

# CURRICULUM VITAE

## Jonathan J. Fortney

### OFFICE ADDRESS:

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Date of Birth: 17 November 1976

### CURRENT POSITION:

July 2011-present, Associate Professor, Department of Astronomy and Astrophysics,  
University of California, Santa Cruz

### PREVIOUS RESEARCH POSITIONS:

January 2008-June 2011, Assistant Professor, Department of Astronomy and Astrophysics,  
University of California, Santa Cruz

August 2006-December 2007, *Spitzer* Fellow, NASA Ames Research Center and Principal  
Investigator, Carl Sagan Center, the SETI Institute

March 2004-July 2006, NASA Postdoctoral Program (NPP) Research Fellow, NASA Ames  
Research Center

### EDUCATION:

2004 – Ph.D., Planetary Sciences, University of Arizona

Dissertation Title: “The Evolution of Giant Planets,” Advisor: W. B. Hubbard

1999 – B.S., Physics, Iowa State University, with Distinction and Honors Program

### MAJOR FIELDS OF INTEREST:

Atmospheres and spectra of low-mass and high-mass extrasolar planets, super Earth and giant planet thermal evolution, planetary interiors, extrasolar planet characterization through transit photometry and direct imaging, formation of giant planets, atmospheres and evolution of low mass stars and brown dwarfs

### HONORS and AWARDS:

2010, Urey Prize, AAS Division for Planetary Sciences

2010, Alfred P. Sloan Research Fellowship

2008, Kavli Fellow, National Academy of Sciences

2006, Spitzer Space Telescope Postdoctoral Fellowship

2006, NASA Early Career Fellowship in Planetary Sciences

2004, National Research Council Postdoctoral Fellowship

1999, Phi Beta Kappa, Iowa State University

### COLLOQUIA and SEMINARS:

- McGill University, Department of Physics, 2/2012
- Yale University, Department of Astronomy, 11/2011
- Yale University, Department of Geology & Geophysics, 11/2011
- University of Washington, Department of Astronomy, 10/2011

- IAP, Paris, 9/2011
- Cambridge University, Institute of Astronomy, 9/2011
- Fermilab, 6/2011
- California Institute of Technology, Division of Geological and Planetary Sciences, 4/2011
- University of Central Florida, Department of Physics, 4/2011
- University of Florida, Department of Astronomy, 4/2011
- Space Telescope Science Institute, 3/2011
- University of Colorado, Department of Astrophysical and Planetary Sciences, 2/2011
- Cornell University, Department of Astronomy, 4/2010
- Arizona State University, School of Earth and Space Exploration, 3/2010
- University of Minnesota, Department of Astronomy, 3/2010
- University of Arizona, Department of Planetary Sciences, 2/2010
- Harvard-Smithsonian CfA, Institute for Theory and Computation, 2/2010
- Texas A&M University, Department of Physics & Astronomy, 12/2009
- Sonoma State University, Department of Physics, 11/2009
- UCLA, Institute for Geophysics and Planetary Physics, 5/2009
- University of Hawaii, Astrobiology Institute, 3/2009
- University of Arizona, Department of Planetary Sciences, 2/2009
- University of California, Santa Cruz, Department of Earth & Planetary Sciences, 11/2008
- Ohio State University, Department of Astronomy, 10/2008
- University of Virginia, Department of Astronomy, 2/2008
- Michigan State University, Department of Physics & Astronomy, 9/2007
- Carnegie Institution of Washington, Department of Terrestrial Magnetism, 3/2007
- University of California, Berkeley, Center for Integrative Planetary Science, 3/2007
- University of California, Santa Cruz, Department of Astronomy & Astrophysics, 1/2007
- University of California, Santa Cruz, Department of Astronomy & Astrophysics, 11/2006
- Lawrence Livermore National Laboratory, Inst. for Geophys. & Planetary Phys., 10/2006
- The SETI Institute, 8/2006
- Harvard University, Department of Earth and Planetary Sciences, 3/2006
- MIT, Department of Earth, Atmospheric, and Planetary Sciences, 2/2006
- University of British Columbia, Department of Physics and Astronomy, 2/2006
- University of Florida, Department of Astronomy, 1/2006
- San Francisco State University, Department of Physics and Astronomy, 11/2005
- Harvard-Smithsonian CfA, Division of Solar, Stellar, and Planetary Science, 9/2005
- NASA Ames Research Center, Space Science and Astrobiology Division 4/2005
- UCLA, Institute for Geophysics and Planetary Physics, 2/2005
- SOFIA Science Center, NASA Ames, 10/2004
- Observatoire de la Cote d'Azur, Nice, France, 4/2004
- American Museum of Natural History, Astronomy and Astrophysics Division, 9/2003
- NASA Ames Research Center, Space Science and Astrobiology Division, 11/2002
- Lawrence Livermore National Laboratory, 11/2002

