

Brad Newton Barlow, Ph.D.

Curriculum Vitae

ASSOCIATE PROFESSOR

Department of Physics & Astronomy

University of North Carolina at Chapel Hill

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RESEARCH INTERESTS

Stellar remnants, gravitational wave verification binaries, astronomical instrumentation, Type 1a supernovae progenitors, hot subluminoous stars, white dwarfs, asteroseismology, time-domain astronomy, public outreach

EDUCATION

- **University of North Carolina at Chapel Hill** Chapel Hill, NC
Doctor of Philosophy in physics (astronomy concentration) *Dec 2011*
Dissertation: “Time-domain Studies of Hot Subdwarfs with SOAR and SKYNET” (*Adviser:* Dr. Chris Clemens)
- **University of North Carolina at Chapel Hill** Chapel Hill, NC
Master of Science in physics (astronomy concentration) *Dec 2008*
Thesis: “Two New Variable Hot DQ Stars” (*Adviser:* Dr. Chris Clemens)
- **Mississippi State University** Starkville, MS
Bachelor of Science in physics (summa cum laude) *May 2006*
Adviser: Dr. J. Patrick Lestrade
Minors: Mathematics, German

ACADEMIC EMPLOYMENT

- **University of North Carolina at Chapel Hill** Chapel Hill, NC
Associate Professor of Physics & Astronomy *2024–present*
- **High Point University** High Point, NC
Co-Director of the Natural Sciences Fellows Program *2021–2024*
Director of Culp Planetarium *2019–2024*
Associate Professor of Astrophysics *2019–2024*
Assistant Professor of Astrophysics *2013–2019*
- **Pennsylvania State University** University Park, PA
Postdoctoral Research Associate *2011–2013*

SELECTED TELESCOPE/OBSERVATORY EXPERIENCE

- **4.1-m Southern Astrophysical Research (SOAR) Telescope** (Cerro Pachon, Chile)
 - *Instruments:* Goodman Spectrograph, SOAR Optical Imager
 - 100+ nights of experience (commissioning + engineering + science nights)
 - observed on-site for engineering runs on 30 nights (remotely otherwise)
 - wrote Goodman camera control software, helped commission instrument
- **NASA’s TESS Spacecraft** (high-Earth elliptical orbit)
 - *Modes:* 20-s and 2-min cadence postage stamp data
 - member of TESS asteroseismic consortium (TASC)
 - awarded ~7000 target slots in Cycles 2–6 as PI of five Guest Investigator program proposals
- **SMARTS Consortium Telescopes** (Cerro Tololo, Chile)
 - *Instruments:* CTIO 1.5-m/CHIRON, CTIO 0.9-m/ARCON
 - primary member of SMARTS Consortium
 - obtained, reduced, and analyzed ~600 hours of spectroscopy/photometry on the 1.5-m and 0.9-m telescopes

- **NASA’s *Swift* Spacecraft** (low-Earth orbit)
 - *Instruments:* Ultraviolet and Optical Telescope, X-Ray Telescope
 - former Swift Gamma Burst Advocate
 - awarded ~20 orbits of observing time (4 ToOs) with UVOT/XRT
- **10–m Hobby–Eberly Telescope** (McDonald Observatory, TX)
 - *Instruments:* High Resolution Spectrograph
 - awarded ~40 hours of observing time for optical spectroscopy with HRS (through Penn State TAC)
- **Skynet Robotic Telescope Network** (worldwide)
 - *Instruments:* array of 0.4-m to 1.0-m robotic telescopes located around the world
 - obtained, reduced, and analyzed over 2000 hours of time-series photometry
- **Morehead Telescope** (Chapel Hill, NC)
 - used 24-inch reflecting telescope for educational & public outreach

HONORS

- [Sigma Xi Distinguished Lecturer](#) 2022–2024
- HPU Undergraduate Mentorship Matters Award..... 2020
- HPU Undergraduate Mentorship Matters Award..... 2019
- [Ruth Ridenhour Scholarly and Professional Achievement Award](#) 2017
- HPU Class of 2017 Faculty Excellence Award for Teaching..... 2016
- Graduate Assistance in Areas of National Need (GAANN) Fellow 2010
- American Association of Physics Teachers (AAPT) Outstanding Teaching Award 2007
- [Marsh W. White Award & Blake Lily Prize](#) for physics outreach (acting SPS President) 2006
- Phi Kappa Phi National Honor Society 2005
- Undergraduate Student Research Award, MSU College of Arts and Sciences 2005

PEER-REVIEWED ARTICLES (COMPLETE LIST AVAILABLE AT [NASA/ADS](#)) *denotes student advisee co-author

62. [A SPECTROSCOPIC SURVEY OF FAST HOT SUBDWARFS](#)
Geier, S., Bastian, A., Heber, U., Kupfer, T., Bloemen, S., Kreuzer, S., Schneider, D., Schindewolf, M., Moeller, L., Pelisoli, I., Schaffenroth, V., **Barlow, B.N.**, Irrgang, A., Raddi, R., Dorsch, M., Geier, S., Reindl, N., Rauch, T., Ziegerer, E., Nemeth, P., Gaensicke, B.T., 2024, *Astronomy & Astrophysics*, submitted.
61. [HOT SUBDWARFS IN CLOSE BINARIES OBSERVED FROM SPACE III: REFLECTION EFFECT ASYMMETRY FROM RELATIVISTIC BEAMING](#)
Barlow, B.N., Smith, B.A.*, Kupfer, T., Schaffenroth, V., Parker, I.* 2024, *Astronomy & Astrophysics*, accepted.
60. [OGLE-BLAP-009 – A CASE STUDY FOR THE PROPERTIES AND EVOLUTION OF BLUE LARGE-AMPLITUDE PULSATORS](#)
Bradshaw, C., Dorsch, M., Kupfer, T., **Barlow, B.N.**, Heber, U., Bauer, E., Bildsten, L., van Roestel, J., 2024, *Monthly Notices of the Royal Astronomical Society*, **527**, 10239.
59. [TIC 378898110: A BRIGHT, SHORT-PERIOD AM CVN BINARY IN TESS](#)
Green, M.J., Hermes, J.J., **Barlow, B.N.**, Marsh, T.R., Pelisoli, I., Gaensicke, B.T., Kaiser, B.C., Romero, A., Antunes Amaral, L., Corcoran, K.*, Grupe, D., Kepler, S.O., Ashley, R.P., Baran, A., Breedth, Elme, Brown, A., Dhillon, V.S., Dyer, M.J., Kerry, P., King, G.W., Littlefair, S.P., Parsons, S.G., Sahman, D.I., Wild, J. 2024, *Monthly Notices of the Royal Astronomical Society*, **527**, 3445.
58. [AN ECLIPSING 47-MINUTE DOUBLE WHITE DWARF BINARY AT 400 PC](#)
Munday, J., Tremblay, P. E., Hermes, J.J., **Barlow, B.N.**, Marsh, T.R., Parsons, S.G., Jones, D., Kepler, S.O., Brown, A., Littlefair, S.P., Hegedus, R.*, Baran, A., Breedth, E., Dhillon, V.S., Dyer, M.J., Gänsicke, B., Green, M., Kennedy, M., Kerry P., Lopez, I.*, Pelisoli, I., Romero, A.D., Sahman, D., Worters, H. 2023, *Monthly Notices of the Royal Astronomical Society*, **525**, 1814.
57. [DISCOVERY OF PERIODIC HOT SUBDWARF VARIABLES THROUGH A SYSTEMATIC SEARCH IN ZWICKY TRANSIENT FACILITY DATA](#)
Wang, K., Kupfer, T., **Barlow, B.N.** 2023, *Monthly Notices of the Royal Astronomical Society*, **524**, 3769.

