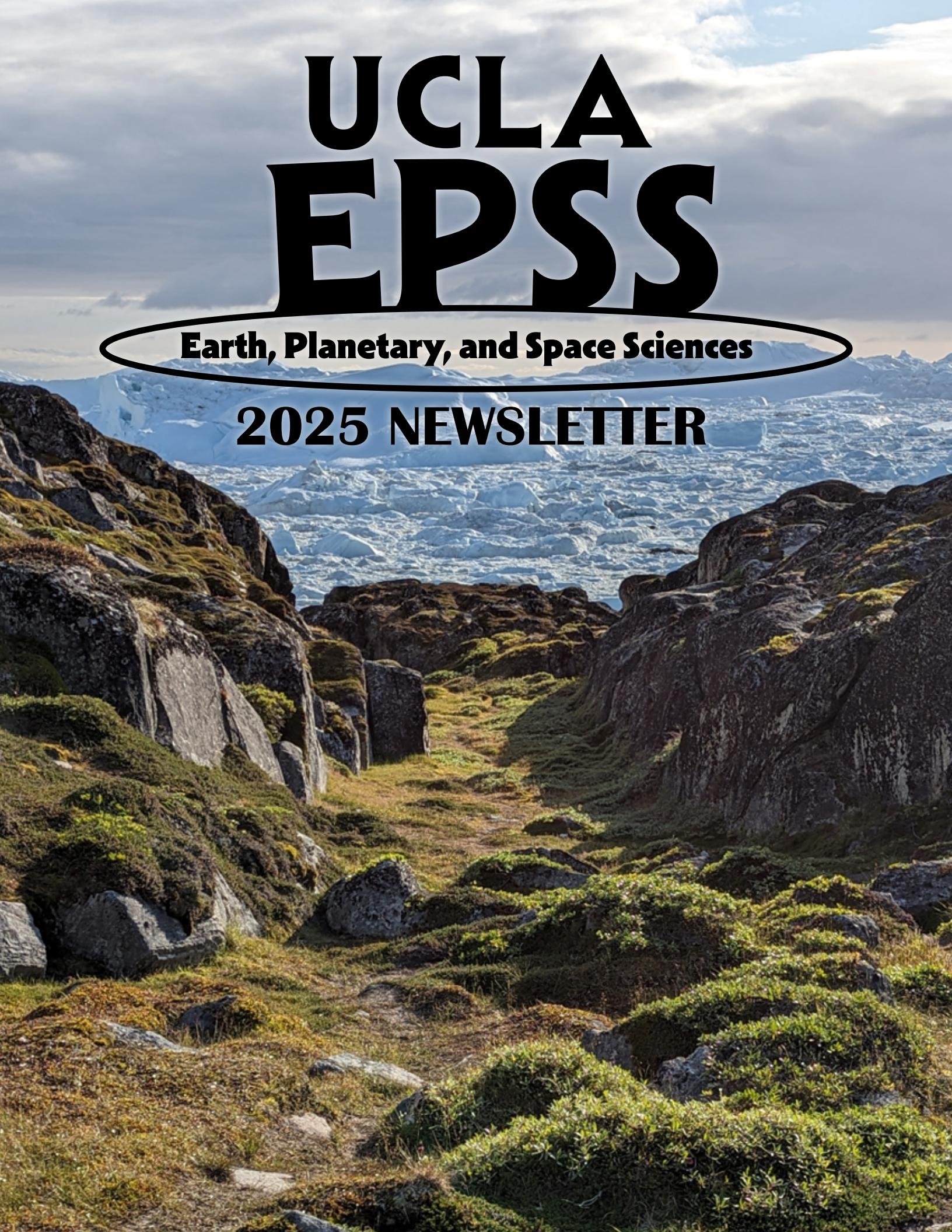


# UCLA EPSS

**Earth, Planetary, and Space Sciences**

**2025 NEWSLETTER**





# Greetings from the Chair

**Jonathan Aurnou**

It is a pleasure to introduce myself as the incoming Chair of EPSS. I am delighted to serve this exciting and vibrant community.

First and foremost, I would like to thank Carolina Lithgow-Bertelloni for her exceptional service as Chair over the past three years. In a period marked by significant challenges, Carolina led with commitment, clarity, and great success as she advanced departmental growth, cohesion, and excellence.

As we look ahead, EPSS—like much of the scientific community—faces a complex and evolving landscape with massive fluctuations in funding access and grant availability. Members of our international community, who contribute so deeply to the intellectual and cultural life of the department, are encountering new hurdles. Moreover, the value of science and academic research continue to be questioned on the national stage. These are undoubtedly stressful times.

And yet, the scientific and educational engagement of EPSS remains as inspiring as ever. To name a few:

- Professor Meng's group recently illuminated the physics underlying the "supersonic" rupture of the magnitude 7.8 Myanmar earthquake.
- Postdoc Pierre-Alexis Roy, working with Professor Benneke and co-authors, revealed a striking "tale of two exoplanets" using James Webb Space Telescope observations.
- Professors Mainzer and Ni's class ventured into the field for a three-day expedition, collecting and studying extraterrestrial meteoritic samples from the Stewart Valley and Silurian Dry Lakes. The experience, like others our department offers, empowered students as primary gatherers of planetary science data.

As a community, we need to stay engaged in all that shapes science—and stay connected to each other. Congress' support for scientific research remains strong, and EPSS members are actively engaging with policymakers to keep it that way. For those who want to act locally, making a gift to EPSS is a powerful way to help. These contributions keep our unique labs running, sustain student activities, and maintain our field-based learning efforts in California—the most extraordinary of classrooms for geoscience and planetary-analog studies. It's our connection as a community that will continue to propel EPSS forward, supporting students, research, and discovery alike.

- Jon



## Farewell from the Chair

**Carolina Lithgow-Bertelloni**

Arrivederci! Having departed as Chair at the end of the 2024-2025 academic year, this greeting marks my last newsletter. Writing it has given me a chance to reflect on the past three years, which have been challenging and rewarding in equal measure. Challenging due to numerous events outside of our control, including this year's devastating January fires, which resulted in heartbreaking losses for our community. Rewarding, because as we came together after each loss, we were able to accomplish a lot as a department. It is fair to say that we not only survived but thrived. Over the last three years, six new faculty members (including two this year, Björn Benneke and Stacy Laroche) have joined our ranks. We have welcomed the first director (Dr. Ranga-Ram Chary) of the new Space Institute. We have attracted vital new staff, revitalized our communications, and continued to excel in undergraduate (see the new Science in the Movies course!) and graduate education, as well as public outreach (see the Here2Observe program, the graduate student-led Exploring Your Universe Radio show, and the fantastic Distinguished Alumni Lecture by Dr. Candice Hansen-Koharchek), as you will see throughout the pages of this newsletter. Our faculty, researchers, students, and alumni continue to garner honors and accolades, which we share on our news site (<https://epss.ucla.edu/news-events/>) and here in this newsletter. We continue to take our mission to understand and protect our home in the universe very seriously. After the January fires, our faculty members (David Paige, Seulgi Moon, and Lingsen Meng) and their groups, concerned about the risk of cascading hazards like debris flows in fire-affected regions, deployed cutting-edge technology and a network of geophysical instruments to monitor these areas. Such rapid action would not have been possible without the generous donation of our own Bill Schopf, who continues to support our educational and research mission in multiple ways. Our donors are too numerous to mention individually and we are grateful to all, but let me extend a special thanks to Joe (our commencement speaker!) and Andrea Straus for their additional endowment of undergraduate research fellowships, and to Michael Thacher and Rhonda Rundle for special contributions to the Chair's Discretionary fund, which helped us acquire vital equipment and spruce up the AV equipment in the Geophysics Seminar Room. Last, but not least, I would like to welcome Prof. Jon Aurnou as the new chair and wish him the very best in navigating the new financial environment. I close with a heartfelt thank you to everyone in the department, including those we lost, for making the last three years possible.

It was an honor,

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## Credits

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**Emmanuel Masongsong**

**Cover Photo**  
**Dr. Stacy Laroche**

# DEPARTMENTAL ARRIVALS



## Dr. Björn Benneke New Associate Professor

Dr. Benneke's research addresses the questions: "How did we get here?" and "Are we alone in the universe?" aligned with the US Decadal Survey Science top priorities: "Pathways to Habitable Worlds," which heralds the 2020s as the era of exoplanet atmosphere spectroscopy. Prof. Benneke and his team are leading ambitious observational campaigns using NASA's revolutionary James Webb Space Telescope and the world's most advanced ground-based telescopes. These assets will facilitate remarkable breakthroughs in the field of exoplanet characterization: exploring the prevalence and nature of "water worlds" as well as rocky planets with Earth-like climates, volcanism, and biosignatures. By measuring the elemental compositions of gaseous planets, they can investigate the fundamental physical and chemical processes that govern planetary atmospheres and climate regimes, to explain how they form and how they evolve over time.

## Dr. Stacy Larochelle Assistant Professor

Stacy is an interdisciplinary geophysicist studying the mechanics of hydrological and glaciological systems, and their interplay with the solid Earth. Stacy grew up in Québec, where she studied civil engineering at McGill University, but soon realized she was more interested in the mechanics of the ground beneath the structures than in the structures themselves. This led her to pursue a PhD in Geophysics at Caltech, where she used satellite geodesy, data analysis, and modeling to investigate the various ways in which water deforms the solid Earth, from hydrological surface loading and aquifer-related deformation to fluid-induced earthquakes. She then delved into glaciology as a postdoc at the Lamont-Doherty Earth Observatory, focusing on the impact of surface meltwater and subglacial groundwater on ice sheet dynamics. Stacy is thrilled to be back in Southern California to work on local issues like groundwater and fault processes — in addition to more distant ones in Greenland and Antarctica — as well as to hike in the San Gabriel Mountains, play tennis, and enjoy LA's food and music scenes.



## Valeria Jaramillo Hernandez Lecturer/Public Education Specialist

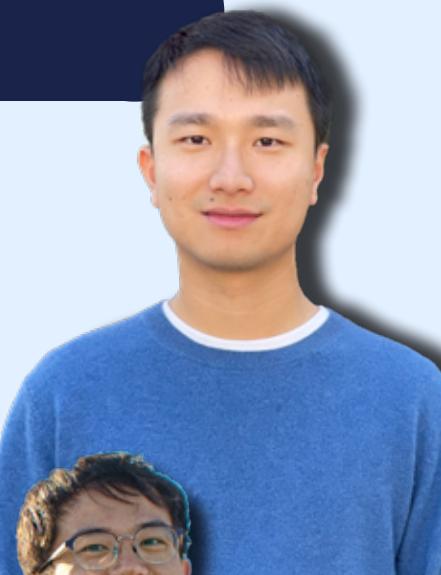


It is with great pleasure that I have been able to come back to EPSS as a lecturer and public education specialist, after getting my PhD in Geology in Fall 2024. As a first-generation student that attended community college and later transferred to UC Santa Barbara (B.S. in Earth Science), I am aware of the challenges that transfer students face and will happily help our incoming transfer students. Furthermore, my passion for mentoring students led me to co-found the student-run EPSS Family Mentorship Program (EFMP), which is still going strong. Teaching is also incredibly important to me and I am grateful I get to teach one of the most fun courses at UCLA - Dinosaurs and their Relatives. Having volunteered and worked as a fossil preparator for the Los Angeles Natural History Museum and getting to dig up dinosaurs has given me some cool insights that I am able to share with students.

I am so grateful to Carolina Lithgow-Bertelloni and Amy Mainzer for giving me the opportunity to give back to the department and also to learn about a completely new field to me (planetary science) through the NEO Surveyor mission, leading education and public outreach.

