

Heather A. Knutson

California Institute of Technology
Division of Geological and Planetary Sciences
1200 E California Blvd MC 150-21
Pasadena, CA 91125 USA

CURRICULUM VITAE

Tel: 1 (626) 395-4268
Fax: 1 (626) 568-0935
hknutson@caltech.edu

Appointments

Professor of Planetary Science, Caltech, 2017-present
Assistant Professor of Planetary Science, Caltech, 2011-2017
Miller Fellow, University of California, Berkeley, 2009-2011
Graduate Research Fellow, Harvard University, 2004-2009

Research Interests

Structure, chemistry, and atmospheric dynamics of planets orbiting other stars
Observational constraints on formation and migration models for gas giant planets
High-precision time-domain infrared photometry and spectroscopy

Education

Ph.D. in Astronomy, Harvard University, 2009, Advisor D. Charbonneau
"Portraits of Distant Worlds: Characterizing the Atmospheres of Extrasolar Planets"
A. M. in Astronomy, Harvard University, 2006
B.Sc. in Physics, Johns Hopkins University, 2004, departmental and university honors

Selected Awards and Prize Lectures

National Science Foundation CAREER (Faculty Early Career Development) Award, 2016
Newton Lacy Pierce Prize, American Astronomical Society, 2015
Alfred P. Sloan Research Fellow in Physics, 2015
Annie Jump Cannon Award, American Astronomical Society, 2013
Harvard-Smithsonian Center for Astrophysics, Bart J. Bok Prize, 2012
Harvard University Fireman Graduate Fellowship, 2009
Harvard Merit Fellowship, 2008
National Science Foundation Graduate Research Fellowship, 2004

Teaching and Mentoring

GE/AY 117, "Statistics and Bayesian Data Analysis", Spring 2014, Winter 2015, 2017
GE/AY 133, "Formation and Evolution of Planetary Systems", Fall 2012-2014, 2016, Spring 2016

Currently Advisor to:

- *Postdocs*: Björn Benneke, Courtney Dressing, Erik Petigura
- *Graduate students*: Marta Bryan, Henry Ngo, Nancy Thomas, Ian Wong, Ge Chen, Nicole Wallack, Zhaoxi Zhang

Previously Advisor to:

- *Postdocs*: Jean-Michel Desert, Avi Shporer
- *Graduate students*: Peter Buhler, Patrick Fischer, Jonathan Fraine (U. Maryland), Joshua Kammer, Michael Line, Joseph O'Rourke, Danielle Piskorz
- *Undergraduates*: Ingrid Beerer (Berkeley), Josh Tollefson, Nathan Baskin

Service Activities

- JWST Users Panel, 2016-present
- JPL Advisory Council, 2014-present
- Spitzer Oversight Committee, 2012-2016
- Spitzer Users Panel, 2010-2012

Selected Talks (2015-present):

Invited Seminars and Colloquia

Astronomy Colloquium, University of Washington, Feb 23 2017
GPS Division Seminar, Caltech, Nov 21 2016
Physics & Astronomy Colloquium, Johns Hopkins University, Nov 17 2016
Joint Astrophysics Colloquium, Princeton/IAS, Nov 15 2016
UC Berkeley Joint Astronomy/EPSColloquium, Sep 3 2015
Salt Lake Astronomical Society, Jul 15 2015
UC Riverside Physics & Astronomy Colloquium, May 21 2015
Ohio State University Astronomy Colloquium, Apr 30 2015
Columbia University Astronomy Colloquium, Apr 29 2015
Goddard Scientific Colloquium, NASA Goddard, March 18 2015
Physics Research Colloquium, Caltech, Jan 29 2015
Stanford University Physics Colloquium, Jan 20 2015

Invited Conference Talks

Exoclines, Squamish, BC, Canada, Aug 1 2016
AAS Pierce Prize Lecture, San Diego CA, Jun 14 2016
Miller Symposium, Tomales Bay CA, Jun 4 2016
Royal Society International Scientific Seminar, Chichley Hall, UK Jun 24 2015
Hubble 2020 Symposium, STScl, Baltimore, MD Apr 20 2015
Physics of Exoplanets, Kavli Institute for Theoretical Physics, Santa Barbara, CA Feb 23 2015

Published Papers (106 Papers, 5763 Citations). 1st-3rd Author:

Ngo, H., **Knutson, H. A.**, Bryan, M., Blunt, S., Nielsen, E. L., Batygin, K., Bowler, B. P., Crepp, J. R., Hinkley, S., Howard, A. W., & Mawet, D. 2017, "No Difference in Orbital Parameters of RV-Detected Giant Planets Between 0.1-5 AU in Single Vs Multi-Stellar Systems," ApJ submitted

