

# Caroline V. Morley

## Curriculum Vitae

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*Department of Astronomy*

*University of Texas at Austin*

*2515 Speedway, Austin, TX 78712*

### **CURRENT POSITION**

August 2018—present, Assistant Professor, University of Texas at Austin

October 2016–August 2018, Sagan Fellow, Harvard University.

### **EDUCATION**

2016—PhD, Astronomy and Astrophysics, University of California, Santa Cruz

2012—M.S., Astronomy and Astrophysics, University of California, Santa Cruz

2010—B.S., Physics, Massachusetts Institute of Technology

—B.S., Earth, Atmosphere, and Planetary Science, Massachusetts Institute of Technology

### **FIELDS OF INTEREST**

Atmospheres of extrasolar planets and brown dwarfs from Earths to super-Jupiters. Planet characterization using transmission spectroscopy, secondary eclipse spectroscopy, and direct-imaging. Brown dwarf characterization. Clouds in all substellar environments.

### **GRANTS, HONORS, AND AWARDS**

2017, IAU PhD Thesis Prize

2016, NASA Sagan Postdoctoral Fellowship

2016, Institute for Theory and Computation Postdoctoral Fellowship, CfA

2016, NASA Hubble Postdoctoral Fellowship, *declined*

2016, Miller Fellowship, Berkeley, *declined*

2016, Porat Fellowship, Stanford, *declined*

2016, O.K. Earl Fellowship, Caltech, *declined*

2015, Chancellor's Dissertation Year Fellowship, UC Santa Cruz

2015, Pierazzo International Student Travel Award

2014, HST Cycle 22 Theory Proposal

2014, ARCS Foundation Fellowship, UC Santa Cruz

2014, Excellence in Mentoring, UC Santa Cruz, Dept. of Astronomy and Astrophysics

2012, Donald and Irene Osterbrock Prize, UC Santa Cruz, Dept. of Astronomy and Astrophysics

2011, Harriet G. Jenkins Predoctoral Fellowship, NASA/UNCFSP

2011, Excellence in Teaching Award, UC Santa Cruz, Dept. of Astronomy and Astrophysics

2011, National Science Foundation Graduate Student Research Fellowship, Honorable Mention

## **TEACHING AND ADVISING EXPERIENCE**

2014, Teaching Assistant, Astronomy 2 (Overview of the Universe). UCSC.  
2013, Instructor, Astronomy 2 (Overview of the Universe). UCSC.  
2013-2015, Mentored 6 high school student research projects in Science Internship Program, UCSC. Siemens Competition Semifinalists (2013, 2014, 2015)  
2012-2017, Mentored 2 undergraduate senior thesis research projects, 2 additional projects  
2012, Center for Astronomy Education, Teaching Excellence Workshop  
2011, Professional Development Program. Inst. for Science and Engineer Educators, UCSC.  
2011, Teaching Assistant, Astronomy 5 (Cosmology). UCSC.  
2010, Teaching Assistant, 12.409. Observing Stars and Planets. MIT.

## **COLLOQUIA AND SEMINARS**

Boston University, Astronomy Colloquium. May 30, 2018.  
University of Chicago, Astrophysics Seminar. March 20, 2018.  
UT Austin, Astronomy Colloquium. February 19, 2018.  
KIPAC Colloquium, Stanford University. February 8, 2018.  
UMass Amherst Five College Astronomy Department Colloquium. October 12, 2017.  
Brown University Astrophysics Seminar Series. September 29, 2017.  
American Museum of Natural History Seminar. April 18, 2017.  
MIT PICS Seminar. April 7, 2017.  
Florida Institute of Technology Colloquium. March 24, 2017.  
UCLA iPLEX Lunch. January 29, 2016.  
Johns Hopkins Earth and Planetary Science Seminar. November 19, 2015.  
McGill Space Institute Seminar. October 6, 2015.  
CfA Small Scale Phenomena Seminar. October 5, 2015.  
IPAC Lunch Seminar. September 23, 2015.  
IfA Colloquium, Univ. of Hawaii. August 26, 2015.  
UC Santa Cruz Astronomy Department FLASH. August 14, 2015.  
Berkeley CIPS Seminar. March 19, 2014.  
Arizona ORIGINS Seminar. March 3, 2014.  
Caltech Yuk Yung Lunch Seminar. February 3, 2014.  
CU Boulder, Laboratory for Atmospheric and Space Physics Colloquium. November 1, 2012.  
Gemini North Seminar. October 16, 2012.  
Center for Astrophysics Solar, Stellar, and Planetary Sciences Seminar. August 13, 2012.  
Caltech Planetary Science Seminar. May 1, 2012.  
UC Santa Cruz Astronomy Department FLASH. April 13, 2012.

