

# IVANNA ESCALA

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## EDUCATION

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|---|---------------------|
| <b>California Institute of Technology (Caltech)</b><br><i>Ph.D., M.S. in Astrophysics</i>   | Sep 2015 - Jun 2020 |
| <b>University of California, San Diego (UCSD)</b><br><i>B.S. in Physics with Specialization in Astrophysics (Magna Cum Laude)</i> | Sep 2011 - Jun 2015 |

## RESEARCH & WORK EXPERIENCE

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| <b>Carnegie-Princeton Postdoctoral Fellow</b><br><i>Carnegie Observatories &amp; Princeton University</i>  | Aug 2020 - Present  |
| <b>Postdoctoral Fellow, Caltech Astronomy</b><br><i>with E. N. Kirby (Caltech)</i>   | Jul 2020            |
| <b>Graduate Student Researcher, Caltech Astronomy</b><br><i>with E. N. Kirby (Caltech), K. M. Gilbert (STScI),<br/>A. Wetzel (UC Davis), and P. F. Hopkins (Caltech)</i>   | Sep 2015 - Jun 2020 |
| <b>Visiting Student Research Collaborator, Princeton Astrophysics</b><br><i>with J. Greene (Princeton)</i>   | Feb 2019 - Jan 2020 |
| <b>Graduate Teaching Assistant, Caltech Astronomy</b><br>· Ay 123: Stellar Structure & Evolution ( <i>with L. Hillenbrand</i> )<br>· Ay 21: Galaxies & Cosmology ( <i>with G. Djorgovski</i> )<br>· Ay 126: Interstellar & Intergalactic Media ( <i>with S. Kulkarni</i> ) | Sep 2016 - Jun 2017 |
| <b>Undergraduate Student Researcher, UCSD Physics</b><br><i>with A. J. Burgasser (UCSD) and D. Kereš (UCSD)</i>  | Jun 2014 - Aug 2015 |
| <b>Academic Student Employee, UCSD Physics &amp; Mathematics</b>   | Sep 2013 - Jun 2014 |

## PUBLICATIONS

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**ADS Publications List:** <https://ui.adsabs.harvard.edu/public-libraries/z50yPfEeQ-GwMGmZmzk4BQ>

1. “Kinematics and Metallicity of Red Giant Branch Stars in the Northeast Shelf of M31”  
**Escala, I.**, Gilbert, K. M., Fardal, M., Guhathakurta, P., Sanderson, R. E., Kalirai, J. S., Mobasher, B., 2022, AJ, 164, 19.
2. “Reading the CARDS: the Imprint of Accretion History in the Chemical Abundances of the Milky Way’s Stellar Halo”  
Cunningham, E. C., Sanderson, R. E., Johnston, K. V., Panithanpaisal, N., Ness, M. K., Wetzel, A., Loebman, S. R., **Escala, I.**, Horta, D., Faucher-Giguère, C.-A., 2021, ApJ, submitted. arXiv: 2110.02957
3. “Elemental Abundances in M31: Gradients in the Giant Stellar Stream”  
**Escala, I.**, Gilbert, K. M., Wojno, J., Kirby, E. N., Guhathakurta, P., 2021, AJ, 162, 45

