

Amy S. Steele

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EDUCATION

- | | |
|------|---|
| 2020 | Ph.D., Astronomy (October 2020) – University of Maryland |
| 2016 | M.Sc., Astronomy – University of Maryland |
| 2014 | M.A., Astronomy – Wesleyan University |
| 2008 | B.A., Astronomy & Mathematics, Honors in Mathematics – Williams College |

RESEARCH INTERESTS

Debris disks, polluted white dwarfs (WDs), WD transits, Multiwavelength observing, Cloudy modeling, and Stellar SED analysis

Circumstellar (C-S) dust is present around stars throughout their entire life cycles. Observations of C-S disks of various ages can therefore provide a method of studying the evolution of planetary systems. How unique are bodies in the Solar System? Multiwavelength observations paired with radiative transfer codes like Cloudy can disentangle the composition of exoplanetary material and help answer this question.

PROFESSIONAL APPOINTMENTS

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| Present – 2021 | Postdoctoral Researcher, Space Telescope Science Institute (STScI), Analyzing circumstellar dust and gas around giant and white dwarf stars. Completing projects that have been started and laying solid ground work for my future research program.
Supervisor: Dr. John Debes (STScI) <i>Ends May 2021.</i> |
| 2016 – 2018 | Research Intern, NASA Headquarters, Washington, D.C.
Mined existing data to investigate whether or not the Participating Scientist program for NASA planetary missions (MAVEN, Cassini, etc.) increased the overall binary gender diversity of missions. Supervisor: Megan Thompson. |

2009 – 2012 Astronomy Lab Coordinator, University of Texas at Arlington
Designed and taught labs to students, while training and supervising 10
undergraduate teaching assistants. Created, maintained, and presented
planetarium shows. Led public outreach events.
Supervisor: Prof. Alex Weiss

PUBLICATIONS

First Author Articles

2 refereed first-author publications, 2 pending dissertation chapters

1. **Steele, Amy** and Debes, John, “Constraining the Dust Properties of Giant Stars using *Herschel*”, *in prep (to be submitted before May 2021)*
2. **Steele, Amy** and Debes, John, “A Grid of Models of Circumstellar Gas around White Dwarf Stars: Part I”, *in prep (to be submitted before Jan 2021)*
3. **Steele, Amy**; Debes, John; Xu, Siyi; Yeh, Sherry; and Dufour, Patrick (2020) “A Characterization of the Circumstellar Gas around WD 1124-293 using Cloudy,” *ApJ accepted*, [arXiv:2010.12667](https://arxiv.org/abs/2010.12667)
4. **Steele, Amy**; Hughes, A. Meredith, Carpenter, John, et al. (2016) “Resolved Millimeter-Wavelength Observations of Debris Disks around Solar-Type Stars,” [ApJ, 816, 27](https://doi.org/10.1086/8078101)

Co-Author Articles

1. Xu, Siyi; Hallakoun, Na'ama; Gary, Bruce, others; **Steele, Amy** (2019) “Shallow Ultraviolet Transits of WD 1145+017,” [AJ, 157, 6](https://doi.org/10.1086/9138101)
2. Marino, S., Matrà, L., others, **Steele, Amy**, (2016) “Exocometary gas in the HD 181327 debris ring,” [MNRAS, 460, 2933](https://doi.org/10.1093/mnras/stw2933)
3. MacGregor, Meredith A.; Wilner, David J.; others; **Steele, Amy** (2016) “Constraints on Planetesimal Collision Models in Debris Disks” [ApJ, 823, 2](https://doi.org/10.1086/8078101)

AWARDS

2020	Graduate Student Distinguished Service Award Finalist, University of Maryland
2019	W. M. Keck Observatory Visiting Scholar Program Participant
2019	Dean’s Fellowship

2018	Gregor and Donat Wentzel Scholarship - Awarded to help recruit and retain outstanding students
2017	UMD Graduate Student Summer Research Fellowship
2017	Dean's Fellowship
2016	Dean's Fellowship
2016	Philip E. Angerhofer Outstanding Teaching Assistant Award - Awarded each fall to a student who worked as a teaching assistant during the preceding year
2016	American Astronomical Society (AAS) Chambliss Astronomy Achievement Student Award – Honorable Mention
2014	Littell Prize (Wesleyan University) The gift of Franklin Bowers Littell, Class of 1891, for excellence in one or more advanced courses in astronomy

GRANTS

2017	Social Science Research Council Predoctoral Research Development grant, \$3000
2016	Social Science Research Council Predoctoral Research Development grant, \$1375

