

# William O. Balmer

PHOTON HUNTER · FRINGE TRACKER · EXOPLANETEER

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## Education

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### Johns Hopkins University

PH.D STUDENT IN ASTRONOMY & ASTROPHYSICS

Baltimore, MD

Aug. 2021 - present

### Amherst College

BACHELORS OF ARTS *cum laude*

- Physics and Astronomy double major
- A- average
- Honors thesis in Astronomy was unanimously nominated by the department for summa cum laude honors

Amherst, MA

Aug. 2017 - May. 2021

## Work Experience

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### Space Telescope Science Institute

GRADUATE RESEARCH ASSISTANT

- Currently investigating the atmospheres and formation of Brown Dwarfs and exoplanets using space and ground based telescopes
- adv. Dr. Laurent Pueyo

Baltimore, MD

Jun. 2021 - present

### Follette Lab, Amherst College

UNDERGRADUATE RESEARCH ASSISTANT

- Conducted angular and spectral differential imaging to search transitional disks for forming exoplanets
- Calibrated absolute astrometric solution for the Visible Light Adaptive Optics (VisAO) instrument
- Transition Disk Database Project Lead: coordinated and managed junior researchers in aggregating data and developing a platform for a centralized, public record of the properties of over 200 transition disks
- Contributed to the Giant Accreting Protoplanet Survey (Follette et al. 2021, in prep.) project code and data reduction
- adv. Dr. Kate Follette

Amherst, MA

Jun. 2018 - present

### SIOS Lab, Cornell University

UNDERGRADUATE RESEARCH ASSISTANT

- Performed space telescope mission yield simulations for Miniaturized Distributed Occulture/Telescope (mDOT) mission
- Contributed to EXOSIMS project code (Savransky et al. 2017)
- adv. Dr. Dmitry Savransky

Ithaca, NY

Jun. 2020 - Aug. 2020

### Physics and Astronomy Department, Amherst College

TEACHING ASSISTANT, GRADING ASSISTANT, AMHERST COLLEGE OBSERVATORY (ACO) OPERATOR

- TA for ASTR112 (2019F), ASTR337 (2020F), ASTR341 (2021S)
- Conducted data collection/reduction, telescope setup/operation, grading/rubric construction, and assisted students with coding challenges. Led a lecture on the implementation of fourier domain image filtering.

Amherst, MA

Sept. 2019 - May. 2021

## Grants & Awards

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\$18,000	<b>Owen Scholars Fellowship</b> , Krieger School of Arts and Sciences, JHU	2021
\$4,300	<b>Amherst Memorial Fellowship</b> , Amherst College Board of Trustees	2021-2021
Award	<b>Chambliss Student Poster Award Honorable Mention</b> , AAS 237th meeting	2021
\$4,500	<b>Charles Hamilton Houston Award</b> , Charles Hamilton Houston Internship Program	2020
\$3,500	<b>Gregory S. Call Student Researcher Award</b> , Gregory S. Call Student Research Program	2019
\$3,500	<b>Sarles Fellow Award</b> , The Sarles Science Fund	2018

## Conference Proceedings

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**Balmer, W. O., Follette, K. B., Males, J., Close, L., Morzinski, K., Weinberger, A.**

*American Astronomical Society  
meeting 237, id. 332.03.*

DRUMS IN THE DEEP: CONSTRAINING THE ORBIT AND PHOTOMETRIC VARIABILITY OF THE CHASM-CARVING M-DWARF HD

*Jan. 2021*

142527B

- With multi-epoch H $\alpha$  and continuum detections of HD 142527B from the visible light Magellan Adaptive Optics camera VisAO, we present monitoring of orbital motion and photometric variability of HD142527B over 5 years.

**Balmer, W. O., Jain, A., Follette, K.**

*American Astronomical Society  
meeting 235, id. 281.04*

EXPLORING THE TRANSITION DISK POPULATION WITH A PUBLIC FACING DATABASE

*Jan. 2020*

- The Transition Disk Database is an online web tool intended to help centralize published information on known transition disks for consumption and analysis by the community. In its first iteration we present comprehensive data on 15 objects and NIR magnitudes, positions, and cavity extents for a total population of 30 objects.

## Accepted Proposals

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PI hrs: 19.5 • Co-I hrs: 0

**PI** APO/ARC3.5m Observing Time Proposal, “*Characterization of exoGRAVITY Host Stars (GHOSTS): Northern Hemisphere*” (19.5 hrs) 2021

## Outreach & Service

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**Sci-Comm** Astronomy Editor , *The Amherst STEM Network* 2019 - 2021

**Volunteer** Observatory Operator , *Amherst College Observatory* 2021

**Presenter** Invited talk , *UMass Amherst Astronomy Club* Apr. 2021