

Featured Stories



JPL Director Laurie Leshin speaks at the Celebration of Life event for Dr. Firouz Naderi. Image Credit: PhotoLab

Like His Mentorship, Firouz Naderi's Memory Lives On

By Taylor Hill

JPLers gathered in Pickering Auditorium and online this week to celebrate the life of Firouz Naderi, a titan of JPL whose name now represents a program to raise future titans.

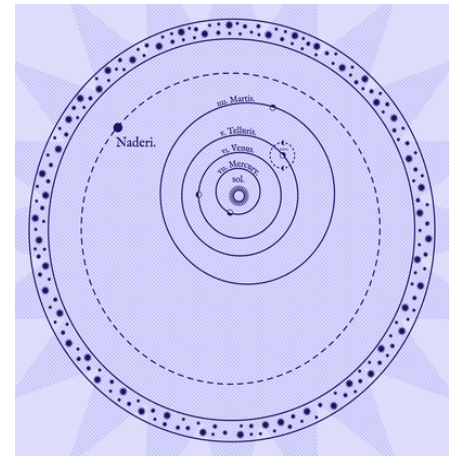
During 36 years of service, Naderi oversaw multiple missions to Mars – including two successful landings – inspired young scientists and engineers who shared his Iranian heritage, and left an indelible impact on nearly every individual he worked with on Lab.

Chief Engineer Rob Manning opened the Sept. 12 celebration of life event as master of ceremonies, reminiscing about his time working with Naderi in the Mars Program.

“He taught me, and he taught all of us, to think about engineering differently,” Manning said. “Not just making spacecraft, missions, robots, and rovers, and sending them to space. He taught us how to think from a deeply humanistic perspective.”

Naderi achieved this through style, speech, and disciplined reasoning, Manning said. Most importantly, Naderi knew how to communicate deeply: he didn’t just unveil new images of Mars and write equations, Manning explained, he captured a feeling of what JPLers did and why they did it.

“He did it all of the way down to the font,” Manning said. “He projected a sense of elegance to the work that we did as a whole.”



Director Laurie Leshin talked of Naderi’s influence early in her career as a collaborator and friend, using three words to describe him: curious, passionate, mentor.

“These three words describe a man who lived a remarkable life, and left an indelible imprint on countless people, and on the fields of space exploration and science,” Leshin said.

Leshin highlighted Naderi’s curiosity, which propelled JPL’s role in planetary exploration through his redesign of the Mars Program; his passion for work and never doing anything halfway; and his quest to pass on what he had learned.

“The bottom line is this: Firouz led a life focused on others. Behind all of his professional accolades and lasting contributions to space exploration is an extraordinary person whose impact is visible on so many people,” Leshin said.

“He understood that nurturing the next generation was just as important as anything any of us can accomplish ourselves. He was generous with his time and had a passion for mentoring young scientists, engineers, and technologists. His life inspired and will continue to inspire young Iranians and Americans to pursue STEM careers. He was a brilliant mentor at JPL who invested in many of our people who are today leading our space exploration missions and enterprise. His wisdom and influence will continue to permeate the Lab for decades to come.”



*JPL Instrument Scientist Sona Hosseini speaks of Naderi's mentorship during the Celebration of Life event on Sept. 12. **Image Credit: PhotoLab***

Leshin's sentiments were echoed by fellow speakers during the celebration, including former JPL Director Charles Elachi, Naderi's grandniece Lilly Amirjavadi, longtime friend Pouria Abbassi, and JPL instrument scientist and mentee of Naderi's, Sona Hosseini.

To close out the event, Leshin announced that JPL's mentoring program would be renamed the Naderi Mentoring Program at JPL. The updated mentoring website includes a new graphic in Naderi's favorite color, inspired by the artwork created when an asteroid was named after him in 2016. The website also has new material about Dr. Naderi's career and legacy of mentoring at JPL.

