

BENJAMIN T. MONTET

Department of Astronomy and Astrophysics
5640 S. Ellis Ave.
Chicago, IL 60637

bmontet@uchicago.edu
<http://www.astro.uchicago.edu/~bmontet>

SCIENTIFIC RESEARCH INTERESTS

Planetary dynamics, transit timing studies of exoplanetary systems, M dwarfs and their companions, exoplanet populations, stellar activity

EDUCATION

2011-2016: California Institute of Technology, Pasadena, CA
Doctor of Philosophy in Astrophysics, defended July 2016
Thesis: “Low-mass Stars and their Companions”
Advisor: Professor John Johnson
Master of Science, Astrophysics, received June 2013

2007-2011: University of Illinois at Urbana-Champaign, Urbana, IL
Bachelor of Science in Physics
Bachelor of Science in Astronomy
Minor in Mathematics
Graduated *summa cum laude*, Bronze Tablet (top 3% of graduating class)

APPOINTMENTS

2016-Present: *Carl Sagan Fellow*, University of Chicago, Chicago, IL
2011-2016: *Graduate Research Assistant*, California Institute of Technology, Pasadena, CA

TEACHING AND ADVISING

Undergraduate Advisor, California Institute of Technology
Juliette Becker (Michigan), *Transit Timing Variations with Kepler*
Presented at the Second Kepler Science Conference (2013), 223rd Meeting of the
American Astronomical Society (2014)
Paper in preparation

Undergraduate Mentor, Banneker Institute, Harvard University
Justin Otor (Princeton), *The Mass and Orbit of Kepler-56d*
2015 Summer research project, work presented at Harvard University, 227th Meeting of the
American Astronomical Society (2016)
Paper submitted to *The Astronomical Journal*

Guadalupe Tovar (University of Washington), *Long-Term Photometric Variability in Kepler*
2016 Summer research project, work presented at Harvard University, to be presented at the 229th
Meeting of the American Astronomical Society (2017)

Anacapa Visiting Scholar, The Thacher School, Ojai, CA (January, 2016)
Prepared and gave lectures in high school introductory physics, multivariable calculus, and AP computer science
Led sky viewing at Thacher Campus Observatory
Lectured and led discussion about Planet Nine, open to all students

Graduate Teaching Assistant, Harvard University
Spring 2015: Astronomy 120: Stellar Physics
Designed and led discussion section, created and graded assignments, created and graded exams

Graduate Teaching Assistant, California Institute of Technology

Spring 2013: Astronomy 1: The Evolving Universe

Designed and led discussion section, created original lectures, created and graded assignments

Winter 2013: Astronomy 126: Galactic Dynamics

Fall 2012: Astronomy 123: Stellar Structure and Evolution

Undergraduate Teaching Assistant, University of Illinois

Fall 2010-Spring 2011: Physics 102: E&M and Modern Physics (2 semesters)

Spring 2010: Physics 211: Mechanics (Laboratory Teaching Assistant)

August 2009-June 2011: Introductory Course Tutor, Department of Physics

ACADEMIC SERVICE

Referee for

The Astrophysical Journal (2015-)

The Astronomical Journal (2014-)

Publications of the Astronomical Society of the Pacific (2014-)

Monthly Notices of the Royal Astronomical Society (2015-)

Astronomy and Astrophysics (2016-)

2015-2016: Exoplanet Pizza Lunch co-organizer, Harvard-Smithsonian Center for Astrophysics

2012-2014: Astrobites, the Astro-Ph Reader's Digest

Collaborated with a team of 20 graduate students across three continents

Published one article a month analyzing a recent paper or current event in the astrophysical sciences

All posts can be viewed at www.astrobites.org/author/bmontet

PROPOSALS AND GRANTS

Carl Sagan Postdoctoral Fellowship, NASA Exoplanet Science Institute

Exploring the Diversity of Planetary Systems with K2

Awarded \$316,000

Principal Investigator on *Spitzer* Proposal

LHS 6343: Precise Constraints on the Atmospheric Parameters of an Effectively Isolated Brown Dwarf

Awarded 22.2 hours, 2014

Awarded \$5,000

Principal Investigator/Science PI on K2 Proposals

Targeting M dwarfs with K2

16,049 targets successfully proposed in Campaigns 0-5, 2013-14

Awarded \$75,000 in Campaign 4-5 (as Science PI)

