

Locke Patton

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Education

University of Washington

Bachelor of Science in Physics & Astronomy, Astro 3.84 | Phys 3.42

UW Dean's List – all years | Physics Honors | Astronomy Honors

Seattle, WA

2015–Present

Portland State University | Portland Community College

Early College Student, PSU 3.83/4

PSU Dean's List – all years | Entered age 16

Portland, OR

2012–2014

Research Experience

Interests: Observational Astronomy – Python – Package Development – Modelling – Massive Stars – Supernovae

Optical Galaxy Resolved Spectroscopy and Python Code Development

Prof. Emily Levesque

Seattle, WA

Fall 2016 – Present

- Reducing and extracting starburst galaxy NGC6946 resolved long slit spectroscopy

- Determining supernovae host site $\log(\frac{O}{H}) + 12$ metallicity & star formation rate, metallicity, extinction maps *Paper in prep.*

Stellar Cluster Photometry

Prof. Ana Larson

Seattle, WA

Winter 2015 – Present

- Performing Milky Way open cluster strömgren photometry to determine cluster metallicities

- Developing cluster membership analysis program in Python, independently

Northern Arizona University REU: Stellar Spectroscopy, Photometry, Modelling

Prof. Philip Massey

Flagstaff, AZ

Summer 2017

- Reduced, calibrated and extracted 100+ stellar spectra and photometry from the 6.5m Magellan and Hubble Telescopes

- Performed OB star spectral identification and FASTWIND temperature modelling on the LMC's Lucke-Hodge 41 cluster

UV Quasar Absorption Spectroscopy

Prof. Jessica Werk

Seattle, WA

Summer 2016

- Identified absorption lines in $z \sim 1$ QSOs, and beta-tested pyIGM absorption GUI

- Analyzed intergalactic & interstellar media Hubble COS spectroscopy

Awards

FAMOUS Travel Grant Recipient: 231st AAS Winter Conference

Winter 2017

UW Mary Gates Research Scholar: Fireworks Galaxy Resolved Metallicity

Winter 2017

UW Mary Gates Research Scholar: Cluster Membership Code Development

Fall 2016

UW Astronomy Undergraduate Prize for Excellence in Academics: Baer Prize

Fall 2016

FTC World Championship 2012 Core Values Team: FIRST Robotics Competitions

2006 – 2013

Teaching Experience

Intro Physics TA: Pioneer Undergraduate for UW TA Program

2016 – Present

Physics Lab Assistant: Developing, testing and designing physics education equipment

2015 – Present

Teaching Intern: Hillsdale High School + Touchstone Elementary School

2014 – 2015

Private Tutor: 12+ Student Clients in college mathematics, physics

2013 – 2017

Presentations + Publications

231st AAS Winter Poster #251.03: Mapping the Supernovae-Rich Fireworks Galaxy NGC 6946

Jan 2018

The League of Astronomers Talk: Lucke-Hodge 41: Massive Stars in the LMC

Fall 2017

Theodor Jacobsen Observatory Newsletter: The Universe Is Hissing At Us

Summer 2017

Northern Arizona University Talk: Characterizing OB Stars in the Large Magellanic Cloud

Summer 2017

UW Undergraduate Research Symposium: Talk + Poster | Presented Two Projects

May 2017

- Fireworks Galaxy Supernovae Host Site Metallicities

- MW Open Cluster Metallicities + Membership Assignment in SDSS u, g, r, i, z and Stromgren v, b, y

Theodor Jacobsen Observatory Outreach Talk: Supernovae - How to Blow Up a Massive Star 101

May 2017

UW Planetarium: Public Outreach Universe Tours

Spring 2017 - Present

UW Undergraduate Research Symposium Poster: Open Cluster Membership Assignment with Python

May 2016

Northwest Astronomy Meeting: Presentation and Poster: MW Open Clusters Membership Assignment

Oct 2016

Technical Skills

Python: Pioneered 2 Solo Code Projects: OCMAP cluster membership + AME PyRAF apall extension

IRAF | PyRAF: Reduction | spectroscopy | calibration | membership | photometry

Languages: Python | JavaScript | Java | Fortran | Mathematica | Latex | Bash | Spanish | French

Telescopes: Observed 15+ nights at APO 3.5m, MRO 0.75m + DAO 1.83m

Volunteer Outreach

Astronomy Undergrad Liaison: Undergraduate representative at faculty meetings

2017 – Present

League of Astronomers: 2017 – Present

- UW Astronomy Outreach - Science Officer

- Hosted Star Party for 40+ New Husky Students

Gender in STEM Panel: Transgender Representative

Spring 2017

Planetarium Volunteer: OMSI Planetarium | SpaceX Child Outreach Program

2014 – 2015