On stage, next to the podium, a picture display featured two images of Naderi: one at the beginning of his career at JPL, and one at the end. The display included a note from Naderi penned at the time of his retirement: "36 magical years at NASA/JPL have passed in the blink of an eye. Now it is time to pass on the torch and look around the bend."



The Evolution of the JPL Logo

By Vincent Robbins

In early 1953, Technical Illustrator Walter Michalsky tried a new kind of sketch.

The tracings of his pencil weren't the typical wind tunnel technical illustrations he was hired to produce. Rather, these were designs that Michalsky submitted to the Employee Recreation Club's decalomania – a design contest intended to produce a JPL decal that would be printed on stickers.

Michalsky got creative. He experimented with incorporating stylized depictions of JPL-related technology like corporal rockets, Delta Dart airplanes, and Bumper WAC rockets. He tried out various typographical treatments using JPL's initials, adding drop shadows and playing with three-dimensional perspective and transparency.



Some of Walter Michalsky's sketches for the JPL decalcomania competition.

A Brand is Born

On March 16, 1953, Michalsky earned his reward. The ERC selected his elegant, minimalist circular mark with a prominent 'JPL' intersected by a Corporal rocket, giving the decal a three-dimensional pop.

A Lab-Oratory newspaper article announced the decal, noting that it could be used on "windshields of employee's automobiles, lunch boxes for identification, sports equipment, or to send to relatives or friends as souvenirs."

Michalsky's design quickly became the informal JPL logo, representing the Laboratory throughout the 1950s and '60s. Although it was never adopted for official use, it clearly had staying power – it continues to grace JPL memorabilia, including the side of Building 148, to this day.

ERC SPONSORS DECAL; SALE BEGINS AT JPL

JPL Decalcomania transfers are now available through either the ERC District Representatives or from Dave Browne. Sale of the decals commenced today.

Cost of the decal transfers is 15 cents each or two for 25 cents. There is no limit to the amount of decals that may be sold to an employee. Suggested uses for the decals are: windshields of employee's automobiles, lunch boxes for identification, sports equipment, or to send to relatives or friends as souvenirs.

The decals are sponsored by the JPL Employees Recreation Club and have been approved by both the Laboratory management and the ERC Council. The entire expense relative to printing is being met by the ERC.

Printed in blue and light gold, with black lettering, the decals measure approximately 4 inches in diameter. Blue and light gold are the colors used on all JPL athletic team uniforms such as softball, volleyball and basketball. The approved design is the creation of Walter Michalsky, Technical Illustrator, Wind Tunnel, whose art work was chosen as the winning design from among those submitted to the ERC Council and management.



NEW JPL DECAL FOR EMPLOYEE'S AUTOMOBILES will make its bow March 16, sponsored by the JPL Employees Recreation Club, Inc. Sale of the Decals will be handled by ERC District Representatives. Colors are blue and light gold with black lettering.



Michalsky's JPL logo can still be found on Lab and on memorabilia today.

Simplifying and Iterating

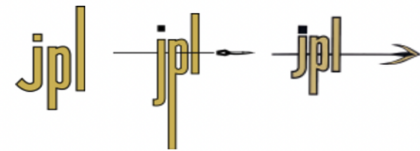
A few years after Michalsky's design started showing up on employee lunch boxes and bumpers around Pasadena, a competitor emerged. Although it may have originated in the early 1950s, the first surviving use of the simplified mark is in a January 1957 issue of Lab-Oratory.



The logo, designed by Alan Wood, an artist in the JPL Reports Section, carried greater official weight than the previous design by Michalsky. Perhaps most noticeably, the logo was emblazoned on top of the sign at the entrance of the Laboratory at the time, which was photographed as early as December 1957.



Wood and Technical Illustrator Takashi Kiriya continued to refine and iterate on this logo for decades – it graced signage, letterhead, brochures, business cards, and other published materials as late as the early 1980s.