#### **INVITED CONFERENCE TALKS:**

- Exploring Giant Planets at the National Ignition Facility (NIF), 2011. Interior Structure of Exoplanets
- International Workshop on Warm Dense Matter, 2011. Interior Structure and Evolution of Giant Planets

- Exploring Strange New Worlds, 2011. Atmospheres of Earths and Super Earths
- 7<sup>th</sup> International School of Planetary Sciences, 2011. Structure and Evolution of Giant Planets
- Exploring Giant Planets at the National Ignition Facility (NIF), 2010. Exoplanets and Hydrogen and Helium Under High Pressure
- Division for Planetary Sciences of the AAS, 2010. Urey Prize Lecture: Characterizing Exoplanet Atmospheres
- Exoclimates: Exploring the Diversity of Planetary Atmospheres, 2010. Exoplanet Model Atmospheres Confronted with Data
- Sagan Exoplanet Summer Workshop: Stars as Homes for Habitable Planetary Systems, 2010. Planetary Interiors
- Sagan Exoplanet Summer Workshop: Planetary Atmospheres, 2009. Orbital Phase Observations of Exoplanets
- Sagan Exoplanet Summer Workshop: Planetary Atmospheres, 2009. The Warm Spitzer Mission
- Sagan Exoplanet Summer Workshop: Planetary Atmospheres, 2009. The Kepler Mission
- Kavli Frontiers of Science, National Academy of Sciences, 2008. Characterizing Planets around Other Stars
- ISSI Workshop on Planetary Magnetism, 2008. The Structure of Jupiter, Saturn, and Extrasolar Giant Planets
- LANL and LLNL Astrophysics Initiative Workshop, 2008. The Structure, Formation, and Evolution of Giant Planets
- Michelson Summer Workshop—Planetary Transits: Detection to Characterization, 2007. Mass-Radius Relations for Giant Planets
- Extreme Solar Systems, 2007. The Impact of Transit Observations on Planetary Physics
- American Astronomical Society, May, 2007. Luminosity and Detectability of Young Giant Planets
- University of Tokyo Workshop on Development of Extra-solar Planetary Science, 2006. On the Luminosity of Young Jupiters
- High Energy Density Laboratory Astrophysics, Six, 2006. High Pressure Equations of State and the Structure of Jupiter, Saturn, and Exoplanets
- Ultra Low-Mass Star Formation and Evolution, 2005. Young Jupiters are Faint: New Models of the Early Evolution of Giant Planets

#### **OTHER CONFERENCE TALKS:**

- Exoclimates 2, 2011.
- Kepler Science Conference, 2011.
- American Astronomical Society – Division for Planetary Sciences Meeting #42, 2010.
- American Astronomical Society – Division for Planetary Sciences Meeting #40, 2008.
- IAU Symposium #253: Transiting Planets, 2008.
- Spirit of Lyot, Berkeley, 2007.
- Cool Stars 14, 2006
- Transiting Extrasolar Planets Workshop, 2006
- IAU Colloquium #200, Direct Imaging of Extrasolar Planets, 2005
- American Astronomical Society – Division for Planetary Sciences Meeting #37, 2005
- Tenth Anniversary of 51 Peg b: Status and Prospects for Hot Jupiter Studies, 2005

- Aspen Winter Conference on Astrophysics: Planet Formation and Detection, 2005
- European Geosciences Union, 2004
- American Astronomical Society – Division for Planetary Sciences Meeting #35, 2003
- American Astronomical Society - Division for Planetary Sciences Meeting #34, 2002

