



Caltech Associates **100**

100

fall | winter

2025

celebrating a century
of discovery
together

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www.cefcu.org

On the cover: In April 2025, just weeks after its launch, NASA's SPHEREx (Spectro-Photometer for the History of the Universe, Epoch of Reionization and Ices Explorer) mission revealed a cloud of dust in a patch of sky. This image was taken inside the Large Magellanic Cloud, a dwarf galaxy near the Milky Way, when SPHEREx was making observations in a specific infrared wavelength (3.29 microns).

The SPHEREx mission will map the entire sky, imaging each object in 102 infrared colors (or wavelengths of light) four times over two years. We will learn more about the SPHEREx mission from **James J. (Jamie) Bock**, the Marvin L. Goldberger Professor of Physics and Jet Propulsion Laboratory Senior Research Scientist, in his presentation prior to our tour of JPL on September 18. See page 2.

Image courtesy: NASA/JPL-Caltech

Celebrating a century of discovery **together**

In March 2026, we will mark the 100th anniversary of the Caltech Associates! When our founding members gathered at Henry Huntington's home for the first formal meeting a century ago, even the most prescient among them could not have predicted the longevity, growth, and profound influence of this organization—not only on Caltech but on the world.

Throughout this academic year, we will honor our association's continued generosity with special events, including a **Centennial Celebration on April 10, 2026**, to be held appropriately at The Huntington. More details and a formal invitation will be shared as the date nears, but please mark your calendars now.

Our fall programming begins in September with several events focusing on the stars and beyond. Over the past century, our small but mighty Institute has had an outsized impact on space exploration. We will visit the **Jet Propulsion Laboratory**, a world-renowned facility born at Caltech, and George Ellery Hale's **Palomar Observatory**, both of which continue to expand our understanding of the universe. We will also learn about **the search for black holes** in our galaxy.

In October, our first centennial program, a panel discussion highlighting the work of the **Graduate Aerospace Laboratories (GALCIT)**, will take place in Pasadena. Established in 1928, GALCIT played a pivotal role in the success of Southern California's aerospace industry in the 20th century. Its scope has since expanded to include unmatched experimental facilities in fluids, solids, materials, biomechanics, propulsion, and combustion. Also in October, our first New York regional event of the year will showcase **a potentially transformative breakthrough in the fight against cancer**.

A few years after our founding, in 1931, we hosted our first dinner at the newly completed Athenaeum, a gift from Associates members Janet and Allan Balch to the Caltech community. The inaugural speaker was Albert Einstein, and although he was a visiting professor for only a few years, his legacy at the Institute endures today through the **Einstein Papers Project**. Our virtual event in November will examine this project and the current efforts of its editorial team.

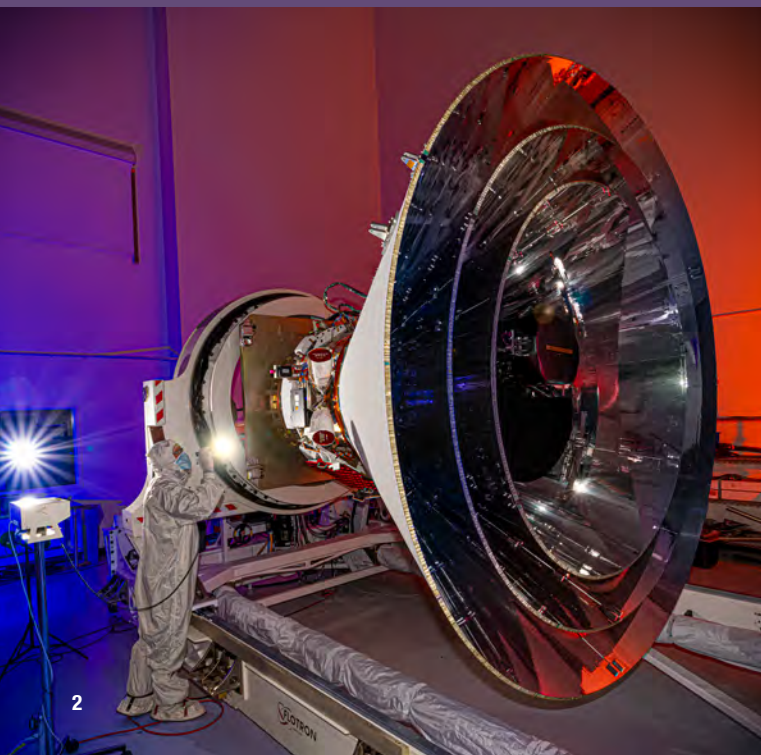
In December, we'll gather for our annual holiday luncheon at The Athenaeum and learn about the **Caltech Heritage Project**, which creates interviews, stories, and presentations to document the Institute's contributions to advancing human knowledge. It will be a fitting discussion for year-end festivities as we approach our centennial anniversary. We hope you will join us at events throughout the year as we celebrate this milestone and the next 100 years of discovery together.

