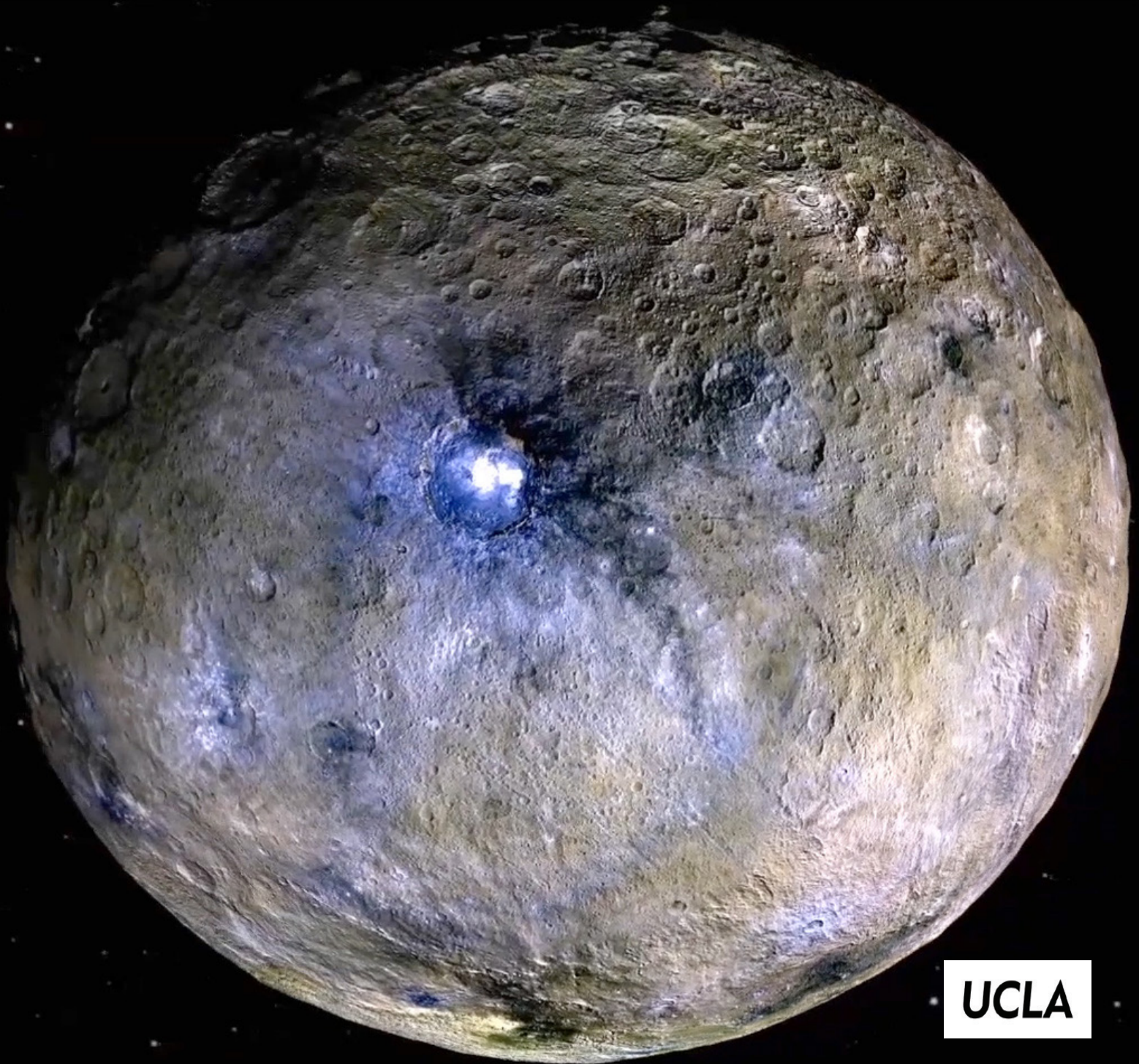


2015 Newsletter

# Earth, Planetary, AND Space Sciences



**UCLA**

# GREETINGS FROM THE CHAIR

The rhythms of academia flow from Fall back around to Summer, and sometimes don't harmonize well with the calendar year (especially at its often frantic end). And so, for those of you who missed our annual Earth, Planetary, and Space Sciences newsletter in December, I offer my apology and an assurance that your beloved department is still alive and doing well. On behalf of all the current denizens of the Geology Building and Slichter Hall, I extend to you, our alumni family, happy greetings for Spring 2016! I hope that you will enjoy seeing here a few highlights from the past year in Westwood.

Along with the changing seasons, come some changes in our faculty. We are excited to welcome geologist **Seulgi Moon**. Born in a small town in South Korea, our newest Assistant Professor received her PhD at Stanford and comes to UCLA following a postdoc at MIT. You can read about her research on surface processes on page 6. After decades of outstanding research achievements, Professors **Bruce Runnegar** and **John Wasson** decided to officially retire, although both continue to come to the department daily, conducting research and interacting with students. Unfortunately (for us) the lure of native lands proved too much for **Ed Rhodes** and **Axel Schmitt**, who left for faculty positions in the U.K. and Germany, respectively. We wish them well. Other notable faculty "transitions" include the attainment of tenure for Associate Professors **Caroline Beghein**, **Jonathan Mitchell**, and **Aradhna Tripathi**, as well as promotion to Professor of **Abby Kavner**.