De Wit, J., Lewis, N. K., **Knutson, H. A.**, Fuller, J., Antoci, V., Fulton, B. J., Laughlin, G., Deming, D., Shporer, A., Batygin, K., Cowan, N. B., Agol, E., Burrows, A. S., Fortney, J. J., Langton, J., & Showman, A. P. 2017, "Planet-Induced Stellar Pulsations in HAT-P-2's Eccentric System," ApJ, 836, L17

Morley, C. V., **Knutson, H. A.**, Line, M., Fortney, J. J., Marley, M. S., Teal, D., & Lupu, R. 2017, "Forward and Inverse Modeling of the Emission and Transmission Spectrum of GJ 436b: Investigating Metal Enrichment, Tidal Heating, and Clouds," AJ 153, 86

Bryan, M. L., Bowler, B. P., **Knutson, H. A.**, Kraus, A. L., Hinkley, S., Mawet, D., Nielsen, E. L., & Blunt, S. C. 2016, "Searching for Scatterers: High-Contrast Imaging of Young Stars Hosting Wide-Separation Planetary-Mass Companions," ApJ, 827, 2

Ngo, H., **Knutson, H. A.**, Hinkley, S., Bryan, M., Crepp, J. R., Batygin, K., Crossfield, I., Hansen, B., Howard, A. W., Johnson, J. A., Mawet, D., Morton, T. D., Muirhead, P. S., & Wang, J. 2016, "Friends of Hot Jupiters. IV. Stellar Companions Beyond 50 AU Might Facilitate Gas Giant Planet Formation, But

Are Unlikely to Cause Kozai-Lidov Migration in Most Systems,” *ApJ*, 827, 1

Fischer, P. D., **Knutson, H. A.**, Sing, D. K., Henry, G. W., Williamson, M. W., Fortney, J. J., Burrows, A. S., Kataria, T., Nikolov, N., Showman, A. P., Ballester, G. E., Desert, J.-M., Aigrain, S., Deming, D., Lecavelier des Etangs, A., & Vidal-Madjar, A. 2016, “HST Hot-Jupiter Transmission Spectral Survey: Clear Skies for Cool Saturn WASP-39b,” *ApJ*, 827, 19

Wong, I., **Knutson, H. A.**, Kataria, T., Lewis, N. K., Burrows, A., Fortney, J. J., Schwartz, J., Shporer, A., Agol, E., Cowan, N. B., Deming, D., Desert, J.-M., Fulton, B. J., Howard, A. W., Langton, J., Laughlin, G., Showman, A. P., & Todorov, K. 2016, “3.6 and 4.5 μm Phase Curves of the Highly-Irradiated Hot Jupiters WASP-19b and HAT-P-7b,” *ApJ*, 823, 122

Bryan, M. L., **Knutson, H. A.**, Howard, A. W., Ngo, H., Batygin, K., Crepp, J. R., Fulton, B. J., Hinkley, S., Isaacson, H., Johnson, J. A., Marcy, G. W., & Wright, J. T. 2016, “Statistics of Long Period Gas Giant Planets in Known Planetary Systems,” *ApJ*, 821, 89

Buhler, P. B., **Knutson, H. A.**, Batygin, K., Fulton, B. J., Fortney, J., Burrows, A., & Wong, I. 2016, “Dynamical Constraints on the Core Mass of Hot Jupiter HAT-P-13b,” *ApJ* 821, 26

Piskorz, D., **Knutson, H. A.**, Ngo, H., Muirhead, P. S., Batygin, K., Crepp, J. R., Hinkley, S., & Morton, T. D. 2015, “Friends of Hot Jupiters. III. An Infrared Spectroscopic Search for Low-Mass Stellar Companions,” *ApJ*, 814, 148

Wong, I., **Knutson, H. A.**, Lewis, N. K., Kataria, T., Burrows, A., Fortney, J. J., Schwartz, J., Agol, E., Cowan, N. B., Deming, D., Desert, J.-M., Fulton, B. J., Howard, A. W., Langton, J., Laughlin, G., Showman, A. P., Todorov, . 2015, “3.6 and 4.5 μm Phase Curves of the Highly-Irradiated Eccentric Hot Jupiter WASP-14b,” *ApJ*, 811, 122

Kammer, J. A., **Knutson, H. A.**, Line, M. R., Fortney, J. J., Deming, D., Burrows, A., Triaud, A. H. M. J., Agol, E., Cowan, N. B., Desert, J.-M., Howard, A. W., Langton, J., Laughlin, G. P., Lewis, N. K., Morley, C. V., Moses, J. I., Showman, A. P., Todorov, K. O. 2015, “Spitzer Secondary Eclipse Observations of Three Cool Gas Giant Planets and Empirical Trends in Cool Planet Emission Spectra,” *ApJ*, 810, 118