Tour of JPL

Thursday, September 18, 2025, 10:00 am
The Athenaeum and Jet Propulsion Laboratory

James J. (Jamie) Bock, the Marvin L. Goldberger Professor of Physics and Jet Propulsion Laboratory Senior Research Scientist, will join us for brunch at The Athenaeum and introduce us to SPHEREx (Spectro-Photometer for the History of the Universe, Epoch of Reionization and Ices Explorer).

An all-sky survey satellite that launched earlier this year, SPHEREx will probe the physics of cosmic inflation, chart the history of galaxy formation, and study the origin of water and biogenic molecules in ices in interstellar space. The mission is managed by JPL for NASA. After the presentation, we'll depart by chartered coach for our private afternoon tour of JPL.



Finding Black Holes

Saturday, September 27, 2025, 6:00 pm • The Sea by Alexander's Steakhouse

Our galaxy, the Milky Way, might contain approximately 100 million black holes, but we've only detected a small number so far. Fewer than 100 have been observed, and only about 20 are confirmed with certainty. Most of what we know comes from rare cosmic events, such as pairs of stars that emit X-rays or produce gravitational waves that ripple through space.

Kareem El-Badry, assistant professor of astronomy, will explain how his team is searching for a much larger population of black holes in our galaxy that have so far gone undetected. He will discuss how unusual stars like "stripped" stars, which have lost part of themselves to a companion, can help us understand the mysterious lives and deaths of stars and the origins of black holes.



SAN DIEGO

Stargazing at Palomar Observatory

Tuesday, September 30, 2025, 1:30 pm • Palomar Mountain

Among the most iconic scientific facilities in the world and a crown jewel of Caltech's research traditions, Palomar Observatory is primarily the vision of George Ellery Hale. He, along with a dedicated team of astronomers, engineers, technicians, and builders, secured funding, designed the telescopes and site, and built the Observatory much as it exists today.

During our private tour, we will have the opportunity to stargaze through the Observatory's 60-inch telescope. We'll also enjoy dinner inside the 200-inch telescope's dome, along with a presentation by **Mansi Kasliwal**, professor of astronomy, whose research group uses two robotic, wide-field infrared and optical cameras at the Observatory to study the lifecycle of stars.

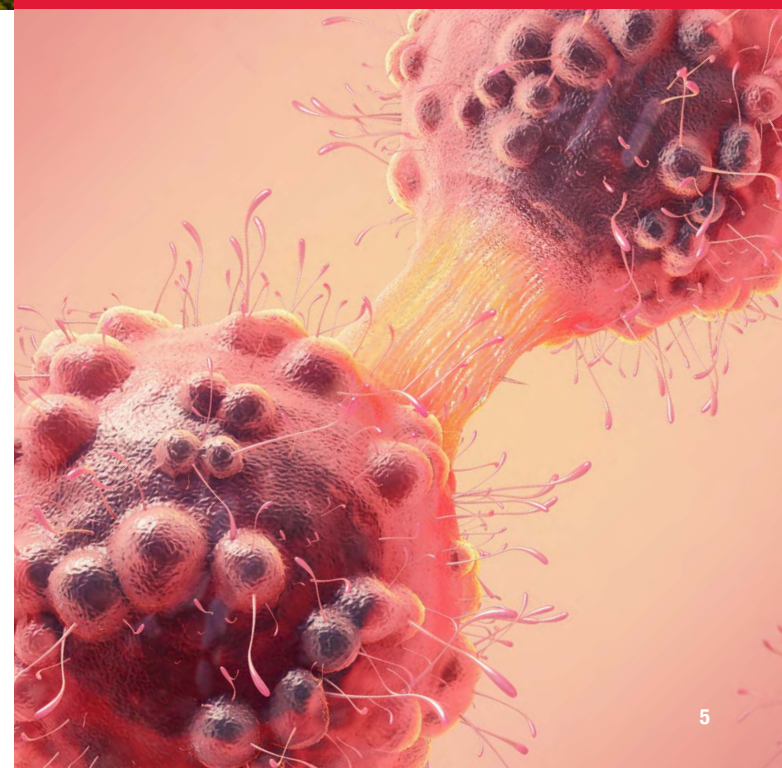
NEW YORK CITY

Cancer's Achilles' Heel

Tuesday, October 28, 2025, 6:00 pm • The Lotos Club

Cancer cells often rely heavily on a protein called DNA2 to survive when their genetic replication encounters problems. This creates an opportunity: blocking DNA2 can hit cancer cells much harder than healthy cells—a concept called “synthetic lethality.”