One thing that doesn't seem to change is that there always is new, exciting research being created by the talented (and hard-working) faculty, researchers, and students of EPSS. We are happy to share some vignettes in this newsletter, starting with the first close-up geological investigation of the solar system's first-discovered asteroid, the dwarf-planet Ceres. The intrepid DAWN, directed by Prof. **Chris Russell** and his UCLA and JPL colleagues, is the first spacecraft to have orbited two independent celestial bodies (Vesta and Ceres) as it explores the global properties of important planetesimals, remnants from the epoch of planetary formation in the inner solar system. Professor **Mark Harrison**, postdoc **Beth Ann Bell** and graduate student **Patrick Boehnke** conducted their own "mission to early Earth" by investigating the microscopic inclusions within some of the oldest surviving fragments of our planet, zircon grains found now in the Jack Hills of Western Australia. Using sophisticated microanalysis tools, they uncovered isotopic evidence suggestive of life having existed on Earth in the Hadean era. Speaking of sophisticated tools, in 2015 EPSS certainly became the US-leader in large mass spectrometers with the installation of the "Panorama", the world's first high resolution gas-source mass spectrometer, and the inaugural ims 1290 which joined its predecessor ion microprobe in the NSF/UCLA National Facility. Read about Panorama's work for the Deep Carbon Observatory with Professors **Ed Young** and **Craig Manning** on page 3.

EPSS welcomed back Prof. **David McComas** (PhD, 1986), to deliver the 2015 Distinguished Alumni Lecture; Dave's talk, "From the Sun to the edge of the Solar System," took us on a fascinating journey with the solar wind to where it is stopped by the pressure of interstellar space. This year we initiated a new lecture series featuring current faculty and we were delighted to see so many alumni who made the journey back to campus in April 2015 to hear Prof. **Bill Schopf** discuss Darwin's null hypothesis. I remind you all that it doesn't need to be a special occasion (with a lecture) to plan a trip back to campus; the class of 1985 recently "crashed" Liquidus en-mass and shared their great class spirit with current students. It turns out that **Mike Hunziker**, **Pat Frascogna**, and (many) friends produce a "Yearly Intrusion" as one way to stay in touch (for a pre-FB generation). We do like to hear from our alumni so please do keep in touch using whatever technology is most convenient. And for those who have stayed in touch with financial support attached, know that we are truly grateful. Your donations have helped fund our undergraduate field and research experiences, bring in scholars for colloquia, and support graduate student research, including travel to the AGU meeting and other conferences. Thank you and best wishes to you all!

With Warmest Regards,



After serving 4 years, McKeegan is ready to surrender the Chair. Jean-Luc Margot will take the helm in July.

Kevin D. McKeegan

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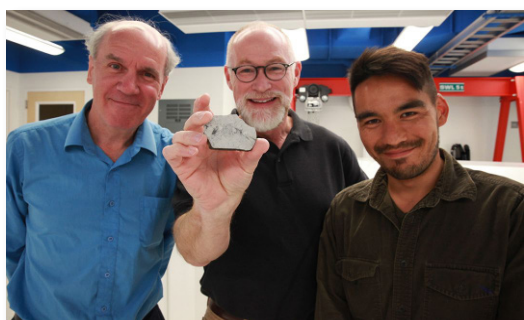
OUR FIRST HIGH RESOLUTION VIEWS OF THE DWARF PLANET CERES WERE OBTAINED BY THE DAWN SPACECRAFT. PROF. CHRIS RUSSELL IS PRINCIPAL INVESTIGATOR OF THE DAWN MISSION (SEE STORY ON PAGE 4).

# PANORAMA

Panorama's large format enables it to achieve high mass resolving power with high sensitivity, permitting direct measurements of the abundances of different molecules of nearly the same mass but which contain different rare isotopes (e.g.,  $^{13}\text{CH}_3\text{D}$  and  $^{12}\text{CH}_2\text{D}_2$  in methane). This unique instrument was made possible by funding from the Alfred P. Sloan Foundation on behalf of the Deep Carbon Observatory, the National Science Foundation, the Department of Energy, Shell Oil Company, the Carnegie Institution of Washington, and UCLA.



Professor Ed Young and colleagues at the Geophysical Laboratory worked with engineers at Nu Instruments to develop the world's largest gas-source multiple-collector mass spectrometer, dubbed the Panorama, shown here with the tired, but happy, installation team.



EPSS scientists Paul Warren, Ed Young (holding a sample of a rock from the Moon) and Issaku Kohl in the Panorama lab.

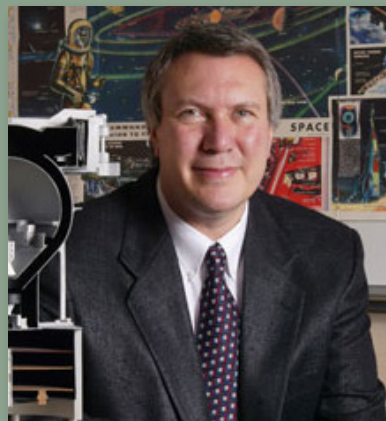
Young and colleagues used Panorama to analyze Apollo samples and terrestrial basalts, finding that the oxygen isotope compositions of the Moon and the Earth are indistinguishable at the level of a few parts-per-million. The unprecedented precision of this result points to a head-on collision rather than a glancing blow, as the "Giant Impact" that led to formation of our moon.

