Featured Stories

Archives' climate-controlled vault located on Lab in Building 156.

Inside the Vault

By Celeste Hoang

Preserving the Lab's most precious historical documents and artifacts is a big job for a small team at JPL. Archivist Kylie I. Casino takes us on a tour of the Lab's scattered treasures.

JPL's rich history is one of the most fascinating aspects of the Lab—but who are the people responsible for preserving treasures such as the Voyager Golden Record's masters, or the thousands of film negatives dating back to the 1930s?

On a recent August afternoon, I had the pleasure of coming to Lab for an in-person tour with Archivist Kylie I. Casino as my guide, and to meet the small but nimble Records and Archives group behind it all. The team is made up of three full-time staff members and four archive contractors who collect, organize, and store items in offices, temperature-controlled rooms, and vaults on Lab.

The JPL Archives Staff (L. to R.): Madison Teodo, Kylie I Casino, Victoria Castaneda, Stephanie Velazquez, Tori Maglonzo, Nicole McKeon. (Not pictured: Archives staff member Julie Cooper)

We started in the group's office in B111, a small, nondescript, and easy-to-miss room—I walked by it twice trying to find it—down the hall from the Hub. Once inside, the room seems to speak to the work itself: There are cardboard boxes upon cardboard boxes of documents and items needing to be archived; planetary globes, artwork, and spacecraft models on display; and white gloves always within reach to handle sensitive artifacts, such as historic Soviet medallions commemorating space exploration alliances. Here is where the group spends the majority of their time organizing, cataloguing, and digitizing what comes their way. (And for anyone curious to see these items in person—yes, you can request a visit to the Archives' office to see their collection for yourself. More on that below.)

Of course, the magic of what Archives possesses is often not what is visible to the eye, but rather what is safely stored away. Across the hallway, Casino led me to the Special Collections Room, where one of JPL's arguably most important items is kept in a simple, gray box on a shelf: Voyager's Golden Record masters, containing the original recordings of sounds and images capturing the beautiful range of Earth's life and culture to anyone who might be able to listen out there in deep space. Over the years, the masters have become one of the most-requested artifacts that JPL visitors ask to see.

Further down the hall is yet another important room: Archives' climate-controlled storage space that holds decades' worth of film negatives and film reels housed at 61 to 67 degrees Fahrenheit. Photo negatives that are more than 80 years old are held in refrigerated storage to slow the degradation process, and all around the space are shelves of scrapbooks containing newspaper clippings, including an entire front page of the Los Angeles Times dedicated to the first Moon photos published on Aug. 1, 1961.

A collection of artifacts entrusted to the Archives group at JPL.

Lastly, Casino takes me to B156, where she deftly unlocks an enormous vault door that looks straight out of a bank heist movie. Inside are some of the Lab's most precious documents, including thousands and thousands of pages' worth of mission chronicles. Every Lab directors' office records are also stored here; a quick glance around the room and my eyes immediately land on William H. Pickering's folders, for example, containing every communication he sent from 1961-1975.

Perhaps the most delightful Archives possessions are the original copies of The GALCIT-Ear—named after what was then the Guggenheim Aeronautical Laboratory of the California Institute of Technology—dating back to 1944 and written by JPL's then-tiny staff who were more than happy to print lighthearted gossip, friendly jabs, and sarcastic complaints to share amongst each other. Only six prints of The GALCIT-Ear exist, and Archives has them all safely tucked away in the vault.

As my tour with Casino wrapped up, I found myself feeling strangely nostalgic for the many eras at Lab that I never even experienced. After more than a year-and-a-half of associating JPL with sitting at my dining table in front of a laptop, it was refreshing and awe-inspiring to see a slice of the Lab's history in person and be reminded that my place of work holds enormous historical significance—and continues to make history every day.

Of course, it's thanks to the dedication of the Archives team that we have the privilege to look back on the Lab's history. And after spending the afternoon mesmerized by the job of an archivist, I sat down with Casino to learn more about her work and how she came upon this career. Below is our conversation on her role as a preserver of JPL's unique place in history. (Answers have been edited for length and clarity.)

What drew you to this type of work?

When I was a kid, I wanted to be an archaeologist and when I got to school, I learned that archaeology can be a really hard life. I switched to cultural anthropology and started studying symbols. I loved knowing that I could study this because somebody preserved something and made it possible, because it wouldn't exist [anymore] otherwise. We help decide what is historically and culturally significant. We help construct

the historical record of our institution. We're making decisions for our own cultural significance 100 years from now, like a living time capsule.

Archivists Kylie I. Casino and Victoria Castaneda showing how photo negatives are stored in envelopes in large filing cabinets.

What exactly does an archivist do?

Essentially, no matter what kind of setting, an archivist's job is to create and maintain a system of knowledge organization. It's our job to take the product of whatever institution we're in—paper documents, photos, models, artifacts—and process them and organize them so that the document itself is usable, accessible, readable, and people can find it. We call it arrangement and description. We arrange it within a collection so it has an organizational system, and description is how we make it findable.

On first learning about archiving as a career:

I was in one of my last classes of college and we were talking about how archaeologists triangulate their data—meaning they need to check their findings against other existing data—and that was the first time I'd ever heard about archives. I looked into it, and something just clicked in my brain: I need to preserve all the cool things that exist. I went to do a master's in Library and Information Science.

