

## Featured Stories



### **NASA Administrator tours JPL, holds town hall**

NASA Administrator Jim Bridenstine made his first official visit to JPL on Aug. 27, exploring the Lab's facilities, meeting with science teams, and holding a town hall meeting open to all JPLers during the day-long tour.

Lab Director Michael Watkins and Caltech President Thomas Rosenbaum joined Bridenstine Monday morning for the tour, starting with coffee and a meet-and-greet in von Kármán auditorium. Afterward, Bridenstine headed to Building 301-232 for an update on the Europa Clipper. He was able to view through a HoloLens head-mounted display the spacecraft's planned elliptical orbit around Jupiter and close flybys of the planet's moon—with the closest-approach altitude getting down to 25 kilometers above the surface of Europa.

Following the Europa update, media members were invited to join the tour with the administrator as he learned about ongoing research on Lab, along with current and upcoming space flight missions such as InSight, Mars Curiosity Rover, Mars 2020, ECOSTRESS, and Grace-FO.

“Our country’s first interplanetary robotic missions were created and carried out by JPL, and when you’re here, you think about all of the probes that we have all over the solar system even right now, they’re all communicating through JPL’s Deep Space Network, which is tremendously valuable for NASA, and really for the world science community,” Bridenstine said.

“A lot of things happening here are critically important for our country, especially when you consider the Earth Sciences missions, and how they aid in our ability to determine how the climate is changing.”

Bridenstine and Watkins opened the town hall meeting in Pickering Auditorium by recognizing David Crouch, of the NASA Management Office, and Katrina Christian, of the Office of Contracts Management, for their work in finalizing JPL’s new prime contract with the agency.

“We’re grateful for JPL and we’re grateful for the NMO for working out a great and well-negotiated, longer term contract. It’s all good for our country, good for JPL and good for NASA,” Bridenstine said.

In brief remarks before a wide-ranging question and answer period, Bridenstine described the direction set for the agency by the National Space Council and its three directives to reinvigorate the country’s human space exploration program, streamline regulations for the commercial use of space and create a space traffic management system.☒

He and Watkins also cited the overwhelming public support for space exploration, most recently demonstrated by a Pew Research Center report which can be viewed [here](#).

Bridenstine closed the meeting on a high note for JPL.

“Before I leave, I just want to make sure that everyone in this room understands how grateful I am for your service. This is service to your country. When you think about what we understand as a nation, and what we understand as a world, about our own planet, it’s because of the people in this room. When you think about what we understand about our solar system, and planets that are not Earth, when you think about what we understand about our sun and heliophysics and astrophysics, we understand all of these things that we understand today because of the people in this room,” he told the standing-room only crowd.

“And that’s not just good for the United States, it’s good for the entire world and it’s good for our leadership position in the world. Know when you leave here that I am grateful, your country is grateful, the administration is grateful, and there’s a whole lot more great work to do.”



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## And the Emmy goes to: Cassini’s Grand Finale

JPL has won an Emmy Award for Outstanding Original Interactive Program for its coverage of the Cassini mission’s Grand Finale at Saturn. The award was presented Saturday, Sept. 8, at the Creative Arts Emmy Awards in Los Angeles by the Academy of Television Arts & Sciences.

Accepting the award were members of the JPL Media Relations and Public Engagement offices, and leaders of the Cassini Mission.

“This award represents the special magic that happens when we combine the stunning imagery and powerful science from a mission such as Cassini with the extraordinary talents of an innovative media and communications team. By honoring our interactive program on the Cassini Grand Finale, the Television Academy honored the great cause of space exploration, and I am tremendously proud of our Public Engagement and Media Relations teams for turning the end of a mission into a new beginning for communicating the wonders of our universe,” said Michael Greene, the Lab’s director for Communications and Education.

In 2017, after nearly 20 years in space and 13 years revealing the wonders of Saturn, NASA’s Cassini orbiter was running out of fuel. As a final act, Cassini began a whole new mission—its Grand Finale. This journey into the unknown would end with a spectacular plunge into the planet. JPL created a multi-month digital campaign to celebrate the mission’s science and engineering accomplishments and communicate why the spacecraft needed to meet its end in the skies of Saturn. Cassini’s first, daring dive into the unexplored space between the giant planet and its rings kicked off the campaign on April 26, 2017. It culminated on Sept. 15, 2017, with live coverage of Cassini’s plunge into Saturn’s atmosphere, with the spacecraft sending back science to the very last second.

“The Cassini team is tremendously grateful that our mission’s amazing story was told in such a creative way by the communications team at JPL, and that the TV Academy has chosen to honor that story. Receiving an Emmy is one more amazing first for Cassini,” said Cassini Project Manager Earl Maize.