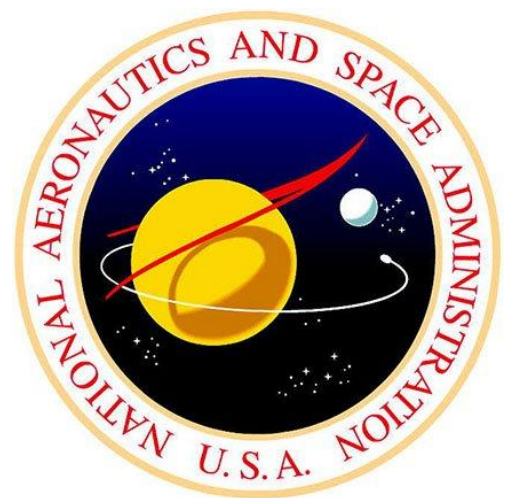


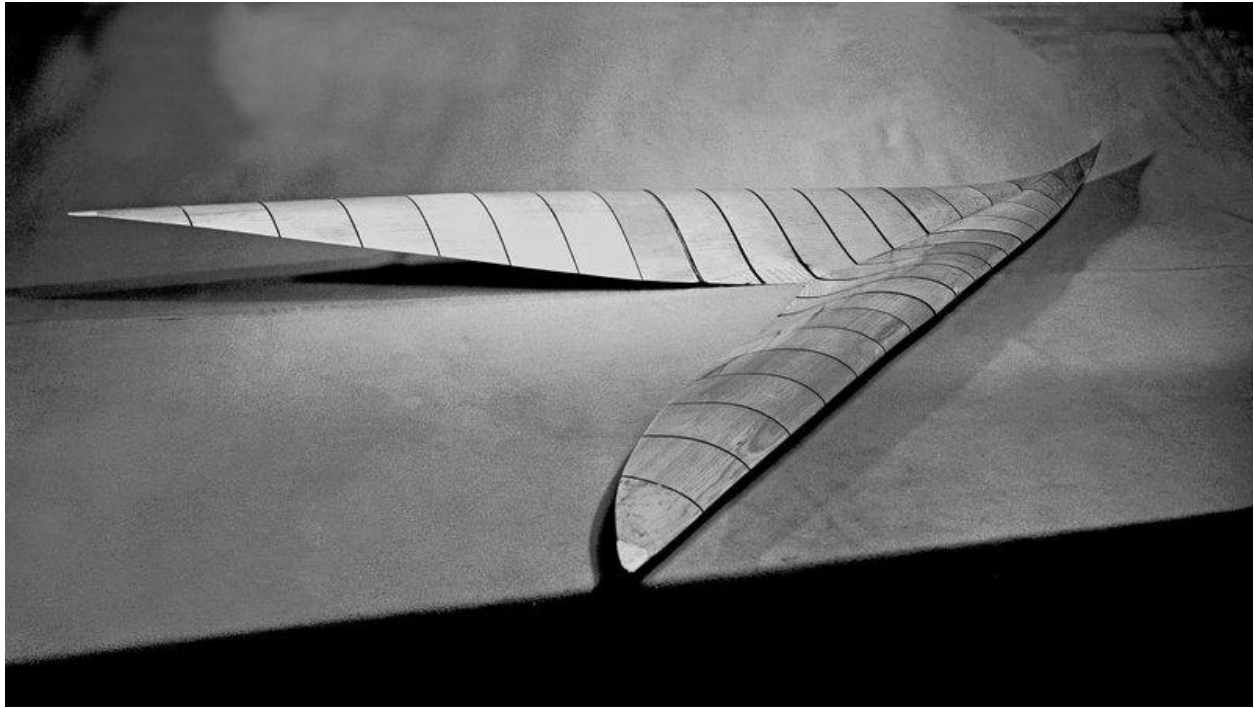
A version of the simplified JPL logo, this time with the addition of a flying arrow – likely a nod to some kind of airfoil wing, similar to the red wing in the NASA meatball logo – was first seen in a 1968 issue of the Lab-Oratory newspaper. This logo can still be found on Lab today, most notably on the wall behind the reception desk of the JPL Visitor Center.

