

# JORDAN M. STONE

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## POSITIONS HELD

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2017-        **Hubble Postdoctoral Fellow**, University of Arizona  
2016-        **Project Scientist**, Arizona Lenslets for Exoplanet Spectroscopy (ALES)  
2015-2017   **Instrument Scientist**, Large Binocular Telescope Interferometer (LBTI)  
2010-2015   **Research Assistant**, University of Arizona  
2009-2010   **Data Analyst**, Sonoma Technologies Inc.  
2006-2010   **Research Assistant**, University of California, Berkeley

## EDUCATION

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2015    Ph.D., Astronomy, University of Arizona  
2008    B.A., Astrophysics, University of California, Berkeley  
2006    A.S., Science and Engineering, Santa Rosa Junior College

## AWARDS AND FELLOWSHIPS

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2017    NASA Hubble Postdoctoral Fellowship  
2015    Arizona Technology Research Initiative for Optics/Imaging Fellowship  
2013    Arizona Department of Astronomy Award for Outstanding Graduate Student Scholarship  
2012    Four Corners Meeting of the APS Graduate Student Presentation Award  
2008    UC Berkeley Daniel Edward Wark Scholarship  
2006    SRJC Retirees and Associates Scholarship  
2006    SRJC Science and Engineering Transferring Student Scholarship  
2006    Frank P. Doyle Scholarship

## RESEARCH INTERESTS

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**Extrasolar Planets**—I am focused on learning how planets form and evolve. Toward this end, I conduct spectroscopic observations designed to constrain atmospheric composition. I also perform large surveys aimed at discovering new planets and constraining the galactic planet population.

**Protoplanetary Disks**—Planets form from the dust, ice, and gas that make up protoplanetary disks. My work utilizes powerful high-resolution techniques to study disks in detail, including both adaptive-optics fed echelle spectroscopy as well as long-baseline infrared interferometry.

**Supermassive Black Holes**—The supermassive black hole at the center of our galaxy, Sgr A\*, is the closest example of a low-luminosity active galactic nucleus. My work includes developing strategies to improve astrometric monitoring of the stars whose winds feed the black hole accretion flow, as well as statistical analysis of time-variable submillimeter emission to help constrain the physical processes giving rise to the variability.

**Instrumentation**—I am interested in developing instrumentation that will facilitate transformative discoveries in the study of planet formation. This has driven my interest in high-spatial resolution thermal and mid-IR instruments that operate at the wavelengths where relatively cool exoplanets and warm circumplanetary material peak in flux. I am leading the effort to build a new more sensitive fringe tracker for LBTI which will facilitate direct probes of the planet formation process at 5 AU from stars in the Taurus star forming region.

## ADVISING AND MENTORING

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- 2018- Steward Observatory Graduate Mentoring Program
- 2018-2019 Mentor to Rachel Smullen and Katrina Litke
- 2018-2019 Arizona Space Grants Program Advisor to intern Dominic Sanchez
- 2018-2019 University of Arizona Undergraduate Research for Astronomy Majors
- 2017-2018 Advisor to Buster Miscusi
- 2017-2018 Arizona Space Grants Program Advisor to intern Brandon Bass
- 2016- Co-advisor to UCSC Graduate Student Zack Briesemeister
- 2016 Kavli Summer Program in Astrophysics
- 2016 Advisor to Graduate Student Laura Mayorga
- 2015 California-Arizona Minority Partnership for Astronomy Research and Education
- 2015 Advisor to Ben Kuhn

## TEACHING

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- Spring 2018 Co-taught University of Arizona Graduate Course Astr 550  
*Origin of the Solar System and Other Planetary Systems*
- Fall 2018 Guest Lecturer University of Arizona Undergraduate Course Astr 203  
*Stars*
- Fall 2015 Guest Lecturer University of Arizona Undergraduate Course Astr 204  
*Great Debates in Astronomy*
- Fall 2015 Teaching Assistant University of Arizona Undergraduate Course Astr 204  
*Great Debates in Astronomy*
- Spring 2015 Guest Lecturer University of Arizona Undergraduate Course Astr 203  
*Stars*
- Spring 2015 Teaching Assistant University of Arizona Undergraduate Course Astr 203  
*Stars*