On her master's degree at UCLA and receiving a certificate in Rare Books and Manuscripts:

They had a program called the California Rare Book School. I was a rare book cataloguer for a while, and I'm actually the first recipient of their Professional Certificate in Rare Books and Manuscripts, which is super cool. The Department of Information Studies had its own small special library, where I worked the whole time I was in school, and after I graduated, I took over that directorship for a year. While I was there, I created a series teaching descriptive bibliography, which is basically how to build rare books and the language of book construction. You talk about how the book was constructed—binding, what it's made out of, pages, and all of the structural elements.

Historial pins and medallions preserved in JPL's Archives.

What's the oldest book you've worked with?

The Fabrica of Andreas Vesalius, an old medical text with really famous anatomical drawings from the 1500s.

How did you find your way to JPL?

Totally by accident. My contract ended at UCLA, and while I was applying for jobs and working freelance. I started through one of JPL's contracting firms, and they didn't say what the company was going to be. They told me where it was and how long the role would be and what the basic duties were, but I had no idea the subject matter or what company it would be for.

What was your reaction when you were told it was JPL?

It was pretty wild when I found out. I'm from L.A., and JPL is a staple. Everybody knows somebody who works there, or they've been to an Open House.

What was it like to start doing your job from home during mandatory telework?

For the first three months, we exhausted everything we could do 100% digitally. At the time of quarantine, we were in the middle of yet another large-scale project. We had our entire collection of microfilm sitting in our office because we had been working on rearranging it. We realized it was soon going to be June—summer—and there's no climate control in the office [the film is usually stored in a separate, climate-controlled room on Lab]. Victoria Castaneda, Archives contractor Madison Teodo, and myself got permission to go on Lab three times a week from June through December of 2020, and we just never left.

Archivist Kylie I. Casino.

What would happen to the microfilm if it wasn't in a climate-controlled environment?

Particular materials are really sensitive to humidity, and if we left it unmonitored, it would get vinegar syndrome. The film smells of vinegar as the emulsion and base separate, and it would crack the negatives, or bubbles would form to the point that we couldn't preserve any of it. We would lose all that content.

On the process of preservation:

Right now, digitization is the main method of doing that. The National Archives and Records Administration wants to digitize everything. At JPL, we have a lot of photo negatives. Any photo from 1942 forward taken by a [JPL] photographer, we keep in various climate-controlled rooms. But even if we digitize something, it doesn't mean we get rid of the physical copy—there's still integrity to the physical copy. Technology moves fast, so if we can keep the original, we do.

On her favorite projects to archive to date:

At the spring dance every year starting in 1952, JPL would host a pageant. The ladies of the Lab would enter, their supervisors would sponsor them, and the winner would get to serve on the Employee Recreation Club [now known as the Employee Resource Group] board for the next year. The winner wore this really big, beautiful maroon robe, and we have it archived in our temperature-controlled vault on Lab.

We also have a piece of porcelain from the Princess of Thailand. She came to visit in 2010 and gave JPL a bowl. We have it on display in our office and anyone can come see it.

The on-site team for the VERITAS site visit poses for a group photo on the steps of the 303 cafeteria. Image Credit: PhotoLab

Get to Know Team VERITAS

By Taylor Hill

JPL's plans for probing Earth's closest neighbor have made the jump from proposal to funded mission. Who was behind the proposal, and what scientific and personal passions vaulted the team over the bar?

This summer, JPL's proposal to visit Venus via VERITAS (Venus Emissivity, Radio Science, InSAR, Topography, and Spectroscopy) earned a place in NASA's Discovery Program.

With the selection, a team of JPLers—led by Principal Investigator Sue Smrekar—begins the process of turning a concept decades in the making into a planet-orbiting spacecraft designed to map Venus' surface, determine the planet's geologic history, and gain insight into why it developed so differently than Earth.

It didn't come easily or quickly. After non-selections at the Discovery stage in 2010 and 2014, the team bet all their chips on the next site visit, ending with a pivotal personal appeal by Smrekar. With the mission finally slated for launch in 2028, we checked in with three team members and Smrekar on the demanding journey with VERITAS to this point, and the outlook for the road ahead:

Scott Hensley, Project Scientist for VERITAS

- Started at JPL in 1991 on the Magellan mission [Magellan produced the first global map of Venus' surface. VERITAS' VISAR (Venus Interferometric Synthetic Aperture Radar) instrument aims to provide a two-order-of-magnitude increase in resolution of those images.]

- Began working on the first incarnation of the VERITAS mission with Smrekar 10 years ago

With launch expected in the 2028 timeframe, can you give an update as to what you are working on, or have been working on since the mission was selected?

When NASA selected VERITAS, they asked for a delay in the mission launch of about one year, so our first order of business has been to look at new launch opportunities, which we expect to report to NASA HQ in the early fall timeframe. During this next year, we will focus on refining all interfaces between instruments and spacecraft, refine the mission design, update and refine instrument performance models, and begin preparation for the System Requirements Review.

Scott Hensley working in Building 303 during the VERITAS virtual site visit in March 2021. Image Credit: PhotoLab

What do you personally hope to see accomplished in this mission?

