

Farhanul Hasan

GRADUATE ASSISTANT · PHD CANDIDATE

Department of Astronomy, New Mexico State University, PO Box 30001, MSC 4500, Las Cruces, NM-88001

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Education

Reed College

B.A.: PHYSICS

Portland, OR

Aug. 2014 - May 2018

- Thesis title: "Into the Void: Mass Function of Supermassive Black Holes in the local universe"
- Thesis advisor: Prof. Alison Crocker

New Mexico State University

PH.D.: ASTRONOMY

Las Cruces, NM

Aug. 2018 - present

- Expected: 2023
- Academic advisor: Prof. Chris Churchill

Skills

Programming	Python, C, LaTeX, Linux, HTML
Data Science	Machine Learning (TENSORFLOW), Data mining
Languages	English, Bengali
Astronomy	Spectral analysis, Photometry, Analyzing large datasets
Other	Teamwork, Collaboration, Problem solving, Event planning

Publications

Hasan, F., Churchill, C. W., Stemock, B., Mathes, N. L., Nielsen, N. M., Finlator, K., Doughty, C., Croom, M., Kacprzak, G. K., Murphy, M. T. "Evolution of CIV Absorbers. I. The Cosmic Incidence" *The Astrophysical Journal*, Volume 904, Number 1, Page 44, November 2020.

Hasan, F., Crocker, A. "Galaxies and Supermassive Black Holes in the local universe I: The Velocity Dispersion Function" submitted to *The Astronomical Journal*. Apr 2019.

Hasan, F., Nayyeri, H., Cooray, A. R. "Far-infrared and Nebular Star-formation Rate of Dusty Star Forming Galaxies from *Herschel* and *3D-HST* at $z \sim 1$." 2018. *Research Notes of the AAS*, Volume 2, Number 1.

Presentations

Galaxy Formation Group (Center for Computational Astrophysics, Flatiron Institute)

Virtual

VIRTUAL INVITED TALK

Dec. 2020

- Hasan, F. "**Evolution of CIV Absorbers. I. The Cosmic Incidence**", paper presentation

36th Annual New Mexico Symposium

Virtual

ORAL PRESENTATION

Nov. 2020

- Hasan, F. "**Tracing gas enrichment in quasar absorption lines: evolution of CIV and implications for galaxy evolution**"

Galaxy Evolution Group Journal Club (UMKC Department of Physics and Astronomy)

Virtual

VIRTUAL INVITED TALK

Jul. 2020

- Hasan, F. "**Evolution of CIV Absorbers. I. The Cosmic Incidence**", paper presentation

35th Annual New Mexico Symposium

Socorro, NM

POSTER

Feb. 2020

- Hasan, F., Churchill, C. W., Stemock, B., Croom, M. **“DEAD VULTURES: The nature and evolution of the weakest CIV absorbers in quasar spectra”** In: *The 35th Annual New Mexico Symposium Abstracts*

233rd Meeting of the American Astronomical Society

Seattle, WA

POSTER

Jan. 2019

- Hasan, F., Crocker, A. **“Galaxies and supermassive black holes in the local universe: the Velocity Dispersion Function and Black Hole Mass Function”** In: *American Astronomical Society Meeting Abstracts 233: #145.22* (2019)

231st Meeting of the American Astronomical Society

Washington, DC

POSTER

Jan. 2018

- Hasan, F., Crocker, A. **“Star Formation in the spiral galaxy NGC 4736”** In: *American Astronomical Society Meeting Abstracts 231: #136.05* (2018)

230th Meeting of the American Astronomical Society

Austin, TX

POSTER & IPOSTER

June 2017

- Hasan, F., Nayyeri, H., Cooray, A. R. **“Far-Infrared and Nebular Star-Formation Rate of Dusty Star Forming Galaxies from Herschel, CANDELS and 3D-HST at $z \sim 1$ ”** In: *American Astronomical Society Meeting Abstracts 230: #315.15* (2017)

Experience

New Mexico State University

Las Cruces, NM

GRADUATE RESEARCH ASSISTANT

Aug. 2018 - Present

- Analyzing high-resolution quasar spectra to study the properties of metal absorption lines in the circumgalactic and intergalactic medium
- Performing statistical analyses of absorbing systems around galaxies
- Observing at Apache Point Observatory (Dual Imaging Spectrograph), and Keck Observatory (Keck Cosmic Web Imager)

