

CULLEN H. BLAKE

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ACADEMIC POSITIONS

Associate Professor of Physics and Astronomy The University of Pennsylvania, Department of Physics and Astronomy	2020-present
Assistant Professor of Physics and Astronomy The University of Pennsylvania, Department of Physics and Astronomy	2013-2020
NSF Astronomy and Astrophysics Postdoctoral Fellow Princeton University, Department of Astrophysical Sciences	2009-2012

EDUCATION

Ph.D. (Astronomy), Harvard University <i>Advisors: David Charbonneau and David W. Latham</i>	2009
A.M. (Astronomy), Harvard University	2006
A.B. with honors (Astrophysical Sciences), Princeton University <i>Advisors: Bohdan Paczyński and David Spergel</i>	2003

PRIMARY RESEARCH AND EDUCATIONAL INTERESTS

- The search for exoplanets orbiting small stars using the Doppler and transit methods
- The formation, structure, and evolution of low-mass stars and brown dwarfs
- Binary stars and eclipsing binary stars
- Direct detection of our Oort cloud and Oort clouds around other stars
- Modeling the impact of Earth's atmosphere on astronomical observations
- Gamma-ray bursts, transient astrophysical phenomena, and variability surveys
- Detector systems for extreme precision radial velocity spectrometers
- Robotic telescopes and instrumentation for near infrared and optical astronomy
- Photonic devices for astronomical instruments
- Increasing the involvement of undergraduates in astronomy research

FELLOWSHIPS, AWARDS, AND HONORS

Signatures of Life in the Universe Scialog Fellow (2020)
Dean's Award for Distinguished Teaching by an Assistant Professor (2017)
NASA Nancy Grace Roman Technology Fellowship (2013-2020)
NSF Astronomy and Astrophysics Postdoctoral Fellowship (2009-2012)
Princeton Society of Fellows Cotsen Fellowship (2009-2013)
Henry Norris Russell Fellowship, Princeton University (2009-2013)
Harvard Origins of Life in the Universe Graduate Fellowship (2006-2009)
Certificate of Distinction in Teaching, Harvard University (2006)
MacCracken Senior Thesis Prize, Princeton University (2003)
Intel-Westinghouse Science Talent Search, 11th place (1999)

TEACHING AND MENTORING EXPERIENCE

“The Solar System, Exoplanets, and Life” (six semesters, 258 total students)
Undergraduate course for non-majors. Covering planets in our solar system and those orbiting other stars. ASTR006

“Survey of the Universe” (five semesters, 395 total students)
Undergraduate course for non-majors. Covering the solar system, stars, galaxies, and cosmology. ASTR001

“Astronomical Instrumentation” (two semesters, 28 total students)
Graduate course covering astronomical instrumentation across the radio, optical, and infrared. ASTR503

Astrophysics Undergraduate Summer Research Program, Co-organizer, 2011-2012
Summer program at Princeton University designed to provide approximately 10 undergraduates with an independent research experience. Partially funded through the NSF REU program.

“Tools and Techniques of Astronomical Measurements”, 2007-2008
Teaching Fellow, Harvard University

“Cosmic Connections,” 2006
Teaching Fellow, Harvard University

“The Universe,” 2001-2002
Teaching Assistant, Princeton University

Graduate Students

Steve Gilhool, University of Pennsylvania, graduated 2018
Currently a postdoc in genetics research at the Children's Hospital of Pennsylvania

Ashley Baker, University of Pennsylvania, graduated 2020
*NSF Graduate Fellow, starting in July 2020 at California Institute of
Technology as Millikan Postdoctoral Fellow and 51 Peg-b Fellow*

David Sliski, University of Pennsylvania, expected graduation 2021

Mark Giovinazzi, University of Pennsylvania, expected graduation 2023
NSF Graduate Fellow

Undergraduate and High School Students

Shivansh Inamdar, University of Pennsylvania, 2017-2018

Charles Carr, University of Pennsylvania, 2015

Seth Koren, University of Pennsylvania, 2013-2015
Currently in physics graduate program at U.C. Santa Barbara

Margaret Shaw, Princeton University 2011, senior thesis student
Currently Senior Research Engineer at Lockheed Martin

Rebecca Harper, Princeton University, 2010, senior thesis student

Sebastian Drave, Harvard University, 2009

Benjamin Clark, high school student, 2009-2010
*Siemens Science Competition, 1st place; Intel Science Talent Search, 7th
place; Davidson Fellow*

MAJOR PROJECTS, GRANTS, AND COLLABORATIONS

NEID: An Extreme Precision Doppler Spectrometer – Co-I and Instrument Scientist
*A new extreme precision Doppler spectrometer for the WIYN telescope. Project
lead from Penn State University. Subcontract to University of Pennsylvania of
\$928,650 direct, \$227,175 indirect. 4/2016 to 10/2019. NASA grant 5405-UP-
JPL-7612*

