the science behind the spacecraft's polar crown trajectory.

"I said 'You have to design it the right way,'" says Wessen, recalling when he explained Voyager 2's trajectory past Neptune to his brother. "You go behind the planet to get a gravity assist, but on Neptune, we went over the top and slightly ahead of it. So here we had a polar crown pass — by Neptune and to get to Triton."

It's clever artistic representations of scientific feats like this that many technically-oriented JPLers seem to love.

"The science and the engineering are, of course, what thrill me, but the intersection of those with art appeals to me very much," says Rayman. "Some of the science and engineering are very abstract, and they also are not easily depicted in a simple visual way. And part of what intrigues me is how talented graphic designers or artists can capture something that's special about that in a simple design that is often less than one square inch."

Marc Rayman poses with just a few pins from his extensive collection.

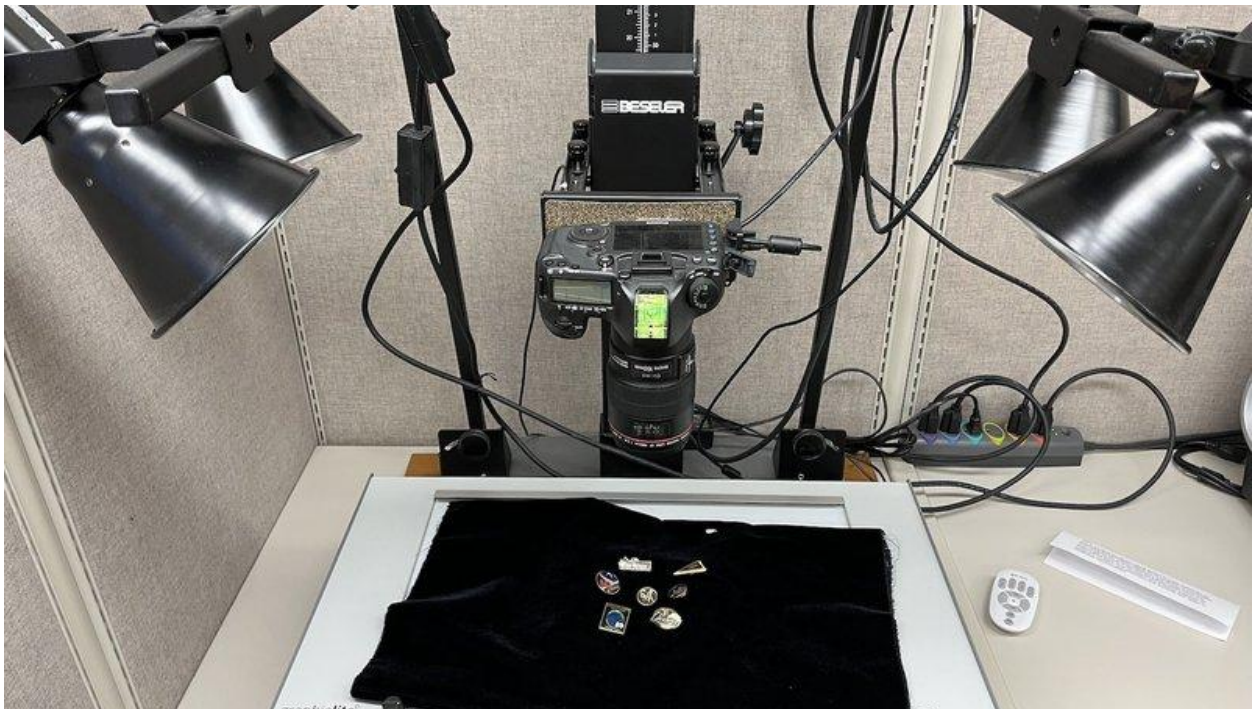
Pin-Pointing the Origins

While JPL's veteran collectors give us a sense of how far back the pin tradition goes, nobody knows when exactly it began and how many pins have been issued over the decades.

But there is one group of collectors that is trying to figure that out: JPL Archives.

Earlier this year, Archivists Madison Teodo, Kylie Neal, and Victoria Castaneda began cataloging the pins that their team has collected and received over the years. As of this writing, they have photographed and documented upwards of 60 pins, but they know they are nowhere near a completed list.