## CONFERENCE TALKS

Planet Habitability Workshop. Leiden, The Netherlands. *Invited talk*. April 23, 2018.  
Sagan Symposium, Pasadena, CA. November 9, 2017.  
The Brown Dwarf Exoplanet Connection, Newark DE. *Invited talk*. October 26, 2017.  
DPS 49, Provo, UT. October 18, 2017.  
Exoclipse. Boise, ID. *Invited Talk*. August 23, 2017.  
Workshop on Astrophysical Opacities. Kalamazoo, MI. *Invited Talk*. August 1, 2017.  
Enabling Transiting Exoplanet Science with JWST. Baltimore, MD. July 11, 2017.  
Gordon Conference, Mt Holyoke College, MA. *Invited Talk*. June 21, 2017.  
Wenner-Gren Conference, Stockholm, Sweden. *Invited Talk*. June 16, 2017.  
High Contrast Imaging in Space, Baltimore, MD. *Invited Talk*. November 15, 2016.  
DPS 48, Pasadena, CA. October 18, 2016.  
Cool Stars 19, Uppsala, Sweden. *Invited Talk*. June 7, 2016.  
Bay Area Exoplanet Science Meeting. June 3, 2016.  
AAS 227, Kissimmee. January 5, 2016.  
Extreme Solar Systems III, Kona, HI. December 3, 2015.  
Enabling Transiting Exoplanet Science with JWST. Baltimore. *Invited Talk*. November 17, 2015.  
Planetary Systems: A Synergistic View. *Invited Talk*. July 23, 2015.  
Bay Area Exoplanet Science Meeting. June 5, 2015.  
Wide-field Infrared Surveys Conference. *Invited talk*. November 17, 2014.  
DPS 46, Tucson. November 11, 2014.  
The Brown Dwarf Exoplanet Connection, Newark DE. *Invited talk*. October 23, 2014.  
Cool Stars 18, Flagstaff AZ. June 9, 2014.  
AAS 223, National Harbor. January 6, 2014.  
Bay Area Exoplanet Science Meeting. December 6, 2013.  
Kepler Science Meeting 2. November 5, 2013.  
DPS 45, Denver. October 7, 2013.  
Brown Dwarfs Come of Age. May 22, 2013.  
AAS 221, Long Beach. January 7, 2013.  
Bay Area Exoplanet Science Meeting. December 14, 2012.  
Exomol Opacities in Cool Stars and Exoplanets. July 3, 2012.  
Cool Stars 17, Barcelona. June 25, 2012.  
Exoclimates 2012, Aspen, CO. January 19, 2012.

## SERVICE

Referee for Science, Icarus, MNRAS, ApJ Letters, A&A, ApJ, AJ.  
Reviewer / External Reviewer for NASA panels.

## PAPERS IN REFEREED JOURNALS (65)

### *FIRST AUTHOR (8):*

**Caroline V. Morley**, Andrew J. Skemer, Katelyn Allers, et al. An L Band Spectrum of the Coldest Brown Dwarf. *The Astrophysical Journal*, Volume 858, Issue 2, article id. 97, 17 pp. (2018).

**Caroline V. Morley**, Laura Kreidberg, Zafar Rustamkulov, Tyler Robinson, Jonathan J. Fortney. Observing the Atmospheres of Known Temperate Earth-sized Planets with JWST. Accepted for publication in *The Astrophysical Journal*. *The Astrophysical Journal*, Volume 850, Issue 2, article id. 121, 18 pp. (2017).

**Caroline V. Morley**, Heather Knutson, Michael Line, Jonathan J. Fortney, Daniel Thorngren, Mark S. Marley, Dillon Teal, Roxana Lupu. Forward and Inverse Modeling of the Emission and Transmission Spectrum of GJ 436b: Investigating Metal Enrichment, Tidal Heating, and Clouds. *The Astronomical Journal*, Volume 153, Issue 2, article id. 86, 15 pp. (2017).