- This article originally appeared in *UCLA Today*

## DISTINGUISHED ALUMNI LECTURE- DAVID McCOMAS

**David McComas** was our Distinguished Alumni Lecturer in 2015. He is the Assistant VP of Space Science and Engineering at the Southwest Research Institute and Professor of Physics at the University of Texas, San Antonio. David has worked on many space physics missions and is the PI of NASA's Interstellar Boundary Explorer Mission, which explored the solar wind to the edge of the heliosphere.

Alumni returning to campus enjoyed a convivial cocktail hour in the garden north of Geology prior to hearing David's expansive lecture.



David J. McComas received his B.S. Degree in Physics from MIT in 1980 and Ph.D. in Geophysics and Space Physics from UCLA in 1986.



Alumni Lauri Holbrook and Scott Prior sandwich professor emeritus Clarence Hall.

Kevin and Grace McKeegan share smiles with Gloria Gálvez-Carlisle and professor emeritus Don Carlisle.

# DAWN COMES TO CERES

Our solar system formed when a nebula of cold gas and dust condensed to produce the Sun and the planets, as well as myriad minor planetary bodies, or "planetesimals". Remnants of these early-formed objects exist today as asteroids and comets.

Studies of meteorites, small samples of these bodies scattered into Earth crossing orbits, have long been a productive area of research at UCLA. These studies led to the hypothesis that Vesta, the second most massive asteroid, is the source of the Howardite-Eucrite-Diogenite (HED) meteorites. In contrast to Vesta, the largest asteroid, Ceres, is not thought to have sent any meteorite samples to the Earth. If we were going to understand the earliest epoch of the solar system we would need to visit both: Vesta to test the HED-Vesta connection and Ceres to solve its enigmatic behavior.

The NASA Discovery program allows individual principal investigators to propose entire missions. After many attempts, NASA finally approved a mission that would use solar-electric propulsion to go out to the asteroid belt and "interview" the intact survivors of the earliest days. The Dawn spacecraft was launched on September 27, 2007 on its way to Vesta and Ceres; it is the first spacecraft ever to orbit two different celestial objects (besides Earth and Moon!).

The arrival at Vesta in July 2011 revealed a body that was as predicted from the HED meteorite analyses, settling some controversies based on the minor variations between meteoritic and telescopic data. After studying Vesta for one year, Dawn fired its ion engines to navigate to Ceres. Despite a failure of some reaction wheels, under direction of the skilled navigation teams at JPL the Dawn spacecraft smoothly slid into orbit about Ceres in March 2015.

The mystery of why there were no cerean meteorites gradually became clear. The surface of Ceres is cratered like Vesta but the craters were created not in igneous rock but in a clay-like material that is most likely much more friable. Had pieces of Ceres reached the Earth, they would probably break up during atmospheric entry. A comparison set of craters is shown in Figure 1.

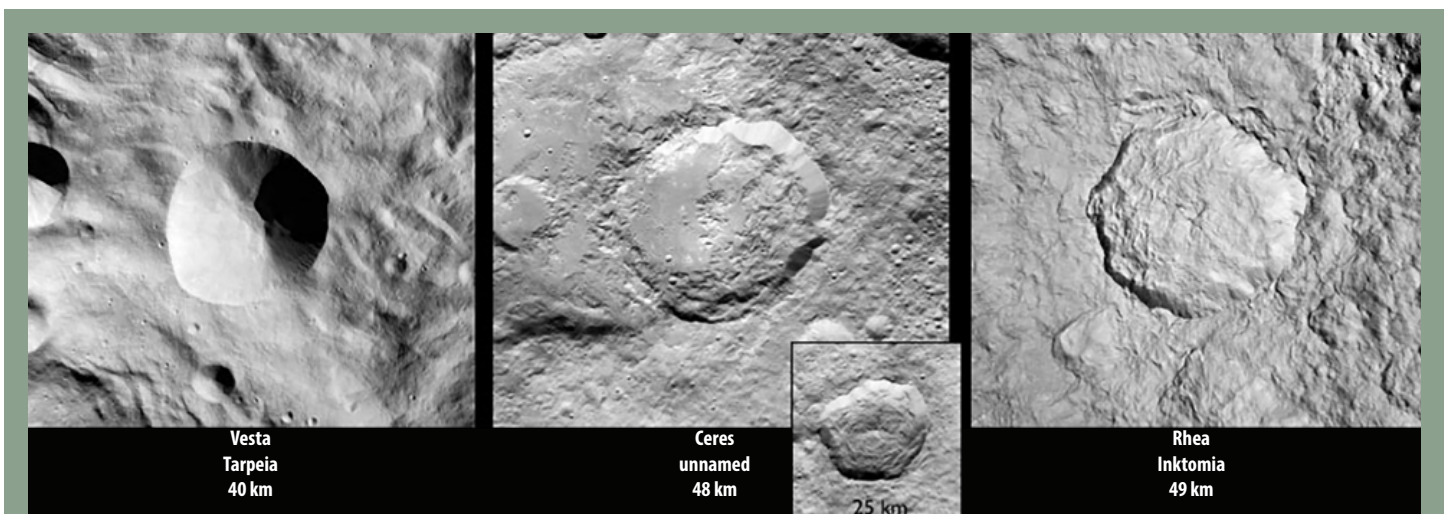


Figure 1. Comparative cratering on small planetary bodies. A bowl-shaped crater forms in the hard rocky regolith of Vesta (left), whereas a cerean crater (middle) has steep walls and a smooth floor. A crater on Saturn's icy moon Rhea (right) has polyginal sides with a rough floor. At the speeds in the asteroid belts most impacts do not have enough energy to melt rock so the vestan crater is a bowl-like excavation of rock. The impacts on Rhea do not have enough energy to melt the cold hard ice but at Ceres impacts at least sometimes have sufficient energy to melt the surface material, and the only reasonably common material that would melt is ice.