## Jerry Xuan 51 Pegasi b Fellow

In October 2025, Jerry Xuan started as a 51 Pegasi b Fellow at UCLA. Jerry's research interests include giant planet and brown dwarf atmospheres, orbital architectures, and substellar binarity. In his PhD at Caltech, Jerry focused on measuring the atmospheric compositions, spins, and radial velocities of giant planets and brown dwarf companions with high- and medium-resolution spectroscopy (R~2,000-100,000). Jerry has studied atmospheres from 700 to 2500 K, from the late T dwarfs up to late M dwarf stars, using both atmospheric retrievals and forward models. He used optical interferometry and high-resolution spectroscopy to discover tight brown dwarf binaries around stars. Outside of research Jerry enjoys playing tennis, snorkeling, kayaking, and reading novels and science fiction.



## Zachary Lacson Purchasing/Travel Specialist

Zachary is the newest edition to our purchasing team and will be joining Mike Rathjen and Kelli Yang in Slichter 3845. Zachary joins us from UC Davis's Microbiology and Molecular Genetics Department, where he worked as the Business Office Assistant since 2022. He brings a great amount of knowledge in purchasing and reimbursements. He is also an Aggie, having earned a bachelor's degree in Managerial Economics from UC Davis.





# Bruner Collection

## The Harold and Marie Bruner Collection of minerals, fossils and artifacts

### By Bruce Runnegar

Harold and Marie Bruner were bird watchers and mineral and fossil collectors in Iowa before moving to Claremont, California just prior to the Second World War. They and their four daughters—Betty, Gretchen, Marilyn, and Marguerite—took a world tour in 1938 with the express purpose of exposing the girls to “geography.” During that tour, which included parts of Australia, Indonesia, Singapore, Egypt, and Europe, they acquired additional geological specimens and other souvenirs for the Bruner family collection.

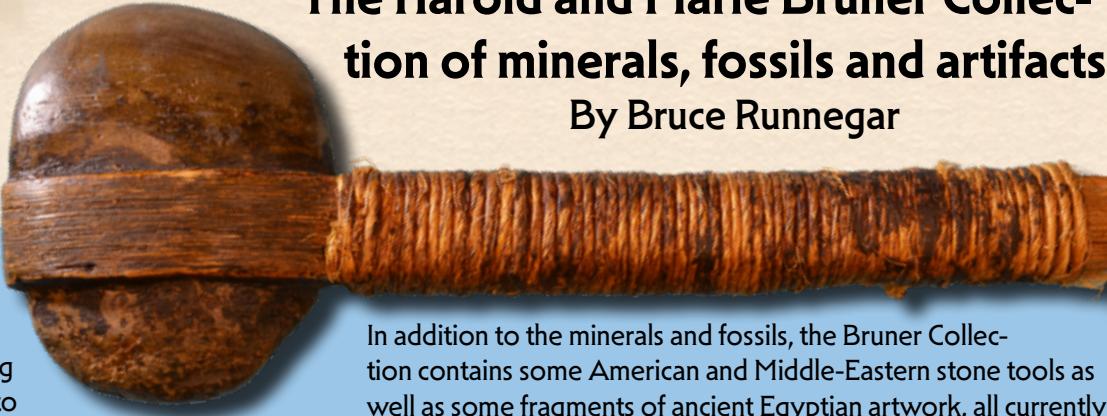
It is not quite clear why and when the Bruner Collection ended up at UCLA. It came with some notes, letters and photographs, some of which mention an earlier proposed donation to Drake University in Des Moines, but it is unclear if that ever happened. There is, however, one firm connection between the Bruners and EPSS: Harold and Marie Bruner’s eldest daughter Betty married John C. Crowell (M.A., 1946, Ph.D., 1947), former EPSS student, faculty member and department Chair. In any case, the collection ended up under John Wasson’s care and was transferred with the meteorites to the Meteorite Gallery following John Wasson’s death.

The Bruner Collection is housed in a custom-built wooden cabinet expertly renovated by Eric Wessenauer, while the specimens themselves were carefully cleaned and curated by Dean Lewis. The best parts of the Collection are the minerals and numerous plant fossils, preserved in ironstone nodules, from the Carboniferous coalfields of the Mazon Creek area, Illinois. Although the department already has a superb display of minerals and fossils, largely donated and assembled by the late Dr. Norman Nichols, the Bruner Collection will now serve another equally important educational role as the source repository for show-and-tell mineral and fossil demonstrations at Exploring Your Universe (EYU).

Above: Bruner family WWII Christmas card, 1941; Aboriginal stone axe made at Cherbourg, Queensland, from the Bruner Collection.

Right: A necklace made from size-graded discoidal shells of the Indo-Pacific protist *Marginopora vertebralis*. Two halves of a Mazon Creek ironstone nodule that formed around a frond of the Carboniferous seed-fern *Alethopteris searlii*. Slab of fossiliferous, organic-rich claystone from an excavation at 6th and Flower Streets, Los Angeles.

Dean Lewis displaying the Bruner Collection and enthusiastically showing a stuffed anomalocarid to interested visitors at EYU 2024.



In addition to the minerals and fossils, the Bruner Collection contains some American and Middle-Eastern stone tools as well as some fragments of ancient Egyptian artwork, all currently on display in the Geology building third floor wall cases. There is also a hafted stone axe with a hand-written paper label that says: Queensland aborigine hatchet Cherburgh Bruner.

When I was asked by Professor Emeritus Kevin McKeegan to assess the collection, I immediately recognized the provenance of this hatchet because in 2004, while living in the Bay Area, I had purchased a carved and signed boomerang that was made at Cherbourg, Queensland (previously known as Barambah) during WWII. A search of the Australian National Library’s database ‘Trove’ using the keywords ‘Bruner’ and ‘Cherbourg’ yielded links to two articles, both published in Brisbane



newspapers on November 5, 1938. They describe how the Bruner family had just visited the government Aboriginal settlement at Cherbourg and were looking forward to witnessing a “corroboree” (gathering or sacred ceremony) that evening.

The Bruner hatchet may be one of the few surviving items made at Cherbourg using traditional methods. Although we cannot know who made it, its existence provides some connection to the inhabitants of Cherbourg prior to WWII. Negotiations are under way to repatriate the hatchet to Queensland, and hopefully to the indigenous community still living at Cherbourg.

Right: Eric Wessenauer with the refurbished wood cabinet holding one of the Bruner treasures, an oreodont skull found in South Dakota in 1928. Oreodonts are pig-like animals from the Eocene that are related to camels.



## Introducing the new GE course EPS SCI 2 Science in the Movies

### By Jean-Luc Margot

Many UCLA students take general education (GE) science courses offered by EPSS to fulfill a science requirement. Based on hundreds of student evaluations, we know that students come in with an average level of interest in the subject of the course. But what if we could get students genuinely excited about taking a science course from the start?

Starting in Winter 2025, EPSS is offering a new 4-unit GE course that describes the methods and results of science through the lens of blockbuster movies. We are betting on the power of visual storytelling and the wide appeal of popular movies to make science more accessible and engaging to a large and diverse audience of students. With assistance

from the UCLA Center of the Advancement of Teaching, we will assess whether this educational approach and the emotional draw of the stories effectively promote interest in STEM disciplines and increases students’ connection with, and long-term retention of the subject matter.

The course focuses primarily on the unifying scientific principles that govern nature, and the power of the scientific method to arrive at a factually accurate and evidence-based understanding of the world. By highlighting the role of scientists in preventing or mitigating natural disasters, solving environmental problems, and enabling space exploration, students should recognize the benefits of science to society. We discuss how scientists answer scientific questions, test a hypothesis, or solve a problem in the movies and in real life, so that students acquire a sound understanding of the scientific method and the peer-review process. The cinematic treatment of these science topics also provides excellent opportunities to distinguish between facts and exaggerations, develop information literacy, and hone critical thinking skills. In the process, students will develop competency in estimating probabilities and computing order-of-magnitude estimates.

The course was inspired in part by the extensive series of “Bad Movie Nights” organized by former EPSS graduate students Deborah Weiser and Beth Ann Bell in 2010–2012, by my experience with consulting for the entertainment industry on a dozen projects since then, and by the students’ responses to movie clips in other GE courses I have taught at UCLA and Cornell.

A description of the course and the list of movies we will show is available at <http://bit.ly/ScienceInTheMovies>. I am really looking forward to teaching this new course!



# Here 2 Observe (H2O) Program

by Valeria Jaramillo and Selmer Wong

Last year EPSS welcomed Dr. Amy Mainzer back to UCLA where she is a professor and the Principal Investigator (PI) for the Near-Earth Objects (NEO) Surveyor mission. The NEO Surveyor is a space telescope designed to identify and characterize the majority of asteroids and comets with potential to hit Earth while they are still at least 10-20 years away. This would give NASA or the U.S. Space Force time to design and implement an intervention.

As part of this effort, a NASA-funded educational outreach program called Here2Observe (H2O) is recruiting college undergraduates nationwide and partnering them with mission teams. The multi-year program grant was awarded in Fall 2024 to Dr. Kevin Hayakawa, a Bruin alum, and now assistant professor of physics at Cal State University Channel Islands (CSUCI). A cohort of 12 CSUCI students was selected to participate based on their academic backgrounds, interests, personal statements, and an interview. The grant enabled CSUCI students under Dr. Hayakawa to meet regularly and learn about the mission, immerse themselves in the world of planetary science and astronomy, and interact with subject-matter experts at NEO Surveyor partner facilities, including UCLA, JPL, and Caltech. Once a month they went on field trips to learn about and see various lab facilities in-person, including prototype and flight hardware. Seeing the day-to-day activities at JPL and watching the team of engineers building the telescope gave students a new perspective on different career opportunities in STEM.

In Fall 2024 they took two field trips to JPL in Pasadena, and saw the satellite being built in High Bay 1 with their own eyes, shortly before it was shipped off to Space Dynamics

Laboratory for telescope and instrument integration. The CSUCI students got a kick out of seeing the optical engineers use lasers to test the alignment of the telescope mirrors down to micron precision. At JPL, the students also spoke with experts about their academic and career paths, including Prof. Amy Mainzer (PI), Drs. Marina Brozovic and Joe Masiero (members of NEO Surveyor Science Team), Dr. Hernan Erlig (Project System Engineer) and Ms. Olivia Dawson (Instrument System Engineer). Next they visited the Caltech Infrared Processing and Analysis Center in December 2024, attending similar career-path talks from various other subject-matter experts. A significant takeaway from these visits was the realization that most professionals' paths were not linear. Students were glad to hear that not everyone has it all figured out and that there is always room for learning, adaptation, and growth in science. Additionally, they were able to attend one of the biggest conferences in planetary science, the 2025 American Astronomical Society (AAS) meeting held in Maryland.

For some of these students, it was not only their first conference, but also their first time traveling on their own, promoting their independence and curiosity. Some memorable highlights included attending informative lectures, exploring various options in astronomy, and seeing snow for the first time.

During field trips at UCLA, two events that stood out were the resume/personal statement writing workshop, which students confirmed helped them greatly improve these documents, and fun experiments in the "Comet Lab." They were able to recreate a comet by mixing water, garden soil, and

tiny amounts of corn syrup and Windex, the latter two ingredients simulating amino acids and ammonia which have been detected in comets. As a group, they observed and noted various properties, then calculated the mass and density of the comets they constructed. While the comets were solidifying in a cooler of dry ice, students explored their surroundings using Forward-Looking Infrared (FLIR) cameras that they paired with their cell phones. Multiple students mentioned that they looked forward to more hands-on activities in future events.

To wrap up the first year of the H2O program, the cohort visited UCLA and were tasked with preparing a small presentation to share what they took away from this program. The impact on each student was astronomical (pun intended)! Their confidence grew as the year progressed and they were exposed to different perspectives and future careers in STEM, which they found really valuable. A common theme across this program was that of community and camaraderie. Students from "commuter campuses" usually don't form bonds with other classmates because they're driving back and forth and most of the time also taking care of other responsibilities. However, H2O allowed students from different academic backgrounds to connect with each other through a shared love of science, and to build stronger relationships and provide mutual support which is critical in academia. The program also greatly impacted their advisor, Dr. Hayakawa, who accompanied the students on all their trips and adventures. He said he really enjoyed developing a closer relationship with his students rather than just being their tough professor.

