

Ad Astra

A newsletter by and for UC Astrophysics Graduate Students

September 27, 2019

2019 Osterbrock Sierra Conference Summary



This year marked the 51st anniversary of the original Sierra Conference, started by UC Berkeley grads in 1968. It was also the second year of the revival of the conference through the Osterbrock Leadership Program at UCSC. Twenty astronomy graduate students from 7 different UC campuses gathered at Crystal Springs Campground in Sequoia and Kings Canyon National Parks between Thursday, August 15 and Sunday, August 18. We talked about our research in the mornings and had community discussions in the evenings. The first night we talked about our different departments and learned

that there are some common themes: grads have a hard time having their voices heard and effecting change; grads care about diversity, equity, and inclusion; there is a desire for a sense of community, but it can be difficult when there is a lack of participation. The second night we elaborated ideas for collaboration between campuses, including this newsletter, a shared Slack workspace, more frequent regional meetups, a grad student directory, and a repository for useful technical information for new graduate students. The rest of the day was spent enjoying the parks through hiking, rock climbing, impressive views of the Sierra mountains, giant trees and refreshing waterfalls. The result of the conference was a strengthening of the UC astronomy grad community through new friendships, a renewed perspective on the state of other departments in the UC, and budding collaborative projects.



General Announcements:

- If you are not on our Slack workspace and would like to be, please email Sunil Simha (shassans@ucsc.edu) .
- If you have feedback about the newsletter, please email Victoria Strait (vbstrait@ucdavis.edu).
- If you are a grad student who has not attended the [Observational Astronomy Workshop at Lick Observatory](#), it's a great idea to check it out. It's a chance to spend a few nights at Lick observing and hanging out with other UC astro grads. Several of us met there a few years ago, and it's a great time! Deadline to apply is **September 27 (today!)**

First Author Papers by UC Grad Students in 2019:

1. Sandra Alber (UCB)- [Star formation at the edge of the Local Group: a rising star formation history in the isolated galaxy WLM](#)
2. Andrea Antoni (UCB)- [The Evolution of Binaries in a Gaseous Medium: Three-Dimensional Simulations of Binary Bondi-Hoyle Lyttleton Accretion](#)

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3. Azalee Bostroem (**UCD**) - [Signatures of circumstellar interaction in the Type III supernova ASASSN-15oz](#)
 4. Zack Briesemeister (**UCSC**) - [High Spatial Resolution Thermal Infrared Spectroscopy with ALES: Resolved Spectra of the Benchmark Brown Dwarf Binary HD 130948BC](#)
 5. Geoff Chen (**UCD**) - [A SHARP view of H0LiCOW: H0 from three time-delay gravitational lens systems with adaptive optics imaging](#)
 6. I-D. Chiang (**UCSD**) - [The Spatially Resolved Dust-to-metals Ratio in M101](#)
 7. Nick Choksi (**UCB**) -
 - a. [The Star Clusters That Make Black Hole Binaries Across Cosmic Time](#)
 - b. [Formation of Globular Cluster Systems II: Impact of the Cutoff of the Cluster Initial Mass Function](#)
 - c. [Origins of the scaling relations of globular cluster systems](#)
 8. M. Cosens (**UCSD**) - [IC-10 3D: An IFS Survey of H II Regions in Local Starburst Galaxy IC-10](#)
 9. Kareem El-Badry (**UCB**) -
 - a. [The formation and hierarchical assembly of globular cluster populations](#)
 - b. [The wide binary fraction of solar-type stars: emergence of metallicity dependence at \$a < 200\$ AU](#)
 - c. [Discovery of an equal-mass "twin" binary population reaching 1000+ AU separations](#)
 - d. [Evolution of supernovae-driven super bubbles with conduction and cooling](#)
 - e. [The geometric challenge of testing gravity with wide binaries](#)
 10. Sal Fu (**UCB**) - [Dynamical Histories of the Crater II and Hercules Dwarf Galaxies](#)
 11. Steven Giacalone (**UCB**) - [Dust Transport and Processing in Centrifugally Driven Protoplanetary Disk Winds](#)
 12. Jessie Hirtenstein (**UCD**) - [The OSIRIS Lens-amplified Survey \(OLAS\). I. Dynamical Effects of Stellar Feedback in Low-mass Galaxies at \$z \sim 2\$](#)
 13. Ethan Jahn (**UCR**) - [Dark and luminous satellites of LMC-mass galaxies in the FIRE simulations](#)
 14. Siyao Jia (**UCB**) - [The Galactic Center: Improved Relative Astrometry for Velocities, Accelerations, and Orbits near the Supermassive Black Hole](#)
 15. Philipp Kemschi (**UCB**) -
 - a. [Thermal Instability of Halo Gas Heated by Streaming Cosmic Rays](#)
 - b. [Shearing-box simulations of MRI-driven turbulence in weakly collisional discs](#)
 16. David Khatami (**UCB**) - [Physics of Luminous Transient Light Curves; A New Relation Between Peak Time and Luminosity](#)
 17. Molly Kosiarek (**UCSC**) -
 - a. [K2-291b: A Rocky Super-Earth in a 2.2 day Orbit](#)
 - b. [Bright Opportunities for Atmospheric Characterization of Small Planets: Masses and Radii of K2-3 b, c, and d and GJ3470 b from Radial Velocity Measurements and Spitzer Transits](#)
 18. Alex Krolewski (**UCB**) -
 - a. [Alignment between filaments and galaxy spins from the MaNGA integral-field survey](#)
 - b. [unWISE tomography of Planck CMB lensing](#)