Meatballs, Worms, and Other Cosmic Quandaries

A quick aside about NASA logos will be useful here for context.

NASA, founded in 1958, introduced a seal designed by NASA employee James Modarelli in 1959. The design incorporates various space symbolism: the blue sphere represents a planet; the stars represent, well, stars (and space); the red v-shaped wing represents aeronautics (inspired by a supersonic wing); and the white circular orbit represents space travel.





Modarelli was inspired by a display model of a supersonic wing design he saw at Langley Research Center.

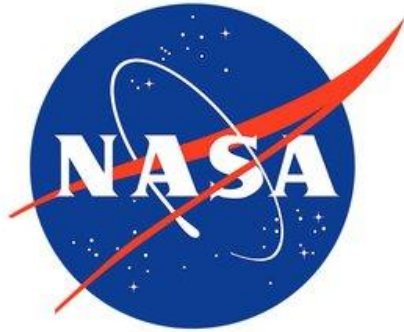
NASA asked Modarelli to create a simplified version of the seal that could more easily be used on signs and memorabilia. Using similar elements to the origins seal, Modarelli designed the now-famous NASA “meatball” logo. This logo was used between 1959 to 1975, then reintroduced in 1992, and continuing until the present day.

In 1975, graphic designer Bruce Blackburn designed a more “modern” NASA logo that came to be known as the NASA “worm” logo for its snaking (almost) contiguous red letters. The worm logo proved somewhat controversial, and in his first address as NASA administrator in 1992, Daniel Goldin announced the return of the meatball logo.



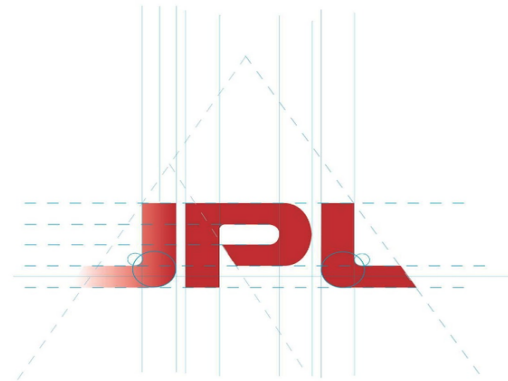
It’s worth noting the similarities between the original JPL decal designed by Michalsky and the NASA meatball logo. Their circular orientation, centered initials, and the orientation of their pointed aeronautical

device (corporal rocket and supersonic wing, respectively), seem as though they might be a tribute to, or play off of, one another. But because the JPL decal was designed several years prior, when JPL was not affiliated with NASA (and when NASA did not, in fact, even exist), the similarities probably speak to graphic design trends of the era, rather than an intentional nod between the two.



JPL's New Look

According to Lab lore, during a meeting in 1982, Caltech colleagues made an offhand remark to Lab Director Dr. Lew Allen about JPL's logo looking outdated. Reportedly, Allen went immediately to John Kempton and Audrey Steffan in Documentation and requested a new logo ASAP (some say he said "tomorrow" and others say he said "five days"). The intent was to create a design that would complement the NASA worm logo. Steffan turned the design project around swiftly, and the first application of the brand-new logo appeared on Allen's business card.



The first mention of the updated logo was in a 1983 edition of the JPL Universe Newsletter, which bid farewell to the minimalist logo that had persisted in various iterations for multiple decades.



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New logo underscores JPL progress

out in JPL document D-901, prepared by John Kempton, manager of JPL’s Documentation Section. Kempton and members of his section coordinated design of the emblem, as well as helping to establish its many uses.

As pointed out in a foreword to the D-901 document by J. P. Click, Assistant Laboratory Director, Administrative Divisions, “the logo is an important

visual element of the Laboratory’s institutional image.”