I have spent the bulk of my career developing algorithms and techniques for applying radar interferometry to geophysical problems. It would be truly satisfying to detect surface deformation on Venus from either tectonic or volcanic activity, which would be the first such use of this technique on another planet. Additionally, we will get to employ the techniques JPL developed for spaceborne topographic mapping to generate a topographic map of Venus that is two orders of magnitude finer resolution than that produced by Magellan. I also expect some of the key science results from this mission to lead to rewriting the textbooks about Venus and that the data from this mission will be used for decades, similar to data from the Magellan mission.

Is there something in particular about this team that has stood out to you? Is there a memory or a moment so far that you have pegged as 'defining' for the mission to get to where it is now?

The VERITAS team is certainly one of the best I have been associated with during my career at JPL, and their undaunted enthusiasm for this mission—even after we weren't selected in the previous Discovery competition—and their desire to make the mission better brought us to where we are now. Picking a

single ‘defining’ moment is a really difficult question as there were so many critical junctures, whether through inspiration or perspiration the team overcame an obstacle that advanced the mission forward. I think getting the wonderful contributions from our foreign partners (including the Italian Space Agency, the German Space Agency, and the French Space Agency) and their steadfast support over the years was integral to getting the mission to where it is now.

Tiffany Kataria, Scientist in Exoplanet Discovery and Science Group

- Started at JPL five years ago
- Began work on the VERITAS mission in 2018

What roles and responsibilities have you had over the course of the project?

I started the project in a small role, supporting the assembly of the Step-1 submission (for example, collecting resumes from team members, plotting team demographics). Eventually, I joined on as a collaborator of the VERITAS science team. I also became a critical team member during VERITAS’ site visit, including acting as moderator to the virtual review board alongside the main project team.

Can you talk about what conducting the site visit with the NASA evaluators virtually this past spring was like?

When the VERITAS team was first planning the site visit, this was before the pandemic began, and so we were planning as though we would be having the site visit completely in person. When it became clear that we would have to shift to a mostly virtual setup (a subset of the team had a “central hub” in Building 303), the team showed great resilience in pivoting to this new format and making it compelling and cohesive. If anything, these challenges brought the team closer together, and I think that spirit of teamwork and camaraderie really translated to the reviewers and helped with its selection.

What do you personally hope to see accomplished in this mission?

As an exoplanet scientist, I’m really interested to see what data from VERITAS will tell us not only about the formation and evolution of Venus, but also the formation and evolution of potentially habitable exoplanets.

Is there a memory or a moment so far that you have pegged as ‘defining’ for the mission to get to where it is now?

One thing I’ll always remember is the closing speech that our PI, Sue Smrekar, delivered to the review board at the conclusion of the VERITAS site visit. It was touching and personal, and so beautifully articulated why this was the right time for VERITAS, and the right team to execute the mission. When she first delivered the speech during our site visit rehearsals, I was so moved I cried! It was definitely a defining moment, and speaks volumes about Sue’s passion for Venus and leadership as VERITAS Principal Investigator. (Read Smrekar’s recollection of that moment below)

Daniel Nunes, Scientist in the Planetary Interiors and Geophysics Group

- Started at JPL as a postdoc in 2008
- Began work on VERITAS during its first proposal in 2010

With your history on the VERITAS team, how has your role evolved over time?

I was a JPL summer intern back in 1997, working with Sue Smrekar on the analysis of gravity anomalies over the coronae on Venus. That was my first taste of planetary research. I have been with the VERITAS mission since its first proposal when I was still a postdoc. Once hired on, I became a co-Investigator and produced more content for the science cases, especially when it came to studying gravity anomalies and surface tectonic features. Now, I have been promoted to deputy project scientist, participating in the development of some of the science requirements, sorting out tech-demo possibilities, co-producing science animation and graphics, and participating in the site visit.

Can you give an update as to what you have been working on since the mission was selected?

My colleague Mark Wallace in Mission Design is busy analyzing the different launch dates and how they help or constrain us. In the meantime, the science team will analyze changes in timing and coverage of the different datasets and how these changes impact our science requirements. I am also assisting in setting up the institutional machinery needed to get the science team officially working in their tasks.

What do you personally hope to see accomplished in this mission?

I want to see VERITAS revolutionize planetary science by revealing Venus as it truly functions as a terrestrial planet. And in the process, I hope to see VERITAS leave a legacy of a rich dataset to be studied by the next generations of planetary scientists.

On a more specific research level, my desire is to understand the processes that have led to deformation of the crust on Venus. At the highly deformed tessera plateaus, which are comparable in areas to Earth's continents, we do not know if each formed as an entire plateau above a mantle hotspot, if they formed above as an entire plateau above a mantle coldspot, or if they have formed from a mashing together of smaller pieces. I will be looking at tectonic features in radar images and topography data acquired by the VISAR instrument, as well as gravity data to be collected with the VERITAS telecom system.

An artist's concept of active volcanoes on Venus, depicting a subduction zone where the foreground crust plunges into the planet's interior at the topographic trench. Image Credit: NASA/JPL-Caltech

Is there something in particular about this team that has stood out to you?