"We're very much in the photo phase," says Teodo. "This is going to take a while to do just because we always keep finding more pins."



Archives documentation project includes photographing each pin for their records.

Finding pins is the least of it — the hard part, Teodo says, is figuring out their provenance.

“I'm trying to get some information before we start just taking photographs of 150 pins, but have no information about any of them,” says Teodo. “Newer ones are easy, it’s the older ones that are super difficult.”

For each pin she catalogs, Teodo hopes to dig up details such as the designer, manufacturer, the year of release, and information about the mission or the milestone that the pin commemorates.

As of now, the Archives team says the handful of Voyager pins — commemorating various fly-bys and anniversaries — are the oldest that they think were produced by JPL, likely in the 1970s and ‘80s. But without further research, they can’t definitively say exactly when each pin was manufactured.

Among the many pins he has collected over his storied three-plus-decade career at JPL, Marc Rayman has several that predate his tenure — a Sergeant missile pin, two different Mariner II pins, two different Mariner IV pins, an Explorer I 10th-anniversary pin, and a Surveyor pin.

“By the time I joined JPL, I'd been writing to the Lab and to its partners for information for more than 20 years. And they'd often include a pin,” recalls Rayman. “I suspect [the Sergeant] pin is from prior to 1962, and perhaps quite a few years before, but I don’t know.”

The Archives team, however, is hesitant to speculate.

“We can't make any assumptions without some more detailed info,” says Teodo.

Here at JPL Space, we don’t mind speculating (ahem: The Hunt for the Oldest Tree on Lab). And to that end, Rayman’s Sergeant pin seems like the leading candidate for the oldest pin remaining in a collection — if it was actually made around the time Sergeants were developed, and distributed by JPL as an official souvenir.

The Archives team says they are relying in part on JPLers like Rayman to open up their pin cases (or desk drawers, jars, or shoeboxes) full of pins to help them fill in the blanks in their timeline. And while they are

happy to accept pin donations, they are primarily hoping to borrow, photograph, and return pins to their proud owners.

“People love their pins, so they don’t want to give them up, but hopefully they would be happy to participate in helping us preserve that information,” says Castaneda.

Although it’s not as organized now as it used to be and he doesn’t have an exact tally, Rayman’s collection, having started through the mail as a youngster and also including some pins donated from retirees who wanted to pass along their old treasures to a loving home, is likely the one to beat.

“I wonder if I might have the largest personal collection of pins from JPL — and the rest of the world’s space activities — of anyone at JPL.”

Rayman, ever enthusiastic about anything space-related, says he’ll be happy if the Archives team proves him wrong.

Pins go on a long journey from ideation to design to manufacturing before landing on JPLers lanyards. Image credit: Photo Lab.

JPL Pins, Part II: How a Pin Comes to Life

By Vincent Robbins

On her first day on Lab, Kaelyn Richards, a graphic designer in DesignLab, met a colleague who took one peek at Richards' lanyard and said that it looked a little empty.

“She had piles of pins, and I think she handed me around 10 of them all from different missions. I thought they were the coolest things ever,” Richards remembers. “I became obsessed with collecting them.”

It wouldn’t be until a few years into her job that Richards would get to design a pin herself — an unusual job even for a seasoned designer.

“It was intimidating to design something so permanent,” Richards remembers. “It's something that the entire Lab sees. You want to make something that people get excited about and actually want to put on their lanyards.”

But Richards and other designers are far from the beginning of the process that brings pins to JPLers’ desks. Like missions themselves, pins go through a thoughtful journey of planning, ideation, and approvals before moving to the proverbial Pincraft Assembly Facility.

Several coin-sized pieces of art from recent years. Image credit: Photo Lab.

Little Mission Spotlight

Under JPL Rules, pins are classified as “memorabilia for public information, educational engagement, and employee morale purposes” to commemorate the accomplishment of “a significant public milestone” such as landings, launches, anniversaries, end-of-missions, or even notable fly-bys and space encounters. The process of bringing a JPL pin to life is shepherded by the Public Engagement office.

“[JPL pins are] really to honor a special event,” says Public Engagement Manager Alice Wessen. “And every mission deserves their special event, their special moment.”

