

Jessica E.  
Libby-Roberts  
jessica.e.roberts@  
colorado.edu  
(970) 219-6460

**Address**  
APS Department,  
University of Colorado  
Boulder, CO 80309  
USA

# Jessica E. Libby-Roberts

## Curriculum Vitae

### Education

**2017 - , University of Colorado, Boulder**

Ph.D. Candidate, Astrophysics

**2014 - 2017, University of Colorado, Boulder**

M.S., Astrophysics

**2011 - 2014, San Jose State University**

M.S., Physics

**2004 - 2009, California Institute of Technology**

B.S., Planetary Science

### Research Experience

**Research Assistant - University of Colorado, Boulder**

January 2015 - Present

- Analyze the WFC3 transmission spectrum of GJ 1132b. Comparing to previously published spectra, determine and quantify the effects of star-spots on the planet's spectrum.
- Analyze the transmission spectra of Kepler 51b and Kepler 51d, two extremely low-mass low-density exoplanets, obtained with HST. Determine their planetary properties, confirm their extreme low densities, and determine the potential for cloud/hazes in their atmosphere
- Test the capabilities and limitations of the two instruments, NICFPS and ARCTIC, on the 3.5m telescope at Apache Point, and determine if they can be used for future exoplanet transit observations
- Perform photometry and spectroscopy follow-up of multiple TESS targets of interest (TOIs) for planet validation using the 3.5m Apache Point Telescope. Multiple light curves and data released to the TESS Follow-Up Working Group.
- Observe the transits of LHS 1140b and c with the 3.5m telescope at Apache Point and analyze their light curves to determine planetary parameters. Perform a re-analysis of the stellar parameters of LHS 1140.

**Research Assistant - NASA Ames Research Center**

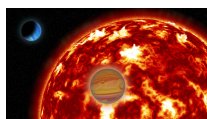
September 2011 - June 2014

- Search for phase curves and secondary eclipses in the Kepler light curves in order to rule out false positives. Analyze the secondary eclipse and phase curve of Kepler 10b, and search for potential phase curve offset.

**Research Assistant - University of Idaho**

September 2009 - May 2011

- Analyze the transit of the highly eccentric planet HD80606b observed by the MOST telescope, and search for any potential transit timing or transit duration variations



Jessica E.  
Libby-Roberts  
jessica.e.roberts@  
colorado.edu  
(970) 219-6460

**Address**  
APS Department,  
University of Colorado  
Boulder, CO 80309  
USA

## Teaching Experience

### Instructor - University of Colorado, Boulder

July 2018-August 2018

- Organize and teach the 5-week summer school course: ASTR1200 Stars and Galaxies, a course for non-science majors. Responsibilities included designing the course, writing lectures, and creating homework and exams.

### Teaching Assistant - University of Colorado, Boulder

August 2014 - May 2015

- Lecture TA for the non-science major course: ASTR1000 The Solar System, and for the astronomy major course: ASTR1020 Stars and Galaxies. Responsibilities included holding office hours, tutoring students, teaching lectures when necessary, and grading exams

### Lab Instructor - San Jose State University

August 2011 - May 2014

- Organized and taught mechanics and electricity and magnetism labs for both physics and engineers. Responsibilities include setting up lab equipment, writing and presenting introduction lectures, and helping students complete each lab.

## Education and Public Outreach Activities

### Time Allocation Committee - Apache Point Observatory

August 2018 - Present

- Serve on the Apache Point TAC as a representative for the University of Colorado. Responsibilities include reading all quarterly CU proposals and ranking them based on science content and scheduling difficulties.

### ISEE's Professional Development Program

March 2019 - July 2019

- Completed ISEE's PDP program by designing and implementing an inquiry activity on buoyancy and density for high school students.

### Astrobits Author

January 2018 - January 2020

- Write and edit monthly blog posts summarizing the latest research papers on [www.astrobits.org](http://www.astrobits.org). A list of my blog post titles is found at <https://astrobits.org/author/jroberts/>.

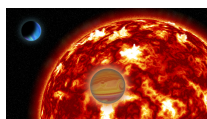
### Mentoring

June 2018 - December 2019

- Advise and mentor an undergraduate student on an exoplanet research project studying transits of LHS 1140b and c.

### CU Exoplanet Journal Club

- Creator and organizer for the weekly graduate and faculty exoplanet journal club at CU.