One word: Excellence. The high level of technical competence and preparation in this team, attention to detail, and Sue's leadership carried the proposal through. One of the moments that stuck to my mind was a technical debate between a reviewer and our Deputy PI Darby Dyar about the subtleties of conducting spectroscopy of Venus rocks and the VEM (Venus Emissivity Mapper) instrument. It was like watching a scientific swashbuckling movie, with the two engaging in a match of intellectual fencing. Memorable! Makes me think of "The Princess Bride":

> **Inigo Montoya:** I know something you don't know.
> **Man in Black:** And what is that?
> **Inigo Montoya:** I am not left-handed! *[switches to fighting with his right hand]*
> *[The two continue to fight, until the Man in Black is backed against the cliff edge]*
> **Man in Black:** There's something I ought to tell you.
> **Inigo Montoya:** Tell me.
> **Man in Black:** I'm not left-handed either.

Sue Smrekar, Principal Investigator of VERITAS

- Started at JPL in 1992
- Has been working on VERITAS since 2010

Smrekar took an unusually personal approach in her closing statement at the end of the two-day site visit, starting with a list of fateful coincidences: Her father was born in Venus, Pennsylvania, and her own birth lined up the same year Mariner 2 made the first-ever flyby of Venus. She ran through her grad school days working with Magellan investigator Roger Phillips who passed away last year, and her time as a postdoc when she traveled to JPL to be among the first to see data of the Venusian surface from Magellan's radar images. Smrekar dug into her early years at JPL, and the tough lessons she learned working on Deep Space 2 and Mars Polar Lander—both failed missions—and also the successes experienced in her roles as study scientist for Curiosity, deputy project scientist for Mars Reconnaissance Orbiter, and deputy principal investigator for Insight.

Your closing appeal made a strong impression on your team, and likely on the reviewers. What made you decide to share your own story?

It's a more personal statement than we normally give as scientists or engineers. And in my current position in my career, this was really my last time to propose this mission. Could someone else have come after and picked it up? Yes, but for me, I've really given it my all. This is it.

(From there, she highlighted for the reviewers the dearth of new data coming from Venus, making it one of the more difficult planets to research despite its proximity to Earth, and how now more than ever, it's a good time to gain understanding in how potentially habitable planets can go bad.)

The work on Mars missions has been an incredible opportunity to learn about what makes missions successful, and about leadership. This is close to heresy to say at JPL, but Mars is my day job. Venus is my passion.

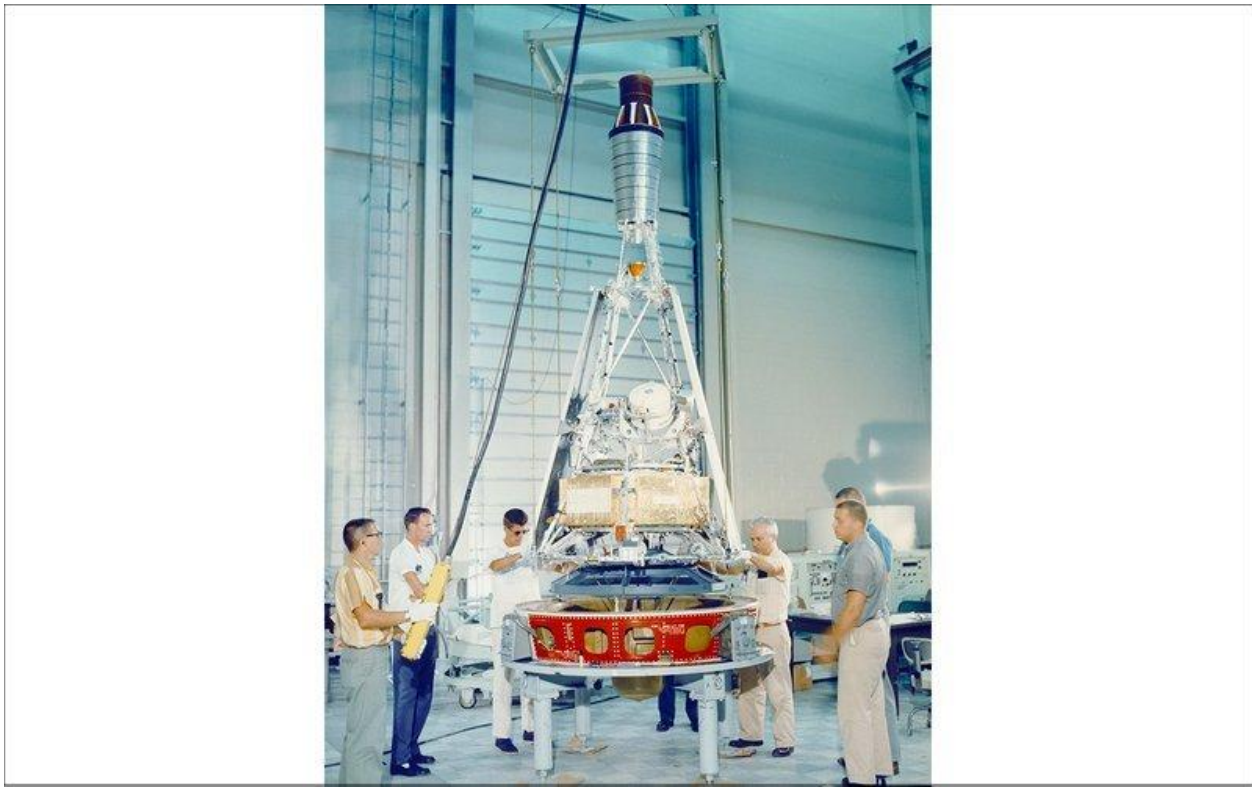
VERITAS restores balance in solar system exploration. It is the right next mission to Venus.