The multi-faceted interactive campaign included regular updates on Twitter, Facebook, Snapchat, Instagram and the Cassini mission website; multiple live social, web and TV broadcasts during which reporter and public questions were answered; a dramatic short film to communicate the mission's story and preview its endgame; multiple 360-degree videos, including NASA's first 360-degree livestream of a mission event from inside JPL mission control; an interactive press kit; a steady drumbeat of articles to keep fans updated with news and features about the people behind the mission; state-standards aligned educational materials; a celebration of art by amateur space enthusiasts; and software to provide real-time tracking of the spacecraft, down to its final transmission to Earth.

"To an incredible spacecraft that could and did. To an amazing mission that guided her. To our public that followed her for 20 years before she plunged into Saturn but sent science to the end. Go NASA!" said Alice Wessen, manager at JPL's Public Engagement Office.

"Thank you to space fans, if you're a current space fan or future space fan. We can't fit you all into mission control but we can give you a virtual seat and we can put you at Saturn and we can put you at Mars," said Veronica McGregor, manager of JPL's Media Relations Office. "Thanks also to NASA and JPL for having a culture that tells us to shoot for the stars in all of our positions, whether we are explorers or storytellers. This is for science, for science literacy, and discovery."

The Creative Arts Emmys honor outstanding artistic and technical achievement in multiple categories including animation, casting, cinematography, costumes, visual effects, title design, interactive programs and more. Awards in over 50 categories were announced on Saturday.

[A full list of winners is available here.](#) An edited version of the show will air on Sept. 15 on the FXX channel.

The Primetime Emmys will be awarded by the Academy of Television Arts & Sciences in Los Angeles on Sept. 17. The Cassini-Huygens mission is a cooperative project of NASA, ESA (European Space Agency) and the Italian Space Agency. JPL manages the mission for NASA's Science Mission Directorate, Washington. JPL designed, developed and assembled the Cassini orbiter.



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## A Schurmeier legacy

When Lauren Schurmeier came to the Lab in August to complete JPL's Planetary Science Summer Seminar, it was a much different place than when her grandfather, a JPL pioneer, was leading many of the Lab's historic flagship missions decades ago. Her grandfather was the late Harris "Bud" Schurmeier, one of the Lab's early engineering leaders.

Prior to Apollo, Bud led the Ranger Program to locate suitable landing sites on the Moon. Later, he was Voyager's first project manager.

"Back then, it was a very small community of engineers and scientists, putting missions together," recalled Lauren, a University of Illinois–Chicago grad student. "NASA was gaining momentum, they had a lot more money to spend, and there was the space race, which was really motivating. I remember him explaining it doesn't matter how much it costs, it just has to work. And we're trying to explore as much as we can. But now, it's got to be the best proposal, it's got to be great for the public and get as much science return as you can. It's big money and no failure, it has to be awesome."

"He said the space program has changed a lot," she noted with a laugh.

Lauren completed the Summer Seminar "bootcamp" at JPL, the final portion of the program that was preceded by 10 weekly webinars and assignments for 60 to 80 hours of preparatory work. At the bootcamp, JPL's advance project design team, Team X, mentors students on how to develop a space mission.

"This has been an intense program. I've heard that a lot of people who come out of it have become professors," said Lauren, who aspires to teach college students.

In May, Lauren completed a Ph.D. in Earth and planetary science from Illinois-Chicago. Previously, she had earned a bachelor's of science in the same subject from UC Santa Cruz, and followed that up with an internship at NASA Ames. Lauren hopes to be in a position to combine teaching and research.

"I really like working with and advising students," she said. "I don't need to be at a top research school; I would be OK being somewhere working with master's students or undergrads. But just mentoring the next generation of scientists and being part of a space mission; that is part of the dream."

## Stealing Space



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Grandpa Bud was heavily involved with events with the Planetary Society in Pasadena. Sometimes, with Bud's encouragement, Lauren would tag along.

"He used to get these booklets from the society every couple months, and I used to steal them from his office -- because they had all the cool space pictures and articles with space mission updates," she said. "In high school I went to the Cassini-Huygens landing party and book signings with Neil deGrasse Tyson and Ann Druyan."

"I gained a lot of momentum in wanting to do science in high school," she added. "I think that was the biggest influence he had on me, other than directly talking to him, learning how cool the space experience was."

Lauren idolized her grandfather, but for far more than his inspiring stories of his JPL days.