Commemorative memorabilia, as well as other educational and promotional materials for each mission, are coordinated by the Public Engagement manager for the given theme (e.g. Earth, Mars, Solar System, Universe, etc.). Whether the mission is currently in development or has been ongoing for decades, the theme manager works closely with mission staff to plan around upcoming landmark events. During this process, the Public Engagement team helps craft the memo that accompanies each pin, secures expenditure clearance from contracts, and liaises with DesignLab and pin manufacturers to make it a reality.

While mission pins are just one piece of the Public Engagement plan, Wessen says they hold a special place in the hearts of those involved with the missions.

“Pins are one of those uniquely nerdy, geeky, wonderful things that missions do,” says Wessen. “Missions all want the little spotlight — they just want to feel like ‘it's my time.’"

As the event approaches — typically at least nine months, sometimes more, in advance — the Public Engagement theme lead and mission staff will connect with DesignLab to begin working on the visual aesthetic of the pin.

Thinking Outside the Square-Inch Box

With many combinations of materials and several manufacturing processes, the practical constraints of designing a one-square-inch piece of metal are a lot different than typical design products like posters, websites, or mission identifiers.

“The learning curve was a little steep just because it took a while to learn what was even possible production-wise, and then you have to figure out how to make it come to life,” says Richards. “You can screen print them, you can embed glitter in them, you can have moving pieces, you can have parts that spin. There are endless possibilities with what you can do, and I’m still learning new things every time a pin project comes across my desk.”

As for materials, many JPL pins use a technique known as cloisonné, in which metal injection molds are used to create small surface compartments that are then filled with enamel. (Cloisonné is an ancient method, dating back to around the third millennium B.C. in Mesopotamia and Egypt.) Some JPLs pins, like the Nustar, SWOT, and Spitzer Beyond pins, are made of soft enamel which allows for more texture and smaller levels of detail for lines and typography. But Richards says the majority of the pins that JPL makes, like the InSight, ECOSTRESS, and MIRI pins, are hard enamel, which tends to be more flush, polished, and smooth. There are also photo pins that have a printed image covered by a resin coating, but these don’t age as well so the demand has gone down in recent years.

One look at Richards’ pin collection offers a small exhibition of how DesignLab has put many of these materials and creative techniques into practice over the years. The Nustar pin, for example, is rainbow anodized metal, making each pin a uniquely colorful hue; the DSN 50 Years of Tracking pin has three-dimensional textures; and the GRACE-FO pin has a printed background image.

Richards has experimented with various colors and materials in her pin design over the years. Image courtesy of Kaelyn Richards.

One of the most challenging and memorable pins that Richards designed was for the Mid-Infrared Instrument (MIRI) on the James Webb Space Telescope. DesignLab was tasked with creating a pin that commemorated and symbolized MIRI and JWST before any of the JWST images were even released.

“How do you design a pin that celebrates the visual results of a mission that we haven’t seen yet?” says Richards. “The MIRI team said that because of the shape of the mirror segments, stars were going to have a prominent six-point diffraction pattern to them — which is why we have the six-pointed star in the center of the pin.”

The result was a hard enamel hexagonal pin with a black background and a six-colored set of arching color rays leading to a six-pointed star in the center. The semi-transparent enamel panels of the color rays have no metal backing, creating a unique “stained glass” effect when the pin is held up to the light.

(Richards says she was relieved to see prominent six-pointed flared stars when the first JWST photographs were released.)

Graphic Designer Barbie Insua, who has designed many JPL pins including the Cassini Grand Finale and the recent MSL 10-Year Anniversary pin, said in a talk about designing the Cassini pin, that she looks for inspiration wherever she can find it — jewelry, posters, vintage berets, signage, museums, theater, art exhibits, books, and even meditation.

“Every pin has a story,” Insua says.

Some have even been horror stories. Insua recalls a run of Mars Reconnaissance Orbiter pins that went to production with the word “reconnaissance” spelled wrong.

“The pin with the typo is more valuable than the one without,” says Insua. “It's limited edition because they caught it.”

But fortunately, most of the pin stories have a happy ending.

“It's really fun to make the mission proud because it represents that mission. And if it represents that mission well, then we've done right by them and we've done right by every single JPL employee,” says Insua. “To me, the pins represent the fact that we are all a part of every mission, of every triumph — and every typo.”