Judith Campbell, professor of chemistry and biology, will discuss her lab's work to develop molecules that block DNA2. In trials with mice, these inhibitors proved to be well-tolerated and effective against aggressive cancers like triple-negative breast cancer, colorectal cancer, ovarian cancer, and bone cancer. They can also be combined with chemotherapy, radiation, or other targeted drugs, making DNA2 a promising new candidate for precise, tailored treatments.





PASADENA

Igniting Discovery

Thursday, October 30, 2025, 6:00 pm • Gates-Thomas Laboratory

From its origins as the spark of Southern California's early aerospace industry, GALCIT (Graduate Aerospace Laboratories) has evolved to encompass unmatched experimental facilities in solids, fluids, biomechanics, propulsion, combustion, and materials and large-scale computational resources. Today, the faculty and staff are developing methods to probe ocean depths, accelerate high-speed terrestrial flight, and advance space exploration and technology.

Sergio Pellegrino, the Joyce and Kent Kresa Professor of Aerospace and Civil Engineering and director of GALCIT, will discuss the fascinating history and interdisciplinary future of research at the Laboratories with **John Dabiri**, Centennial Professor of Aeronautics and Mechanical Engineering, and **Michael Watkins**, professor of aerospace and geophysics.

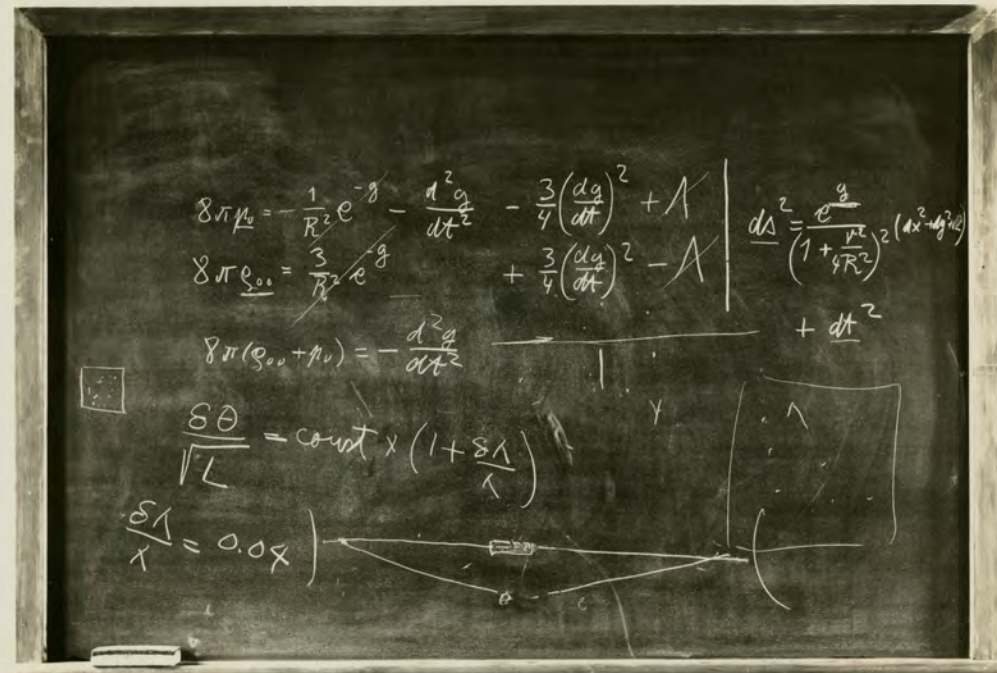
VIRTUAL

The Einstein Papers Project

Wednesday, November 12, 2025, 11:00 am • Via Zoom

The publication of the Collected Papers of Albert Einstein has been a long-standing editorial project that began shortly after his death in 1955. The trustees of his estate organized the documents in his home and collected a substantial amount of additional material from around the world over a period of 25 years. They aimed to publish all of Einstein's papers, both personal and scientific, and in 1971, Princeton University Press took on this significant effort. By the mid-1980s, they had collected more than 40,000 items.

The project later relocated to Boston University and then to Caltech in 2000, under the editorial direction of **Diana Kormos-Buchwald**, the Robert M. Abbey Professor of History. The editors are currently investigating Einstein's visits to Caltech in the early 1930s, exploring his scientific work, daily conversations, friendships, political interventions, and amusements. Through a collection that has grown to more than 80,000 documents, they are uncovering new insights into science and life at Caltech, in Pasadena, and beyond.





