

Maxwell Kroft

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Education

- Ph.D. University of Wisconsin-Madison, Astronomy** 2023 –
 • Advisor: Thomas Beatty
- M.S. University of Wisconsin-Madison, Astronomy** 2023 – 2025
- B.S. University of California, Los Angeles, Astrophysics** 2018 – 2022
 • Graduated *Cum Laude*

Research Experience

- University of Wisconsin-Madison, Department of Astronomy**
 Graduate Research Assistant 2023 –
 • Advisor: Thomas Beatty
- University of California, Los Angeles, Department of Physics & Astronomy**
 Post-Baccalaureate Lab Assistant 2022 – 2023
 • Advisors: Andrea Ghez, Shoko Sakai
- Undergraduate Research Assistant 2020 – 2022
 • Advisors: Andrea Ghez, Shoko Sakai

Teaching Experience

- University of Wisconsin-Madison, Department of Astronomy**
 Graduate Teaching Assistant, Astronomy 103 Spring 2024
- UCLA Math Circle**
 Assistant Teacher, 1st & 2nd grade class 2018 – 2019

Publications

1st Author

- GJ 523b is a Massive, 170 Myr-old Mega-Earth on a Likely Polar Orbit** Submitted to AJ Mar 2026
Maxwell Kroft, Thomas Beatty, Joseph Salzer, et al.
[10.48550/arXiv.2603.24682](https://arxiv.org/abs/10.48550/arXiv.2603.24682) 🔗
- A Pair of Dynamically Interacting Sub-Neptunes Around TOI-6054** Sep 2025
Maxwell Kroft, Thomas Beatty, Ian Crossfield, et al.
[10.3847/1538-3881/adee24](https://arxiv.org/abs/10.3847/1538-3881/adee24) 🔗

2nd or 3rd Author

- A New Astrometric Reference Frame for Measuring Precession of Stellar Orbits Around the Supermassive Black Hole at the Galactic Center: Leveraging the Strengths of W. M. Keck Observatory Adaptive Optics, Hubble Space Telescope, and GAIA** In Prep
 Shoko Sakai, Andrea Ghez, **Maxwell Kroft**, et al.

Contributing Author

TOI-1355 b and TOI-1414 b: Two Giant Objects on Misaligned Orbits Around Hot Stars Zuzana Balkóová, Jiri Zak, M. Starka, et al. incl. <i>Maxwell Kroft</i>	Submitted to A&A July 2026
Discovery and Characterization of the TOI-4468 Planetary System: A Transiting Hot Jupiter With a Lone Nearby Outer Companion Joseph Livesey, Benjamin Hord, Juliette Becker, et al. incl. <i>Maxwell Kroft</i>	Submitted to AJ May 2026
Stellar Orbits at the Galactic Center: New Estimates of the Black Hole Properties and the First Measurement of Orbital Precession with Keck Observatory Andrea Ghez, Gregory Martinez, Zoë Haggard, et al. incl. <i>Maxwell Kroft</i>	Submitted to ApJ May 2026
The TESS Grand Unified Hot Jupiter Survey. III. Thirty More Giant Planets. Samuel Yee, Joshua Winn, Joel Hartman, et al. incl. <i>Maxwell Kroft</i> 10.3847/1538-4365/aded0d 	Sep 2025
OrCAS: Origins, Compositions, and Atmospheres of Sub-Neptunes. I. Survey Definition Ian Crossfield, Alex Polanski, Paul Robertson, et al. incl. <i>Maxwell Kroft</i> 10.3847/1538-3881/ad9aa6 	Feb 2025