Principal Investigator on FLWO TRES Proposals

Non-transiting Companions to *Kepler's* Transiting Planets

13 nights awarded, 2014-2015

Fundamental Parameters of Pre-Main Sequence M dwarfs

3 nights awarded, 2014-2015

Principal Investigator on Gemini-North Proposal

Fundamental Parameters of Pre-Main Sequence M Dwarfs

2.9 nights awarded on DSSI through NOAO, 2014-2015

Principal Investigator on Gemini-South Proposal

Fundamental Parameters of Pre-Main Sequence M Dwarfs

0.7 nights awarded on DSSI through NOAO, 2016

Principal Investigator on CHIRON Proposal
Fundamental Parameters of Pre-Main Sequence M Dwarfs
1 night awarded through NOAO, 2015

Principal Investigator on Palomar Hale Telescope Proposal
The TRENDS High-Contrast Imaging Survey
2 nights awarded, 2013

Co-Investigator on Hubble Space Telescope Proposal
Direct Test of the Brown Dwarf Evolutionary Models Through Secondary Eclipse Spectroscopy of LHS 6343
5 orbits awarded, 2015
Awarded \$69,650

Co-Investigator on *Spitzer* Proposal
Eclipse Observations of a Temperate Transiting Brown Dwarf
Awarded 15.7 hours, 2016
Funding TBA

Co-Investigator on Discovery Channel Telescope Proposal
Fundamental Parameters of Pre-Main Sequence M Dwarfs
9 nights awarded on DSSI, 2014-2015 (PI Evgenya Shkolnik)

HONORS AND AWARDS

Carl Sagan Fellowship, 2016-2019
First prize, SciPy John Hunter Excellence in Plotting Contest, July 2015
NSF Graduate Research Fellowship, May 2012
Chambliss Medal for outstanding poster presentation, 223rd AAS meeting, January 2013
Robert Hetrick Outstanding Senior Thesis Award, UIUC Physics, May 2011
UIUC List of Teachers Ranked as Excellent, Three Semesters
Twice listed as “Outstanding,” the highest ranking conferred
Stanley Wyatt Memorial Award (Outstanding Student in Astronomy), May 2011
UIUC Campus Honors Program Outstanding Senior Award, July 2010

FIRST-AUTHOR REFEREED PUBLICATIONS

KIC 8462852 Faded Throughout the Kepler Mission

Montet, B. T. & Simon, J. D., submitted to the AAS Journals (arXiv:1608.01316)

Benchmark Transiting Brown Dwarf LHS 6343 C: Spitzer Secondary Eclipse Observations Yield Brightness Temperature and Mid-T Spectral Class

Montet, B. T., Johnson, J. A., Fortney, J. J., & Desert, J.-M. 2016, ApJL, 822, 6 (arXiv:1603.09343)

Dynamical Masses of Young M Dwarfs: Masses and Orbital Parameters of GJ 3305 AB, the Wide Binary Companion to the Imaged Exoplanet Host 51 Eri

Montet, B. T., Bowler, B. P., Shkolnik, E. L., et al. 2015, ApJL, 813, 11 (arXiv:1508.05945)

Stellar and Planetary Properties of K2 Campaign 1 Candidates and Validation of 18 Systems, Including a Planet Receiving Earth-like Insolation

Montet, B. T., Morton, T. D., Foreman-Mackey, D., et al. 2015, ApJ, 809, 25 (arXiv:1503.07866)

Characterizing the Cool KOIs. VII. Refined Physical Properties of the Transiting Brown Dwarf LHS 6343 C

Montet, B. T., Johnson, J. A., Muirhead, P. S., et al. 2015, ApJ, 800, 134 (arXiv:1411.4047)

The TRENDS High-contrast Imaging Survey. IV. The Occurrence Rate of Giant Planets around M Dwarfs
Montet, B. T., Crepp, J. R., Johnson, J. A., et al. 2014, ApJ, 781, 28 (arXiv:1307.5849)

Model-independent Stellar and Planetary Masses from Multi-transiting Exoplanetary Systems
Montet, B. T. & Johnson, J. A. 2013, ApJ, 762, 112 (arXiv:1211.4028)

OTHER REFEREED PUBLICATIONS

The Orbit and Mass of the Third Planet in the Kepler-56 System
Otor, O. J., **Montet, B. T.**, et al. 2016, submitted to the AAS Journals (arXiv:1608.03627)

The TRENDS High-Contrast Imaging Survey. VI. Discovery of a Mass, Age, and Metallicity Benchmark Brown Dwarf
Crepp, J. R., et al. 2016, ApJ *accepted* (arXiv:1604.00398)

Magnetic Field Strengths in Photodissociation Regions
Balsler, D. S., et al. 2016, ApJ, 816, 22 (arXiv:1511.07383)

Tests of the planetary hypothesis for PTFO 8-8695b
Yu, L., et al. 2015, ApJ, 812, 48 (arXiv:1509.02176)

