Jason A. Dittmann

CONTACT

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RESEARCH INTERESTS

Exoplanets - detection, characterization, atmospheres
Low mass stars - astrometry, atmospheres, kinematics
Instrumentation - optical, infrared

EDUCATION

Harvard University, Cambridge, MA
PhD, Astronomy and Astrophysics, May 2016
- Advisor: David Charbonneau, PhD

University of Arizona, Tucson, AZ
BS, Astronomy and Physics (Double Major), May 2010
- Advisor: Laird Close, PhD
- *Graduated with Honors*

RESEARCH EXPERIENCE

Postdoctoral Researcher July 2016 – Present
Center for Astrophysics, Harvard University
Supervisor: David Charbonneau

Research Assistant September 2010 – May 2016
Center for Astrophysics, Harvard University
Advisors: David Charbonneau
Awarded Pierce Fellowship 2010 - 2013

Research Assistant May 2009 – August 2010
Steward Observatory, University of Arizona
Advisor: Laird Close, PhD

Lab Assistant May 2009 – August 2010
Department of Physics, University of Arizona
Advisor: Donald Huffman, PhD

NASA Space Grant Intern August 2008 – May 2009
Steward Observatory, University of Arizona
Advisor: Laird Close, PhD

AWARDS

Harvard University
- Certificate of Distinction in Teaching 2012
- Pierce Fellowship 2010 – 2013

University of Arizona
- Best Project Award, Physics Undergraduate Research Symposium 2009
- Best Undergraduate Research (Steward Observatory) 2009 – 2010
- Galileo Circle 2007 – 2010
- Arizona Excellence Award 2006 – 2010

Presentations

- Priming the solar neighborhood M dwarfs for future planet searches
  AAS #227 | *Kissimmee, FL* — January 2016
- Calibrated optical photometry and a photometric metallicity relation for the nearby cool stars from the MEarth Project
  AAS #225 | *Seattle, WA* — January 2015
- Trigonometric parallaxes and the inferred properties for 1507 mid-to-late M-dwarfs from the MEarth planet survey
  Cool Stars 18 | *Flagstaff, AZ* — June 2014
- Trigonometric parallaxes from the MEarth survey
  Boston University — March 2013
- Recovery of SN 1970G with the Jansky Very Large Array
  Fifty-one Ergs | *Raleigh, NC* — May 2013

Posters

- Trigonometric Distances, griz Photometry, and Metallicity Estimates of Nearby, Northern Mid-to-late M Dwarfs
  Cool Stars 19 | *Uppsala, Sweden* — June 2016
- The Metallicities of the Closest M-dwarfs, the Optimal Hosts for Terrestrial Exoplanets
  Extreme Solar Systems III | *Waikoloa, HI* — Dec. 2015
- Standardizing the solar neighborhood M dwarfs: 1% absolute optical photometry and a photometric metallicity relation with 0.1 dex precision
  Young Stars and Planets Near the Sun | *Atlanta, GA* — May 2015
- Trigonometric parallaxes of 1548 mid-to-late M-dwarfs from the MEarth survey
  Protostars and Planets VI | *Heidelberg, Germany* — July 2013
- Trigonometric parallax measurements from the MEarth survey
  AAS #219 | *Austin, TX* — January 2012

Summer Schools and Workshops

- Machine Learning Online Course | *Stanford University* — Fall 2011
- CASA Data Workshop | *Socorro, NM* — September 2011
- Astrobiology Summer School | *Santander, Spain* — June 2010

Teaching Experience

- Methods of Observational Astronomy — Spring 2012
  Instructor: Alicia Soderberg
  Astronomy Department, Harvard University
- Galactic and Extragalactic Astronomy — Fall 2011
  Instructor: Christopher Stubbs
  Physics Department, Harvard University
- Stellar and Planetary Astronomy — Spring 2011
  Instructor: Douglas Finkbeiner
  Astronomy Department, Harvard University