It’s that collective, commemorative nature of the pins that makes each pin a particularly significant project for the DesignLab team.

“[At JPL] we work on these really long-term projects, people put so much time into them, so many years, and then they get shipped off to wherever they are going in space — and that's it,” says Graphics and Production Group Supervisor Lauren Shapiro. “So it’s a physical token, or a reminder, of that moment in time. And so as you collect them, it shows all of the achievements that have happened since you started here.”

For the folks involved in the creation of JPL pins, these little tokens of colorful enamel and metal aren’t just a commemoration of the achievements that happened during their tenure on Lab, rather their pin collections *are* the achievements — glittering proof of their imaginative contribution to JPL’s mission.

Sergeant: JPL's Last Weapon and First Foray into Systems Engineering

By Erik Conway

The U.S. Army Ordnance Department's Jet Propulsion Laboratory was not all picnics and dances, notwithstanding my last article. Social events offered a brief respite from the challenges of turning the Sergeant missile, successor to the troubled Corporal, into a deployable weapon.

The Sergeant had two incarnations between 1948 and JPL's exit from the weapons business in 1963. Sergeant was born as a sounding rocket like the WAC Corporal. This version of Sergeant failed, but at least it failed as instructively as spectacularly.

Twelve of the 15-inch Sergeant motors were cast and tested at the Marine Corps' Camp Pendleton. They all exploded.

It had started out well enough. In May 1947, JPL had received a research contract from the Army to develop larger diameter rocket motors. During the decade or so since Jack Parsons' relatively successful asphalt and perchlorate solid fuel JATO motors, there had been a great deal of research into better fuels.

In 1945, a member of JPL's solid fuels section named Charles Bartley had developed a new formulation that used neoprene as its fuel. But the solid neoprene was difficult to work with, and a polymer specialist from Shell Chemicals Co. pointed Bartley to Thiokol Chemicals and their proprietary liquid polysulfide compound.

Known as LP-2, Thiokol's fuel became the basis of Bartley's and others' efforts at JPL. Newly hired JPLers John I. Shafer and Henry L. Thackwell, Jr., took on the task of proving that the polysulfide propellant would withstand high accelerations. They used a test vehicle called Thunderbird, a six-inch diameter rocket designed to reach accelerations 120 times stronger than Earth's gravity.

Shafer and Thackwell introduced a British concept to JPL with that experiment: the internal burning star grain. Instead of the propellant igniting from one end like a wick, the configuration burned from the center

outwards. When the fuel grain was cast, it was poured around a star-shaped mold that was removed as the propellant cured. The star shape prevented a too-rapid buildup of pressure, while combustion from the center out allowed the fuel to insulate the casing from intense heat until the moment of burnout.

Thunderbird tests in 1947 and 1948 were highly successful, and the propellant was immediately adopted beyond JPL's fence. Hughes Aircraft adopted it as the booster for its Falcon air-to-air missile, and Shafer used it for the 'spin-up' rockets on the Bumper-WAC.

But the goal of the program was much larger solids than the six-inch Thunderbird, and Shafer proposed a 15-inch diameter test vehicle after the first successful Thunderbird flights. In 1948, the Army approved the Sergeant Test Vehicle.

After 12 consecutive explosions, JPL cancelled the program to focus on the nearly as troubled Corporal.

Thackwell wouldn't quit on the Sergeant. He quit on JPL instead and went to Thiokol, convinced that the Sergeant could fly with a thicker casing. He convinced Thiokol and General Electric, which managed the Bumper program of V-2 flights, that a solid fueled successor to the V-2 was possible. Army Ordnance approved a test vehicle using the JPL fuel and star grain combination that was even larger than the doomed Sergeant. Known as RV-A-10, the rocket would be 31 inches in diameter and contain 5000 lbs. of fuel.

With a much thicker case (0.2 inches or 5mm thick vs. .065 inches or 1.7mm), and a revised propellant that was slightly more elastic, the RV-A-10 flew successfully at Cape Canaveral in 1953.

The Sergeant Returns to JPL

Shortly before the RV-A-10's successful flight, Army Ordnance had granted three study contracts for a solid-fuel successor to the Corporal to JPL, to GE, and Redstone Arsenal. Aerodynamicist James D. Burke, who had come to JPL from Caltech in 1949, led JPL's proposal. The following year, the Army rated Burke's proposal the most comprehensive of the three. The Sergeant program at JPL was reborn.