**SERVICE:**

Member, NASA Exoplanet Exploration Program Analysis Group (ExoPAG), 2012-  
 Member, Gemini Planet Imager (GPI) Science Team, 2009-  
*Kepler* Mission Collaborator, 2011-  
 Member, *Kepler* Mission Science Team, 2008-2011  
 Keck Telescope, NASA Time Allocation Committee, 2007-2010  
 Head of Exoplanets TAC, 2008-2009  
*Spitzer* Space Telescope Time Allocation Committee, Galactic Panel, 2007, 2010  
 Graduate Admissions Committee, 2008-2010  
 Graduate Advising Committee, 2011-  
 Undergraduate Curriculum Committee, 2008-  
 Faculty Search Committee, Department of Earth & Planetary Sciences, 2008-09  
 NSF Astronomy & Astrophysics Panel, 2009  
 NASA Space Interferometry Mission (SIM) Science Studies, Planets & “Super” Panels, 2008  
 UC Santa Cruz, Dept. of Astronomy & Astrophysics, Colloquium Comm., Spring, 2008, 2011  
 Scientific Organizing Committee, High Energy Density Physics (HEDP) 1 / High Energy  
 Density Laboratory Astrophysics (HEDLA) 8, 2008  
 Local Organizing Committee, Navigator Program Forum, 2007

**PROFESSIONAL AFFILIATIONS:**

American Astronomical Society  
 AAS Division for Planetary Sciences,  
 American Geophysical Union

**CLASSES TAUGHT:**

W12, AY118 Physics of Planetary Systems (advanced undergraduate level), 30 students  
 W11, AY223 Planetary Physics (graduate level), 7 students  
 F08, F10, AY220A Stellar Structure and Evolution (graduate level), 15 students  
 S09, F11, AY112 Physics of Stars (advanced undergraduate level), 25-30 students  
 W10, AY003 The Solar System (introductory undergraduate level), 85 students

**STUDENTS SUPERVISED:**

Caroline Morley, Graduate Student, 2010-  
 Eric Lopez, Graduate Student, 2009-  
 Neil Miller, Graduate Student, 2008-  
 Katie Morzinski, Graduate Student, 2008-2011 (co-supervised)  
 Larissa Nofi, Undergraduate Student, 2011-  
 John Kolpin, Undergraduate Student, 2011-  
 Jennifer Mulder, Undergraduate Student, 2011-  
 Jacob Bruns, Undergraduate Student, 2010-  
 Megan Shabram, Undergraduate Student, 2008-2010 (senior thesis + extra year)

Jon Jonson, Undergraduate Student, 2008-2009 (senior thesis)

