

TREVOR Z. DORN-WALLENSTEIN

CURRICULUM VITAE

Observatories of the Carnegie Institution for Science
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Employment CARNEGIE FELLOW September 2022 - Present
Observatories of the Carnegie Institution for Science, Pasadena, CA

Postdoctoral Experience POSTDOCTORAL SCHOLAR September 2021 - September 2022
University of Washington, Seattle, WA

Education PH.D. IN ASTRONOMY August, 2021
Thesis: "Small Samples No More: Probing the Evolution of Massive Stars"
University of Washington, Seattle, WA

M.S. IN ASTRONOMY 2016
University of Washington, Seattle, WA

B.S. IN PHYSICS 2015
B.S. IN ASTRONOMY
Thesis: "Characterizing the X-Ray Source Population of the Whirlpool Galaxy"
Wesleyan University, Middletown, CT

Honors & Awards ASTRONOMY DEPARTMENT GRADUATE RESEARCH PRIZE (UW) 2020
SCHMIDT SCIENCE FELLOWSHIP NOMINEE (UW) 2020
SELECTED ATTENDEE: PULSATIONS ALONG STELLAR EVOLUTION VIII 2019
(La Plata, Argentina)
INTERNATIONAL TRAVEL GRANT RECIPIENT (International Astronomical Union) 2016
HIGH HONORS (Wesleyan University) 2015
LITTELL PRIZE (Wesleyan University Astronomy Dept.) 2015
PRESENTER, COMMITTEE ON UNDERGRADUATE RESEARCH REU SYMPOSIUM 2014

Research Experience POSTDOCTORAL SCHOLAR (U. Washington) 2021 – Present
Supervisors: Prof. Emily M. Levesque, Prof. J. Davenport

GRADUATE RESEARCH ASSISTANT (U. Washington) 2015 – Present
Supervisors: Prof. Emily M. Levesque (Ph.D. Thesis Advisor),
Prof. J. Davenport, Prof. J. Dalcanton
(Published: Dorn-Wallenstein et al. 2017, 2018, 2019, 2020a, 2020b, 2021)

UNDERGRADUATE RESEARCHER (Wesleyan University) 2013 – 2015
Supervisor: Prof. Roy Kilgard (B.A. Honors Thesis Advisor)
Published: Dorn-Wallenstein (2015)

REU STUDENT RESEARCHER (Colgate University) 2014
Supervisor: Prof. Jeff Bary (Keck Northeast Astronomy Consortium)

24" TELESCOPE OPERATOR (Van Vleck Observatory) 2014 – 2015
Supervisor: Prof. Seth Redfield (Wesleyan University)

Speaking Experience	Invited Panelist, Observations, Transport in Stellar Interiors (KITP), video	2021
	Invited Talk, TESS Science Conference II, video	2021
	Invited Talk, Thorne-Zytkow Object Meeting-in-a-Meeting, AAS 238	2021
	Invited Talk, AAVSO Webinar	2021
	Invited Talk, ARC Star Talk, University of Victoria video	2021
	Astronomy at Home video	2021
	Invited Talk, “Lunch Talk” Seminar, Carnegie Observatories	2021
	Contributed Talk, DELVE Virtual Conference	2021
	Contributed Talk, MOBSTER-1 Virtual Conference video	2020
	Breakout wavelet tutorial, online.tess.science Virtual Sprint video	2020
	Contributed Talk, STScI Spring Symposium	2019
	Astronomy on Tap Seattle video	2019
	Contributed Talk, Northwest x Southwest Meeting (University of British Columbia)	2018
	Astronomy on Tap Seattle video	2017
	Contributed Splinter Talk, IAU Symposium 329 (Auckland, NZ)	2016
Successful Observing Proposals	TESS, Cycles 2-4 (targets awarded)	2019-2021
	P-I: T. Dorn-Wallenstein	
	APO 3.5-m (>30 half nights)	2015 – Present
	Optical imaging, long-slit spectroscopy, echelle spectroscopy on various projects.	
	P-I: T. Dorn-Wallenstein	
	Gemini, GMOS-S	2017A
	“Multi-Wavelength Monitoring of the Young HMXB SN 2010da,”	
	P-I: E. Levesque	
	Gemini Fast Turnaround, GMOS-N	2016A
	“A Candidate Red Supergiant High-Mass X-ray Binary in M31,”	
	P-I: E. Levesque	
	ESO, VLT/XSHOOTER	2016A
	“SMC 8324: A New Thorne-Zytkow Object Candidate in the Small Magellanic Cloud,”	
	P-I: E. Levesque	
Technical Skills	Developer on open-source software packages: JazzHands , ARCESETC , AESOP , INGOT	
	Data reduction, analysis, and visualization with Python, SQL/ADQL, IDL, IRAF, ciao/Xspec	
	Proposing, planning, and carrying out optical spectroscopic and photometric observations	
	Survey & time-domain data retrieval and analysis	
Service & Outreach	GRADUATE STUDENT REPRESENTATIVE TO FACULTY (UW)	2018-2020
	ASTRONOMY ON TAP SEA ORGANIZER	2016 - 2020
	JOURNAL REFEREE (MNRAS)	2019, 2020
	PRE-MAP GRADUATE RESEARCH MENTOR	2018, 2020
	APO-UW TIME ALLOCATION COMMITTEE	2017 – 2019
	OPEN HOUSE SPEAKER (THEODOR JACOBSON OBSERVATORY, UW)	2019
	PROSPECTIVE GRADUATE STUDENT VISIT COORDINATOR (UW)	2017, 2018
	PLANETARIUM PRESENTER (UW)	2016, 2017
Teaching Experience	TEACHING ASSISTANT (UW)	2015-2017
	· Designed and led lab/quiz sections for introductory college astronomy courses.	