A Compact Doppler Spectrometer for Discovering Earth-like Planets Orbiting Low-Mass
Stars (“Minerva-Red”) – PI
*Project to build and operate a near-infrared spectrometer designed for exoplanet
surveys targeting nearby low-mass stars. Funded through the NASA Roman
Technology Fellowship Program. \$705,596 direct, \$311,157 indirect. 6/2013 to
5/2020. NASA grant number NNX13AI79G*

APOGEE M Dwarf Planet Survey - Co-PI (current)
*SDSS III/IV ancillary science program to use the APOGEE spectrograph to
observe a large sample of low-mass stars*

NIRSPEC Ultracool Dwarf Radial Velocity Survey (2005-2010)
*Doppler survey using the Keck telescope to search for giant planets orbiting
ultracool dwarfs*

Peters Automated Infrared Imaging Telescope – PAIRITEL (2003-2008)

Core member of a team that developed an automated infrared telescope designed for rapid response to gamma-ray bursts and observations of a wide range of time-variable phenomena

REFEREED PUBLICATIONS (* DENOTES 1ST- OR 2ND-AUTHORED PAPERS)

74. “SOLES II: The Aligned Orbit of WASP-148b, the Only Known Hot Jupiter with a Nearby Warm Jupiter Companion, from NEID and HIRES,” Wang, X.-Y. et al. (38 authors), 2021, ApJL (*submitted*; arxiv:2110.08832)

73*. Enhancing ground-based observations of trans-Neptunian objects using a single-epoch parallax measurement from L2, Giovinazzi, M., **Blake, C.H.**, Bernardinelli, P. 2021, PASP (*accepted*)

72. The Brown Dwarf Kinematic Project (BDKP) V: Radial and Rotational Velocities of T Dwarfs from Keck-NIRSPEC High-Resolution Spectroscopy, Hsu, C-C, Burgasser, A. J., Theissen, C.A., Gelino, C.R., Birky, J.L., Diamant, S.J.M., Bardalez Gagliuffi, D.C., Aganze, C., Blake, C.H., Faherty, J.K. 2021, ApJS (*accepted*; arxiv:2107.01222)

71. Target Prioritization and Observing Strategies for the NEID Earth Twin Survey, Gupta, A. et al. (19 authors), 2021, AJ, 161, 3, 130

70. Astrometric orbits of spectral binary brown dwarfs - I. Massive T dwarf companions to 2M1059-21 and 2M0805+48, Sahlmann, J. et al. (10 authors), 2020, MNRAS, 495, 1136

69*. The HD 217107 Planetary System: Twenty Years of Radial Velocity Measurements, Giovinazzi, M., **Blake, C.H.** et al. (16 authors), 2020, Astronomische Nachrichten (*accepted*; arXiv:2009.12356)

68. Solar Contamination in Extreme Precision Radial Velocity Measurements: Deleterious Effects and Prospects for Mitigation, Roy, A. et al. (22 authors), 2020, AJ (*accepted*; arXiv:2002.09468)

67*. The IAG Solar Flux Atlas: Telluric Correction with a Semi-empirical Model, Baker, A.D., **Blake, C.H.**, & Reiners, A., 2020, AJ (*accepted*; arXiv:2001.02615)

66*. Improving the Thermal Stability of a CCD Through Clocking, **Blake, C.H.**, Li, D., Tufts, J., Ninan, J., Mahadevan, S., Bender, C., Hearty, F., Monson, A. & Giovinazzi, M., 2019, *Journal of Astronomical Telescopes, Instruments, and Systems*, 5, 041510