4. “Gas infall and radial transport in cosmological simulations of Milky Way-mass disks”  
Trapp, C., Kereš, D., Chan, T. K., **Escala, I.**, Hummels, C., Hopkins P. F., Faucher-Giguère, C.-A., Murray, N., Quataert, E., Wetzel, A., 2021, MNRAS, accepted. arXiv: 2105.11472
5. “Elemental Abundances in M31: Properties of the Inner Stellar Halo”  
**Escala, I.**, Kirby, E. N., Gilbert, K. M., Wojno, J., Cunningham, E. C., Guhathakurta, P., 2020, ApJ, 902, 51
6. “Elemental Abundances in M31: Iron and Alpha Element Abundances in M31’s Outer Halo”  
Gilbert, K. M., Wojno, J., Kirby, E. N., **Escala, I.**, Beaton, R., Guhathakurta, P., Majewski, S., 2020, ApJ, 160, 41
7. “Elemental Abundances in M31: [Fe/H] and [alpha/Fe] in M31 Dwarf Galaxies Using Coadded Spectra”  
Wojno, J., Gilbert, K. M., Kirby, E. N., **Escala, I.**, Beaton, R., Tollerud, E., Majewski, S., Guhathakurta, P., 2020, ApJ, 895, 78
8. “Elemental Abundances in M31: The Kinematics and Chemical Evolution of Dwarf Spheroidal Satellite Galaxies”  
Kirby, E. N., Gilbert, K. M., **Escala, I.**, Wojno, J., Guhathakurta, P., 2020, ApJ, 159, 46
9. “Elemental Abundances in M31: A Comparative Analysis of Alpha and Iron Abundances in the Outer Disk, Giant Stellar Stream, and Inner Halo”  
**Escala, I.**, Gilbert, K. M., Kirby, E. N., Wojno, J., Cunningham, E. C., Guhathakurta, P., 2020, ApJ, 889, 177
10. “Elemental Abundances in M31: First Alpha and Iron Abundance Measurements in M31’s Giant Stellar Stream”  
Gilbert, K. M., Kirby, E. N., **Escala, I.**, Wojno, J., Kalirai, J. S., Guhathakurta, P., 2019, ApJ, 883, 128
11. “Elemental Abundances in M31: Alpha and Iron Element Abundances from Low-Resolution Resolved Stellar Spectroscopy in the Stellar Halo”  
**Escala, I.**, Kirby, E. N., Gilbert, K. M., Cunningham, E. C., Wojno, J., 2019, ApJ, 878, 42
12. “Reconciling Observed and Simulated Stellar Halo Masses”  
Sanderson, R. E., Garrison-Kimmel, S., Wetzel, A., Chan, T. K., Hopkins, P. F., Kereš, D., **Escala, I.**, Faucher-Giguère, C.-A., Ma, X., 2018, ApJ, 869, 12
13. “Modeling chemical abundance distributions for dwarf galaxies in the Local Group: the impact of turbulent metal diffusion”  
**Escala, I.**, Wetzel, A., Kirby, E. N., Hopkins, P. F., Ma, X., Wheeler, C., Kereš, D., Faucher-Giguère, C.-A., Quataert, E., 2018, MNRAS, 474, 2194
14. “FIRE-2 simulations: physics versus numerics in galaxy formation”  
Hopkins, P. F., Wetzel, A., Kereš, D., Faucher-Giguère, C.-A., Quataert, E., Boylan-Kolchin, M., Murray, N., Hayward, C. C., Garrison-Kimmel, S., Hummels, C., Feldmann, R., Torrey, P., Ma, X., Anglés-Alcázar, D., Su, K. Y., Orr, M., Schmitz, D., **Escala, I.**, Sanderson, R., Grudić, M., Hafen, Z., Kim, J. H., Fitts, A., Bullock, J. S., Wheeler, C., Chan, T. K., Elbert, O. D., Narayanan, D., 2018, MNRAS, 480, 800
15. “The First Brown Dwarf/Planetary-mass Object in the 32 Orionis Group”  
Burgasser, A. J., Lopez, M. A., Mamajek, E. E., Gagné, J., Fahertry, J. K., Tallis, M., Choban, C., Tamiya, T., **Escala, I.**, Aganze, C., 2016, ApJ, 820, 32
16. “Auroral Radio Emission from Late L and T Dwarfs: A New Constraint on Dynamo Theory in the Substellar Regime”  
Kao, M., Hallinan, G., Pineda, J. S., **Escala, I.**, Burgasser, A. J., Bourke, S., Stevenson, D., 2016, ApJ, 818, 2

17. “Characterization of the Very-low-mass Secondary in the GJ 660.1AB System”

Aganze, C., Burgasser, A. J., Faherty, J. K., Choban, C., **Escala, I.**, Lopez, M. A., Jin, Y., Tamiya, T., Tallis, M., Rockward, W., 2016, AJ, 151, 46