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19. Alex Lazar (**UCI**) [A simple and accurate mass estimator for the transverse velocity dispersion of dispersion-supported galaxies](#)
 20. G.C.K. Leung (**UCSD**)- [The MOSDEF survey: a census of AGN-driven ionized outflows at \$z=1.4-3.8\$](#)
 21. Andrew Mayo (**UCB**)- [An 11 Earth-Mass, Long-Period Sub-Neptune Orbiting a Sun-like Star](#)
 22. Ned Molter (**UCB**)-
 - a. [Analysis of Neptune's 2017 Bright Equatorial Storm](#)
 - b. [Thermal Emission from the Uranian Ring System](#)
 23. Abigail Polin (**UCB**)- [Observational Predictions for Sub-Chandrasekhar Mass Explosions: Further Evidence for Multiple Progenitor Systems for Type Ia Supernovae](#)
 24. Diana Powell (**UCSC**)- [New Constraints From Dust Lines on the Surface Densities of Protoplanetary Disks](#)
 25. Grecco Oyarzún (**UCSC**) - [Signatures of Stellar Accretion in MaNGA Early-type Galaxies](#)
 26. Amanda Quirk (**UCSC**)- [Asymmetric Drift in the Andromeda Galaxy \(M31\) as a Function of Stellar Age](#)
 27. Namrata Roy (**UCSC**)- [Probing the jets of blazars using the temporal symmetry of their multiwavelength outbursts](#)
 28. Jenna Samuel (**UCD**)- [A profile in FIRE: resolving the radial distributions of satellite galaxies in the Local Group with simulations](#)
 29. Matt Siebert (**UCSC**)- [Investigating the diversity of Type Ia supernova spectra with the open-source relational data base KAEPORA](#)
 30. Victoria Strait (**UCD**)- [Stellar Properties of \$z \sim 8\$ Galaxies in the Reionization Lensing Cluster Survey](#)
 31. Katherine (Wren) Sueß (**UCB**)- [Half-mass radii for \$\sim 7,000\$ galaxies at \$1.0 < z < 2.5\$: most of the evolution in the mass-size relation is due to color gradients](#)
 32. James (Jamie) Sullivan (**UCB**)- [The clustering of galaxies in the SDSS-III Baryon Oscillation Spectroscopic Survey: evolution of higher-order correlations demonstrated with Minkowski functionals](#)
 33. R. J.R. Vaught (**UCSD**)- [A VLT/FORS2 Narrowband Imaging Search for Mg II Emission around \$z \sim 0.7\$ Galaxies](#)

Department News:

- **UC Irvine** has a new department chair. Their previous chair, James Bullock, is now the dean of physical sciences at UCI, and the new department chair is Tim Tait. The department is also now offering a separate Astrophysics PhD program, that will start with the 2020 incoming class. Current astro students will have the option to switch to this program if they want or just stay in Physics.

- **UC Santa Cruz** has had a curriculum restructure, the prelim (second-year written exam) was eliminated in favor of graded classes, the required classes have been reduced and consolidated, and more flexibility in requirements has been added, allowing for equivalent education options (elective class, side research project, research seminar). Enrico Ramirez-Ruiz was selected as the first [Vera Rubin Presidential Chair for Diversity in Astronomy](#), designed to advance the causes of diversity, equity, and inclusive excellence in astronomy. They've also had some new hires: Natalie Batalha, Philip M Hinz, and Rebecca Jensen-Clem.
- **UC Davis** has changed their prelim (end of first year written exam) structure to cover only undergraduate material, include an equation sheet, have extended time allowance, and be offered twice per year. They also have a new department chair, Rena Zieve.
- **UC Santa Barbara** has a new faculty hire, Tejaswi Venumadhav, who works on theoretical astrophysics with a specific focus on physical cosmology.
- **UC Riverside** student Ethan Jahn advanced to candidacy last December.
- **UC San Diego** is currently moving towards removing the qualification exam for 1st year graduate students. The proposed new criteria will be grades from first year physics courses and electives. The Physics Graduate Council (PGC) at UCSD is currently negotiating for an increase in GSR stipend, and the Physics Grad Women Meeting ended in success.
- **UC Berkeley** has had two faculty retire this year, joining the emeritus faculty: Professors James Graham and Imke de Pater. There have also been some recent graduates: Dr. Carina Cheng, now a consultant at Keystone Strategy, Dr. Sean Ressler, now a postdoctoral researcher at UC Santa Barbara/KITP, Dr Gerry Zhang, and Sandra Albers, now in medical school at Columbia University Vagelos College of Physicians and Surgeons.
- **UCLA** is offering a new class this year for training and practice in giving scientific presentations for graduate students.
- **UC Merced has an Astronomy department coming soon!!**