PALO ALTO

Centennial Event: Please Save the Date

Saturday, January 10, 2026, 6:00 pm
Woman's Club of Palo Alto

Please plan to join us for a special centennial event at the Woman's Club of Palo Alto. Details will be shared as soon as they are finalized.

The venue is the home of a historic organization that served as the women's arm of local government and school affairs when women were ineligible to vote or hold political offices during Palo Alto's early years. After a year of planning, on June 20, 1894, a group of women in the Stanford Mother's Club officially incorporated as the Woman's Club of Palo Alto with 24 members. Today, club members engage in philanthropic activities to benefit the community, including awarding annual grants to local nonprofits.

PASADENA

Holiday Luncheon

Thursday, December 11, 2025, 11:00 am • The Athenaeum

One of our most popular events of the year, our annual holiday luncheon is a favorite occasion to gather with faculty, friends, and fellow Associates in the cheerful atmosphere of The Athenaeum's festive decor.

Our speaker will be **David Zierler**, the Ronald and Maxine Linde Director of the Caltech Heritage Project. The Project curates historical materials, publishes oral history interviews with members of the Caltech community, and produces stories and presentations that promote the Institute's positive impact on society and the world. He will discuss the Project and his forthcoming book, *To Illuminate Nature from Molecules to the Cosmos: A Narrative History of Caltech Discovery*.





PASADENA

Pre-Watson Dinner with Francois Tissot

Wednesday, January 21, 2026, 5:00 pm • The Athenaeum

President's Circle and Associates 100 Legacy Circle members are invited to join **Francois Tissot**, professor of geochemistry and investigator at the Heritage Medical Research Institute, for dinner at The Athenaeum before his Watson Lecture, "Lead Contamination: An Old Foe Rises from the Ashes."

Groundbreaking research at Caltech by geochemist Clair Patterson in the 1950s–1970s helped us understand the dangers of lead contamination, leading to the passage of the Clean Air Act and other measures to reduce lead exposure. After the historic 2025 Los Angeles fires, Institute researchers once again played a crucial role in studying the lead pollution caused by the destruction. In his Watson Lecture, Professor Tissot will discuss the impact of the research so far, the lessons learned, and what actions should be taken as mega fires like this become more common.

Upcoming Watson Lectures

Presented in the elegant Beckman Auditorium on campus, the Earnest C. Watson Lecture Series has brought the wonder of Caltech research and discovery to the public for more than 100 years. Caltech Associates members receive complimentary preferred seating. To reserve tickets, call (626) 395-4652.

Wednesday, October 22, 2025, 7:30 pm

Molecular Senses

Nick Hutzler, assistant professor of physics, describes how molecules can sense fundamental particles and forces.

Wednesday, November 19, 2025, 7:30 pm

The Habitability of Mars

Ashwin Vasavada, project scientist with the Mars Science Laboratory at JPL, discusses the habitability of Mars as revealed by the 13-year journey of the Curiosity rover.

Wednesday, January 21, 2026, 7:30 pm

Addressing Lead Contamination

Francois Tissot, professor of geochemistry, presents Caltech's role in addressing environmental lead pollution, both historically and following the 2025 Los Angeles fires.

Wednesday, February 25, 2026, 7:30 pm

How Batteries Work

Kimberly See, professor of chemistry, explains the science of batteries and their place in our energy landscape.

Wednesday, March 25, 2026, 7:30 pm

Revealing the Hidden Universe

Katie Bouman, associate professor of computing and mathematical sciences, electrical engineering, and astronomy, describes how physics and AI are working together to illuminate the hidden universe.



Iceland 2026

Monday, June 8, to Wednesday, June 17, 2026

Embark aboard the *National Geographic Explorer* to circumnavigate Iceland and explore the eastern coast of Greenland on an unforgettable adventure at the edge of the Arctic. Our faculty guide will be **Zhongwen Zhan**, professor of geophysics and the Clarence R. Allen Leadership Chair and director of the Caltech Seismological Laboratory. His expertise will illuminate the powerful, primal forces that continue to forge and reshape this magnificent landscape.

Tour Highlights

- Survey the Westman Islands, formed by undersea volcanoes between 5,000 and 10,000 years ago and among the youngest of the world's archipelagos.
- In the northern Highlands of Iceland, visit Goðafoss, one of the island's largest waterfalls (pictured above), and Lake Mývatn, its most geologically active area.
- Keep watch for whales and other elusive marine life as we investigate ice-filled shores and glacier-carved fjords.

Scan to view the tour
brochure and full itinerary





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