**1st Author
Publications**

8. [THE PROPERTIES OF FAST YELLOW PULSATING SUPERGIANTS: FYPS POINT THE WAY TO MISSING RED SUPERGIANTS](#)
T.Z. Dorn-Wallenstein, E.M. LEVESQUE, J.R.A. DAVENPORT, K.F. NEUGENT, B.M. MORRIS, & K.A. BOSTROEM. *APJ*, IN PRESS (2022)
7. [PHOTOMETRIC CLASSIFICATIONS OF EVOLVED MASSIVE STARS: PREPARING FOR THE ERA OF *Webb* AND *Roman* WITH MACHINE LEARNING](#)
T.Z. Dorn-Wallenstein, J.R.A. DAVENPORT, D. HUPPENKOTHEN, & E.M. LEVESQUE. *APJ*, 913(1):32 (2021)
6. [SHORT TERM VARIABILITY OF EVOLVED MASSIVE STARS WITH TESS II: A NEW CLASS OF COOL, PULSATING SUPERGIANTS](#)
T.Z. Dorn-Wallenstein, E.M. LEVESQUE, K.F. NEUGENT, J.R.A. DAVENPORT, B.M. MORRIS, & K. GOOTKIN[†]. *APJ*, 902(1):24 (2020) PRESS: [PHYSICS WORLD](#), [ASTROBITES](#)
5. [A COMPARISON OF ROTATING AND BINARY STELLAR EVOLUTION MODELS: EFFECTS ON MASSIVE STAR POPULATIONS](#)
T.Z. Dorn-Wallenstein & E.M. LEVESQUE. *APJ*, 896(2):164 (2020)
4. [SHORT TERM VARIABILITY OF EVOLVED MASSIVE STARS WITH TESS](#)
T.Z. Dorn-Wallenstein, E.M. LEVESQUE, & J.R.A. DAVENPORT. *APJ*, 878(1):155 (2019)
3. [STELLAR POPULATION DIAGNOSTICS OF THE MASSIVE STAR BINARY FRACTION](#)
T.Z. Dorn-Wallenstein & E.M. LEVESQUE. *APJ*, 867(2):125 (2018)
2. [A MOTE IN ANDROMEDA’S DISK: A MISIDENTIFIED PERIODIC AGN BEHIND M31](#)
T.Z. Dorn-Wallenstein, E.M. LEVESQUE, & J.J. RUAN. *APJ*, 850(1):86 (2017)
1. [CHARACTERIZING THE X-RAY SOURCE POPULATION OF THE WHIRLPOOL GALAXY](#)
T.Z. Dorn-Wallenstein. WESLEYAN UNIVERSITY PRESS (2015)

