

Robert C. Morehead | Curriculum Vitæ

Department of Astronomy & Astrophysics – Center for Exoplanets and Habitable Worlds
525 Davey Lab, The Pennsylvania State University
University Park, PA 16802
☎ 360-870-3029 • ✉ rcm242@psu.edu
🌐 www.robertcmorehead.com

Education

The Pennsylvania State University <i>Doctoral Candidate, Astronomy & Astrophysics</i> Advisor: Eric B. Ford	University Park, PA 2013–2014
The University of Florida <i>Master of Science, Astronomy</i> Advisor: Eric B. Ford	Gainesville, FL 2009–2013
Columbia University <i>Bachelor of Science, Astrophysics</i> Advisor: Caleb Scharf	New York, NY 2006–2009
South Puget Sound Community College <i>No Degree</i>	Olympia, WA 2004–2006

Research

Transiting exoplanets, multiple transiting planet systems and their architectures, planet population inference, planet candidate validation, approximate Bayesian computation

Research Experience

The Pennsylvania State University <i>Graduate Research Assistant</i> Supervisor: Eric B. Ford	University Park, PA 2014
The Pennsylvania State University <i>National Science Foundation Graduate Research Fellow</i> Supervisor: Eric B. Ford	University Park, PA 2013–2014
The University of Florida <i>National Science Foundation Graduate Research Fellow</i> Supervisor: Eric B. Ford	Gainesville, FL 2011–2013
The University of Florida <i>Graduate Research Assistant</i>	Gainesville, FL 2011

Supervisor: Eric B. Ford

Columbia Astrophysics Laboratory

Lab Assistant II

Supervisor: Arlin P. Crotts

New York, NY

2007–2009

Teaching Experience

Center for Astrostatistics

Workshop Assistant

Bayesian Computing for Astronomical Data Analysis Workshop

University Park, PA

2014

The University of Florida

Co-Instructor

Python Coding for Astronomers Workshop

Gainesville, FL

2012

The University of Florida

Graduate Teaching Assistant

AST 1022L Astronomy Laboratory - Instructor 5 Sections

AST 3018 Astronomy and Astrophysics 1 - Assistant 1 Section

AST 2037 Life in the Universe (Guest Lectures)

Gainesville, FL

2009-2010

Awards and Honors

2013: Homer F. Braddock and Nellie H. and Oscar L. Roberts Fellowship

2011–2014: National Science Foundation Graduate Research Fellowship

2009: Ruth Hay and Hans Schrader Astronomy Fellowship

2005: Phi Theta Kappa

Outreach

The Pennsylvania State University

Outreach Committee Member

Numerous planetarium programs, public nights, special outreach events

University Park, PA

2013-2014

The University of Florida

Outreach Committee Member

Numerous school programs, public nights, special outreach events

Gainesville, FL

2011-2013

Public Talk:: *Strange New Worlds: The Planets of the Kepler Mission*

Central Pennsylvania Observers, State College, PA, October 2013

Ferguson Observatory, Sonoma County, CA, May 2012

Alachua Astronomy Club, Gainesville, FL, November 2011

Podcast:: *Tides: More Than What Floats Your Boat*

International Year of Astronomy 365 Days of Astronomy Podcast. May 2009

Publications

Publications with Significant Contribution.....