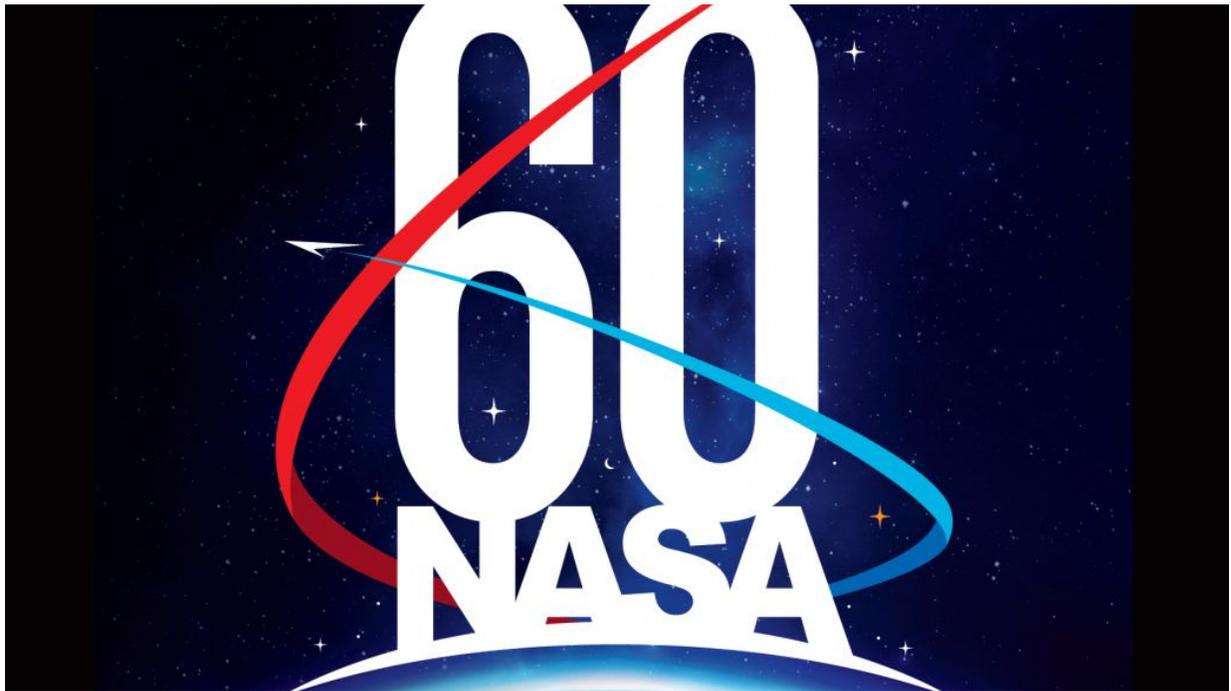
"He never talked about himself. He was really humble," she said. "And he had so many great accomplishments, but that didn't seem to matter. When he wanted to talk about Voyager, he talked about how great the team was, how proud he was of everyone who worked on it. He always cared about people working their hardest."

"He retired (from JPL) before I was born. He built himself an avocado orchard near Oceanside, and he ran the whole thing, so mostly I saw him just working really hard. He always had to fix everything himself."

Lauren is thinking about applying for a NASA postdoctoral fellowship at JPL. “I’d like to keep my options open,” she said. “When I was younger, I was like, how cool would it be to work at NASA?”

For more about Harris Schurmeier, [read this Planetary Society biography](#)

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## **NASA@60: The Role of the Robots**

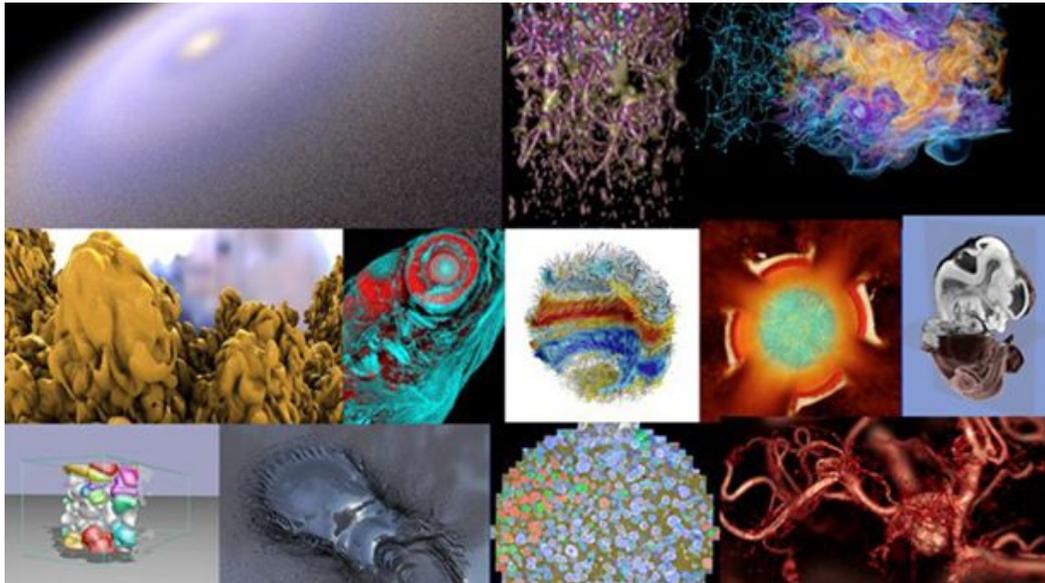
[Watch NASA@60: The Role of the Robots.](#) Held on Sept. 7, this panel discussion included Rob Manning, Julie Webster, Charles Norton, Anne Marinar, and moderator Preston Dyches.