Deming, D., **Knutson, H. A.**, Kammer, J., Fulton, B. J., Ingalls, J., Carey, S., Burrows, A., Fortney, J. J., Todorov, K., Agol, E., Cowan, N., Desert, J.-M., Fraine, J., Langton, J., Morley, C., & Showman, A. P. 2015, “Spitzer Secondary Eclipses of the Dense, Modestly-Irradiated Giant Exoplanet HAT-P-20b Using Pixel-Level Decorrelation,” *ApJ* 805, 132

Ngo, H., **Knutson, H. A.**, Hinkley, S., Crepp, J. R., Bechter, E. B., Batygin, K., Howard, A. W., Johnson, J. A., Morton, T. D., & Muirhead, P. S. 2015, “Friends of Hot Jupiters II: No Correspondence Between Hot Jupiter Spin-Orbit Misalignment and the Incidence of Directly Imaged Stellar Companions,” *ApJ* 800, 138

Wong, I., **Knutson, H. A.**, Cowan, N. B., Lewis, N. K., Agol, E., Burrows, A., Deming, D., Fortney, J. J., Fulton, B. J., Langton, J., Laughlin, G., & Showman, A. P. 2014, “Constraints on the Atmospheric Circulation and Variability of the Eccentric Hot Jupiter XO-3b,” *ApJ*, 794, 134

Knutson, H. A., Dragomir, D., Kreidberg, L., Kempton, E. M.-R., McCullough, P. R., Fortney, J. J., Bean, J. L., Gillon, M., Homeier, D., & Howard, A. W. 2014, “Hubble Space Telescope Near-IR Transmission Spectroscopy of the Super-Earth HD 97658b,” *ApJ*, 794, 155

Zellem, R. T., Lewis, N. K., **Knutson, H. A.**, Griffith, C. A., Showman, A. P., Fortney, J. J., Cowan, N. B., Agol, E., Burrows, A., Charbonneau, D., Deming, D., Laughlin, G., & Langton, J. 2014, “The 4.5 μm Full-Orbit Phase Curve of the Hot Jupiter HD 209458b,” *ApJ*, 790, 53

Shporer, A., O’Rourke, J., **Knutson, H. A.**, Szabo, G., Zhao, M., Burrows, A., Fortney, J., Agol, E., Cowan, N. B., Desert, J.-M., Lewis, N. A., Showman, A. P., & Todorov, K. O. 2014, “Atmospheric

Characterization of the Hot Jupiter Kepler-13Ab,” *ApJ*, 788, 92

Knutson, H. A., Fulton, B. J., Montet, B. T., Kao, M., Ngo, H., Howard, A. W., Crepp, J. R., Hinkley, S., Bakos, G. A., Batygin, K., Johnson, J. A., Morton, T. D., & Muirhead, P. S. 2014, “Friends of Hot Jupiters I: A Radial Velocity Search for Massive, Long-Period Companions in Hot Jupiter Systems,” *ApJ*, 785, 126

Line, M. R., **Knutson, H.**, Wolf, A., Yung, Y. 2014, “A Systematic Retrieval Analysis of Secondary Eclipse Spectra II: A Uniform Analysis of Eight Planets and Their C to O Ratios,” *ApJ*, 783, 70

Knutson, H. A., Benneke, B., Deming, D., & Homeier, D. 2014, “A featureless transmission spectrum for the Neptune-mass exoplanet GJ 436b,” *Nature* 505, 66

Kammer, J. A., **Knutson, H. A.**, Howard, A. W., Laughlin, G. P., Deming, D., Todorov, K. O., Desert, J.-M., Agol, E., Burrows, A., Fortney, J. J., Showman, A. P., & Lewis, N. K. 2014, “A Spitzer Search for Transits of Radial Velocity Detected Super-Earths,” *ApJ* 781, 103

O’Rourke, J. G., **Knutson, H. A.**, Zhao, M., Fortney, J. J., Burrows, A., Agol, E., Deming, D., Desert, J.-M., Howard, A. W., Lewis, N. K., Showman, A. P., & Todorov, K. O. 2014, “Warm Spitzer and Palomar Near-IR Secondary Eclipse Photometry of Two Hot Jupiters: WASP-48b and HAT-P-23b,” *ApJ* 781, 109

Line, M. R., **Knutson, H.**, Deming, D., Wilkins, A., & Desert, J.-M. 2013, “A Near-Infrared Transmission Spectrum for the Warm Saturn HAT-P-12b,” *ApJ* 778, 183

Baskin, N. J., **Knutson, H. A.**, Burrows, A., Fortney, J. J., Lewis, N. K., Agol, E., Charbonneau, D., Cowan, N. B., Deming, D., Desert, J.-M., Langton, J., Laughlin, G., & Showman, A. P. 2013, “Secondary Eclipse Photometry of the Exoplanet WASP-5b with Warm Spitzer,” *ApJ*, 773, 124