- *Transit timing observations from Kepler - VII. Confirmation of 27 planets in 13 multiplanet systems via transit timing variations and orbital stability*
Steffen, J. H., Fabrycky, D. C., Agol, E., Ford, E. B., **Morehead, R. C.**, Cochran, W. D., Lissauer, J. J., Adams, E. R., Borucki, W. J., Bryson, S., et al. Monthly Notices of the Royal Astronomical Society, Volume 428, Issue 2, p.1077-1087
- *Constraining the false positive rate for Kepler planet candidates with multicolour photometry from the GTC*
Colón, K. D., Ford, E. B., **Morehead, R. C.** Monthly Notices of the Royal Astronomical Society, Volume 426, Issue 1, pp. 342-353.
- *Transit Timing Observations from Kepler. II. Confirmation of Two Multiplanet Systems via a Non-parametric Correlation Analysis*
Ford, E. B., Fabrycky, D. C., Steffen, J. H., Carter, J. A., Fressin, F., Holman, M. J., Lissauer, J. J., Moorhead, A. V., **Morehead, R. C.**, Ragozzine, D., et al. The Astrophysical Journal, Volume 750, Issue 2, article id. 113, 18 pp. (2012).
- *Kepler's candidate multiple transiting planets*
Lissauer, J. J., Ragozzine, D., Fabrycky, D. C., Steffen, J. H., Ford, E. B., Jenkins, J. M., Shporer, A., Holman, M. J., Rowe, J. F., Quintana, E. V., et al. VizieR On-line Data Catalog: J/ApJS/197/8. Originally published in: 2011ApJS..197....8L
- *Architecture and Dynamics of Kepler's Candidate Multiple Transiting Planet Systems*
Lissauer, J. J., Ragozzine, D., Fabrycky, D. C., Steffen, J. H., Ford, E. B., Jenkins, J. M., Shporer, A., Holman, M. J., Rowe, J. F., Quintana, E. V., et al. The Astrophysical Journal Supplement, Volume 197, Issue 1, article id. 8, 26 pp. (2011).
- *The Distribution of Transit Durations for Kepler Planet Candidates and Implications for Their Orbital Eccentricities*
Moorhead, A. V., Ford, E. B., **Morehead, R. C.**, Rowe, J., Borucki, W. J., Batalha, N. M., Bryson, S. T., Caldwell, D. A., Fabrycky, D. C., Gautier, T. N., III, et al. The Astrophysical Journal Supplement, Volume 197, Issue 1, article id. 1, 15 pp. (2011).
- *A closely packed system of low-mass, low-density planets transiting Kepler-11*
Lissauer, J. J., Fabrycky, D. C., Ford, E. B., Borucki, W. J., Fressin, F., Marcy, G. W., Orosz, J. A., Rowe, J. F., Torres, G., Welsh, W. F., et al. Nature, Volume 470, Issue 7332, pp. 53-58 (2011).

- *The Architectures of Planetary Systems from Transit Observations*
Ford, E. B., Fabrycky, D. C., Holman, M. J., Lissauer, J. J., Moorhead, A. V., **Morehead, R. C.**, Ragozzine, D., Steffen, J. H., Koch, D., Kepler Science Team American Astronomical Society, AAS Meeting #217, #103.05; Bulletin of the American Astronomical Society, Vol. 43, 2011
- *Five Kepler Target Stars That Show Multiple Transiting Exoplanet Candidates*
Steffen, J. H., Batalha, N. M., Borucki, W. J., Buchhave, L. A., Caldwell, D. A., Cochran, W. D., Endl, M., Fabrycky, D. C., Fressin, F., Ford, E. B., et al. The Astrophysical Journal, Volume 725, Issue 1, pp. 1226-1241 (2010).
- *Kepler-9: A System of Multiple Planets Transiting a Sun-Like Star, Confirmed by Timing Variations*
Holman, M. J., Fabrycky, D. C., Ragozzine, D., Ford, E. B., Steffen, J. H., Welsh, W. F., Lissauer, J. J., Latham, D. W., Marcy, G. W., Walkowicz, L. M., et al. Science, Volume 330, Issue 6000, pp. 51- (2010).
- *Discovery of a Low-mass Companion to a Metal-rich F Star with the MARVELS Pilot Project*
Fleming, S. W., Ge, J., Mahadevan, S., Lee, B., Eastman, J. D., Siverd, R. J., Gaudi, B. S., Niedzielski, A., Sivarani, T., Stassun, K. G., et al. The Astrophysical Journal, Volume 718, Issue 2, pp. 1186-1199 (2010).

Other Peer-Reviewed Publications.....