## PRESENTATIONS

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|   |                              |
|---|------------------------------|
| Testing Hierarchical Assembly with Roman<br>240 <sup>th</sup> Meeting of the American Astronomical Society (invited)<br><i>Pasadena, CA</i> | June 2022                    |
| Carnegie Observatories Colloquium   | June 2022                    |
| Joint UCSD-SDSU Astronomy Seminar   | May 2022                     |
| UC Santa Cruz FLASH Seminar   | Apr 2022, Sep 2019           |
| University of Chicago Near-Field Cosmology Talk   | Apr 2022                     |
| Notre Dame Astrophysics Seminar   | Apr 2022                     |
| Princeton Astrophysics Galread Seminar  | Apr 2022, Mar 2021, Oct 2019 |
| University of Pennsylvania Astrophysics Seminar   | Feb 2022                     |
| Center for Computational Astrophysics Lunch Talk  | Feb 2022                     |
| Spatially Resolved Spectroscopy with ELTs (contributed talk)<br><i>Oxford, UK (virtual)</i>   | Sep 2021                     |
| 2021 GALAH Science Meeting (contributed talk)<br><i>Sydney, Australia (virtual)</i>   | Jun 2021                     |
| Linking the Galactic and the Extragalactic (contributed talk)<br><i>Wollongong, Australia (virtual)</i>                                     | Dec 2020                     |
| STScI Symposium. The Local Group: Assembly and Evolution (contributed talk)<br><i>Baltimore, MD, USA (virtual)</i>                          | Sep 2020                     |
| University of Wisconsin-Madison, Monday Astronomy Talk  | Sep 2020                     |
| JINA Galactic Chemical Evolution Workshop<br><i>Boston, MA, USA</i>   | Mar 2020                     |
| 235 <sup>th</sup> Meeting of the American Astronomical Society (dissertation talk)<br><i>Honolulu, HI, USA</i>                              | Jan 2020                     |
| University of Washington, Astronomy Lunch Talk  | Nov 2019                     |
| Subaru 20th Anniversary Conference (contributed talk)<br><i>Big Island, HI, USA</i>   | Nov 2019                     |
| The Ohio State University CCAPP Seminar (invited)   | Nov 2019                     |
| Harvard Galaxies & Cosmology Seminar  | Oct 2019                     |
| MIT Astronomy Lunch Talk  | Oct 2019                     |
| 2019 Keck Science Meeting (contributed talk)<br><i>Los Angeles, CA, USA</i>   | Sep 2019                     |
| UC Davis Cosmology Seminar  | Sep 2019                     |
| UC Berkeley Astronomy Lunch Talk  | Sep 2019                     |

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| American Museum of Natural History Astrophysics Seminar   | Sep 2019 |
| Small Galaxies, Cosmic Questions (contributed flash talk and poster)<br><i>Durham, UK</i>   | Jul 2019 |
| Stellar Archaeology & the First Stars, Kavli IPMU (contributed talk)<br><i>Tokyo, Japan</i>   | Dec 2018 |
| Stellar Abundances in Dwarf Galaxies<br>232 <sup>nd</sup> Meeting of the American Astronomical Society (contributed talk)<br><i>Denver, CO, USA</i> | Jun 2018 |
| 2017 GMT Community Science Meeting (contributed talk)<br><i>Tarrytown, NY, USA</i>  | Sep 2017 |
| The 3rd Swinburne-Caltech Workshop: Galaxies and their Halos (contributed talk)<br><i>Pasadena, CA, USA</i>   | Sep 2017 |
| Large Surveys of the Great Andromeda Galaxy (contributed talk)<br><i>Leiden, the Netherlands</i>  | Jul 2017 |

