

# Christina Willecke Lindberg

Astronomy Post-Doctoral Researcher

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## RESEARCH INTERESTS

HST ◦ JWST ◦ Local galaxies ◦ Interstellar Medium ◦ Stellar populations ◦ Data science ◦ Community leadership

## APPOINTMENTS

### **J.C. Ryan Postdoctoral Fellow**

2025 - Present

*Center for Astrophysics (CfA) — Harvard & Smithsonian Astrophysical Observatory (SAO)*

## EDUCATION

### **Ph.D. Candidate in Astronomy**

2019 - 2025

*Johns Hopkins University (JHU)*

Thesis Topic: Resolving the Multi-Scale Structure of the Interstellar Medium in Local Group Galaxies

Research Advisor: Dr. Claire Murray (STScI)

### **B.S. in Comprehensive Physics and Astronomy (Honors)**

2015 - 2018

*University of Washington (UW)*

## SOFTWARE

### **Bayesian Extinction And Stellar Tool (BEAST)**

2019 - Present

*Active Developer*

Open-source Python package for probabilistically modeling dust-extinguished multi-band spectral energy distributions of resolved stellar populations in nearby galaxies.

### **AsteroGaP**

2018 - 2021

*Lead Developer*

Open-source Bayesian Python package for modeling sparse asteroid light curve profiles with Gaussian Processes and Markov Chain Monte Carlo models for Zwicky Transient Facility and Rubin Observatory data.

## OBSERVING PROGRAMS AS PI

*Hubble Space Telescope Cycle 31 - 15 orbits*

2023 PI: Winging the SMC: 3D Structure of the Interstellar Medium in the Tidally Disrupted Wing of the SMC

*James Webb Space Telescope Cycle 4 - 12 hours orbits*

2023 PI: Winging the SMC: 3D Structure of the Interstellar Medium in the Tidally Disrupted Wing of the SMC

## OBSERVING PROGRAMS AS CO-I

*Hubble Space Telescope Cycle 33 - Archival*

2025 Co-I: Unraveling the Tarantula's Web: A precise, high-resolution dust map of 30 Doradus

*James Webb Space Telescope Cycle 3 - 25.8 hours*

2024 Co-I: Zooming-in on the sub-grid physics of PAHs at 20% solar metallicity

*Hubble Space Telescope Cycle 32 - 162 orbits*

2024 Co-I: Bringing HST to the VLA: The Interaction of Stars and Gas in the Local Group

*Hubble Space Telescope Cycle 30 - 12 orbits*

2022 Co-I: Taming the BEAST of N66 to resolve how star formation shapes the interstellar medium at low metallicity

*Hubble Space Telescope Cycle 26 - 73 orbits*

2018 Co-I: QuaStar: The first unobscured view of the Milky Way's Circumgalactic Medium

## FIRST-AUTHOR PUBLICATIONS

4. **C. W. Lindberg**, et al., "Scylla VI: Parsec-Scale Extinction Maps in the Magellanic Clouds", 2024, *in prep*
3. **C. W. Lindberg**, et al., "Scylla IV: Intrinsic Stellar Properties and Line-of-Sight Dust Extinction Measurements Towards 1.5 Million Stars in the SMC and LMC", 2024, *submitted to ApJ*
2. **C. W. Lindberg**, C. Murray, J. Dalcanton, J. Peek, K. Gordon, "Dust around massive stars is agnostic to galactic environment", 2024, *ApJ*, 963, 58

1. **C. W. Lindberg**, D. Huppenkothen, R. L. Jones, B. T. Bolin, M. Jurić et al., “Characterizing Sparse Asteroid Light Curves with Gaussian Processes”, 2022, *AJ*, 163, 29

## **OTHER PUBLICATIONS** (†= significant contribution)

7. K. Gilbert et al. incl. **C. W. Lindberg**, “The Local Ultraviolet to Infrared Treasury I. Survey Overview of the Broadband Imaging”, 2024, *accepted to ApJS*
6. R. Cohen et al. incl. **C. W. Lindberg**, “Scylla III. The Outside-In Radial Age Gradient in the Small Magellanic Cloud and the Star Formation Histories of the Main Body, Wing and Outer Regions”, 2024, *accepted to ApJ*
5. R. Cohen et al. incl. **C. W. Lindberg**, “Scylla II. The Spatially Resolved Star Formation History of the Large Magellanic Cloud Reveals an Inverted Radial Age Gradient”, 2024, *accepted to ApJ*
4. C. Murray, †**C. W. Lindberg**, et al., “Scylla I: A pure-parallel, multi-wavelength imaging survey of the ULLYSES fields in the LMC and SMC”, 2024, *accepted to ApJS*
3. T. Wainer et al. incl. **C. W. Lindberg**, “PHATTER. VI. The High-Mass Stellar IMF in M33”, 2024, *ApJ*, 168, 86
2. C. Murray et al. incl. **C. W. Lindberg**, “A Galactic Eclipse: The Small Magellanic Cloud is Forming Stars in Two, Superimposed Systems”, 2023, *ApJ*, 962, 120
1. B. Williams et al. incl. **C. W. Lindberg**, “The Panchromatic Hubble Andromeda Treasury: Triangulum Extended Region (PHATTER) I. Ultraviolet to Infrared Photometry of 22 Million Stars in M33”, 2021, *ApJS*, 253, 53