Skills

Programming

- C, C++, Python, IDL, Matlab, Maple, Mathematica

Astronomical Software

- IRAF, DS9, AIPS, CASA, CIAO, Sherpa

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First and second authored refereed publications

1. **Dittmann, J.A.**, Irwin, J.M., Charbonneau, D., Berta-Thompson, Z. K., Newton, E.R.
"A Search for Additional Bodies in the GJ 1132 Planetary System from 21 Ground-based Transits and a 100 Hour Spitzer Campaign", *ApJ*, submitted

2. **Dittmann, J.A.**, Irwin, J.M., Charbonneau, D., Berta-Thompson, Z.K., Newton, E.R., Latham, D.W., Latham, C.A., Esquerdo, G., Berlind, P., and Calkins, M.
"Discovery and Precise Characterization by the MEarth Project of LP 661-13, an Eclipsing Binary Consisting of Two Fully Convective Low-mass Stars", *ApJ*, submitted, arXiv:1609.03591

3. **Dittmann, J.A.**, Irwin, J.M., Charbonneau, D., and Newton, E.
"Calibration of the MEarth Photometric System: Optical Magnitudes and Photometric Metallicity Estimates for 1802 Nearby M-dwarfs", *ApJ*, 818, 153, 2016.

4. **Dittmann, J. A.**; Soderberg, A. M.; Chomiuk, L.; Margutti, R.; Goss, W. M.; Milisavljevic, D.; Chevalier, R. A.
"A Mid-life Crisis? Sudden Changes in Radio and X-Ray Emission from Supernova 1970G" *ApJ*, 788, 38, 2014.

5. **Dittmann, J. A.**; Irwin, Jonathan M.; Charbonneau, David; Berta-Thompson, Zachory K.
"Trigonometric Parallaxes for 1507 Nearby Mid-to-late M Dwarfs" *ApJ*, 784, 156, 2014.

6. **Dittmann, J. A.**; Close, L. M.; Scuderi, L. J.; Turner, J.; Stephenson, P. C.
"A revised orbital ephemeris for HAT-P-9b" *New Ast*, 17, 438, 2012.

7. **Dittmann, J. A.**; Close, L. M.; Scuderi, L. J.; Morris, M. D.
"Transit Observations of the WASP-10 System" *ApJ*, 717, 235, 2010.

8. Scuderi, Louis J.; **Dittmann, J. A.**; Males, J. R.; Green, E. M.; Close, L. M.
"On the Apparent Orbital Inclination Change of the Extrasolar Transiting Planet TrES-2b" *ApJ*, 714, 462, 2010.

9. **Dittmann, J. A.**; Close, L. M.; Green, E. M.; Fenwick, M.
"A Tentative Detection of a Starspot During Consecutive Transits of an Extrasolar Planet from the Ground: No Evidence of a Double Transiting Planet System Around TrES-1" *ApJ*, 701, 756, 2009.

10. **Dittmann, J. A.**; Close, L. M.; Green, E. M.; Scuderi, L. J.; Males, J. R.
"Follow-up Observations of the Neptune Mass Transiting Extrasolar Planet HAT-P-11b" *ApJL*, 699, 48, 2009.

Additional Publications

1. Newton, Elisabeth R.; Irwin, Jonathan; Charbonneau, David; Berta-Thompson, Zachory K.; **Dittmann, Jason A.**
"The Impact of Stellar Rotation on the Detectability of Habitable Planets around M Dwarfs" *ApJ*, 821L, 19, 2016

2. Newton, Elisabeth R.; Irwin, Jonathan; Charbonneau, David; Berta-Thompson, Zachory K.; **Dittmann, Jason A.**; West, Andrew A.
"The Rotation and Galactic Kinematics of Mid M Dwarfs in the Solar Neighborhood" *ApJ*, 821, 93, 2016