In keeping with the “new look”, this issue of UNIVERSE sports its own new logo or “flag”, incorporating the official Lab design. (A newspaper’s flag is sometimes referred to as a “masthead” in error. The masthead is the boxed statement of publication, address, and staff names appearing in each issue. Some newspapers also refer to

their “flag” as the “nameplate”.)

The new UNIVERSE flag is the creation of Documentation Section artist Audrey Steffan, who was design coordinator on the JPL logo type project.

Her design continues the tradition of the UNIVERSE name and dateline reversed in white type against the dark background of the night sky, dappled by nebulae, stars and other light-emitting objects.

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“The initials ‘JPL’ are known worldwide, synonymous with the exciting investigation of space and the planets, and advanced research in science and high-technology engineering,” the Universe article said. “Now JPL reinforces its forward-moving theme with a new emblem or logo.”

The new logo was here to stay — 40 years after that announcement in Universe, the red worm-like logo still officially represents JPL to the world.

For the most discerning of eyes, minor changes have been made: In 2003, Executive Manager of the Office of Communications Blaine Baggett changed the color of the JPL logo to a red that more closely matches the red found in the aeronautical swoop of the NASA meatball logo. And in 2020, DesignLab Manager David Rager fine-tuned a few of the angles and spacing to meet modern design standards.

Like JPL, most iconic brands that span multiple decades undergo changes in their brand identity and logo, sometimes dramatically (see the original Apple or Ford logos). Times change, businesses and organizations change, design mores change, people change — and with them, our language of symbolism and representation evolves, too. Given JPL’s propensity for innovation, what lies ahead for the future of JPL’s logo is a mystery of the universe — one that only time will answer.

Much of the historical information included in this article was uncovered by JPL Archivist Madison Teodo.



Building and Manufacturing in Space Is the Future – How Will JPL Play A Role?

By Taylor Hill

On Sept. 26, former NASA Associate Administrator for Technology, Policy, and Strategy Bhavya Lal took the stage at Pickering Auditorium to discuss the emerging technologies and potential of In-space Servicing Assembly and Manufacturing (ISAM) for space exploration.

Lal, who has been involved with the subject since 2015, said the progress on implementing ISAM capabilities into missions has been gradual, but the potential benefits to space architectures and mission lifecycles remain untapped.

“It’s not very often that you see paradigms change, but ISAM can change the way we think about space architecture,” Lal said. “We don’t have to have these monolithic launches with fully formed satellites. Now we get to experiment, we get to change. It isn’t just about saving money or just better capabilities, it’s really all of the above.”



Former NASA Associate Administrator for Technology, Policy, and Strategy Bhavya Lal speaking at Pickering Auditorium with StoryLab Chief Story Architect Paul Propster.

At JPL, the opportunity to be a part of that paradigm shift has led the Office of Strategic Planning to call out ISAM as an area of strategic interest for the Lab.

“We believe ISAM is going to have a transformative impact on JPL,” Deputy Director Larry James said in a video message this month. “How we think about formulation, how we think about new missions, how we think about the capabilities we could bring to bear using these capabilities, ultimately to conduct our science emissions in perhaps unique and different ways.”

So, what does ISAM encompass? According to NASA’s national strategy, an ISAM mission could include all or some of these elements:

1. System is designed as a collection of modular components with standard interfaces and/or raw materials
2. Missions use one or more launches
3. In-space rendezvous and capture/docking utilized to combine the launch pieces
4. In-space robotic manipulation and mobility to assemble or manufacture space system
5. Post-launch robotic servicing to refuel, extend life, fix anomalies, update technologies, orbit change, disposal, and more

ISAM allows for movement and maneuverability in space without the hard cap on fuel of a single launch; the assembly or manufacturing of assets from modular components or materials sent into space separately; and in-space service capabilities to sustain assets, overcome anomalies, update technologies, and potentially extend mission lifecycles.

The vision adapts how things are made on the ground to how they could be made in space. Humans don’t live in pop-up houses; we have modular building designs and construction phases. If your air conditioning breaks, you don’t abandon your house—you get the AC serviced.