**Caroline V. Morley**, Jonathan J. Fortney, Mark S. Marley, Kevin Zahnle, Michael Line, Eliza Kempton, Nikole Lewis, Kerri Cahoy. Thermal Emission and Reflected Light Spectra of Super Earths with Flat Transmission Spectra. *ApJ*, Volume 815, 110.

**Caroline V. Morley**, Mark S. Marley, Jonathan J. Fortney, Roxana Lupu. Spectral Variability from the Patchy Atmospheres of T and Y Dwarfs. *ApJL*, Volume 789, Issue 1.

**Caroline V. Morley**, Mark S. Marley, Jonathan J. Fortney, Roxana Lupu, Didier Saumon, Tom Greene, Katharina Lodders. Water Clouds in Y Dwarfs and Exoplanets. *ApJ*, Volume 787, Issue 1.

**Caroline V. Morley**, Jonathan J. Fortney, Eliza M.-R. Kempton, Mark Marley, Channon Visscher, Kevin Zahnle. Quantitatively Assessing the Role of Clouds in the Transmission Spectrum of GJ 1214b. *ApJ* Volume 775, Issue 1.

**Caroline V. Morley**, Jonathan J. Fortney, Mark Marley, Channon Visscher, Didier Saumon, Sandy Leggett. Neglected Clouds in T and Y Dwarf Atmospheres. *ApJ* Volume 756, Issue 2.

### *CO-AUTHORED (57):*

Beatty, Thomas G.; **Morley, Caroline V.**; Curtis, Jason L.; Burrows, Adam; Davenport, James R. A.; Montet, Benjamin T. A Significant Overluminosity in the Transiting Brown Dwarf CWW 89Ab. *The Astronomical Journal*, Volume 156, Issue 4, article id. 168, 15 pp. (2018).

Wang, Ji; Fortney, Dimitri Mawet Jonathan J.; Hood, Callie; **Morley, Caroline V.**; Benneke, Bjorn. Detecting Water In the atmosphere of HR 8799 c with L-band High Dispersion Spectroscopy Aided By Adaptive Optics. Accepted for publication in AJ.

Kilpatrick, Brian M.; Cubillos, Patricio E.; Stevenson, Kevin B.; Lewis, Nikole K.; Wakeford, Hannah R.; MacDonald, Ryan J.; Madhusudhan, Nikku; Blečić, Jasmina; Bruno, Giovanni; Burrows, Adam; Deming, Drake; Heng, Kevin; Line, Michael R.; **Morley, Caroline V.**; Parmentier, Vivien; Tucker, Gregory S.; Valenti, Jeff A.; Waldmann, Ingo P.; Bean, Jacob L.; Beichman, Charles; Fraine, Jonathan; Krick, J. E.; Lothringer, Joshua D.; Mandell, Avi M. Community Targets of JWST's Early Release Science Program: Evaluation of WASP-63b. *The Astronomical Journal*, Volume 156, Issue 3, article id. 103, 14 pp. (2018).

Bonnefoy, M.; Perraut, K.; Lagrange, A.-M.; Delorme, P.; Vigan, A.; Line, M.; Rodet, L.; Ginski, C.; Mourard, D.; Marleau, G.-D.; Samland, M.; Tremblin, P.; Ligi, R.; Cantalloube, F.; Mollière, P.; Charnay, B.; Kuzuhara, M.; Janson, M.; **Morley, C.**; et al. The GJ 504 system revisited. Combining interferometric, radial velocity, and high contrast imaging data. Accepted for publication in *Astronomy and Astrophysics*

Kempton, Eliza M.-R.; Bean, Jacob L.; Louie, Dana R.; Deming, Drake; et al. A Framework for Prioritizing the TESS Planetary Candidates Most Amenable to Atmospheric Characterization. *Publications of the Astronomical Society of the Pacific*, Volume 130, Issue 993, pp. 114401 (2018).

He, Chao; Horst, Sarah M.; Lewis, Nikole K.; Yu, Xinting; Moses, Julianne I.; Kempton, Eliza M.-R.; Marley, Mark S.; McGuiggan, Patricia; **Morley, Caroline V.**; Valenti, Jeff A.; Vuitton, Veronique. Photochemical Haze Formation in the Atmospheres of super-Earths and mini-Neptunes. *The Astronomical Journal*, Volume 156, Issue 1, article id. 38, 8 pp. (2018).