Observing Experience

PI

Using NEID Spectra to Mitigate the Transit Light Source Effect NEID, WIYN Telescope, 1.33 hours awarded	2026B
Validating the Masses of Mega-Earths NEID, WIYN Telescope, 18 hours awarded	2026B
NEID Confirmation of Bright Exoplanets 2026B NEID, WIYN Telescope, 25.23 hours awarded	2026B
FASHION (Faint Accelerating Stellar Hosts In Our Neighborhood) NEID, WIYN Telescope, 6.8 hours awarded	2026B
Starspot Characterization with High Resolution Optical Spectra (GHOST) GHOST, Gemini South, 2.75 hours awarded.	2026A
Starspot Characterization with High Resolution Optical Spectra (LCO) Sinistro, Las Cumbres Observatory, 20.0 hours awarded.	2026A
NEID Confirmation of Bright Exoplanets 2026A NEID, WIYN Telescope, 47.07 hours awarded	2026A
FASHION (Faint Accelerating Stellar Hosts In Our Neighborhood) NEID, WIYN Telescope, 9.46 hours awarded	2026A
NEID Confirmation of Bright Exoplanets 2025B NEID, WIYN Telescope, 25.58 hours awarded	2025B
Refining the Masses of the TOI-1470 System NEID, WIYN Telescope, 20.65 hours awarded, CO-PI Collette Sarver	2025B

CO-I

RV Confirmation of NIR Bright Sub-Neptunes	2025A
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NEID, WIYN Telescope, 45.52 hours awarded, PI Thomas Beatty

RV Confirmation of Candidate Hycean Planet GJ 523b

2025A

NEID, WIYN Telescope, 12.9 hours awarded, PIs Thomas Beatty and Juliette Becker

Confirmation of Bright Exoplanet Candidates Using NEID

2024B

NEID, WIYN Telescope, 39.83 hours awarded, PI Thomas Beatty

RV Confirmation of NIR Bright Sub-Neptunes

2024A

NEID, WIYN Telescope, 16.82 hours awarded, PI Thomas Beatty

Awards and Honors

NASA Wisconsin Space Grant Consortium's Graduate & Professional Research Fellowship, 2026

Blair Savage Astronomy Travel Fund, Department of Astronomy, University of Wisconsin-Madison, 2026

NSF Graduate Research Fellowship Program Honorable Mention, 2025

Chambliss Astronomy Achievement Student Award, AAS 244, 2024

Scientific Presentations

Talks

Using the Relationship Between GJ 523b and its Host Star to Inform its Evolutionary History and Composition

May 2026

Astrobiology Science Conference 2026, Madison, WI

Searching for Hycean Worlds: GJ 523b

Nov 2025

Great Lakes Exoplanet Area Meeting 2025, Madison, WI

Exoplanet Characterization in the JWST Era

Sep 2024

UW-Madison Astronomy Board of Visitors, Madison, WI

Posters

Using the Relationship Between GJ 523b and its Host Star to Inform its Evolutionary History and Composition

July 2026

Exoplanets 6, Porto, Portugal

TOI-6054: A Highly Irradiated, Resonant Pair of Sub-Neptunes

Sep 2024

WiCOR Kickoff Reception, Madison, WI

A Pair of Hot Sub-Neptunes Around an F-Type Sub-Giant

Jun 2024

AAS 244, Madison, WI

Outreach

Public Talks

Top 10 Least Habitable Planets in the Known Universe

May 2026

Badgers on Tap, Madison, WI

How do we *actually* know things about exoplanets?

April 2026

Invited talk at the Madison Astronomical Society, Madison, WI

How do we know stuff about stars and exoplanets?

Jan 2025

Invited Badger Talk at Kirkland Crossings Senior Living Center, Pewaukee, WI
Universe in the Park Program

- Kohler-Andrae State Park, Sheboygan, WI Aug 2025
- Interstate State Park, St. Croix Falls, WI Jul 2025
- Pattison State Park, Superior, WI Aug 2024
- Mirror Lake State Park, Baraboo, WI Jul 2024

How do we actually find exoplanets? Dec 2024
 Madison Astronomy on Tap, Madison, WI

Professional Development

Great Lakes Exoplanet Area Meeting 2025 Science Organizing Committee Member Nov 2025
 UW-Madison, Madison, WI

Summer Training in Astrobiology Research Bootcamp Aug 2025
 WiCOR, UW-Madison, Madison, WI

Code/Astro Aug 2025
 CIERA, Northwestern University, Evanston, IL

Employment

Private Math Tutor 2019 – 2022

YMCA Camp Minikani, Hubertus, WI

Adventure Challenge Director 2021

Summer Camp Counselor 2017 – 2021

Technical Skills

Languages: Python, C++, C, Java

Software: Unix, Git, $\text{\LaTeX}$, Mathematica, Excel