Todorov, K. O., Deming, D., **Knutson, H. A.**, Burrows, A., Sada, P. V., Cowan, N. B., Agol, E., Desert, J.-M., Fortney, J. J., Charbonneau, D., Laughlin, G., Langton, J., Showman, A. P., Lewis, N. K. 2013, “Warm Spitzer Photometry of Three Hot Jupiters: HAT-P-3b, HAT-P-4b, and HAT-P-12b,” *ApJ*, 770, 102

Lewis, N. K., **Knutson, H. A.**, Showman, A. P., Fortney, J. J., Mighell, K. J., Agol, E., Burrows, A., Charbonneau, D., Cowan, N. B., Desert, J.-M., Langton, J., & Laughlin, G. 2013, “Orbital Phase Variations of the Eccentric Giant Planet HAT-P-2b at 3.6 and 4.5 Microns,” *ApJ*, 766, 95

Knutson, H. A., Lewis, N., Fortney, J. J., Burrows, A., Showman, A. P., Cowan, N. B., Agol, E., Aigrain, S., Charbonneau, D., Deming, D., Desert, J.-M., Henry, G. W., Langton, J., & Laughlin, G. 2012, “3.6 and 4.5 μm Phase Curves and Evidence for Non-Equilibrium Chemistry in the Atmosphere of Extrasolar Planet HD 189733b,” *ApJ*, 754, 22

Crossfield, I. J. M., **Knutson, H. A.**, Fortney, J., Showman, A. P., Cowan, N. B., & Deming, D. 2012, “Spitzer/MIPS 24 μm Observations of HD 209458b: 3 Eclipses, 2.5 Transits, and a Phase Curve Corrupted by Instrumental Sensitivity Variations,” *ApJ*, 752, 81

Todorov, K. O., Deming, L. D., **Knutson, H. A.**, Burrows, A., Sada, P. V., Agol, E., Desert, J.-M., Fortney, J. J., Charbonneau, D., Cowan, N. B., Laughlin, G., Langton, J., Showman, A. P., & Lewis, N. K. 2012, “Warm *Spitzer* Observations of Three Hot Exoplanets: XO-4b, HAT-P-6b, and HAT-P-8b,” *ApJ*, 746, 111

Knutson, H. A., Madhusudhan, N., Cowan, N. B., Christiansen, J. L., Agol, E., Deming, D., Desert, J.-M., Charbonneau, D., Henry, G. W., Homeier, D., Langton, J., Laughlin, G., Seager, S. 2011, “A Spitzer Transmission Spectrum for the Exoplanet GJ 436b, Evidence for Stellar Variability, and Constraints on Dayside Flux Variations,” *ApJ*, 735, 27

Beerer, I. M., **Knutson, H. A.**, Burrows, A., Fortney, J. J., Agol, E., Charbonneau, D., Cowan, N. B.,