3. Berta-Thompson, Zachory K.; Irwin, Jonathan; Charbonneau, David; Newton, Elisabeth R.; **Dittmann, Jason A.**; Astudillo-Defru, Nicola; Bonfils, Xavier; Gillon, Michael; Jehin, Emmanuel; Stark, Antony A.; Stalder, Brian; Bouchy, Francois; Delfosse, Xavier; Forveille, Thierry; Lovis, Christophe; Mayor, Michel; Neves, Vasco; Pepe, Francesco; Santos, Nuno C.; Udry, Stephane; Wunsche, Anael
"A rocky planet transiting a nearby low-mass star" *Nature*, 527, 204, 2015

4. West, Andrew A.; Weisenburger, Kolby L.; Irwin, Jonathan; Berta-Thompson, Zachory K.; Charbonneau, David; **Dittmann, Jason A.**; Pineda, J. Sebastian.
"An Activity-Rotation Relationship and Kinematic Analysis of Nearby Mid-to-Late M Dwarfs" *ApJ*, 812, 3, 2015

5. Chakraborti, Sayan; Soderberg, Alicia; Chomiuk, Laura; Kamble, Atish; Yadav, Naveen; Ray, Alak; Hurley, Kevin; Margutti, Raffaella; Milisavljevic, Dan; Bietenholz, Michael; Brunthaler, Andreas; Pignata, Giuliano; Pian, Elena; Mazzali, Paolo; Fransson, Claes; Bartel, Norbert; Hamuy, Mario; Levesque, Emily; MacFadyen, Andrew; **Dittmann, Jason**; Krauss, Miriam; Briggs, M. S.; Connaughton, V.; Yamaoka, K.; Takahashi, T.; Ohno, M.; Fukazawa, Y.; Tashiro, M.; Terada, Y.; Murakami, T.; Goldsten, J.; Barthelmy, S.; Gehrels, N.; Cummings, J.; Krimm, H.; Palmer, D.; Golenetskii, S.; Aptekar, R.; Frederiks, D.; Svinkin, D.; Cline, T.; Mitrofanov, I. G.; Golovin, D.; Litvak, M. L.; Sanin, A. B.; Boynton, W.; Fellows, C.; Harshman, K.; Enos, H.; von Kienlin, A.; Rau, A.; Zhang, X.; Savchenko, V.
"A Missing-link in the Supernova?GRB Connection: The Case of SN 2012ap" *ApJ*, 805, 187, 2014

6. Kamble, Atish; Soderberg, Alicia M.; Chomiuk, Laura; Margutti, Raffaella; Medvedev, Mikhail; Milisavljevic, Dan; Chakraborti, Sayan; Chevalier, Roger; Chugai, Nikolai; **Dittmann, Jason**; Drout, Maria; Fransson, Claes; Nakar, Ehud; Sanders, Nathan
"Radio Observations Reveal a Smooth Circumstellar Environment Around the Extraordinary Type Ib Supernova 2012au" *ApJ*, 797, 2, 2014

7. Chornock, R.; Berger, E.; Gezari, S.; Zauderer, B. A.; Rest, A.; Chomiuk, L.; Kamble, A.; Soderberg, A. M.; Czekala, I.; **Dittmann, J.**; Drout, M.; Foley, R. J.; Fong, W.; Huber, M. E.; Kirshner, R. P.; Lawrence, A.; Lunnan, R.; Marion, G. H.; Narayan, G.; Riess, A. G.; Roth, K. C.; Sanders, N. E.; Scolnic, D.; Smartt, S. J.; Smith, K.; Stubbs, C. W.; Tonry, J. L.; Burgett, W. S.; Chambers, K. C.; Flewelling, H.; Hodapp, K. W.; Kaiser, N.; Magnier, E. A.; Martin, D. C.; Neill, J. D.; Price,

P. A.; Wainscoat, R.
"The Ultraviolet-bright, Slowly Declining Transient PS1-11af as a Partial Tidal Disruption Event" *ApJ*, 780, 44, 2014.

