



Raphael E. Hviding

ASTRONOMER · PHD CANDIDATE · HE/HIS

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Education

Department of Astronomy & Steward Observatory, University of Arizona

Tucson, AZ

MASTERS OF SCIENCE

2018 - 2021

- Major and Minor in Astronomy & Astrophysics. Advisors: Professor Kevin N. Hainline & Professor Marcia J. Rieke

Dartmouth College

Hanover, NH

BACHELOR OF ARTS

2014 - 2018

- Physics Major with High Honors, Mathematics Major, and Astronomy Minor

Honors & Awards

2022	Awarded: Department of Astronomy Graduate Student Award for Service	UArizona
2018	Awarded: National Science Foundation Graduate Research Fellowship	NSF
2018	Awarded: College of Science Fellowship	UArizona
2018	Awarded: International Travel Grant	AAS
2017	Awarded: E.E. Just Scholar	Dartmouth College
2016	Awarded: James O. Freedman Presidential Scholar	Dartmouth College

Publications

Six refereed journal articles (three as first author, two as second/third author) [full list here]:

“A New Infrared Criterion for Selecting Active Galactic Nuclei to Lower Luminosities”, **Raphael E. Hviding** et al., [2022AJ....163..224H](#)

“Simulating JWST/NIRCam Color Selection of High-Redshift Galaxies”, Kevin N. Hainline, **Raphael E. Hviding** et al., [2020ApJ...892..125H](#)

“NuSTAR and Keck Observations of Heavily Obscured Quasars Selected by WISE”, W. Yan, R. C. Hickox, K N. Hainline, D. Stern, G. Lansbury, D. M. Alexander, **Raphael E. Hviding** et al., [2019ApJ...870...33Y](#)

“Two Long-period Cataclysmic Variable Stars: ASASSN-14ho and V1062 Cyg”, L. Claire Gasque, Callum A. Hening, **Raphael E. Hviding** et al., [2019AJ....158..156G](#)

“Spatially Extended Low Ionization Emission Regions (LIERs) at $z \sim 0.9$ ”, **Raphael E. Hviding** et al., [2018ApJ...868...16H](#)

“Characterizing the WISE-selected Heavily Obscured Quasar Population with Optical Spectroscopy from the Southern African Large Telescope”, **Raphael E. Hviding** et al., [2018MNRAS.474.1955H](#)

Other:

“JWST GTO/ERS Deep Surveys”, M. Rieke, ..., **Raphael E. Hviding** et al. [2019BAAS...51c..45R](#)

Conferences

Sep. 2022	SACNAS NDiSTEM 2022: Poster presenter	San Juan, PR
Sep. 2022	What drives the growth of black holes?: Poster presenter	Reykjavík
Jun. 2019	IAU Galaxies 2019: Poster presenter	Viana do Castelo
Nov. 2018	Advances with SALT: Speaker	Pretoria
Nov. 2017	Ivy League Undergraduate Research Symposium: Poster presenter	Philadelphia, PA
Aug. 2016	Hidden Monsters: Support staff	Hanover, NH
Jun. 2016	Active Galactic Nuclei: What’s in a name?: Poster presenter	Garching

Telescope Time

PRINCIPAL INVESTIGATOR

MMT 2022B	“Uncovering the True Nature of the Kiloparsec-Scale Ionization in NGC 1068: Past AGN Activity or Shocks?” with MMIRS and BCSpec	<i>3 Nights</i>
MMT 2021A	“MMIRS longslit follow-up of mid-IR AGN candidates with high Balmer Decrements: Obscured optical line emission?” with MMIRS	<i>1.5 Nights</i>
MMT 2020B	“Uncovering an Undiscovered Population of AGNs: Hectospec Follow-up of HSC-WISE-SDSS Matched Targets” with MMIRS	<i>2 Nights</i>

Diversity, Equity, & Inclusion

Astrocharlas Talk Series

Tucson, AZ

ORGANIZER

Oct. 2018 - Present

- Worked as a primary organizer for Astrocharlas, the first Spanish-language talk series at the UArizona College of Science.
- Involved Spanish-speaking and Hispanic undergraduates to serve the Hispanic population of Tucson and fulfill the university's role as an HSI.
- Provided undergraduate team members with opportunities for career advice from speakers and conference attendance.
- Shifted Astrocharlas to a virtual, now hybrid, talk series; enabling presenters from across the globe and growing an international audience.
- Coordinated with departments inspired to develop similar talk series with the potential to unify the talk series under the College of Science.
- Astrocharlas attracts a new demographic to the university and establishes a support network of Spanish-speaking professors, post-docs, graduate students, and undergraduates, setting team members up for success in a future in and beyond STEM.