56. [NEW HOT SUBDWARF VARIABLES FROM GAIA EDR3](#)
Lopez, I.D.*, Kosakowaski, A., **Barlow, B.N.**, Kupfer, T. 2023, *Bull. Soc. R. Sci. Liege*, **92(2)**, 1 - 23
55. [HOT SUBDWARFS IN CLOSE BINARIES OBSERVED FROM SPACE II: ANALYSIS OF THE LIGHT VARIATIONS](#)
Schaffenroth, V., **Barlow, B.N.**, Pelisoli, I., Geier, S., Kupfer, T. 2022, *Astronomy & Astrophysics*, **673**, A90.
54. [V907 SCO SWITCHED TO THE ECLIPSING MODE AGAIN](#)
Zasche, P., Vokrouhlicky, D., **Barlow, B.N.**, Mavsek, M. 2023, *Astronomical Journal*, **165**, 81.
53. [PULSE TIMING DETECTION OF A THREE-DAY COMPANION TO THE HOT SUBDWARF BPM 36430](#)
Smith, B.A.*, **Barlow, B.N.**, Rosenthal, B., Hermes, J.J., Schaffenroth, V. 2022, *Astrophysical Journal*, **939**, 57.
52. [HOT SUBDWARFS IN CLOSE BINARIES OBSERVED FROM SPACE I: ORBITAL, ATMOSPHERIC, AND ABSOLUTE PARAMETERS AND THE NATURE OF THEIR COMPANIONS](#)
Schaffenroth, V., Pelisoli, I., **Barlow, B.N.**, Geier, S., Kupfer, T. 2022, *Astronomy & Astrophysics*, **666**, A182.
51. [V1294 AQL = HD 184279: A BAD BOY AMONG BE STARS OR AN IMPORTANT CLUE TO THE BE PHENOMENON?](#)
Harmanec, P., Božić, H., Koubsky, P., Yang, S., Ruždjak, D., Sudar, D., Šlechta, M., Wolf, M., Korcáková, D., Zasche, P., Oplištilová, A., Vršnak, D., Ak, H., Eenens, P., Bakis, H., Bakis, V., Otero, S., Chini, R., Demsky, T., **Barlow, B.N.**, Svodobda, P., Jonák, J., Vitovský, K., Harmanec, A. 2022, *Astronomy & Astrophysics*, **666**, A136.
50. [TOWARDS A CONSISTENT MODEL OF THE HOT QUADRUPLE SYSTEM HD 93206 = QZ CARINÆ II. N-BODY MODEL](#)
Broz, M., Harmanec, P., Zasche, P., Catalan-Hurtado, R.*, **Barlow, B.N.**, Frondorf, W.*, Wolf, M., Drechsel, H., Chini, R., Nasser, A., Pigulski, A., Labadie-Bartz, J., Christie, G.W., Walker, W.S.G., Blackford, M., Blane, D., Henden, A.A., Bohlsen, T., Boi, H., Jonák, J. 2022, *Astronomy & Astrophysics*, **666**, A24.
49. [TOWARDS A CONSISTENT MODEL OF THE HOT QUADRUPLE SYSTEM HD 93206 = QZ CARINÆ I. OBSERVATIONS AND THEIR INITIAL ANALYSES](#)
Mayer, P., Harmanec, P., Zasche, P., Broz, M., Catalan-Hurtado, R.*, **Barlow, B.N.**, Frondorf, W.*, Wolf, M., Drechsel, H., Chini, R., Nasser, A., Pigulski, A., Labadie-Bartz, J., Christie, G.W., Walker, W.S.G., Blackford, M., Blane, D., Henden, A.A., Bohlsen, T., Boi, H., Jonák, J. 2022, *Astronomy & Astrophysics*, **666**, A23.
48. [NEW VARIABLE HOT SUBDWARF STARS IDENTIFIED FROM ANOMALOUS GAIA FLUX ERRORS, OBSERVED BY TESS, AND CLASSIFIED VIA FOURIER DIAGNOSTICS](#)
Barlow, B.N., Corcoran, K.A.*, Hermes, J., Kupfer, T., Walser, S.*, Schaffenroth, V.S., Parker, I.*, Frondorf, W.*, Vestal, D.*, Holden, J.* 2022, *Astrophysical Journal*, **928**, 20.
47. [HEN 3-860: NEW SOUTHERN ECLIPSING SYMBIOTIC STAR OBSERVED IN THE OUTBURST](#)
Merc, J., Gális, R., Wolf, M., Velez, P., T. Bohlsen, T., **Barlow, B.N.**, 2022, *MNRAS*, **510**, 1404.
46. [THE BINARY CENTRAL STAR OF THE BIPOLAR PRE-PLANETARY NEBULA IRAS 08005-2356 \(V510 PUP\)](#)
Manick, R., Miszalski, B., Kamath, D., Whitelock, P., van Winckjel, H., Hrivnak, B., **Barlow, B.N.**, Mohamed, S., 2021, *MNRAS*, **508**, 2226.
45. [ECLIPSING BINARIES FOUND BY THE EREBOS PROJECT: GAIA DR2 6097540197980557440—A DEEPLY ECLIPSING SDB+DM SYSTEM](#)
Corcoran, K.A.*, **Barlow, B.N.**, Schaffenroth, V., Walser, S.*, Heber, U., Irrgang, A., 2021, *Astrophysical Journal*, **918**, 28.
44. [A HOT SUBDWARF–WHITE DWARF SUPER-CHANDRASEKHAR CANDIDATE SUPERNOVA IA PROGENITOR](#)
Pelisoli, I., Neunteufel, P., Geier, S., Kupfer T., Heber, U., Irrgang, A., Schneider, D., A. Bastian, van Roestel, J., Schaffenroth, V., and **Barlow, B.N.**, 2021, *Nature Astronomy*, **5**, 1052.
43. [A TRANSIT SURVEY TO SEARCH FOR PLANETS AROUND HOT SUBDWARFS: I. METHODS AND PERFORMANCE TESTS ON LIGHT CURVES FROM KEPLER, K2, TESS, AND CHEOPS](#)
Van Grootel, V., Pozuelos, F.J., Thuillier, A., Charpinet, S., Delrez, L., Beck, M., Fortier, A., Hoyer, S., Sousa, S.G., **Barlow, B.N.**, Billot, N., Østensen, R.H., + 71 additional co-authors, 2021, *Astronomy & Astrophysics*, **650**, A205.
42. [I SPY TRANSITS AND PULSATIONS: EMPIRICAL VARIABILITY IN WHITE DWARFS USING GAIA AND THE ZWICKY TRANSIENT FACILITY](#)
Guidry, J.A., Hermes, J.J., Vanderbosch, Z.P., **Barlow, B.N.**, Lopez, I.*, Boudreaux, E.M.*, Corcoran, K.A.*, Dunlap, B.H., Bell, K.J., Montgomery, M.H., Winget, D.E., Winget, K.I., Kuehne, J.W., 2021, *Astrophysical Journal*, **912**, 125.
41. [EVR-CB-004: AN INFLATED HOT SUBDWARF O STAR + UNSEEN WD COMPANION IN A COMPACT BINARY DISCOVERED WITH THE EVRYScope](#)
Ratzloff, J., Kupfer, T., **Barlow, B.N.**, Schneider, D., Marsh, T., Heber, U., Corcoran, K.A.*, Bauer, E., Haemmerich, S., Corbett, H., Glazier, A., Howard, W., Law, N.M., 2020, *Astrophysical Journal*, **902**, 92.

40. [MULTI-WAVELENGTH PHOTOMETRY AND PROGENITOR ANALYSIS OF THE NOVA V906 CAR](#)
Wee, J., Blagorodnova, N., Penprase, B.E., Facey, J.P., Morioka, T., Corbett, H., **Barlow, B.N.**, Kupfer, T., Law, N.M., Ratzloff, J.K., Howard, W.S., Chavez, R.G., Glazier, A., Vasquez Soto, A., Horiushi, T., 2019, *Astrophysical Journal*, **899**, 2.
39. [HOT SUBDWARF ALL SOUTHERN SKY FAST TRANSIT SURVEY WITH THE EVRYSCOPE](#)
Ratzloff, J.K., **Barlow, B.N.**, Nemeth, P., Corbett, H.T., Walser, S.*, Galliher, N.W., Glazier, A., Howard, W.S., Law, N.M., 2020, *Astrophysical Journal*, **890**, 126.
38. [THE EREBOS PROJECT: INVESTIGATING THE EFFECT OF SUBSTELLAR AND LOW-MASS STELLAR COMPANIONS ON LATE STELLAR EVOLUTION. SURVEY, TARGET SELECTION, AND ATMOSPHERIC PARAMETERS](#)
Schaffenroth, V., **Barlow, B.N.**, Geier, S., Vuckovic, M., Kilkenny, D., Wolz, M., Kupfer, T., Heber, U., Drechsel, H., Dreizler, S., Kimeswenger, S., Marsh. T., Wolf M., Kreuzer, S., Ziegerer, E. and Freudenthal, J., 2019, *Astronomy & Astrophysics*, **630**, A80.
37. [EVR-CB-001: AN EVOLVING, PROGENITOR WHITE DWARF COMPACT BINARY DISCOVERED WITH THE EVRYSCOPE](#)
Ratzloff, J., **Barlow, B.N.**, Kupfer, T., Corcoran, K.*, Geier, S., Bauer, E., Corbett, H., Howard, W., Glazier, A., Law, N.M., 2019, *Astrophysical Journal*, **833**, 51.
36. [VARIABLES IN THE SOUTHERN POLAR REGION EVRYSCOPE 2016 DATASET](#)
Ratzloff, J., Corbett, H., Law, N., **Barlow, B.N.**, Glazier, A., Howard, W., Fors, O., del Ser, D., Trifinov, T., 2019, *Publications of the Astronomical Society of the Pacific*, **131**, 100.
35. [THE P–Q RELATION OF WIDE SDB BINARIES AND ITS APPLICATION TO THE STABILITY OF RLOF](#)
Vos, J., Vuckovic, M., Chen, X., Han, Z., Boudreaux, E.*, **Barlow, B.N.**, Østensen, R., Nemeth, P., 2018, MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY, **482**, 4592.
34. [NEW PULSE TIMING MEASUREMENTS OF THE SDBV STAR CS 1246](#)
Hutchens*, Z., **Barlow, B.N.**, Vasquez Soto*, A., Reichart, D.E., Haislip, J.B., Kouprianov, V.V., Linder, T.R. and Moore, J.P. 2017, *Open Astronomy*, **26**, 252.
33. [NEWS FROM THE EREBOS PROJECT](#)
Schaffenroth, V., **Barlow, B.**, Geier, S., Vuckovic, M., Kilkenny, D., and Schaffenroth, J. 2017, *Open Astronomy*, **26**, 208.
32. [A MULTI-WAVELENGTH STUDY OF NEARBY MILLISECOND PULSAR PSR J1400-1431: IMPROVED ASTROMETRY AND AN OPTICAL DETECTION OF ITS COOL WHITE DWARF COMPANION](#)
Swiggum, J., McLaughlin, M., Lorimer, D., Kaplan, D., Lynch, R., Gentile, P., Rosen, R., Heatherly, S.A., **Barlow, B.N.**, Hegedus, R.J.*, Vasquez Soto, A.*, Clancy, P.*, Kondatiev, V.I., Ray, P., Bogdanov, S., Istrate, A., 2017, *Astrophysical Journal*, **847**, 25.
31. [A SEARCH FOR RAPIDLY-PULSATING HOT SUBDWARF STARS IN THE GALEX SURVEY](#)
Boudreaux, E.M.*, **Barlow, B.N.**, Fleming, S.W., Vasquez Soto, A.*, Million, C., Reichart, D. E., Haislip, J., Linder, T., Moore, J.P., 2017, *Astrophysical Journal*, **845**, 171.
30. [THE SOLAR NEIGHBORHOOD. XL. PARALLAX RESULTS FROM THE CTIOPI AND NOFS PROGRAMS: 50 NEW MEMBERS OF THE 25 PARSEC WHITE DWARF SAMPLE](#)
Subasavage, J., Jao, W., Henry, T.J., Harris, H.C., Dahn, C.C., Bergeron, P., Dufour, P., Dunlap, B.H., **Barlow, B.N.**, Ianna, P.A., Lepine, S., Margheim, S.J., 2017, *ASTROPHYSICAL JOURNAL*, **154**, 32.
29. [THE FADING OF CASSIOPEIA A, AND IMPROVED MODELS FOR THE ABSOLUTE SPECTRUM OF PRIMARY RADIO CALIBRATION SOURCES](#)
Trotter, A.S., Reichart, D.E., Egger, R.E., Stýblová, J., Paggen, M.L., Martin, J.M., Dutton, D.A., Reichart, J.E., Kumar, N.D., Maples, M.P. **Barlow, B.N.**, Berger, T.A., Foster, A.C., Frank, N.R., Ghigo, F.D., Haislip, J.B., Heatherly, S.A., Kouprianov1, V.V., LaCluyzé, A.P., Moffet D.A., Moore, J.P., Stanley, J.L., White, S., 2017, *Monthly Notices of the Royal Astronomical Society*, **469**, 1299.
28. [TWO-SITE PHOTOMETRY AND SPECTROSCOPY OF THE RAPIDLY-PULSATING SDB STAR EC 22221–3152](#)
Barlow, B.N., Kilkenny, D., Geier, S., Dunlap, B.H., Reichart, D.E., LaCluyze, A.P., Ivarsen, K.M., Haislip, J.B., Nysewander, M.C., 2017, *Publications of the Astronomical Society of the Pacific*, **129**, 975.
27. [PHYSICAL PROPERTIES OF SEVEN BINARY AND HIGHER-ORDER MULTIPLE OB SYSTEMS](#)
Mayer, P., Harmanec, P., Chini, R., Nemravova, J.A., Nasserri, A., Drechsel, H., **Barlow, B.N.**, Catalan–Hurtado*, R., Fremat, Y., Kotkova, L., 2017, *Astronomy & Astrophysics*, **600**, A33.

