
Nicholas W. Troup
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Education & Employment

Assistant Professor of Physics, Salisbury University (SU), Salisbury, MD **08/2017 - Present**

Ph.D. in Astronomy, University of Virginia, Charlottesville, VA **08/2017**
Dissertation Title: Companions to APOGEE Stars: A Stellar Populations View of the Milky Way's Stellar and Substellar Companion Hosts.
Thesis Committee: Steven R. Majewski (*Advisor*), Michael F. Skrutskie, Phil Arras, Zhi-Yun Li

M.S. in Astronomy, University of Virginia (UVa), Charlottesville, VA **05/2014**

Honors B.S. with Distinction in Physics, University of Delaware (UD), Newark, DE **05/2012**
Degree Awarded *Magna Cum Laude* **Minors:** Computer Science & Mathematics
Senior Thesis Title: The Habitability and Stability of Planets in Binary Star Systems

Research & Professional Development

Research Interests: Stellar Populations, Exoplanets and Brown Dwarfs, & Astronomical Surveys (pipeline development, data science)

Professional Affiliations: American Astronomical Society (AAS), Sloan Digital Sky Survey (SDSS) Alpha Lambda Delta, Golden Key International Honor Society, Phi Beta Kappa

Research Experience & Positions Held

SDSS-V Milky Way Mapper (MWM) 01/2017 - Present

Radial Velocity (RV) Monitoring Working Group Leader – Defined scientific goals and selected targets for the MWM RV monitoring programs. Evaluated survey simulations to ensure feasibility of the SDSS-V survey.

SDSS-III/IV Apache Point Observatory Galactic Evolution Experiment (APOGEE) 09/2012-Present

APOGEE Software Graduate Assistant- Implemented new features in the APOGEE pipelines, including: automating the process of acquiring stellar chemical abundances and rotational velocities, and improving performance of radial velocity extraction. As a result of this work, I qualified for *External Participant Status*, which allows me to continue to work with SDSS data.
Substellar Companions Working Group Leader – Coordinate scientific efforts of working group, developed and maintained APOGEE's Keplerian orbit fitting pipeline, and compiled catalogs of stellar and substellar companions discovered by APOGEE.

NASA Goddard Spaceflight Center (GSFC) **6/2011 – 8/2011**

WISE Summer Intern- Funded by the Delaware Space Grant Consortium, I worked with the GSFC WISE team to develop a novel method to heal and recover saturated images in the WISE catalog. **Advisor:** Dr. Dominic Benford

University of Delaware Undergraduate Research Program **6/2010 – 5/2011**

Science and Engineering Summer Scholar- Using data from the AKARI and WISE databases, searched for infrared excesses from nearby stars to identify debris disk candidates.

Advisor: Prof. John Gizis

Grants, Fellowships, and Other Awards

SU Henson Faculty Travel Award **10/2019**
Award amount: \$1000

Allan T. Gwathmey Award **04/2017**
Annual award that recognizes the best paper by a UVa graduate student in physical sciences. Award amount: \$7500.

NSF Collaborative Research Grant AST-1616636 **08/2016-08/2019**
Proposal Title: *A survey of the types of stars and massive planets that make up binary pairs in the Milky Way Galaxy.* Award Amount: ~\$250,000. PIs: *Majewski, Skrutskie, Li, Arras(UVa), Nathan De Lee(NKU).* While not PI, proposal was inspired by my published work, and I heavily contributed to the proposal.

Virginia Space Grant Consortium Graduate Research Fellowship **08/2016-05/2017**
Proposal Title: *Combining the Brown Dwarf Desert with APOGEE.* Award amount: \$6000

SDSS Early Career Travel Assistant Award **07/2013, 07/2014, 06/2016**
Award amount: \$500-\$600

Telescope Observing Time Awarded

SDSS 2.5m (APOGEE)	Ancillary Program 2017
Large Binocular Telescope (LMIRcam)	2016A,B
MMT (Hectochelle)	2015B, 2016A
NOAO WIYN Telescope (DESI)	2015B
Apache Point Observatory 3.5m (ARCES)	Several Nights 2013-2017