One of the outstanding results shared by this new network is that they learned about the Summer Bridge- Educational Opportunity Program and different internship opportunities

available to them. As a result, several students secured internships over the summer and everyone (except the seniors) were accepted to the second year of the program, along with three new participants. We are grateful that Here 2 Observe will continue to empower students, providing them with exciting opportunities in planetary science for the next few years!



Model of the NEO Surveyor spacecraft



# Every Day Is Your Birthday: The Exploring Your Universe Radio Show

By Megan Grace Li (DJ Stellar Cloud)

The best things in life only come once a year. My birthday, St. Patrick's Day, and Exploring Your Universe (EYU). But what if they didn't have to?

Exploring Your Universe, UCLA's annual science fair and the largest public science event in Los Angeles County, brings together over 12,000 visitors and 500 volunteers for a cost-free day of scientific wonder. But waiting all year for that Sunday in November to experience the joy, discovery, and community of EYU can feel like a lifetime. That's why I created the EYU Radio Show.

The EYU Radio Show is my love letter to the people who make Exploring Your Universe happen: our Board Members, Booth Leaders, Speakers, and Volunteers. Every year, they pour their energy, creativity, and care into making science fun, welcoming, and accessible. I started the show because I wanted to capture even a fraction of that magic. But more than that, I wanted to understand why they do it. What drives someone to show up early, stay late, and still beam with joy when a child asks a surprisingly deep question? Each episode helps me peel back a layer of the event and get closer to those who make it possible.

Just like EYU itself, the Radio Show is grassroots and student-led. We first launched in collaboration with UCLA Radio, another student-run organization, and were honored with a nomination for "Show of the Quarter." These days, we've relocated to the basement of the EPSS building to stay closer to home and avoid the long, long walks to Ackerman.

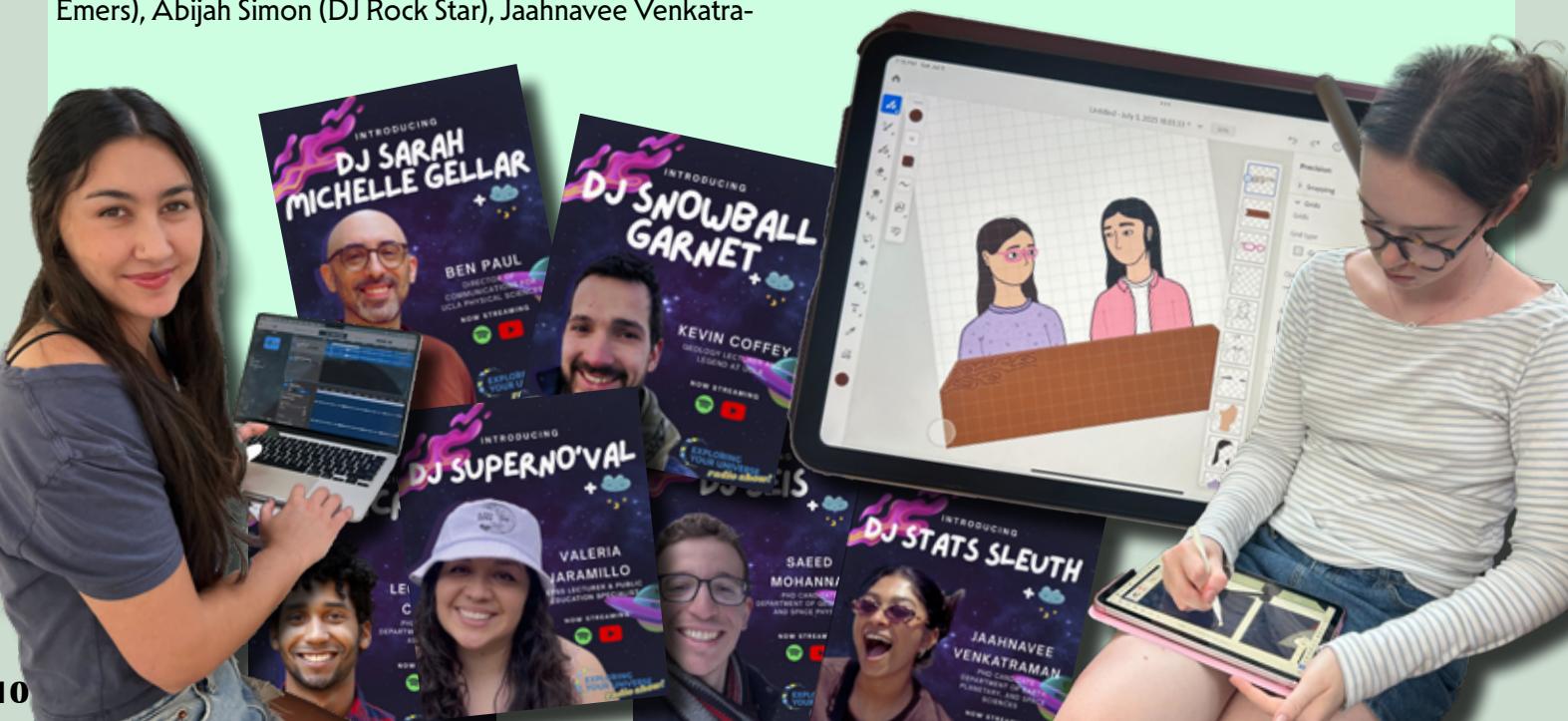
We've already featured an all-star cast of EPSS-ers: Emmanuel Masongsong (DJ Swan), Emerson Whittaker (DJ Emers), Abijah Simon (DJ Rock Star), Jaahnavee Venkatra-

man (DJ Stats Sleuth), David James (DJ2), and the extremely well-received Brandon Lazard (DJ Solar Beam), whose episode was spotlighted both on the University of California's website and the front page of UCLA's newsroom. At its core, the Radio Show is about celebrating the people behind science, from their triumphs to their trials. Science isn't one-size-fits-all, and neither are the people who make it happen. Each guest brings a unique perspective shaped by who they are and where they come from. Through these conversations, I hope to show that there's no single way to be a scientist—and that there's space for everyone in science.

The Radio Show couldn't go on without our team: Zoe Latimer, Lead Editor (B.S. Aerospace Engineering, '28), Alex Wu, Graphic Design (B.S. Computational Mathematics, '27), and Nicole Everage, Animations (B.S. Astronomy and Astrophysics, '27). Their creativity, dedication, and passion for science communication are truly out of this world. Special thanks to Physical Sciences Director of Communications Ben Paul for connecting us.

We're also deeply grateful for Wesley Hon, EYU Communications Chair (B.S. Electrical Engineering + B.S. Computer Engineering, '29), who joined the team while still preparing for his high school AP exams. His initiative and enthusiasm are a testament to the future of science outreach.

You can listen to the EYU Radio Show on YouTube ([youtube.com/@exploringyouruniverse](https://www.youtube.com/@exploringyouruniverse)) and Spotify. If you're interested in joining EYU or contributing to the show, we'd love to hear from you! Reach us at [universe@ucla.edu](mailto:universe@ucla.edu). Never stop exploring!



## Understanding and Preparing for Post-Fire Hazards in Los Angeles by Seulgi Moon

The devastating fires that swept through Los Angeles in January 2025 hit close to home for many of us at UCLA. Members of our community experienced heartbreaking losses — homes, favorite hiking trails, beloved restaurants, and entire neighborhoods were damaged or destroyed. In the aftermath, many are left wondering: what comes next?

One critical concern is the risk of cascading hazards — additional, often more destructive events triggered by the initial disturbance of a wildfire. These include floods, debris flows, and accelerated erosion. At UCLA EPSS, faculty and students are working together to better understand how fire-affected landscapes respond in the months and years after a fire, and how we can better prepare for the hazards that follow.

Our team is using cutting-edge technology to study these changes. Using ultra-high-resolution digital elevation maps created by drones, we are documenting how the burned landscapes evolve — from immediate erosion during rainstorms to gradual recovery of the hillslopes. Over multiple flights across Topanga and Mandeville Canyons, the drones have captured dramatic changes: sediment mobilized by the loss of vegetation, small incised channels (known as rills) carving into the soil, and deposits left behind by floods and debris flows. By quantifying how much sediment is removed and redeposited over time, we aim to understand how these landscapes recover from fire.

Thanks to a generous donation from emeritus faculty member Bill Schopf, we are also installing a network of geophones and rain gauges in several watersheds affected by the Palisades Fire. These instruments will allow us to monitor vibrations from moving sediment, measure sediment fluxes, and determine the rainfall intensities that trigger dangerous debris flows. This data will be crucial in improving future warning systems for debris flows, helping protect the safety of both the Los Angeles community and its infrastructure. This research is supported by the National Science Foundation through the Center for Land Surface Hazards. Together, we are working to advance scientific understanding of post-fire landscape dynamics and to help our community better prepare for the challenges of living with fire and its cascading effects.



Drone optical image comparison before and after the Feb 13 storm. The debris flood/flow deposits near the State Route 27. Debris flood deposits in Topanga Canyon. Damaged roadside rails resulted from flow impacts. The exposed deposit wall reveals stratification in flow near the surface.

# Awards



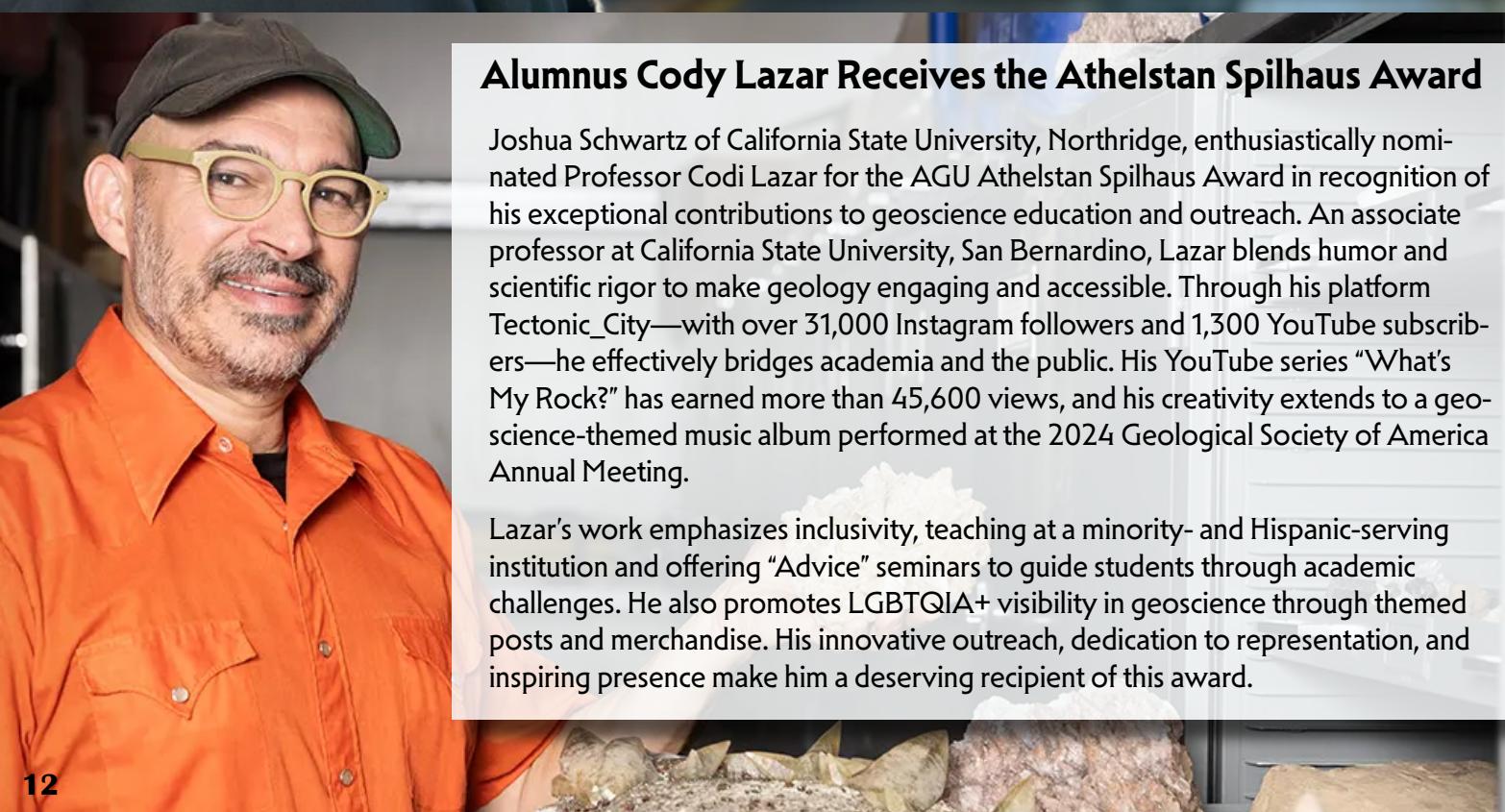
## Tina Treude appointed Göttingen Academy of Sciences and Humanities

Professor Tina Treude, a distinguished faculty member in UCLA EPSS, has been appointed as a corresponding member of the Göttingen Academy of Sciences and Humanities, Germany's oldest scientific academy, established in 1751.