26. [RADIAL VELOCITY VARIABLE, HOT POST-AGB STARS FROM THE MUCHFUSS PROJECT — CLASSIFICATION, ATMOSPHERIC PARAMETERS, FORMATION SCENARIOS](#)
Reindl, N., Geier, S., Kupfer, T., Bloemen, S., Schaffenroth, V., Heber, U., **Barlow, B.N.**, Østensen, R.H, 2016, *Astronomy & Astrophysics*, **587**, A101.
25. [PSR J1930-1852: A PULSAR IN THE WIDEST KNOWN ORBIT AROUND ANOTHER NEUTRON STAR](#)
Swiggum, K., Rosen, R., McLaughlin, M.A., Lorimer, D.R., Heatherly, S., Lynch, R., Scoles, S., Hockett*, T., Filik*, E., Marlowe*, J.A., **Barlow, B.N.**, Weaver, M., Hilzendeger, M., Ernst, S., Crowley, R., Stone, E., Miller, B., Nunez, R., Trevino, G., Doehler, M., Cramer, A., Yencsik, D., Thorley, J., Andrews, R., Laws, A., Wenger, K., Teter, L., Snyder, T., Dittmann, A., Gray, S., Carter, M., McGough, C., Dydiw, S., Pruett, C., Fink, J., 2015, *ASTROPHYSICAL JOURNAL*, **805**, 156.
24. [AN ECLIPSING POST COMMON-ENVELOPE SYSTEM CONSISTING OF A PULSATING HOT SUBDWARF B STAR AND A BROWN DWARF COMPANION](#)
Schaffenroth, V., **Barlow, B.N.**, Drechsel, H., and Dunlap, B.H. 2015, *Astronomy & Astrophysics*, **576**, 123.
23. [THE CATALOGUE OF RADIAL VELOCITY VARIABLE HOT SUBLUMINOUS STARS FROM THE MUCHFUSS PROJECT](#)
Geier, S., Kupfer, T., Heber, U., Schaffenroth, V., **Barlow, B.N.**, Østensen, R.H., O’Toole, S.J., Ziegerer, E., Heuser, C., Maxted, P.F.L., Gansicke, B.T., Marsh, T.R., Napiwotzki, R., Brunner, P., Schindewolf, M., and Niederhofer, F., 2015, *Astronomy & Astrophysics*, **577**, A26.
22. [EVRYSCOPE SCIENCE: EXPLORING THE POTENTIAL OF ALL-SKY GIGAPIXEL-SCALE TELESCOPES](#)
N.M. Law, O. Fors, J. Ratzloff, P. Wulfken, D. Kavanaugh, **B.N. Barlow**, K. Cannon, S.B. Cenko, B.H. Dunlap, A. Kraus, T.J. Maccarone, 2015, *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF THE PACIFIC*, **127**, 234.
21. [HOT SUBDWARF BINARIES FROM THE MUCHFUSS PROJECT ANALYSIS OF 12 NEW SYSTEMS AND A STUDY OF THE SHORT PERIOD BINARY POPULATION](#)
T. Kupfer, S. Geier, U. Heber, **B. N. Barlow**, P. F. L. Maxted, C. Heuser, V. Schaffenroth, R. H. Østensen, and B. T. Gänsicke, 2015, *ASTRONOMY & ASTROPHYSICS*, **576**, A44.
20. [ORBITAL SOLUTIONS OF EIGHT CLOSE SDB BINARIES AND CONSTRAINTS ON THE NATURE OF THE UNSEEN COMPANIONS](#)
Geier, S., Østensen, R.H., Heber, U., Kupfer, T., Maxted, P.F.L, **Barlow, B.N.**, Vuckovic, M., Tillich, A., Müller, S., Edelmann, H., Classen, L., McLeod, A.F. 2014, *Astronomy & Astrophysics*, **562**, 95.
19. [STRONG UV AND X-RAY VARIABILITY OF THE NARROW LINE SEYFERT 1 GALAXY WPVS 007– ON THE NATURE OF THE X–RAY LOW STATE](#)
Grupe, D., Komossa, S., Scharwächter, Dietrich, M., Leighly, K.M., Lucy, A., **Barlow, B.N.** 2013, *Astronomical Journal*, **146**, 78.
18. [TWO NEW LONG-PERIOD HOT SUBDWARF BINARIES WITH DWARF COMPANIONS](#)
Barlow, B.N., Liss*, S.E., Wade, R.A., Green, E.M. 2013, *Astrophysical Journal*, **771**, 23.
17. [A PROGENITOR BINARY AND AN EJECTED MASS DONOR REMNANT OF FAINT TYPE IA SN](#)
S. Geier, T. R. Marsh, B. Wang, B.H. Dunlap, **B.N. Barlow**, V. Schaffenroth, X. Chen, A. Irrgang, P. F. L. Maxted, E. Ziegerer, T. Kupfer, B. Miszalski, U. Heber, Z. Han, A. Shporer, J. H. Telling, B. T. Gänsicke, R. H. Østensen, S. J. O’Toole, and R. Napiwotzki 2013, *Astronomy & Astrophysics*, **554**, 54.
16. [EC 10246-2707: AN ECLIPSING SUBDWARF B + M DWARF BINARY](#)
Barlow, B.N., Kilkenny, D., Drechsel, H., Dunlap, B.H., O’Donoghue, D., Geier, S., O’Steen, R.G., Clemens, J.C., LaCluyze, A., Reichart, D.E., Haislip, J., Nysewander, M., Ivarsen, K.M., 2013, *Monthly Notices of the Royal Astronomical Society*, **430**, 22.
15. [A RADIAL VELOCITY SURVEY OF COMPOSITE SPECTRA HOT SUBDWARF BINARIES](#)
Barlow, B.N., Wade, R.A., Liss*, S.E., Østensen, R.H., Van Winckel, H. 2012, *Astrophysical Journal*, **758**, 68.
14. [MUCHFUSS - MASSIVE UNSEEN COMPANIONS TO HOT FAINT UNDERLUMINOUS STARS ...](#)
Geier, S., Schaffenroth, V., Hirsch, H. Tillich, A., Heber, U., Maxted, P. F. L., Østensen, R. H. **Barlow, B. N.**, O’Toole, S. J., Kupfer, T., Marsh, T., Gnsicke, B., Napiwotzki, R., Cordes, O., Mller, S., Classen, L., Ziegerer, E., Drechsel, H. 2012, *Astronomische Nachrichten*, **333**, 431.
13. [THE RØMER DELAY AND MASS RATIO OF THE SDB+dM BINARY 2M 1938+4603 ...](#)
Barlow, B.N., Wade, R.A., Liss, S.E. 2012, *Astrophysical Journal*, **753**, 101.
12. [THE MULTIYEAR AND MULTISITE CAMPAIGNS ON THE \[...\] SDBV STAR EC 01541-1409](#)
Reed, M.D., Kilkenny, D., O’Toole, S., Østensen, R.H., Honer, C., Gilker, J.T., Quint, A.C., Doennig, A.M., Hicks, L.H., Thompson, M.A., McCart III, P.A., Zietsman, E., Chen, W.-P., Chen, C.-W., Lin, C.-C., Beck, P., Degroote, P.,

Barlow, B.N., Reichart, D.E., Nysewander, M.C., LaCluyze, A.P., Ivarsen, K.M., Haislip, J.B., Baran, A., Winiarski, M., Drozd, M. 2012, *Monthly Notices of the Royal Astronomical Society*, **421**, 181-189.

