

# Nicholas Saunders

RESEARCH SUPPORT SCIENTIST · NASA AMES

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## Education

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**BS Astronomy & Comprehensive Physics**

**BA Comparative Literature (Cinema Studies)**

*Aug 2013 - Jun 2018*

UNIVERSITY OF WASHINGTON

Seattle WA

- Departmental Honors in Astronomy — Washington NASA Space Grant — Irving and Louise Donnergaard Endowment
- Astronomy GPA: 3.7/4.0 — Physics GPA: 3.0 / 4.0 — Comparative Literature GPA: 3.9/4.0

## Research Experience

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**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 Connolly*

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

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**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

## Publications

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- Hedges, C., **Saunders, N.**, Barentsen, G., Gully-Santiago, M., Cody, A.M., Vinícius de Miranda Cardoso, J. (2019) *A Hot Jupiter Exoplanet Candidate towards the Galactic Center Identified in Kepler/K2 Campaign 9 Microlensing Survey*. [RNAAS, 3, 1](#)
- Saunders, N.**, Luger, R., Barnes, R. (2018) *The Pointing Limits of Transiting Exoplanet Light Curve Characterization with Pixel Level De-correlation*. 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](#)
- 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](#)
- 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](#)

## Talks

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- Saunders, N.**, "A Uniform Analysis of Kepler/K2 Exoplanet Transit Parameters," AAS 233, Seattle, WA, Jan 2019
- 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," AAS 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

## Posters

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- Saunders, N.**, M. Gully-Santiago, C. Hedges, G. Barentsen, J. Dotson, "Exoplanet Science with the Lightkurve Python Package," AAS 233, Seattle, WA, Jan 2019

## Outreach

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### 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** \_\_\_\_\_

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

**Other Employment** \_\_\_\_\_

<b>Barista</b> — Tea Republik, Seattle, WA	<i>May 2015 - Mar 2017</i>
<b>Busser</b> — Sun Mountain Lodge, Winthrop, WA	<i>Sept 2012 - Aug 2013</i>
<b>Swim Instructor &amp; Lifeguard</b> — Wagner Memorial Pool, Twisp, WA	<i>June 2010 - Aug 2012</i>