Professor Treude's research focuses on understanding how microorganisms in the ocean interact with their environment and impact the planet. She has studied how certain microbes help reduce methane emissions, an important greenhouse gas, from the ocean floor. Her work also explores how low-oxygen areas in the ocean, which are becoming more common due to climate change, function and affect marine ecosystems.

"Professor Treude's appointment to this esteemed institution is a testament to her outstanding academic achievements and contributions to the advancement of knowledge, and we are proud to see her join such a distinguished group of scholars," said then EPSS Chair Carolina Lithgow-Bertelloni.

The Göttingen Academy has hosted some of history's most influential scholars, including Carl Friedrich Gauß, the Brothers Grimm, and Albert Einstein. Professor Treude's appointment highlights her significant achievements in advancing marine science and places her among a distinguished community of global intellectuals.



## Alumnus Cody Lazar Receives the Athelstan Spilhaus Award

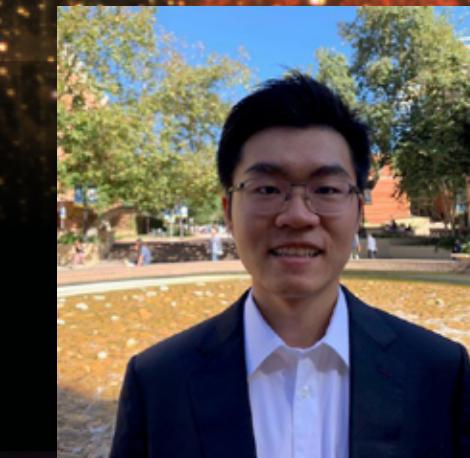
Joshua Schwartz of California State University, Northridge, enthusiastically nominated Professor Codi Lazar for the AGU Athelstan Spilhaus Award in recognition of his exceptional contributions to geoscience education and outreach. An associate professor at California State University, San Bernardino, Lazar blends humor and scientific rigor to make geology engaging and accessible. Through his platform Tectonic\_City—with over 31,000 Instagram followers and 1,300 YouTube subscribers—he effectively bridges academia and the public. His YouTube series "What's My Rock?" has earned more than 45,600 views, and his creativity extends to a geoscience-themed music album performed at the 2024 Geological Society of America Annual Meeting.

Lazar's work emphasizes inclusivity, teaching at a minority- and Hispanic-serving institution and offering "Advice" seminars to guide students through academic challenges. He also promotes LGBTQIA+ visibility in geoscience through themed posts and merchandise. His innovative outreach, dedication to representation, and inspiring presence make him a deserving recipient of this award.

## Carolina Lithgow-Bertelloni Awarded Guggenheim Fellowship

Since its establishment, the Guggenheim Foundation has granted over \$400 million in Fellowships to more than 19,000 individuals, among whom are more than 125 Nobel laureates, members of all the national academies, winners of the Pulitzer Prize, Fields Medal, Turing Award, Bancroft Prize, National Book Award, and other internationally recognized honors. The broad range of fields of study is a unique characteristic of the Fellowship program.

The Foundation's 100th Class of Fellows includes 198 Trailblazing Artists and Scholars Across 53 Fields. Professor Lithgow-Bertelloni, outgoing Chair of UCLA EPSS, was the only researcher representing the field of Earth Sciences honored in this year's class of Fellows.



## Postdoctoral Scholar Zesen Huang Receives IAU PhD Prize

Congratulations to Dr. Zesen Huang (USA) on receiving the IAU PhD Prize from Division E (Sun and Heliosphere)! His award-winning thesis, "Tracing Alfvén Waves, Turbulence, and Gaussian Structures in the Upper Corona and Inner Heliosphere," showcases cutting-edge research using in-situ measurements and statistical modeling to deepen our understanding of solar plasma dynamics.



EPSS is proud to highlight our most recent grad awardees!

### Fall AGU 2024 Outstanding Student Presentation Award (OSPA)

Emily Klonicki  
Sergei Kamaletdinov

### NSFGRFP, NSF Graduate Research Fellowship

Eva Zlimen  
Miranda Chang

### 2024 IAU PhD Prize

Zesen Huang

### UCLA Dissertation Year Fellowship Awardees

Sergei Kamaletdinov  
Kyle Webster  
Emerson Whittaker



# EPSS Distinguished Alumni Lecture

EPSS welcomed its community of alumni, faculty, staff, and friends for this year's Distinguished Alumni Lecture, introduced by Department Chair Carolina Lithgow-Bertelloni. Dr. Lithgow-Bertelloni reflected on EPSS's pioneering history of uniting Earth and planetary sciences, its continued resilience through challenges, and its forward-looking mission of discovery and excellence. She shared her pride that the department shows its commitment to fostering scientific progress while also honoring those who carry its legacy forward through events like this.

The evening highlighted the accomplishments of Dr. Candice Hansen-Koharchek, Senior Research Scientist at the Planetary Science Institute and one of EPSS's most distinguished alumnae. Dr. Hansen's career spans nearly five decades of groundbreaking planetary exploration:

- **Voyager Mission:** Designed imaging sequences for the flybys of Jupiter, Saturn, Uranus, and Neptune; co-created the command sequence for the iconic Pale Blue Dot photograph.
- **Cassini Mission:** Co-investigator for the Ultraviolet Imaging Spectrograph; contributed to the discovery of subsurface oceans on Enceladus.
- **Mars Exploration:** Deputy PI for "HiRISE on the Mars Reconnaissance Orbiter, studying Martian CO<sub>2</sub> cycles and co-authoring Mars: The Pristine Beauty of the Red Planet".
- **Juno Mission:** Led the outreach-driven JunoCam, producing the first close-up images of Jupiter's poles.
- **Europa Clipper & Beyond:** Current Co-Investigator, continuing her role in advancing outer solar system exploration.

Her distinguished career has been recognized with numerous honors, including the Edward Stone Award, the NASA Exceptional Scientific Achievement Medal, the NASA Outstanding Public Leadership Medal, and most recently, the 2023 G.K. Gilbert Award from the Geological Society of America's Planetary Geology Division.

The event closed with warm recognition not only of Dr. Hansen's scientific achievements but also of her enduring role as a mentor, leader, and advocate for exploration—a testament to the values EPSS strives to uphold.



## An Yin's Plaque Unveiling

Watch via QR code

On September 21st, 2024, we gathered in the EPSS Commons Room to cement An Yin's legacy to the department in two ways: by unveiling a bronze plaque that will hang on the wall outside his office and by announcing the creation of the An Yin Endowed Chair in Geology, thanks to the generous donation by his brother, Ray Yin. With a plaque, we anoint Distinguished Professor An Yin amongst the scientific giants who are part of the great scientific history of EPSS: David Griggs, Louis Slichter, Bill Kaula, and Leon Knopoff. I think he would be quite pleased to join a club with Kaula and Knopoff as members, as he greatly admired them. We unveiled the plaque, with an inscription written by Mark Harrison, followed by some words by Ray Yin, and a fun reception with faculty, students, and alumni, all in town to celebrate An's scientific legacy at a special session at the Geological Society of America annual meeting held in Anaheim in September 2024.



**Remembering Professor Helen Niña Tappan Loeblich (1917-2004)**  
Founding Editor and Illustrator of these Newsletters in 1967.

By Bruce Runnegar

Helen Tappan was born on October 12 (Columbus Day) in 1917 and given the middle name of Niña for the favorite (La Niña) of the three-ship fleet that Christopher Columbus used to reach the West Indies in 1492. She and her husband Alfred Loeblich were probably the most influential micropaleontologists of the twentieth century and their work on Foraminifera and stratigraphically significant algal microfossils (acritarchs) is legendary.

Late in their careers, just after Helen retired, they were invited to Qingdao, a coastal city on the Shandong Peninsula, China. There they were welcomed with a microscope slide with a message spelled out in two languages using the shells of modern Foraminifera. The slide is now part of the Bruner Collection and will be available for viewing when that collection is displayed.

Above: Microscope slide presented to Helen Tappan Loeblich and Alfred R. Loeblich in 1987 when they visited Chinese colleagues in Qingdao, Shandong.

Right: Helen Tappan Loeblich (1917-2004) from her obituary published by her daughter, Elizabeth Loeblich, in the Journal of Foraminiferal Research (35, 86-89) in 2005.



# In Memory of Sorena Svea Sorensen (1956-2025)

Excerpted from Liz Cottrell, NMNH, Smithsonian

Sorena Sorensen began her geological training as an undergraduate at Pomona College where she graduated in 1978 as the last student of the legendary California geologist Alfred O. Woodford. She joined the Department of Mineral Sciences, National Museum of Natural History, Smithsonian Institution, in 1984 just months after completing her Ph.D., advised by Gary Ernst, at the University of California at Los Angeles.

Sorena was an enormously talented field geologist, petrologist, and geochemist, whose research focused on fluid-assisted metamorphism in convergent margin subduction zone complexes. Building on her Ph.D. research to understand regional metamorphism in Southern California, with a focus on the Catalina Schist, she expanded her geographic scope to include Central and South America, Southeast Asia, and the Sierra Nevada. Over her career, Sorena published more than 40 peer-reviewed papers, with seminal contributions on the role that fluid-mediated element redistribution plays in subduction zone metamorphism and the formation of jade varieties. Her pioneering application of cathodoluminescent imaging and geochemical data to elucidate the petrologic, mineralogic, and tectonic histories of metamorphic rocks were her intellectual hallmarks. Sorena was a Fellow of both the Geological Society of America and Mineralogical Society of America. She mentored extensively and fostered the careers of many female geoscientists, and is fondly remembered by colleagues and friends across the country. She is survived by her husband of 41 years, Jeff Grossman, and their son Joel.



## Farewell to Bob Newton

By Craig Manning



The 2024-2025 academic year saw Bob Newton's second departure from our department as he moved to Maryland to be near family. Renowned for his work on igneous and metamorphic processes, Bob got BS, MS and PhD degrees from

UCLA. In 1964 he joined the faculty at the University of Chicago, where he conducted foundational experimental studies on metamorphic reactions in the deep crust. Some of Bob's earliest Chicago work targeted the aluminosilicate polymorphs. In the early 1960s, it was known that their occurrence offered clues to depths and temperatures of metamorphism. But these refractory phases proved difficult to study experimentally. Poor equilibration in experimental investigations led to widely discrepant versions of the "triple point" at which kyanite, andalusite, and sillimanite coexist. In 1966, Bob produced two classic papers which provided the first correct equilibrium phase relations in the system. The work has been modified only slightly since. He and his team also constrained classic geobarometers and measured enthalpies of many common rock-forming minerals.