65. MINERVA-Australis. I. Design, Commissioning, and First Photometric Results, Addison, B. et al. [36 authors], 2019, *Publications of the Astronomical Society of the Pacific*, 131, 115003
64. First Radial Velocity Results from the MINIature Exoplanet Radial Velocity Array (MINERVA), Wilson, M. et al. [37 authors], 2019, *Publications of the Astronomical Society of the Pacific*, 131, 115001
- 63*. The Oxyometer: A Novel Instrument Concept for Characterizing Exoplanet Atmospheres, Baker, A.D., **Blake, C.H.**, & Halverson, S. 2019, *Publications of the Astronomical Society of the Pacific*, 131, 064402
- 62*. A Data-driven Technique for Measuring Stellar Rotation, Gilhool, S. & **Blake, C.H.** 2019, *The Astrophysical Journal*, 875, 8
61. Ultra-Stable Environment Control or the NEID Spectrometer: Design and Performance Demonstration, Robertson, P. et al. [33 authors], 2019, *Journal of Astronomical Telescopes, Instruments, and Systems*, 5, 015003
- 60*. Probing Oort Clouds Around Milky Way Stars with CMB Surveys, Baxter, E.J., **Blake, C.H.**, & Jain, B., 2018, *The Astrophysical Journal*, 156, 243
59. Forty-four New and Known M Dwarf Multiples in the SDSS-III/APOGEE M Dwarf Ancillary Science Sample, Skinner et al. [31 authors], 2018, *The Astrophysical Journal*, 156, 45
58. Stellar Characterization of the Exoplanet Hosting Star Ross 128 from APOGEE Spectra, Souto, D., Unterborn, C.T., Smith, V.V., Cunha, K., Teske, J., Covey, K., Rojas-Ayala, B., Garcia-Hernandez, D.A., Stassun, K., Zamora, O., Masseron, T., Johnson, J.A., Majewski, S.R., Jonsson, H., Gilhool, S., **Blake, C.H.**, & Santana, F., 2018, *The Astrophysical Journal Letters*, 860, 15
- 57*. Temporal Variations of Telluric Water Vapor Absorption at Apache Point Observatory, Li, D., **Blake, C.H.**, Nidever, D., & Halverson, S., 2018, *Publications of the Astronomical Society of the Pacific*, 130, 014501
- 56*. The Rotation of M Dwarfs Observed by the Apache Point Galactic Evolution Experiment, Gilhool, S., **Blake, C.H.**, Terrien, R.C., Bender, C., Mahadevan, S., & Deshpande, R., 2017, *The Astronomical Journal*, 155, 38
- 55*. A Low-cost Environmental Control System for Precise Radial Velocity Spectrometers, Sliski, D., **Blake, C.H.**, & Halverson, S., 2017, *Publications of the Astronomical Society of the Pacific*, 129, 125001

- 54*. Monitoring Telluric Absorption with CAMAL, Baker, A.D., **Blake, C.H.**, & Sliski, D.H., 2017, *Publications of the Astronomical Society of the Pacific*, 129, 5002
- 53*. The Impact of Charge Transfer Inefficiency on Extreme Precision Doppler Measurements, **Blake, C.H.**, Halverson, S., & Roy, A., 2017, *Journal of Instrumentation*, 12, 4003
52. Chemical Abundances of M-dwarfs from the APOGEE Survey. I. The Exoplanet Hosting Stars Kepler-138 and Kepler-186, Souto, D. et al. [20 authors], 2017, *The Astrophysical Journal*, 835, 239
- 51*. The Orbit of the L dwarf + T dwarf Spectral Binary SDSS J080531.84+481233.0, Burgasser, A., **Blake, C.H.**, Gelino, C.R., Sahlmann, J., & Gagliuffi, D.B., 2016, *The Astrophysical Journal*, 827, 25
- 50*. The Low-Mass Astrometric binary LSR1610-0040, Koren, S., **Blake, C.H.**, Dahn, C.C., & Harris, H.C., 2016, *The Astronomical Journal*, 151, 57
49. MINERVA: Small Planets from Small Telescopes, Wittenmyer, R.A. et al. [25 authors], 2016, *Publications of the Korean Astronomical Society*, 30, 665
48. The Eleventh and Twelfth Data Releases of the Sloan Digital Sky Survey: Final Data from SDSS-III, Alam, S. et al. [305 authors], 2015, *The Astrophysical Journal Supplement*, 219, 12
47. WISE J072003.20-084651.2: An Old and Active M9.5 + T5 Spectral Binary 6 pc from the Sun, 2014, Burgasser, A. J., Gillon, M., Melis, C., Bowler, B.P., Michelsen, E.L., Bardalez, D., Gelino, C.R., Jehin, E., Delrez, L., Manfroid, J., & **Blake, C.H.**, 2015, *The Astronomical Journal*, 149, 104
46. Miniature Exoplanet Radial Velocity Survey (MINERVA) I: Design, commissioning, and First Science Results, Swift, J., Bottom, M., Johnson, J., Wright, J.T., McCrady, N., Wittenmyer, R., Plavchan, P., Riddle, R., Muirhead, P.S., Herzig, E., Myles, J., **Blake, C.H.**, Eastman, J., Beatty, T.G., Lin, B., Zhao, M., Gardner, P., Falco, E.E., Criswell, S., Nava, C., Robinson, C., Sliski, D.H., Hedrick, R., Ivarsen, K., Hjelstrom, A., de Vera, J., & Szentgyorgyi, A., 2015, *Journal of Astronomical Telescopes, Instruments, and Systems*, 1, 7002
45. CfAIR2: Near Infrared Light Curves of 94 Type Ia Supernovae, Friedman, A. S., Wood-Vasey, W.M., Marion, G.H., Challis, P., Mandel K.S., Bloom, J.S., Modjaz, M., Narayan, G., Hicken, M., Foley, R.J., Klein, C.R., Starr, D.L., Morgan, A., Rest, A., **Blake, C.H.**, Miller, A.A., Falco, E., Wyatt, W.F., Mink, J., Skrutskie, M.F., & Kirshner, R.P., 2015, *The Astrophysical Journal Supplement*, 220, 9