11. [RADIAL VELOCITY CONFIRMATION OF A BINARY DETECTED FROM PULSE TIMINGS](#)
Barlow, B.N., Dunlap, B.H., Clemens, J.C. 2011, *Astrophysical Journal Letters*, **737**, L2.
10. [FORTNIGHTLY FLUCTUATIONS IN THE O-C DIAGRAM OF CS 1246](#)
Barlow, B.N., Dunlap, B.H., Clemens, J.C., Reichart, D.E., Ivarsen, K., LaCluyze, A., Haislip, J., Nysewander, M. 2011, *Monthly Notices of the Royal Astronomical Society*, **414**, 3434.
9. [THE MUCHFUSS PROJECT -SEARCHING FOR HOT SUBDWARF BINARIES WITH MASSIVE ...](#)
Geier, S., Hirsch, H., Tillich, A., Maxted, P.F.L., Bentley, S.J., Østensen, R.H., Heber, U., Gänsicke, B.T., Marsh, T.R., Napiwotzki, R., **Barlow, B.N.**, O’Toole, S.J. 2011, *Astronomy & Astrophysics*, **530**, A28.
8. [BINARIES DISCOVERED BY THE MUCHFUSS PROJECT: SDSS J08205+0008 – AN ECLIPSING SUBDWARF B BINARY WITH BROWN DWARF COMPANION](#)
Geier, S., Schaffenroth, V., Drechsel, H., Heber, U., Kupfer, T., Tillich, A., Østensen, R.H., Smolders, K., Degroote, P., Maxted, P.F.L., **Barlow, B.N.**, Gänsicke, B.T., Marsh, T.R., Napiwotzki, R. 2011, *Astrophysical Journal Letters*, **731**, L22.
7. [MASSIVE UNSEEN COMPANIONS TO HOT FAINT UNDERLUMINOUS STARS FROM SDSS: ANALYSIS OF SEVEN CLOSE SUBDWARF B BINARIES](#)
Geier, S., Maxted, P.F.L., Napiwotzki, R., Østensen, R.H., Heber, U., Kupfer, T., Müller, S., Tillich, A., **Barlow, B.N.**, Oreiro, R., Ottosen, T.A., Copperwheat, C., Gänsicke, B.T., Marsh, T. 2011, *Astronomy & Astrophysics*, **526**, A39.
6. [PHOTOMETRY AND SPECTROSCOPY OF THE NEW SDBV CS 1246](#)
Barlow, B.N., Dunlap, B.H., Clemens, J.C., Lynas-Gray, A.E., Ivarsen, K., LaCluyze, A., Reichart, D., Haislip, J., Nysewander, M. 2010, *Monthly Notices of the Royal Astronomical Society*, **403**, 324-334.
5. [A NEW SMALL-AMPLITUDE VARIABLE HOT DQ WHITE DWARF](#)
Dunlap, B.H., **Barlow, B.N.**, Clemens, J.C. 2010, *Astrophysical Journal Letters*, **720**, L159.
4. [PULSATONAL MAPPING OF CALCIUM ACROSS THE SURFACE OF A WHITE DWARF](#)
Thompson, S. E., Montgomery, M. H., von Hippel, T., Nitta, A., Dalessio, J., Provencal, J., Strickland, W., Holtzman, J. A., Mukadam, A., Sullivan, D., Nagel, T., Koziel-Wierzbowska, D., Zola, S., Kundera, T., Winiarski, M., Drozd, M., Kuligowska, E., Ogloza, W., Bognar, Zs., Handler, G., Kanaan, A., Ribeira, T., Rosen, R., Reichart, D., Haislip, J., **Barlow, B.N.**, Dunlap, B.H., Ivarsen, K., LaCluyze, A., Mullally, F. 2010, *Astrophysical Journal*, **714**, 296-308.
3. [DETECTION OF PHOTOMETRIC VARIATIONS IN THE SDBV STAR JL 166](#)
Barlow, B.N., Dunlap, B.H., Clemens, J.C., Lynas-Gray, A.E. 2009, *Astronomical Journal*, **138**, 686-690.
2. [A RADIO PULSAR/X-RAY BINARY MISSING LINK](#)
Anne M. Archibald, Ingrid H. Stairs, Scott M. Ransom, Victoria M. Kaspi, Vladislav I. Kondratiev, Duncan R. Lorimer, Maura A. McLaughlin, Jason Boyles, Jason W. T. Hessels, Ryan Lynch, Joeri van Leeuwen, Mallory S. E. Roberts, Frederick Jenet, David J. Champion, Rachel Rosen, **Brad N. Barlow**, Bart H. Dunlap, Ronald A. Remillard. 2009, *Science*, **324**, 1411-1414.
1. [TWO NEW VARIABLE HOT DQ STARS](#)
Barlow, B.N., B.H. Dunlap, R. Rosen, J.C. Clemens. 2008, *Astrophysical Journal Letters*, **688**, L95.

CONFERENCE PROCEEDINGS & RESEARCH NOTES

**denotes student advisee co-author*

23. [PULSATONAL VELOCITY VARIATIONS OF THE RADIAL MODE SDBV STAR BPM 36430](#)
Kirby, B.C.*, **Barlow, B.N.**, Smith, B.A.*, 2023, *Research Notes of the AAS*, **7**, 255.
22. [IMPROVED PHYSICAL PROPERTIES OF THE QUADRUPLE SUB-SYSTEM WITH THE ECLIPSING BINARY QZ CARINAE](#)
Mayer, P., Harmanec, P., Zasche, P., Catalan-Hurtado*, R., **Barlow, B. N.**, Frémat, Y., Wolf, M., Drechsel, H., Chini, R., Nasser, A., Christie, G. W., Walker, W. S. G., Henden, A. A., Bohlsen, T., Boží, H., 2020, *Contributions of the Astronomical Observatory Skalnaté Pleso*, **50**, 580.
21. [USING WIDE HOT SUBDWARF BINARIES TO CONSTRAIN ROCHE-LOBE OVERFLOW MODELS](#)
Vos, J., Vucković, M., Chen, X., Han, Zh., Boudreaux, E.*, Barlow, B. N., Østensen, R., Németh, P., 2018, *Contributions of the Astronomical Observatory Skalnaté Pleso*, **49**, 264.