Much has changed about the way we explore space in the 60 years since NASA began operations on Oct. 1, 1958. Today’s robotic spacecraft are beginning to experiment with laser communications, artificial intelligence and 3-D printed parts. But did you know some of the first spacecraft the U.S. sent to the Moon included parts made of wood, or that spacecraft used to record data on motorized magnetic tape recorders? Despite all the advances, one thing hasn’t changed: we still rely on robotic spacecraft to extend our senses above and beyond Earth and to blaze a trail as precursors for human explorers.

As NASA celebrates its 60th anniversary, this panel discussion will look back over the decades at how far our robotic exploration has come, and consider where we might be headed. Part one of the program focuses on major milestones in robotic exploration, what it took to reach those accomplishments, how far we’ve come, and how have spacecraft changed over the years. Part two focuses on new developments we might look for in robotic spacecraft in the next couple of decades. What demands will we be placing on spacecraft, in terms of capabilities and destinations, that are different?

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# Upcoming Events

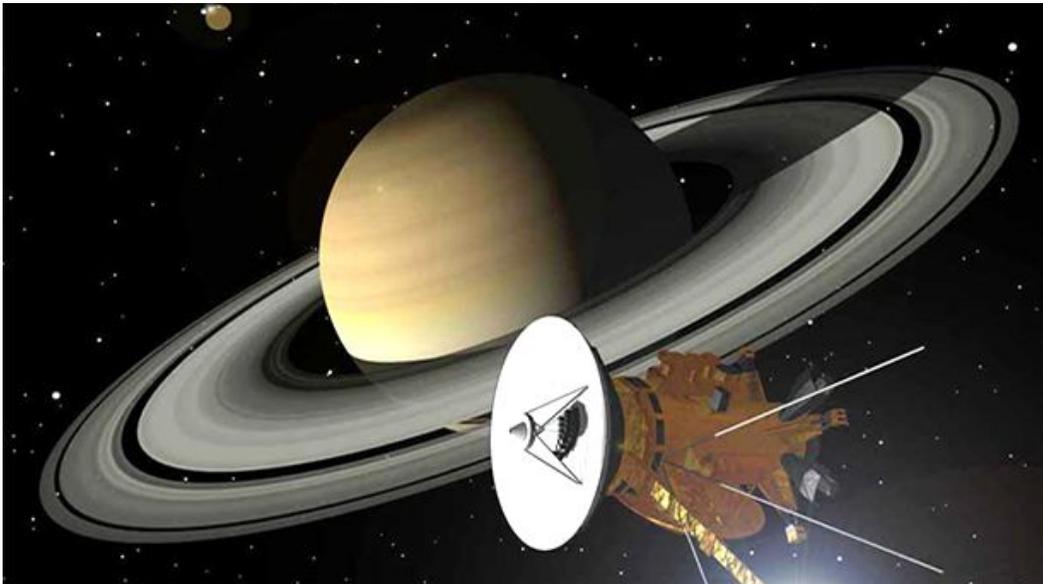


## The Age of Data: Visualizing the revolution

Chris Johnson, Director of the Scientific Computing and Imaging Institute and Distinguished professor at the University of Utah School of Computing, will speak Thursday, Sept. 13, from noon to 1 p.m. at Pickering Auditorium

**Abstract:** We live in the Age of Data. Ninety percent of all data in the world has been created in the past two years at a rate of exabytes per day. New data is growing exponentially in every way: structured, unstructured, quantitative, qualitative, spatial, temporal. One of our greatest scientific challenges is to effectively understand and make use of the vast amount of data being produced. Visual data analysis will be among our most important tools to understand such large-scale complex data. Visualization is useful for detecting patterns, assessing situations, and prioritizing tasks. Visualization facilitates the reasoning process by supporting the human capacity to perceive, understand, and reason about complex large-scale data and enables researchers to derive knowledge from data. In this talk, Johnson will present state-of-the-art visual analysis techniques, insights and examples of how visualization can enable understanding in the Age of Data applied to applications in science (biology, astronomy), medicine (cancer, cardiology, radiology, neurology), and engineering (combustion, fluids, materials).