Observations like this led a group of younger Dawn team members, spearheaded by two recent UCLA graduates, **Britney Schmidt** and **Jennifer Scully**, and including current UCLA graduate student **Kynan Hughson**, to search for evidence of ground ice in the surface. Ground ice is a mixture of rock and ice that is harder than pure ice and flows if struck hard enough. They have made a good case for the pervasive presence of such material across the surface of Ceres. The UCLA team with other members of the Dawn science team are now spreading out across the virtual surface of Ceres (Fig. 2), pursuing the UCLA tradition of geologic mapping.

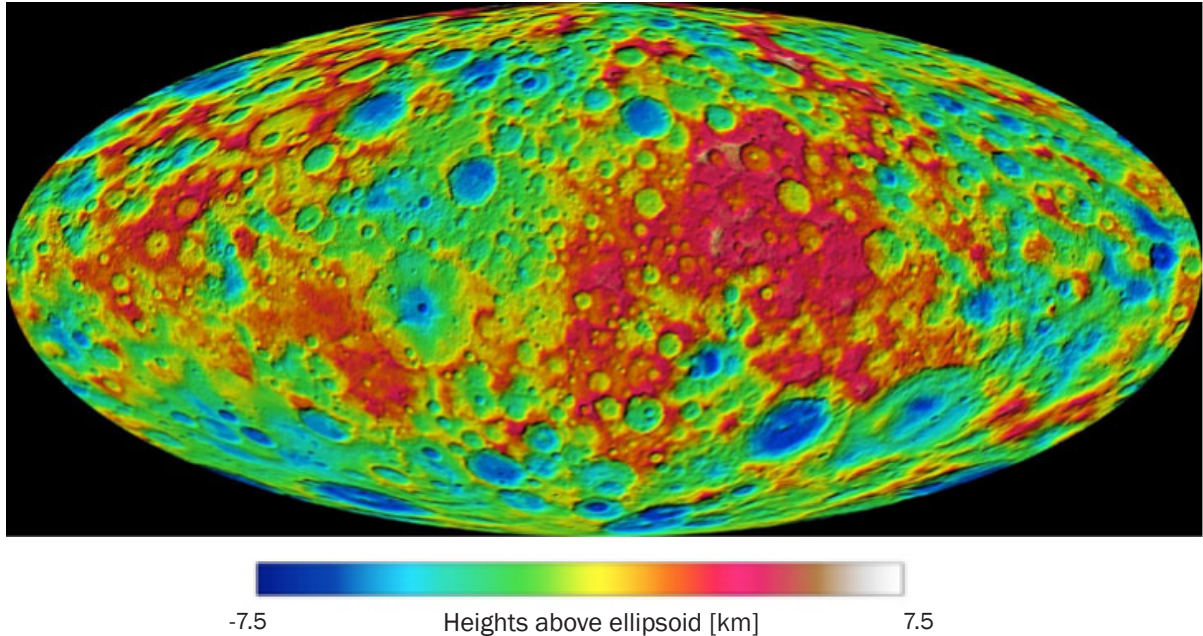
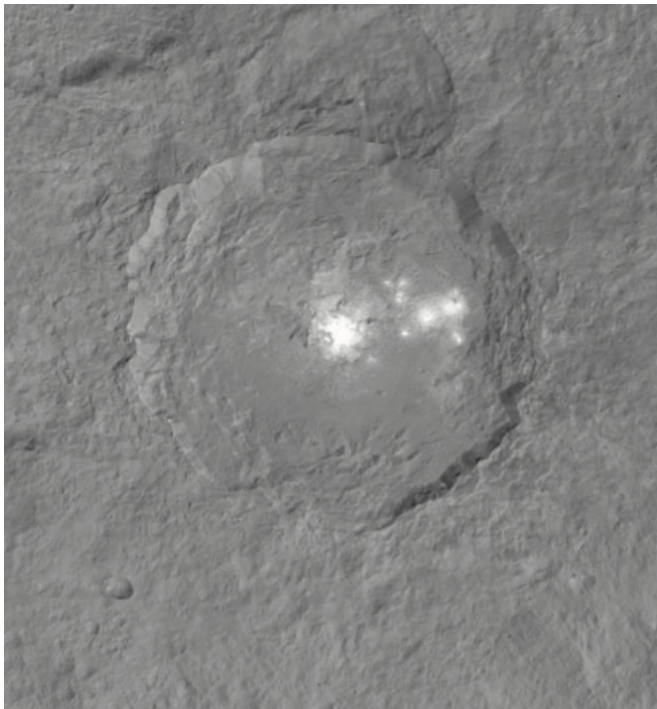


Fig. 2. Mollweide projection of the surface of Ceres showing color contours of elevation and distribution of craters.

Ceres has provided surprises, including a region of bright material in the Occator crater (Fig. 3), which became the subject of much public speculation. We now think that the material is a salt deposit that arose from Ceres sub-surface in what appears to be good evidence for cryovolcanism, however no comprehensive model for the Occator bright spots has yet been postulated.



Fortunately, Vesta and Ceres, the intact survivors from the earliest days of the solar system, have interesting stories to tell, and they have remembered many of those stories allowing us to develop a credible history of those early days. Vesta and Ceres have proven to be very good witnesses indeed.

