

# ADINA D. FEINSTEIN

NSF Graduate Research Fellow ◊ [afeinstein@uchicago.edu](mailto:afeinstein@uchicago.edu) ◊ <https://adina.feinste.in>

## EDUCATION

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### University of Chicago

September 2018 - Present

Master of Physical Sciences in Astrophysics

Overall GPA: 4.0/4.0

Master's Thesis: *eleanor: An open-source tool for extracting light curves from the TESS Full-Frame Images*

### Tufts University

September 2014 - May 2018

Bachelor of Science in Astrophysics / Minor in English

Major GPA: 3.71/4.0

Senior Honors Thesis: *Exploring the Low and High Mass Extremes in the Distant Universe*

## RESEARCH EXPERIENCE

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### Graduate Research Assistant

July 2018 - Present

*Advisors: Professor Jacob Bean & Dr. Benjamin Montet*

*University of Chicago*

- Creating an open-source data analysis pipeline to produce light curves for roughly 25 million stars in the Transiting Exoplanet Survey Satellite (TESS) Full-Frame Images (FFIs)
- Only publicly available light curves that are tailored towards finding exoplanet transits; will be hosted on MAST servers at the Space Telescope Science Institute
- Updates on the open-source pipeline can be found here: [github.com/afeinstein20/eleanor](https://github.com/afeinstein20/eleanor)

### Undergraduate Research Assistant

May 2015 - May 2018

*Advisor: Professor Danilo Marchesini*

*Tufts University*

- Constructed catalogs of gravitational lensing magnifications using publicly available lensing models for Hubble Frontier Fields cluster pointings; Completed a statistical analysis of systematic and random errors with publicly available magnification catalogs found here: [cosmos.phy.tufts.edu/~danilo/HFF/Home.html](https://cosmos.phy.tufts.edu/~danilo/HFF/Home.html)
- Conducted a brief study on the evolution of high mass ( $M/M_{\text{Sun}} \geq 10^{11}$ ) high redshift ( $2 \leq z \leq 6$ ) galaxies using the Ultra Deep Survey with the VISTA telescope (UltraVISTA) Survey

### Summer Research Assistant

June 2017 - August 2017

*Advisor: Dr. Joshua E. Schlieder*

*NASA Goddard Space Flight Center*

- Determined spectral types and ages of red dwarfs in the solar neighborhood using SpeX, a medium resolution 0.7-5.3  $\mu\text{m}$  spectrograph mounted on the NASA Infrared Telescope Facility
- Calculated basic planet parameters from stellar spectra and *Kepler/K2* light curve observations
- Post-summer Collaboration: Conducted planet confirmation follow-up analysis for a temperate  $1.9R_{\oplus}$  planet identified by citizen scientists using the Exoplanet Explorers tool on the Zooniverse platform

### High School Research Assistant

Summers of 2013 & 2012

*Advisor: Professor Phil Arras*

*University of Virginia*

- Calculated the effect of planet mass, radius, and semi-major axis on planet rotation periods within the habitable zone of low-mass stars using FORTRAN

*Advisor: Professor Jonathan Lunine*

*Cornell University*

- Studied the effects of a low-mass host star on a carbon dioxide rich (Venus-like) atmosphere

## OBSERVING EXPERIENCE

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- Obtained low-resolution spectra for *TESS* exoplanet candidate follow-up

- Completed 4 half nights (7/16, 7/17, 7/24, & 7/31) of remote observing using *SpeX*, a mid-resolution spectrograph, to characterize stars identified by the *Kepler/K2* missions and conduct follow-up confirmation of identified planet transits

## HONORS & AWARDS

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- McCormick Fellowship (June, 2019)
- NSF Graduate Research Fellowship (May, 2019)
- University of Chicago Three Minute Thesis Competition, Winner of Master's Thesis Category (May, 2019)
- Chambliss Medal (January, 2019)