Principal Investigator Sue Smrekar makes closing remarks during day two of the virtual VERITAS site visit set up in Cafe 303. Image Credit: PhotoLab

Describe your reaction on June 2, when you got the call from Headquarters.

It was just incredible relief and euphoria. It's obviously so long coming, and this is a team that has in many regards worked very closely together for a long period of time. I was just one person among many who put everything on the table to make this happen. I was overjoyed to get the call and accept it, and be able to move forward and convey the good news to the team—which, by the way, I'm not going to stop celebrating until we can all get together and celebrate in person.

On June 2, 2021, following a competitive, peer-review process, VERITAS was selected along with DAVINCI+ (managed by Goddard Space Flight Center) to be the next NASA missions to Venus. NASA is awarding approximately $500 million per mission for development. Each is expected to launch in the 2028-2030 timeframe. These investigations are the final selections from four mission concepts NASA picked in February 2020 as part of the agency's Discovery 2019 competition.



Ranger 1 being mated to its launch vehicle adapter (red ring below the spacecraft), July 5, 1961. Image Credit: NASA/JPL-Caltech

Ranger 1's Mission to Earth Orbit; Juno Leaves for Jupiter

By Erik Conway

Aug. 22 marks the 60th anniversary of the launch of JPL's Ranger 1. The Ranger series of spacecraft was intended to be lunar impactors, carrying scientific instruments, seismometer capsules, and cameras to provide close-up photography during the high-velocity impacts with Earth's Moon. But Ranger 1's target wasn't the Moon. Instead, JPL intended it to go into an Earth orbit whose apogee was about four times the Moon's distance. The mission's goals were engineering-oriented. Ranger 1 was JPL's first three-axis stabilized spacecraft, and also its first solar-powered spacecraft. The elliptical orbit would provide engineers several months of operations to fully evaluate the performance of the vehicle.

JPL wouldn't get months of data, though. Ranger 1's launch was also the first attempt by the United States to use a "parking orbit" style trajectory. That is, the Agena upper stage would have to fire twice, once to reach low-Earth orbit, and a second time to provide the desired apogee. Due to failure of the switch that controlled the Agena fuel supply, the second burn cut off just as it began, leaving Ranger 1 stranded in the wrong orbit. During the much-shorter-than-intended orbits, the nitrogen-gas-based attitude control system had to work harder and expend more gas to maintain orientation, and the spacecraft ran out of nitrogen only two days later, on Aug. 24. It re-entered on the 30th.

Ranger 1 didn't provide the long-duration data that JPL's engineers had hoped for, but it demonstrated that their novel attitude control and power system designs worked, even under "off nominal" circumstances. It was also a lesson that space exploration would be hard.

This month is also the 10th anniversary of the Juno mission's launch to Jupiter, on Aug. 5, 2011. Juno has the distinction of being the first solar-powered spacecraft to orbit Jupiter. It arrived July 4, 2016, on a mission to study the giant planet's atmosphere, magnetic and gravity fields, and especially its poles.

There are many other August anniversaries. The first test flights of solid-fueled Jet-Assisted Take-Off motors took place over two weeks in Aug. 1941. On Aug. 12, 1960, JPL and Bell Labs in New Jersey carried out a telecommunications relay experiment via the Echo balloon satellite devised by the NASA Langley Research Center. JPL's first successful planetary mission, Mariner 2, left Earth on Aug. 27, 1962, and flew past Venus on Dec. 14 of the same year. The Viking 1 mission launched Aug. 20, 1975, while the Viking 2 mission arrived at Mars on Aug. 7, 1976. Voyager 2 launched Aug. 20, 1977, and flew past Neptune on Aug. 25, 1989. The Magellan mission to Venus arrived in orbit Aug. 20, 1990. The Genesis mission to collect particles of the solar wind launched Aug. 8, 2001, while the Spitzer Space Telescope was launched Aug. 25, 2003. On Aug. 12, 2005, the Mars Reconnaissance Orbiter left Earth. The Mars Phoenix mission followed it on Aug. 4, 2007. Voyager 1 crossed the heliopause into interstellar space during August of 2012. And on Aug. 21, 2013, the Wide-Field Infrared Survey Explorer, or WISE, was reactivated as NEOWISE, with a new mission to hunt near-Earth objects.

Events

Interstellar Comets: Visitors From Another Solar System—Natural or Artificial?

Tuesday, Sept. 14
5 to 6 p.m.
Registration link

Abstract:
The recent discovery of the first interstellar object, 1I/`Oumuamua, passing through the

solar system in 2017 has provoked intense, sustained interest by the scientific community—but the interest has not always been purely scientific. `Oumuamua was visible to ground-based telescopes for less than a month, and a little longer from space. After this short period of study, `Oumuamua's characteristics were quite different from what scientists expected from the first interstellar object (ISO). There have been a huge number of papers written about this one object, energizing a new interdisciplinary discussion about planet formation. ISOs enable the close up study of material from other planetary systems, allowing us to assess similarities and differences in the chemistry and physical processes driving planetary growth in other planetary systems. The second ISO, 2I/Borisov, was discovered less than two years after the first, much sooner than expected, and has characteristics which are very different from the first ISO, looking more like a solar system comet.