**POSTDOCS SUPERVISED:**

Philip Nutzman, 2010-

Eliza (Miller-Ricci) Kempton, Sagan Fellow, 2009-

Nadine Nettelmann, 2009-2010

PUBLICATIONS  
Jonathan J. Fortney

**RESEARCH PAPERS IN REFEREED JOURNALS:**

- 75) **Fortney, J. J.**, 2012. On the Carbon-to-oxygen Ratio Measurement in nearby Sun-like Stars: Implications for Planet Formation and the Determination of Stellar Abundances, *Astrophysical Journal*, 747, L27
- 74) Berta, Z. K., et al., 2012. The Flat Transmission Spectrum of the Super-Earth GJ1214b from Wide Field Camera 3 on the Hubble Space Telescope, *Astrophysical Journal*, 747, 35
- 73) Todorov, K. O., et al., 2012. Warm Spitzer Observations of Three Hot Exoplanets: XO-4b, HAT-P-6b, and HAT-P-8b, *Astrophysical Journal*, 746, 111
- 72) Borucki, W. J., et al., 2012. Kepler-22b: A 2.4 Earth-radius Planet in the Habitable Zone of a Sun-like Star, *Astrophysical Journal*, 745, 120
- 71) Kramm, U., Nettelmann, N., **Fortney, J. J.**, Neuhauser, R., & Redmer, R., 2012. Constraining the interior of extrasolar giant planets with the tidal Love number  $k_2$  using the example of HAT-P-13b, *Astronomy and Astrophysics*, 538, A146
- 70) Welsh, W. F., et al., 2012. Transiting circumbinary planets Kepler-34 b and Kepler-35 b, *Nature*, 481, 475
- 69) Colon, K. D., Ford, E. B., Redfield, S., **Fortney, J. J.**, Shabram, M., Deeg, H. J., & Mahadevan, S., 2011. Probing potassium in the atmosphere of HD 80606b with tunable filter transit spectrophotometry from the Gran Telescopio Canarias, *Monthly Notices of the Royal Astronomical Society*, 419, 2233
- 68) Miller-Ricci Kempton, E., Zahnle, K., & Fortney, J. J., 2012. The Atmospheric Chemistry of GJ 1214b: Photochemistry and Clouds, *Astrophysical Journal*, 745, 3
- 67) Desert, J.-M., et al., 2011. The Hot-Jupiter Kepler-17b: Discovery, Obliquity from Stroboscopic Starspots, and Atmospheric Characterization, *Astrophysical Journal Supplement*, 197, 14
- 66) Endl, M., et al., 2011. Kepler-15b: A Hot Jupiter Enriched in Heavy Elements and the First Kepler Mission Planet Confirmed with the Hobby-Eberly Telescope, *Astrophysical Journal Supplement*, 197, 13
- 65) Desert, J.-M., et al., 2011. The Atmospheres of the Hot-Jupiters Kepler-5b and Kepler-6b Observed during Occultations with Warm-Spitzer and Kepler, *Astrophysical Journal Supplement*, 197, 11
- 64) **Fortney, J. J.**, et al., 2011. Discovery and Atmospheric Characterization of Giant Planet Kepler-12b: An Inflated Radius Outlier, *Astrophysical Journal Supplement*, 197, 9
- 63) Lissauer, J. J., et al., 2011. Architecture and Dynamics of Kepler's Candidate Multiple Transiting Planet Systems, *Astrophysical Journal Supplement*, 197, 8
- 62) Cochran, W. D., et al., 2011. Kepler-18b, c, and d: A System of Three Planets Confirmed by Transit Timing Variations, Light Curve Validation, Warm-Spitzer Photometry, and Radial Velocity Measurements, *Astrophysical Journal Supplement*, 197, 7

- 61) Fressin, F., et al., 2011. Kepler-10 c: a 2.2 Earth Radius Transiting Planet in a Multiple System, *Astrophysical Journal Supplement*, 197, 5
- 60) Buchhave, L. A., et al., 2011. Kepler-14b: A Massive Hot Jupiter Transiting an F Star in a Close Visual Binary, *Astrophysical Journal Supplement*, 197, 3
- 59) Nutzman, P. A., Fabrycky, D. C., & **Fortney, J. J.**, 2011. Using Star Spots to Measure the Spin-orbit Alignment of Transiting Planets, *Astrophysical Journal*, 740, L10
- 58) Doyle, L. R., et al., 2011. Kepler-16: A Transiting Circumbinary Planet, *Science*, 333, 1602
- 57) Arridge, C. S., et al., 2011. Uranus Pathfinder: exploring the origins and evolution of Ice Giant planets, *Experimental Astronomy*, 113
- 56) Moses, J. I., Visscher, C., **Fortney, J. J.**, et al., 2011. Disequilibrium Carbon, Oxygen, and Nitrogen Chemistry in the Atmospheres of HD 189733b and HD 209458b, *Astrophysical Journal*, 737, 15
- 55) Miller, N. & **Fortney, J. J.**, 2011. The Heavy-element Masses of Extrasolar Giant Planets, Revealed, *Astrophysical Journal*, 736, L29
- 54) Croll, B., Albert, L., Jayawardhana, R., Miller-Ricci Kempton, E., **Fortney, J. J.**, Murray, N., & Neilson, H., 2011. Broadband Transmission Spectroscopy of the Super-Earth GJ 1214b Suggests a Low Mean Molecular Weight Atmosphere, *Astrophysical Journal*, 736, 78
- 53) Borucki, W. J., et al., 2011. Characteristics of Planetary Candidates Observed by Kepler. II. Analysis of the First Four Months of Data, *Astrophysical Journal*, 736, 19
- 52) Nettelmann, N., **Fortney, J. J.**, Kramm, U., & Redmer, R., 2011. Thermal Evolution and Structure Models of the Transiting Super-Earth GJ 1214b, *Astrophysical Journal*, 733, 2
- 51) Cubillos, P. E., Rojo, P., & **Fortney, J. J.**, 2011. High-resolution spectroscopic search for the thermal emission of the extrasolar planet HD 217107b, *Astronomy and Astrophysics*, 529, A88
- 50) Désert, J.-M., et al., 2011. Observational Evidence for a Metal-rich Atmosphere on the Super-Earth GJ1214b, *Astrophysical Journal*, 731, L40
- 49) **Fortney, J. J.**, Ikoma, M., Nettelmann, N., Guillot, T., & Marley, M. S., 2011. Self-consistent Model Atmospheres and the Cooling of the Solar System's Giant Planets, *Astrophysical Journal*, 729, 32
- 48) Batalha, N. M., et al., 2011. Kepler's First Rocky Planet: Kepler-10b, *Astrophysical Journal*, 729, 27
- 47) Sing, D. K., Désert, J.-M., **Fortney, J. J.**, et al., 2011. Gran Telescopio Canarias OSIRIS transiting exoplanet atmospheric survey: detection of potassium in XO-2b from narrowband spectrophotometry, *Astronomy and Astrophysics*, 527, A73
- 46) Lissauer, J. J., et al., 2011. A closely packed system of low-mass, low-density planets transiting Kepler-11, *Nature*, 470, 53
- 45) Borucki, W. J., et al., 2011. Characteristics of Kepler Planetary Candidates Based on the First Data Set, *Astrophysical Journal*, 728, 117

