

Sarafina El-Badry Nance

NSF Graduate Fellow
 Department of Astronomy
 UC Berkeley
 94720-5800

nance.sarafina@berkeley.edu

Tel: by request
 Office: by request
starafina.com
[@starstrickenSF](https://twitter.com/starstrickenSF)

INTERESTS

ASTRONOMY: Transients, core-collapse supernovae, progenitors of supernovae, stellar evolution, AGB & post-AGB stars, spectroscopic modeling, dark energy & cosmology, computational astrophysics, asteroseismology.

ADVOCACY: Breast cancer, genetic testing, the BRCA mutation, women's health, equity in health-care and in science.

EDUCATION

Ph.D. in Astrophysics	(expected) May 2022
University of California, Berkeley Advisor: Dr. Peter Nugent	
M.S. in Astrophysics	May 2019
University of California, Berkeley	
B.S. in Physics & Astronomy Honors	May 2016
The University of Texas at Austin (UT) Dean's Scholars Honored Graduate Advisor: Dr. J. Craig Wheeler	

APPOINTMENTS

NSF Graduate Research Fellow (UNDER DR. P. NUGENT)	UC Berkeley, 2017 –
Summer Undergraduate Research Fellow (UNDER DR. A. SODERBERG)	Harvard, Summer 2015
Undergraduate Research Assistant (UNDER DR. J. CRAIG WHEELER)	UT, 2012 – 2016
McDonald Observatory Intern	Summer 2013

SELECTED HONORS & AWARDS

SOME FUNDED	Forbes 30 Inspirational Women	Spring 2021
	Arab American 40 Under 40 Awardee	Fall 2020
	BBC 100 Women	Spring 2020
	National Science Foundation (NSF) Graduate Research Fellowship*	Spring 2018
	Commencement Speaker, UT College of Natural Sciences	Spring 2016
	Dean's Honored Graduate , UT College of Natural Sciences	Spring 2016
	UT Research Travel Scholarship*	Fall 2016
	Karl G. Henize Endowed Scholarship Award*	2015
	Harvard NCRC Innovation Challenge Winner* : <i>Gender Inequality & Educational Opportunity</i>	2015
	John W. Cox Endowment for the Advanced Studies in Astronomy*	2014
	Dean's Scholars Honors Program	2013 – 2016
University Honors	2013 – 2015	
NSF Astronomy Scholarship* (Declined)	2011	

NOTE: any activities that were affected by COVID-19 & rescheduled for a future date are marked by [COVID-19]

*included prize or monetary award

AWARDED TELESCOPE TIME

Lick Observatory, CA – Shane 120-in telescope

- **KAST Spectrograph** **12 nights**
 - Primary or secondary science lead 12 nights

McDonald Observatory, TX – 0.8-meter telescope

- **Robert G. Tull Coudé Spectrograph** **2 nights**
 - Contributing scientist 2 nights

Public Data – significant experience with data from ZTF, iPTF, PTF

SUPERCOMPUTING TIME

PI: NERSC Cori/KNL 17K CPU-hours

SELECTED OUTREACH MEDIA

ASTRONOMY	— Show host for Seeker's Constellations Jan 2021
	<i>Audience: 5 million, w/ 55+ million views/mo</i>
	— Science communicator 2018 –
	<i>Audience: Twitter: 100K+, Instagram: 16K+</i>
	— NPR Short Wave Space Week: The Mystery of Dark Energy Aug 2020
	— Astronomy.com When Betelgeuse goes supernova, what will it look like... Feb 2020
— Space.com Will Betelgeuse Explode? Jan 2020	
— BBC News The Power to Make a Star Explode Jan 2020	
— National Geographic A Giant Star is Acting Strange... Dec 2019	
BREAST CANCER	— POPSUGAR 4 Women Get Real About Numbness Post Mastectomy Oct 2020
	— BBC 100 Women Breast Cancer: I have Sensation in my Breasts Again March 2020
	— BBC Women's Hour Preserving Breast Sensation After Surgery March 2020
	— Refinery29 I Am 26 & Getting A Double Mastectomy — Truth Told Jan 2020
	— SF Chronicle I lost my breasts, but an early test saved my life Nov 2019
	— FOX News Sensation in Double Mastectomies Nov 2019