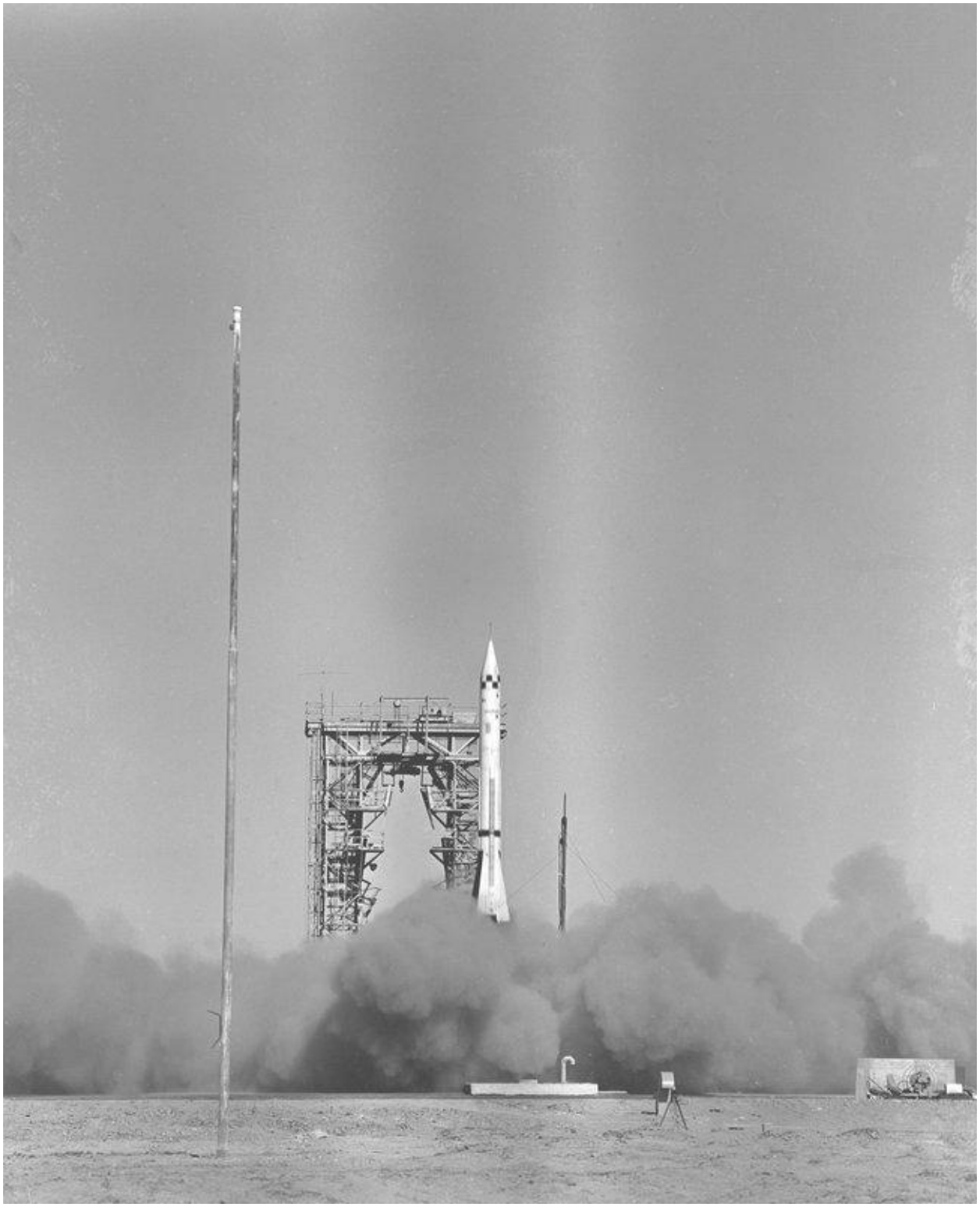
The new Sergeant program had as its goal a simple, reliable, maintainable weapon system. At the Industrial College of the Armed Forces in 1958, JPL Director Pickering commented that the Corporal development had been a "miserable mess."

Sergeant had to be different.