- Christopher T. Russell

Figure 3. Occator, a 90 km crater with steep walls, shows several bright spots on a varied crater floor that includes smooth material.

# EPSS FACULTY AND STAFF NEWS

## NEW FACULTY

SEULGI MOON

**Dr. Seulgi Moon**, a geomorphologist, started as an assistant professor at UCLA this past July. She studied Earth System Sciences for her B.S. and M.S. degrees at Seoul National University and focused on tectonic geomorphology and geochemistry for her Ph.D. research at Stanford University. She came to UCLA after a two-year postdoctoral position at MIT.



Seulgi was born in Geochang-Gun, South Korea, a small town in the southern part of the peninsula. She grew up at an apple orchard in the mountains and the surrounding landscapes always fascinated her. In high school, she decided to pursue Earth Science as she thought that studying the environment would be of value to people and a meaningful way to help other lives. She still has this passion today.

Dr. Moon's research focus is on understanding the complex interactions between climate, tectonics, and surface processes that drive landscape evolution. "Understanding the nature of these interactions provides a key to unlock how current landscapes may have arisen, and how they may change in the future," she declares. The rapidity of landscape evolution is important not just for geoscience, but also for how it affects society.

She uses various analytical and numerical methods to quantify the rates and distribution of surface processes for areas with diverse climatic and tectonic regimes. Her study sites include the Washington Cascade Mountains, the Mendocino Triple Junction in Northern California, the Colorado Front Range, and various rivers on Earth. She has plans to conduct field work and research in Southern California, since there are so many interesting landscapes near Los Angeles. When asked about her relocation to Los Angeles, Dr. Moon smiled and exclaimed, "I am so happy to be in California, a beautiful state with various topographic features made by active tectonics and numerous surface processes including rivers, waves, and glaciers."

*welcome*

# NEW STAFF

## CARLENE BROWN, OUR NEW CAO

The department welcomed Carlene Brown in June 2015 as our new EPSS Chief Administrative Officer. A true Bruin with a B.A. in History, Carlene began her career at UCLA in 2001 in the College Deans Office. Since then, she has served as manager for various campus units including the Institute for Society and Genetics, Undergraduate Educational Initiatives and the Dodd Humanities Group.



Carlene shares a keen interest in the geological sciences through her love of the mountains, particularly the Sierra Nevada. When she is not in the office working hard to keep departmental operations running smoothly she may be found hiking on a trail somewhere or backpacking in a wilderness area. Her motto (to borrow from a local sports retailer): "I'd rather be hiking!" Favorite places: "Bishop Creek Canyon in the Inyo National Forest and Hemlock Crossing in the Ansel Adams Wilderness."

## SHEEN HE, OUR NEW COMMUNICATIONS MANAGER

Sheen joins EPSS from the private sector after recently moving back to California from New York City. In this newly created role, Sheen's primary goal is enhancing department visibility through various media outlets and increasing alumni outreach and engagement. She holds an MBA from MIT Sloan School of Management and a BA in Economics, UC Berkeley. She has experience in operations, client development, and event organization. Sheen is looking forward to communicating with EPSS alumni of all ages! Please email her at: [communications@epss.ucla.edu](mailto:communications@epss.ucla.edu)



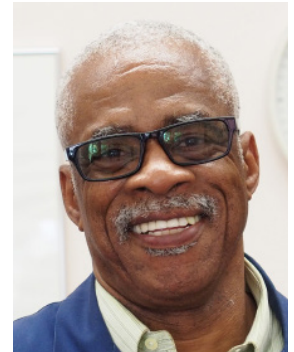
# EPSS STAFF



**Bottom from left to right:** Herumi Baylon - Fund Manager; Carlene Brown - CAO; Yasmin Thomas - Academic Personnel Coordinator; Brenda Duran-Weeks - Payroll/VISA Specialist  
**Top from left to right:** Lauri Holbrook - Student Affairs Officer; Gloria Contreras - Admin Assistant; Steve Salyards - Programmer Analyst Supervisor; Jim Nakatsuka - CAO, IGPP; Elyse Chou - Financial Manager; Rick Fort - Admin Specialist; Jason Pang - Webmaster; Sheen He - Communications Manager; Mike Rathjen - Fund Manager

# FAREWELLS

**David Riley** will be retiring in June 2016 after 36 years of service at UCLA. Everyone in EPSS will miss David's wonderful smile and can-do attitude and we hope that he'll keep the power of positive thinking on the golf course!



David Riley - Facilities Coordinator



Gary Glesener

**Gary Glesener**, director of UCLA's Modeling and Education Demonstrations Laboratory, has headed east to Virginia Tech. An example of Gary's MEDLing can be seen on the YouTube video of UCLA's Augmented Reality Sandbox. Check it out!  
<https://youtu.be/CE1B7tdGCw0>

# AROUND THE DEPARTMENT...

## MAUTNER MEMORIAL LECTURE

EPSS was privileged this year to host world-renowned geophysicist Prof. **Barbara Romanowicz** of UC Berkeley as the 2015 Mautner Memorial Lecturer. Professor Romanowicz delivered a fascinating public lecture, "Voyage Through the Earth's Deep Interior," followed the next day by a research lecture, "Of Mantle Plumes and Secondary Scale Convection: Recent Insight From Whole Mantle Seismic Waveform Tomography." Two of our senior geophysics graduate students, **Jonathan Cheng** and **Igor Stubailo**, were honored prior to the event as winners of the Mautner Graduate Student Award.