Selected Publications

Aguado, D.S., Ahumada, R., Almeida, A., et al. 2019, ApJS, 240, 23
 Sun, M., Arras, P., Weinberg, N.N., **Troup, N.W.**, & Majewski, S.R. 2018, MNRAS, 481, 4077
 Holtzman, J.A., Hogg, D.W., Rix, H.W., et al. 2018, AJ, 156, 125
 Skinner, J., Covey, K.R., Bender, C.F., et al. 2018, AJ, 156, 45
 Price-Whelan, A.M., Hogg, D.W., Rix, H.W., et al. 2018, AJ, 156, 18
 Badenes, C., Mazzola, C., Thompson, T.A., et al. 2018, ApJ, 854, 147
 Wilson, R.F., Teske, J., Majewski, S.R., et al. 2018, AJ, 155, 68
 Serenelli, A., Johnson, J., Huber, D., et al. 2017, ApJS, 233, 23
 Zasowski, G., Cohen, R.E., Chojnowski, S.D., et al. 2017, AJ, 154, 198

Majewski, S.R., Schiavon, R.P., Frinchaboy, P.M., et al. 2017, AJ, 154, 94
 Fernandez, M.A., Covey, K.R., De Lee, N., et al. 2017, PASP, 129, 084201
 Blanton, M.R., Bershad, M.A., Abolfathi, B., et al. 2017, AJ, 154, 28
 Grieves, N., Ge, J., Thomas, N., et al. 2017, MNRAS, 467, 4264
 Linden, S.T., Pryal, M., Hayes, C.R., et al. 2017, ApJ, 842, 49
Troup, N., et al. 2016, AJ, 151, 85
 Garcia Perez, A.E., et al. 2016, AJ, 151, 144
 Holtzman, J.A., et al. 2015, AJ, 150, 148
 Tayar, J, et al. 2015, ApJ, 807,82
 Meszaros, et. al, 2015, AJ,149,153
 J.E. Gizis, **N.W. Troup** & A.J. Burgasser, 2011, ApJ, 736, L34.

Invited Talks

SU Math & Computer Science Seminar	05/2019
SU Physical Science Seminar	11/2018
Carnegie DTM Astronomy Seminar	10/2016
University of Delaware Astronomy Seminar	09/2016
Penn State Center for Habitable Worlds Seminar	09/2016
SDSS-IV Collaboration Meeting, Madison, WI	06/2016

Selected Contributed Presentations

Sun, M., Arras, P., Weinberg, N.N., Majewski, S., & **Troup, N.** 2019, AAS Meeting Abstracts #233, 233, 465.06
 De Lee, N.M., Houston, K., Herweck, K., et al. 2019, AAS Meeting Abstracts #233, 233, 348.30
 Covey, K., Kounkel, M., Reyna, A., et al. 2019, AAS Meeting Abstracts #233, 233, 348.14
 Galbraith-Frew, J., Ivans, I., Johnson, J., et al. 2019, AAS Meeting Abstracts #233, 233, 259.40
 Sun, M., Arras, P., Weinberg, N.N., **Troup, N.**, & Majewski, S.R. 2018, AAS Meeting Abstracts #231, 231, 421.06
 De Lee, N.M., Houston, K., **Troup, N.**, et al.2018, AAS Meeting Abstracts #231, 231, 246.43
 Wilson, R.F., Teske, J., Majewski, S.R., et al. 2018, AAS Meeting Abstracts #231, 231, 211.02
 Sun, M., Arras, P., Majewski, S., **Troup, N.**, & Weinberg, N.N. 2017, AAS Meeting Abstracts, 229, 417.01
Troup, N.W., et al. 2016, AAS Meeting Abstracts, 229, #344.19
 Nguyen, D.T., **Troup, N.W.**; Majewski, S. R. 2016, AAS Meeting Abstracts, 229, #344.18
Troup, N.W., et al. 2016, AAS Meeting Abstracts, 227, #142.13
 Nguyen, D.C., Carlberg, J.K., **Troup, N.W.**, et al. 2015, AAS Meeting Abstracts, 225, #340.06
Troup, N.W., et al. 2015, AAS Meeting Abstracts, 225, #340.04
 J.E. Gizis & **N.W. Troup.**, AAS Meeting Abstracts, 218, #326.02

Professional Development

AAS Ambassador	01/2016 – Present
Tomorrow's Professor Today	08/2014 – 05/2016
Summer School in Statistics for Astronomers XI	June 2015

