

Bayu J. Wilson

Address: 4504 16th Ave NE #A203
Seattle, WA 98105

Phone: (913) 653-7606
Email: bayuw@uw.edu

Education

University of Washington

Seattle, WA

B.S. Astronomy with Honors

September 2015 - June 2019

B.S. Comprehensive Physics (Double Degree)

Mathematics Minor

GPA (Type): 3.62 (Cumulative) & 3.78 (Astronomy)

Research

Ly β Power Spectrum from XQ-100 Legacy Survey

Seattle, WA

Adviser: Dr. Vid Irsic

August 2018 - Present

- Made the first measurements of the Ly β power spectrum and Ly α -Ly β cross power spectrum with VLT/XSHOOTER
- Investigated thermal evolution of intergalactic medium
- Will constrain cosmological parameters (σ_8 and Ω_m) in future work

How does the Ly α profile depend on galaxy properties?

Leiden, NL

Adviser: Dr. Jorjyt Matthee

June 2017 - August 2017

- Used narrow-band filter (NB392) at CFHT to select galaxies in COSMOS & UDS fields
- Calibrated Ly α with H α to study effect Ly α emission on galaxy properties
- Designed a robust image reduction pipeline in Python

Testing Our Models for the Intergalactic Medium

Seattle, WA

Adviser: Dr. Matthew McQuinn

October 2015 - May 2017

- Analyzed data from HST and the UV-Visual Echelle Spectrograph at VLT
- Investigated absorption diagnostics of the intergalactic medium
- Created a pipeline in Python to estimate quasar continua and model model C_4 metal absorption

Professional Presentation

AAS Meeting 233

January 2019

Poster: The Ly β Power Spectrum

Mary Gates Research Symposium

May 2018

Poster: Ly α & Ly β cross-correlations from the XQ-100 Legacy Survey

Leiden/ESA Astrophysics Program for Summer Students

August 2017

Talk: The CALYMHA Survey: How does the Ly α profile depend on galaxy properties?

Mary Gates Research Symposium

May 2017

Poster: Testing our models for the Intergalactic Medium

Teaching Experience

CLUE Physics Tutor

Spring 2016 - Spring 2019

- Tutored hundreds of physics students on a drop-in basis every quarter
- Held introductory physics review sessions containing up to 200 students per session
- Applied instructional scaffolding and other pedagogical methods to help student achieve learning goals

ASTR 427 Grader

Winter 2019

- Graded homework for advanced computational astrophysics course

Salsa & Latin Dance Teaching Assistant

Autumn 2019

- Helped teach salsa dancing to 40 students with Professor Juliet McMains

Awards

Behr Award

Spring 2017

Awarded by University of Washington Astronomy department for outstanding outreach and leadership

Mary Gates Research Scholarship

Winter 2017

Awarded by Mary Gates Endowment for Students for undergraduate researchers on basis of academic achievement and merit of proposed research

Annual Dean's List

2016-2018

High-scholarship award for undergraduate students who achieved a quarterly GPA of at least 3.50 for each of the three quarters of the academic year

Outreach

Mobile Planetarium Committee

Autumn 2018 - Spring 2019

Title: Founder & President

- Founded committee to increase diversity in field of astronomy
- Designed effective and engaging planetarium presentations for middle school students in the Seattle Public School District
- Created plan to partner with middle schools and test efficacy using student surveys

League of Astronomers

Spring 2016 - Spring 2019

Title: Outreach Coordinator

- Promoted astronomy outreach by targeting undergraduates, pre-college students, and the general public
- Motivated other undergraduates to get involved in research by holding research seminars, hosting meetings with colloquium speakers, and providing mentorship opportunities

Technical Skills

Python, C, Mathematica, L^AT_EX, HTML, Git version control, Bash