## PUBLICATIONS

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- First Author Refereed Publications
  1. **eleanor**: *An open-source tool for extracting light curves from the TESS Full-Frame Images*  
**Feinstein, A. D.**, Montet, B. T., Foreman-Mackey, D. et al. 2019 PASP, 131, 1003
  2. *K2-288Bb: A small temperate planet in a low-mass binary system discovered by citizen scientists*  
**Feinstein, A. D.**, Schlieder, J. E., Livingston, J. H., et al. 2019 AJ, 157, 2
- Other Refereed Publications
  1. *The L 98-59 System: Three transiting terrestrial-size planets orbiting a nearby M dwarf*  
Kostov, V. B., Schlieder, J. E., Barclay, T. et al. 2019, AJ, 158, 32
  2. *Characterizing K2 candidate planetary systems orbiting low-mass stars IV: Updated properties for 86 cool dwarfs observed during campaigns 1-17*  
Dressing, C.D., Hardegree-Ullman, K., Schlieder, J.E., et al. 2019, arXiv e-prints, arXiv:1905.11457
  3. *A super-Earth and two sub-Neptunes transiting the bright nearby, and quite M-dwarf TOI-270*  
Günther, M. N., Pozuelos, F. J., Dittmann, J. A., et al. 2019, Nature Astronomy, accepted
  4. *A TESS Dress Rehearsal: Planetary Candidates and Variables from K2 Campaign 17*  
Crossfield, I. J. M., Guerrero, N., David, T., et al. 2018 AJ, 239, 1
  5. *HFF-Deepspace photometric catalogs of the twelve Hubble Frontier Fields, clusters, and parallels: Photometry, photometric redshifts, and stellar masses*  
Shipley, H., Lange-Vagle, D., Marchesini, D., et al. 2018 ApJS, 235, 14
  6. *K2-136: A binary system in the Hyades open cluster hosting a Neptune-sized planet*  
Ciardi, D. R., Crossfield, I. J. M., **Feinstein, A. D.**, et al. 2018, AJ, 155, 10
  7. *Planetary Candidates from K2 Campaign 16*  
Yu, L., Crossfield, I. J. M., Schlieder, J. E., et al. 2018 AJ, 156, 22

## TALKS & POSTERS

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- Talks<sup>1</sup>

1. [Extreme Solar Systems IV](#), Reykjavik, Iceland (August, 2019)
2. University of Maryland, College Park, Exoplanet Journal Club (August, 2019) \*
3. *TESS* Science Conference I, Splinter Session, Cambridge, MA USA (July, 2019)
4. [5<sup>th</sup> TESS Asteroseismic Science Consortium \(TASC\) Workshop](#), Cambridge, MA USA (July, 2019) \*
5. *TESS* Data Workshop, Space Telescope Science Institute, Baltimore, MD USA (February, 2019) \*
6. AAS 233, *TESS* Special Session, Seattle, WA USA (January, 2019)
7. AAS 231, Session 104. Detection of Extrasolar Planets I, National Harbor, MD USA (January, 2018)

- Posters

1. *TESS* Science Conference I, [Poster 97](#) – *Improvements to **eleanor**, an open-source pipeline for FFI light curve extraction* (July, 2019)
2. AAS 233, Poster 140.14 – *A Complete Survey of the Southern Sky with TESS Full-Frame Images* (January, 2019)
3. AAS 233, Poster 467.04 – *K2-288Bb: A Small Temperate Planet in a Low-Mass Binary System Discovered by Citizen Scientists* (January, 2019)
4. 2017 NASA Goddard Space Flight Center summer intern poster session (July, 2017)
5. The 4<sup>th</sup> AstroCon DC Meeting, George Washington University (August, 2017)

## PRESS

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1. *Discovery of K2-288Bb*  
Press release at 233<sup>rd</sup> AAS meeting; interview on WGN radio and with Corey Powell of NBC News

## OUTREACH

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1. Soapbox Science Chicago selected speaker (July 13, 2019)
2. Invited talk at the Naperville Astronomical Association meeting (June 4, 2019)
3. Invited talk at the Chicago Astronomical Society Monthly meeting (March 12, 2019)
4. *Letters to a Pre-Scientist*  
Scientist pen-pal (2018-Present)
5. *Classroom assistant*  
Volunteer at the Hyde Park Neighborhood Club after-care program called the Maker Lab, which combines science education and art
6. *Skype a Scientist*  
Volunteer to Skype with classrooms around the world to discuss what it's like to be a scientist
7. *@astrotweeps Twitter Guest Host*  
May 21<sup>st</sup>-28<sup>th</sup>, 2018
8. *Heard Mentality (WMFO)*  
Invited guest on the Tufts University radio show

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<sup>1</sup>\* denotes invited talks