**Co–Author
Publications**

7. [PHOTOMETRIC DETECTION OF INTERNAL GRAVITY WAVES IN UPPER MAIN-SEQUENCE STARS. III. COMPARISON OF GAUSSIAN PROCESSES AND AMPLITUDE SPECTRUM FITTING](#)
D.M. BOWMAN & **T.Z. Dorn-Wallenstein**. *A&A*, ACCEPTED (2022).
Developed and tested GP fitting methodology, computed simulated light curves in hare & hound tests, contributed to manuscript.
6. [TESTING EVOLUTIONARY MODELS WITH RED SUPERGIANT AND WOLF-RAYET POPULATIONS](#)
P. MASSEY, K.F. NEUGENT, **T.Z. Dorn-Wallenstein**, *et al.* *APJ*, 922(2):177 (2021).
Computed model grids, ran variable star-formation history simulations, contributed to manuscript.
5. [13 YEARS OF P CYGNI SPECTROPOLARIMETRY: INVESTIGATING MASS LOSS THROUGH H \$\alpha\$, PERIODICITY, AND ELLIPTICITY](#)
K. GOOTKIN[†], **T.Z. Dorn-Wallenstein**, *et al.* *APJ*, 900(2):162 (2020)
Mentored first author, oversaw the analysis work and development of the manuscript.
4. [PHOTOMETRIC METALLICITIES FOR LOW-MASS STARS WITH GAIA AND WISE](#)
J.R.A. DAVENPORT & **T.Z. Dorn-Wallenstein**. *RNAAS*, 3, 3, (2019)
Ran queries and cross-matches to assemble the sample, aided in manuscript preparation.
3. [ARCESETC: ARC ECHELLE SPECTROGRAPH EXPOSURE TIME CALCULATOR](#)
B.M. MORRIS, **T.Z. Dorn-Wallenstein**, *et al.* *JOSS*, 4, 34 (2019)
Aided in software development and the creation of documentation.
2. [AESOP: ARC ECHELLE SPECTROSCOPIC OBSERVATION PIPELINE](#)
B.M. MORRIS & **T.Z. Dorn-Wallenstein**. *JOSS*, 3, 28 (2018)
Aided in software development and the creation of documentation.
1. [NO STRONG GEOMETRIC BEAMING IN THE ULTRALUMINOUS NEUTRON STAR BINARY NGC 300 ULX-1 \(SN 2010DA\) FROM SWIFT AND GEMINI](#)
B. BINDER, E.M. LEVESQUE, & **T.Z. Dorn-Wallenstein**. *APJ*, 863(2):141 (2018)
Reduced optical spectroscopic observations, contributed to manuscript preparation.

- Recent Conference Proceedings** TALK: NEW PHENOMENA IN EVOLVED SUPERGIANTS REVEALED BY TESS
T.Z. Dorn-Wallenstein, E.M. Levesque, K.F. Neugent, J.R.A. Davenport, B.M. Morris, & K. Gootkin[†].
TESS Science Conference II Virtual Conference, 2021
- TALK: PHOTOMETRIC IDENTIFICATION OF RED SUPERGIANTS BEYOND THE LOCAL GROUP USING MACHINE LEARNING
T.Z. Dorn-Wallenstein, J.R.A. Davenport, D. Huppenkothen, & E.M. Levesque.
AAS 238, 2021 (Virtual)
- TALK: NEW PHENOMENA IN EVOLVED SUPERGIANTS REVEALED BY TESS
T.Z. Dorn-Wallenstein, E.M. Levesque, K.F. Neugent, J.R.A. Davenport, B.M. Morris, & K. Gootkin[†].
DELVE: Death-throes of EvOLved stars, a Virtual Encounter, 2021
- LIGHTNING TALK: A NEW CLASS OF PULSATING YELLOW SUPERGIANTS
T.Z. Dorn-Wallenstein, E.M. Levesque, K.F. Neugent, J.R.A. Davenport, B.M. Morris, & K. Gootkin[†].
MOBSTER-1 Virtual Conference, 2020
- POSTER: MEASURING THE MASSIVE STAR BINARY FRACTION WITH STELLAR POPULATION DIAGNOSTICS
T.Z. Dorn-Wallenstein, & E.M. Levesque.
AAS 233, 2019 (Seattle, WA)
- POSTER: 13 YEARS OF SPECTROPOLARIMETRY OF P CYGNI
 K. Gootkin[†], J. Lomax, **T.Z. Dorn-Wallenstein**, & E.M. Levesque.
AAS 233, 2019 (Seattle, WA)
- TALK: MEASURING THE MASSIVE STAR BINARY FRACTION WITH STELLAR POPULATION DIAGNOSTICS
T.Z. Dorn-Wallenstein & E.M. Levesque.
Northwest x Southwest Meeting, 2018, (University of British Columbia)
- POSTER: 13 YEARS OF SPECTROPOLARIMETRY OF P CYGNI
 K. Gootkin[†], J. Lomax, **T.Z. Dorn-Wallenstein**, & E.M. Levesque.
Northwest x Southwest Meeting, 2018, (University of British Columbia)
- POSTER: A MOTE IN ANDROMEDA’S DISK: A PERIODIC AGN BEHIND M31
T.Z. Dorn-Wallenstein, E.M. Levesque, & J.J. Ruan.
AAS 231, 2018 (National Harbor, MD)
- TALK: THERE ARE (SUPER)GIANTS IN THE SKY: SEARCHING FOR MISIDENTIFIED MASSIVE STARS IN ALGORITHMICALLY-SELECTED QUASAR CATALOGS
T.Z. Dorn-Wallenstein & E.M. Levesque.
IAUS 329: The Lives and Death Throes of Massive Stars, 2016 (Auckland, New Zealand)
- POSTER: PROPERTIES OF THE DISCRETE X-RAY SOURCE POPULATION OF M51
T.Z. Dorn-Wallenstein, *et al.*.
AAS 225, 2015 (Seattle, WA)

[†]: Supervised student