Kreidberg, Laura; Line, Michael R.; Thorngren, Daniel; **Morley, Caroline V.**; Stevenson, Kevin B. Water, High-altitude Condensates, and Possible Methane Depletion in the Atmosphere of the Warm Super-Neptune WASP-107b. *The Astrophysical Journal Letters*, Volume 858, Issue 1, article id. L6, 7 pp. (2018).

Chen, Ge; Knutson, Heather A.; Dressing, Courtney D.; **Morley, Caroline V.**; et al. An Improved Transit Measurement for a 2.4  $R_{\oplus}$  Planet Orbiting A Bright Mid-M Dwarf K2-28. *The Astronomical Journal*, Volume 155, Issue 5, article id. 223, 8 pp. (2018).

Haze production rates in super-Earth and mini-Neptune atmosphere experiments. Hörst, Sarah M.; He, Chao; Lewis, Nikole K.; Kempton, Eliza M.-R.; Marley, Mark S.; **Morley, Caroline V.**; Moses, Julianne I.; Valenti, Jeff A.; Vuitton, Véronique. *Nature Astronomy*, Volume 2, p. 303-306. 2018.

Bean, Jacob L.; Stevenson, Kevin B.; Batalha, Natalie M.; Berta-Thompson, Zachory; Kreidberg, Laura; et al. The Transiting Exoplanet Community Early Release Science Program for JWST. Submitted for publication in PASP. arXiv:1803.04985.

He, Chao; Hörst, Sarah M.; Lewis, Nikole K.; Yu, Xinting; Moses, Julianne I.; Kempton, Eliza M.-R.; McGuiggan, Patricia; **Morley, Caroline V.**; Valenti, Jeff A.; Vuitton, Véronique. Laboratory Simulations of Haze Formation in the Atmospheres of Super-Earths and Mini-Neptunes: Particle Color and Size Distribution. *The Astrophysical Journal Letters*, Volume 856, Issue 1, article id. L3, 8 pp. (2018).

Lothringer, Joshua D.; Benneke, Björn; Crossfield, Ian J. M.; Henry, Gregory W.; **Morley, Caroline**; Dragomir, Diana; Barman, Travis; Knutson, Heather; Kempton, Eliza; Fortney, Jonathan; McCullough, Peter; Howard, Andrew W. An HST/STIS Optical Transmission Spectrum of Warm Neptune GJ 436b. *The Astronomical Journal*, Volume 155, Issue 2, article id. 66, 14 pp. (2018).

Bruno, Giovanni; Lewis, Nikole K.; Stevenson, Kevin B.; Filippazzo, Joseph; Hill, Matthew; Fraine, Jonathan D.; Wakeford, Hannah R.; Deming, Drake; Kilpatrick, Brian; Line, Michael R.; **Morley, Caroline V.**; Collins, Karen A.; Conti, Dennis M.; Garlitz, Joseph; Rodriguez, Joseph E. A Comparative Study of WASP-67 b and HAT-P-38 b from WFC3 Data. *The Astronomical Journal*, Volume 155, Issue 2, article id. 55, 15 pp. (2018).

Burningham, Ben; Marley, M. S.; Line, M. R.; Lupu, R.; Visscher, C.; **Morley, C. V.**; Saumon, D.; Freedman, R. Retrieval of atmospheric properties of cloudy L dwarfs. *Monthly Notices of the Royal Astronomical Society*, Volume 470, Issue 1, p.1177-1197.

Rajan, Abhijith; Rameau, Julien; De Rosa, Robert J.; Marley, Mark S.; Graham, James R.; Macintosh, Bruce; Marois, Christian; **Morley, Caroline**; Patience, Jennifer; Pueyo, Laurent; Saumon, Didier; Ward-Duong, Kimberly, et al. Characterizing 51 Eri b from 1 to 5  $\mu\text{m}$ : A Partly Cloudy Exoplanet. *The Astronomical Journal*, Volume 154, Issue 1, article id. 10, 20 pp. (2017).

Henderson, Cassandra S.; Skemer, Andrew J.; **Morley, Caroline V.**; Fortney, Jonathan J. A new statistical method for characterizing the atmospheres of extrasolar planets. *Monthly Notices of the Royal Astronomical Society*, Volume 470, Issue 4, p.4557-4563

Line, Michael R.; Marley, Mark S.; Liu, Michael C.; **Morley, Caroline V.**; Burningham, Ben; Hinkel, Natalie R.; Teske, Johanna; Fortney, Jonathan J. Uniform Atmospheric Retrieval Analysis of Ultracool Dwarfs II: Properties of 11 T-dwarfs. *The Astrophysical Journal*, Volume 848, Issue 2, article id. 83, 22 pp. (2017).