Jessica E.  
Libby-Roberts  
jessica.e.roberts@  
colorado.edu  
(970) 219-6460

**Address**  
APS Department,  
University of Colorado  
Boulder, CO 80309  
USA

## Fiske Planetarium Talk Series (Science Under the Dome), University of Colorado

October 2017 - Present

- Co-organize and run the monthly graduate student talk series (Climate Change in Our Own Backyard, Science of SciFi, and Science and Society) at Fiske Planetarium. Responsibilities include selecting talks from applications, organizing and attending practice sessions, providing feedback on talk structure and visuals, advertising to the community, and introducing each talk.

### Public Talks at Fiske Planetarium, University of Colorado

- December 2018 - *3D Printing the Next Space Race*
- April 2017 - *Trappist-1 System*
- October 2016 - *NASA's Craziest Missions*
- March 2016 - *Space, the Mining Frontier*

### Other Public Talks

- Guest speaker for 60 Minutes in Space at the Denver Museum of Nature and Science - May 2020
- Colorado Scientific Society Speaking Competition - 2nd Place - September 2017

### Science Speakeasy - Public Speaking Workshop

March 2018, February 2019, February 2020

- Co-creator and co-organizer for an annual public and scientific speaking workshop aimed at early-career scientists and researchers at the University of Colorado. Each workshop is 7-9 hours spread over two days with the goal of providing scientists with tools to improve their speaking abilities. Topics rotate each year with the last three being: speaking to a general public audience, using PowerPoint for a conference talk, and poster presentations at a scientific conference. We have between 25-30 participants from various science related subjects. Responsibilities included obtaining grant funding each year, coordinating and scheduling speakers, designing and running activities, facilitating sessions, advertising, and of course bringing the coffee.

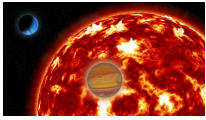
### Sommers-Bausch Observatory, University of Colorado - Present

Open House Volunteer

### Astronomy Day Coordinator, San Jose State University - October 2010

## Scientific Talks and Posters

- *Poster*, Extreme Solar Systems IV, Reykjavik, Iceland, August 2019
- *Talk*, Exoplanets 2, Cambridge, UK, July 2018
- *Talk*, AAS, Denver, CO, June 2018
- *Seminar*, CASA Seminar Talk Series, Boulder, CO, August 2017
- *Poster*, JWST Workshop, Baltimore, MD, July 2017
- *Poster*, Exoplanet Summer School, Vietri Sul Mare, Italy, May 2017
- *Poster*, AAS, National Harbor, MD, Jan. 2014
- *Colloquium*, University of Idaho Physics Dept, Moscow, ID, Apr. 2011
- *Poster*, AAS, Seattle, WA, Jan. 2011
- *Poster*, AGU, San Francisco, CA, Dec. 2008



Jessica E.  
Libby-Roberts  
jessica.e.roberts@  
colorado.edu  
(970) 219-6460

**Address**  
APS Department,  
University of Colorado  
Boulder, CO 80309  
USA

## Publications

- Chachan, Y., D. Jontof-Hutter, H. Knutson, and collaborators including **J. E. Libby-Roberts**, "A Featureless Infrared Transmission Spectrum for the Super-Puff Planet Kepler-79d", 2020, The Astronomical Journal, (Accepted for Publication)
- **Libby-Roberts, J. E.**, Z.K. Berta-Thompson, J.M. Desert, K. Masuda, and collaborators, "The Featureless Transmission Spectra of Two Low-Density Super-Puffs", 2020, The Astronomical Journal, 159, 2
- **Roberts, J. E.**, J. W. Barnes, J. F. Rowe, J. J. Fortney, "MOST Space Telescope Photometry of the 2010 January Transit of Extrasolar Planet HD80606b", 2013, The Astrophysical Journal, 762, 55
- Brown, M. E., **J. E. Roberts**, E. L. Schaller, "Clouds on Titan During the Cassini Prime Mission: A Complete Analysis of the VIMS Data", 2010, Icarus 205, 571
- Brown, M. E., E. L. Schaller, H. G. Rowe, C. Chen, **J. Roberts**, R. H. Brown, K. H. Baines, R. N. Clark, "Discovery of Lake-Effect Clouds on Titan", 2008, Geophysical Research Letters, 36, L01103