SELECTED CONFERENCES & PRESENTATIONS

Talks

- Invited: (ANTICIPATED) JILA/CU Boulder Astrophysics Seminar 9 April 2021
- Invited: (ANTICIPATED) Stanford Physics Seminar 15 April 2021
- Invited: (ANTICIPATED) UC Berkeley Astronomy Society (BERKELEY, CA) 21 April 2021
- Invited: (ANTICIPATED) 2021 Brooke Owen's Summit (BERKELEY, CA) 9 July 2021
- Invited: International Women's Day Panel 5 March 2021
(AMAZON WEB SERVICES (AWS) & AMAZON.COM)
- Invited: (KEYNOTE) Royal Astronomical Society of Canada 21 Jan 2021

Invited: (KEYNOTE, ANTICIPATED) Women in Space Conference (CANADIAN SPACE AGENCY, CANADA) [COVID-19]	May 2021
Invited: Students for the Exploration and Development of Space (SEDS) (BERKELEY, CA)	16 Nov 2020
Invited: Graduate Admissions Panel (UNIVERSITY OF CALIFORNIA, BERKELEY)	22 Oct 2020
Invited: QuarkNet Conference (BERKELEY, CA)	9 July 2020
Invited: NSF Education & Outreach Panel (BERKELEY, CA) Title: <i>Bringing Science to the Public in Non-Traditional Venues</i>	8 July 2020
Invited: CraigFest 2020 Conference (AUSTIN, TX) [COVID-19]	25 May 2020
Invited: University of Pennsylvania Astronomy Society (BERKELEY, CA)	17 April 2020
Invited: <i>Astronomy on Tap</i> (AUSTIN, TX) [COVID-19] (recording)	31 March 2020

Undergraduate Presentations

Poster: American Astronomical Society (ORLANDO, FL)	Spring 2016
Talk: Harvard REU Intern Symposium (CAMBRIDGE, MA)	Summer 2015
Talk: (PLENARY) The National Collegiate Research Conference (NCRC) (CAMBRIDGE, MA)	Spring 2015
Poster: McDonald Observatory Board of Visitors Meeting (AUSTIN, TX)	Spring 2015
Talk: UT Undergraduate Women in Physics (AUSTIN, TX)	Spring 2015
Talk: Dean's Scholars ReSULTS (AUSTIN, TX)	Spring 2015
Talk: Texas Astronomy Undergraduate Research Symposium (TAURS) (AUSTIN, TX)	Fall 2014
Talk: Stellar Activity, McDonald Observatory (FORT DAVIS, TX)	Summer 2013

PUBLICATIONS

REFEREED PUBLICATIONS

First Author

The Betelgeuse Project II: Asteroseismology // [arXiv:1805.10347](#) (5 citations)
Monthly Notices of the Royal Astronomical Society, Volume 479, Issue 1, pgs. 251–261 (2018)
Nance, S, Sullivan, J.M., Diaz, M. et. al.

Co-Author

The Betelgeuse Project III: Merger Characteristics // [arXiv:2010.08880](#)
Accepted for publication
Wheeler, J.C., Nance, S., Diaz, M. et. al.

The Betelgeuse Project: Constraints from Rotation // [arXiv:1611.08031](#) (11 citations)
Monthly Notices of the Royal Astronomical Society, Volume 465, Issue 3, pgs. 2654–2661 (2017)
Wheeler, J.C., Nance, S., Diaz, M. et. al.

BOOKS

First Author

Starstruck: A Memoir of Astrophysics & Finding Light in the Dark (Forthcoming, 2023)

Little Leonardo's Fascinating World of Astronomy GIBBS-SMITH (August, 2021)

TEACHING EXPERIENCE

Teaching Assistant: <i>The Planets</i> [COVID-19]	UC Berkeley, Spring 2021
Teaching Assistant: <i>MESA Summer School</i>	Beijing, China, Spring 2018
Graduate Student Instructor: <i>Stellar Astrophysics</i>	UC Berkeley, Spring 2018
Graduate Student Instructor: <i>Introduction to Astronomy</i>	UC Berkeley, Fall 2017
Undergraduate Teaching Assistant: <i>Introduction to Astronomy</i>	UT, Fall 2015
Undergraduate Teaching Assistant: <i>Modern Physics Lab</i>	UT, Fall 2015
Tutor: <i>English, Math, & Physics</i>	2011 -

PROGRAMMING

Computer Languages:	Python, L ^A T _E X, Fortran, Mathematica, bash, git
Parallel Computing:	MPI, OpenMP, Python multiprocessing
Machine Learning:	PyTorch, TensorFlow, SciPy, Keras