**Bio:** Johnson is founding director of the Scientific Computing and Imaging Institute at the University of Utah. He also holds faculty appointments in the departments of physics and bioengineering. His research interests are in the areas of scientific computing and scientific visualization. In 1992, Johnson founded the SCI research group, now the SCI Institute, which has grown to employ more than 200 faculty, staff and students. Johnson has received a number of awards, including a National Science Foundation Presidential Faculty Fellow Award from President Clinton, and the IEEE Visualization Career Award. If you would like to speak individually with Dr. Johnson, please contact Kiri Wagstaff, [kiri.wagstaff@jpl.nasa.gov](mailto:kiri.wagstaff@jpl.nasa.gov) or ext. 3-6393.



## **Designing the Cassini Solstice mission 2010-17**

Julie Webster and Earl Maize will speak on Wednesday, Sept. 19, from noon to 1 p.m. at von Karman Auditorium.

The end of the Cassini mission was seen by millions of people, but few people, even here at JPL, knew the design was completed in 2009. Earl Maize and Julie Webster will discuss some of the major events that both troubled and highlighted the last eight years of the Cassini mission.

The technical data in this document is controlled under the U.S. Export Regulations; release to foreign persons may require an export authorization.

This talk is part of the “Mission Chronicles” series. The 3X/5X Operations Working Group sponsors this series to communicate to a wide JPL audience the challenges experienced during mission development and operations, increase awareness of those situations, and help prevent similar occurrences in the future.



## **Arthritis wellness presentation**

Dr. Frank Meza will give a wellness presentation on Wednesday, Sept. 19, from 11:30 a.m. to 12:30 p.m. in Pickering Auditorium. This presentation will also be available via WebEx.

Approximately 350 million people worldwide have arthritis. Nearly 40 million people in the United States are affected by arthritis, including more than a quarter million children. Dr. Frank Meza from Kaiser will discuss what can be done to manage arthritis and how to work with your physician to get the proper medication and treatment.

Dr. Meza has been a popular speaker in the community and has spoken at JPL in the past. He is the assistant area medical director of the Los Angeles and West Los Angeles Kaiser Permanente Medical Centers. Dr. Meza has been a Kaiser physician since 1978 and is board certified in family practice and sports medicine. He is an avid runner and advocate of a proactive holistic approach to health through exercise and good eating practices.

WebEx meeting number (access code): 900 832 156 Join by phone: 510-210-8882 USA Toll; Local: 818-35(4-4044); Toll free: 844-JPL-WEBX (844-575-9329)

Please note that this WebEx service allows audio and other information sent during the session to be recorded, which may be discoverable in a legal matter. By joining this session, you automatically consent to such recordings. If you do not consent to being recorded, discuss your concerns with the host or do not join the session.



## Register for 2018 JPL Invention Challenge

The “Upright Pipe Contest” will mark the 20th anniversary of the JPL Invention Challenge, to be held Friday, Dec. 14 on the Mall. Registration is due Nov. 10.

The rules and registration forms are posted on the JPL Invention Challenge website: <https://www.jpl.nasa.gov/events/inventionchallenge/>

The contest is open to all JPL employees, contractors, retirees, and immediate family members. Teams of students from Southern California middle schools and high schools also participate.

The contest objective this year is to create a device that can position a plastic pipe resting on two support stands into a vertical position atop a small platform in under 60 seconds. The winner will be the team whose device places the pipe in the upright position in the fastest time while complying with all rules.

For more information, contact Paul MacNeal at ext. 4-7824, mail stop T1723-118 or e-mail: [paul.d.macneal@jpl.nasa.gov](mailto:paul.d.macneal@jpl.nasa.gov).

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## JPL Classifieds

Ads submitted Sept. 1-7

Submit an ad to: [universe@jpl.nasa.gov](mailto:universe@jpl.nasa.gov)

## For Sale

3-D PRINTER + EXTRUDER SET, Lulzbot Taz 6 with single extruder head (prints one filament), Flexystruder V2 (prints flexible filaments), Dual Extruder V2 (prints 2 filaments of diff color or material), and Moarstruder (prints large prints fast); printer has been owned for 2 years and is very well-maintained, seller is the original owner; upgrades include a new heated plate installed this year and a stepper motor damper to reduce noise; \$2,400. 818-319-0046.