Leggett, S. K.; Tremblin, P.; Esplin, T. L.; Luhman, K. L.; **Morley, Caroline V.** The Y-type Brown Dwarfs: Estimates of Mass and Age from New Astrometry, Homogenized Photometry, and Near-

infrared Spectroscopy. *The Astrophysical Journal*, Volume 842, Issue 2, article id. 118, 25 pp. (2017).

Delorme, P.; Dupuy, T.; Gagné, J.; Reylé, C.; Forveille, T.; Liu, M. C.; Artigau, E.; Albert, L.; Delfosse, X.; Allard, F.; Homeier, D.; Malo, L.; **Morley, C.**; Naud, M. E.; Bonnefoy, M. CFBDSIR 2149-0403: young isolated planetary-mass object or high-metallicity low-mass brown dwarf? *Astronomy & Astrophysics*, Volume 602, id.A82, 17 pp.

Kilpatrick, Brian M.; Cubillos, Patricio E.; Stevenson, Kevin B.; Lewis, Nikole K.; Wakeford, Hannah; Macdonald, Ryan J.; Madhusudhan, Nikku; Blečić, Jasmina; Bruno, Giovanni; Burrows, Adam; Deming, Drake; Heng, Kevin; Line, Michael R.; **Morley, Caroline V.**; Parmentier, Vivien; Tucker, Gregory S.; Valenti, Jeff A.; Waldmann, Ingo P.; Bean, Jacob L.; Beichman, Charles; Fraine, Jonathan; Krick, J. E.; Lothringer, Joshua D.; Mandell, Avi M. Community targets for JWST's early release science program: evaluation of WASP-63b. Submitted for publication in *ApJ*. eprint arXiv:1704.07421

Rackham, Benjamin; Espinoza, Néstor; Apai, Dániel; López-Morales, Mercedes; Jordán, Andrés; Osip, David J.; Lewis, Nikole K.; Rodler, Florian; Fraine, Jonathan D.; **Morley, Caroline V.**; Fortney, Jonathan J. ACCESS I: An Optical Transmission Spectrum of GJ 1214b Reveals a Heterogeneous Stellar Photosphere. *The Astrophysical Journal*, Volume 834, Issue 2, article id. 151, 21 pp. (2017).

Stevenson et al. Transiting Exoplanet Studies and Community Targets for JWST's Early Release Science Program. *Publications of the Astronomical Society of Pacific*, Volume 128, Issue 967, pp. 094401 (2016).

Croll, Bryce; Muirhead, Philip S.; Han, Eunhyu; Dalba, Paul A.; Radigan, Jacqueline; **Morley, Caroline V.**; Lazarevic, Marko; Taylor, Brian. Long-term, Multiwavelength Light Curves of Ultra-cool Dwarfs: I. An Interplay of Starspots & Clouds Likely Drive the Variability of the L3.5 dwarf 2MASS 0036+18. Submitted for publication in *MNRAS*. ArXiv:1609.03586.

Parmentier, Vivien; Fortney, Jonathan J.; Showman, Adam P.; **Morley, Caroline**; Marley, Mark S. Transitions in the Cloud Composition of Hot Jupiters. *The Astrophysical Journal*, Volume 828, Issue 1, article id. 22, 20 pp. (2016).

Skemer, Andrew J.; **Morley, Caroline V.**; Allers, Katelyn N.; Geballe, Thomas R.; Marley, Mark S.; Fortney, Jonathan J.; Faherty, Jacqueline K.; Bjoraker, Gordon L.; Lupu, Roxana. The First Spectrum of the Coldest Brown Dwarf. *The Astrophysical Journal Letters*, Volume 826, Issue 2, article id. L17, 5 pp. (2016).

Leggett, S. K.; Cushing, Michael C.; Hardegree-Ullman, Kevin K.; Trucks, Jessica L.; Marley, M. S.; **Morley, Caroline V.**; Saumon, D.; Carey, S. J.; Fortney, J. J.; Gelino, C. R.; Gizis, J. E.;

Kirkpatrick, J. D.; Mace, G. N. Observed Variability at 1 $\mu$ m and 4 $\mu$ m in the Y0 Brown Dwarf WISEP J173835.52+273258.9. *The Astrophysical Journal*, Volume 830, Issue 2, article id. 141, 9 pp. (2016).