- 44) Shabram, M., **Fortney, J. J.**, Greene, T. P.; Freedman, R. S., 2011. Transmission Spectra of Transiting Planet Atmospheres: Model Validation and Simulations of the Hot Neptune GJ 436b for the James Webb Space Telescope, *Astrophysical Journal*, vol 727, 65.
- 43) Croll, B., Lafreniere, D., Albert, L., Jayawardhana, R., **Fortney, J. J.**, Murray, N., 2011. Near-infrared Thermal Emission from WASP-12b: Detections of the Secondary Eclipse in Ks, H, and J, *Astronomical Journal*, vol 141, 30.
- 42) Beerer, I. M., Knutson, H. A., Burrows, A, **Fortney, J. J.**, et al., 2011. Secondary Eclipse Photometry of WASP-4b with Warm Spitzer, *Astrophysical Journal*, vol 727, 23.
- 41) D. Deming, H. Knutson, E. Agol, et al., 2011. Warm Spitzer Photometry of the Transiting Exoplanets CoRoT-1 and CoRoT-2 at Secondary Eclipse, *Astrophysical Journal*, vol 726, 95.
- 40) J. Steffen, N. M. Batalha, W. J. Borucki et al., 2010. Five Kepler target stars that show multiple transiting exoplanet candidates, *Astrophysical Journal*, vol 725, 1226-1241.
- 39) K. Cahoy, M. S. Marley, **J. J. Fortney**, 2010. Exoplanet albedo spectra and colors as a function of planet phase, separation, and metallicity, *Astrophysical Journal*, vol 724, 189-214.
- 38) B. Jackson, N. Miller, R. Barnes, S. N. Raymond, **J. J. Fortney**, R. Greenberg, 2010. The Roles of Tidal Evolution and Evaporative Mass Loss in the Origin of CoRoT-7b, *Monthly Notices of the Royal Astronomical Society*, vol 407, 910-922.
- 37) N. K. Lewis, A. P. Showman, **J. J. Fortney**, R. S. Freedman, K. Lodders, 2010. Atmospheric Circulation of Eccentric Hot Neptune GJ436b, *Astrophysical Journal*, vol 720, 344-356.
- 36) B. Croll, R. Jayawardhana, **J. J. Fortney**, D. Lafreniere, L. Albert, 2010. Near-Infrared Thermal Emission from TrES-3b: Ks-band Detection and an H-band Upper Limit on the Depth of the Secondary Eclipse, *Astrophysical Journal*, vol 718, 920-927.
- 35) B. Croll, L. Albert, D. Lafreniere, R. Jayawardhana, **J. J. Fortney**, 2010. Near-Infrared Thermal Emission from the Hot Jupiter TrES-2b: Ground-Based Detection of the Secondary Eclipse, *Astrophysical Journal*, vol 717, 1084-1091.
- 34) E. Miller-Ricci & **J. J. Fortney**, 2010. The Nature of the Atmosphere of the Transiting Super-Earth GJ 1214b, *Astrophysical Journal*, vol 716, L74-L79.
- 33) J. F. Rowe, W. J. Borucki, D. Koch, et al., 2010. *Kepler* Observations of Transiting Hot Companions, *Astrophysical Journal*, vol 713, L150-L154.
- 32) W. F. Welsh, J. A. Orosz, S. Seager, **J. J. Fortney**, J. Jenkins, J. F. Rowe, D. Koch, W. J. Borucki, 2010. The Discovery of Ellipsoidal Variations in the *Kepler* Light Curve of HAT-P-7, *Astrophysical Journal*, vol 713, L145-L149.
- 31) W. J. Borucki, D. Koch, et al., 2010. *Kepler* Planet Detection Mission: Introduction and First Results, *Science*, vol 327, 977-980.
- 30) S. Li, N. Miller, D. N. C. Lin, **J. J. Fortney**, 2010. WASP-12b as a prolate, inflated and disrupting planet from tidal dissipation. *Nature*, vol 463, 1054-1056.
- 29) M. Gillon, A. A. Lanotte, T. Barman, N. Miller, B.-O. Demory, M. Deleuil, J. Montalban, F. Bouchy, A. Collier Cameron, H. J. Deeg, **J. J. Fortney**, eight other authors, 2010. The thermal emission of the young and massive planet CoRoT-2b at 4.5 and 8 microns. *Astronomy*