### Vehicles / Accessories

'12 GIANT ANTHEM mountain bike, like new, new Shimano braking system, new rear tire, \$900. Call or text 818-634-0878.

'04 HONDA CR-V, approx. 130,000 miles, single owner, blue exterior, gray interior, automatic, vg condition, \$3,500. Sarah: 310-749-6018, sarah1zerga@gmail.com.

'13 HYUNDAI Elantra GLS 4-door sedan, 67,000 miles, Pearl white with tan/black cloth interior, single owner, no accidents, automatic transmission, heated seats, \$9,900. 404-452-4758.

## Wanted

SPACE INFORMATION/memorabilia from U.S. & other countries, past & present, for personal use (see <http://www.youtube.com/watch?v=S7PvjGp7mCU>). mrayman@alumni.princeton.edu, 818-790-8523, Marc Rayman.

## For Rent

ALTADENA, one room available Oct. 1; house is 1,200 sq. ft., upper unit, 2 bedrooms, 1 bath, good street parking in front of house, 4 miles from JPL, all utilities included, \$950/month. 206-637-5333.

ALTADENA (91001), furnished loft with awesome view for lease; non-smoker to share beautiful 4-bedroom, 3-bath house across from community garden, available October; close to local colleges, Pasadena city schools, walk to JPL, utilities are included, central air/heat, internet access, near 210/134/110/bus stop/shopping/banking/entertainment/restaurants; \$775/month. 818-370-0601.

ALTADENA, furnished room with awesome view for lease; non-smoker to share a beautiful 4-bedroom, 3-bath house across from community garden, available October; close to local colleges, Pasadena city schools, walk to JPL, utilities are included, central air/heat, internet access; near 210/134/110/bus stop/shopping/banking/entertainment/restaurants; \$900/month. 818-370-0601.

GRANADA HILLS house for lease, 4 bedrooms, 1.75 baths, 1,486 sq. ft. in quiet neighborhood near Knollwood Country Club; central air, 2-car attached garage with laundry hookup; new carpet, tiles; \$2,500/mo plus security deposit, no pets. homarellc@gmail.com.

## Vacation Rentals

MAMMOTH, Snowcreek, 2 bd., 2 ba. + loft, sleeps 6-8, fully equip'd kitchen incl. microwave, D/W, cable TV, VCR, phone, balcony w/mtn. vw., Jacz., sauna, streams, fishponds, close to Mammoth Creek, JPL discount, no pets. 626-798-9222, 626-840-3749 or [valeriee@caltech.edu](mailto:valeriee@caltech.edu).

MAMMOTH, Snowcreek, beautiful updated condo, 2 bd., 2 ba. + loft (sleeps 6-8), great location by pond/meadow, new appliances, TVs, DVD players, free wireless Internet and washer/dryer, no pets. 818-952-2696 or [BigMtnPrettySky@gmail.com](mailto:BigMtnPrettySky@gmail.com).

MAMMOTH, remodeled 2 bed/2 bath + loft, short walk to Canyon Lodge; Courchevel 6 features full kitchen, cable/Internet TV, DVD, Blu-Ray, wireless hi-speed Internet, 2-car garage, Jacuzzis, grill, pool; no pets. <http://Courchevel6.com>.

To submit an ad, click [universe@jpl.nasa.gov](mailto:universe@jpl.nasa.gov)

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## JPL Family News

### Awards



Three JPL scientists have been elected Fellows of the American Geophysical Union.

Chief Scientist **Mark Simons** (left), JPL Fellow **Chris Webster** (center) and Principal Scientist **Don Argus** are among 62 new AGU Fellows selected for the honor, which will be bestowed at the AGU's Dec. 12 fall meeting in Washington, DC.

As the Lab's chief scientist, Simons serves as the focal point for interactions with universities and the external research community. He is also a professor of geophysics in Caltech's Seismological Laboratory and has been a full professor there since 2007. He obtained a bachelor's in geophysics and space physics from UCLA and a Ph.D. in geophysics from MIT.

Webster, a JPLer since 1981, previously led the Microdevices Laboratory and was program manager for the Planetary Science Instruments Office. In 2016, he won the NASA Exceptional Scientific Achievement Medal as well as JPL's Ed Stone Award for Outstanding Research Paper. He holds a bachelor's in chemical physics at the University of Reading and a Ph.D. in molecular spectroscopy from the University of Bristol. Both institutions are in the United Kingdom.

Argus, from the Geodynamics and Space Geodesy Group, joined JPL in 1992. His research interests include earthquakes, ice sheets and water resources, as well as space geodesy. He earned a bachelor's degree in geophysics from MIT, followed by a master's and Ph.D. in the same subject from Northwestern University. Last month he received the Ed Stone Award for Outstanding Research Paper.