## OUTREACH TO UNDER-REPRESENTED GROUPS IN ACADEMIA

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- 2017- Arizona Space Grants Program Mentor  
An objective of the program is, "To recruit and train professionals, especially women and underrepresented minorities, for careers in aerospace science, technology, and allied fields"
- 2017- Tucson Initiative for Minority Engagement in Science and Technology Leader  
I helped students craft grad-school applications
- 2015 California-Arizona Minority Partnership for Astronomy Research and Education  
Advisor

## PUBLIC AND COMMUNITY OUTREACH

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- 2018 Star party co-leader at Saguaro National Park, West
- 2017 Star party co-leader at Saguaro National Park, West
- 2017 Special Exhibitor to Nashua High School, Nashua, New Hampshire
- 2016 Star party co-leader at Saguaro National Park, West
- 2015 Space Drafts Public Talk, Borderlands Brewery, Tucson, Arizona
- 2015 Special Exhibitor to Tucson High School, Tucson, Arizona

## PUBLICATIONS

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### First-Author Refereed

- 6.) "The LEECH Exoplanet Imaging Survey:  
Limits on Planet Occurrence Rates Under Conservative Assumptions"  
**Jordan M. Stone** et al., 2018, *Astronomical Journal*, 156, 6
- 5.) "L-Band Spectroscopy with Magellan-AO/Clio2:  
First Results on Young Low-Mass Companions",  
**Jordan M. Stone** et al., 2016, *Astrophysical Journal*, 829, 39

- 4.) “Far Infrared Variability of Sagittarius A\*:  
25.5 Hours of Monitoring with Herschel”,  
**Jordan M. Stone** et al., 2016, *Astrophysical Journal*, 825, 32
- 3.) “Adaptive Optics imaging of VHS 1256-1257:  
A Low Mass Companion to a Brown Dwarf Binary System”,  
**Jordan M. Stone** et al., 2016, *Astrophysical Journal Letters*, 818, L12
- 2.) “Variable Accretion Processes in the Young Binary-Star system UY Aur”,  
**Jordan M. Stone** et al., 2014, *Astrophysical Journal*, 792, 56
- 1.) “Disentangling Confused Stars at the Galactic Center with Long-baseline Infrared Interferometry”,  
**Jordan M. Stone** et al., 2012, *Astrophysical Journal*, 754, 115