- Deming, D., Desert, J.-M., Langton, J., Laughlin, G., Lewis, N. K., Showman, A. P. 2011, "Secondary Eclipse Photometry of WASP-4b with *Warm Spitzer*," ApJ, 727, 23
- Deming, D., **Knutson, H. A.**, Agol, E., Desert, J.-M., Burrows, A., Fortney, J. J., Charbonneau, D., Cowan, N. B., Laughlin, G., Langton, J., Showman, A. P., Lewis, N. K., 2011, "*Warm Spitzer* Photometry of the Transiting Exoplanets CoRoT-1 and CoRoT-2 at Secondary Eclipse," ApJ, 726, 95
- Knutson, H. A.**, Howard, A. W., & Isaacson, H. 2010, "A Correlation Between Stellar Activity and Hot Jupiter Emission Spectra," ApJ, 720, 1569
- Fressin, F., **Knutson, H. A.**, Charbonneau, D., O'Donovan, F. T., Burrows, A., Deming, D., Mandushev, G., Spiegel, D. 2010, "The Broadband Infrared Emission Spectrum of the Exoplanet TrES-3," ApJ, 711, 374
- Agol, E., Cowan, N. B., **Knutson, H. A.**, Deming, D., Steffen, J. H., Henry, G. W., Charbonneau, D. 2010, "The Climate of HD 189733b from Fourteen Transits and Eclipses Measured by Spitzer," ApJ, 721, 1861
- Knutson, H. A.**, Charbonneau, D., Cowan, N. B., Fortney, J. J., Showman, A. P., Agol, E., & Henry, G. W. 2009, "The 8 μm Phase Variation of the Hot Saturn HD 149026b," ApJ, 703, 769
- Knutson, H. A.**, Charbonneau, D., Burrows, A., O'Donovan, F. T., & Mandushev, G. 2009, "Detection of a Temperature Inversion in the Broadband Infrared Emission Spectrum of TrES-4", ApJ, 691, 866
- Pont, F., Gilliland, R. L., **Knutson, H. A.**, Holman, M., & Charbonneau, D. 2009, "Transit Spectroscopy of the hot Neptune Around GJ 436 with the HST", MNRAS, 393, L6
- Knutson, H. A.**, Charbonneau, D., Cowan, N. B., Agol, E., Showman, A. P., Fortney, J. J., Henry, G. W., Everett, M. E., Allen, L. E. 2009, "Multi-Wavelength Constraints on the Day-Night Circulation Patterns of HD 189733b", ApJ, 690, 822
- Charbonneau, D., **Knutson, H. A.**, Barman, T., Allen, L. E., Mayor, M. S., Megeath, S. T., Queloz, D., & Udry, S. 2008, "The Broadband Infrared Emission Spectrum of the Exoplanet HD 189733b", ApJ, 686, 1341
- Pont, F., **Knutson, H. A.**, Gilliland, R. L., Moutou, C., & Charbonneau, D. 2008, "Detection of an Atmospheric Haze on an Extrasolar Planet: The 0.55-1.05 μm Transmission Spectrum of HD 189733b", MNRAS, 385, 109
- Knutson, H. A.**, Charbonneau, D., Allen, L. E., Burrows, A., & Megeath, S. T. 2008, "The 3.6-8.0 μm Broadband Emission Spectrum of HD 209458b: Evidence for an Atmospheric Temperature Inversion", ApJ, 673, 576
- Knutson, H. A.**, Charbonneau, D., Deming, D., & Richardson, L. J. 2007, "A Ground-Based Search for Thermal Emission from the Exoplanet TrES-1", PASP, 119, 616
- Knutson, H. A.**, Charbonneau, D., Allen, L. E., Fortney, J. J., Agol, E., Cowan, N. B., Showman, A. P., Cooper, C. S., & Megeath, S. T. 2007, "A Map of the Day-Night Contrast of the Extrasolar Planet HD 189733b", Nature, 447, 183
- Knutson, H. A.**, Charbonneau, D., Noyes, R. W., Brown, T. M., & Gilliland, R. L. 2007, "Using Stellar Limb-Darkening to Refine the Properties of HD 209458b," ApJ, 655, 564
- Bakos, G. A., **Knutson, H.**, Pont, F., Moutou, C., Charbonneau, D., Shporer, A., Bouchy, F., Everett, M., Hergenrother, C., Latham, D. W., Mayor, M., Mazeh, T., Noyes, R. W., Queloz, D., Pal, A., & Udry, S. 2006, "Refined Parameters of the Planet Orbiting HD 189733," ApJ, 650, 1160

Other Refereed Publications:

- Dressing, C. D., Newton, E. R., Schlieder, J. E., Charbonneau, D., **Knutson, H. A.**, Vanderburg, A., Sinukoff, E. 2017, "Characterizing K2 Candidate Planetary Systems Orbiting Low-mass Stars. I. Classifying Low-mass Host Stars Observed During Campaigns 1-7," *ApJ* 836, 167
- Sinukoff, E., Howard, A. W., Petigura, E. A., Fulton, B. J., Isaacson, H., Weiss, L. M., Brewer, J. M., Hansen, B. M. S., Hirsch, L., Christiansen, J. L., Crepp, J. R., Crossfield, I. J. M., Schleider, J. E., Ciardi, D. R., Beichman, C. A., **Knutson, H. A.**, Benneke, B., Dressing, C. D., Livingston, J. H., Deck, K. M., 2017, "Mass Constraints of the WASP-47 Planetary System from Radial Velocities," *AJ*, 153, 70
- Wakeford, H. R., Stevenson, K. B., Lewis, N. K., Sing, D. K., Lopez-Morales, M., Marley, M., Kataria, T., Mandell, A., Ballester, G. E., Barstow, J., Ben-Jaffel, L., Bourrier, V., Buchhave, L. A., Ehrenreich, D., Evans, T., Garcia Munoz, A., Henry, G., **Knutson, H.**, Lavvas, P., Lecavelier des Etangs, A., et al. 2017, "HST PanCET Program: A Cloudy Atmosphere for the Promising JWST Target WASP-101b," *ApJ*, 835, L12
- Benneke, B., Werner, M., Petigura, E., **Knutson, H.**, Dressing, C., Crossfield, I. J. M., Schleider, J. E., Livingston, J., Beichman, C., Christiansen, J., Krick, J., Gorjian, V., Howard, A. W., Sinukoff, E., Ciardi, D. R., Akeson, R. L. 2017, "Spitzer Observations Confirm and Rescue the Habitable-zone Super-Earth K2-18b for Future Characterization," *ApJ*, 834, 187
- Cartier, K. M. S., Beatty, T. G., Zhao, M., Line, M., Ngo, H., Mawet, D., Stassun, K. G., Wright, J. T., Kreidberg, L., Fortney, J., **Knutson, H.** 2017, "Near-Infrared Emission Spectroscopy of WASP-103b Using Hubble Space Telescope/Wide Field Camera 3," *AJ*, 153, 34
- Sinukoff, E., Howard, A. W., Petigura, E. A., Schleider, J. E., Crossfield, I. J. M., Ciardi, D. R., Fulton, B. J., Isaacson, H., Aller, K., Baranec, C., Beichman, C. A., Hansen, B. M. S., **Knutson, H. A.**, Law, N. M., Liu, M. C., & Riddle, R. 2015, "Eleven Multi-Planet Systems from K2 Campaigns 1 & 2 and the Masses of Two Hot Super-Earths," *ApJ*, 827, 78
- Beichman, C., Livingston, J., Werner, M., Gorjian, V., Krick, J., Deck, K., **Knutson, H.**, Wong, I., Petigura, E., Christiansen, J., Ciardi, D., Greene, T. P., Schleider, J. E., Line, M., Crossfield, I., Howard, A., Sinukoff, E., 2016, "Spitzer Observations of Exoplanets Discovered With the Kepler K2 Mission," *ApJ*, 822, 39
- Sing, D. K., Fortney, J. J., Nikolov, N., Wakeford, H. R., Kataria, T., Evans, T. M., Aigrain, S., Deming, D., Desert, J.-M., Gibson, N. P., Henry, G. W., Huitson, C. M., **Knutson, H. A.**, Etangs, A., Showman, A. P., Madjar, A., Williamson, M. H., & Wilson, P. A. 2016, "A Continuum From Clear to Cloudy Hot-Jupiter Exoplanets Without Primordial Water Depletion," *Nature*, 529, 7584
- Haynes, K., Mandell, A. M., Madhusudhan, N., Deming, D., **Knutson, H. A.** 2015, "Spectroscopic Evidence for a Temperature Inversion in the Dayside Atmosphere of the Hot Jupiter WASP-33b," *ApJ*, 806, 146
- Desert, J.-M., Charbonneau, D., Torres, G., Fressin, F., Ballard, S., Bryson, S. T., **Knutson, H. A.**, Batalha, N. M., Borucki, W. J., Brown, T. M., Deming, D., Ford, E. B., Fortney, J. J., Gilliland, R. L., Latham, D. W., Seager, S., 2015, "Low False Positive Rate of Kepler Candidates Estimated From a Combination of Spitzer and Follow-Up Observations," *ApJ*, 804, 59
- Sing, D. K., Wakeford, H. R., Showman, A. P., Nikolov, N., Fortney, J. J., Burrows, A. S., Ballester, G. E., Deming, D., Aigrain, S., Désert, J.-M., Gibson, N. P., Henry, G. W., **Knutson, H.**, Lecavelier des Etangs, A., Pont, F., Vidal-Madjar, A., Williamson, M. W., Wilson, P. A. 2015, "HST Hot-Jupiter Transmission Spectral Survey: Detection of Potassium in WASP-31b Along With a Cloud Deck and Rayleigh Scattering," *MNRAS*, 446, 2428