The Fellows designation is given to individual AGU members who have made exceptional scientific contributions and gained prominence in their respective fields of Earth and space sciences. Since the AGU Fellows program was established in 1962, no more than 0.01 percent of the total membership of AGU is recognized annually.



JPL researcher **Morgan Cable** has been named one of the "Talented 12" rising stars by Chemical and Engineering News. The Talented 12 were selected from about 350 nominations for the annual honor.

Cable, from JPL's Imaging Spectroscopy Group, focuses on organic and biomarker detection strategies through in-situ and remote-sensing techniques. One of her current chemistry experiments mimics the conditions on Saturn's moon Titan.

"I'm interested in trying to understand what kinds of physical and chemical processes can happen on a world like this," she says.

Cable grew up a stone's throw from Florida's Kennedy Space Center. She studied chemistry at Florida Atlantic University, followed by a summer internship at JPL her junior year. She started developing a way to detect life in extreme environments, which began her Ph.D. thesis as a Caltech graduate student. After earning a Ph.D. in inorganic chemistry in 2010, she served as a NASA Postdoctoral Fellow at JPL, designing lab-on-a-chip instruments to search for biomarkers, molecules indicative of life.

Cable and was initially inspired by her dad, also a Ph.D. chemist. "He encouraged me at an early age to do science projects and design experiments myself to answer my questions about the world around me," she says. As triplets, Cable and her siblings Matt and Casey always challenged one another to work harder

and smarter, and to never stop learning. Today, "they are both the other kind of doctor (M.D.) and inspire me," she says.

"Morgan makes the Energizer Bunny look like a slowpoke," says Harry Gray, a Caltech chemistry professor and one of Cable's doctoral advisers. "I'm sure her work will soon reveal exotic reactions occurring in the methane seas of Titan."

For more on the award, go to <https://cen.acs.org/physical-chemistry/astrochemistry/Morgan-Cable/96/i33>

For more about Morgan Cable, visit <https://solarsystem.nasa.gov/people/3023/morgan-cable>.



**Leon Alkalai**, manager of JPL's Office of Strategic Planning, has been named to receive the Engineering Sciences Award of the International Academy of Astronautics.

The award, the highest distinction of the academy, will be bestowed at the organization's Academy Day Honor Night Sept. 30 in Bremen, Germany.

Alkalai, a JPL Engineering Fellow, earned a master's and Ph.D. in architectural engineering from UCLA.

In 2012, he received the NASA Distinguished Individual Achievement Medal for the formulation of the Gravity Recovery and Interior Laboratory (GRAIL) mission to the moon and also won the subsequent NASA Discovery competition with the selection of the InSight mission to Mars, which launched earlier this year.



The Government Innovation Awards, presented by Federal Computer Week, Government Computing News, and Washington Technology & Defense Systems, has named **Michael (Mik) Cox**, a data scientist and internet of things team lead in the Office of the CIO, as one of its 2018 Rising Stars.

Cox becomes JPL's fourth consecutive Rising Star honoree and the fifth since 2010. Tasked with rapidly exploring new IT capabilities that will enhance JPL in its mission, Cox, through his teaming with end users and industry developers, has successfully evolved many emerging capabilities at JPL with excellent user benefits and at an astounding rate. He was instrumental in the creation of multiple intelligent digital assistants for JPL, including one for the Acquisition Division, the development of IoT prototypes like "ShopBot" enabling approved users to swipe their JPL badge to turn on machine shop equipment. Cox has served as a collaborator with several industry partners who are designing and releasing new products, services, and technologies. His input has made a positive impact on their development, ultimately enabling these items to be deemed acceptable for enterprise use (e.g., Alexa at Work). Cox also served as a lead for the immensely successful Open Source Rover project, and between two AWS re:Invent conferences, he has delivered complex live demonstrations in two IoT State of the Union addresses. Cox is the only NASA/FFRDC representative on the 2018 list, which can be found at <https://fcw.com/articles/2018/08/23/rising-stars-2018.aspx>

The complete profiles for all the 2018 Rising stars will be available this fall. Cox and his fellow honorees will be officially recognized at the Nov. 8 Government Innovation Awards Dinner in Tysons Corner, Va.

### **ASTERIA CubeSat wins Small Satellite Award**

Confirming the old adage that good things comes in small packages, the ASTERIA mission has earned the Small Satellite Mission of the Year award from the AIAA (American Institute of Aeronautics and Astronautics). The mission, a JPL-MIT collaboration, is funded through the JPL Phaeton Program for training early career employees.