PRESENTATIONS

Talks

c = contributed, i = invited, s = service

2020	i	MIT Lunch Seminar “Connecting circumstellar gas around white dwarfs to small bodies in the solar system”
2020	c	AAS Dissertation Talk “Connecting circumstellar gas around white dwarfs to small bodies in the solar system”
2019	i	Astronomy Seminar, Carnegie DTM “Determining the composition of gas polluted WDs: a planetary origin”
2019	i	Colloquium Talk, Williams College “Determining the composition of gas polluted WDs: a planetary origin”

- 2019 s The National Astronomy Consortium Workshop
- 2019 i Extreme Solar Systems Conference, Iceland
“The Abundances of Metals in Circumstellar Gas around Polluted White Dwarfs”
- 2019 i Gemini Observatory
“Modeling a polluted white dwarf using Cloudy”
- 2019 i W. M. Keck Observatory
“Modeling Keck HIRES spectra of a polluted white dwarf using Cloudy”
- 2018 s American Astronomical Society Education and Public Outreach Speaker
- 2017 i Inner Solar Systems, American Astronomical Society Panel
“Circumstellar Material on and off the Main Sequence”
- 2017 s STScI’s Youth for Astronomy & Engineering Program “Family Night” Speaker
- 2016 i Astronomy Seminar at Carnegie DTM
“Resolved Millimeter-Wavelength Observations of Debris Disks around Solar-Type Stars”
- 2016 i Planetary and Exoplanetary Astronomy Lunch Seminars, University of Maryland
“Resolved Millimeter-Wavelength Observations of Debris Disks around Solar-Type Stars”
- 2015 i CRESST Retreat
“Resolved Millimeter-Wavelength Observations of Debris Disks around Solar-Type Stars”
- 2014 i Lunch Series at the Harvard Center for Astrophysics

Posters

- 2020 Division of Planetary Science
J. Steckloff, J. Debes, Amy Steele, and B. Johnson “The Physical Processes Restricting Dusty Debris Disks to Cooler White Dwarfs, DPS Meeting, #306.05
- 2019 American Astronomical Society, AAS Meeting #233, id. 163.09
“Modeling circumstellar gas around white dwarfs,”
- 2018 American Astronomical Society, AAS Meeting #231, id. 359.01
“GRAD-MAP: A Joint Physics and Astronomy Diversity Initiative at the University of Maryland ”
- 2018 American Astronomical Society, AAS Meeting #231, id. 147.04
“A sample of potential disk hosting first ascent red giants”

- 2017 AAS Meeting #230, id.217.07
“On the Detection and Characterization of Polluted White Dwarfs”
- 2017 AAS Meeting #230, id.210.01
“Circumstellar Material on and off the Main Sequence”
- 2016 American Astronomical Society, AAS Meeting #227, id.343.11
“Resolved Millimeter Observations of the HD 181327 Debris Disk”
- 2014 American Astronomical Society, AAS Meeting #223, id.350.24
“Resolved Millimeter-Wavelength Observations of Debris Disks around Sun-like Stars,”

Panels

- 2019 Inclusive Astronomy 2 Conference
Invited as the GRAD-MAP Team Lead to discuss undergraduate education and bridge-to-masters/PhD programs.
- 2019 UMCP Centennial Celebration
Invited to discuss “Innovation in Graduate Education at Maryland” by describing my service as the GRAD-MAP Team Lead.
- 2018 NASA proposal peer reviews (5), Executive Secretary, 2015 (2), 2016, 2017, 2018:
Executive Secretary: an early-career scientist, usually a post-doctoral researcher or senior grad student, chosen to serve on the annual proposal-review panel.
- 2017 NASA proposal peer review, Executive Secretary
- 2016 NASA proposal peer review, Executive Secretary
- 2016 APS Conference for Undergraduate Women in Physics (CUWiP)
A three-day regional conference for undergraduate physics majors.
- 2015 NASA proposal peer review, Executive Secretary
- 2015 NASA proposal peer reviews, Executive Secretary
- 2015 Clare Booth Luce Scholars Panel
In her bequest establishing this program, Clare Booth Luce sought “to encourage women to enter, study, graduate, and teach” in science, mathematics and engineering.

