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| CONTACT INFORMATION          | Department of Astrophysical Sciences<br>Princeton University<br>4 Ivy Lane, Princeton, NJ 08544, USA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | joshua.roth@princeton.edu<br>(951) 213-1615 |
| RESEARCH INTERESTS           | Exoplanet detection and characterization, dynamics of stellar and planetary systems, machine learning, data analysis and modeling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |
| EDUCATION                    | <b>Princeton University</b><br>Ph.D., Astrophysics (Expected June 2029)<br>M.A., Astrophysics (Awarded May 2026)<br><i>Advisors: Prof. Joshua Winn, Prof. Gaspar Bakos</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2024–2029                                   |
|                              | <b>University of California, Riverside</b><br>B.S., Physics, Magna Cum Laude<br><i>Advisor: Prof. Anson D'Aloisio</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2020–2024<br>GPA: 3.94/4.0                  |
| PUBLICATIONS                 | <b>First-Author Papers</b> <ol style="list-style-type: none"> <li><b>Roth, J. T.</b>, Hartman, J. D., Bakos, G. A., Yee, S. W., Bouma, L. G., Galarza, J. Y., Teske, J. K., Butler, R. P., Crane, J. D., Shethman, S., Osip, D., Vissapragada, S., Beletsky, Y., Kanodia, S., &amp; Gaibor, Y. (2026). "The T16 Planet Hunt: 10,000 New Planet Candidates from TESS Cycle 1 and the Confirmation of a Hot Jupiter around TIC 183374187." <i>The Astrophysical Journal Supplement Series</i>, 284(1), 19. doi: 10.3847/1538-4365/ae5b6c.</li> <li><b>Roth, J. T.</b>, D'Aloisio, A., Cain, C., Wilson, B., Zhu, Y., Becker, G. D. (2024). "The effect of reionization on direct measurements of the mean free path." <i>Monthly Notices of the Royal Astronomical Society</i>, 530(4), 5209-5219. doi:10.1093/mnras/stae1194, arXiv:2311.06348</li> </ol><br><b>Co-Author Papers</b> <ol style="list-style-type: none"> <li>Cain, C., D'Aloisio, A., Lopez, G., Gangolli, N., <b>Roth, J. T.</b> (2024). "On the rise and fall of galactic ionizing output at the end of reionization." <i>Monthly Notices of the Royal Astronomical Society</i>, 531(1), 1951-1970. doi:10.1093/mnras/stae1223, arXiv:2311.13638</li> </ol> |                                             |
| SELECTED RESEARCH EXPERIENCE | <b>Princeton University</b> , Princeton, NJ<br><i>Lead Researcher, The T16 Planet Hunt</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | March 2025–Present                          |
|                              | <ul style="list-style-type: none"> <li>Developed a GPU-accelerated machine-learning pipeline that analyzed tens of millions of TESS light curves, resulting in the discovery of over 10,000 previously unidentified exoplanet candidates.</li> <li>Published a paper describing the findings and presented the results at two international astronomy conferences.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                             |
|                              | <b>Princeton University</b> , Princeton, NJ<br><i>Lead Researcher, KH-15D</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | March 2026–Present                          |
|                              | <ul style="list-style-type: none"> <li>Analyzing and modeling spectroscopic data of the young pre-main-sequence binary KH-15D using optimizers and bayesian inference.</li> <li>Paper currently in preparation.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                             |

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|                                | <b>University of California, Riverside</b> , Riverside, CA<br><i>Lead Researcher, Cosmic Reionization</i>                                                                                                                                                                         | June 2021–June 2024 |
|                                | <ul style="list-style-type: none"> <li>• Ran cosmological radiative transfer simulations to study the effect of ongoing reionization on cosmological observables.</li> <li>• Published a paper describing the findings and presented the results at an AAS conference.</li> </ul> |                     |
| HONORS AND AWARDS              | <b>UCR Academic Excellence Award</b><br>College of Natural and Agricultural Sciences                                                                                                                                                                                              | June 2024           |
|                                | <b>Outstanding Senior Undergraduate Award</b><br>Physics & Astronomy Dept., UCR                                                                                                                                                                                                   | June 2024           |
|                                | <b>R'Scholar Award</b><br>Highest Student Athlete GPA, UCR                                                                                                                                                                                                                        | June 2025           |
|                                | <b>R. Stephen White Family Award</b><br>Outstanding Third Year Award, Physics & Astronomy Dept., UCR                                                                                                                                                                              | June 2023           |
|                                | <b>Achievement Award</b><br>Scholarship awarded based on academic promise, UCR                                                                                                                                                                                                    | 2020–2024           |
|                                | <b>Dean's/Chancellor's List</b><br>University of California, Riverside                                                                                                                                                                                                            | 2020–2024           |
|                                | <b>Brown Williams Endowment Award</b><br>Outstanding Second Year Award Physics & Astronomy Dept., UCR                                                                                                                                                                             | June 2022           |
|                                | <b>Ferry Porsche Prize</b><br>Awarded based on potential in STEM; link                                                                                                                                                                                                            | August 2020         |