- *Architecture of Kepler's Multi-transiting Systems. II. New Investigations with Twice as Many Candidates*
Fabrycky, D. C., Lissauer, J. J., Ragozzine, D., Rowe, J. F., Steffen, J. H., Agol, E., Barclay, T., Batalha, N., Borucki, W., Ciardi, D. R., et al. The Astrophysical Journal, Volume 790, Issue 2, article id. 146, 12 pp. (2014).
- *Planetary Candidates Observed by Kepler IV: Planet Sample from Q1-Q8 (22 Months)*
Burke, C. J., Bryson, S. T., Mullally, F., Rowe, J. F., Christiansen, J. L., Thompson, S. E., Coughlin, J. L., Haas, M. R., Batalha, N. M., Caldwell, D. A., et al. The Astrophysical Journal Supplement, Volume 210, Issue 2, article id. 19, 12 pp. (2014).
- *Planet Occurrence within 0.25 AU of Solar-type Stars from Kepler*
Howard, A. W., Marcy, G. W., Bryson, S. T., Jenkins, J. M., Rowe, J. F., Batalha, N. M., Borucki, W. J., Koch, D. G., Dunham, E. W., Gautier, T. N., III, et al. The Astrophysical Journal Supplement, Volume 201, Issue 2, article id. 15, 20 pp. (2012).
- *Almost All of Kepler's Multiple-planet Candidates Are Planets*
Lissauer, J. J., Marcy, G. W., Rowe, J. F., Bryson, S. T., Adams, E., Buchhave, L. A., Ciardi, D. R., Cochran, W. D., Fabrycky, D. C., Ford, E. B., et al. The Astrophysical Journal, Volume 750, Issue 2, article id. 112, 15 pp. (2012).
- *Kepler's First Rocky Planet: Kepler-10b*
Batalha, N. M., Borucki, W. J., Bryson, S. T., Buchhave, L. A., Caldwell, D. A., Christensen-Dalsgaard, J., Ciardi, D., Dunham, E. W., Fressin, F., Gautier, T. N., III, et al. The Astrophysical Journal, Volume 729, Issue 1, article id. 27, 21 pp. (2011).
- *Ground-based Multisite Observations of Two Transits of HD 80606b*
Shporer, A., Winn, J. N., Dreizler, S., Colón, K. D., Wood-Vasey, W. M., Choi, P. I., Morley, C., Moutou, C., Welsh, W. F., Pollaco, D., et al. The Astrophysical Journal, Volume 722, Issue 1, pp. 880-887 (2010).

Conference Abstracts.....

- *A Test of Stellar Cohabitation in Multiple Transiting Planet Systems*
Morehead, R. C., Ford, E. B. American Astronomical Society, AAS Meeting #221, #343.04
- *Enhancing Multiple-Transiting Planet System Validation with Transit Duration Ratios*
Morehead, R. C., Ford, E. B., Prša, A., Ragozzine, D. American Astronomical Society, ESS meeting #2, #28.01
- *Validation of Candidate Multiple-Transiting Planet Systems and Assessing Possible False Positives based on Photometric Observables*
Morehead, R., Ford, E. B., Kepler Science Team American Astronomical Society, AAS Meeting #217, #140.09; Bulletin of the American Astronomical Society, Vol. 43, 2011
- *The Distribution of Orbital Eccentricities for Kepler Planet Candidates*
Moorhead, A., Ford, E. B., **Morehead, R.**, Kepler Science Team American Astronomical Society, AAS Meeting #217, #103.06; Bulletin of the American Astronomical Society, Vol. 43, 2011
- *Status of a Program Monitoring Optical Lunar Surface Transients*
Crotts, A. P. S., Berger, A., Cecil, G., Cseresnjcs, P., Ebel, D., Hickson, P., Joner, M., Pfrommer, T., Marka, S., **Morehead, R.**, et al. 40th Lunar and Planetary Science Conference, (Lunar and Planetary Science XL), held March 23-27, 2009 in The Woodlands, Texas, id.2373