“Make things in terms of modules – like LEGO bricks,” Mukherjee said. “Launch them efficiently using a variety of launch options, and in space, assemble or manufacture the item. If you break it, use a robot to fix it. It’s the next frontier on access to space.”

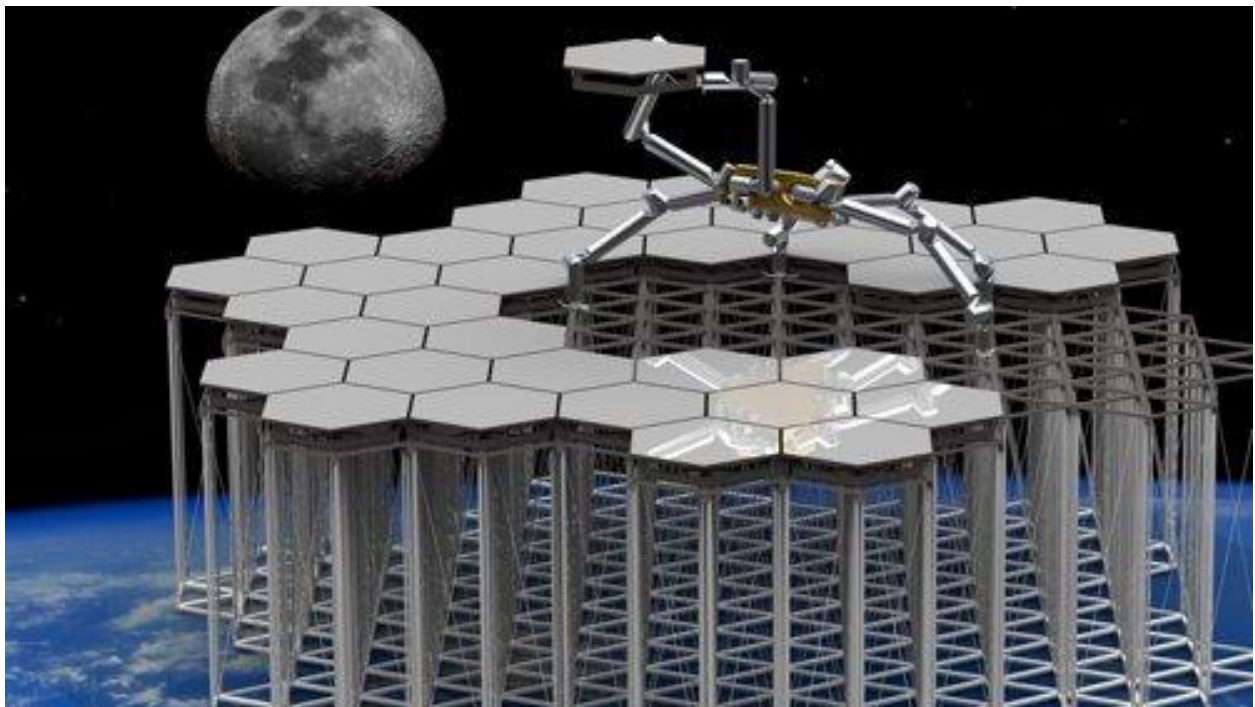
A History of Looking Ahead

As an idea, ISAM isn’t new. In the late ’90s, the International Space Station (ISS) relied on ISAM for its modular construction, and it continues to require in-space service and upgrades today. JPL has had its share of ISAM experiences, too, playing a leading role for the in-space rescue mission to replace Hubble’s faulty Wide Field and Planetary Camera with WFPC2 via astronauts.

“You see what’s been done to keep the ISS and instruments like Hubble up to date and steadily serviced,” said JPL research technologist Rudra Mukherjee. “You extrapolate that capability to some of our current missions, say for Earth science astrophysics, or think if we were able to remove the constraints of single-fairing missions, and then you start to get a sense of the magnitude of something like this.”