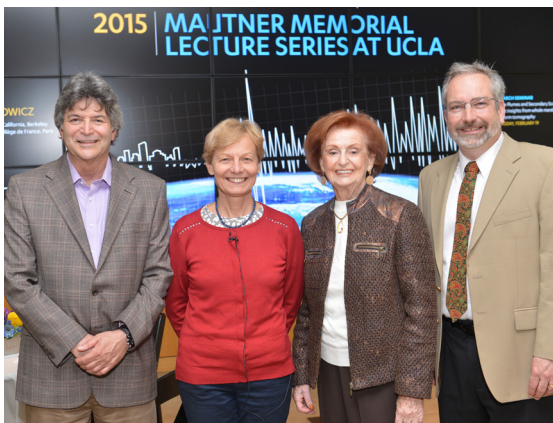
Barbara Romanowicz



Prof. Paul Davis



Jonathan Cheng and Igor Stubailo



Dean Rudnick, Prof. Romanowicz, Mrs. Mautner, Prof. McKeegan



Yan Kagan



# IN THE FIELD WITH PROFESSOR AN YIN

Growing interest in planetary research led us to creating a new graduate-level course called "Planetary Surface Processes." Graduate students with a wide range of academic backgrounds (astronomy, astrophysics, geology, and biology) take the course that comes with a four-day field trip to Utah where students learn about surface processes and their resulting landforms.



Prof. An Yin explains the formation of the impact-induced Upheaval Dome in Utah



Students at rim of the Upheaval Dome impact crater in Utah

Summer Field Camp has been the ultimate experience for all Geology/Engineering Geology undergraduates at UCLA. The class is four weeks of intensive mapping exercise in the famed Poleta Folds area and four field trips to the classic geologic sites of the western United States. Students learn to conduct independent fieldwork and acquire skills to communicate their findings in writing and oral presentation. In addition to learning geology, Summer Field Camp has provided a bonding experience among the classmates.



2015 Summer Field Camp Professor An Yin with students and TAs Peter Haproff and Andrew Zuza on the crest of the White Mountains. The backdrop is the Sierra Nevada.



2015 Summer Field Camp students celebrating the successful completion of their mapping projects at Camp Nelson in the White Mountains of eastern California.

## GLOBAL EARTHQUAKE ACTIVITY RATE MODEL

Emeriti faculty **David Jackson** and **Peter Bird**, along with Research Geophysicist **Yan Kagan**, published a new global earthquake forecasting model called the Global Earthquake Activity Rate model, GEAR-1. Read more about it here: [http://peterbird.name/publications/2015\\_GEAR1/2015\\_GEAR1.htm](http://peterbird.name/publications/2015_GEAR1/2015_GEAR1.htm)

# COMMENCEMENT

# 2015



# DEGREES

## BACHELOR OF ARTS

Christine Marie Lopez  
Kyiacos Georgiou Psara  
Martin Villegas

## BACHELOR OF SCIENCE

Kimberly Alice Badescu  
Chase Alexander Bennett  
Michael Jeffrey Berina  
Victoria Marcelyn Buford  
Sean Tyler Burford  
Kyler Samuel Boyle-Pena  
Corinna Shae Casey  
Lorianne Theresa Esturas  
Laureen Hyomi Kim  
Paul Suk Lee  
Guoqiang Li  
Jacob Seth Manheim\*  
Kevin Tyler McFarland  
Masato Brian Munekiyo  
Brenda Pack  
Marisa Irene Raygoza  
Shannon McGregor Reese  
Seth Sean Rosner  
Ryan James Stahl  
Steven Michael Tomlinson  
Derek Pham-Huong Tran  
Gregory Scott Wilson  
Louise Wan Yi Tsang

## MASTER OF SCIENCE

Zagid Abatchev  
Jeanine L. Ash  
Kevin Thomas Coffey  
James Hiro Eguchi  
Jillian Theresa Daniels  
Sean Faulk  
Zixu Liu  
John Arthur Mering  
Mojhgan Haghnegahdar  
Cong Zhao

## DOCTOR OF PHILOSOPHY

Jonathan Shuo Cheng  
Xiangning Chu  
Ivy S. Curren  
Alexander M. Grannan  
Ellen Renee Harju  
Shantanu Naidu  
Sebastiano Padovan  
Sarah E. Maloney Palaich  
Jodie Barker Ream  
Jennifer Eva Scully  
Igor Stubailo  
Jessica Watkins

\*valedictorian



## MAJOR GIFTS

**E**PSS now holds title to 46 acres of the Mojave thanks to the generosity of the Wacker family. The Kern county land is north of Edwards Air Force base and borders the edge of a dry lake on which a meteorite had been found around 1980. Because the shape of the meteorite indicates that it broke up during atmospheric entry, two searches have been organized to look for additional fragments in the vicinity. So far none have been recovered, but we did have the good fortune to have “found” David Wacker and his siblings Gerry, Beverly and Michael, all former UCLA graduates. Their gift will help support the UCLA meteorite collection and gallery.



Two hunters scour the desert for meteorites near the EPSS land.

**S**hortly before going to press, we received a nearly \$500,000 gift from the estate of alumnus **Douglas J. Traxler** (Geology B.S. '42, M.A.'48). This endowment will support education in the field, which is a core part of our student experience. All future Bruin geologists thank the Traxler family for their extraordinary generosity and their vision. A celebration will be held on May 10, 2016 in conjunction with the Spring faculty lecture. All are invited!