44. The Tenth Data Release of the Sloan Digital Sky Survey: First Spectroscopic Data from the SDSS-III Apache Point Observatory Galactic Evolution Experiment, Ahn, C. et al. [238 authors], 2014, *The Astrophysical Journal Supplement*, 211, 17
- 43*. The SDSS-III APOGEE Radial Velocity Survey of M Dwarfs I: Description of Survey and Science Goals, Deshpande, R., **Blake, C.H.** et al. [33 authors], 2013, *The Astronomical Journal*, 146, 156
42. Target Selection for the Apache Point Observatory Galactic Evolution Experiment (APOGEE), Zasowski, G. et al. [46 authors], 2013, *The Astronomical Journal*, 146, 81
41. Multiplicity of Cool Dwarfs, Dupuy, T.J., Allen, P.R., Kraus, A.L., Biller, B., **Blake, C.H.**, Davison, C., Deacon, N.R., Duchene, G., Geller, A.M., King, R.R., Law, N.M., Nguyen, D.C., Reipurth, B., Winters, J.G., & Zhang, Z.H., 2013, *Astronomische Nachrichten*, 334, 36
40. Optimizing Doppler Surveys for Planet Yield, Bottom, M., Muirhead, P., Johnson, J., & **Blake, C.H.**, 2013, *Publications of the Astronomical Society of the Pacific*, 125, 240
39. Keck NIRSPEC Radial Velocity Observations of Late-M Dwarfs, Tanner, A. M., White, R., Bailey, J., **Blake, C.H.**, Blake, G., Cruz, K., Burgasser, A.J., Kraus, A. 2012, *The Astrophysical Journal Supplement*, 203, 10
38. The Ninth Data Release of the Sloan Digital Sky Survey: First Spectroscopic Data from the SDSS-III Baryon Oscillation Spectroscopic Survey, Ahn, C. P. et al. [236 authors], 2012, *The Astrophysical Journal Supplement*, 203, 21
37. The Baryon Oscillation Spectroscopic Survey of SDSS-III, Dawson, K.S. et al. [165 authors], 2012, *The Astronomical Journal*, 145, 10
- 36*. The Close Binary Fraction of Dwarf M Stars, Clark, B.M., **Blake, C.H.**, & Knapp, G.R., 2012, *The Astrophysical Journal*, 744, 119
35. Precise Infrared Radial Velocities from Keck/NIRSPEC and the Search for Young Planets, Bailey, J.I., White, R.J., **Blake, C.H.**, Charbonneau, D., Barman, T.S., Tanner, A.M., & Torres, G., 2012, *The Astrophysical Journal*, 749, 16
- 34*. Measuring NIR Atmospheric Extinction Using a Global Positioning System Receiver, **Blake, C.H.** & Shaw, M.M., 2011, *Publications of the Astronomical Society of the Pacific*, 123, 1302
33. PTF10FQS: A Luminous Red Nova in the Spiral Galaxy Messier 99, Kasliwal, M. M. et al. [42 authors], 2011, *The Astrophysical Journal*, 730, 134
- 32*. The NIRSEPC Ultracool Dwarf Radial Velocity Survey, **Blake, C.H.**, Charboneau, D., & White, R. J., 2010, *The Astrophysical Journal*, 723, 684