Proficiencies

Programming Languages: C++, Java, MATLAB, IDL, Python, IRAF
Mathematical Software: LaTeX, Maple, Mathematica, Origin, Minitab, R
Other: FITS image processing, Basic Electronics, Computer Hardware

Teaching & Mentoring

Teaching Interests: Observational Astronomy (Professional & Amateur), Stellar Astrophysics, Problem-Based Learning & Guided Inquiry

Teaching Experience

Assistant Professor, Salisbury University Dept. of Physics **08/2017 – Present**

Courses Taught: Lecture & Lab for PHYS 108, PHYS 121, PHYS 123, PHYS 221

Courses Developed: PHYS 307 (Astronomical Surveys and Databases)

Graduate Course Grader, University of Virginia Dept. of Astronomy **01/2016-05/2016**

Graded for graduate course *Galactic Structure and Stellar Populations* and advised final research project required for this course.

CAST Tutor, University of Virginia Athletics Dept. of Academic Affairs **07/2014-05/2016**

Tutored UVa student athletes in introductory Astronomy courses.

Summer Course Instructor, University of Virginia Dept. of Astronomy **07/2013-08/2013**

Taught *Introduction to Stars, Galaxies and the Universe*, implementing a combination of traditional lectures and problem-based learning to achieve learning goals.

Graduate Teaching Assistant, University of Virginia Dept. of Astronomy **08/2012-05/2014**

Assisted with the undergraduate education of the Astronomy Department. Duties included: grading exams and homework, substitute lectures, and leading night lab activities for the Majors' *Observational Astronomy* course in particular. Awarded the **Laurence W. Fredrick Graduate Teaching Award** in Feb. 2014 for these efforts.

Mentoring

Cal Wilkins & Jacob Lapinsky, SU Undergraduate Senior Project **2019-2020**

ThinSat Program (18 Junior & Senior Physics Majors) **2018-Present**

Rachael Fox & Justin McShane, SU Undergraduate Senior Project **2017-2018**

Duy Nguyen, UVa Undergraduate Research & Senior Thesis **2015-2017**

Service & Outreach

Public Outreach Events & Organizations

Salisbury University Seagull Star Party	12/2019
Henson STEM Outreach Award (\$500)	10/2019
Wicomico County Public Schools	
Salisbury Middle School Science Saturday	
Willards Elementary School 1 st Grade Classroom Visit	04/2018
Wicomico County Public Library	
Celestial Art Show Judge	02/2018
Solar Eclipse Event	08/2017
UVa Dark Skies Bright Kids (DSBK)	
Onancock Elementary School Summer Astronomy Camp	07/2018
After-School Astronomy Club Volunteer	08/2014 - 05/2016
Central Virginia Star Party Volunteer	08/2012 - 10/2016
<i>Contributing author on the following publications & presentations related to this effort:</i>	
Hayes, C., Matthews, M., Song, Y., et al. 2019, submitted to PRPER	
Burkhardt, A.M., et al. 2018, AAS Meeting Abstracts, 231, #360.01	
Bittle, L., et al. 2017, AAS Meeting Abstracts, 229, #248.07	
Bittle, L., et al. 2016, AAS Meeting Abstracts, 227, #248.07	
Liss, S., Troup, N.W. , et al. 2015, AAS Meeting Abstracts, 225, #335.09	
UVa Astronomy Dept. Public Night Volunteer	09/2012 – 05/2017

Invited Public Lectures

NASA Wallops Flight Facility Visitor's Center	07/2018
Delmarva Space Sciences Foundation Astronomy on Tap	03/2018
Bridgewater College Public Night, Bridgewater, VA	11/2016
George Mason University Public Night, Fairfax, VA	10/2014

Administrative Roles

SU Henson School Data Science Degree Ad-Hoc Committee	2018
<i>Developed "Astrostatistics" Track for Degree</i>	
SU Department of Physics Lab Committee	08/2018- Present
SU Henson School STEM Outreach Committee	08/2018- Present
SU Henson School Research & Faculty Development Committee	08/2017- Present
UVa Exoplanet Journal Club Organizer	08/2015 – 08/2017
Filtergraph Advisory Board	08/2015 – 08/2017
UVa Astronomy Dept. Public Night Coordinator	08/2014 – 05/2016
UVa Local Observatory Committee	08/2012- 05/2014