"Simplicity and reliability must be the first considerations in all system planning," Pickering told the audience. "I feel it is most important in the concept of a weapon system, in all phases from research and development down to logistic supply and maintenance, that the complete system concept be introduced very early in the development of any weapon."

With Corporal, the missile came before the system intended to make the weapon reliable and effective. Sergeant – and every JPL mission since – went from system to product.

The first Sergeant firing took place in January 1956 at White Sands, using the Corporal test launcher and a modified Corporal guidance system, as the JPL-designed all-inertial guidance selected by the Army wasn't completed until mid-1957. Starting with Round 7, thanks to a project manager named Jack James, a guidance and control specialist, JPL started using a novel failure reporting system. James credited Eberhart Rechtin, manager of JPL's Electronics Research section.



Sergeant Round 1 launch, Jan. 19, 1956.

James recalled Rechtin saying “Look, they [the Army] are asking such high reliability of the Sergeant that what we must do is institute a failure recording-reporting system, and any time during the development there is one problem, one anomaly, we must effect a major change… so it precludes it ever happening again.”

Failure reporting wasn’t the only systems engineering innovation in Sergeant. In September 1957, the program gained a new director, Robert J. Parks, also a guidance specialist and previously manager of the Guidance Analysis section. Parks and James, as his deputy, introduced design freezes, change control,

and required consistent documentation to facilitate hand-over of the project to the production contractor, Sperry Gyroscope Co.

Seventeen Experimental Model flights followed the earlier series of feasibility tests. These flights brought both missile and ground systems closer to the final intended configuration. The drag brakes, jet vanes, propellant and guidance system all evolved during this test series, as did the ground equipment. Yet even these early tests showed Sergeant's reliability advantage over the Corporal. Two missiles were accidently destroyed by range safety, but all the rest completed their flights with varying degrees of success.

The final test series, the Engineering Model flights, were performed with production prototypes and were intended to show the Army that the *system* met its requirements. These tests were not just of the missile, but of its launcher and transporter and the rest of its ground system. Only corrections were allowed at that point. JPL only participated in the first three of the Engineering Model flights, in late 1959 and early 1960. After that, Sperry took over production and testing, with JPL serving as a consultant. Even the Lab's consulting role ended in 1963.

The Sergeant missile was first deployed in 1963 to South Korea and Europe, though its flight test program continued several years beyond that as Sperry tried to further improve the weapon's reliability. It replaced JPL's Corporal overseas. The Sergeant required about a third of the ground equipment and personnel the Corporal system had, a key goal of the Army's. The last Sergeant missile battalion was deactivated in 1977.

Sergeant's Legacies

The large solid fuel motor technologies that JPL helped pioneer quickly replaced liquid fuels in most American missile systems. Even larger solids proved possible. The US Navy's Polaris submarine-launched ballistic missile boasted a 54-inch diameter solid motor, for example, and first flew in 1958.

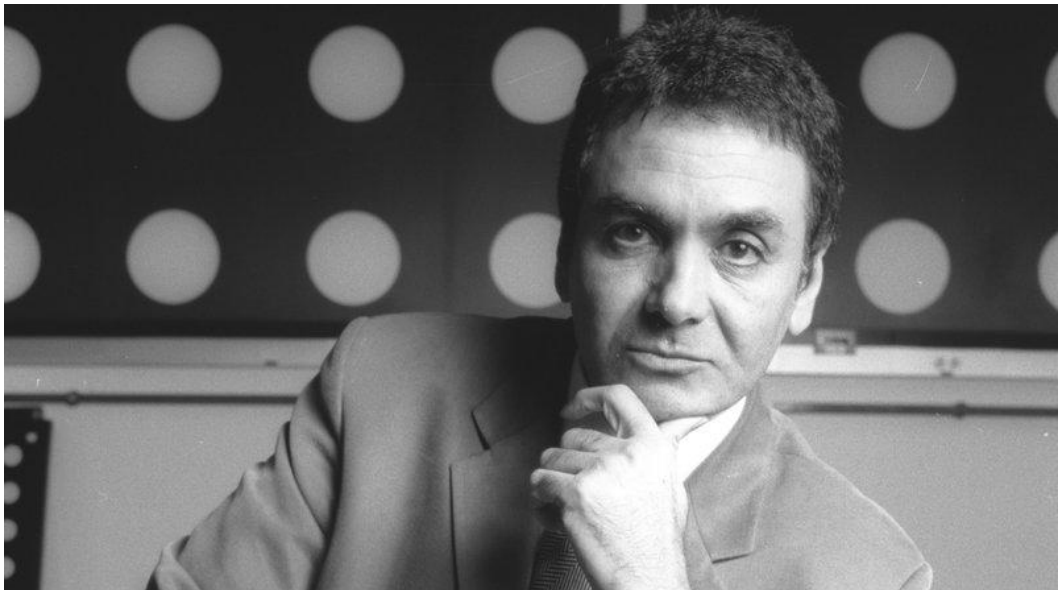
In his 1958 speech, Pickering contrasted the Sergeant program with the Air Force's parallel Atlas ICBM program. Atlas was a system of contracts, he said, with myriad vendors producing hardware for a systems integrator, Ramo-Wooldridge, which itself had no contact with or responsibility for the hardware. While the Atlas program was also ultimately successful, that wasn't how JPL worked. Pickering argued that hardware responsibility and the authority to make technical decisions should be integrated into one group. His Laboratory would aim to preserve that ability to design, integrate, test, and operate its own hardware, even as the Air Force model of systems development became ascendant outside its fence.