20. [CLOSE BINARY PROGENITORS AND EJECTED COMPANIONS OF THERMONUCLEAR SUPERNOVAE](#)
Geier, S., Kupfer, T., Heber, U., Nemeth, P., Ziegerer, E., Irrgang, A., Schindewolf, M., Marsh, T. R., Gänsicke, B. T., **Barlow, B. N.**, Bloemen, S., 2017, 19th European White Dwarf Workshop, *ASP Conference Series*, **509**, 79.
19. [DISCOVERY OF RADIAL VELOCITY VARIABLE POST-AGB STARS FROM THE MUCHFUSS PROJECT](#)
Reindl, N., Geier, S., Kupfer, T., Schaffenroth, V., Heber, U., **Barlow, B.N.**, Østensen, R. H., 2015, *EAS Publications Series*, **71-72**, 135.
18. [THE POPULATION OF WHITE DWARF BINARIES WITH HOT SUBDWARF COMPANIONS](#)
Geier, S., Kupfer, T., Heber, U., **Barlow, B. N.**, Maxted, P. F. L., Heuser, C., Schaffenroth, V., Ziegerer, E., Østensen, R. H., Gänsicke, B. T., 2015, 19th European White Dwarf Workshop, *ASP Conference Series*, **493**, 475.
17. [A RADIAL VELOCITY SURVEY OF HOT SUBDWARFS WITH MAIN SEQUENCE COMPANIONS USING THE HOBBY-EBERLY TELESCOPE](#)
Wade, R., **Barlow, B.N.**, Liss*, S., Stark, M., 2014, 6th Meeting on Hot Subdwarf Stars and Related Objects, *ASP Conference Series*, **481**, 311
16. [RESOLVED, BUT UNRESOLVED: A TRIO OF TRIPLE- AND QUADRUPLE-STAR HOT SUBDWARF SYSTEMS](#)
Barlow, B.N., Wade, R., Liss*, S., Stark, M., 2014, 6th Meeting on Hot Subdwarf Stars and Related Objects, *ASP Conference Series*, **481**, 301
15. [MUCHFUSS: STATUS AND HIGHLIGHTS](#)
Geier, S., Kupfer, T., **Barlow, B.**, Schaffenroth, V., Fürst, F., Heuser, C., Ziegerer, E., Heber, U., Marsh, T., Maxted, P., Østensen, R., O'Toole, S., Gänsicke, B., Napiwotzki, R., 2014, 6th Meeting on Hot Subdwarf Stars and Related Objects, *ASP Conference Series*, **481**, 243
14. [DETECTING THE ORBITAL MOTION OF RE J0317-853 AND LB 9802](#)
Lawrie, K. A., Burleigh, M. R., **Barlow, B. N.**, O'Donoghue, D., Barstow, M. A., Marsh, T. R., Kilkenny, D., Worters, H. 2012, 18th European White Dwarf Workshop, *ASP Conference Proceedings*, **469**, 385.
13. [HOT DQ PULSATOR OR MAGNETIC WHITE DWARF BINARY?](#)
Dunlap, B.H., **Barlow, B. N.**, Clemens, J.C. 2012, 18th European White Dwarf Workshop, *ASP Conference Proceedings*, **469**, 9.
12. [A PHASE-CENTRIC ANALYTICAL APPROACH TO THE O-C DIAGRAM](#)
Dalessio, J., Provencal, J. L., Shipman, H.L., **Barlow, B. N.** 2012, 18th European White Dwarf Workshop, *ASP Conference Proceedings*, **469**, 45.
11. [DISCOVERY OF THE CLOSEST HOT SUBDWARF BINARY WITH A WHITE DWARF COMPANION](#)
Geier, S., Marsh, T.R., Dunlap, B.H., **Barlow, B.N.**, Schaffenroth, V., Ziegerer, E., Heber, U., Kupfer, T., Maxted, P.F.L., Miszalski, B., Shporer, A., Telting, J., Østensen, R.H., O'Toole, S.J., Gänsicke, B.T., Napiwotzki, R. 2012, 18th European White Dwarf Workshop, *ASP Conference Proceedings*, **469**, 373.
10. [THE MUCHFUSS PROJECT: SEARCHING FOR THE MOST MASSIVE COMPANIONS TO HOT SUBDWARF STARS IN CLOSE BINARIES AND FINDING THE LEAST MASSIVE ONES](#)
Geier, S., Schaffenroth, V., Hirsch, H., Tillich, A., Heber, U., Classen, L., Kupfer, T., Maxted, P. F. L., Østensen, R. H., **Barlow, B.N.**, O'Toole, S. J., Marsh, T. R., Gänsicke, B. T., Cordes, O., Napiwotzki, R. 2011, Fifth Meeting on Hot Subdwarf Stars and Related Objects, *ASP Conference Series*, Edited by David Kilkenny, C. Simon Jeffery, and Chris Koen. San Francisco, CA, **452**, 129.
9. [MULTICOLOR PHOTOMETRY AND TIME-RESOLVED SPECTROSCOPY OF TWO SDBV STARS](#)
Reed, M. D., O'Toole, S. J., Telting, J. H., Østensen, R. H., Heber, U., **Barlow, B.N.**, Reichart, D. E., Nysewander, M. C., LaCluyze, A. P., Ivarsen, K. M., Haislip, J. B., Bean, J. 2011, Fifth Meeting on Hot Subdwarf Stars and Related Objects, *ASP Conference Series*, Edited by David Kilkenny, C. Simon Jeffery, and Chris Koen. San Francisco, CA, **452**, 193.
8. [SUBSTELLAR COMPANIONS AND THE FORMATION OF HOT SUBDWARF STARS](#)
Geier, S., Heber, U., Tillich, A., Hirsch, H., Kupfer, T., Schaffenroth, V., Classen, L., Maxted, P. F. L., Østensen, R. H., **Barlow, B. N.**, Marsh, T. R., Gänsicke, B. T., Napiwotzki, R., O'Toole, S. J., Günther, E. W. 2011, Planetary Systems Beyond the Main Sequence, *AIP Conference Proceedings*, **1331**, 163.
7. [ANALYSIS OF TWO ECLIPSING HOT SUBDWARF BINARIES WITH A LOW MASS STELLAR AND A BROWN DWARF COMPANION](#)
Schaffenroth, V., Geier, S., Heber, U., Drechsel, H., Østensen, R.H., Maxted, P.F.L., Kupfer, T., **Barlow, B.N.**, and the MUCHFUSS Collaboration. 2011, Planetary Systems Beyond the Main Sequence, *AIP Conference Proceedings*, **1331**, 174.

6. [MUCHFUSS - SEARCHING FOR MASSIVE COMPACT COMPANIONS TO HOT SUBDWARF STARS](#)
S. Geier, U. Heber, A. Tillich, H. Hirsch, S. Müller, T. Kupfer, V. Schaffenroth, L. Classen, P.F.L. Maxted, R.H. Østensen, **B. N. Barlow**, T.R. Marsh, B.T. Gänsicke, R. Napiwotzki, and S.J. O’Toole. 2010, International Conference on Binaries, *AIP Conference Proceedings*, **1314**, 67.
5. [ANALYSIS OF TWO ECLIPSING HOT SUBDWARF BINARIES WITH A LOW MASS STELLAR COMPANION AND A BROWN DWARF COMPANION](#)
Schaffenroth, V., Geier, S., Heber, U., Drechsel, H., Østensen, R.H., Maxted, P.F.L., Kupfer, T., **Barlow, B.N.**, and the MUCHFUSS Collaboration. 2010, Planetary Systems Beyond the Main Sequence, *AIP Conference Proceedings*, **1314**, 91.
4. [THE O-C DIAGRAM OF CS 1246](#)
Barlow, B.N., Dunlap, B.H., Clemens, J.C. 2010, 17th European White Dwarf Workshop, *AIP Conference Proceedings*, **1273**, 548.
3. [CHARACTERISTICS OF THE HOT DQ VARIABLES](#)
Dunlap, B.H., **Barlow, B.N.**, Clemens, J.C. 2010, 17th European White Dwarf Workshop, *AIP Conference Proceedings*, **1273**, 70.
2. [MASSIVE UNSEEN COMPANIONS TO HOT FAINT UNDERLUMINOUS STARS FROM SDSS \(MUCHFUSS\) – STATUS REPORT](#)
S. Geier, U. Heber, A. Tillich, H. Hirsch, S. Müller, T. Kupfer, V. Schaffenroth, L. Classen, P.F.L. Maxted, R.H. Østensen, **B.N. Barlow**, T. R. Marsh, B. T. Gänsicke, R. Napiwotzki, and S. J. O’Toole. 2010, 17th European White Dwarf Workshop, *AIP Conference Proceedings*, **1273**, 263.
1. [ANALYSIS OF TWO ECLIPSING HOT SUBDWARF BINARIES WITH A LOW MASS STELLAR COMPANION AND A BROWN DWARF COMPANION](#)
Schaffenroth, V., Geier, S., Heber, U., Drechsel, H., Østensen, R.H., Maxted, P.F.L., Kupfer, T., **Barlow, B.N.**, and the MUCHFUSS Collaboration. 2010, 17th European White Dwarf Workshop, *AIP Conference Proceedings*, **1273**, 243.

PROFESSIONAL RESEARCH TALKS

- | | |
|--|--|
| 36. Colloquium – Davidson College Dept. of Physics [<i>Invited</i>]
<i>“Optical Discovery of a Bright Spider Binary in Our Cosmic Backyard”</i> | Davidson, NC
Mar 15th, 2024 |
| 35. Hvar Stellar Meeting 2023 [<i>Invited</i>]
<i>“Fundamental Properties of Hot Subluminous O/B Stars Observed from Space”</i> | Hvar, Croatia
Sep 19th, 2023 |
| 34. 11th Meeting on Hot Subdwarfs and Related Objects
<i>“Surfing the Sine Waves: Fourier Analyses of Hot Subdwarf Binaries Observed by TESS”</i> | Armagh, Northern Ireland
Sep 13th, 2023 |
| 33. Seminar – UC Boulder Dept. of Astrophysical & Planetary Sciences [<i>Invited</i>]
<i>“A Search for Variable Hot Subdwarf Stars and Their Significance to Astrophysics”</i> | Boulder, Colorado
Jun 12th, 2023 |
| 32. Southern Star Astronomical Convention [<i>Invited</i>]
<i>“A Search for Stripped Red Giants Using NASA’s TESS Spacecraft”</i>
<i>“Set Phases to Stun: Classifying Binary Light Curves with Fourier Diagnostics”</i> | Little Switzerland, NC
Apr 26-29, 2023 |
| 31. Colloquium – Mississippi State University, Dept. of Physics & Astronomy [<i>Invited</i>]
<i>“A Search for Stripped Red Giants and Their Significance to Astrophysics”</i> | Starkville, MS
Jan 20th, 2023 |
| 30. Colloquium – Astronomical Institute of Charles University [<i>Invited</i>]
<i>“A Search for Variable Hot Subdwarf Stars and Their Significance to Astrophysics”</i> | Prague, Czech Republic
Jun 20th, 2022 |
| 29. 10th Meeting on Hot Subdwarfs and Related Objects
<i>“Set Phases to Stun: Classifying Binary Hot Subdwarfs and Quantifying Their Properties via Fourier Diagnostics from TESS Photometry”</i> | Liège, Belgium
Jun 16th, 2022 |
| 28. Colloquium – University of Kentucky, Dept. of Physics & Astronomy [<i>Invited</i>]
<i>“A Search for Variable Hot Subdwarf Stars and Their Significance to Astrophysics”</i> | <i>virtual</i>
Mar 2nd, 2022 |
| 27. Colloquium – Texas Tech University, Dept. of Physics & Astronomy [<i>Invited</i>]
<i>“A Search for Variable Hot Subdwarf Stars and Their Significance to Astrophysics”</i> | Lubbock, Texas
Nov 9th, 2021 |
| 26. 9.5th Meeting on Hot Subdwarf Stars and Related Objects
<i>“A TESS Survey of Candidate Variable Hot Subdwarfs Identified from Gaia Flux Errors”</i> | <i>virtual</i>
Aug 18th, 2021 |