Fortney, Jonathan J.; Marley, Mark S.; Laughlin, Gregory; Nettelmann, Nadine; **Morley, Caroline V.**; Lupu, Roxana E.; Visscher, Channon; Jeremic, Pavle; Khadder, Wade G.; Hargrave, Mason. The Hunt for Planet Nine: Atmosphere, Spectra, Evolution, and Detectability. *The Astrophysical Journal Letters*, Volume 824, Issue 2, article id. L25, 6 pp. (2016).

Zahnle, K.; Marley, M. S.; **Morley, C. V.**; Moses, J. I. Photolytic Hazes in the Atmosphere of 51 Eri b. *The Astrophysical Journal*, Volume 824, Issue 2, article id. 137, 17 pp. (2016).

Leggett, S. K.; Tremblin, P.; Saumon, D.; Marley, M. S.; **Morley, Caroline V.**; Amundsen, D. S.; Baraffe, I.; Chabrier, G. Near-infrared Spectroscopy of the Y0 WISEP J173835.52+273258.9 and the Y1 WISE J035000.32-565830.2: The Importance of Non-equilibrium Chemistry. *The Astrophysical Journal*, Volume 824, Issue 1, article id. 2, 13 pp. (2016).

Cushing, Michael C.; Hardegree-Ullman, Kevin K.; Trucks, Jessica L.; **Morley, Caroline V.**; Gizis, John E.; Marley, Mark S.; Fortney, Jonathan J.; Kirkpatrick, J. Davy; Gelino, Christopher R.; Mace, Gregory N.; Carey, Sean J. The First Detection of Photometric Variability in a Y Dwarf: WISE J140518.39+553421.3. *The Astrophysical Journal*, Volume 823, Issue 2, article id. 152, 11 pp. (2016).

Stone, Jordan M.; Skemer, Andrew J.; Kratter, Kaitlin M.; Dupuy, Trent J.; Close, Laird M.; Eisner, Josh A.; Fortney, Jonathan J.; Hinz, Philip M.; Males, Jared R.; **Morley, Caroline V.**; Morzinski, Katie M.; Ward-Duong, Kimberly. Adaptive Optics imaging of VHS 1256-1257: A Low Mass Companion to a Brown Dwarf Binary System. *The Astrophysical Journal Letters*, Volume 818, Issue 1, article id. L12, 5 pp. (2016).

Skemer, Andrew J., **Morley, Caroline V.**, plus 40 additional authors. The LEECH Exoplanet Imaging Survey: Characterization of the Coldest Directly Imaged Exoplanet, GJ 504 b, and Evidence for Superstellar Metallicity. *The Astrophysical Journal*, Volume 817, Issue 2, article id. 166, 10 pp. (2016).

Macintosh, B.; Graham, J. R.; Barman, T.; De Rosa, R. J.; Konopacky, Q.; Marley, M. S.; Marois, C.; Nielsen, E. L.; Pueyo, L.; Rajan, A.; Rameau, J.; Saumon, D.; Wang, J. J.; Ammons, M.; Arriaga, P.; Artigau, E.; Beckwith, S.; Brewster, J.; Bruzzone, S.; Bulger, J.; Burningham, B.; Burrows, A. S.; Chen, C.; Chiang, E.; Chilcote, J. K.; Dawson, R. I.; Dong, R.; Doyon, R.; Draper, Z. H.; Duchêne, G.; Esposito, T. M.; Fabrycky, D.; Fitzgerald, M. P.; Follette, K. B.; Fortney, J. J.; Gerard, B.; Goodsell, S.; Greenbaum, A. Z.; Hiben, P.; Hinkley, S.; Hufford, T.; Hung, L.-W.; Ingraham, P.; Johnson-Groh, M.; Kalas, P.; Lafreniere, D.; Larkin, J. E.; Lee, J.; Line, M.; Long, D.; Maire, J.; Marchis, F.; Matthews, B. C.; Max, C. E.; Metchev, S.; Millar-Blanchaer, M. A.; Mittal, T.; **Morley, C. V.**; and 30



additional authors. Discovery and spectroscopy of the young Jovian planet 51 Eri b with the Gemini Planet Imager. *Science Express*, Aug 13 2015.