Read more at: <https://www.jpl.nasa.gov/news/news.php?feature=7213>

## Retirees

The following JPL employees recently announced their retirements:

☒ **David Durham**, 39 years, Section 1620; **Curtis Eaton**, 17 years, Section 393D; **Thomas Gautier**, 34 years, Section 3262; **Taenha Goodrich**, 27 years, Section 5330; **Benhan Jai**, 24 years, Section 8850; **Helen Paley**, 43 years, Section 1000; **Asim Sehic**, 18 years, Section 355M.

## Passings

**Albert Beavers**, a retired electrician, died July 13.

Beavers worked at JPL from 1956 to 1989, contributing to Mariner 10 and JPL's wind tunnel. He is survived by daughters Cheryl and Debra; granddaughters Anne and Erin; and great-grandchildren Jack Amerine, Ben Amerine, Paige Amerine, Matthew Phillips, William Phillips and William Amerine.

**William Chitty**, 80, a retired electrical engineer, died June 24.

A U.S. Air Force veteran, Chitty joined JPL in 1966. He contributed to the Mariner mission to Mars as well as the Hubble Space Telescope camera. He received NASA's Multimission Data Capture Award. He retired in 2002.

Chitty is survived by his wife, Agida; daughters Brenda and Benita; grandchildren James, Rachel, Ashley, William, Kelli, Kyle, Stephanie and Jason; and great-grandchildren Jacoby and Zana. Services were held in Linton, Utah.

**John Ekelund**, 83, a retired mathematician, died Aug. 6.

Ekelund had a 40-year career with JPL, where he calculated orbit determination and trajectory for spacecraft. He retired in 2016.

Ekelund is survived by his wife, Marianna; daughter Elke, son Erick, and grandchildren Blake, Jayden, Alex and Jack (a JPL employee). A private service was held Aug. 9.

**Ernest Franzgrote**, 87, a retired chemical engineer, died Aug. 14.

Franzgrote worked at JPL from 1957 to 1994. In his research, Franzgrote co-authored numerous studies of the surface of Earth's moon, including chemical analysis for the Surveyor missions' landing sites. He also contributed to the Voyager mission.

He is survived by his wife, Amy Douglas; his children, Merula and Christoph; and grandchildren Hannah, Ben, Maya and Clara. The Franzgrote family requests that memorial donations in name be considered to the Cornell Lab of Ornithology at <https://give.birds.cornell.edu/page/7789/donate/1?locale=en-US>.

**Henry Gundersen**, 82, a retired senior engineer, died June 24.

Gundersen worked at JPL from 1980 to 1998. He contributed to the Hubble Space Telescope, Mars Observer and Mars Pathfinder.

Gundersen is survived by his wife, Rose. He was interred at Forest Lawn Memorial Park in Palm Springs.

**Ralph Ouellet Jr.**, 72, a retired mission operations specialist, died July 23.

After a stint in the U.S. Navy, Ouellet worked at JPL from 1989 to 2016. He supported the Deep Space Network as well as JPL's TOPEX/Poseidon, OSTM/Jason, GRACE, WISE/NeoWISE, QuikScat and AcrimSat missions. Services were held at Riverside National Cemetery.

**Herbert Pickett**, 75, a retired senior research scientist, died Aug. 3.

Pickett graduated from Williams College in 1965 and went on to earn his Ph.D. in physical chemistry at UC Berkeley in 1970. He later attended Harvard University and the University of Texas at Austin before joining JPL in 1978.

At JPL, Pickett pioneered numerous advances in molecular spectroscopy. He authored or co-authored more than 100 publications, and his pathbreaking research was the focus of two dedicated issues of the Journal of Molecular Spectroscopy. Among other wide-reaching impacts, the measurement instruments he helped develop for atmospheric research satellites ultimately informed policy efforts to close the hole in the ozone layer, and a computer program for spectroscopy analysis he debuted in 1991 remains a critical tool for specialists to the present day. He retired in 2009.

Pickett is survived by his wife, Nancy; children Tim, Jennifer and James; and grandchildren Melanie, Clayton, Claire and Luke.

Retired senior research scientist **Michail Zak**, 85, died June 7.

Zak joined JPL in 1977. A member of the Ultracomputing Technology Research Group, he received 20 certificates of recognition from NASA and published more than 100 articles in science journals. His research included the detection of intelligence in space and a quantum-classical hybrid for computing and simulations. Zak retired in 2012.

He is survived by his wife, Irene, son Alexander and grandsons Mitchell and Niccolo.

## Letters

Thank you to the JPL family for the beautiful plant you sent me following the passing of my mother. I have appreciated your kindness and support during this difficult time. ☺ --**Andrea Donnellan**