- 31.** Characterizing Transiting Extrasolar Planets with Narrow-band Photometry and GTC/OSIRIS, Colon, K.D., Ford, E.B., Lee, B., Mahadevan, S., & **Blake, C.H.**, 2010, *Monthly Notices of the Royal Astronomical Society*, 408, 1494
- 30.** GJ 3236: A New Bright, Very Low-mass Eclipsing Binary Discovered by the MEARTH Observatory, Irwin, J., Charbonneau, D., Berta, Z.K., Quinn, S.N., Latham, D.W., Torres, G., **Blake, C.H.**, Burke, C.J., Esquerdo, G.A., Furesz, G., Mink, D.J., Nutzman, P., Szentgyorgyi, A.H., Calkins, M.L., Falco, E.E., Bloom, J.S., & Starr, D.L. 2009, *The Astrophysical Journal*, 701, 1436
- 29.** Observations of the Naked-Eye GRB 080319B: Implications of Nature's Brightest Explosion, Bloom, J.S., Perley, D., Li, W., Butler, N.R., Miller, A.A., Kocevski, D., Kann, D.A., Foley, R.J., Chen, H.-W., Filippenko, A.V., Starr, D.L., Macomber, B., Prochaska, J.X., Chornock, R., Poznanski, D., Klose, S., Skrutskie, M.F., Lopez, S., Hall, P., Glazerbrook, K., & **Blake, C.H.** 2009, *The Astrophysical Journal*, 691, 723
- 28***. An Age Constraint for the Very Low-Mass Stellar/Brown Dwarf Binary 2MASS J03202839-0446358AB, Burgasser, A.J., & **Blake, C.H.**, 2009, *The Astrophysical Journal*, 137, 4621
- 27.** From Shock Breakout to Peak and Beyond, Modjaz, M., Li et al. [41 authors], 2009, *The Astrophysical Journal*, 702, 226
- 26.** The Rapidly Flaring Afterglow of the Very Bright and Energetic GRB 070125, Urdike, A. C., et al. [55 authors], 2008, *The Astrophysical Journal*, 685, 361
- 25.** T-Lyr-17236: A Long-period Low-mass Eclipsing Binary, Devor, J., Charbonneau, D., Torres, G., **Blake, C.H.**, White, R.J., Rabus, M., O'Donovan, F.T., Mandushev, G., Bakos, G., Furesz, G., & Szentgyorgyi, A. 2008, *The Astrophysical Journal*, 687, 1253
- 24***. A Spectroscopic Binary at the M/L Transition, **Blake, C.H.**, Charbonneau, D., White, R., Torres, G., Marley, M., & Saumon, D. 2008, *The Astrophysical Journal Letters*, 678L, 125
- 23***. A New Low-mass Eclipsing Binary from SDSS-II, **Blake, C.H.**, Torres, G., Bloom, J.S., & Gaudi, B.S. 2008, *The Astrophysical Journal*, 684, 635
- 22.** The Troublesome Broadband Evolution of GRB 061126: Does a Grey Burst Imply Grey Dust?, Perley, D.A., Bloom, J.S., Butler, N.R., Pollack, L.K., Holtzman, J., **Blake, C.H.**, Kocevski, D., Vestrand, W.T., Li, W., Foley, R.J., Bellm, E., Chen, H.-W., Prochaska, J.X., Starr, D., Filippenko, A.V., Falco, E.E., Szentgyorgyi, A.H., Wren, J., Wozniak, P.R., White, R., & Pergande, J., 2008, *The Astrophysical Journal*, 672, 449

- 21.** Discovery of a Very Bright, Nearby Gravitational Microlensing Event, Gaudi, B.S., Patterson, J., Spiegel, D.A., Krajcic, T., Koff, R., Pojmanski, G., Dong, S., Gould, A., Prieto, J.L., **Blake, C.H.**, Roming, P.W.A., Bennett, D.P., Bloom, J.S., Boyd, D., Eyler, M.E., de Ponthiere, P., Mirabal, N., Morgan, C.W., Remillard, R.R., Vanmuster, T., Wagner, M.R., & Watson, L.C., 2008, *The Astrophysical Journal*, 677, 1268
- 20*.** Near Infrared Monitoring of Ultracool Dwarfs: Prospects for Searching for Transiting Companions, **Blake, C. H.**, Bloom, J.S., Latham, D., Szentgyorgyi, A., Skrutskie, M., Falco, E., & Starr, D., 2008, *Publications of the Astronomical Society of the Pacific*, 120, 860
- 19.** Type 1a Supernovae are Good Standard Candles in the Near Infrared: Evidence from PAIRITEL, Wood-Vasey, W.M., Friedman, A.S., Bloom, J.S., Hicken, M., Modjaz, M., Kirshner, R.P., Starr, D.L., **Blake, C.H.**, Falco, E.E., Szentgyorgyi, A., Challis, P., Blondin, S., & Rest, A., 2008, *The Astrophysical Journal*, 689, 377
- 18.** Near-Infrared Interferometric, Spectroscopic, and Photometric Monitoring of T Tauri Inner Disks, Eisner, J.A., Hillenbrand, L., White, R., Bloom, J.S., Akerson, R.L., & **Blake, C.H.**, 2007, *The Astrophysical Journal*, 669, 1072
- 17.** Multicolor Infrared Observations of SN 2006aj: The Supernova Associated with XRF 060218, Kocevski, D., Modjaz, M., Bloom, J.S., Foley, R., Starr, D., **Blake, C.H.**, Falco, E.E., Butler, N.R., Skrutskie, M., & Szentgyorgyi, A., 2007, *The Astrophysical Journal*, 663, 1180
- 16.** A Putative Early-Type Host Galaxy for GRB 060502B: Implications for the Progenitors of Short-Duration Hard-Spectrum Bursts, Bloom, J.S., Perley, D., Chen, H., Butler, N., Prochaska, J., Kocevski, D., **Blake, C.H.**, Szentgyorgyi, A., Falco, E., & Starr, D.L. 2007, *The Astrophysical Journal*, 654, 878
- 15*.** What Can the Cosmic Microwave Background Tell Us About the Outer Solar System?, Babich, D., **Blake, C.H.**, & Steinhardt, C., 2007, *The Astrophysical Journal*, 669, 1406
- 14*.** Multiepoch Radial Velocity Observations of L Dwarfs, **Blake, C.H.**, Charbonneau, D. White, R. J., Marley, M.S., & Saumon, D., 2007, *The Astrophysical Journal*, 666, 1198
- 13.** GRB 050408: A Bright Gamma-Ray Burst Probing an Atypical Galactic Environment, Foley, R.J., Perley, D.A., Pooley, D., Prochaska, J.X., Bloom, J.S., Li, W., Cobb, B., Chen, H.-W., Aldering, G., Baily, C., **Blake, C.H.**, Falco, E.E., Green, P.J., Kowalski, M.P., Perlmutter, S., Roth, K., & Volk, K., 2006, *The Astrophysical Journal*, 645, 450