I first met Bob in 1982 on a Northern California field trip for which I had been drafted as an anonymous student driver. It was my first year in graduate school, and I was just becoming

aware of his work. As I read and learned in the following years, I realized that this unfailingly polite and considerate personality had contributed to every subject in which I was interested. So imagine my surprise when, some 15 years later when I was a junior faculty member at UCLA, I received an enthusiastic letter from him expressing interest in what we were up to in the PTX lab. He was retiring from the University of Chicago but proposed to continue working by moving west to learn our methods for studying fluids in the deep Earth. I replied that this was about the best idea I'd ever heard and in 1998 Bob returned "home" to UCLA to commence another career.

In the ensuing years we measured the solubilities of many common rock-forming minerals in diverse fluids at deep-crustal conditions. The experimental results have given unprecedented insights into the nature of deep fluids and the complex interactions among dissolved solutes. Bob has received numerous accolades, including the 2010 Roebling Medal from the American Mineralogical Society – their highest honor.

Bob is legendary for his marathon walks – in the early days of his latest stint here he would walk much of the way to UCLA (~20 km) from his home in Whittier. Bob's extreme perseverance, work ethic, and petrologic and thermodynamic skills helped shape UCLA's experimental petrologists for the last 25+ years. We hope Maryland proves to be a terrific new chapter; we will miss him.

# Symposium in Honor of Distinguished Professor Emeritus

Christopher T. Russell

By Peter Chi, Hao Cao, and Hanying Wei



On September 20, 2024, more than 100 members of the UCLA Earth, Planetary, and Space Sciences (EPSS) community – including colleagues, students, alumni, and friends – gathered on campus to honor the extraordinary scientific achievements of Distinguished Professor Emeritus Chris Russell. Many members of Chris' family were also present for this special occasion.

The symposium, held in the Physics & Astronomy Auditorium, opened with welcoming remarks from Prof. Miguel García-Garibay, Dean of Physical Sciences, and Prof. Edward Young, EPSS Vice Chair for Academic Personnel. Dr. Nicky Fox, NASA Associate Administrator for the Science Mission Directorate, shared a video message of congratulations. Additional opening reflections were offered by Prof. Margaret Kivelson (UCLA), Dr. Janet Luhmann (UC Berkeley Space Sciences Laboratory), and Dr. Carol Raymond (JPL). These remarks set the stage for a series of presentations and panel discussions covering topics such as the NASA Dawn mission (led by Chris), heliophysics, planetary sciences, and Chris' prolific contributions to space science and record-breaking



publications. A highlight was the panel discussion, "Space Exploration: From Past to Future," moderated by Prof. Jacob Bortnik, Faculty Director of the UCLA SPACE Institute.

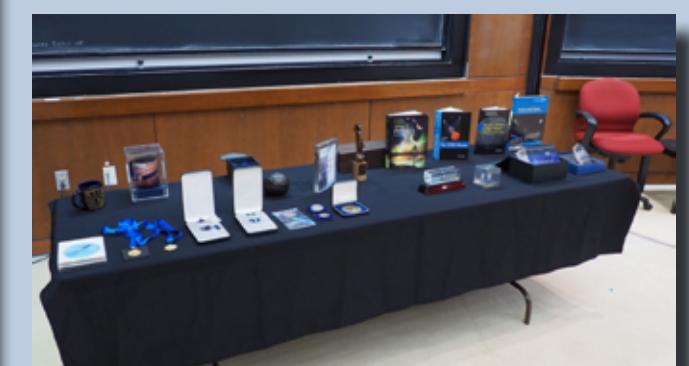
The symposium concluded with a panel chaired by Prof. David McComas of Princeton University (PhD, UCLA EPSS, 1986, with Chris as the thesis advisor), celebrating Chris's lasting impact on space science education. In addition to directly mentoring 60 graduate students, fostering education programs through his leadership of the NASA Dawn mission and multiple space-based magnetometer projects, and authoring and editing numerous books, Chris spearheaded the development of UCLA

ground-based magnetometers in the 1990s. Through the efforts of Chris and his colleagues in subsequent decades, nearly 100 stations were established worldwide – many in rural areas – bringing space science education to local communities for the first time. The program closed with a heartfelt presentation of a plaque of appreciation to Chris from his former students, who have gone on to become professors in the US and abroad, as well as leaders at NASA, national laboratories, and in the aerospace industry.

In the evening, many attendees joined the Russell family for a banquet at the Fowler Museum's Goldenberg Terrace, where they shared personal stories and lighthearted anecdotes from years of research with Chris.

We extend our sincere gratitude to the EPSS Department and UCLA SPACE Institute for their enthusiastic support, and to the many colleagues who contributed to organizing and hosting this celebration. Additional details and photos are available on the event website <https://www.space.ucla.edu/russell2024>.

Above: Group photo of attendees at the 2024 Russell Symposium. Below: Presentation of a plaque of appreciation to Professor Russell from his former students.



## UCLA Meteorite Collection

By Amy Mainzer

The UCLA Meteorite Committee has been very busy, with new faculty Profs. Peng Ni and Amy Mainzer joining EPSS. Here are some recent highlights of events:

**Securing the Collection:** We have long recognized the need to secure our increasingly valuable collection, and the university has been supportive of our efforts to do so. The university's Risk Management Division provided funds that allowed us to do the following work this spring:

- Install much-needed upgraded security measures in the Collection and Museum areas
- Hire students to help sort and categorize meteorites
- Conduct the first comprehensive appraisal of the Collection since the 1980s

**Appraisal:** During the week of March 4, 2025, UCLA's Meteorite Committee undertook its first comprehensive appraisal/inventory since the mid-1980's. The Committee engaged the services of Geoff Notkin and Elizabeth Viera of Aerolite Meteorites to come to UCLA and perform a valuation of the collection in person. The objective was to complete as thorough an appraisal/inventory as possible within a single work week. Participants included Amy Mainzer, Kevin McKeeegan, Peng Ni, Alan Rubin, and Paul Warren, in addition to assistance from several other researchers, postdocs, undergraduate, and graduate students. The evaluators were able to assess the properties and values of the majority of the value of the collection, which now consists of ~3700 specimens that have been formally accessioned. It was a hive of activity as scientists and student helpers worked together to give us a thorough understanding of the contents of our collection.

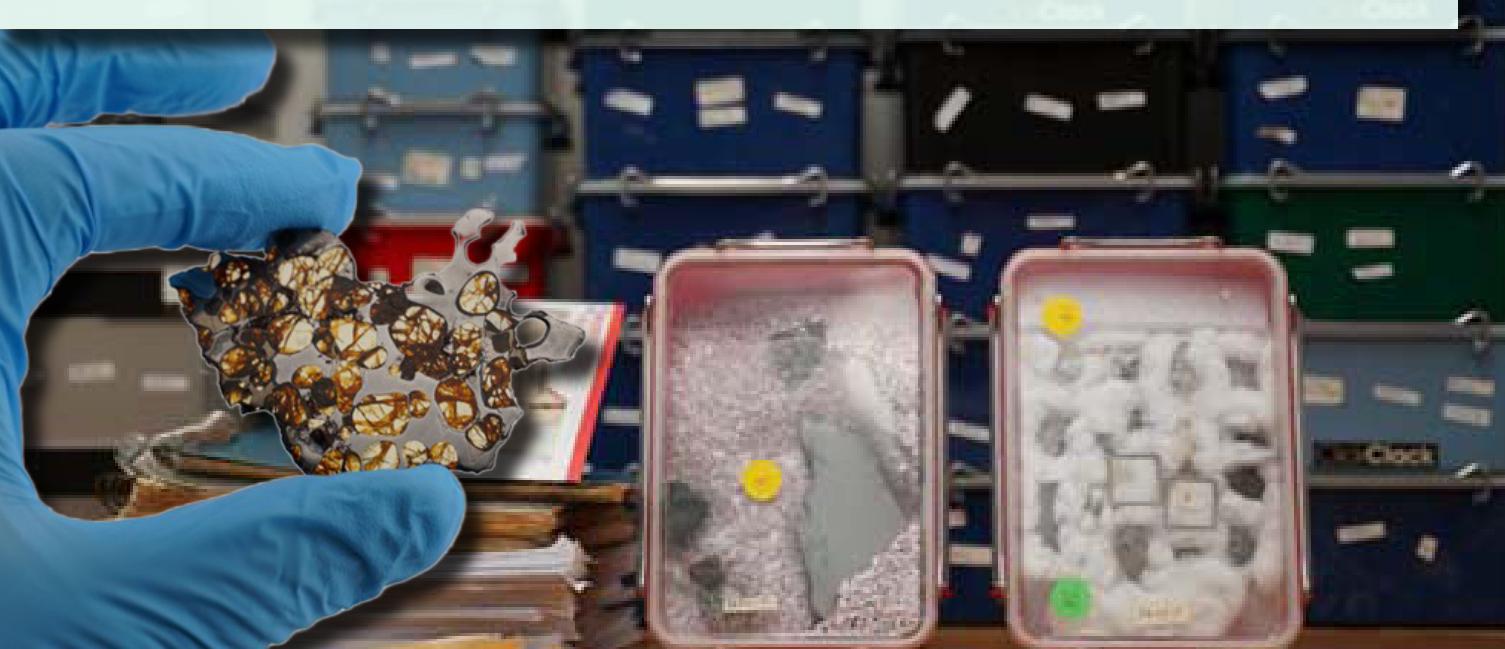
**Collections Management:** The Meteorite Committee is in the process of putting together a new Collections Management Policy to help guide in stewardship of the collection. The policy includes guidelines on accession/deaccessioning, loans,

and collecting. The ultimate goal is to support a more formal public research lending program similar to that of other major collections.

**Support:** We have been so incredibly fortunate to benefit from the support of our donors. This has allowed us to grow the collection, protect it, and use it to educate students at all levels. Here are some recent highlights:

- We have received a one-of-a-kind, world-class specimen from Darryl Pitt: Karavannoe, 29-lb piece of a rare pallasite that is a member of the Eagle Station group.
- Judy and Jim Roach have provided support for a UCLA undergraduate researcher who will work with us during the upcoming school year to digitize the paper notebooks of Prof. John Wasson (which date back to 1961) that track the collection's accessions.
- The JGB Foundation has provided a dehumidifier and Teflon bags that will allow us to better preserve fragile iron and pallasite specimens.
- Paul and Bessie Warren have generously donated the resources to fund purchase of a new Leco saw that will enable us to cut specimens for research and display, and a new microscope for teaching.

**Outreach:** Meteorite Committee members as well as EPSS students and staff supported the Exploring Your Universe and International Observe the Moon events. Gary Bostrup very generously helped set up and staff the NEO Surveyor booth at EYU, and Peter Utas delighted students, families, and kids of all ages with his mobile meteorite collection at both events, which I suspect motivated more than one UCLA undergraduate to switch their major to EPSS. Exploring Your Universe is coming up again this fall, and we hope to see you there!



