

Alex Bixel

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Website



Publications



LinkedIn



GitHub

Overview

Graduate research fellow & astronomer with a strong physics background and 5+ years' experience in data-driven astronomical research. Specialized in the detection and characterization of habitable extra-solar planets. Selected research accomplishments:

- Pioneered target optimization strategies for next-generation NASA space observatories which would save over a month of observing time (translates to \$100m+ added value for a \$15bn mission).
- Made major contributions to establish the observing strategy and data processing & archival algorithms for an international research collaboration with 1000+ hours/yr of data.
- Proposed new statistical methods for studying the evolution of Earth-like planets which could significantly increase the science return of future NASA investments.
- Through simulations, developed the science goals and technical requirements of future space telescopes, ranging from SmallSats to next-generation flagship observatories.

Education

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|-------------|--|
| 2018 – now | 📖 Ph.D. Candidate, Astronomy & Astrophysics at the University of Arizona.
Projected completion date: <i>May 2021</i> |
| 2016 – 2018 | 📖 M.S. Astronomy & Astrophysics at the University of Arizona. |
| 2012 – 2016 | 📖 B.A. Astronomy & Physics at the University of Virginia. |

Skills

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|---------------|---|
| Coding | 📖 Highly proficient in Python, familiar with \LaTeX and C++.
Experienced with UNIX operating systems and command line operations. |
| Data analysis | 📖 Collecting and analyzing astronomical imaging, spectroscopic, and time series data.
Bayesian and machine learning model fitting and classification methods. |
| Astronomy | 📖 Operation of large astronomical observatories and optical/infrared detectors.
Defining the technical requirements for future flagship NASA space telescopes. |
| Publications | 📖 4 first-author and 5 co-authored publications.
10+ talks at scientific conferences and seminars. |



Awards

Research and academic awards

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|-----------|---|
| 2017-2020 | 📖 NASA Earth and Space Sciences Fellowship , awarded to define the requirements for next-generation space observatories to study habitable planets.
<i>Total amount awarded: \$150k</i> |
| 2016 | 📖 D. Nelson Limber Award for excellence in astronomy, University of Virginia. |
| 2015 | 📖 Phi Beta Kappa , University of Virginia chapter member. |

Awards (continued)

Time awarded at major astronomical observatories

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|-----------|--|
| 2018-2019 |  Large Binocular Telescope , 2.5 nights awarded to discover extrasolar moons in the TRAPPIST-1 planetary system.
<i>Estimated value of time awarded: \$200k</i> |
| 2017-2020 |  Steward Observatory , 100+ nights awarded as part of a collaboration to discover habitable planets around nearby stars.
<i>Estimated value of time awarded: \$200k</i> |