

Nicholas Saunders

RESEARCH SUPPORT SCIENTIST · NASA AMES

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Education

BS Astronomy & Comprehensive Physics

BA Comparative Literature (Cinema Studies)

Aug 2013 - Jun 2018

UNIVERSITY OF WASHINGTON

Seattle, WA

- Departmental Honors in Astronomy — Astronomy GPA: 3.7/4.0 — Comparative Literature GPA: 3.9/4.0
- Washington NASA Space Grant Scholarship — Irving and Louise Donnergaard Endowment

Research Experience

Research Support Scientist — Kepler/K2 Guest Observer Office

Aug 2016 - present

NASA AMES RESEARCH CENTER

Moffett Field, CA

- Developing and maintaining open source community software to assist with the analysis of data from the *Kepler/K2* mission

Student Researcher — Detection of Transiting Exoplanets

Jan 2016 - Aug 2018

UNIVERSITY OF WASHINGTON — *advisors: Rory Barnes, Rodrigo Luger*

Seattle, WA

- Simulated a forward model of CCD detectors
- Developed python code to reduce instrumental noise for *Kepler/K2* photometry and exoplanet transit detection

Student Researcher — LSST Citizen Science

Jun 2017 - Aug 2018

UNIVERSITY OF WASHINGTON — *advisor: Andrew Connelly*

Seattle, WA

- Created an online project interface to identify and characterize transient objects in LSST data using Zooniverse citizen science web portal

Planetary Science Intern

Apr 2011 - Jun 2013

THE BEAR FIGHT INSTITUTE — *advisors: Tom McCord, Bernard Nordmann*

Winthrop, WA

- Generated mosaicked satellite imagery maps for surface of Mars and the Moon
- Analyzed composition of the Moon's surface using reflectance spectroscopy

Academic Employment

Data Visualization Analyst

Jun 2018 - Aug 2018

UNIVERSITY OF WASHINGTON

Seattle, WA

- Used Tableau to create visualizations that demonstrate elementary & high school student learning as part of the UW Astrobiology Mobile Planetarium outreach program

Teaching Assistant — Astronomy Department

Mar 2018 - Jun 2018

UNIVERSITY OF WASHINGTON

Seattle, WA

- Led multiple weekly in-class sections, taught intro astronomy material
- Collaborated with team of T.A.s and professor
- Assisted students in lab assignments

Planetarium Organizer

Jan 2018 - Aug 2018

UNIVERSITY OF WASHINGTON

Seattle, WA

- Scheduled planetarium presentations
- Managed ticket sales and social media

Student Assistant — Astronomy Department

Jan 2017 - Mar 2018

UNIVERSITY OF WASHINGTON

Seattle, WA

- Graded assignments for multiple upper-division astronomy courses
- Led planetarium presentations for students

Skills

Data reduction and photometric analysis using IRAF/PyRAF; programming with python, bash, java, LaTeX; presentation of astronomy and physics

Publications

- Saunders, N.**, Luger, R., Barnes, R. (2018) *The Pointing Limits of Transiting Exoplanet Light Curve Characterization with Pixel Level De-correlation*. Submitted to AJ
- Mahabal, A., Rebbapragada, U., Walters, R. et al. including **Saunders, N.** (2018), *Machine Learning for the Zwicky Transient Facility*. Submitted to AJ
- Barentsen, G., Hedges, C., **Saunders, N.**, Cody, A.M., Gully-Santiago, M., Bryson, S., Dotson, J. (2018) *Kepler's Discoveries Will Continue: 21 Important Scientific Opportunities with Kepler & K2 Archive Data*. [arXiv:1810.12554](https://arxiv.org/abs/1810.12554)
- Cody, A.M., Barentsen, G., Hedges, G., Gully-Santiago, M., Dotson, J., Barclay, T., Bryson, S., **Saunders, N.** (2018) *A catalog of 29 open clusters and associations observed by the Kepler and K2 Missions*. [arXiv:1810.12267](https://arxiv.org/abs/1810.12267)
- Luger, R., Kruse, E., Foreman-Mackey, D., Agol, E., **Saunders, N.** (2018) *An Update to the EVEREST K2 Pipeline: Short Cadence, Saturated Stars, and Kepler-like Photometry down to $K_p = 15$* . [AJ, 156, 99](https://arxiv.org/abs/1810.12267)

Talks

- Saunders, N.**, "Simulated CCD Photometry: An Application for K2 Sputtering," Kepler/K2 Science Office, NASA Ames, Moffett Field, CA, May 2018
- Saunders, N.**, "Searching for Exoplanets with Sputtering Space Telescopes," UW Undergraduate Research Symposium, Seattle, WA, May 2018
- Saunders, N.**, "Putting the Science in Science Fiction," Astronomy on Tap, Seattle, WA, Apr 2018
- Saunders, N.**, Luger, R., "De-trending K2 Exoplanet Targets for High Spacecraft Motion," American Astronomical Society Meeting 231, Washington DC, Jan 2018
- Saunders, N.**, "The Search for Habitable Worlds," Astrobiology Mini Talks, Museum of Flight, Seattle, WA, Apr 2018
- Saunders, N.**, Luger, R., "Sputtering Effects on K2 Systematics Removal," Kepler/K2 Guest Observer Office, NASA Ames, Moffett Field, CA, Oct 2017
- Saunders, N.**, "Effects of Pixel Sensitivity Variation on K2 Systematics Removal," UW Undergraduate Research Symposium, Seattle, WA, May 2017

Outreach

Volunteer Presenter — Astrobiology Mobile Planetarium

[Mar 2018](#)

UNIVERSITY OF WASHINGTON

[Eastern WA](#)

- Presented planetarium shows with UW's inflatable dome to rural schools in WA to introduce the study of astrobiology

Undergraduate Liaison — Astronomy Department Faculty Board

[Sept 2017 - Aug 2018](#)

UNIVERSITY OF WASHINGTON

[Seattle, WA](#)

- Attended faculty meetings and reported undergraduate concerns
- Communicated with both faculty and students

Volunteer — Total Solar Eclipse NASA Outreach Event

[Aug 2017](#)

WASHINGTON NASA SPACE GRANT CONSORTIUM

[Warm Springs, OR](#)

- Organized educational outreach activities at a middle school on the Warm Springs Indian Reservation
- Assembled and managed telescopes for solar and planetary observation

Volunteer Event Organizer

[Jan 2017 - Oct 2017](#)

ASTRONOMY ON TAP

[Seattle, WA](#)

- Assisted with setup and organization of astronomy outreach event

Volunteer Presenter — UW Planetarium

[Nov 2015 - Aug 2018](#)

UNIVERSITY OF WASHINGTON

[Seattle, WA](#)

- Performed multiple shows each month for public and private audiences

Honors

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| 2018 | Kudos of the Quarter , UW Astronomy Department | Seattle, WA |
| 2016 | 1st Place: Best Online Photo Essay , Washington Newspaper Publishers Association | Wenatchee, WA |
| 2016 | 2nd Place: Best Video , Washington Newspaper Publishers Association | Wenatchee, WA |

Other Employment

Barista — Tea Republik, Seattle, WA

May 2015 - Mar 2017

Busser — Sun Mountain Lodge, Winthrop, WA

Sept 2012 - Aug 2013

Swim Instructor & Lifeguard — Wagner Memorial Pool, Twisp, WA

June 2010 - Aug 2012