12. The 2005 Outburst of the Halo Black Hole X-Ray Transient XTE J1118+480, Zurita, C., Torres, M.A.P., Steeghs, D., Rodriguez-Gil, P., Munoz-Darias, T., Casares, J., Shahbaz, T., Martinez-Pais, I.G., Zhao, P., Garcia, M.R., Piccioni, A., Bartolini, C., Guarnieri, A., Bloom, J.S., **Blake, C.H.**, Falco, E.E., Szentgyorgyi, A., & Skrutskie, M., 2006, *The Astrophysical Journal*, 644, 432

11. Closing in on a Short-Hard Burst Progenitor: Constraints from Early-Time Optical Imaging and Spectroscopy of a Possible Host Galaxy of GRB 050509b, Bloom, J.S., Prochaska, J.X., Pooley, D., **Blake, C.H.**, Foley, R.J., Jha, S., Ramirez-Ruiz, E., Filippenko, A.V., Sigurdsson, S., Barth, A., Chen, H.-W., Cooper, M.C., Falco, E.E., Gal, R.R., Gerke, B.F., Gladders, M.D., Greene, J.E., Hennawi, J., Ho, L.C., Hurley, K., Koester, B.P., Li, W., Lubin, L., Newman, J., Perley, D.A., Squires, G.K., & Wood-Vasey, W.M., 2006, *The Astrophysical Journal*, 638, 354

10. Optical Light Curve and Cooling Break of GRB 050502A, Yost, S.A., Alatalo, K., Rykoff, E.S., Aharonian, F., Akerlof, C.W., Ashley, M.C.B., **Blake, C.H.**, Bloom, J.S., Boettcher, M., Falco, E.E., Gogus, E., Guver, T., Halpern, J.P., Horns, D., Joshi, M., Kiziloglu, U., McKay, T.A., Mirabal, N., Ozel, M., Phillips, A., Quimby, R.M., Rujopakarn, W., Schaefer, B., Shields, J.C., Skrutskie, M., Smith, D.A., Starr, D.L., Swan, H.F., Szentgyorgyi, A., Vestrand, W.T., Wheeler, J.C., & Wren, J., 2006, *The Astrophysical Journal*, 636, 959

9. The Unique Type Ib Supernova 2005bf: A WN Star Explosion Model for Peculiar Light Curves and Spectra, Tominaga, N., Tanaka, M., Nomoto, K., Mazzali, P.A., Deng, J., Maeda, K., Umeda, H., Modjaz, M., Hicken, M., Challis, P., Kirshner, R.P., Wood-Vasey, W.M., **Blake, C.H.**, Bloom, J.S., Skrutskie, M., Szentgyorgyi, A., Falco, E.E., Inada, N., Minezaki, T., Yoshii, Y., Kawabata, K., Iye, M., Anupama, G.C., Sahu, D.K., & Prabhi, T.P., 2005, *The Astrophysical Journal Letters*, 633, 97

8. Systematic Errors in Weak Lensing: Application to SDSS Galaxy-galaxy Weak Lensing, Mandelbaum, R., Hirata, C., Seljak, U., Guzik, J., Padmanabhan, N., **Blake, C.H.**, Blanton, M., Lupton, R., & Brinkmann, J., 2005, *Monthly Notices of the Royal Astronomical Society*, 361, 1287

7*. Automated Classification of Variable Stars for ASAS Data, Eyer, L. & **Blake, C.H.**, 2005, *Monthly Notices of the Royal Astronomical Society*, 358, 30

6*. An Infrared Flash Contemporaneous with the Gamma Rays of GRB 041219a, **Blake, C.H.**, Bloom, J.S., Starr, D.L., Falco, E.E., Skrutskie, M., Fenimore, E.E., Duchene, G., Szentgyorgyi, A., Hornstein, S., Prochaska, J.X., McCabe, C., Ghez, A., Konopacky, Q.,