## Departmental Farewells

**Cindy Russell  
(17 Years)**

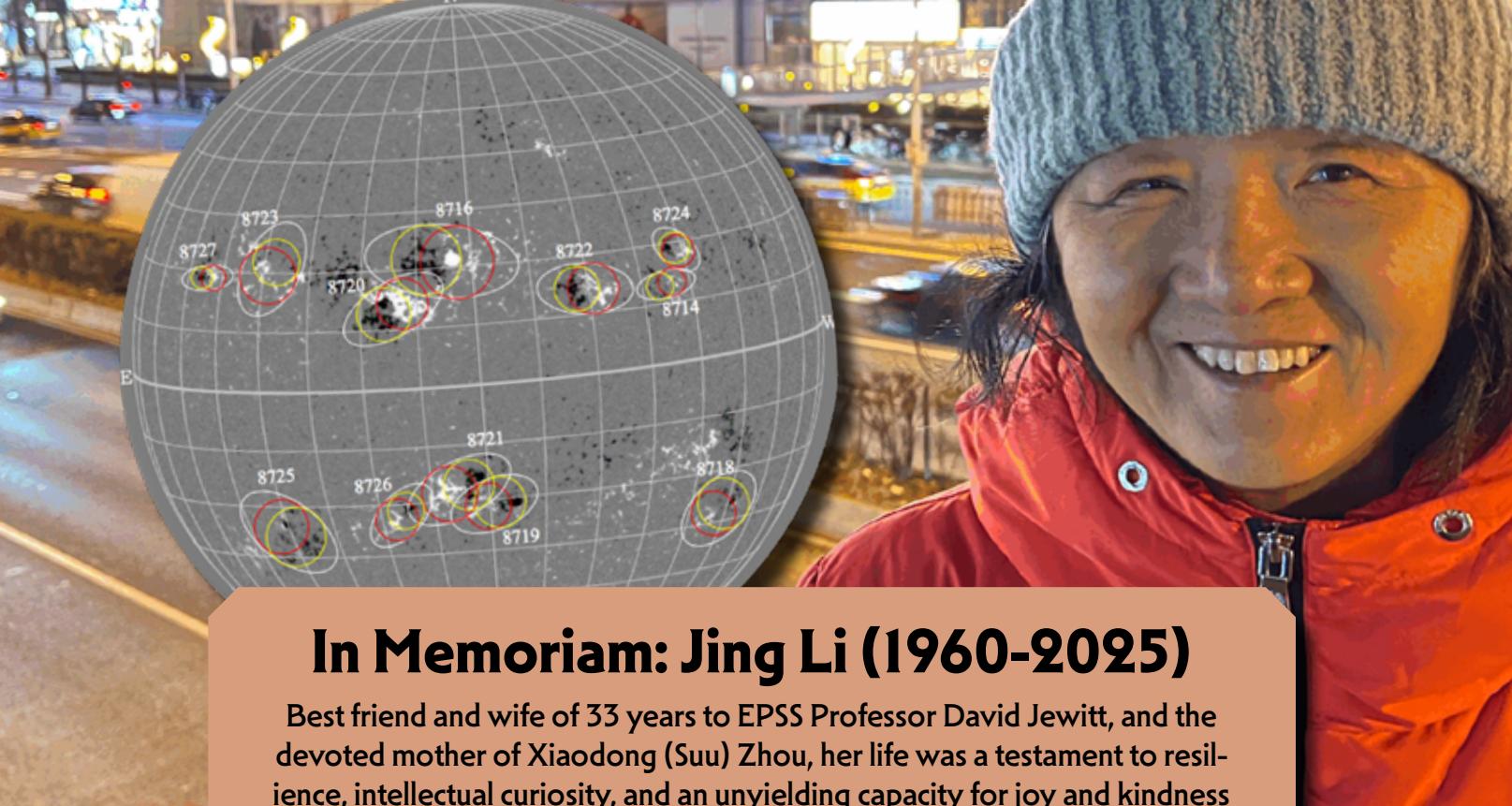
I have had the immense pleasure of working for UCLA and the Earth, Planetary, and Space Sciences department for over 17 years. I feel incredibly fortunate to have contributed to a diverse array of NASA missions, including THEMIS, ARTEMIS, and ELFIN, where I provided science software support and data analysis for the spacecraft and a global array of ground magnetometers. Additionally, I was able to play a role in the development of the Space Physics Environment Data Analysis Software, SPEDAS, a suite of open-source, standardized data analysis tools, enabling the global heliophysics community to efficiently compare events across many satellite missions. What has meant the most to me is the opportunity to collaborate with such talented faculty, staff, and students. It has truly been a privilege to be part of such an outstanding team. I would like to extend my heartfelt thanks to everyone for their invaluable support over the years, and I wish you all continued success and happiness in your future endeavors.



**Evgenia Grigorova  
(27 Years)**

It is with deep gratitude and heartfelt well wishes that we announce the retirement of Evgenia Grigorova, our devoted Personnel & Payroll Analyst. Evgenia concludes an exemplary career at UCLA, spanning 27 years of dedicated service. During her tenure at EPSS, many of us have had the distinct privilege of collaborating closely with Evgenia. Her diligence, professionalism, and ability to adapt to ever-evolving policies have been invaluable assets to our department. She will be profoundly missed.





## In Memoriam: Jing Li (1960-2025)

Best friend and wife of 33 years to EPSS Professor David Jewitt, and the devoted mother of Xiaodong (Suu) Zhou, her life was a testament to resilience, intellectual curiosity, and an unyielding capacity for joy and kindness

Jing Li, an accomplished solar astronomer, wife, mother, and friend, passed away on June 21, 2025, at the age of 64 after a battle with cancer. Jing had been a member of UCLA EPSS department since 2009.

Best friend and wife of 33 years to EPSS Professor David Jewitt, and the devoted mother of Xiaodong (Suu) Zhou, Jing's life was a testament to resilience, intellectual curiosity, and an unyielding capacity for joy and kindness. She will be deeply missed.

Simply put, Jing had a remarkable life. She was born in Beijing in 1960, in the middle of the famine caused by Mao's Great Leap Forward, and she grew up during the following Cultural Revolution. As a young woman in 1989, she hid from gunfire during the Tiananmen Square Massacre and witnessed the aftermath on the streets directly outside her home.

Jing never gave up on her interest in science. A solar astronomer for over forty years, she first worked at Huairou Solar Observatory in Beijing before moving to France to earn her PhD at University of Paris VI. There, she learned fluent French and worked on the magnetic field 180 degree ambiguity problem.

She eventually made her way to Hawaii, and then UCLA, where she studied the distribution and evolution of large scale magnetic fields on the Sun using massive, space-based datasets. Her two most elegant papers on the subject, ApJ

758, 115, (2012) and ApJ, 867, 89 (2018), had a profound impact on the field and are often referenced today. Jing also collaborated regularly with her husband, and the two wrote dozens of papers on solar system topics.

In addition to her love of science and knowledge, Jing was an outgoing spirit who took great joy in living life. A lover of nature and the outdoors, she was a trusted source for anyone looking for a new hidden gem among LA's hiking trails. And, as an excellent and inventive cook, a great many lively discussions were had at the table over the food she grew in her garden and cooked for friends.

"We were fortunate to have Jing as a member of our community for so many years," said EPSS department chair Jon Aurnou. "Her legacy isn't only in her research, but in the people she touched through kindness, curiosity, and joy. Our hearts go out to Dave and Suu."

Her husband Dave said that her enthusiasm was her most extraordinary characteristic. "The thing that I loved about her the most was her open fascination and excitement with anything new. And she was always very happy. I've never met anyone else like her."

Jing died on the day of the summer solstice — the longest day of the year in the northern hemisphere. For someone who spent her life studying our Sun, and who brought so much of her own light into the world, it is a reminder of the brightness she shared with so many people.

## Welcoming Ranga-Ram Chary, Director, UCLA SPACE Institute

My name is Ranga-Ram Chary. I am a graduate of the UCLA Astronomy and Astrophysics doctoral program and was a postdoctoral researcher at the UC Santa Cruz. Over the past 25 years, I have worked on various large space missions: Spitzer, Planck, and now Euclid, mostly at the Infrared Processing and Analysis Center at Caltech. One of the tenets of my research is using innovative techniques to understand the origin of the Universe and the growth of the earliest galaxies. This helps answer the question "How did the Universe as we know it now, come to be?"

Leveraging innovative multidisciplinary techniques to build knowledge, while educating our youth to think critically, and be responsible stewards of our planet and society, is one of the goals of a large public university such as the UC. With the amount of misinformation out in the public domain and the growth of AI, it has become imperative to provide hands-on training, and have a large positive multiplier effect on society, which is my motivation for helping steer the development of UCLA's SPACE Institute.

Space is the only location from which one obtains a near-continuous eagle's eye view of Earth. From space, we can provide forewarning of disasters such as fires, solar storms, landslides, and droughts. We can also monitor malignant activities like overfishing, deforestation and nuclear proliferation. At the same time, by being above the Earth's atmosphere, space platforms provide an amazingly sharp view of events throughout the Universe. Nothing is as mind-blowing as knowing that black holes exist. Studying space can make us realize that we as a species are just a complex set of chemical reactions occurring on a rocky planet around a very ordinary star, in a run-of-the-mill galaxy. The only thing keeping us alive from obliteration is a ~100 km thick layer of atmosphere.

The UCLA SPACE Institute (SPACE is an acronym for Space, Planetary Physics, Applications, Communications and Engineering) is aiming to be a unique trans-departmental institute which leverages space technologies for advancing knowledge, and benefitting humankind, in a



sustainable way. UCLA has a heritage of working in the space sector going back many decades. So we have the intellectual heft, which when combined with the aerospace sector in the area, and an enthusiastic and intelligent student body, is a perfect amalgamation of the ingredients required to have a positive impact on space exploration, space technologies, and humanity. The areas in which there are demands for skills in the space sector are diverse, from environment and medicine, pharmacology, engineering, robotics, cryogenics, civil engineering, law, communications, agriculture, conservation, forestry, art, and I'm sure I have forgotten a few! By introducing students to the connection between space and these areas, we hope that they undertake working in the space sector as a career choice.

There is an ongoing revolution in the space sector, with the number of launches having increased exponentially, and space access no longer the domain of national space agencies. Developing the space sector will require a skilled workforce. By advancing technologies that are in university labs and spinning some of them off as companies, or as partnerships with the Southern California aerospace sector, we can commercialize UCLA's and the federal government's investment in technology. Since California has always been a leader in environmentalism, the SPACE institute can guide the use of space in a sustainable way and use it to study various tangible issues like water resources, pollution, and earthquakes, on all scales from local neighborhoods to continents. I hope to be a part of this exciting journey, in collaboration with UCLA and the broader UC community.

# The Petrified Stump and the Importance of Curiosity

By Hazel Veteto :)

I woke up early Thursday morning, headed out of my dorm, got coffee at Kerckhoff Cafe, got to the loading dock by 8am, and waited for everyone to arrive. After a two-hour “missing van” crisis and loading up the vehicles, we were on the road. “Rainbow Unicorn Sparkles, how many people do you have?” Dr. Kevin Coffey spoke into the radio. “All 7. Over,” I replied. We drove through Barstow, passing Primm and Buffalo Bill’s, and as night began to fall, we rode through the glowing lights of Las Vegas. Once we passed Vegas, the darkness of the desert surrounded us, and we eventually got to our first camping location, Valley of Fire State Park, Nevada. We unloaded, pitched our tents, and gathered around the campfire before going to sleep. The next morning I woke up early –5:55 am to be exact – in hopes of seeing the sunrise. Little did I know what was in store for me later that day.

After a geology talk from Dr. Kevin, we drove to our first trail: the Petrified Logs Loop. Before commencing the walk, researcher Zhicai Zhu challenged the class to try and find the “first fossils of human remains,” as this would be a good area. I took his words to heart, and accepted the challenge. Being an avid rock collector myself, I was on the hunt. The trail was fairly short, and before long the end was nearing. I was lagging behind the rest of the class, beginning to get worried I wouldn’t find anything. In my head, I figured that if fossils were anywhere, they’d be near the tree stumps—since animals often burrow, nest, or rest under trees. And, considering the size of the logs, I guessed the stumps might once have formed a forest and would be clustered together.

