DANIEL M. KROLIKOWSKI

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WORK EXPERIENCE

Postdoctoral Research and Software Associate *September 2022 - Present*
⟶ *Steward Observatory, University of Arizona*

I am a software and science team member for the extreme precision radial velocity spectrometers NEID and HPF. I actively contribute to the NEID data pipeline to develop new features and address issues. I support NEID operations, including re-starting the instrument after the 2022 KPNO wildfire shutdown.

EDUCATION

The University of Texas at Austin *August 2016 - August 2022*
Ph.D. Astronomy
Advisor: Dr. Adam Kraus
Thesis: *Exploring the Formation and Evolutionary Pathways of Young Stars and Planetary Systems at High Precision*

State University of New York College at Geneseo *September 2012 - May 2016*
B.A. Physics, B.A. Mathematics

PUBLICATIONS

First Author

2. *The Strength and Variability of the Helium 10830 Å Triplet in Young Stars with Implications for Exosphere Detection*
Daniel Krolikowski, Adam Kraus, Benjamin Tofflemire, Caroline Morley, Andrew Mann, Andrew Vanderburg, AJ, accepted. eprint arXiv:2311.04971

1. *Gaia EDR3 Reveals the Substructure and Complicated Star Formation History of the Greater Taurus-Auriga Star-forming Complex*
Daniel Krolikowski, Adam Kraus, Aaron Rizzuto, 2021, AJ, 162, 110

In prep.

1. *The Discovery of Four Lithium Rich Red Giants in a Single Open Cluster, NGC 2158*
Daniel Krolikowski, Aaron Steinhauer, Constantine Deliyannis, Barbara Anthony-Twarog, Bruce Twarog. In prep.

Co-author

12. *A Large and Variable Leading Tail of Helium in a Hot Saturn Undergoing Runaway Inflation*
Michael Gully-Santiago, Caroline Morley, Jessica Luna, ..., **Daniel Krolikowski**, et al., AJ, under review

11. *Giant tidal tails of helium escaping the hot Jupiter HAT-P-32 b*
Zhoujian Zhang, Caroline Morley, Michael Gully-Santiago, ..., **Daniel Krolikowski**, et al., Science Advances, 9, 23

10. *TOI-4562 b: A highly eccentric temperate Jupiter analog orbiting a young field star*
Alexis Heitzmann, George Zhou, Samuel Quinn, ..., **Daniel Krolikowski**, et al., AJ, 165, 121

9. *SPYGLASS III: The Fornax-Horologium Association and its Traceback History within the Austral Complex*
Ronan Kerr, Adam Kraus, Simon Murphy, **Daniel Krolikowski**, et al., ApJ, 941, 143

8. *SPYGLASS II: The Multigenerational and Multiorigin Star Formation History of Cepheus Far North*
   Ronan Kerr, Adam Kraus, Simon Murphy, **Daniel Krolikowski**, et al., ApJ, 941, 49

7. *TESS Hunt for Young and Maturing Exoplanets (THYME) VII: Membership, rotation, and lithium in the young cluster Group-X and a new young exoplanet*
   Elisabeth Newton, Rayna Rampalli, Adam Kraus, ..., **Daniel Krolikowski**, et al., AJ, 164, 115

6. *Transit Hunt for Young and Maturing Exoplanets (THYME) VIII: a Pleiades-age association harboring two transiting planetary systems from Kepler*
   Madyson Barber, Andrew Mann, Jonathan Bush, ..., **Daniel Krolikowski**, et al., AJ, 164, 88

5. *Astronomical échelle spectroscopy data analysis with* `muler`
   Michael Gully-Santiago, Jessica Luna, Caroline Morley, , ..., **Daniel Krolikowski**, JOSS, 7, 73

4. *A 2+1+1 quadruple star system containing the most eccentric, low-mass, short-period, eclipsing binary known*
   Eunkyu Han, Saul Rappaport, Andrew Vanderburg, ..., **Daniel Krolikowski**, et al., 2022, MNRAS, 510, 2448

3. *NEID Rossiter-McLaughlin Measurement of TOI-1268b: A Young Warm Saturn Aligned with Its Cool Host Star*
   Jiayin Dong, Chelsea Huang, George Zhou, ..., **Daniel Krolikowski**, et al., 2022, ApJL, 926, L7

2. *Close Companions around Young Stars*
   Marina Kounkel, Kevin Covey, Maxwell Moe, ..., **Daniel Krolikowski**, et al., 2019, AJ, 157, 196

1. *Zodiacal Exoplanets in Time VIII. A Two-planet System in Praesepe from K2 Campaign 16*
   Aaron Rizzuto, Andrew Vanderburg, Andrew Mann, ..., **Daniel Krolikowski**, 2018, AJ, 156, 195

COMPUTER SKILLS

Computer Languages: Python, Bash, SQL/ADQL, Markdown, MATLAB, C
Tools and Software: git/GitHub, LaTeX, Slurm, Sphinx, IRAF/PyRAF, Mathematica

OBSERVING PROPOSALS AND EXPERIENCE

Hobby Eberly Telescope (Habitable-zone Planet Finder) *November 2018 - Present*
$\longrightarrow$ 200+ hours PI awarded
Harlan J. Smith Telescope (Tull Spectrograph) *November 2016 - Present*
$\longrightarrow$ 52 nights observing experience (45 PI awarded): 24 in-person, 28 remote
WIYN 0.9m Telescope (Half Degree Imager) *December 2013 - January 2014*
$\longrightarrow$ 4 nights on-site observing experience

ACADEMIC PRESENTATIONS

Talks

9. *Variability of the NIR helium line in young stars, and implications for detecting the evaporating atmospheres of young exoplanets.* Exoplanets IV, May 5, 2021

