

CURRICULUM VITAE

Shelley Jia Cheng

July, 2023

CONTACT INFORMATION	Phone: (310) 433-3736 E-mail: shelly.cheng@cfa.harvard.edu Website: shellycheng.com	
RESEARCH INTERESTS	<ul style="list-style-type: none">• Formation, evolution, and dynamics of stellar, black hole, and planetary systems• Accretion disk magnetohydrodynamics	
EDUCATION	Harvard University Doctor of Philosophy in Astronomy (intended)	September 2020 - June 2025
	Harvard University Master of Arts in Astronomy & Astrophysics	September 2020 - December 2022 GPA: 3.953
	University of California: Los Angeles (UCLA) Bachelor of Science in Physics (Summa Cum Laude)	September 2016 - June 2020 GPA: 3.935
RESEARCH EXPERIENCE	PhD Candidate & Research Fellow with Prof. Charlie Conroy Harvard-Smithsonian Center for Astrophysics	August 2022 - current
	Research Analyst (Pre-Doctoral internship) with Matteo Cantiello, Mathieu Renzo, and Jared Goldberg Center for Computational Astrophysics at the Simons Foundation's Flatiron Institute	January - June 2023
	PhD Research Fellow with Prof. Abraham Loeb Harvard-Smithsonian Center for Astrophysics <ul style="list-style-type: none">• Study star formation in quasar/AGN disks	May 2021 - August 2022
	PhD Research Fellow with Prof. Ramesh Narayan Harvard-Smithsonian Center for Astrophysics <ul style="list-style-type: none">• Study black hole accretion using the H-AMR general-relativistic magnetohydrodynamic simulation code	September 2020 - May 2021
	Summer Undergraduate Research Fellow with Prof. Jim Fuller, published in <i>ApJ</i> California Institute of Technology Department of Astronomy <ul style="list-style-type: none">• Study tidally excited oscillations in heartbeat stars and investigate whether resonance locking between tidal forcing and stellar oscillation modes can explain any prominent tidally excited oscillations	July - September 2019
	Undergraduate Research Scholar with Prof. Smadar Naoz, published in <i>MNRAS</i> UCLA Department of Physics and Astronomy <ul style="list-style-type: none">• Study the three-body dynamics, tidal and pre-main sequence evolution of the binary system Par 1802 in the presence of a tertiary companion with the goal to constrain and predict the third star's orbital parameters	August 2018 - August 2019
PUBLICATIONS	<ol style="list-style-type: none">1. (<i>In prep</i>) Cheng, S., Cantiello, M., Goldberg, J., Renzo, M., Conroy, C. 2023 "Estimating Eruptive Mass Loss in Massive Stars with MESA"2. (<i>In review at A&A</i>) Cheng, S., and Loeb, A. 2022 "Metallicity Ceiling in Quasars from Recycled Stellar Winds"3. Cheng, S., Fuller, J., Guo, Z., Lehman, H., and Hambleton, K. 2020. "Detailed Characterization of Heartbeat Stars and their Tidally Excited Oscillations". <i>ApJ</i>, 903(2), p.1224. Cheng, S., Vinson, A., and Naoz, S. 2019. "Interacting young M-dwarfs in triple system - Par 1802 binary system case study". <i>MNRAS</i>, 489(2), p.2298-2306.	
COMPUTER SKILLS	<ul style="list-style-type: none">• Languages: Fortran, C, C++, Unix shell scripting, Perl, LabVIEW, Python.• High-level numerical languages: Mathematica, Matlab, Numerical Python.• Large-scale computing: MPI, OpenMP, OpenACC, CUDA (some).• Big data: Spark cluster, PySpark, Hadoop.	

TALKS AND PRESENTATIONS	<ul style="list-style-type: none"> • “Estimating eruptive Mass Loss in Massive Stars with MESA,” <i>3,2,1: Massive Triples, Binaries and Mergers 2023</i> conference at Leuven, Belgium, 17-21 July 2023 (poster) • “Studying eruptive mass loss in massive stars using 1D MESA modeling,” Columbia University Department of Astronomy & Astrophysics Seminar, 27 June 2023 (seminar) • “Estimating eruptive Mass Loss in Massive Stars with MESA,” Center for Computational Astrophysics (CCA) Pre-Doc Symposium, 23 June 2023 (symposium) • “Characterizing Reflected Light in Close-In Exoplanets,” UCLA Undergraduate Research Week Showcase, 19 May 2020 (talk) • “Detailed Characterization of Heartbeat Stars and their Tidally Excited Oscillations,” 235th AAS Meeting, Honolulu, 8 January 2020 (talk) 	
RELEVANT ACADEMIC COURSEWORK	Computing Foundations for Computational Science NSF/APS-DPP GPAP plasma physics summer school Astrophysical Fluids & Plasmas Stellar Astrophysics	Radiative Astrophysics Extragalactic Astronomy and Cosmology Exoplanet Systems A Survey of Planetary Sciences
AWARDS AND HONORS	James Mills Peirce Fellowship – Harvard Graduate School of Arts and Sciences Summa Cum Laude – UCLA Registrar’s Office Departmental Highest Honors – UCLA Department of Physics and Astronomy College Honors – UCLA College Honors Phi Beta Kappa Society Dean’s Prize for Excellence in Science – UCLA Dean and Vice Provost of Undergraduate Education Summer Undergraduate Research Fellowship – California Institute of Technology	<i>February 2020</i> <i>June 2020</i> <i>June 2020</i> <i>June 2020</i> <i>May 2020</i> <i>May 2020</i> <i>April 2019</i>
OUTREACH	Mentor – Harvard University WiSTEM Mentorship Program Workshop Mentor – The Women+ of Color Project	<i>September 2020 - June 2021</i> <i>October 2020</i>