The Five Planets in the Kepler-296 Binary System All Orbit the Primary: A Statistical and Analytical Analysis
Barclay, T., et al. 2015, ApJ, 809, 7 (arXiv:1505.01845)

Characterizing the Cool KOIs VIII. Parameters of the Planets Orbiting Kepler's Coolest Dwarfs
Swift, J. J., **Montet, B. T.**, et al. 2015, ApJS, 218, 26 (arXiv:1503.01115)

A systematic search for transiting planets in the K2 data
Foreman-Mackey, D., **Montet, B. T.**, et al. 2015, ApJ, 806, 215 (arXiv:1502.04715)

Planets Around Low-mass Stars (PALMS). V. Age-dating Low-mass Companions to Members and Interlopers of Young Moving Groups
Bowler, B. P., et al. 2015, ApJ, 806, 62 (arXiv:1505.01494)

Characterizing K2 Planet Discoveries: A Super-Earth Transiting the Bright K Dwarf HIP 116454
Vanderburg, A., **Montet, B. T.**, et al. 2015, ApJ, 800, 59 (arXiv:1412.5674)

WASP-12b and HAT-P-8b are Members of Triple Star Systems
Betcher, E. B., et al. 2014, ApJ, 788, 2 (arXiv:1307.6857)

Friends of Hot Jupiters. I. A Radial Velocity Search for Massive, Long-period Companions to Close-in Gas Giant Planets
Knutson, H. A., Fulton, B. J., **Montet, B. T.**, et al. 2014, ApJ, 785, 126 (arXiv:1312.2954)

Stellar Spin-Orbit Misalignment in a Multiplanet System
Huber, D., et al. 2013, Science, 342, 331 (arXiv:1310.4503)

Characterizing the Cool KOIs. IV. Kepler-32 as a Prototype for the Formation of Compact Planetary Systems throughout the Galaxy
Swift, J. J., et al. 2013, ApJ, 764, 105 (arXiv:1301.0023)

The TRENDS High-Contrast Imaging Survey. I. Three Benchmark M Dwarfs Orbiting Solar-type Stars
Crepp, J. R., et al. 2012, ApJ, 761, 39 (arXiv:1210.3000)

NON-REFEREED PUBLICATIONS

Maximizing Kepler science return per telemetered pixel: Searching the habitable zones of the brightest stars

A white paper submitted in response to the “Kepler Project Office Call for White Papers: Soliciting Community Input for Alternate Science Investigations for the *Kepler* Spacecraft”

Montet, B. T. et al. 2013 (arXiv:1309.0654)

Maximizing Kepler science return per telemetered pixel: Detailed models of the focal plane in the two-wheel era

A white paper submitted in response to the “Kepler Project Office Call for White Papers: Soliciting Community Input for Alternate Science Investigations for the *Kepler* Spacecraft”

Hogg, D. W. et al. 2013 (arXiv:1309.0653)

TALKS PRESENTED

Invited Talks

Low-mass Stars and Their Companions

Planetary Science Seminar, Caltech (Pasadena, CA, January 2016)

Center for Integrative Planetary Science, UC Berkeley (Berkeley, CA, December 2015)

Boston University (Boston, IL, November 2015)

University of Chicago (Chicago, IL, October 2015)

University of Delaware (Newark, DE, September 2015)

NASA Ames Research Center (Mountain View, CA, June 2015)

Targeting M Dwarfs with K2

Kepler Town Hall, AAS 224 (Boston, MA, June 2014)

Contributed Talks

Fundamental Parameters of M Dwarfs in Young Moving Groups

Cool Stars 19 (Uppsala, Sweden, June 2016)

Low-mass Stars and Their Companions

AAS 227 (Orlando, FL, January 2016)

Characterizing the Cooler KOIs with K2

K2 Science Conference (Santa Barbara, CA, November 2015)

Transit Timing Posteriors through Importance Sampling

IAU 2015 (Honolulu, HI, August 2015)

A Transit Timing Posterior Distribution Catalog for all Kepler Planet Candidates

AAS 225 (Seattle, WA, January 2015)

Transit Timing Posteriors through Importance Sampling

ExoStats 2014 (Carnegie Mellon University, June 2014)

Transit Timing Observations of a Hierarchical Triple M Dwarf System

AAS 224 (Boston, MA, June 2014)

LHS 6343: Precise Constraints on the Mass and Radius of a Transiting Brown Dwarf Discovered by Kepler

AAS 223 (National Harbor, MD, January 2014)

The Occurrence Rate of Giant Planets around M Dwarfs

Modern Statistical and Computational Methods for Analysis of *Kepler* data (SAMSI, Research Triangle Park, NC, June 2013)