## HELPING OUR DUAL MISSIONS OF EDUCATION AND RESEARCH

**T**he generosity of our Alumni and Friends has a direct impact on the success of our students and faculty. All levels of gifts are valuable and help us maintain our leadership position in Earth, space, and planetary sciences by sustaining and encouraging the groundbreaking endeavors of outstanding faculty, students, and researchers. If you have the means, please consider a gift to the EPSS department.

### STAY CONNECTED

**W**e love to stay in touch with our Alumni! Please keep EPSS up to date on your personal and professional information. Follow us on Twitter and Facebook or send an email to Sheen He at [communications@epss.ucla.edu](mailto:communications@epss.ucla.edu)

### AREAS OF NEED

ENDOWED FACULTY CHAIRS

NAMED PRIZE POSTDOCTORAL FELLOWSHIPS

GRADUATE AWARDS AND FELLOWSHIPS

**W**ith the ever-increasing costs of college education, and especially for field-based education, important priorities are establishing new named student scholarships and support for field teaching, especially for all-terrain vehicles and equipment.

### EPSS ALUMNI CHAIR'S DISCRETIONARY FUND

**O**ther areas of need can be addressed by gifts of all sizes to the EPSS Alumni Chair's Discretionary Fund. This general department fund allows us the flexibility to serve the current and greatest needs across the department and research program areas, including student support, undergraduate lab equipment, and alumni and public outreach. Thank you for your continued support of EPSS.

# D GIVING

# Donor thank YOU Recognition

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American Chemical Society Petroleum Research Fund  
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Cynthia G. and Robert D. Shurtleff  
Ted and Arlene Schlazer  
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Willard Edwin Sharp  
Harry A. and Donna C. Shetrone  
Liangshu Shu  
Karen Rebecca Shulman  
Matthew Adam Siegler  
Howard J. and Valerie B. Singer  
Parke D. and Claire W. Snavelly  
Lily Sil Kuen Soley  
Li-Jun Song  
Joseph L. Stables  
Stevan P. Dumas  
Joe M. and Andrea S. Straus  
Ming Sun  
Andrew Philip Surany  
Ronald C. and Joyce C. Surdam  
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Clarence A. Hall and Lauri Holbrook  
The GDL Foundation  
The Simons Foundation  
Paul Anthony Tonkin  
Toyota Motor Sales U.S.A. Inc.  
J. Douglas Traxler Estate  
Peter C. Utas and Barbara L. Broide  
Ventura Gem and Mineral Society  
Theodore A. Viera Jr.  
Bo Wang  
Chao Wang  
Junpeng Wang  
Qin Wang  
Yu Wang  
Zhen-Zheng Wang  
Scott D. Warner and Susan L. Bell-Warner  
John and Gudrun Wasson  
Yan Yan Wei  
Wells Fargo & Company  
Adam Joshua White  
Ancheng Xiao  
Jiang Xin  
Qiang Xu  
Xisheng Xu  
Fengjie Yang  
Shufeng Yang  
Bruce Irwin Yen  
Jinhai Yu  
Xiao Yu  
Bo Zhang  
Fengqi Zhang  
Jinjiang Zhang  
Junfeng Zhang  
Zao Zhang  
Zhidan Zhao  
Su Zhou  
Dicheng Zhu  
Suzanne and Hans Zimmer

\*Gifts to the Department of Earth, Planetary, and Space Sciences from July 1, 2014 to December 31, 2015

# INAUGURAL FACULTY LECTURE WELL ATTENDED BY ALUMNI

The first springtime faculty lecture, "Two-Billion-Year-Old Communities of 'Living Fossils: the Linchpin of Darwin's Evolution?" was delivered by EPSS Prof. **J. William Schopf** to a large and appreciative audience of Bruins and the public. Bill and his team had used confocal Raman imaging methods to determine that groups of microscopic bacteria in 2.3 billion year-old fossils are indistinguishable from modern sulfur bacteria living in similar habitats. "It seems astounding that life has not evolved for more than 2 billion years — nearly half the history of the Earth," said Bill. However, he pointed out that the environment in which these microorganisms live has remained essentially unchanged for 3 billion years, and "the rule of biology is not to evolve unless the physical or biological environment changes, which is consistent with Darwin."



The lecture was preceded by a lively gathering of alumni from near and far. We intend that the faculty lecture become a regular springtime event and we hope to see many alumni on campus on May 10, 2016 when Prof. **Paul Davis** will discuss "*Recent Developments in Seismology: new views of Earthquakes and Ground Shaking.*"

## AROUND THE DEPARTMENT



Kathleen Micham (former CAO) is safe to move to Chemistry.



Emmanuel Masongsong and future Bruins.



Official EPSS Hummer "Squeak" feeds her babies "Stardust" and "Zircon."



Gary Glesener shaking things up at EYU 2015.

# ALUMNI UPDATES

## CLASS OF 1985

IN THIS ISSUE, WE FOCUS ON THE CLASS OF 1985. THESE TRUE BRUINS HAVE REMAINED CLOSE SINCE GRADUATION AND THROUGH SO MANY LIFE EVENTS (PROFESSIONAL ACCOMPLISHMENTS, MARRIAGES, CHILDREN, MOVES, ETC). THROUGH IT ALL, THE DEPARTMENT AND THE EXPERIENCES THEY SHARED IS A BOND THAT HOLDS THEM CLOSE. EVERY YEAR, THE CLASS OF 1985 PUBLISHES THEIR OWN VERSION OF A CLASS NEWSLETTER, *THE YEARLY INTRUSION*. MANY MEMBERS OF THE CLASS OF '85 CRASHED LIQUIDUS IN NOVEMBER 2015, AN UNOFFICIAL 30TH YEAR REUNION.