New Mexico State University

Las Cruces, NM

GRADUATE TEACHING ASSISTANT

Aug. 2018 - Present

- ASTR 110G: Introduction to Astronomy (Fall 2020)
- ASTR 105G: The planets (Spring 2019)
- ASTR 308V: Into the Final Frontier (Fall 2019)
- ASTR 301V: Revolutionary Ideas in Astronomy (Fall 2018, Spring 2020)

Numerade

Freelance

ONLINE EDUCATOR

May 2019 - Present

- Making solution videos online for problems from a variety of physics and astronomy textbooks for the undergraduate level
- Staying on schedule to complete tasks on queue and manage personal workload remotely

Reed College

Portland, OR

UNDERGRADUATE RESEARCH ASSISTANT

May 2017 - Aug. 2017

- Analyzing photometric images of nearby spiral galaxy NGC 4736
- Using stellar evolution models to estimate star formation activity in the central and peripheral regions of NGC 4736

University of California, Irvine

Irvine, CA

UNDERGRADUATE RESEARCH ASSISTANT

June 2016 - Aug. 2017

- Matching spectroscopic data of high redshift galaxies in the UV, optical and IR to obtain spectra energy distributions
- Using spectral energy distributions to infer galactic-scale properties for a large sample of galaxies

Community Wellness

Reed College

PEER HEALTH ADVOCATE

Mar. 2016 - Nov. 2017

- Creating inclusive programming to address issues of health and wellness among the student body
- Organizing activities to help students deal with stress during finals week

Leadership

Astronomy Graduate Student Organization (AGSO)

New Mexico State University

SECRETARY

Aug. 2019 - May 2020

- Rechartering the organization through the graduate student body
- Taking meeting notes at every biweekly meeting

Residence Life

HOUSE ADVISOR

- Advising 15 students in a college residence hall
- Organizing programming to help facilitate community building and promote student life on campus

[Reed College](#)

Aug. 2017 - May 2017

Student Committee for Academic Planning and Policy (SCAPP)

MEMBER

- Student liaison to the faculty on issues related to the academic program
- Helping faculty decide on changes to the academic curriculum

[Reed College](#)

Aug. 2016 - May 2017

Service

Community Outreach, Dept. of Astronomy

VOLUNTEER

- Completed 11 hours of outreach in the 2018-19 academic year
- Volunteered at Southern NM Pride Festival 2018, Tombaugh Elementary School, and Valley View Elementary School

[New Mexico State University](#)

Aug. 2018 - present

Científico Latino Graduate Student Mentorship Initiative (GSMI)

MENTOR

- Mentored and guided a student from an underrepresented group on graduate school applications

[Científico Latino](#)

Jul. 2020 - present

Students for Education, Empowerment and Direct Service (S.E.E.D.S.)

ADMINISTRATIVE AND MARKETING INTERN

- Promoting community service activities on and off-campus

[Reed College](#)

Aug. 2016 - May 2017

Tacoma/ Pierce County Habitat for Humanity

HOMEBUILDING VOLUNTEER

- Volunteered for a week to help build homes for the needy

[Tacoma, WA](#)

Mar. 2016

Awards & Grants

2018, 2019 **William Webber Voyager Fellowship**, New Mexico State University

[Las Cruces, NM](#)

2019 **College of Arts & Sciences General Scholarship**, New Mexico State University

[Las Cruces, NM](#)

2018 **Commendation for excellence**, Reed College

[Portland, OR](#)

2017 **Research Fellowship Award**, Reed College

[Portland, OR](#)

2017 **Research Opportunity Grant**, Reed College

[Portland, OR](#)

2016 **Summer Experience Award**, Reed College

[Portland, OR](#)

References

Dr. Christopher W. Churchill

PROFESSOR

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Phone: 505-646-1913

[New Mexico State University](#)

Department of Astronomy

Dr. Kristian Finlator

ASSISTANT PROFESSOR

Email: finlator@nmsu.edu

Phone: 575-646-2614

[New Mexico State University](#)

Department of Astronomy

Dr. Glenn G. Kacprzak

ASSOCIATE PROFESSOR

Email: gkacprzak@swin.edu.au

Phone: +61-3-9214-5439

[Swinburne University of Technology](#)

Department of Physics and Astronomy