Steward Observatory Diversity, Equity, & Inclusion (SODEI) Initiative

Tucson, AZ

DEPARTMENT CLIMATE TASK FORCE

Jun. 2020 - Present

- Developed a department-wide survey to assess graduate student and postdoc wellbeing to create action items to promote a healthy workplace.
- Developed a strategy for allowing department members to optionally provide their pronouns and name pronunciation guides for the website.

Outreach

Carthage Institute of Astronomy

White Mountains, NH

PUBLIC ASTRONOMER UNDER PROFESSOR DOUGLAS ARION

Summer 2015 & Summer 2019

- I worked with the Appalachian Mountain Club to bring daytime solar observing, nighttime stellar observing, astronomy lectures, and mountain hut programs to a popular wilderness and hiking region in New Hampshire. In particular, I created and led educational activities for large camp groups of school-aged children. In addition, I wrote astronomy presentations to be given to the public that have been used in the years since. Over the course of the two summers, we reached thousands of adults and children with our educational message about astronomy and the environment.

Teaching

PUBLIC TEACHING EXPERIENCE WITH LEARNERS OF ALL AGES

- NOIRLab Teen Astronomy Cafe *Tucson, AZ. Oct. 2018 - May. 2022*
- Project Astro Sparks Elementary School *Baltimore, MD. May. 2017*
- Mokone Primary School Teaching with the SAAO *Langa, Cape Town, South Africa. Jan. 2017*

Public Speaking

PRESENTATIONS ON ASTRONOMY FOR A PUBLIC AUDIENCE

- Splendido Intellectual Pursuits Program *Tucson, AZ. Feb. 2019 and Feb. 2022*
- Space Drafts *Tucson, AZ. Aug. 2019 and Nov. 2021*
- SkyCenter SkyNights *Tucson, AZ. Nov. 2021*
- Astronomy on Tap *Lansing, MI. May. 2021*

Observing

PUBLIC ASTRONOMY TELESCOPE OBSERVING

- Dartmouth College Public Observing *Hanover, NH. Sep. 2015 - Jun. 2018*
- Sidewalk Astronomy *Baltimore, MD. Apr. 2017 - Jun. 2017*

Mentoring

NOAO Astronomy Teen Café

Tucson, AZ

GRADUATE STUDENT GUEST AND DISCUSSION LEADER

Oct. 2018 - May. 2022

- Led group discussions about potential college career paths and graduate student life.
- Answered questions regarding academics after high school and the study of astronomy.
- Worked with high school students on relevant astronomical coding exercises.

Project ASTRO

Tucson, AZ

ASTRONOMER PARTNER OF A SCHOOL TEACHER

Sep. 2018 - May. 2022

- Worked with a primary school teacher to organize and plan astronomical lessons for her classroom.
- Participated in workshops teaching school teachers about astronomical lessons plans and how to implement them.
- Organized classroom visits and activities with guest speakers in astronomy for the classroom.

Carthage Institute of Astronomy

White Mountains, NH

PUBLIC ASTRONOMER UNDER PROFESSOR DOUGLAS ARION

Summer 2015 & Summer 2019

- Worked with younger public astronomers on developing their public speaking skills.
- Organized regular public lectures and worked to publicize them to the greater community.
- Managed large camp groups to facilitate education and generate interest in astronomy.
- Created astronomy lectures to be given to the public by other employees, even those without an astronomical background.

Sparks Elementary School

Baltimore, MD

PUBLIC SCHOOL TEACHING THROUGH PROJECT ASTRO

May. 2017

- Worked with a middle school teacher to organize and plan astronomical lessons for her classroom.
- Taught fourth grade classes about telescopes and scales in the solar system.
- Used Galileoscopes and other tools to provide hands-on demos for students.

Mokone Primary School

Langa, Cape Town

PUBLIC SCHOOL TEACHING THROUGH THE SOUTH AFRICAN ASTRONOMICAL OBSERVATORY

Jan. 2017

- Taught medium sized groups of middle school learners, engaging in outdoor astronomy activities about the solar system.
- Taught inside the classroom about astronomical research being done in South Africa and around the world.

Computing

Developer:

Galaxy/AGN Emission Line Analysis TOOL (GELATO)

Python Code for Fitting Optical Spectroscopy

Programming: Python, Linux, SQL, HTML, GitHub, \LaTeX , SLURM, PBS

Languages

Native:

English

Spoken:

Spanish, French (Basic)

Written:

Spanish