## HONORS & AWARDS

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| Carnegie-Princeton Fellowship<br><i>Carnegie Observatories &amp; Princeton University</i>                 | Feb 2020 |
| France A. Córdova Tombrello Scholar<br><i>California Institute of Technology</i>                          | Jun 2019 |
| California Alliance Research Exchange Fund<br><i>California Institute of Technology</i>                   | Mar 2019 |
| Caltech Leadership Award<br><i>California Institute of Technology</i>                                     | Jun 2017 |
| Women Mentoring Women Candace Rypisi Outstanding Mentor<br><i>California Institute of Technology</i>      | Jun 2017 |
| National Science Foundation Graduate Research Fellowship  | Apr 2017 |
| Ford Foundation Predoctoral Fellowship  | Apr 2017 |
| National Science Foundation Graduate Research Fellowship, Honorable Mention                               | Apr 2016 |
| Earle C. Anthony Fellowship<br><i>California Institute of Technology</i>                                  | Sep 2015 |
| Phi Beta Kappa New Initiate Scholarship<br><i>University of California, San Diego</i>                     | Jun 2015 |
| Phi Beta Kappa<br><i>University of California, San Diego</i>  | Jun 2015 |
| Norm Taylor Award (Physics)<br><i>University of California, San Diego</i>                                 | May 2015 |
| Physical Sciences Dean's Undergraduate Award for Excellence<br><i>University of California, San Diego</i> | May 2015 |

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| California Alliance for Minority Participation (CAMP)<br>Statewide Symposium Special Merit in Science & Engineering Award<br><i>Irvine, CA, USA</i> | Feb 2015 |
| Physics Department Chair's Challenge Fund<br><i>University of California, San Diego</i>   | Jan 2014 |

## PROFESSIONAL SERVICE

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|---|--------------------------|
| NSF NOIRLab Telescope Allocation Committee Member           | Semester 2022A – Present |
| Monthly Notices of the Royal Astronomical Society – Referee | 2021 – Present           |
| AAS Representative, Congressional Day Visit                 | Mar 2019                 |

## LEADERSHIP & MENTORSHIP EXPERIENCE

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| Carnegie Astrophysics Summer Student Internship Program – Mentor / Volunteer | 2022, 2021          |
| UC Santa Cruz Science Intership Program (SIP) Mentor                         | 2022                |
| Carnegie Postdoc Co-Representative   | Nov 2021 – Jul 2022 |
| Caltech Graduate Student Council – Associate Director                        | 2018–2019           |
| Caltech Women in Physics, Math, and Astronomy – Founding President           | 2016–2018           |
| Caltech Astronomy Graduate Outreach Coordinator                              | 2017–2018           |
| Caltech Graduate Student Council – Secretary                                 | 2017–2018           |
| Caltech Women Mentoring Women – Mentor                                       | 2018, 2017, 2016    |
| Caltech Summer Research Connection Program – Mentor                          | 2017, 2016          |
| UCSD Undergraduate Women in Physics – Board Member                           | 2015, 2014          |

## SELECTED OUTREACH ACTIVITIES

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| Science Internship Program 2022 Plenary Session (speaker)<br><i>Santa Cruz, CA, USA (virtual)</i>    | Aug 2022           |
| Pasadena Senior Center Cosmic Cocktail Hour (speaker)<br><i>Pasadena, CA, USA</i>                    | Feb 2022           |
| Astronomy on Tap, Trenton (speaker)<br><i>Trenton, NJ, USA</i>                                       | Feb 2019           |
| Kavli IPMU Meet the Scientists Outreach Event (speaker)<br><i>Tokyo, Japan</i>                       | Dec 2018           |
| Caltech Astronomy Stargazing & Lecture Series (speaker)<br><i>Pasadena, CA, USA</i>                  | Jun 2017           |
| Palomar Observatory Greenway Talk Series (speaker)<br><i>Palomar Mountain, CA, USA</i>               | Jan 2017           |
| Southern California Physics Graduate Admissions Bootcamp (guest speaker)<br><i>La Jolla, CA, USA</i> | Aug 2017, Aug 2016 |

Astronomy on Tap, Los Angeles (speaker)  
*Pasadena, CA, USA*

Dec 2016