### Additional Refereed

- 12.) “Thermal Infrared Imaging of MWC 758 with the Large Binocular Telescope:  
Planetary-driven Spiral Arms?”,  
Kevin Wagner, **Jordan M. Stone**, et al., 2019, *Astrophysical Journal*, 882, 20
- 11.) “High Spatial Resolution Thermal-Infrared Spectroscopy with ALES:  
Resolved Spectra of the Benchmark Brown Dwarf Binary HD 130948BC”,  
Zackery W. Briesemeister et al. (including **Jordan M. Stone**), 2019, *Astronomical Journal*, 157,  
244
- 10.) “Methane in Analogs of Young Directly Imaged Exoplanets”,  
Brittany E. Miles et al. (including **Jordan M. Stone**), 2018, *Astronomical Journal*, 869, 18
- 9.) “The TRENDS High-contrast Imaging Survey. VII. Discovery of a Nearby Sirius-like White Dwarf  
System (HD 169889)”  
Justin R. Crepp et al. (including **Jordan M. Stone**), 2018, *Astrophysical Journal*, 864, 42
- 8.) “Detection of Intrinsic Source Structure at  $\sim 3$  Schwarzschild Radii with Millimeter-VLBI Obser-  
vations of SAGITTARIUS A\*”  
Ru-Sen Lu et al. (including **Jordan M. Stone**), 2018, *Astrophysical Journal*, 859, 60
- 7.) “The HOSTS Survey –Exozodiacal Dust Measurements for 30 Stars”  
S. Ertel et al. (including **Jordan M. Stone**), 2018, *Astronomical Journal*, 155, 194
- 6.) “Persistent Asymmetric Structure of Sagittarius A\* on Event Horizon Scales”,  
V.L. Fish, et al. (including **Jordan M. Stone**), 2016, *Astrophysical Journal*, 820, 90
- 5.) “The LEECH Exoplanet Imaging Survey: Characterization of the Coldest Directly Imaged Exo-  
planet, GJ 504 b, and Evidence for Superstellar Metallicity”  
Andrew J. Skemer, et al. (including **Jordan M. Stone**), 2016, *Astrophysical Journal*, 817, 166
- 4.) “Time-monitoring observations of Br $\gamma$  emission from young stars”  
J.A. Eisner, et al. (including **Jordan M. Stone**), 2015, *Monthly Notices of the Royal Astronomical  
Society*, 447, 202
- 3.) “Constraining the sub-au-scale distribution of hydrogen and carbon monoxide gas around young  
stars with the Keck Interferometer”  
J.A. Eisner, L.A. Hillenbrand, **Jordan M. Stone**, 2014, *Monthly Notices of the Royal Astronomical  
Society*, 443, 1916
- 2.) “An 8 h characteristic time-scale in submillimetre light curves of Sagittarius A\*”  
Jason Dextor, et al. (including **Jordan M. Stone**), 2014, *Monthly Notices of the Royal Astro-  
nomical Society*, 442, 2797

- 1.) “Time-monitoring observations of the ro-vibrational overtone CO bands in young stars”  
J.A. Eisner, et al. (including **Jordan M. Stone**), 2013, *Monthly Notices of the Royal Astronomical Society*, 434, 407

### **SPIE/Technical**

- 9.) “On-sky operations with the ALES integral field spectrograph”,  
**Stone, J. M.**, et al., 2018, Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 10702,107023F
- 8.) “MEAD: data reduction pipeline for ALES integral field spectrograph and LBTI thermal infrared calibration unit”,  
Briesemeister, Z., et al., (including **Jordan M. Stone**), 2018, Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 10702,107022Q
- 7.) “ALES: overview and upgrades”,  
Skemer, A. J., et al., (including **Jordan M. Stone**), 2018, Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 10702,107020C
- 6.) “Towards controlled Fizeau observations with the Large Binocular Telescope”,  
Spalding, E., et al., (including **Jordan M. Stone**), 2018, Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 10701,107010J
- 5.) “The HOSTS survey for exo-zodiacal dust: preliminary results and future prospects”,  
Ertel, S., et al., (including **Jordan M. Stone**), 2018, Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 10698,106981V
- 4.) “Simultaneous water vapor and dry air optical path length measurements and compensation with the large binocular telescope interferometer”,  
Defre, D., et al., (including **Jordan M. Stone**), 2016, Optical and Infrared Interferometry and Imaging V, 9907,99071G
- 3.) “Overview of LBTI: a multipurpose facility for high spatial resolution observations”,  
Hinz, P. M., et al., (including **Jordan M. Stone**), 2016, Optical and Infrared Interferometry and Imaging V, 9907,990704
- 2.) “Exoplanet science with the LBTI: instrument status and plans”,  
Defre, D., et al., (including **Jordan M. Stone**), 2015, Techniques and Instrumentation for Detection of Exoplanets VII, 9605,96051G
- 1.) “First light with ALES: A 2-5 micron adaptive optics Integral Field Spectrograph for the LBT”,  
Skemer, A. J., et al., (including **Jordan M. Stone**), 2015, Techniques and Instrumentation for Detection of Exoplanets VII, 9605,96051D