Stapelfeldt, K., Hurley, K., Campbell, R., Kassis, M., Chafee, F., Gehrels, N., Barthelmy, S., Cummings, J.R., Hullinger, D., Krimm, H.A., Markwardt, C.B., Palmer, D., Parsons, A., McLean, K., & Tueller, J., 2005, *Nature*, 435, 181

5. Galaxy-galaxy Weak Lensing in the Sloan Digital Sky Survey: Intrinsic Alignments and Shear Calibration Errors, Hirata, C., Mandelbaum, R., Seljak, U., Guzik, J., Padmanabhan, N., **Blake, C.H.**, Scranton, R., & Szalay, A.S., 2004, *Monthly Notices of the Royal Astronomical Society*, 353, 529

4*. Optical Limits on Precursor Emission from Gamma-ray Bursts with Known Redshifts, **Blake, C.H.** & Bloom, J.S., 2004, *The Astrophysical Journal*, 606, 1019

3*. A Search for Period Changes in Delta Scuti Stars with the Super-LOTIS Sky Patrol System, **Blake, C.H.** Fox, D., Park, H.S., & Williams, G.G., 2003, *Astronomy & Astrophysics*, 399, 365

2*. The Princeton Variability Survey, **Blake, C.H.**, 2003, *Publications of the Astronomical Society of the Pacific*, 115, 104

1. V1162 Ori: A Multiperiodic Delta Scuti Star with Variable Period and Amplitude, Arentoft, T., Sterken, C., Handler, G., Freyhammer, L., Bruch, A., Niarchos, P., Gazeas, K., Manimanis, V., Van Cauteren, P., Poretti, E., Dawson, D.W., Liu, Z.L., Zhou, A.Y., Du, B.T., Shobbrook, P.R., Garrido, R., Fried, R., Akan, M.C., Ibanoglu, C., Evren, S., Tas, G., Johnson, D., **Blake, C.H.**, & Kurtz, D.W., 2001, *Astronomy & Astrophysics*, 374, 1056

CONFERENCE PROCEEDINGS AND OTHER PUBLICATIONS

Co-author on 25 Gamma-ray Burst Coordinates Network (GCN) circulars between 2002 and 2007

14. Characterizing Extra-solar Oort Clouds with Submillimeter-wave Observations. Orłowski-Scherer, J., Baxter, E., **Blake, C.H.**, Devlin, M., & Jain, B., 2019, arXiv:1903.06598

13. High-Resolution Spectroscopic Surveys of Ultracool Dwarf Stars & Brown Dwarfs. Burgasser, A., Apai, D., Bardalez Gagliuffi, D., **Blake, C.H.**, Gaghe, J., Konopacky, Q., Martin, E., Metchev, S., Plavchan, P., Reiners, A., Schlawin, E., Sousa-Silva, C., Vos, J., 2019, *Astro2020 Science White Paper* (arXiv:1903:04664)

12. The need for single-mode fiber-fed spectrographs. Crass, J., Bechter, A., Bechter, E., Beichman, C., **Blake, C.H.**, Coutts, D., Feger, T., Halverson, S., Harris, R.J., Jovanovic, N., Plavchan, P., Schwab, C., Gautam, V., Wallace, J.K., & Wang, J., 2019, *White paper submitted to the National Academy of Sciences 2018 Exoplanet Science Strategy committee* (arXiv:1901.07567)

11. Planet X in CMB and Optical Galaxy Surveys, Baxter, E.J., Jain, B., **Blake, C.H.**, Bernstein, G., Devlin, M. & Holder, G., 2018, arXiv:1812.08701
10. The NEID Precision Radial Velocity Spectrometer: Optical Design of the Port Adapter and ADC, 2018, Schwab, C. et al. [26 authors], *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Proceedings, Ground-based and Airborne Instrumentation for Astronomy VII*, 10702, 1070271
9. The NEID Precision Radial Velocity Spectrometer: Port Adapter Overview, Requirements, and Test Plan, Logsdon, S. et al [24 authors], 2018, *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Proceedings, Ground-based and Airborne Instrumentation for Astronomy VII*, 10702, 1070267
8. EarthFinder: A Precise Radial Velocity Probe Mission Concept for the Detection of Earth-Mass Planets Orbiting Sun-like Stars, Plavchan, P. et al. [43 authors], 2018, *White paper submitted to the National Academy of Sciences 2018 Exoplanet Science Strategy committee* (arXiv:1803.03960)
7. Radial Velocity Prospects Current and Future, Plavchan, P. et al. [40 authors], 2015, *White Paper Report prepared by the Study Analysis Group 8 for the Exoplanet Program Analysis Group* (arXiv: 1503.01770)
6. NIMBUS: The Near-infrared Multi-band Ultraprecise Spectroimager for SOFIA, McElwain, M. et al. [23 authors], 2012, *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Proceedings*, 8446, 84467B
5. High resolution Florida IR silicon immersion grating spectrometer and an M dwarf planet survey, Ge, J., Powell, S., Bo, M., Wang, J., Fletcher, A., Schofield, S., Liu, J., Muterspaugh, M., **Blake, C.H.**, 2012, *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Proceedings*, 8446, 84463O
4. Fundamental Properties of Low-mass Stars and Brown Dwarfs. Liu, M., Stassun, K., Allard, F., **Blake, C.H.**, Bonnefoy, M., Cody, A.M., Day-Jones, A.C., Dupuy, T., Kraus, A., & Lopez-Morales, M., 2009, *15th Cambridge Workshop on Cool Stars, Stellar Systems, and the Sun*, 1094, 258
3. The PAIRITEL Ultracool Dwarf Transit Survey, **Blake, C.H.**, Latham, D.W., & Bloom, J.S., 2007, *Transiting Extrasolar Planets Workshop*, 366, 87
2. Autonomous Observing and Control Systems for PAIRITEL, a 1.3m Infrared Imaging Telescope, Bloom, J.S., Starr, D.L., **Blake, C.H.**, Skrutskie, M.F., & Falco, E.E., 2006, *Astronomical Data Analysis Software and Systems XV*, 351, 751

