

Sean DILLON, M.S.

CONTACT INFORMATION	University of Texas at San Antonio Physics and Astronomy Department 1 UTSA Circle San Antonio, TX, 78238, USA	<i>Email:</i> sean.dillon@my.utsa.edu Personal website: astroseandillon.github.io
EDUCATION	University of Texas–San Antonio , San Antonio, Texas, USA Doctoral Candidate in Astrophysics Advisor: Dr. Angela Speck August 2020–Present	
	California State University–Chico , Chico, California, USA B.S., Physics Minor: Mathematics Advisor: Dr. Nicholas Nelson August 2018–May 2020	
RESEARCH EXPERIENCE	Graduate Research Assistant Jan 2021– Present Advisor: Dr. Angela Speck University of Texas–San Antonio, San Antonio, TX Modeling cosmic minerals around AGB star Rx Boo	
	Research Experience for Undergraduates Internship May 2019 – August 2019 Advisor: Dr. Karen Masters Haverford College, Haverford, PA Plotting correlations between neutral hydrogen and other cosmic quantities using principle component analysis techniques, a form of AI	
	Undergraduate Research Assistant August 2018 – May 2020 Advisor: Dr. Nicholas Nelson California State University–Chico, Chico, California Modeling solar convection around Sun-like stars	
PAPERS: REFEREED	3. Preston, Michael D.; Speck, Angela K.; Dillon, Sean ; Sargent, B. <i>Unraveling the Dusty Environment around RT Vir</i> , Accepted to The Astrophysical Journal, arXiv: 2412.01726	
	2. Stark, David V.; Masters, Karen L.; Avila-Reese, Vladimir; Riffel, Rogemar; Riffel, Rogerio; Boardman, Nicholas Fraser; Zheng, Zheng; Weijmans, Anne-Marie; Dillon, Sean ; et al. <i>HI-MaNGA: Tracing the physics of the neutral and ionized ISM with the second data release</i> , Accepted to MNRAS 2021, arXiv: 2101.12680	
	1. Dillon, Sean & 314 others, <i>The 16th Data Release of the Sloan Digital Sky Surveys: First Release from the APOGEE-2 Southern Survey and Full Release of eBOSS Spectra</i> , 2020, ApJS, 249, 1, arXiv: 1912.02905	
PROPOSALS: GRANTS	• NASA SMD Community of Practice for Education (SCoPE) 2025 NASA Neurodiversity Network (N3), FUNDED “Sun Science for Special Ed. Students in San Antonio”, PI: Lynn Cominsky at ASU, Duration: 6 months, Budget: \$19000	

CONFERENCE
POSTERS (2019–)

7. "Crystal Math: Continuous Distributions of Ellipsoids in Radiative Transfer Models" **Dillon, Sean M.**; Speck, Angela K; Sargent, Beth
Poster for The Dusty Universe: 5th Pan Dust Conference 2025, Tucson, AZ
6. "Crystal Math: Continuous Distributions of Ellipsoids in Radiative Transfer Models" **Dillon, Sean M.**; Speck, Angela K; Sargent, Beth
iPoster for 246th AAS Meeting 2025, Anchorage, AK
5. "Crystal Math: Modeling Distributions of Dust Grain Shapes" **Dillon, Sean M.**; Speck, Angela K; Sargent, Beth
iPoster for 243rd AAS Meeting 2023, New Orleans, LA
4. "Implementing Non-Spherical Grain Shape and Size Distributions into Radiative Transfer Code DUSTY: Application to AGB Stars" **Dillon, Sean M.**, Speck, Angela K.
iPoster for 242nd AAS Meeting 2022, Albuquerque, NM
3. "Using Radiative Transfer Modeling to Determine Nature of Dust Around RX Boo" **Dillon, Sean M.**, Speck, Angela K.
iPoster for 240th AAS Meeting 2021, Pasadena, CA
2. "A Principle Component Analysis of the HI Mass Fraction of Galaxies in the MaNGA Survey" **Dillon, Sean M.**, Masters, K.L., Stark, D.
Poster for the 235th AAS Meeting 2020 (Abstract 207.06), Honolulu, HI
1. "Modeling Convection in Slowly-Rotating Stars" **Dillon, Sean**, Swenson, T., Grigalva, T.,
College of Sciences Poster Session 2019 (Abstract UF46), California State University–Chico, Chico, CA, USA

PROFESSIONAL
TALKS
(2019–)

Feb 2024 - April 2024 "Counting Down to the Solar Eclipse" **Public Outreach** given
at numerous libraries and public schools

Oct 17, 2023 "Counting Down to the Solar Eclipse" **Public Outreach** talk in downtown San Antonio on the day of the solar eclipse

Sept 2023 - Oct 2023 Getting Ready for the Solar Eclipse
Public Outreach given at numerous libraries and public schools

Sept 2023 "Implementing Non-Spherical Grain Shape and Size Distributions into Radiative Transfer Code DUSTY: Application to AGB Stars"
Qualifying Exam advanced to candidacy

Aug 2023 "Stars the Size of San Antonio"
Astronomy on Tap talk at Blue Star Brewing Company, San Antonio, Texas

Nov 2019 " A Principle Component Analysis of the HI Mass Fraction of Galaxies in the MaNGA Survey"
Contributed 2019 Annual Meeting of the American Physical Society Far West Section
Dillon, Sean M., Masters, K.L., Stark, D.
(Abstract E03.00010), Stanford University, Menlo Park, CA

Oct 2019 " A Principle Component Analysis of the HI Mass Fraction of Galaxies in the MaNGA Survey"

Invited Annual Meeting of Keck Northeast Astronomy Consortium (KNAC),
Vassar College, Poughkeepsie, New York

PROFESSIONAL
WORKSHOPS

June 2024 Hispanic Serving Research Universities in San Antonio, TX. Volunteered
coordinating registration and introducing speakers.

Sept 2023 Solar Eclipse Planning Workshop in San Antonio, TX in collaboration with
the Scobee Education Center at San Antonio College to plan for the 2023 and
2024 solar eclipses and how we can engage the public by talking about the eclipse.

Jun 2023 Solar Eclipse Planning Workshop in Albuquerque, NM in collaboration with
New Mexico Museum of Natural History and Science to plan for the 2023 and
2024 solar eclipses and how we can engage the public by talking about the eclipse.

Jan 2020 Using Python to Search NASA's Astrophysics Archive workshop at the 235th
AAS Meeting to understand how python can be used for direct data analysis.

RESEARCH
INTERESTS

- Modeling dust around AGB stars
- Evolution of chemical abundances around galaxies
- Computational astrophysics and data analysis in Python