The next leap forward will require robots to conduct servicing, assembly, and manufacturing in space—a challenge JPL is uniquely positioned to undertake.

Lal noted that although private companies and other government agencies are working on ISAM, JPL’s excellence in robotics and autonomous technologies is an advantage for future missions.



JPL has a long history of developing technologies and concepts for ISAM and surface construction. Click through to see a few representative samples going as far back as the late 1980s.

In the upcoming year, planned activities at JPL related to ISAM include:

- Hosting a seminar series for speakers with expertise in ISAM to present ideas and topics to the JPL community
- Joining The Consortium for Execution of Rendezvous and Servicing Operations (CONFERS)— a not-for-profit group developing standards and policies for satellite servicing
- Joining the Consortium for Space Mobility and ISAM Capabilities ([COSMIC](#)), a nationwide coalition that will invigorate a domestic in-space servicing, assembly, and manufacturing (ISAM) capability

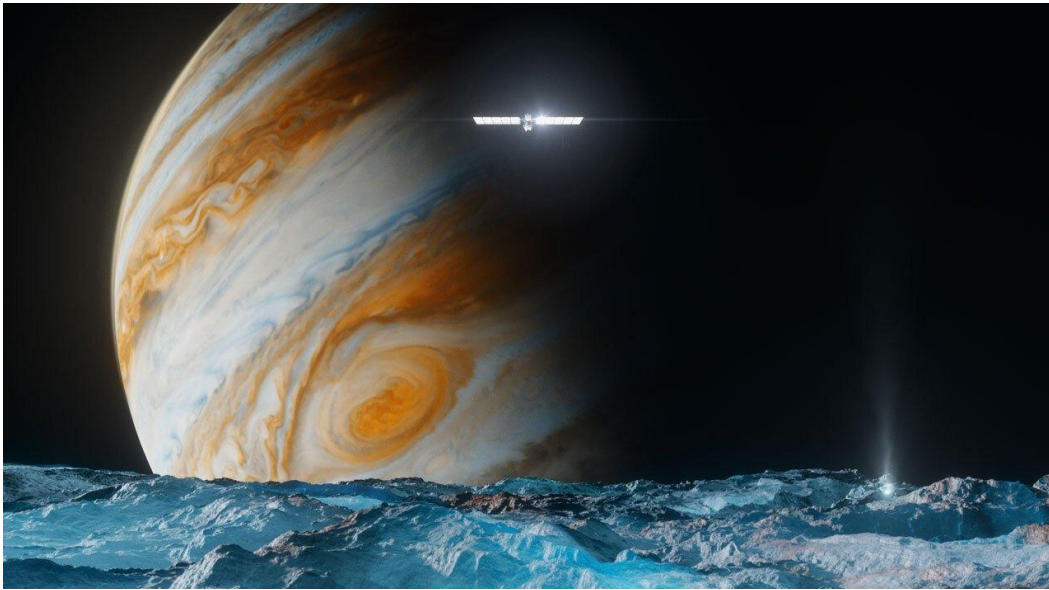
- Funding summer intern positions to focus on ISAM
- Establishing a JPL ISAM technical working group
- Establishing JPL activities for science formulations for ISAM and lunar construction

This week, the Office of Strategic Planning launched a new internal website where JPLers can learn more about ISAM and the Lab's involvement.

The main goals driving these ISAM activities at JPL align with Director Laurie Leshin's [Strategic Imperatives](#) for the Lab, according to Mukherjee.

"Now is the time to start seeding these types of technology so we can put JPL and its people in a position from which we can lead, so that as the technology advances, we can succeed," Mukherjee said.

Events



Von Karman Lecture Series – Exploring Ocean Worlds: Europa Clipper Is One Year From Launch

[Watch live on YouTube](#)

Thursday, Oct. 19

7 to 8 p.m.