25. **Monthly Online Surviving COVID Astronomy Meeting** virtual
“A TESS Survey of Candidate Variable Hot Subdwarfs Identified from Gaia Flux Errors” Mar 2nd, 2021
24. **North Carolina Astronomers’ Meeting** Jamestown, NC
“Finding Extreme Binaries Using Photometric Uncertainties from Gaia” Sep 28th, 2019
23. **9th Meeting on Hot Subdwarfs and Related Objects** Hendaye, France
“New Variable Hot Subdwarfs from the Evryscope” Jun 23rd, 2019
22. **Large Surveys with Small Telescopes: Past, Present, and Future [Invited]** Bamberg, Germany
“The Evryscope: Science from the First Full-Sky Gigapixel-Scale Telescope” Mar 12th, 2019
21. **Colloquium – University of North Carolina Dept. of Physics & Astronomy [Invited]** Chapel Hill, NC
“Exploring Peculiar Events in Stellar Evolution Using the Enigmatic Hot Subdwarf Stars” Feb 19th, 2018
20. **Colloquium – East Carolina University Dept. of Physics [Invited]** Greenville, NC
“David and Goliath: Can Planets Quarrel with their Host Stars and Survive?” Oct 27th, 2017
19. **8th Meeting on Hot Subdwarfs and Related Objects** Kraków, Poland
“Hot Subdwarfs in the Evryscope Survey” Jul 15, 2017
18. **Southern Star Astronomical Convention [Invited]** Little Switzerland, NC
“The Influence of Planets and Brown Dwarfs on Stellar Evolution” Apr 28-29, 2017
“The MUCHFUSS Project: Searching for Massive Companions to Hot Subdwarfs”
17. **Colloquium – Central Michigan University [Invited]** Mt Pleasant, MI
“The Coolest Little Hot Stars You’ve Never Heard Of” Mar 2nd, 2017
16. **Colloquium – Davidson College Dept. of Physics [Invited]** Davidson, NC
“EREBOS: Understanding the Influence of Substellar Objects on Stellar Evolution” Sep 29th, 2016
15. **Colloquium – Florida Inst. of Tech. Dept. of Physics & Space Sc. [Invited]** Melbourne, FL
“Hot Subdwarfs: the Coolest Little Hot Stars in the Galaxy” Apr 22, 2016
14. **Colloquium – Georgia State U. Dept. of Physics [Invited]** Atlanta, GA
“The Coolest Little Hot Stars You’ve Never Heard Of” Apr 5, 2016
13. **North Carolina Astronomers’ Meeting** Jamestown, NC
“The EREBOS Project: Studying the Influence of Planets on Stellar Evolution” Oct 3, 2015
12. **7th Meeting on Hot Subdwarf Stars and Related Objects** Oxford, UK
“The Disappearing Pulsations of the sdBV Star CS 1246” Jul 20, 2015
11. **Colloquium – Univ. of Richmond, Dept. of Physics [Invited]** Richmond, VA
“The MUCHFUSS Project: Searching for massive companions to hot subdwarfs” Jan 26, 2015
10. **North Carolina Astronomers’ Meeting** Jamestown, NC
“Discovery of An Extreme Binary Hot Subdwarf System” Oct 4, 2014
9. **Colloquium – Wake Forest Univ., Dept. of Physics [Invited]** Winston-Salem, NC
“The Coolest Little Hot Stars You’ve Never Heard Of” Feb 12, 2014
8. **Swift Missions Operation Center Research Talk [Invited]** State College, PA
“The Peculiar Variations of Carbon-atmosphere White Dwarfs” Apr 13, 2012
7. **219th American Astronomical Society Meeting** Austin, TX
“A Radial Velocity Study of sdBs with Cool Main Sequence Companions” Jan 8-12, 2012
6. **1st International Symposium of Science with SOAR [Invited]** Maresias, Brazil
“Time-resolved studies of hot subdwarf stars” May 15-19, 2011
“The Goodman high-throughput spectrograph”
5. **North Carolina Astronomers’ Meeting** Jamestown, NC
“Detecting planets with pulsations” Oct 2, 2010
4. **Seminar – Dr. Remeis Observatories [Invited]** Bamberg, Germany
“The O-C diagram of CS 1246” Aug 24, 2010
3. **17th European White Dwarf Workshop** Tübingen, Germany
“PROMPT: an effective tool for studies of pulsating stars” Aug 16 – 20, 2010
2. **Colloquium – Mississippi State University, Dept. of Physics [Invited]** Starkville, MS
“Probing stellar evolution with asteroseismology” Oct 21, 2009

1. [4th Meeting on Hot Subdwarf Stars and Related Objects](#)
 “The large-amplitude radial pulsations of the sdBV star CS 1246”

Shanghai, China
 Jul 19 – 24, 2009

INVITED PUBLIC RESEARCH TALKS

- | | | |
|-----|--|-----------------------------------|
| 21. | Charlotte Amateur Astronomers Club [<i>Invited</i>]
“How to Catch A Spider (Binary)” | Charlotte, NC
Mar 15, 2024 |
| 20. | Astronomy on Tap Triangle [<i>Invited</i>]
“Stellar Evolution, Interrupted” | Durham, NC
Sep 7, 2022 |
| 19. | NC Governor’s School West Seminar [<i>Invited</i>]
“Finding Interesting New Variable Stars Using Boring Error Bars” | High Point, NC
Jul 3, 2021 |
| 18. | Astronomy On Tap Triangle [<i>Invited</i>]
“The Coolest Little Hot Stars You’ve Never Heard Of” | Durham, NC
Mar 4, 2020 |
| 17. | NC Governor’s School West Seminar [<i>Invited</i>]
“Red, White, and Boom! A Tale of Hypervelocity Stars, Binaries, and Explosions.” | High Point, NC
Jul 4, 2019 |
| 16. | Forsyth Astronomical Society [<i>Invited</i>]
“Exploring the Impact of Substellar Objects on Late Stellar Evolution” | Winston-Salem, NC
May 8, 2019 |
| 15. | Charlotte Amateur Astronomers Club [<i>Invited</i>]
“Exploring the Impact of Substellar Objects on Late Stellar Evolution” | Charlotte, NC
Jan 18, 2019 |
| 14. | Astronomy On Tap Triangle [<i>Invited</i>]
“Slingshotting Stars Out of the Galaxy” | Durham, NC
Dec 4, 2018 |
| 13. | 2018 Ridenhour Lecture, High Point University [<i>Invited</i>]
“Hot Subdwarfs: the Most Gregarious Stars in the Universe” | High Point, NC
Feb 9th, 2018 |
| 12. | Carbon3D Friday Speaker Series Talk [<i>Invited</i>]
“The Influence of Planets and Brown Dwarfs on Late Stellar Evolution” | Redwood City, CA
Nov 4th, 2016 |
| 11. | Virginia Association of Astronomical Societies Meeting 2016 [<i>Invited</i>]
“The Influence of Planets and Brown Dwarfs on Late Stellar Evolution” | Roanoke, VA
Oct 29th, 2016 |
| 10. | Davidson College Star Party Public Lecture [<i>Invited</i>]
“US 708: The Most Extreme Hypervelocity Star in the Milky Way” | Davidson, NC
Sep 29th, 2016 |
| 9. | Greensboro Astronomy Club [<i>Invited</i>]
“The Fastest Hypervelocity Star in the Milky Way” | Greensboro, NC
Jun 19, 2015 |
| 8. | Kernersville Astronomy Club Research Talk [<i>Invited</i>]
“Finding Exoplanets Using Pulsating Stars” | Kernersville, NC
Sep 9, 2014 |
| 7. | Forsyth Astronomical Society Research Talk [<i>Invited</i>]
“Finding Exoplanets Using Pulsating Stars” | Winston-Salem, NC
Jul 24, 2014 |
| 6. | Forsyth Astronomical Society Research Talk [<i>Invited</i>]
“The MUCHFUSS Project” | Winston-Salem, NC
Mar 25, 2014 |
| 5. | High Point Family Weekend Talk [<i>Invited</i>]
“A Zombie Star Lurking in Our Cosmic Backyard” | High Point, NC
Feb 1, 2014 |
| 4. | High Point University Honors Program Talk [<i>Invited</i>]
“A Zombie Star Lurking in Our Cosmic Backyard” | High Point, NC
Feb 12, 2013 |
| 3. | Center for Exoplanets and Habitable Worlds Journal Club
“The mass ratio of the sdB+dM binary 2M 1938+4603 from Kepler” | State College, PA
Apr 6, 2012 |
| 2. | TriStar Astronomy Festival, Guilford Tech. Comm. College [<i>Invited</i>]
“Starquakes! Probing Stellar Evolution using Asteroseismology” | Jamestown, NC
Mar 3, 2012 |
| 1. | Stellar Society Lecture, Guilford Tech. Comm. College [<i>Invited</i>]
“Searching for planets around pulsating stars” | Jamestown, NC
Apr 8, 2011 |