8. *Gaia EDR3 Reveals the Complicated Substructure and Star Formation History of Taurus.* University of Hawaii Star and Exoplanet Seminar, November 8, 2021

7. *Gaia EDR3 Reveals the Complicated Substructure and Star Formation History of Taurus.* UT Austin, April 14, 2021

6. *Probing the Formation and Evolution of Young Planetary Systems with HPF.* THYME (TESS Hunt for Young and Maturing Exoplanets) Collaboration Meeting, December 8, 2020
5. *Probing the Formation and Evolution of Young Planetary Systems with HPF.* UT Austin, April 15, 2020
4. *Gaia Reveals Substructure in the Taurus Star Forming Region.* UT Austin, March 15, 2019
3. *Multiple Stellar Populations in Taurus and their 6D Structure.* GMT Science Meeting, September 13, 2018
2. *An Older Stellar Population Associated with the Taurus Star Forming Region.* UT Austin, May 2, 2018
1. *The Discovery of Four Lithium Rich Giants in a Single Open Cluster, NGC 2158.* UT Austin, March 3, 2017

Posters

7. *Precision RVs and He Spectroscopy of Young Planet Hosts with the Habitable-zone Planet Finder.* Extreme Solar Systems IV, August 2019
6. *A Spectroscopic and Kinematic Survey of the Taurus-Auriga Star Forming Complex.* Cool Stars 20, July 2018
5. *A Spectroscopic and Kinematic Survey of the Taurus-Auriga Star Forming Complex.* Star and Planet Formation in the Southwest 2, March 2018
4. *WIYN Open Cluster Study: Lithium in Red Giants of the Open Cluster NGC 2158.* Council on Undergraduate Research: Posters on the Hill, April 2016
3. *WIYN Open Cluster Study: Lithium in Red Giants of the Open Cluster NGC 2158.* 227th AAS Meeting, January 2016
2. *Detecting Traces of Life in the Plume of Enceladus.* 225th AAS Meeting, January 2015
1. *WIYN Open Cluster Study: Li in the Open Cluster NGC 6811.* 225th AAS Meeting, January 2015

TEACHING

Teaching Assistant: Search for Extraterrestrial Life *Spring 2019 & Spring 2020*
UT Austin, Astronomy 309L
Gen-Ed course for non-STEM majors. Tasks included planning and executing multiple lectures throughout the semester, helping to run class-time discussions, leading exam review sessions, writing exam questions, holding office hours, and grading.

Undergraduate Lab Instructor: Introductory Astronomy *Fall 2013 - Spring 2016*
SUNY Geneseo, Astronomy 101, 106, 111
Gen-Ed astronomy lab course for non-STEM majors. Tasks included running my own section of the lab course, giving pre-lab lectures, holding office hours, and grading.

Physics Learning Center Tutor *Spring 2014 – Spring 2016*
SUNY Geneseo
I tutored physics students taking intro to upper-level courses in the department learning center.

AWARDS AND DISTINCTIONS

- Fred T. Goetting, Jr. Memorial Fellowship *Summer 2021*
- JPL Strategic Undergraduate Research Partnership (SURP) Fellowship *September 2020*

- SUNY Geneseo Presidential Scholar *May 2015*
- Phi Beta Kappa Honor Society *May 2015*
- Sigma Pi Sigma Physics Honor Society *December 2014*

SERVICE AND OUTREACH

Space Drafts (Astronomy on Tap Tucson) *Spring 2023 – Present*
I am the co-host of the Astronomy in the News segment at the monthly Space Drafts (Astronomy on Tap Tucson) shows.

Astronomy on Tap ATX *Fall 2017 – Fall 2020*
I volunteer with other UT Austin graduate students and postdocs to run the monthly Astronomy on Tap ATX outreach show, attended regularly by $\sim$ 200 people. Since September 2019 I have been the co-host of the Astronomy in the News section of our shows (see https://www.youtube.com/AstronomyonTapATX for examples), and helped run social media. More about AoTATX can be found at our website: aotatx.org

Graduate Recruitment Officer *Fall 2018 – Spring 2020*
I was the grad student representative on our department recruitment visit planning committee. I planned visit activities and schedules, and was the point of contact for prospective students and their hosts.

TAURUS Graduate Student Mentor *Summer 2019 & Summer 2021*
I have been a graduate student mentor for the Texas Astronomy Undergraduate Research experience for Under-represented Students (TAURUS).

Grad-Undergrad Mentoring Program *Spring 2019 – Spring 2021*
I am a graduate student mentor for two UT Austin astronomy undergraduate majors.

Girl Day at UT *Spring 2019 & Spring 2020*
I participated in the Association of Women in Astronomy Research and Education's Discover Astronomy demos and activities for Girl Day at UT Austin, a STEM outreach event attended by over 8,000 elementary and middle school students.

PUBLIC TALKS

6. *Earth's analogue in the unlikeliest place, or why Titan is the coolest moon.* Astronomy on Tap ATX, September 17, 2019
5. *Illuminating the Physics of Star and Planet Formation with the Nearest Newly-Formed Stars.* McDonald Observatory Board of Visitors Meeting, July 14, 2018
4. *What the Taurus Star Forming Region Can Tell Us About Star and Planet Formation.* McDonald Observatory Special Viewing Night, November 1, 2017
3. *The Cosmic Importance of Lithium and the Mystery of Four Lithium Rich Stars in a Single Cluster.* Austin Astronomical Society Meeting, July 14, 2017
2. *Life is hard... to find, but let's look around Saturn for it!* Austin Astronomical Society Meeting, July 14, 2017
1. *Life is hard... to find, but let's look around Saturn for it!* Astronomy on Tap ATX, March 20, 2017. Video link: https://youtu.be/bVnOff4VTcU