In October 2024, NASA's Europa Clipper spacecraft will begin its 1.8-billion-mile journey to Jupiter's icy moon Europa. It will investigate if an ocean thought to lie beneath Europa's icy crust could support life. Join Europa Clipper Mission System Manager Al Cangahuala and Planetary Scientist Kate Craft to learn about the spacecraft's assembly and preparations for launch, and how Europa Clipper's detailed exploration of Europa will help scientists better understand the astrobiological potential for habitable worlds beyond our planet.

Speakers:

L. Alberto (Al) Cangahuala, Mission System Manager, Europa Clipper, NASA/JPL
Kate Craft, Project Staff Scientist and Assistant Science Systems Engineer on Europa Clipper, JHU/APL

Host:

Marc Razze, Office of Communications and Education, NASA JPL

Co-host:

Laurance Fauconnet, Solar System Public Engagement Specialist, NASA JPL

JPL Family News

Retirees

The following JPL employees recently announced their retirements:

40+ Years:

Janis Chodas, Section 1000, 43 years

30+ Years:

David Braun, Section 3551, 39 years

Aubyn Biery, Section 2135, 35 years

20+ Years:

Karla R. Miller, Section 7310, 29 years

Jo E. Tillis, Section 382J, 27 years

Edward Sewall, Section 1844, 20 years

Passings

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

Michael David Hicks of Sunland, CA passed away on July 30, 2023, at 59 years of age. He worked at JPL as a NASA postdoc and then as a research scientist from 1998 until 2022. Born in Dayton, Ohio, Michael earned degrees from Boston University and a Ph.D. in Lunar and Planetary Science at the University of Arizona. His research specialty was the physical properties of comets and asteroids. He served on the science teams of the DART Project, the Near Earth Asteroid Tracking (NEAT) Project, the Dawn Mission, and the NASA Deep Space 1 Mission. He was the author of over 80 peer-reviewed scientific papers.

Michael's passion for science was coupled with a deep appreciation of art. He pursued projects in visual media, from woodblock prints to oil painting to metalwork, and he played the ukulele. His performances were a regular occurrence during observing runs at Mount Palomar.

He is survived by his father Richard; six brothers and sisters; daughter Julia; and ex-wife Brunella.

Awards & Honors

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

Laurie Barge

Rosalind Franklin Society (RFS) Award in Science for Astrobiology

This prestigious award was launched in partnership with Mary Ann Liebert, Inc. and the Rosalind Franklin Society to “recognize outstanding published peer-reviewed research by women and underrepresented minorities in science in each of the publisher’s peer-reviewed journals.” [Award citation](#)

Ingenuity Mars Helicopter Team

Milton Caniff Spirit of Flight Award

The National Aviation Hall of Fame is proud to announce that the prestigious Milton Caniff Spirit of Flight Award was presented to NASA’s Mars Helicopter Team in recognition of their groundbreaking achievements in aerospace innovation and exploration. [Award citation](#)

PIXLISE, Accelerating Astrobiology Analysis

NASA, 2023 Software of the Year Award, Runner-Up

PIXLISE is the central analysis tool for the Planetary Instrument for X-ray Lithochemistry (PIXL) science and engineering teams, with discussions and insights generated around a shared PIXLISE screen. PIXLISE uses PIQUANT, an in-house developed micro-XRF software package, to quantify spectra. Together, the two systems drive a massive increase in the pace of scientific discovery by delivering orders of magnitude increase in speed, novel automation, and networked collaboration. In addition to the Mars 2020 Science team, national laboratories around the world are piloting the software for their use. [Award citation](#)

Serena Ferraro, Alejandra Gomez, Ian Ruiz, Jacqueline Sly, Michael Eastwood, and Sisi Hall

Contract Management Excellence Voyager Awards

The Contract Management Excellence Voyager Award was established to recognize and honor outstanding and impactful contributions made by contract technical managers that play a pivotal role in achieving mission success. CTMs were nominated by Engineering and Science Directorate divisions, and these individuals demonstrated remarkable leadership in the field, achieved technical and business operational success, exhibited exceptional job performance, and adopted an institutional approach that has led to lasting industry partnerships.