Kammer, Joshua A.; Knutson, Heather A.; Line, Michael R.; Fortney, Jonathan J.; Deming, Drake; Burrows, Adam; Cowan, Nicolas B.; Triaud, Amaury H. M. J.; Agol, Eric; Desert, Jean-Michel; Fulton, Benjamin J.; Howard, Andrew W.; Laughlin, Gregory P.; Lewis, Nikole K.; **Morley, Caroline V.**; Moses, Julianne I.; Showman, Adam P.; Todorov, Kamen O.. Spitzer Secondary Eclipse Observations of Five Cool Gas Giant Planets and Empirical Trends in Cool Planet Emission Spectra. *The Astrophysical Journal*, Volume 810, Issue 2, article id. 118, 16 pp. (2015).

Deming, Drake; Knutson, Heather; Kammer, Joshua; Fulton, Benjamin J.; Ingalls, James; Carey, Sean; Burrows, Adam; Fortney, Jonathan J.; Todorov, Kamen; Agol, Eric; Cowan, Nicolas; Desert, Jean-Michel; Fraine, Jonathan; Langton, Jonathan; **Morley, Caroline**; Showman, Adam P. Spitzer Secondary Eclipses of the Dense, Modestly-irradiated, Giant Exoplanet HAT-P-20b Using Pixel-Level Decorrelation. *The Astrophysical Journal*, Volume 805, Issue 2, article id. 132, 19 pp. (2015).

Rajan, A.; Patience, J.; Wilson, P. A.; Bulger, J.; De Rosa, R. J.; Ward-Duong, K.; **Morley, C.**; Pont, F.; Windhorst, R. The brown dwarf atmosphere monitoring (BAM) project - II. Multi-epoch monitoring of extremely cool brown dwarfs. *Monthly Notices of the Royal Astronomical Society*, Volume 448, Issue 4, p.3775-3783.

Webber, Matthew W.; Lewis, Nikole K.; Marley, Mark; **Morley, Caroline**; Fortney, Jonathan; Cahoy, Kerri. Effect of Longitudinally Varying Cloud Coverage on Visible Wavelength Reflected-Light Exoplanet Phase Curves. *The Astrophysical Journal*, Volume 804, Issue 2, article id. 94, 12 pp. (2015).

Yang, Hao; Apai, Daniel; Marley, Mark S.; Saumon, Didier; **Morley, Caroline V.**; Buenzli, Esther; Artigau, Etienne; Radigan, Jacqueline; Metchev, Stanimir; Burgasser, Adam J.; Mohanty, Subhanjoy; Lowrance, Patrick L.; Showman, Adam P.; Karalidi, Theodora; Fplateau, Davin; Heinze, Aren N. HST Rotational Spectral Mapping of Two L-Type Brown Dwarfs: Variability In and Out of Water Bands Indicates High-Altitude Haze Layers. *The Astrophysical Journal Letters*, Volume 798, Issue 1, article id. L13, 5 pp. (2015).

Leggett, S. K.; **Morley, Caroline V.**; Marley, M. S.; Saumon, D. Near-infrared photometry of Y dwarfs: low ammonia abundance and the onset of water clouds. *The Astrophysical Journal*, Volume 799, Issue 1, article id. 37, 16 pp. (2015).

Buenzli, Esther; Saumon, Didier; Marley, Mark. S.; Apai, Daniel; Radigan, Jacqueline; Bedin, Luigi R.; Reid, I. Neill; **Morley, Caroline V.** Cloud structure of the nearest brown dwarfs: Spectroscopic variability of Luhman 16AB from the Hubble Space Telescope. *The Astrophysical Journal*, Volume 798, Issue 2, article id. 127, 13 pp. (2015).

Pinfield, D. J.; Gromadzki, M.; Leggett, S. K.; Gomes, J.; Lodieu, N.; Kurtev, R.; Day-Jones, A. C.; Ruiz, M. T.; Cook, N. J.; **Morley, C. V.**; Marley, M. S.; Marocco, F.; Smart, R. L.; Jones, H. R. A.; Lucas, P. W.; Beletsky, Y.; Ivanov, V. D.; Burningham, B.; Jenkins, J. S.; Cardoso, C.; Frith, J.; Clarke, J. R. A.; Gálvez-Ortiz, M. C.; Zhang, Z. Discovery of a new Y dwarf: WISE J030449.03-270508.3. *Monthly Notices of the Royal Astronomical Society*, Volume 444, Issue 2

Tinney, C. G.; Faherty, Jacqueline K.; Kirkpatrick, J. Davy; Cushing, Mike; **Morley, Caroline V.**; Wright, Edward L. The Luminosities of the Coldest Brown Dwarfs. *The Astrophysical Journal*, Volume 796, Issue 1, article id. 39, 13 pp. (2014).