There are some who speculate that `Oumuamua's characteristics can be better explained as alien technology—but this is not an accepted view in the community. If we had sent a space mission to `Oumuamua we could have resolved this very quickly, but unfortunately the current NASA mission calls are not compatible with missions that respond very quickly to new discoveries.

When the Rubin survey telescope begins its survey from Chile in 2022/2023, we expect to find many more ISOs, and it is time to start thinking about new types of missions that could respond to exciting new discoveries such as interstellar objects. This talk will summarize what we know about our first two interstellar visitors, how we know it, and what they are, and will present some new ways we might explore these intriguing objects in the future.

Speaker's bio:
Karen Meech is an astronomer/astrobiologist who investigates how habitable worlds form, exploring the bigger picture of whether there is life elsewhere. She uses the leftover pieces from our solar system's formation to understand how habitable planets are made. She started her astronomical career investigating comets, the icy leftovers from the birth of our solar system. Her work led to an understanding of many of the processes that cause the beautiful tails to develop far from our Sun and was co-investigator on three comet missions: Deep Impact, EPOXI, and Stardust-NExT. In addition to her science role on these missions, she coordinated major ground-and space-based observing campaigns in support of the missions. Her discoveries provide information to test our understanding of how planetary systems are assembled. Now her work has embraced the power of interdisciplinary science and she is combining geological field work, geochemistry, astronomical observations, theory, and space mission concepts to address fundamental questions about how Earth got its water. This includes the development of a Discovery class mission to explore water in the main asteroid belt. More recently she has been leading teams observing and characterizing interstellar objects. She obtained her B.A. in Space Physics from Rice University and her Ph.D. in Planetary Physics from MIT. After

MIT she obtained a faculty position at the University of Hawaii's Institute for Astronomy, where she is an astronomer and the current interim director.

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

Von Karman Lecture Series - Instrumental: Engineers Who Make Science Possible

Thursday, Sept. 16
7 to 8 p.m.
YouTube link (streaming content to begin at the time of the event)

We'll sit down for a one-on-one with Janelle Wellons and discuss her upcoming work with the Multi-Angle Imager for Aerosols (MAIA), weaving together the challenges of the mission with her journey to JPL.

Speaker: Janelle Wellons, Instrument Operations Systems Engineer, NASA/JPL
Host: Brain White, Public Services Office, NASA/JPL
Co-Host: Jocelyn Argueta, Public Outreach Specialist, NASA/JPL

Signups Open for United Way/JPL Fundraising Walk

JPLers and retirees are invited to register for the Nov. 6 WalkUnitedLA, the first planned in-person United Way/JPL fundraising event since before the pandemic.

Signup link

As with most public events since the pandemic began, the United Way Los Angeles collaboration with JPL has had to adapt, switching most events from in-person to virtual. And during these trying times, United Way and other community organizations are playing even more important roles in helping the most vulnerable in our communities who have been affected by Covid-19.

Assuming Covid conditions allow, the traditional 5k United Way L.A./JPL walk is being held on Nov. 6. It has a new name (WalkUnitedLA) and a new location (SoFi Stadium, the new home of the Los Angeles Rams). Signups to join the JPL Voyagers team in the walk are now open at https://secure.qgiv.com/event/walkunitedla2021/team/884851/.

Participants will be notified of any changes due to the pandemic; for example, if it needs to be converted to a virtual event, along the lines of the virtual walk held last year. The United Way Walk page states, "Pending public health guidelines, we will either walk together at the new SoFi Stadium, or we'll walk in our neighborhoods and join a virtual celebration. Either way, we will WalkUnited for a more just and equitable LA! "

In addition to this endeavour, JPL's annual employee giving campaign for this year will be announced soon. Last year, the JPL community invested more than $513,000 in United

Way programs that serve all vulnerable Angelenos. The programs have supported families and students who need rent and cash assistance, addressed education equity in L.A.'s highest-need communities, and provided education and social-emotional support for families, the homeless, and front-line workers. The end goal is to end poverty for everyone in L.A. County.

JPL Contact: Mark Lopez mark.a.lopez@jpl.nasa.gov, or 818-393-6878.

JPL Family News

Retirees

The following JPL employees recently announced their retirements:

40+ Years:

David H. Lehman, Section 4200, 41 years

30+ Years:

James S. Jenkins, Section 3101, 32 years

Thomas J. Cunningham, Section 3890, 30 years

20+ Years:

John R. Wright, Section 3981, 27 years

Hung Q. Pham, Section 353F, 26 years

Vincent S. Hung, Section 394G, 25 years

Ginny G. Azevedo, Section 3310, 20 years

Passings

Larry W. Epp, PhD, 59, of Pasadena, passed away at 12:02 a.m. on Aug. 10, 2021, at his residence. He was born on Feb. 8, 1962 in Lincoln, Nebraska, a son of Waldeen M. and Janet M. Krehbiel Epp. He is survived by his mother Janet Epp of Rushville, Illinois; brother, Jeffrey Epp and Denise of Bedford, Texas; sister, Becky Adams and David of Mason City, Illinois; brother-in-law, Steve Eyler of Rushville, Illinois; and numerous nieces and nephews. He was preceded in death by his father and sister Christie D. Eyler. Larry

graduated from Rushville High School in 1980. He was on the football and wrestling teams in High School, and a member of the band and chorus. He enjoyed soccer, football, baseball, and Formula One racing. Larry was an avid outdoorsman, enjoying hunting and fishing.