& *Astrophysics*, vol 511, A3.

- 28) **J. J. Fortney**, M. Shabram, A. P. Showman, Y. Lian, M. S. Marley, R. S. Freedman, N. Lewis, 2010. Transmission Spectra of Three-Dimensional Hot Jupiter Model Atmospheres. *Astrophysical Journal*, vol 709, 1396-1406.
- 27) K. Todorov, D. Deming, J. Harrington, K. B. Stevenson, W. C. Bowman, S. Nymeyer, **J. J. Fortney**, G. Bakos, 2010. Spitzer IRAC Secondary Eclipse Photometry of the Transiting Extrasolar Planet HAT-P-1b. *Astrophysical Journal*, vol 708, 498-504.
- 26) H. A. Knutson, D. Charbonneau, N. B. Cowan, **J. J. Fortney**, A. P. Showman, E. Agol, G. W. Henry, 2009. The 8 Micron Phase Variation of the Hot Saturn HD 149026b. *Astrophysical Journal*, vol 703, 769-784.
- 25) N. Miller, **J. J. Fortney**, B. Jackson, 2009. Inflating and Deflating Hot Jupiters: Coupled Tidal and Thermal Evolution of Known Transiting Planets. *Astrophysical Journal*, vol 702, 1413-1427.
- 24) K. Zahnle, M. S. Marley, R. S. Freedman, K. Lodders, **J. J. Fortney**, 2009. Atmospheric Sulfur Photochemistry on Hot Jupiters. *Astrophysical Journal*, vol 701, L20-L24.
- 23) A. P. Showman, **J. J. Fortney**, Y. Lian, M. S. Marley, R. S. Freedman, H. A. Knutson, D. Charbonneau, 2009. Atmospheric circulation of hot Jupiters: Coupled radiative-dynamical general circulation model simulations of HD 189733b and HD 209458b. *Astrophysical Journal*, vol 699, 564-584.
- 22) P. Nutzman, D. Charbonneau, J.N. Winn, H.A. Knutson, **J.J. Fortney**, M.J. Holman, E. Agol, 2009. A Precise Estimate of the Radius of the Exoplanet HD 149026b from Spitzer Photometry. *Astrophysical Journal*, vol 692, 229-235.
- 21) H. A. Knutson, D. Charbonneau, N. B. Cowan, **J. J. Fortney**, A. P. Showman, E. Agol, G. W. Henry, M. E. Everett, L. E. Allen, 2009. Multi-Wavelength Constraints on the Day-Night Circulation Patterns of HD 189733b. *Astrophysical Journal*, vol 690, 822-836.
- 20) **J.J. Fortney**, M.S. Marley, D. Saumon, K. Lodders, 2008. Synthetic Spectra and Colors of Young Giant Planet Atmospheres: Effects of Initial Conditions and Atmospheric Metallicity. *Astrophysical Journal*, vol 683, 1104–1116.
- 19) A. P. Showman, C. S. Cooper, **J. J. Fortney**, M. S. Marley, 2008. Atmospheric Circulation of Hot Jupiters: Three-dimensional circulation models of HD 209458b and HD 189733b with Simplified Forcing. *Astrophysical Journal*, vol 682, 559-576.
- 18) **J. J. Fortney**, K. Lodders, M. S. Marley, R. S. Freedman, 2008. A Unified Theory for the Atmospheres of the Hot and Very Hot Jupiters: Two Classes of Irradiated Atmospheres. *Astrophysical Journal*, vol 678, 1419-1435.
- 17) **J. J. Fortney** & M. S. Marley, 2007. Analysis of Spitzer Spectra of Irradiated Planets: Evidence for Water Vapor? *Astrophysical Journal*, vol 666, L45-L48.
- 16) H. A. Knutson, D. Charbonneau, L. E. Allen, **J. J. Fortney**, E. Agol, N. B. Cowan, A. P. Showman, C. S. Cooper, S. T. Megeath, 2007. A Map of the Day-Night Contrast of the Extrasolar Planet HD 189733b, *Nature*, vol 447, 183-186.
- 15) **J. J. Fortney**, M. S. Marley, J. W. Barnes, 2007. Planetary Radii across Five Orders of