- Zhao, M., O'Rourke, J. G., Wright, J. T., **Knutson, H. A.**, Burrows, A., Fortney, J. J., Ngo, H., Fulton, B. J., Baranec, C., Riddle, R., Law, N. M., Muirhead, P. S., Hinkley, S., Showman, A. P., Curtis, J., Burruss, R. 2015, "Characterization of the Atmosphere of the Hot Jupiter HAT-P-32Ab and the M-dwarf Companion HAT-P-32B," *ApJ*, 796, 115
- Lewis, N. K., Showman, A. P., Fortney, J. J., **Knutson, H. A.**, & Marley, M. S. 2014, "Atmospheric Circulation of Eccentric Hot Jupiter HAT-P-2b," *ApJ*, 795, 150
- Fraine, J., Deming, D., Benneke, B., **Knutson, H. A.**, Jordán, A., Espinoza, N., Madhusudhan, N., Wilkins, A., & Todorov, K. 2014, "Water Vapour Absorption in the Clear Atmosphere of a Neptune-Sized Exoplanet," *Nature*, 513, 526
- Rostron, J. W., Wheatley, P. J., Anderson, D. R., Collier Cameron, A., Fortney, J. J., Harrington, J., **Knutson, H. A.**, & Pollacco, D. L. 2014, "The thermal emission of the exoplanet WASP-3b," *MNRAS*, 441, 3666
- Wilkins, A. N., Deming, D., Madhusudhan, N., Burrows, A., **Knutson, H.**, McCullough, P., & Ranjan, S. 2014, "The Emergent 1.1-1.7 μm Spectrum of the Exoplanet CoRoT-2b as Measured Using the Hubble Space Telescope," *ApJ*, 783, 113
- Beatty, T. G., Collins, K. A., Fortney, J., **Knutson, H.**, Gaudi, B. S., Bruns, J. M., Showman, A. P., Eastman, J., Pepper, J., Siverd, R. J., Stassun, K. G., & Kielkopf, J. F. 2014, "Spitzer and z' Secondary Eclipse Observations of the Highly Irradiated Transiting Brown Dwarf KELT-1b," *ApJ*, 783, 112
- Bechter, E. B., Crepp, J. R., Ngo, H., **Knutson, H. A.**, Batygin, K., Hinkley, S., Muirhead, P. S., Johnson, J. A., Howard, A. W., Montet, B. T., Matthews, C. T., & Morton, T. D. 2014, "WASP-12b and HAT-P-8b are Members of Triple Star Systems," *ApJ*, 788, 2
- Gillon, M., Demory, B.-O., Madhusudhan, N., Deming, D., Seager, S., **Knutson, H. A.**, Lanotte, A., Bonfils, X., Desert, J.-M., Delrez, L., Jehin, E., Fraine, J. D., Magain, P., & Triaud, A. H. M. J. 2013, "Search for a habitable terrestrial planet transiting the nearby red dwarf GJ 1214," *A&A*, 563, A21
- Nikolov, N., Sing, D. K., Pont, F., Burrows, A. S., Fortney, J. J., Ballester, G. E., Evans, T. M., Huitson, C. M., Wakeford, H. R., Wilson, P. A., Aigrain, S., Deming, D., Gibson, N. P., Henry, G. W., **Knutson, H.**, Lecavelier des Etangs, A., Showman, A. P., Vidal-Madjar, A., & Zahnle, K. 2014, "Hubble Space Telescope hot Jupiter transmission spectral survey: a detection of Na and strong optical absorption in HAT-P-1b," *MNRAS*, 437, 46
- Demory, B.-O., de Wit, J., Lewis, N., Fortney, J., Zsom, A., Seager, S., **Knutson, H.**, Heng, K., Madhusudhan, N., Gillon, M., Barclay, T., Desert, J.-M., Parmentier, V., & Cowan, N. B. 2013, "Inference of Inhomogeneous Clouds in an Exoplanet Atmosphere," *ApJ* 776, L25
- Sing, D. K., Lecavelier des Etangs, A., Fortney, J. J., Burrows, A. S., Pont, F., Wakeford, H. R., Ballester, G. E., Nikolov, N., Henry, G. W., Aigrain, S., Deming, D., Evans, T. M., Gibson, N. P., Huitson, C. M., **Knutson, H.**, Showman, A. P., Vidal-Madjar, A., Wilson, P. A., Williamson, M. H., Zahnle, K. 2013, "HST hot Jupiter transmission spectral survey: evidence for aerosols and lack of TiO in the atmosphere of WASP-12b," *MNRAS*, 436, 2956
- Wakeford, H. R., Sing, D. K., Deming, D., Gibson, N. P., Fortney, J. J., Burrows, A. S., Ballester, G., Nikolov, N., Aigrain, S., Henry, G., **Knutson, H.**, Lecavelier des Etangs, A., Pont, F., Showman, A. P., Vidal-Madjar, A., Zahnle, K. 2013, "HST hot Jupiter transmission spectral survey: detection of water in HAT-P-1b from WFC3 near-IR spatial scan observations," *MNRAS*, 435, 3481
- Line, M. R., Wolf, A. S., Zhang, X., **Knutson, H.**, Kammer, J. A., Ellison, E., Deroo, P., Crisp, D., Yung, Y. L. 2013, "A Systematic Retrieval Analysis of Secondary Eclipse Spectra. I. A Comparison of Atmospheric Retrieval Techniques," *ApJ*, 775, 137

Deming, D., Wilkins, A., McCullough, P., Burrows, A., Fortney, J. J., Madhusudhan, N., Crouzet, N., Desert, J.-M., Gilliland, R. L., Haynes, K., **Knutson, H. A.**, Line, M., Magic, Z., Mandell, A. M., Ranjan, S., Charbonneau, D., Clampin, M., Seager, S., & Showman, A. P. 2013, "Infrared Transmission Spectroscopy of the Exoplanets HD 209458b and XO-1b Using the Wide Field Camera-3 on the Hubble Space Telescope," *ApJ*, 774, 95