1. Automated Classification of Variable Stars for ASAS Data. Eyer, L, & **Blake, C.H.**, 2002, *IAU Colloquium 185: Radial and Nonradial Pulsations as Probes of Stellar Physics*, 259, 160

SELECTED INVITED PRESENTATIONS

The College of New Jersey – Physics Colloquium speaker (April 2020)
NASA Goddard Space Flight Center – Astrophysics colloquium speaker (April 2019)
Ohio State University Physics Department – Colloquium speaker (April 2019)
Extreme Precision Radial Velocities IV – Invited review talk (March 2019)
Penn State Center for Habitable Worlds – Seminar speaker (February 2019)
NASA ExoPAG 2018 – Speaker (July 2018)
Roman Technology Fellowship Special AAS Session – Speaker (June 2018)
Transiting Exoplanet Survey Satellite Team Meeting – Speaker (February 2018)
Extreme Precision Radial Velocities III – Speaker (August 2017)
University of Maryland, Baltimore – Physics colloquium speaker (September 2017)
Temple University – Physics colloquium speaker (May 2017)
Northwestern University – Astronomy seminar speaker (February 2017)
Precision Astronomy with Deep Depletion CCDs, Brookhaven National Lab – Speaker (December 2016)
University of Delaware – Physics and Astronomy colloquium speaker (August 2016)
University of Toronto – Astronomy seminar speaker (June 2016)
Institute for Advanced Study, Princeton – Colloquium speaker (October 2015)
Pathways to Habitable Planets II, Bern (Switzerland) – Invited speaker (May 2015)
New York State Science and Engineering Fair – Keynote speaker (March 2015)
University of California, Los Angeles – Seminar Speaker (February 2015)
American Astronomical Society Winter Meeting – Invited speaker (January 2015)
Geneva Observatory, Geneva (Switzerland) – Seminar speaker (November 2014)
Fermi National Laboratory – Seminar Speaker (February 2014)
Harvard-Smithsonian Center for Astrophysics– Seminar speaker (December 2013)
California Institute of Technology – Seminar speaker (May 2013)
Rensselaer Polytechnic Institute – Physics colloquium speaker (April 2013)
University of California, San Diego – Seminar speaker (October 2012)
50 Years of Brown Dwarfs Conference – Ringberg (Germany) –
Invited review talk (October 2012)
Penn State University Department of Astronomy– Seminar speaker (April 2011)
Cornell University – Colloquium speaker (February 2011)

SCIENTIFIC COMMUNITY SERVICE AND UNIVERSITY SERVICE

NASA Extreme Precision Radial Velocity Working Group (member; 2019-2020)
Lead organizer of *Telluric Line Hack Week* workshop (2019)
Lead organizer of *Exoplanet Science with Small Telescopes* workshop (2017)

Member of Scientific Organizing Committee for: *Extreme Precision Radial Velocities III, Sagan Summer Workshop 2018*

Member of *Transiting Exoplanet Survey Satellite (TESS)* Follow-up Working Group
Physics and Astronomy Graduate Admission Committee, the University of Pennsylvania
(2013-2018)

Physics and Astronomy Diversity Committee, the University of Pennsylvania
(2018-present)

Member of dissertation committee for: Tasha Billings (Penn), Rachel Cane-Wolf (Penn),
Saul Kohn (Penn), Matt Malloy (Penn), Yutong Shan (Harvard),
Jessie Taylor (Penn), Jon Ward (Penn)

Referee for journals including *The Astronomical Journal*, *The Astrophysical Journal*,
Astronomy and Astrophysics, and *Monthly Notices of the Royal Astronomical Society*
(2004-present)

National Science Foundation Proposal Review Panel Member (multiple, 2010-present)