

Alex M. Garcia

Contacts

Email:
[aku7cf@virginia.edu]

LinkedIn:
[[/in/alex-garcia-astro](https://in/alex-garcia-astro)]

Personal Website:
[alexgarcia623.github.io]

ORCID:
[0000-0002-8111-9884]

Github:
[[AlexGarcia623](https://github.com/AlexGarcia623)]

Honors and Awards

- Graduate Student Teaching Award (UF)
Spring 2023
- The Million Scholarship for Excellence in Astronomy and Astrophysics: Outstanding Master's Thesis (UF)
Fall 2022
- Million Graduate Student Research Symposium Award for Outstanding Research Presentation (UF)
Fall 2022
- John Oliver Award for Distinguished Contributions to the Department by a Graduate Student (UF)
Fall 2022
- Astro Award for Distinguished Service and Citizenship (UF)
Fall 2022
- Tutor of the Year Finalist; Honorable Mention (UIUC)
Spring 2021
- Dean's List (UIUC):
 - ◊ College of Liberal Arts and Sciences
Fall 2020
 - ◊ Grainger College of Engineering
Spring 2018, 2019
- Access and Achievement Scholar (UIUC)
Fall 2017 - Spring 2021
- Eagle Scout, Boy Scouts of America
April 2015

Education

University of Virginia <i>2023 – Present</i>	Doctorate of Philosophy in Astronomy Master's of Science in Astronomy
University of Florida <i>2021 – 2023</i>	Master's of Science in Astronomy
University of Illinois <i>2017 – 2021</i>	Bachelor's of Science in Engineering Physics (<i>Honors</i>) Bachelor's of Science in Astronomy (<i>Distinction</i>)

Research Experience

Graduate Researcher <i>2021 – Present</i>	University of Virginia & University of Florida Advisor: Paul Torrey
Mentoring: <ul style="list-style-type: none">◊ Caitlin O'Brien (2022-23; REU Student) – Parameterizing Splashback Radii-Mass Relations of Galaxy Clusters with IllustrisTNG Simulations	
Undergraduate Researcher <i>2020 – 2021</i>	University of Illinois Advisors: Bryan Dunne & Yue Shen

Publications

First Author Publications:

2. *Interplay of Stellar and Gas-Phase Metallicities: Unveiling Insights for Stellar Feedback Modeling with Illustris, IllustrisTNG, and EAGLE:*
Garcia, et al., Submitted [[Preprint](#)]
1. *Gas-phase metallicity break radii of star-forming galaxies in IllustrisTNG*
Garcia, et al., Accepted. [[arXiv](#)] [[MNRAS](#)]

Co-Author Publications:

4. *Gas-phase metallicity plateaus in TNG50 galaxies*
Hemler, **Garcia**, Torrey, Hernquist, Kewley, Grasha, Nelson. MNRAS. In Prep
3. *Resolving scaling relations in IllustrisTNG at $z = 0$*
Qi, Torrey, Moreno, Hemler, Hernquist, **Garcia**. MNRAS. In Prep
2. *Extragalactic Archaeology: the chemical and accretion history of NGC 1365*
Kewley, Grasha, Hemler, **Garcia**, et al., Nature Astronomy. In Prep
1. *The First Quiescent Galaxies in TNG300*
Hartley, Nelson, Suess, **Garcia**, et al., MNRAS. Accepted. [[arXiv](#)] [[MNRAS](#)]

Talks:

3. *Using the metal content of galaxies to inform stellar feedback modeling*
Sara Ellision Group Meeting
May 2023 [[Slides](#)]
2. *Stellar Metallicities as a Star Formation History Diagnostic*
UF Graduate Symposium
October 2022 [[Slides](#)]
1. *Metallicity Break Radii in IllustrisTNG Galaxies*
Master's Defense
September 2022 [[Video](#)]

Service

Referee

Monthly Notices of the Royal Astronomical Society (MNRAS)

2023

Graduate Student

Representative:

Committee for Diversity, Equity and Inclusion

University of Florida Astronomy

2021 - 2023

Technical Skills

●●● = Fluent

●●● = Proficient

●●● = Familiar

●●● Python

●●● L^AT_EX

●●● Tikz

●●● Microsoft Office

●●● Google Workspace

●●● JavaScript

●●● HTML

●●● CSS

●●● Bash

●●● SLURM

●●● Git/Github

●●● R

Hobbies/Interests

Alachua Astronomy Club

2021-2023

Bluecoats Drum and Bugle Corps

Summer 2019, 2020, 2021

Madison Scouts Drum Corps

Summer 2017, 2018

Non-research Publications:

2. *Hands-on Astronomy – Tenth Edition*

– UF Astronomy 1022L Lab manual updates [\[Summary\]](#)

1. *Astronomy Laboratory Exercises and eXperiments (ALEX)*

– UF Astronomy 1022L Lab software [\[Github\]](#) [\[View\]](#)

Professional Experience

Teaching/Course Assistant

Charlottesville, VA

Gainesville, FL

Urbana, IL

	Course	Semester
Univ. of Virginia	ASTR ??? - TBD	Spring 2024
Univ. of Florida	AST 1022L - Astronomy Laboratory	Spring 2023
	AST 1022L - Astronomy Laboratory	Spring 2022
	AST 1002 - Discovering the Universe	Fall 2021
Univ. of Illinois	ASTR 330 - Extraterrestrial Life	Spring 2021
	ASTR 330 - Extraterrestrial Life	Winter 2021
	ASTR 100 - Introduction to Astronomy	Fall 2020
	ASTR 150 - Killer Skies: Astro-Disasters	Fall 2020

– During the Spring 2022 semester, I reformatted the entire AST 1022L lab manual into LaTeX (including most of the figures in Tikz) for ease of editing and uniformity throughout the entire 160+ page manual.

– Host observatory sessions at the campus observatory for students in the course to attend. Includes setting up an array of telescopes and fielding student questions on their assignments.

Planetarium Assistant

2021 – 2023

Gainesville, FL

Kika Silva Pla Planetarium

– Designed, developed, and presented planetarium shows for K-12 classes, collegiate-level curricula, as well as the general public.

– Hosted several shows, including *Florida Skies*: an hour long tour of the Gainesville night sky using a CHRONOS II optical-mechanical projector.

Tutor

2018 – 2021

Urbana, IL

Center for Academic Resources in Engineering