Although I didn’t find any animal fossils, just as I passed the last petrified log, something caught my eye: a large rock extruding from the ground. I recognized its composition—quartz and chert—and felt my excitement rise. Deep down, I knew it was petrified wood. I called over Dr. Kevin to confirm my suspicion, to which he promptly agreed and expressed that

although he had walked this trail many times, he had never seen it before. I took a video of where I found it, documenting its precise location, and we all headed to the visitor’s center. Once there, I spoke with three workers at the park, and to my surprise, none of them knew that section of petrified wood existed. They were all just as surprised and delighted as I was, and they called two park rangers to section off the area. After this, they instructed me to email the State Park with the information about my discovery.

I wrote a long –and admittedly overly-wordy– email to the park. They never got back to me. Nevertheless, I tell my story proudly, because it represents something important: the value of student curiosity. I tell my story about discovering the petrified stump to encourage students to wander off the beaten path. If I had not fallen behind the rest of the class, if I had just blindly looked where I was told, I would have never found the petrified wood. Although I wasn’t disobeying any instructions, I trusted my instincts over following the class.

College is about earning a degree, yes—but it’s also about discovering yourself, what you love, what drives you, and what you’re capable of. I’ve always suspected I had an eye for rocks and fine details, and this experience confirmed that. But, I wouldn’t have found that stump if I hadn’t believed in my own abilities as an amateur geologist. This discovery taught me that you don’t have to be the most experienced to discover something new. Sometimes it takes slowing down to observe your surroundings, and staying curious to stumble on something no one else saw. So now, when I think back on that trip, it’s not just about finding a piece of petrified wood. It’s about learning to trust my curiosity and let wonder lead me. It’s also about staying present in the moment, and realizing that sometimes, the best discoveries are made when you’re not rushing toward finishing the trail, but paying attention while you’re walking.



# A Final Doggerel

From the Matthew/Jade/Kyle/Bill “Book Gifting Team”

It's dawn, we yawn,  
and the free books are gone!

7,000 volumes,  
off to washrooms and barrooms.

Some might be sad,  
but we're mighty glad,

'Cause they have good stuff,  
if you can sluff through the gruff.

They'll make you think,  
'til your mind turns pink,

And your thoughts will churn,  
As you yearn to learn.

For that's the point of this joint,  
to be educated, not jaded.

To ponder and wonder,  
Not to plunder and blunder.

To ferret out the answer,  
Not to prance like a dancer!

To be smart as a tack,  
Not a hack, not a quack.

To know your stuff,  
Not to huff, puff and bluff.

Our friends, our pals, pass every test,  
EPSS is the very best!

## Palm Canyon 2, BGS 0

By Dianne Mutia

**The desert gives—and it takes away.**

That's what they should have told us when we entered Anza-Borrego Desert State Park for our BGS<sup>1</sup> camping trip—and if you ask me, the desert was not feeling particularly generous that weekend. One minute you're sitting on a rock overlooking an oasis on a beautiful sunny day with your friends, taking in a stunning view of the greenery and savoring the tranquil sounds of running water below, when all of a sudden—the strongest gust of wind you have ever experienced in your life knocks your friend's hat straight off her head. For a few beats, you're all frozen in shock—the hat trapped against the side of the rock—an igneous rock—granodiorite, from what I could tell, based on the higher content of quartz and plagioclase feldspar (sorry, Craig<sup>2</sup>). The wind tapers off in an almost anticlimactic way—like you expected it to—and all you can do is watch in despair as the offending khaki-colored article drifts off into the depths of the canyon below. You turn to your friends to laugh, to try and make light of the situation, but before you can—another gust of wind rushes past, and all you can do is watch as another hat—a green baseball cap this time—drifts off into the abyss.

After a loss like that, all that is left to do is mourn.

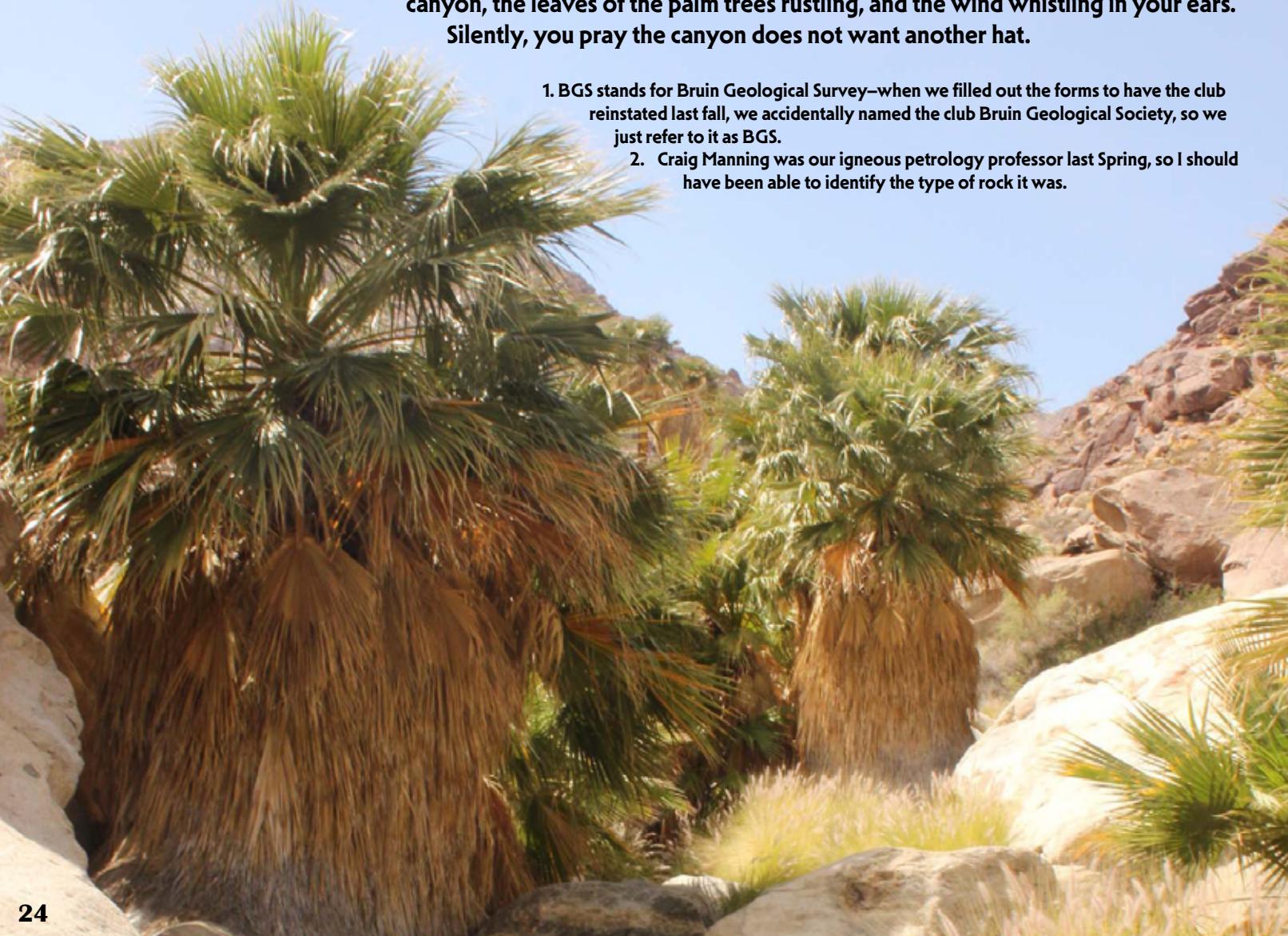
The four of you stare off into the canyon in silence—you silently grasp the leather straps of your hat a bit tighter, and the person next to you places a nervous hand atop their own.

For the next 8 minutes—give or take—all you can hear is the wind blowing through the canyon, the leaves of the palm trees rustling, and the wind whistling in your ears.

Silently, you pray the canyon does not want another hat.

1. BGS stands for Bruin Geological Survey—when we filled out the forms to have the club reinstated last fall, we accidentally named the club Bruin Geological Society, so we just refer to it as BGS.

2. Craig Manning was our igneous petrology professor last Spring, so I should have been able to identify the type of rock it was.



## That Time When I Lost Grad Slam (Twice)

By Megan Li

I was almost there. On my second try, I'd made it to the final round of UCLA Graduate Education's Grad Slam, where contestants have three minutes to explain their research to the general public. I was halfway through my speech when my worst fear happened: I fumbled my words. After a year of preparation, in just three seconds, I had lost the competition.

But for me, Grad Slam wasn't about winning. It was about sharing a message I deeply believed in. Growing up, I never imagined myself in science. Women in science, as portrayed in the media, seemed cold, hyper-logical—nothing like me. They didn't laugh, wear color, or make mistakes. I wanted to challenge that image. Grad Slam gave me the platform to do just that.

Grad Slam is no easy task. With only three minutes to share my life's work, every word must be meticulously chosen, each pixel on my Powerpoint scrutinized. It was tons of work and immense pressure, but it was an opportunity to show that someone like me could be a scientist, so I put myself out there. Two years in a row.

Last year, in my first attempt, I was proud to make the top 10. But I knew I could do better. This year, I rebuilt my speech from the ground up, writing something more personable and easily understood. I rehearsed until the speech was in my dreams—I remember waking up at night worrying whether I pronounced "extraterrestrial" weirdly.

But hearing myself stutter into the microphone at my second



Grad Slam, I realized that the year spent preparing, sleepless nights and all, didn't go as planned.

With 90 seconds left of my three minutes, I took a deep breath and remembered why I was there: to be the representation I always wanted. Somehow, I managed to finish my speech without incident.

After each speech, there's a Q&A session where the Grad Slam host interviews each contestant on stage, asking what inspired them to compete. My three minutes may have been over, but I still had words left.

I shared my passion for outreach, including my role as President of Exploring Your Universe, UCLA's (and LA County's) largest science fair, which hosts over 12,000 attendees annually, including children from marginalized communities.

I also spoke about juggling my lifelong hidden disability with the challenges of graduate school. Later, an audience member privately thanked me for speaking openly about struggles that many disabled people endure in silence. I even acknowledged my fumble, telling the audience that

I will continue to chase my dreams of being a scientist, even though I sometimes make mistakes. That moment of owning my vulnerability on stage, in front of hundreds of people, became my proudest.

I am so grateful to have been named the Audience Choice Winner for Grad Slam 2025. Thank you to everyone who listened to me rehearse, gave me feedback, voted online, and fought LA traffic to witness my proudest moment.

# 2025 Commencement and Awards

## Minor Candidates (Major)

Maria Luisa Carrillo Tacoronte – Geophysics (Materials Science Engineering)  
Luwuam Geberu Haile – Geology (Sociology)  
Hanyi Jia – Geology (Molecular, Cell & Developmental Biology)  
Brody Joseph Moore – Earth & Environmental Sci. (Atmospheric and Oceanic Sciences)  
Henry Tang – Geochemistry, Mathematics (Applied Mathematics)

## Bachelor of Arts Candidates (Minor)

Jada Dawson – Earth & Enviro. Sci.  
Catherine Elizabeth Ohr – Earth & Enviro. Sci.  
Syrah Nicole Tomola – Earth & Enviro. Sci.