Evans, T. M., Pont, F., Sing, D. K., Aigrain, S., Barstow, J. K., Desert, J.-M., Gibson, N., Heng, K., **Knutson, H. A.**, Lecavelier des Etangs, A. 2013, "The Deep Blue Color of HD 189733b: Albedo Measurements with the Hubble Space Telescope at Visible Wavelengths," *ApJ*, 772, L16

Fulton, B. J., Howard, A. W., Winn, J. N., Albrecht, S., Marcy, G. W., Crepp, J. R., Bakos, G. A., Johnson, J. A., Hartman, J. D., Isaacson, H., **Knutson, H. A.**, & Zhao, M. 2013, "The Stellar Obliquity and the Long-Period Planet in the HAT-P-17 Exoplanetary System," *ApJ*, 772, 80

Fraine, J. D., Deming, D., Gillon, M., Jehin, E., Demory, B.-O., Benneke, B., Seager, S., Lewis, N. K., **Knutson, H.**, & Desert, J.-M. 2013, "Spitzer Transits of the Super-Earth GJ 1214b and Implications for its Atmosphere," *ApJ*, 765, 127

Deming, D., Fraine, J. D., Sada, P. V., Madhusudhan, N., **Knutson, H. A.**, Harrington, J., Blecic, J., Nymeyer, S., Smith, A. M. S., Jackson, B. "Infrared Eclipses of the Strongly Irradiated Planet WASP-33b, and Oscillations of Its Host Star," *ApJ*, 754, 106

Gibson, N. P., Aigrain, S., Pont, F., Sing, D. K., Desert, J.-M., Evans, T. M., Henry, G., Husnoo, N., **Knutson, H.** 2012, "Probing the haze in the atmosphere of HD 189733b with the Hubble Space Telescope/WFC3 transmission spectroscopy," *MNRAS*, 422, 753

Fressin, F., Torres, G., Pont, F., **Knutson, H. A.**, Charbonneau, D., Mazeh, T., Aigrain, S., Fridlund, M., Henze, C. E., Guillot, T., & Rauer, H. 2011, "Spitzer Infrared Observations and Independent Validation of the Transiting Super-Earth CoRoT-7b," *ApJ*, 745, 81

Desert, J.-M., Charbonneau, D., Fortney, J. J., Madhusudhan, N., **Knutson, H. A.**, Fressin, F., Deming, D., Borucki, W. J., Brown, T. M., Caldwell, D., Ford, E., Gilliland, R. L., Latham, D. W., Marcy, G. W., Seager, S., and the Kepler Science Team. 2011, "The atmospheres of the hot-Jupiters Kepler-5b and Kepler-6b observed during occultations with Warm-Spitzer and Kepler," *ApJS*, 197, 11

Deming, D., Sada, P. V., Jackson, B., Peterson, S. W., Agol, E., **Knutson, H. A.**, Jennings, D. E., Haase, F., & Bays, K. 2011, "Kepler and Ground-based Transits of the Exo-Neptune HAT-P-11b," *ApJ*, 740, 33

Mandell, A. M., Deming, L. D., Blake, G. A., **Knutson, H. A.**, Mumma, M. J., Villanueva, G. L., Salyk, C. 2011, "Non-Detection of L-band Line Emission from the Exo-Planet HD 189733b," *ApJ*, 728, 18

Ballard, S., Charbonneau, D., Deming, D., **Knutson, H. A.**, Christiansen, J. L., Holman, M. J., Fabrycky, D., Seager, S., A'Hearn, M. F. 2010, "A Search for a Sub-Earth Sized Companion to GJ 436 and a Novel Method to Calibrate Warm Spitzer IRAC Observations," *PASP*, 122, 1341

Pillitteri, I., Wolk, S. J., Cohen, O., Kashyap, V., **Knutson, H.**, Lisse, C. M., Henry, G. W. 2010, "XMM-Newton Observations of HD 189733 During Planetary Transits," *ApJ*, 722, 1216

O'Donovan, F. T., Charbonneau, D., Harrington, J., Madhusudhan, N., Seager, S., Deming, D., **Knutson, H. A.** 2010, "Detection of Planetary Emission from the Exoplanet TrES-2 using Spitzer/IRAC," *ApJ*, 710, 1551

Nutzman, P., Charbonneau, D., Winn, J. T., **Knutson, H. A.**, Fortney, J. J., Holman, M. J., & Agol, E. 2008, "A Precise Estimate of the Radius of HD 149026b," *ApJ*, 692, 229

Burrows, A., Hubeny, I., Budaj, J., **Knutson, H. A.**, & Charbonneau, D. 2007, "Theoretical Spectral Models of the Planet HD 209458b with a Thermal Inversion and Water Emission Bands", *ApJ*, 668, L171