|                                | <b>Full Athletic Scholarship</b><br>Captain (2 years) and player (4 years) of UCR's NCAA Division 1 Tennis Team                                                                                                                                                                   | 2020–2024           |
| SELECTED PRESS COVERAGE        | <i>Forbes</i> , Kevin Holden Platt. "Super-Speed AI Helps Astronomers Find Cosmic Trove Of New Exoplanets." Coverage of the T16 Planet Hunt.                                                                                                                                      | Jul. 27, 2026       |
|                                | <i>New Scientist</i> , Jonathan O'Callaghan. "10,000 new planets found hidden in NASA telescope data." Coverage of the T16 Planet Hunt.                                                                                                                                           | Apr. 27, 2026       |
|                                | <i>IFLScience</i> , Alfredo Carpineti. "10,091 New Exoplanet Candidates Found In Largest Single Discovery Yet – 'I'm Really Excited For The Future Of The Field'." Coverage of the T16 Planet Hunt.                                                                               | May 1, 2026         |
| TEACHING, OUTREACH AND SERVICE | Mentoring of undergraduate summer student                                                                                                                                                                                                                                         | Summer 2026         |
|                                | Active member of "Buddy-up program"                                                                                                                                                                                                                                               | Fall 2025-present   |
|                                | Support and coaching of handicapped children                                                                                                                                                                                                                                      |                     |
|                                | Volunteer Organizer, Peyton Hall Public Observing                                                                                                                                                                                                                                 | Fall 2024-present   |
|                                | Teaching Assistant, Princeton University (AST255)                                                                                                                                                                                                                                 | Fall 2025           |
|                                | Princeton Astro Wednesday Lunch ("Wunch") Organizer                                                                                                                                                                                                                               | 2025-2026           |
|                                | Leadership for social change seminar, UCR                                                                                                                                                                                                                                         | 2023                |
|                                | Student Athlete Advisory Committee (SAAC) member                                                                                                                                                                                                                                  | 2022-2024           |
|                                | Society of Physics Students, UC Riverside                                                                                                                                                                                                                                         | 2020-2024           |
|                                | Participated in various outreach events                                                                                                                                                                                                                                           |                     |

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| PRESENTATIONS<br>AND CONFERENCES<br>(*INVITED) | Exoplanets VI ( <i>Porto, Portugal</i> )                                 | June 2026                                           |
|                                                | ExoNYC Meeting #3 ( <i>New York, NY</i> )                                | Jan 2026                                            |
|                                                | From Transits to Trends, Exoplanets Workshop ( <i>Albuquerque, NM</i> )  | Aug 2025                                            |
|                                                | *University of Washington DUSC journal Club ( <i>Seattle, WA</i> )       | Jan 2024                                            |
|                                                | AAS General Meeting #241 ( <i>Seattle, WA</i> )                          | Jan 2024                                            |
| TECHNICAL SKILLS                               | Programming: Python, C++, Fortran                                        |                                                     |
|                                                | Tools and environments: Unix/Linux, Git, L <sup>A</sup> T <sub>E</sub> X |                                                     |
| LANGUAGES                                      | German                                                                   | Native language                                     |
|                                                | English                                                                  | Fluent                                              |
|                                                | Latin                                                                    | Sufficient in reading and translating (High School) |
|                                                | Ancient Greek                                                            | Sufficient in reading and translating (High School) |
|                                                | Hebrew                                                                   | Sufficient in reading and translating (High School) |