OBSERVING PROPOSALS

Principal Investigator

- 2020 “WD1145+017: tracking the rapidly changing transits of its disintegrating planetesimal”
DCT Telescope, AZ, 4 nights
- 2019 “WD1145+017: tracking the rapidly changing transits of its disintegrating planetesimal”
DCT Telescope, AZ, 9 nights
- 2019 “Tracking the circumstellar gas of disintegrating exo-asteroids”
HIRES, W. M. Keck Observatory, HI
- 2017 “Millimeter wavelength observations of 4 giant stars” (rated B, not observed)
Submillimeter Array, HI
- 2017 “Circumstellar Material after the Main Sequence” (rated A)
Submillimeter Array, HI
- 2017 “Transits of WD1145+017”
Perkins 72”, Lowell Observatory, AZ, 9 nights

Co-Investigator

- 2019 “A Comprehensive UV Study of the White Dwarf with A Disintegrating Asteroid”
Hubble Space Telescope
Pi: Siyi Xu
- 2019 “A Search for Circumstellar and Interstellar Gas in The HD 15115 System”
NOAO Proposal Status Report for 20A-0272
PI: Meredith Macgregor

Training

- 2014 CARMA Summer School Participant, CA
Combined Array for Millimeter-wave Astronomy

TEACHING

2017	Teaching Assistant, Astronomy 230, The Science and Fiction of Planetary Systems Dr. Alan Peel	University of Maryland
2016	Teaching Assistant, Astronomy 220, Collisions in Space - The Threat of Asteroid Impacts Dr. Melissa Hayes-Gehrke	University of Maryland
2014	Teaching Assistant, Astronomy 101, General Astronomy Prof. Grace Deming	University of Maryland
2013	Teaching Assistant, Astro 155, Introductory Astronomy, Prof. Meredith Hughes	Wesleyan University
2012	Teaching Assistant, Astro 155, Introductory Astronomy, Prof. Bill Herbst	Wesleyan University
2011 – 2009	Astronomy Lab Coordinator Astronomy 101 in the fall, Astronomy 102 in the spring (Taught labs; 3 years, fall, spring, and summer)	University of Texas at Arlington
2008 – 2005	Undergraduate Teaching Assistant Operated the observatory telescopes (2 nights a week) and helped students complete observing projects for different courses (3 years, fall and spring)	Williams College

SERVICE

2020 – Present	Member on the College of Math and Natural Sciences CMNS Diversity & Inclusion Advisory Council.	
2020	Astronomy Graduate Admissions Committee Participated in the interviewing of short-listed candidates to the astronomy graduate program.	
2019 – Present	GRAD-MAP Team Advisor Currently training the next generation of graduate students to lead GRAD-MAP.	

- 2017 – GRAD-MAP Team Lead
2019 GRAD-MAP, or Graduate Resource Advancing Diversity with Maryland Astronomy and Physics, is a graduate student led and run diversity initiative. Please see <https://umdgradmap.org> for additional information. As Team Lead I organized, planned, and led the program by: managing the website, creating an advertising video, finding solutions to low participation among graduate students and faculty, creating/planning/organizing new events like the Open House, and providing general advising and mentoring of all GRAD-MAP students and alumni. Advocated for pay for graduate students who create materials for the program.
- 2017 – Astronomy Graduate Student Deputy
2019
1. A department position akin to a graduate student vice president.
 2. Provided support to the Astronomy graduate student president and worked closely with the department chair to help improve graduate student life.
- 2017 – Astronomy Graduate Social Events Coordinator
2018
1. Organized outings for the entire department.
 2. Organized events for the astronomy graduate students to help improve comradery and morale.
 3. Helped further advertise events planned by the Graduate Student Life group.
 4. Provided assistance to the department front office with events.
- 2017 Astronomy Graduate Admissions Committee
Participated in the interviewing of short-listed candidates to the astronomy graduate program.
- 2016 Astronomy Department Chair Search Committee
1. Asked to sit on this committee by then Dean Jayanth Banavar.
 2. Provided a graduate student's perspective on the candidates and what we would prioritize in a department chair.
- 2015 – Astronomy Graduate Council Class Representative
2019
1. Joined the council as a first year in its first year.
 2. Kept the council in existence after founding leadership graduated.
 3. Helped write the initial by-laws for the council, including setting the ground rules for electing our department graduate student president.

PROFESSIONAL MEMBERSHIPS

- 2014 – present American Astronomical Society Junior Member
- 2006 – present Mellon Mays Fellow

REFEREES

1. Dr. John Debes (he/his), Space Telescope Science Institute, Baltimore, MD,
Email: debes@stsci.edu
2. Prof. Stuart Vogel (he/his), University of Maryland, College Park, MD,
Email: svogel@umd.edu
3. Dr. Siyi Xu (she/her), Gemini Observatory, Hilo, HI,
Email: sxu@gemini.edu