Magnitude in Mass and Stellar Insolation: Application to Transits, *Astrophysical Journal*, vol 659, 1661-1672.

14) M. S. Marley, **J. J. Fortney**, O. Hubickyj, P. Bodenheimer, J. J. Lissauer, 2007. On the Luminosity of Young Jupiters, *Astrophysical Journal*, vol 655, 541-548.

13) **J. J. Fortney**, C. S. Cooper, A. P. Showman, M. S. Marley, R. S. Freedman, 2006. The Influence of Atmospheric Dynamics on the Infrared Spectra and Light Curves of Hot Jupiters. *Astrophysical Journal*, vol 652, 746-757.

12) N. Bozorgnia, **J. J. Fortney**, C. McCarthy, D. A. Fischer, G. W. Marcy, 2006. The Search for an Atmospheric Signature of the Transiting Exoplanet HD 149026b, *Publications of the Astronomical Society of the Pacific*, vol 118, 1252-1257.

11) P. K. G. Williams, D. Charbonneau, C. S. Cooper, A. P. Showman, **J. J. Fortney**, 2006. Resolving the Surfaces of Extrasolar Planets with Secondary Eclipse Light Curves. *Astrophysical Journal*, vol 649, 1020-1027.

10) **J. J. Fortney**, D. Saumon, M. S. Marley, K. Lodders, R. Freedman, 2006. Atmosphere, Interior, and Evolution of the Metal-Rich Transiting Planet HD 149026b. *Astrophysical Journal*, vol 642, 495-504.

9) **J. J. Fortney**, 2005. The Effect of Condensates on the Characterization of Transiting Planet Atmospheres with Transmission Spectroscopy, *Monthly Notices of the Royal Astronomical Society*, vol 364, 649-653.

8) **J. J. Fortney**, M. S. Marley, K. Lodders, D. Saumon, R. Freedman, 2005. Comparative Planetary Atmospheres: Models of TrES-1 and HD209458b. *Astrophysical Journal*, vol 627, L69-L72.

7) J. Barnes and **J. J. Fortney**, 2004. Transit Detectability of Ring Systems around Extrasolar Giant Planets, *Astrophysical Journal*, vol 616, 1193-1203.

6) A. Burrows, I. Hubeny, W. B. Hubbard, D. Sudarsky, **J. J. Fortney**, 2004. Theoretical Radii of Transiting Giant Planets: The Case of OGLE-TR-56b, *Astrophysical Journal*, vol 610, L53-L56.

5) **J. J. Fortney** and W. B. Hubbard, 2004. Effects of Helium Phase Separation on the Evolution of Extrasolar Giant Planets, *Astrophysical Journal*, vol 608, 1039-1049.

4) **J. J. Fortney** and W. B. Hubbard, 2003. Phase Separation in Giant Planets: Inhomogeneous Evolution of Saturn. *Icarus*, vol. 164, 228-243.

3) **J. J. Fortney**, D. Sudarsky, I. Hubeny, C. S. Cooper, W. B. Hubbard, A. Burrows, J. I. Lunine, 2003. On the Indirect Detection of Sodium in the Atmosphere of the Planetary Companion to HD 209458. *Astrophysical Journal*, vol. 589, 615-622.

2) J. Barnes and **J. J. Fortney**, 2003. Measuring Oblateness and Rotation of Transiting Extrasolar Giant Planets. *Astrophysical Journal*, vol. 588, 545-556.

