ADINA D. FEINSTEIN

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EDUCATION

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

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

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
- Conducted a brief study on the evolution of high mass ($M/M_{Sun} \geq 10^{11}$) 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 μm 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

Magellan Telescopes, Las Campanas Observatory December 21, 2018
Instrument: FIRE

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

NASA Infrared Telescope Facility, Mauna Kea, Hawaii July, 2017
Instrument: SpeX

· 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

Gemini North January 21, 2020
Instrument: GRACES

· P.I. of a Fast Turnaround proposal to obtain Rossiter-McLaughlin observations of the simultaneous transits of V 1298 Tau c and d, two $\sim 6R_\oplus$ 23 Myr planets.

HONORS & AWARDS

- 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 (Janunary, 2019)

PUBLICATIONS

- 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 Young Planet DS Tuc Ab has a Low Obliquity*
     Montet, B. T., **Feinstein, A. D.**, Luger, R., et al. 2019, arXiv e-prints, arXiv:1912.03794
  2. *THOR 42: A touchstone $\sim$ 24 Myr-old eclipsing binary spanning the fully-convective boundary*
     Murphy, S. J., Lawson, W. A., Onken, C. A., et al. 2019, MNRAS, 2794
  3. *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
  4. *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
  5. *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
  6. *A TESS Dress Rehearsal: Planetary Canddiates and Variables from K2 Campaign 17*
     Crossfield, I. J. M., Guerrero, N., David, T., et al. 2018 AJ, 239, 1

7. *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
8. *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
9. *Planetary Candidates from K2 Campaign 16*
   Yu, L., Crossfield, I. J. M., Schlieder, J. E., et al. 2018 AJ, 156, 22

TALKS & POSTERS

- Talks[1]
  1. Lake Michigan Area Exoplanet Meeting (November, 2019)
  2. Extreme Solar Systems IV, Reykjavik, Iceland (August, 2019)
  3. University of Maryland, College Park, Exoplanet Journal Club (August, 2019) *
  4. *TESS* Science Conference I, Splinter Session, Cambridge, MA USA (July, 2019)
  5. 5th *TESS* Asteroseismic Science Consortium (TASC) Workshop, Cambridge, MA USA (July, 2019) *
  6. *TESS* Data Workshop, Space Telescope Science Institute, Baltimore, MD USA (February, 2019) *
  7. AAS 233, *TESS* Special Session, Seattle, WA USA (January, 2019)
  8. 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 Sourthern 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 4th AstroCon DC Meeting, George Washington University (August, 2017)

PRESS

1. Discovery of TOI 270
2. Discovery of K2-288Bb
   Press release at 233rd AAS meeting; interview on WGN radio and with Corey Powell of NBC News

OUTREACH

1. University of Chicago Physics Mentorship Program mentor (October, 2019-Present)
2. Soapbox Science Chicago selected speaker (July 13, 2019)

[1] * denotes invited talks

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