MAJOR SCIENTIFIC COLLABORATIONS

- [Argus Array Science Team](#) - a 900-telescope, gigapixel-scale survey instrument that will generate transient alerts, images, and light curves with millions of epochs for millions of stars (UNC, USA; et al.) *2022-present*
- [TESS Asteroseismic Science Consortium](#) - selects and prioritizes targets for each TESS cycle, organizes ground-based observations, and coordinates data analysis & publications *2019-present*
- [EREBOS Collaboration](#) - searches for eclipsing compact hot subdwarf stars with brown dwarf/M-dwarf companions to determine influence of substellar objects on stellar evolution (HPU, USA; U. of Postdam, Germany; U. Western Cape, South Africa; Texas Tech U., USA; U. Valparaíso, Chile) *2016-present*
- [Massive Multiple O/B Systems](#) - radial velocity monitoring of massive, O/B star systems with CHIRON (HPU, USA; Charles U., Czechia; U. Católica del Norte, Chile; Royal Obs., Belgium) *2015-present*
- [Evrscope Science Collaboration](#) - gigapixel-scale photometric survey to discovery new variable stars and transient events (UNC, USA; et al.) *2015-2020*
- [SMARTS Consortium](#) - maintains, operates, and governs four medium-aperture telescopes on Cerro Tololo in Chile (HPU, USA; Yale U., USA; Georgia State U., USA; CTIO, Chile; et al.) *2014-present*
- [MUCHFUSS Project](#) - survey of compact hot subdwarf binaries with white dwarf companions to find SN Ia progenitors (HPU, USA; U. Potsdam, Germany; Dr. Remeis Sternwarte, Germany; U. Western Cape, South Africa; K.U. Leuven, Belgium; U. Hertfordshire, UK) *2011-2020*

COURSES TAUGHT

- PHY 1050, Astronomy of Stars, Galaxies and Cosmos, 96 students, HPU, Spring 2024
- PHY 2002, Research and Scientific Writing in Physics II, 5 students, HPU, Spring 2024
- PHY 4000, Advanced Research in Physics, 1 student, HPU, Spring 2024
- PHY 2030, Modern Physics, 12 students, HPU, Fall 2023
- PHY 2001, Research and Scientific Writing in Physics I, 6 students, HPU, Fall 2023
- PHY 4000, Advanced Research in Physics, 1 student, HPU, Fall 2023
- PHY 3210, Electromagnetism, 5 students, HPU, Spring 2023
- PHY 2002, Research and Scientific Writing in Physics II, 6 students, HPU, Spring 2023
- PHY 4000, Advanced Research in Physics, 2 students, HPU, Spring 2023
- PHY 2001, Research and Scientific Writing in Physics I, 6 students, HPU, Fall 2022
- PHY 2010L, Fundamentals of Physics I Lab (2 sections), 47 students, HPU, Fall 2022
- PHY 4000, Advanced Research in Physics, 2 students, HPU, Fall 2022
- PHY 1050, Astronomy of Stars, Galaxies and Cosmos, 92 students, HPU, Spring 2022
- PHY 4000, Advanced Research in Physics, 2 students, HPU, Spring 2022
- PHY 1050, Astronomy of Stars, Galaxies and Cosmos, 88 students, HPU, Fall 2021
- PHY 4000, Advanced Research in Physics, 2 students, HPU, Fall 2021
- PHY 2100, Electronics, 6 students, HPU, Spring 2021
- PHY 3210, Electromagnetism, 12 students, HPU, Spring 2021
- PHY 4000, Advanced Research in Physics, 1 student, HPU, Spring 2021
- PHY 1050, Service Learning Astronomy of Stars, Galaxies and Cosmos, 19 students, HPU, Fall 2020
- PHY 2000, Planetarium Operations, 3 students, HPU, Spring 2020
- PHY 3700, Modern Astrophysics, 5 students, HPU, Spring 2020
- PHY 4000, Advanced Research in Physics, 3 students, HPU, Spring 2020
- PHY 1050, Astronomy of Stars, Galaxies and Cosmos, 91 students, HPU, Fall 2019
- PHY 2000, Planetarium Operations, 3 students, HPU, Fall 2019
- PHY 4000, Advanced Research in Physics, 2 students, HPU, Fall 2019
- PHY 3210, Electromagnetism, 14 students, HPU, Spring 2019
- PHY 4000, Advanced Research in Physics, 3 students, HPU, Spring 2019
- PHY 1050, Astronomy of Stars, Galaxies and Cosmos, 76 students, HPU, Fall 2018

- PHY 2030, Modern Physics, 8 students, HPU, Fall 2018
- PHY 1050, Astronomy of Stars, Galaxies and Cosmos, 90 students, HPU, Spring 2018
- PHY 1511, General Physics I Lab, 19 students, HPU, Spring 2018
- PHY 3700, Modern Astrophysics, 5 students, HPU, Spring 2018
- PHY 4000, Advanced Research in Physics, 5 students, HPU, Spring 2018
- PHY 2030, Modern Physics, 12 students, HPU, Fall 2017
- PHY 4000, Advanced Research in Physics, 4 students, HPU, Fall 2017
- PHY 1050, Astronomy of Stars, Galaxies and Cosmos, 90 students, HPU, Spring 2017
- PHY 3210, Electromagnetism, 12 students, HPU, Spring 2017
- PHY 4000, Advanced Research in Physics, 4 students, HPU, Spring 2017
- PHY 1050, Astronomy of Stars, Galaxies and Cosmos, 60 students, HPU, Fall 2016
- PHY 2030, Modern Physics, 12 students, HPU, Fall 2016
- PHY 4000, Advanced Research in Physics, 4 students, HPU, Fall 2016
- PHY 1050, Astronomy of Stars, Galaxies and Cosmos, 100 students, HPU, Spring 2016
- PHY 2100, Electronics, 8 students, HPU, Spring 2016
- PHY 4000, Advanced Research in Physics, 4 students, HPU, Spring 2016
- PHY 1050, Astronomy of Stars, Galaxies and Cosmos, 90 students, HPU, Fall 2015
- PHY 1511, General Physics I Lab, 15 students, HPU, Fall 2015
- PHY 4000, Advanced Research in Physics, 4 students, HPU, Fall 2015
- PHY 1050, Astronomy of Stars, Galaxies and Cosmos, 100 students, HPU, Spring 2015
- PHY 2100, Electronics, 8 students, HPU, Spring 2015
- PHY 4000, Advanced Research in Physics, 4 students, HPU, Spring 2015
- PHY 1050, Astronomy of Stars, Galaxies and Cosmos (2 sections), 60 students, HPU, Fall 2014
- PHY 2030, Modern Physics, 8 students, HPU, Fall 2014
- PHY 4000, Advanced Research in Physics, 4 students, HPU, Fall 2014
- PHY 1510, General Physics I, 6 students, HPU, Summer 2014
- PHY 1511, General Physics I Lab, 6 students, HPU, Summer 2014
- PHY 1050, Astronomy of Stars, Galaxies and Cosmos (3 sections), 90 students, HPU, Spring 2014
- PHY 1050, Astronomy of Stars, Galaxies and Cosmos (3 sections), 90 students, HPU, Fall 2013
- ASTR 001, Astronomical Universe, 315 students, PSU, Fall 2012

RESEARCH STUDENTS ADVISED

Graduate Student Projects Advised:

- **Fabian Mattig**[†] (U. Potsdam; 2023-present) — LAMOST RV Survey for Compact Hot Subdwarf Binaries
- **Corey Bradshaw**[‡] (U. Hamburg; 2023-present) — Fundamental Properties of Blue Large Amplitude Pulsators
- **Kyle Corcoran**[‡] (UVA; 2018-2020) — Identifying Variable Hot Subdwarfs from Anomalous Gaia Uncertainties
- **Jeff Ratzloff**[†] (UNC; 2015-2020) — A Photometric Search for Compact Hot Subdwarf Binaries with Evryscope

Post-Baccalaureate Student Projects Advised:

- **Isaac Lopez** (2021-2024) — Characterizing the Shortest-Period Post-Common Envelope Binaries
- **Sandra Liss** (PSU; 2012-2013) — Long-Period sdB+F/G/K Binaries Observed by HET/HRS

Undergraduate Student Projects Advised:

- **Bennett Kirby** (2024S) — Application of the Baade-Wesselink Method to the Radial Mode sdBV Star BPM 36430
- **Teagan Graham, Steve Difillipo** (2023F) — Quantifying the Fabric of Spacetime Demo
- **Bennett Kirby** (2023F) — Pulsational Velocity Variations of the Radial Mode sdBV Star BPM 36430
- **Bryce Smith** (2023S) — Beaming-Induced Asymmetry in the Reflection Effect of Hot Subdwarf Binaries
- **Gabriana del Vecchio** (2023S) — Rotational Splitting of Pulsating Hot Subdwarfs Observed by TESS
- **Bowie Laughrey** (2022F) — Characterization of HW Vir Binaries using their Lomb Scargle Periodograms