By the time JPL exited the Sergeant program, it had been out of the Army for five years. The Lab had started collaborating with Werner von Braun's rocketeers at the Redstone Arsenal in Huntsville, Alabama.

In the Re-entry Test Vehicle (RTV) program, the two organizations demonstrated that one could bring warheads safely back from space. In the next column, I'll tell the RTV story.

Parks and James became the managers of JPL's Mariner planetary exploration program of the 1960s. Far more successful than JPL's parallel lunar program, Mariner proved the value of the systems engineering techniques the two had introduced in the Sergeant program. Their success embedded systems engineering in JPL's technical culture.

Events



Celebration of Life Event for Dr. Firouz Naderi

Tuesday, Sept. 12
1 to 2 p.m.

Join via public live stream

Join Lab leadership and your fellow colleagues at this celebration of life event for Dr. Firouz Naderi on Sept. 12 from 1 to 2 p.m.

Dr. Naderi joined JPL in 1976 and dedicated almost four decades to overseeing some of NASA's most historic space missions, including the remarkable Mars landing of twin rovers Spirit and Opportunity in 2004.

This celebration will feature remarks by Director Laurie Leshin, former JPL Director Charles Elachi, a member of Dr. Naderi's family, as well as others who knew him throughout his life.

Von Karman Lecture Series — Solar Eclipses: Your Guide to the 2023/2024 Celestial Events

Thursday, Sept. 21
7 to 8 p.m.

Watch live on YouTube

Two eclipses are crossing over most of the U.S. in the next few months. The first is an Annular Eclipse on Oct. 14, 2023, and the second will be a Total Solar Eclipse on April 8, 2024. An eclipse can be an awe-inspiring celestial event that drastically changes the appearance of the two biggest objects in our sky: the Sun and Moon. It also gives us the opportunity to study our Sun, Earth, and our space environment.

Speakers:
Marin M. Anderson, Research Scientist, NASA/JPL
Jason Craig, Data Visualization Producer, NASA/JPL

Host:
Nikki Wyrick, Office of Communications and Education, NASA/JPL

Co-host:
Rachel Zimmerman Brachman, Solar System Public Engagement Specialist, NASA/JPL

JPL Family News

Retirees

The following JPL employees recently announced their retirements:

40+ Years:
William Banerdt, Section 3220, 45 years

30+ Years:
Bruce Carrico, Section 334J, 39 years
Martin D. Johnston, Section 4200, 34 years
John D. Fleener, Section 319B, 33 years
Keith E. Martin, Section 349D, 33 years
Isik Kanik, Section 3220, 31 years

20+ Years:
Virginia G. Ford, Section 3830, 26 years

Passings

Passings must be submitted through Human Resources, which coordinates with the family of the deceased.

Long-time JPL employee **Allan Klumpp** passed away on May 3 at age 92. Allan spent 31 years at JPL, from 1959-1963 and from 1976-2003. Allan spent his career working on guidance and navigation systems for multiple interplanetary probes. Allan was a principal engineer on the Apollo Lunar Descent Guidance and Navigation system that landed the first men on the Moon in 1969 during his years at the MIT Draper Laboratory.