8. Milisavljevic, Dan; Soderberg, Alicia M.; Margutti, Raffaella; Drout, Maria R.; Howie Marion, G.; Sanders, Nathan E.; Hsiao, Eric Y.; Lunnan, Ragnhild; Chornock, Ryan; Fesen, Robert A.; Parrent, Jerod T.; Levesque, Emily M.; Berger, Edo; Foley, Ryan J.; Challis, Pete; Kirshner, Robert P.; **Dittmann, Jason**; Bieryla, Allyson; Kamble, Atish; Chakraborti, Sayan; De Rosa, Gisella; Fausnaugh, Michael; Hainline, Kevin N.; Chen, Chien-Ting; Hickox, Ryan C.; Morrell, Nidia; Phillips, Mark M.; Stritzinger, Maximilian
"SN 2012au: A Golden Link between Superluminous Supernovae and Their Lower-luminosity Counterparts" *ApJL*, 770, L38, 2013.

9. Mancini, L., Southworth, J., Ciceri, S., Fortney, J.J., Morley, C.V., **Dittmann, J. A.**, Tregloan-Reed, J.; Bruni, I.; Barbieri, M.; Evans, D. F.; D'Ago, G.; Nikolov, N.; Henning, Th.
"A Lower Radius and Mass for the Transiting Extrasolar Planet HAT-P-8b" *A&A*, 551:A11, 2013.

10. Sanders, N. E.; Soderberg, A. M.; Levesque, E. M.; Foley, R. J.; Chornock, R.; Milisavljevic, D.; Margutti, R.; Berger, E.; Drout, M. R.; Czekala, I.; **Dittmann, J. A.**
"A Spectroscopic Study of Type Ibc Supernova Host Galaxies from Untargeted Surveys" *ApJ*, 758, 132, 2012.

11. Soderberg, A. M.; Margutti, R.; Zauderer, B. A.; Krauss, M.; Katz, B.; Chomiuk, L.; **Dittmann, J. A.**; Nakar, E.; Sakamoto, T.; Kawai, N.; and 25 coauthors
"Panchromatic Observations of SN 2011dh Point to a Compact Progenitor Star" *ApJ*, 752, 78, 2012.

12. Chomiuk, L.; Soderberg, A. M.; Moe, M.; Chevalier, R. A.; Rupen, M.P.; Badenes, C.; Margutti, R.; Fransson, C.; Fong, W.; **Dittmann, J.A**.
"EVLA Observations Constrain the Environment and Progenitor System of Type Ia Supernova 2011fe" *ApJ*, 750, 164, 2012.

13. Irwin, J. M.; Quinn, S. N.; Berta, Z. K.; Latham, D. W.; Torres, G.; Burke, C. J.; Charbonneau, D.; **Dittmann, J. A.**; Esquerdo, G. A.; Stefanik, R. P.; and 6 coauthors
"LSPM J1112+7626: Detection of a 41 Day M-dwarf Eclipsing Binary from the MEarth Transit Survey" *ApJ*, 742, 123, 2011.

14. For, B.-Q.; Green, E. M.; Fontaine, G.; Drechsel, H.; Shaw, J. S.; **Dittmann, J. A.**; Fay, A. G.; Francoeur, M.; Laird, J.; Moriyama, E.; and 10 coauthors.
"Modeling the System Parameters of 2M 1533+3759: A New Longer Period Low-Mass Eclipsing sdB+dM Binary" *ApJ*, 708, 253, 2010.

15. Kurtze, D.A.; Restrepo, J.M., **Dittmann, J.A.**
"Convective Adjustment in Box Models" *Ocean Modelling*, 34, 92, 2010.

Papers in Preparation

1. **Dittmann, J. A.**, Charbonneau, D., Irwin, J.I. et al.
"A transiting terrestrial planet in the habitable-zone of a nearby cool star", *to be submitted to Nature*