## Bachelor of Science Candidates (Minor)

Mahdi Alioua – Geology  
Safa Beg – Geology  
Teresa Bui – Engineering Geology  
Pedro Foz Caltabiano – Geophysics  
Luis Alberto Chavez Jr. – Eng. Geology  
Lilian Abigail Dewey – Geology (Musicology)  
Mira Kathryn Getrost – Geophysics (Geospa-

tial Information Systems & Technologies)  
Sora Graciano – Geology  
Ian Williams Keyes – Geophysics; Astrophysics (Math)  
Joseph Felix Lopez – Geology  
Dianne Marie Famas Mutia – Engineering Geology  
Alexa Nguyen – Engineering Geology  
Nicole Paredes – Engineering Geology (Chicano Studies)  
Daisy Trinity Ramirez – Geology  
Nancy Santos – Geophysics  
Nayaab Singh – Geophysics; Astrophysics  
Forrest Swain – Geology  
Veronica Vega – Engineering Geology

## Master of Science Candidates

Abraham Amiri – Planetary Science  
Sergei Kamaletdinov – Geophysics & Space Physics  
Imani Lawrence – Geology  
Brandon Lazard – Geophys. & Space Physics  
Megan Grace Li – Planetary Science  
Jaahnavee Venkatraman – Planetary Science  
Jacob Michael Widmer – Geology  
Liuwei Xu – Geophysics & Space Physics  
Zijin Zhang – Planetary Science

## Doctor of Philosophy Candidates

Jewel Alessandra Abbate – Geophysics & Space Physics  
Laboratory-Theoretical Investigations of Rotating Convection in Planetary Interiors; Advisor: Jonathan Aurnou

Hanzhang Chen – Geophysics & Space Physics  
From Crust to Orbit: the Geologic History Recorded on Planetary Surfaces; Advisors: An Yin, Seulgi Moon

Valeria Jaramillo Hernandez – Geology  
Insights into the Tectonometamorphic Evolution of the Whipple Mountains Ductile Shear Zone, SE California; Advisors: An Yin, Craig Manning

Emily Klonicki – Geochemistry  
Microbial Regulation of Methane and Redox Dynamics in the Water Column: From a Proterozoic Ocean Analog to Modern Marine Seeps; Advisor: Tina Treude

Boontigan Kuhasubpasin – Geophysics & Space Physics  
From Tectonic Stress Field to Surface Deformation: A Global Analysis; Advisor: Carolina Lithgow-Bertelloni

Yang Li – Geochemistry  
Supercritical Fluids in the System Albite-Water: Phase Relations and Properties; Advisor: Craig Manning

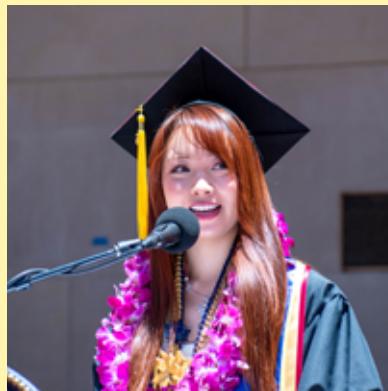
Jiarui Liu – Geochemistry  
The Biogeochemistry of Methane Cycling and its Clumped Isotope Effects; Advisors: Tina Treude, Edward Young

Alexander Sedlak – Geochemistry  
Field Shift Fractionations in Novel Isotope Systems; Advisor: Edwin Schauble

Abijah Simon – Geology  
Structural Geology and Tectonic Evolution of the Eastern Tibetan Plateau; Advisors: An Yin, Mackenzie Day

## Undergraduate Awards

Theresa Bui – Salutatorian  
Mahdi Alioua – Straus Family Fund for Undergraduate Opportunity  
Mira Kathryn Getrost, Daisy Trinity Ramirez – Deane Oberste-Lehn Scholarship  
Nayaab Singh – John & Frances Handin Scholarship  
Hanyi Jia, Maria Luisa Carrillo Tacoronte, Henry Tang – Sullwold Endowed Fund Summer Field Scholarships  
Ava Hulten, Natasha Kuhn, Daisy Trinity Ramirez -Clarence A. Hall Jr. Scholarship  
Lilian Abigail Dewey, Sarina Ortiz-Stock – Deane Oberste-Lehn Award  
Luis Chavez Jr. – Walter S. Harris Summer Field Endowment  
Taiyu Chen, Luca De Angelis, Phoenix He, Katrina Le, Marian Macatula, Samir Mallya, Emrys Yufei Mao, Naren Sathishkumar, Mimi Xue, Sophie Ye – David Michels ELFIN Fellowship



# Student-Built ELVES Sails Through the Stratosphere

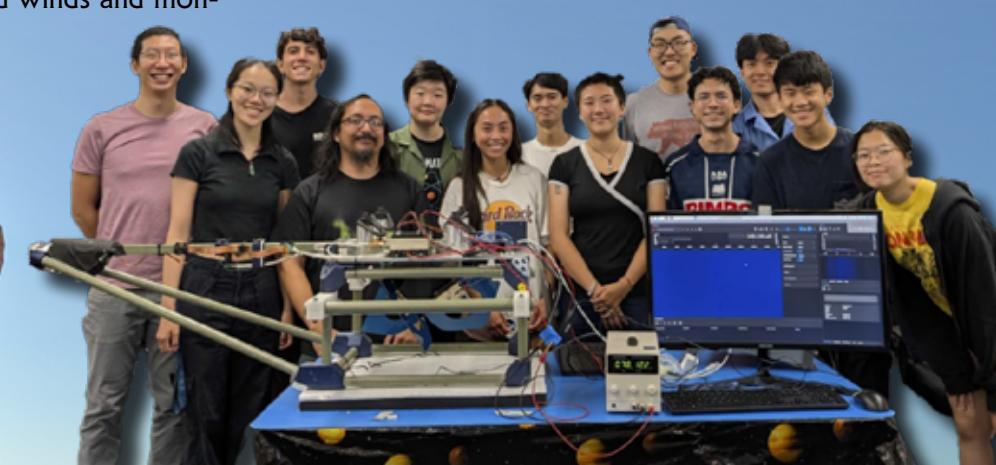
By Emmanuel Masongsong

The Electron Losses and Fields Investigation (ELFIN) mission team launched two small satellites (aka CubeSats), in orbit from 2018-2022. This student-led NASA/NSF-funded mission captured low-altitude observations of "electron rain," advancing the science of space weather. Recently, the team sent their newest Bruin tech to the edge of space on a high-altitude helium balloon, on the exact date that ELFIN launched 7 years before.

The ELFIN CubeSats were built entirely in EPSS, except for the flight computer provided by Aerospace Corp., a local industry partner. Now, the student team has developed their own customizable onboard computer platform, funded by NASA TechLeap. The UCLA Software Defined Payload Interface (SDPI) is a universal backbone for connecting small and large spacecraft, rovers, drones, etc., to various power systems, scientific sensors, and other commercial payloads. SDPI is central to their latest project, dubbed ELVES (Electron Losses driven by VLF EmissionS), slated for a stratospheric test flight to prove it in space-like conditions, to optimize performance and ensure reliability and, importantly, fundability.

Carrying a suite of next-generation miniaturized UCLA magnetometers and a novel X-ray particle detector from University of Alberta, ELVES would fly after a year of design challenges, lots of testing and prototyping, and much code debugging. Software lead Taiyu Chen proudly declared: "This mission and our testing results validated the functionality of our entire stack including hardware, firmware, and software, giving us confidence in our technology to fulfill our responsibilities to NASA TechLeap while developing a robust and effective system for our own mission requirements."

A gondola enclosure was built using fiberglass tubes and 3D-printed brackets to remain magnetically transparent, and this was bolted to an aluminum plate to carry the electronics and covered in thick insulating foam. The enclosure protected SDPI and the instruments not only from the intense landing impact, but also UV radiation and extreme temperatures at 125,000 ft (from 100 C to -80 C), as well as high-speed winds and mon-



soon rains. "It was very motivating to be entrusted with such a large part of the project," said undergrad mechanical lead, Emrys Mao. "I learned a great deal about working with unconventional materials, as well as the overall time management and process of completing a project like ELVES."

Everything was assembled just in time to hand-transport it over 18 hrs by train to the wide-open spaces of Fort Sumner, in eastern New Mexico. Housed in a repurposed WWII hangar, the NASA Columbia Scientific Balloon Facility experienced alternating days of blazing sun and wind, thunderstorms, and even fog, making launch conditions elusive. Made of plastic film less than  $\frac{1}{8}$ " the thickness of a human hair, the balloon had to carry ELVES weighing over 50 lbs, plus another 130 lbs for the battery, telemetry radio, parachute, and rope. After multiple scrubbed attempts over two weeks due to unsafe high winds (>8 mph), ELVES successfully flew on September 15, celebrating its elder siblings' birthday. As the payload floated over the desert near Roswell, it was surely spotted by many a UFO hunter as it passed the crescent Moon overhead.

After 9 hours aloft, the balloon burst and the parachute deployed to slow ELVES' descent to Earth, landing nearly 160 miles to the west on a patch of federal land, bouncing and rolling in the dirt and cactus under ominous rain clouds. Thankfully the payload stayed dry and was quickly recovered for examination and disassembly.

"The ELFIN lab has given me opportunities beyond my wildest dreams, from operating a NASA-funded spacecraft to now spearheading plasma instrument development—all while still being a student," said Sophie Ye, a PhD student in EPSS who traveled to Ft. Sumner. "Being able to lead the development of a next-generation UCLA magnetometer has been an incredibly rewarding experience!"

Now the true fun begins: assessing ELVES' performance and decoding terabytes of data, so we can make improvements for the next steps towards our hardware actually venturing into space!



## UCLA SETI Progress Report

By Jean-Luc Margot

The Search for Extraterrestrial Intelligence (SETI) is a high-risk, high-reward scientific enterprise dedicated to test a fascinating hypothesis: are there other civilizations in our vast universe?

The 9th edition of the UCLA SETI course resulted in observations of approximately 1000 additional stars and planetary systems with the 100 m Green Bank Telescope. Some of the most promising signals from our 2024 observations have been uploaded to our collaborative project at <http://arewealone.earth> for analysis by project volunteers. The collaboration has exceeded our expectations, with over one million signal classifications submitted by over 30,000 volunteers. UCLA graduate student Megan Li is using these classifications to design and train a machine learning application to accelerate our search.

In October 2023, we published an article in the *Astronomical Journal* with the results of our 2020–2023 search around nearly 12,000 stars. Although we did not find ET, the paper includes lots of goodies. For instance, we measured the efficiency of the UCLA and Breakthrough Listen radio SETI detection pipelines, we proposed an improved metric to quantify the search volumes of SETI searches, and we described a formalism to compute upper bounds on transmitter prevalence, i.e., the fraction of stars that host transmitters detectable in any SETI search.

Learn more about UCLA SETI or join our collaboration at <https://seti.ucla.edu/>.



# DONATE TO THE EPSS DEPARTMENT

The department is grateful for your incredible generosity over the last few years. Thanks to you, we have funded undergraduate and graduate research, bought a new pickup truck we used for field camp this year, created a new Makerspace, renovated labs and offices, and continued to strive for excellence in research, teaching, and outreach. Budgetary situations are such that we continue to need your help. Please visit our EPSS General Fund using the QR code to the right. No amount is too small, and every cent is deeply appreciated.



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# EPSS Events This Year

This year was full of exciting events for supporters of EPSS, celebrating the work we are doing. In this academic year, we kicked off a special salon series hosted at our outgoing Chair, Carolina Lithgow-Bertelloni's home. These intimate salons each highlighted a specific research project in the department, inviting a select handful of local supporters to have an inside look, hear updates to the research, and have one-on-one conversations with our professors who lead these projects. This year we had salons focusing on the Meteorite Gallery and collection, featuring Professors Amy Mainzer and Peng Ni, the Search for Extraterrestrial Intelligence (SETI), featuring Professor Jean-Luc Margot, and lastly DIYnamics, featuring our new Chair, Professor Jon Aurnou. These interactive and intimate salons gave those in attendance a new insight into the work our professors are doing, and the broad impact of our research.

We were also honored to welcome Candice Hansen-Koharcheck, MS '89 PhD '94, back to campus as our Distinguished Alumni Lecturer for her talk, "Exploring Ocean Worlds" in March. This exciting event, hosted in the James West Alumni Center, brought many alumni back to campus to hear Candice's riveting talk. We want to sincerely thank those of you who were involved this year at any level, or attended any of our events. Or, if you were not involved this year and would like to learn more or become a donor to EPSS, please contact Emily Bisno at [ebisno@support.ucla.edu](mailto:ebisno@support.ucla.edu) or (310) 963-8319.



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