Larry received a B.S. from Bradley University (1984), an M.S. (1986) and PhD (1990) both from the University of Illinois, Urbana, all in electrical engineering, where he studied under Professor Raj Mittra. Between his undergraduate and PhD at the university, he was a Northrop Fellow (1986-1990) and a Post Doctorate (1990) in the Electromagnetic Communication Laboratory of the Department of Electrical and Computer Engineering.

Larry joined JPL in the fall of 1990, working in the Transmitter Engineering group of the RF and Microwave Subsystems Section, where he developed high-power radio frequency transmitter systems and frequency selective surfaces for the Deep Space Network. He became an expert in these high voltage systems, as well as on multipaction and ionization, ultimately transferring that knowledge to the support of spacecraft transmitters later in his career. Between the fall of 1996 and 1997, Larry left JPL to join the RF Systems Research Laboratory, Cellular Subscriber Sector Research Laboratories at Motorola as a Lead Electrical Engineer. Returning to JPL in 1997 and until 2021, Larry held positions of increasing responsibility, including a member of Technical Staff in his original group, then as Technical Group Supervisor of the Spacecraft Transmitter Systems Group, and subsequently as the Deputy Section Manager in the Flight Communications Systems Section. His ability to perform both as a line manager and project manager is most notable, while he held both the position of Deputy Section Manager and the MAVEN Electra Project and Task Manager. Most recently, in 2019 he returned to his JPL roots as the Technical Group Supervisor for the Applied Electromagnetics Group in the Communications Ground Systems Section supporting the Deep Space Network. In 2016, Larry was awarded the Designation of Principal Engineer, one of the highest technical designations at JPL.

At JPL Larry contributed significantly to the Deep Space Network, CloudSat, Mars Curiosity Chemin X-Ray instrument, Aquarius, SMAP, SWOT, NISAR, MRO, GRAIL, Deep Impact, and MAVEN.

Larry was included in seven patents with colleagues, and included in eight NASA Group Achievement Awards and awarded a Ranger award and four Mariner awards for leadership on flight project activities.

Dennis Lee Potts, 78, of South Pasadena, passed away peacefully on August 19th from complications of Alzheimer's disease. For more than 25 years Denny worked at the Jet Propulsion Laboratory, as lead Spacecraft Engineer for two Mars missions, Supervisor of Systems Engineering for the Cassini Mission to Saturn, and Spacecraft Development Manager for the Spitzer Infrared Space Telescope. NASA awarded Dennis its Exceptional Service Medal in 2004 in recognition of his many contributions to their mission of space exploration.

Always active in the South Pasadena community, Denny was a Scoutmaster for Troop 342, an AYSO soccer coach, and a member of the South Pasadena Planning Commission and the Centennial Committee (1988). Denny was an avid golfer, cyclist, outdoorsman, and photographer. He is survived by his beloved wife of 44 years, Donna, his brother Jim, his four children (Shannon, Don, Josh, and Kelly), and his five grandchildren (Bryan, Kayla, Luke, Alden, and Sean). His family will place a memorial bench in Eddie Park, where Denny played with and coached two generations of his offspring.

In lieu of flowers, please consider donating "in memory of Dennis Potts" to the Friends of the South Pasadena Public Library, at 1100 Oxley St, South Pasadena, CA 91030.

Andre Caticchio, former JPL engineer, died on April 17, 2021, at the age of 82. He had worked for JPL for more than 30 years. Catichio was the oldest son of John and Angela Caticchio, and brother to Frank Caticchio of California and sisters Camilla and Carol of Cleveland, Ohio. Services and burial were held at All Soul Cemetery in Cleveland.

Donald W. Ritchie died on Aug. 2, 2021, at the age of 84. He was hired as a technician in Section 342. Through the years, he became an engineer, and the "job of his JPL life" was to act as contract and technical manager for the power subsystem of the Viking orbiter. In 1978, he moved to the Solar Energy Research Institute in Golden, Colorado. After eight years, he returned to JPL to work on Mariner Mars, and his last position was as group supervisor of the Infrared Group. He left JPL in 1994.

Ritchie is survived by his wife and former JPLer, Jan Ritchie; daughter, Pam; sons Robert, Jeff, and Richard; daughters-in-law Michele and Shirley; eight grandchildren, and 10 great-grandchildren. He was preceded in death by son Daniel.

John W. Lucas was born on March 14, 1923 (Pi Day) in Pomona, California, and passed peacefully on June 19, 2021, at his home in San Marino, California, at the age of 98. His parents were Leo J. and Mary G. Lucas. His father was a member of the Lucas family that owned and operated the Lucas Ranching Company in Cucamonga, California. John's mother's maiden name was Schwamm. John had two brothers, Richard and Don, who predeceased him.