Upcoming Local Events:

- **UC Irvine** will be hosting the southern California [CUWIP](#) in January 2020!
- **UC Santa Cruz:**
 - Monthly [Astronomy on Tap](#)
 - Yearly [Noche de las Estrellas](#) at Lick Observatory (Oct 5, 2019)
 - [Bay Area Adaptive Optics Meeting](#)
 - [Bay Area Exoplanets Meetings](#)
- **UC Davis:**
 - Monthly [Astronomy on Tap](#) every third Thursday at [Sudwerk Brewing Co.](#) - If you are interested in presenting please email Victoria Strait (vbstrait@ucdavis.edu)
 - Special Astronomy on Tap October 25th at [Sac State Planetarium](#) and [Tower Brewing](#)
- **UC Santa Barbara:**

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- Astronomy on Tap SB! Public Astronomy talks on Wednesdays at M8RX bar and nightclub in downtown SB - If you will be in town and are interested in presenting please email Dr. Andy Howell (ahowell@lco.global) or just stop on by if you're passing through, admission is free!
 - **UCLA:**
 - [Exploring Your Universe](#): Sunday, November 3, 2019 from Noon to 8pm

Attendees at Upcoming Conferences:

- **AAS Winter 2020 Meeting in Honolulu, HI**-Jessie Hirtenstein (UCD), Azalee Bostroem (UCD), Isabel Lipartito (UCSB), Devin Chu (UCLA), Jon Zink (UCLA), Isabel Angelo (UCLA), Abhimat Gautam (UCLA)
- **In The Spirit of Lyot in Tokyo, Japan 2019**- Zack Briesemeister (UCSC), Kielan Wilcomb (UCSD)
- **Inclusive Astronomy 2 in Baltimore, MD (Oct 2019)**- Amanda Quirk (UCSC)
- **Celebrating the Legacy of Spitzer Space Telescope, CalTech**- Victoria Strait (UCD)
- **Cosmic Controversies in Chicago, IL**- Geoff Chen (UCD)
- **Keck Science Meeting 2019, UCLA**- James Wiley (UCSD)
- **[TOM Toolkit Workshop, Pasadena](#)**- Jamie Burke (UCSB)

Other braggables:

- This is the second year of Peer to Peer Mentoring program at UCSD. Junior graduate students can both be mentors for undergraduate students and mentees to senior graduate students.
- Azalee Bostroem (UCD) organized well-attended introductory git/GitHub tutorials ([version control](#), and collaborating when you [do](#) and [don't](#) trust your collaborators) over the summer.
- Jenna Samuel is leading the organization of a grad-to-undergrad mentoring program at UC Davis, following the footsteps of the [PACE](#) program at UCI. The first Grad Apps Workshops and Imposter Syndrome Workshop will take place this quarter.
- Ethan Jahn (UCR) participated in the 50th anniversary of the moon landing outreach event, and [POWUR](#) (Physics Organization for Women and the Underrepresented).
- UC San Diego had another year of [Young Physicists Program \(YPP\)](#) events!

In Memoriam

UC Irvine lost a Ph.D. student, José Flores Velázquez, in August. Here is a statement from his friends and a photo of some of them at a Dodgers game:



“José made the west coast feel like a home for those of us new to California, and in the process he made a family out of his friends in the physics department at UCI. We feel so lucky to be a part of it. This loving friendship grew out of his love for his own family, who he visited nearly every weekend, regardless of traffic. He once told us it “recharged and reenergized” him, being with his family gave him the weekly motivation to strive for his best in his science.

In his absence, we will imperfectly strive for our own bests: in our science, in our lives, and with those we love. But now the laughter we share will not be as loud, the dinner table will feel one seat too small, and there will always be a void in our hearts that even happy memories just won't be able to fill. We hope that whenever you see a picture of a galaxy, in the arms' shimmering spiral, you feel a small sense of wonder, and you see José's beaming smile.”