[†]served as a project adviser/collaborator and a thesis committee member

[‡]served as a project adviser/collaborator

- **Bennett Kirby** (2022F) — Generating Ephemerides for Compact Hot Subdwarf + White Dwarf Binaries
- **Gabriana del Vecchio** (2022F) — Exploring the Period Distribution of sdBV Stars Observed by TESS
- **Jazzmyn Holden** (2022F) — Searching for New sdB Reflection Effect Binaries in TESS Cycle 5
- **Bryce Smith** (2022F) — Solving the Mystery of the Reflection Effect Binary TIC 231712886
- **Isabelle Parker** (2022S) — Asymmetry in the Reflection Effect Shape of Hot Subdwarf Binaries from TESS
- **Will Frondorf** (2022S) — SCOPES Production (Scientific Community Outreach Program for Exploring Space)
- **Bryce Smith** (2022S) — Pulse Timing Analysis of the sdBV Star BPM 36430
- **Isabelle Parker** (2021F) — Asymmetry in the Reflection Effect Shape of Hot Subdwarf Binaries from TESS
- **Will Frondorf** (2021F) — SCOPES (Scientific Community Outreach Program for Exploring Space)
- **Jazzmyn Holden** (2021) — Measuring the Rossiter McLaughlin Effect in AA Dor
- **Bryce Smith** (2021F) — A 3-Day Companion to the Hot Subdwarf BPM 36430 Detected with TESS Pulse Timings
- **Jack Munn** (2021Sum) — O-C Analysis of Non-Eclipsing Hot Subdwarf + Red Dwarf Binaries Observed by TESS
- **Caden Sanchez** (2021Sum) — O-C Analysis of Eclipsing Hot Subdwarf + Red Dwarf Binaries Observed by TESS
- **Isabelle Parker** (2021Sum) — Confirming a New Method for Identifying Variable Hot Subdwarf Stars with TESS
- **Isabelle Parker** (2020F) — Constraining the Inclination of Non-Eclipsing Reflection Binaries with Fourier Analysis
- **Colin McCarrie** (2020S) — Development of a Time-Series Photometry Aperture Photometry Code
- **Will Frondorf** (2020S) — Follow-Up Spectroscopy of the Quadruple Star System QZ Car
- **Nathan Grinalds** (2019S) — A CHIRON Radial Velocity Survey of Candidate Hot Subdwarf Variables from Gaia
- **Emily Boudreaux** (2019S) — Creation of Toy Models of p-Mode Pulsating Stars in Python
- **H. Harrington, Z. Straumins** (2019/2020) — Using NASA’s TESS Spacecraft to Classify Hot Subwarfs
- **Stephen Walser** (2019S) — Follow-up Photometry of EREBOS Targets of Interest
- **Stephen Walser** (2018F) — EC 01578-1743: A Newly Discovered Hot Subdwarf Binary Star System
- **Emily Boudreaux** (2018F) — The Binary Period Distribution in Globular Clusters
- **W. Frondorf, I. Parker, D. Vestal** (2018/2019) — A Search for RV-Variable sdBs with CHIRON
- **Alan Vasquez** (2018S) — Photometry & Spectroscopy of the New Pulsating White Dwarf EPIC 245988146
- **Kyle Corcoran** (2018S) — An Updated O-C Diagram of CD-30 Using Evryscope Data
- **Zack Hutchens** (2018S) — Using the O-C Diagram to Detect Subtle Temperature Changes in an Oscillating Spring
- **Emily Boudreaux** (2018S) — Photometric Classification of PTF Data Using Deep Neural Networks
- **Alan Vasquez** (2017F) — K2 Observations of the New Pulsating White Dwarf EPIC 245988146
- **Emily Boudreaux** (2017F) — Using Deep Learning to Analyze the Voices of Stars
- **Kyle Corcoran** (2017F) — Updated O-C Diagrams for HW Vir Binaries Observed by Evryscope
- **Paddy Clancy** (2017F) — The Effects of Asynchronous Rotation on Secondary Eclipse Timings in HW Vir Binaries
- **J. Aube, S. Mycroft, S. Walser** (2017/2018) — The New HW Vir Binary EC 01578-1743
- **Emily Boudreaux** (2017S) — The Applications of Deep Neural Networks to SdBV Classification
- **Joseph Godoy** (2017S) — Classifying Light Curves with K-means Clustering
- **Zack Hutchens** (2017S) — An Updated O-C Diagram for CS 1246
- **Ryan Hegedus** (2017S) — Modeling the Rossiter McLaughlin Effect in HW Vir Binaries in Python
- **Emily Boudreaux** (2016F) — A GALEX Virtual Survey of all Known Hot Subdwarfs with gPhoton
- **Rebecca Lewis, Kyle Corcoran** (2016/2017) — A Chromatic Amplitude Study of the Reflection Effect in HW Virs
- **Alan Vasquez** (2016Sum) — The Disappearing Pulsations of the sdBV Star CS 1246 (cont’d)
- **Ryan Hegedus** (2016Sum) — Studying the Influence of Substellar Objects on Stellar Evolution
- **Alan Vasquez** (2015Sum) — The Disappearing Pulsations of the sdBV Star CS 1246
- **Rodrigo Catalan** (2015Sum) — Clash of the Titans: a Velocity Study of HD 318015
- **Alan Vasquez** (2015, 2016F) — The Disappearing Pulsations of the sdBV Star CS 1246
- **Ryan Hegedus** (2016F) — Studying the Influence of Substellar Objects on Stellar Evolution
- **Joseph Godoy** (2016F) — The Roemer Delay of Kepler-13b
- **Eugene Filik** (2016S) — Re-Writing *Tracker* using a Raspberry Pi
- **Rodrigo Catalan** (2016S) — RVs of Binaries in Proto-Planetary Nebulae with CHIRON
- **Michael Cantor** (2016S) — Construction of a Simple Cell Phone using Raspberry Pis
- **Eugene Filik** (2015F) — Construction of a Simple Spectrograph using Raspberry Pis
- **Rodrigo Catalan** (2015F) — Light Curve Solutions for HW Vir Binaries with *Binary maker*
- **E. Boudreaux, P. Clancy** (2015/2016) — Spectroscopic Follow-Up of K2 Binaries
- **Stephen Vultaggio** (2015S) — A Survey for New sdBV Stars with SKYNET
- **Eugene Filik** (2014/2015) — Measuring the Binary Fraction of sdO and He-sdO Stars with CHIRON
- **Stephen Vultaggio** (2014F) — The Pulsation Amplitude of the sdBV Star CS 1246
- **A. Marlowe, S. Gordon** (2013/2014) — An Orbital Solution for Comet ISON

High School Student Projects Advised:

- **Mark Muchane** (2021-2022) — Machine Learning ZTF Hot Subdwarfs
- **Emily Boudreaux** (2015) — Confirmation of a Hypervelocity Star with SOAR/Goodman
- **Arjun Raghavan** (2013) — Photometric Evidence of Changes in Pulsation Characteristics of Hot Subdwarf B Stars

GRANT FUNDING

- PI, \$49,942, 2021-2023, [TESS Cycle 3 Guest Investigator Program Grant](#), NASA
- PI, \$29,999, 2019-2021, [TESS Cycle 2 Guest Investigator Program Grant](#), NASA
- PI, \$349,621, 2018-2024, [Astronomy & Astrophysics Research Grant](#), NSF
- PI, \$10,000, 2016, [Summer Undergraduate Research Program in the Sciences Grant](#), High Point University
- PI, \$13,000, 2015, [Summer Undergraduate Research Program in the Sciences Grant](#), High Point University
- PI, \$2,000, 2014, [Silvershein/Gutenstein Family Faculty Development Grant](#), High Point University
- PI, \$100,000, 2013, [HPU Science Instrumentation Expansion Grant](#), High Point University
- PI, \$2,000, 2010, Graduate Assistance in Areas of National Need ([GAANN](#)) Fellowship, U.S. DOE

PROFESSIONAL SERVICE & MEMBERSHIPS

- Proposal Review Panel Member, NSF Division of Astronomical Sciences 2024
- Reviewer, [North Carolina Space Grant](#) Graduate Research Fellowship Program 2024
- Scientific Organizing Committee, [11th Meeting on Hot Subdwarf Stars](#) in Armagh, Northern Ireland .. 2023
- Invited Session Chair, [Hvar Stellar Meeting](#) in Hvar, Croatia 2023
- Reviewer, [The Royal Society](#) University Research Fellowship Program 2023
- Scientific Organizing Committee, [10th Meeting on Hot Subdwarf Stars](#) in Liège, Belgium 2022
- Reviewer, [North Carolina Space Grant](#) Graduate Research Fellowship Program 2022
- Invited Session Chair, [Large Surveys with Small Telescopes Meeting](#) in Bamberg, Germany 2019
- Invited Session Chair, [8th Meeting on Hot Subdwarf Stars and Related Objects](#) in Kraków, Poland 2017
- Reviewer, [Netherlands Organisation for Scientific Research](#) 2015
- Invited Session Chair, [7th Meeting on Hot Subdwarf Stars and Related Objects](#) in Oxford, UK 2015
- Management Council Member, [SMARTS Telescope Consortium](#) 2014–present
- Grant Review Panel Member, NASA K2 Guest Observer program 2014
- Member: [Sigma Xi](#) Research Honor Society, [American Astronomical Society](#), [Society of Physics Students](#)
- Referee: *Astrophysical Journal*, *Monthly Notices of the Royal Astronomical Society*, *Publications of the Astronomical Society of the Pacific*, *Open Astronomy*, & *Explorations*

EDUCATIONAL & PUBLIC OUTREACH

- Founding Director of [Culp Planetarium](#) (2019–2024)
- Helped produce world’s first opera conceived for a planetarium, [Galaxies In Her Eyes](#) (2021-2022)
- Created a service learning astronomy program called [LASeR](#) (2020)
- Lead Organizer of [HPU Universe Day](#), a large, astronomy-themed public outreach event at HPU (2014–2024)
- Coordinator, Educational Research in Radio Astronomy ([ERIRA](#)) summer program (2010–2013, 2016)
- Faculty Adviser for NASA’s [Micro-g NExT program](#) (2014-2015)
- Developed interactive robotic observing activity for PSU’s public outreach program [AstroFest](#)
- Hosted planetarium shows at Penn State for the public and traveling school groups
- Volunteered at the [Discovery Space](#) (science museum for kids) in State College, PA
- Research advisor for NC high–school student Arjun Raghavan ([INTEL ISEF Senior Grand Award](#))
- Hosted guest nights at [Morehead](#) (UNC) and [Howell](#) (MSU) observatories for the general public