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

2018 – now **Ph.D. Candidate, Astronomy & Astrophysics** at the University of Arizona.
Projected completion date: *May 2021*

2016 – 2018 **M.S. Astronomy & Astrophysics** at the University of Arizona.

2012 – 2016 **B.A. Astronomy & Physics** at the University of Virginia.

Skills

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

2017-2020 **NASA Earth and Space Sciences Fellowship**, awarded to define the requirements for next-generation space observatories to study habitable planets.
Total amount awarded: $150k

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

2018-2019 **Large Binocular Telescope**, 2.5 nights awarded to discover extrasolar moons in the TRAPPIST-1 planetary system.
Estimated value of time awarded: $200k

2017-2020 **Steward Observatory**, 100+ nights awarded as part of a collaboration to discover habitable planets around nearby stars.
Estimated value of time awarded: $200k