Luhman, K. L.; **Morley, C. V.**; Burgasser, A. J.; Esplin, T. L.; Bochanski, J. J. Near-infrared Detection of WD 0806-661 B with the Hubble Space Telescope. *ApJL* 794, 16. 2014.

Naud, Marie-Eve; Artigau, Étienne; Malo, Lison; Albert, Loïc; Doyon, René; Lafrenière, David; Gagné, Jonathan; Saumon, Didier; **Morley, Caroline V.**; Allard, France; Homeier, Derek; Beichman, Charles A.; Gelino, Christopher R.; Boucher, Anne. Discovery of a Wide Planetary-mass Companion to the Young M3 Star GU Psc. *ApJ*, 787, 5.

Wilson, P. A., Colón, K. D., Sing, D. K., Ballester, G. E., Désert, J.-M., Ehrenreich, D., Ford, E. B., Fortney, J. J., Lecavelier des Etangs, A., Lopez-Morales, M., **Morley, C. V.**, Pettitt, A. R., Pont, F., & Vidal-Madjar, A., 2014. A search for methane in the atmosphere of GJ 1214b via GTC narrow-band transmission spectrophotometry, *Monthly Notices of the Royal Astronomical Society*, 438, 2395

Lupu, R. E., Zahnle, K., Marley, M. S., Schaefer, L., Fegley, B., **Morley, C.**, Cahoy, K., Freedman, R., & Fortney, J. J., 2014. The Atmospheres of Earthlike Planets after Giant Impact Events, *The Astrophysical Journal*, 784, 27

Beichman, C., Gelino, C. R., Kirkpatrick, J. D., Cushing, M. C., Dodson-Robinson, S., Marley, M. S., **Morley, C. V.**, & Wright, E. L., 2014. WISE Y Dwarfs as Probes of the Brown Dwarf-Exoplanet Connection, *The Astrophysical Journal*, 783, 68

Leggett, S. K., Liu, M. C., Dupuy, T. J., **Morley, C. V.**, Marley, M. S., & Saumon, D., 2014. Resolved Spectroscopy of the T8.5 and Y0-0.5 Binary WISEPC J121756.91+162640.2AB, *The Astrophysical Journal*, 780, 62

Burningham, B., et al., 2013. 76 T dwarfs from the UKIDSS LAS: benchmarks, kinematics and an updated space density, *Monthly Notices of the Royal Astronomical Society*, 433, 457

Mace, G. N., et al., 2013. A Study of the Diverse T Dwarf Population Revealed by WISE, *The Astrophysical Journal Supplement Series*, 205, 6

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, T., 2013. A lower radius and mass for the transiting extrasolar planet HAT-P-8 b, *Astronomy and Astrophysics*, 551, A11

Leggett, S. K., **Morley, C. V.**, Marley, M. S., Saumon, D., Fortney, J. J., & Visscher, C., 2013. A Comparison of Near-infrared Photometry and Spectra for Y Dwarfs with a New Generation of Cool Cloudy Models, *The Astrophysical Journal*, 763, 130

Metchev, S., Apai, D., Radigan, J., Artigau, É., Heinze, A., Helling, C., Homeier, D., Littlefair, S., **Morley, C.**, Skemer, A., & Stark, C., 2013. Clouds in brown dwarfs and giant planets, *Astronomische Nachrichten*, 334, 40

Barclay, T., et al., 2012. Photometrically Derived Masses and Radii of the Planet and Star in the TrES-2 System, *The Astrophysical Journal*, 761, 53

Buenzli, E., Apai, D., **Morley, C. V.**, Flatitude, D., Showman, A. P., Burrows, A., Marley, M. S., Lewis, N. K., & Reid, I. N., 2012. Vertical Atmospheric Structure in a Variable Brown Dwarf: Pressure-dependent Phase Shifts in Simultaneous Hubble Space Telescope-Spitzer Light Curves, *The Astrophysical Journal*, 760, L31

Shporer, A., et al., 2010. Ground-based Multisite Observations of Two Transits of HD 80606b, *The Astrophysical Journal*, 722, 880