Allan was pre-deceased by his wife, Susan Wing Klumpp, and survived by four children, Tom, Jim, Andy, and Margaret, nine grandchildren, and two great-grandchildren. Memorial contributions may be made to the Union of Concerned Scientists. A memorial service will be held in the Boston area at 4 p.m. EST (1 p.m. PST) on Saturday, October 21. JPL employees who knew Allan are welcome to participate by Zoom at https://encoreglobal.zoom.us/j/93510315186?pwd=VmZhUlc1RERZQ25xN01EM1ErbmZYUT09

For additional information, please contact Tom Klumpp at klumpptr@gmail.com.

Michael Harris Jacobs died on July 7, 2023, at the age of 88. Jacobs retired after 59 years of working at JPL. His last day was Feb. 1. He joined Acquisition in 1963 and was a determined subcontracts manager who took pride in his work and never had an issue with speaking his mind. The majority of his career was spent in flight subcontracts, where he always accomplished his tasks with a keen sense of humor and without complaint (but with debate). He was as passionate about negotiating as he was about going out to lunch with his teammates.

Michael is survived by his daughter, Genice Jacobs, and life partner Kathleen Schwartzman.

David H. Rodgers passed away in Peoria, Ariz. on April 20, 2023, at the age of 86 after being in poor health, spending almost four years on dialysis and enduring several other medical conditions.

Dave, as everyone knew him, was born in Loughborough, England, graduated with honors from Nottingham University, before moving to Australia and eventually settling in the United States, first working for Texas Instruments in Dallas, Texas, then coming to JPL in 1971.

Dave was an Applied Physicist with broad based experience and a creative talent in the successful design, development, and management of complex systems. Over the course of the next 31 years, Dave was a key contributor and System Architect and/or Project manager in instrument and mission formulation and development, beginning with Magellan, moving to Seasat and then Viking, SIRTE, the Wide Field/Planetary Camera Project on the Hubble Space Telescope and MICAS on DS1. Notably, Dave was the project manager for development of the successful Wide Field/Planetary Camera 1 for the Hubble Space Telescope (1980-89) with HST WF/PC-1 enabling successful fault-free operation on orbit for well over 35,000 hours. He was particularly proud of the work he did to define and plan the successful program that made the changes required to restore the imaging capability of the Hubble Space Telescope with WE/PC-2.

He was also active in line management, first as a section manager in Division 33 (1974-78) and then circling back to retire as the Deputy Lead for the Center for In Situ Exploration and Sample Return from the Engineering and Science Directorate. He returned to JPL after retirement to provide valuable support to 4x and the instrument developers by evaluating and improving instrument proposals.

Dave is survived by his wife, Roberta of Peoria AZ and his daughters, Jacqueline Salisbury, Sally Gill, and Kay Rodgers, of Nottingham, England. He was an avid airplane pilot who loved travel in their Cessna 172, then Cessna 182, and finally the Ercoupe. He was also known for his "infamous margaritas" at Cinco de Mayo parties and was a great martini chef. Family and friends held a celebration of life for Dave on Aug. 5 at Gardiner Community Center, 980 Old Gardiner Rd., Sequim, Washington.

Personnel Appointments

Star Tracks is a monthly series highlighting recent personnel appointments around Lab.

Lauren E. Shapiro: Group Supervisor of 183B Graphic Design and Production on July 3.

John C. Klose: Group Supervisor of 398N Science Data System Operations Engineering on July 17.

Rebecca L. Mikhaylov: Section Manager of 3530 Propulsion, Thermal, and Materials Engineering on July 17.

Clara O'Farrell: Group Supervisor of 3436 EDL Guidance & Control Systems on July 17.

Sarah D. Sherman: Group Supervisor of 352M Mechanical Systems and Technology on July 17.

Tony Vanelli: Group Supervisor of 3433 Spacecraft Guidance & Control Analysis on July 17.

Nune B. Wheeler: Group Supervisor of 3317 Section 337 Business Administration on July 17.

John C. Pearson: Manager of 3801 Flight Instrument Implementation Office on July 24.