

Curriculum Vitae

Personal Information

Cail Daley
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Education

- 08/2018–Present **PhD**, Astronomy
University of Illinois at Urbana-Champaign
- 09/2014–05/2018 **BA**, Astronomy & Physics (Dual Major)
Wesleyan University, Middletown, CT
- Cumulative GPA: 3.79
 - Major GPA: 3.85

Research Experience

- 02/2014-08/2018 **Undergraduate Researcher**, Wesleyan University
Advisor: A. Meredith Hughes, Ph.D.
- Studied debris disks at sub-mm wavelengths. Investigated the axisymmetry of the 49 Ceti system; lead reduction and analysis of observations of the debris disk around AU Mic to measure its vertical structure at mm wavelengths for the first time.
- 6/2016-9/2017 **Undergraduate Researcher**, Leiden University
Advisor: Catherine Walsh, Ph.D.
- Modeled the kinematic structure of the circumstellar disk HD 100546. Selected for Leiden's LEAPS program from a pool of 450 applicants.
- 9/2014-5/2015 **Observer**, Wesleyan University
PI: Seth Redfield, Ph.D.
- Observed for White Dwarf Exoplanet Transit Survey.

Gained experience with solo set-up, use, and take-down of 24-inch optical telescope.

Other Experience

- 09/2016–07/2018 **Astronomy Outreach**, Wesleyan University
- Running and assisting various outreach events. Presenting astronomy topics (with demos) to both adult and child audiences, talking about majoring in astronomy with Upward Bound high school students, and giving starlab planetarium presentations at a local elementary school.
- 06/2014–07/2014 **Head Intern**, Kids College Summer Arts Camp
Carnegie Hall, Lewisburg, WV
- Coordinated program that draws hundreds of elementary and pre-K children and offers dozens of classes. Acquired and inventoried supplies, coordinated volunteers, assisted teachers, and dealt with disruptive children.

Honors & Awards

- 09/2017 **Student Travel Grant** (\$1000)
NASA Connecticut Space Grant Consortium
- Travel to AAS
- 05/2017 **3rd Prize, Visualizing Knowledge Exhibition** (\$50)
Wesleyan University
- Title: *Orbital Motion of Gas in Planetary System HD 100546*
- 04/2017 **Siver Scholarship**
Wesleyan University
- “awarded to undergraduate students majoring in or demonstrating strong academic interest in physics”
- 04/2015 **Undergraduate Research Fellowship** (\$5000)
NASA Connecticut Space Grant Consortium
- Title: *Searching for Non-Axisymmetry in the Unusual Gas Disk Around a Main Sequence Star*
- 03/2015 **Research in Sciences Fellowship** (\$4000)
Wesleyan University
- Title: *Searching for Non-Axisymmetry in the Unusual Gas Disk Around a Main Sequence Star*

Skills Python, Latex, Git, Mathematica, SQL, Microsoft Office Suite, astronomy packages including as CASA, MIRIAD, and astropy

Presentations

- 01/2018 **American Astronomical Society 231st Meeting**
National Harbor, MD
· Will present poster on AU Mic research
- 7/2017 **Research in Sciences Poster Session**
Wesleyan University
· Presented poster on AU Mic research
- 10/2016 **Keck Northeast Astronomy Consortium**
Wesleyan University
· Gave talk on HD 100546 research
· Published paper in conference proceedings
- 08/2016 **LEAPS Symposium**
Leiden University
· Gave talk on HD 100546 research to international audience
- 10/2015 **Keck Northeast Astronomy Consortium**
Williams College
· Gave talk on 49 Ceti research
· Published paper in conference proceedings
- 07/2015 **Research in Sciences Poster Session**
Wesleyan University
· Presented poster on 49 Ceti research

Publications

1. *Using Vertical Structure to Infer the Total Mass Hidden in a Debris Disk*, [C. Daley, A. M. Hughes, E. Carter, K. Flaherty, Z. S. Lambros, M. Pan, H. Schlichting, E. Chiang, D. Wilner, B. Dent, J. Carpenter, S. Andrews, M. A. MacGregor, A. Moór, Á. Kóspál, in prep].
· Leading data reduction and analysis

2. *CO emission tracing a warp or radial flow within $\lesssim 100$ au in the HD 100546 protoplanetary disk*, [C. Walsh, **C. Daley**, S. Facchini, A. Juhász, *Astronomy & Astrophysics*, 607, A114, 2017]. arXiv: [1710.00703](#)
 - Performed initial grid search of parameter space
 - Contributed Figure 2 (featured on front page of issue)
 - Wrote abstract, heavily involved in editing
3. *Radial Surface Density Profiles of Gas and Dust in the Debris Disk around 49 Ceti*, [A. M. Hughes, J. Lieman-Sifry, K. M. Flaherty, **C. M. Daley**, A. Roberge, Á. Kóspál, A. Moór, I. Kamp, D. J. Wilner, S. M. Andrews, J. H. Kastner, P. Ábrahám, *Astrophysical Journal*, 839, 86, 2017]. arXiv: [1704.01972](#)
 - Contributed Figure 4

Urbana IL, September 1, 2018