1) W. B. Hubbard, **J. J. Fortney**, J. I. Lunine, A. Burrows, D. Sudarsky, P. Pinto, 2001. Theory of Extrasolar Giant Planet Transits. *Astrophysical Journal*, vol. 560, 413-419.

## REFEREED REVIEW ARTICLES:

- 5) **J. J. Fortney**, I. Baraffe, B. Militzer, 2010. Giant Planet Interior Structure and Thermal Evolution. *EXOPLANETS*. S. Seager (ed.), Univ. of Arizona Press, Tucson, AZ, arXiv:0911.3154.
- 4) **J. J. Fortney** and N. Nettelmann, 2010. Structure, Composition, and Evolution of Giant Planets, *Space Science Reviews*, vol 152, 423-447.
- 3) **J. J. Fortney**, S. H. Glenzer, M. Koenig, B. Militzer, D. Saumon, D. Valencia, 2009. Frontiers of the physics of dense plasmas and planetary interiors: experiments, theory, applications. *Physics of Plasmas*, vol 16, 041003-041003-7, doi:10.1063/1.3101818.
- 2) M. S. Marley, **J. J. Fortney**, S. Seager, T. Barman, 2007. Atmospheres of Extrasolar Giant Planets. *Protostars and Planets V*. B. Reipurth, D. Jewitt, and K. Keil (eds.), University of Arizona Press, Tucson, 733-747.
- 1) M. S. Marley and **J. J. Fortney**, 2007. The Interiors of Giant Planets. *Encyclopedia of the Solar System, Second Edition*. L. McFadden, P. Weissman, T. Johnson (eds.), Academic Press, San Diego, 403-418.

## COMMENTARIES:

- J. J. Fortney**, 2010. Peering into Jupiter, *Physics*, vol 3, 26.
- J. J. Fortney**, 2007. Extrasolar Planets: The one that Got Away, *Nature*, vol 449, 147-148.
- J. J. Fortney**, 2004. Looking into the Giant Planets, *Science*, vol 305, 1414-1415.

## PAPERS IN CONFERENCE PROCEEDINGS (first author only):

- J. J. Fortney**, 2009. Two Classes of Hot Jupiter Atmospheres, Transiting Planets, Proceedings of the International Astronomical Union, IAU Symposium, vol. 253, p. 247-253.
- J. J. Fortney**, 2008. The Impact of Transit Observations on Planetary Physics. Extreme Solar Systems, ASP Conference Series, vol. 398, 405-417.
- J. J. Fortney**, 2008. Hot Jupiter Model Atmospheres in the Spitzer Era. 14th Cambridge Workshop on Cool Stars, Stellar Systems, and the Sun, ASP Conference Series, vol. 384, 264-269.
- J. J. Fortney**, 2007. Hot Jupiter Model Atmospheres and Spectra. Transiting Planet Workshop (Heidelberg), ASP Conference Series, vol 366, pg. 297.
- J. J. Fortney**, 2007. The Structure of Jupiter, Saturn, and Exoplanets: Key Questions for High-Pressure Experiments. High Energy Density Laboratory Astrophysics. *Astrophysics and Space Science*, vol. 307, 279-283. (*refereed*)
- J. J. Fortney**, M. S. Marley, O. Hubickyj, P. Bodeheimer, 2005. Young Jupiters are Faint: Evolution Models for Giant Planets at Young Ages. Ultra Low-Mass Star Formation and Evolution. *Astronomical Notes*, vol. 325, 925-929. (*refereed*)
- J. J. Fortney** and M. S. Marley, 2005. What can we learn about giant planets from low resolution spectra? IAU Colloquium 200: Direct Detection of Exoplanets: Science and Techniques. pg. 145.

**J. J. Fortney**, M.S. Marley, K. Lodders, D. Saumon, R. Freedman, 2005. Comparative Planetary Atmospheres: Models of HD 20945b, TrES-1, and HD 149026b. Tenth Anniversary of 51 Peg b: Status and Prospects for Hot Jupiter Studies. pg. 234.

**J. J. Fortney** and W. B. Hubbard, 2004. Effects of Phase Separation on the Evolution of Giant Planets. Maryland Astrophysics Conference: The Search for Other Worlds, pg. 197.