## **ACADEMIC SERVICE**

Fornax External System Readiness Review Panel	2025
STScI Spring Symposium - INTER+STELLAR Local Organizing Committee	2025

## **LEADERSHIP EXPERIENCE**

<i>JHU Physics and Astronomy Graduate Students (PAGS)</i> - President	2022 - 2023
Represented +130 graduate students and coordinated initiatives to improve the graduate experience within the JHU Physics and Astronomy Department e.g. pay raises, travel grants, professional society memberships, mentorship program, etc. Led discussions with the department chair and graduate program committee to improve faculty-student communication and gender equity, .	
<i>Astronomy Graduate Congress</i> - JHU Representative	2024 - Present
Served as JHU representative for the Astronomy Graduate Congress, which provides a common platform for graduate students to discuss issues regarding graduate education in astronomy.	
<i>Gender Minorities and Women in Physics (GWIP) JHU Chapter</i> - LOC Member	2023 - Present
Helped organize +100 person annual GWIP Summit aimed at fostering connections among women and gender minorities in physics across all career stages and institutions in the DMV region.	

## **MENTORING**

<i>JHU PHA Mentorship Program</i>	
Sasha Levina - First-year graduate student (Fall 2023 - Spring 2024)	
Qiushi (Chris) Tian - Post-bac student (Fall 2024 - Spring 2025)	
Alexia Knight - First-year undergraduate student (Fall 2024 - Spring 2025)	

## **TEACHING**

### **Johns Hopkins University**

AS 173.111/112 <i>General Physics Lab I &amp; II</i>	2019-2020
AS.171.108 <i>General Physics: Electromagnetism (Active Learning)</i>	2020
AS 171.101 <i>General Physics: Physical Science</i>	2019

### **University of Washington**

ASTR 150 <i>The Planets</i>	2018 - 2019
ASTR 101 <i>Introductory Astronomy</i>	2018 - 2019
PHYS 122 <i>Electromagnetism</i>	2018

## GRANTS & AWARDS

APS Women in Physics Group Grant (Co-author: \$1,000)	2025
James Webb Space Telescope Cycle 4 (PI: \$220,709)	2024
Hubble Space Telescope Cycle 31 (PI: \$134,040)	2024
AAS FAMOUS Travel Grant (\$1,000)	2022
UW Mary Gates Research Scholarship	2018

## SELECTED PRESENTATIONS

Institute for Advanced Science Astrocoffee	2024
<i>Talk: Dust around massive stars is agnostic to galactic environment: New insights from PHAT &amp; BEAST</i>	
Princeton Thunch	2024
<i>Seminar: Reading Between the Stars: Resolving the Multi-Scale Interstellar Medium in Local Group Galaxies</i>	
UC San Diego A&A Journal Club	2024
<i>Talk: Scylla IV: Intrinsic Stellar Properties and Line-of-Sight Dust Extinction Measurements Towards 1.5 Million Stars in the SMC and LMC</i>	
Harvard-Smithsonian CfA ITC Luncheon	2024
<i>Seminar (Invited): Reading Between the Stars: Resolving the Multi-Scale Interstellar Medium in Local Group Galaxies</i>	
Columbia Astronomy	2024
<i>Seminar: Reading Between the Stars: Resolving the Multi-Scale Interstellar Medium in Local Group Galaxies</i>	
Rutgers Astrocoffee	2024
<i>Talk: Dust around massive stars is agnostic to galactic environment: New insights from PHAT &amp; BEAST</i>	
Astronomy on Tap - Baltimore	2024
<i>Talk: Massive Stars and Where to Find Them</i>	
HotSci@JHU/STScI	2024
<i>Talk: The Future of HST - Tracing the Multi-Phase ISM via Dust Extinction in Nearby Galaxies with UV Photometry</i>	
STScI Spring Symposium: Recipes to Regulate Star Formation at All Scales	2024
<i>Poster: Dust around massive stars is agnostic to galactic environment: New insights from PHAT &amp; BEAST</i>	
Flatiron Institute CCA: XMC Workshop	2024
<i>Talk: Constraining the 3D Structure of the ISM in 30 Doradus with Scylla</i>	
Resolving Galaxy Ecosystems Across All Scales	2023
<i>Plenary Talk: Dust Around Massive Stars is Agnostic to Galactic Environment</i>	
237rd Meeting of the American Astronomical Society	2021
<i>Poster &amp; Talk: Investigating Massive Stars in M31</i>	
236rd Meeting of the American Astronomical Society	2020
<i>Poster: Studying Nearby Low-Metallicity Environments with Scylla</i>	
233rd Meeting of the American Astronomical Society	2019
<i>Talk: A Bayesian-Based Method for Inferring Asteroid Properties from Sparse Light Curve</i>	
50th Meeting of the Division of Planetary Sciences	2018
<i>Talk: A Bayesian-Based Method for Inferring Asteroid Properties from Sparse Light Curve</i>	
Mary Gates 21st Annual Undergraduate Research Symposium	2018
<i>Talk: Werk SQuAD: The Quest to Better Understand Galaxies and Their Surrounding Medium</i>	
231rd Meeting of the American Astronomical Society	2018
<i>Poster: Classifying Variable Sources in SDSS Stripe 82</i>	