During the fall of 1944, John was a member of the 13th reserve class at the U.S. Naval Academy at Annapolis, Maryland. He received his commission as an Engineering Officer in December 1944. He then reported aboard a "baby" aircraft carrier, the U.S.S. Casablanca-CVE 55, and served in the South Pacific during 1945. As a junior officer, he managed the engine room and was the ship's band manager and conductor. Music and dancing were always a deep passion of his. He became an accomplished pianist and danced into his 90s with the Stardusters Ballroom Dance Club.

John attended UC Davis and earned his B.S. in Engineering from UC Berkeley (1948). He received his MS in Engineering {1949) and PhD in Engineering from UCLA (1953) after marrying his ever-lasting love, Genevieve Marie Blessent, on Feb. 9, 1952. Shortly after their wedding, he was granted a Postdoctoral Fellowship by the National Science Foundation and moved with Genevieve and their first son to Berlin, Germany to conduct research at the Fritz Haber Institute.

After one year in Berlin, John joined the Jet Propulsion Laboratory in 1954, where he transitioned from research to management activities. During that time, he participated in the early missions to the Moon, Venus, and Mars. He was Manager for Research from 1970 to 1973. He was Executive Assistant to both the Deputy Director, Lt. General Charles Terhune Jr. and Director, Dr. William H. Pickering, from 1974 to 1976. From 1977 to his retirement in 1985, he was project manager for the Development of Technology for Solar Thermal Parabolic Dish Electricity Generation. Additionally, he edited several books, including Thermo Characteristics of the Moon and Fundamentals of Spacecraft Thermo Design. He was actively involved with The Lucas Brothers Foundation, founded by his brother Don, and the John W. Lucas Adaptive Wind Tunnel at Caltech.

He was very dedicated to his San Marino community, where he was a long-time member of the San Marino City Club, San Marino Tennis Center, and the Athenaeum at Caltech. He had also taken the lead as a parent in the 1970s to recruit Burt Kanner to San Marino High School to become a math teacher, water polo and swim coach to ultimately a nationally ranked swim team.

John was warm, constantly curious, enjoyed lively debates, and is remembered for his infectious smile and laugh. His greatest joy was his 69-year marriage to Genevieve and raising his family. His spirit lives on in her heart and in the hearts of their three children, Christopher Lucas, Mark Lucas, and Susan Healy, together with their three grandchildren, Jacquie, Cristina, Richard, and soon a great grandchild. He also lives on in the beloved traditions he introduced them to, including water skiing and camping on Lake Mead, water skiing and houseboating on Lake Powell, snow skiing at Mammoth and Telluride, and playing tennis, which he played well into his 90s. While skiing at Telluride when he was 75, John hiked Gold Hill (12,000 feet) from the highest ski lift to ski Electra, a double black diamond run. Whatever the sport he always had a unique hat on.

John was an Associate Fellow at the American Institute of Aeronautics and Astronautics and a national vice president (1975-1976). He received the Group Achievement Award, NASA (1984). He is named in Who's Who Nationwide.

Awards

American Indian Science and Engineering Society Honors Aaron Yazzie

The American Indian Sciences and Engineering Society (AISES) is presenting JPL mechanical engineer Aaron Yazzie with a 2021 Professional Award for Technical Excellence. The Society's Professional Awards celebrate contributions of Indigenous innovators and professionals in six award categories.

Yazzie has supported development of mechanical systems for such missions as Mars Science Laboratory/Curiosity rover; InSight Mars Lander; and the Mars 2020 Perseverance rover. On Perseverance,

he served as the cognizant engineer for the drill bit assemblies being used for sampling Martian rock and soil.

Born in Tuba City, Arizona on the Navajo Nation, and raised in Holbrook, Arizona (a border town to the Navajo Nation), Yazzie earned his bachelor of science degree in Mechanical Engineering at Stanford University. He is a Sequoyah Fellow and professional member of AISES. Yazzie has worked to significantly increase representation of Indigenous Peoples in STEAM fields.

The Navajo Nation Council honored him in 2017 for “serving as an inspiration to Diné youth and citizens," and in 2019 he received JPL's Bruce Murray Award “for outstanding and consistent dedication in promoting inclusion and excitement in science and education especially among Indigenous Communities.”

Yazzie will accept his award on Sept. 25 during the 2021 AISES National Conference in Phoenix.

In an AISES news release, the organization's CEO explains that the purpose of the awards is to honor recipients in their respective fields of STEM: “They represent the strength and pride of Indigenous STEM talent. They are working to help their own people while paving roads for others. Join us in congratulating them on their successes, and wait for more important things from them as they take a remarkable place in STEM and Indigenous history.”

Hui Su Becomes Meteorological Society Fellow

The American Meteorological Society is honoring JPL Earth Scientist Hui Su by making her a Fellow of the organization. A formal presentation is planned for their annual meeting in January in Houston.

The Society recognizes outstanding individuals and organizations of the weather, water, and climate community. Su uses observations and numerical models to study precipitation and cloud processes on

Earth. Her work has included such missions and instruments as Aura, Terra, Aqua, GPM, CloudSat, and CALIPSO.

Read the full American Meteorological Society announcement of honorees.