In the waning days before graduation in 1985, the reality began to set in that my classmates and I were soon to all go our separate ways. Indeed, we had been through a lot together, beginning with Dr. Dollase's mineralogy class, through the petrology series with Drs. DePaolo, Rosenfeld and Reed, to the much feared Tick Canyon field experience with Dr. Hall. Along the way we had even lived together in two different camps in the White/Inyo Mountains. It was an exciting time to finally know we had survived our academic rigors but it was a little sad, too.



The newsletter was born out my desire to stay connected to an incredible place and time in my life, but it was my classmates who made it possible. We named our fledgling newsletter *The Yearly Intrusion*, since at the time back in the 1980s we had had an underground departmental newsletter dubbed

The Weekly Intrusion. When we began the "Y.I." there were no such things as Facebook and email. The first issue of the Y.I. was in 1986.

So many of those from our class living in Southern California have stayed close by attending lectures in the department, going to ballgames together, and the like. We have had three reunions, 1995, 2005, and just this past November of 2015.

- Pat Frascogna



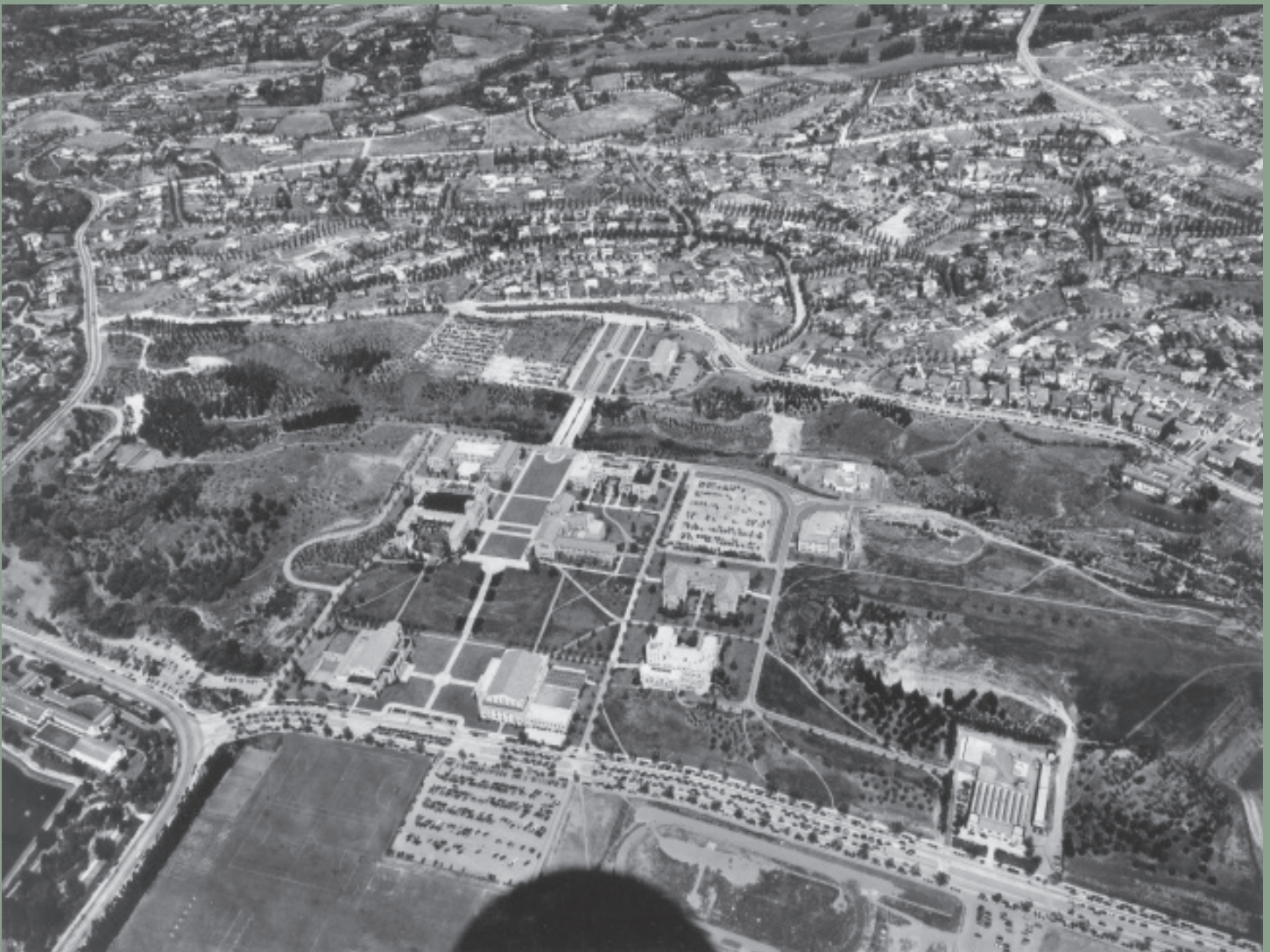
Class of 1985 then...



and now!

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View of UCLA and Westwood Village looking East, taken May 6, 1941 by Fairchild Aerial Surveys. Clearly visible are Royce Hall and Powell Library, Sunset Blvd. and Hilgard Ave. One can also make out the ravine and creek that later would be buried to the east of the future Geology Building.