# Andrew W. Mann

*Curriculum Vitae* 

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| CONTACT INFORMATION | UNC Chapel Hill<br>Department of Physics & Astronomy<br>271 Phillips Hall, Office 242<br>Chapel Hill, NC 27599 | *E-mail:* awmann@unc.edu<br>Github: https://github.com/awmann<br>Homepage: http://andrewwmann.com<br>*Office:* (919) 962-9230 |


RESEARCH INTERESTS

Evolution of planetary systems, machine learning & data mining, techniques for the detection of exoplanets, astrophysical and measurement noise, statistical properties of exoplanets, fundamental properties of late-type and pre-main sequence stars, stellar evolution, techniques for high-precision photometry/spectrophotometry.

EMPLOYMENT

| | |
|---|---|
| Assistant Professor, UNC Chapel Hill | 2018 – |
| *Hubble* Prize Postdoctoral Fellow, Columbia University | 2017 – 2018 |
| *Hubble* Prize Postdoctoral Fellow, UT Austin | 2015 – 2017 |
| Visiting Scientist, Boston University | 2013 – 2014 |
| *Harlan J. Smith* Prize Postdoctoral Fellow, UT Austin | 2013 – 2015 |

EDUCATION

**Institute for Astronomy, University of Hawai'i at Manoa**,

Ph.D., Astronomy & Astrophysics, August 2013

PhD Thesis Topic: *Planets around cool stars: a spectroscopic and photometric study of M dwarfs and their planets*
Advisor: Prof. Eric Gaidos

M.S., Astronomy, 2010

Masters Thesis Topic: *The Invisible Majority? Evolution and Detection of Outer Planetary Systems without Gas Giants*; Advisor: Prof. Eric Gaidos
Masters Thesis Topic 2: *BHOMs and the Redshift Evolution of the Cluster Merger Fraction*; Advisor: Dr. Harald Ebeling

**Department of Physics and Astronomy, Johns Hopkins University**,
B.S., Physics, Mathematics minor, June 2008

PROFESSIONAL ACTIVITIES & SERVICE

| | |
|---|---|
| *TESS* Cool Dwarf Team | 2015-present |
| *TESS* Target Selection working group | 2015-present |
| McDonald Time Allocation Committee | 2015-present |
| Referee for Nature, ApJ, AJ, A&A | |
| Texas M Dwarfs and Exoplanets (Tex-MEX) Organizer | 2014-2017 |
| NESSF reviewer | 2016, 2017 |
| Bashfest SOC, LOC | 2015, 2017 |
| OPTICON external reviewer | 2015-2017 |
| China Telescope Access Program Reviewer | 2016 |
| TAURUS Summer Research Program Mentor/Organizer | 2016, 2017 |
| *Hubble Space Telescope* Time Allocation Committee | 2015 |

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|---|---|
| *Kepler* Stellar properties working group | 2013-2014 |
| Visiting Researcher at Boston University | 2014-2015 |
| Cool Stars 18 Splinter Organizer | 2014 |
| University of Hawaii Time Allocation Committee | 2012-2013 |
| University of Hawaii Graduate Student Representative | 2011-2012 |
| University of Hawaii Graduate Admissions Committee | 2010-2011 |

## Mentorship & Teaching

**Students Supervised:**

Pa Chia Thao; TAURUS Undergraduate; *Spitzer's view of two young exoplanets*

Megan Ansdell; UH/IfA Graduate Student; *Are circumstellar disks always aligned with their host stars?*

Xueying Guo; MIT Graduate Student; *The metallicity distribution and hot Jupiter rate of the Kepler field*

Jennifer Medina; TAURUS Undergraduate; *Measuring Vsin(i) of young planet-hosting stars*

Nathan Morris; UT Undergraduate; *Rotation periods and ages for K2 planet hosts*

Richard Seifert; UT Undergraduate; *Cluster Binarity from WIYN/Hydra*

## PI Observing Time

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| SOAR (Goodman) | 6 nights |
| *Spitzer* (IRAC) | 150 hours |
| Keck (LRIS, NIRC2, ESI) [UH, NASA] | 14 nights |
| Gemini (GNIRS) [NOAO] | 5 nights |
| CFHT (ESPaDOnS) [UH] | 30 hours |
| WIYN (Hydra) [NOAO] | 75 hours |
| IRTF (SpeX) [UH, Open] | 32 nights |
| Harlan J. Smith (TS23 Coude, IGRINS) [UT] | 34 nights |
| LCOGT [UT] | 250 hours |
| UH2.2m (SNIFS, OPTIC) [UH] | $>$ 50 nights |

## Invited Talks and Colloquia

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| (Colloquium) | University of Hawaii at Manoa; Institute for Astronomy | 2018 |
| (Invited) | IRTF Future Directions | 2018 |
| (Colloquium) | UNC Chapel Hill; Department of Physics and Astronomy | 2018 |
| (Colloquium) | Michigan State University; Department of Astronomy | 2018 |
| (Colloquium) | Ohio State University; Department of Astronomy | 2018 |
| (Colloquium) | University of Florida; Department of Astronomy | 2018 |
| (Invited) | Frank N. Bash Symposium; New Horizons in Astronomy | 2017 |
| (Invited) | EXES Teacher Meeting | 2017 |
| (Invited) | Asteroseismology and Optical Interferometry | 2017 |
| (Colloquium) | University of Florida; Department of Astronomy | 2017 |
| (Colloquium) | Academia Sinica; Institute of Astronomy and Astrophysics | 2017 |
| (Colloquium) | University of Minnesota; Institute for Astrophysics | 2017 |
| (Invited) | Gasparilla Teacher's Association | 2016 |
| (Colloquium) | Institute of Astronomy, National Tsing Hua University | 2016 |
| (Invited) | California Institute for Technology (Distinguished Visitor) | 2013 |

*23 contributed/seminar/public talks not listed*

## Press Releases

AAS NOVA coverage on the a planetary system we discovered in the Hyades

New Planet Offers Clues to the Origin of Close-in Exoplanets

Bad Astronomy Article on the K2-33 System

Newly Discovered Planet in the Hyades Cluster Sheds Light on Planetary Evolution

## First Author Publications (16)

*"How to Constrain Your M dwarf II: the mass-luminosity-metallicity relation from 0.075 to 0.70$M_\odot$"*
**Mann, Andrew W.**; Dupuy, Trent; Kraus, Adam; et al.; 2019, ApJ 871 63.

*"Zodiacal Exoplanets in Time (ZEIT) VI: a three-planet system in the Hyades cluster including an Earth-sized planet"*
**Mann, Andrew W.**; Vanderburg, Andrew; Rizzuto, Aaron C.; et al.; 2018, AJ 155 4.

*"The Gold Standard: Accurate Stellar and Planetary Parameters for Eight Kepler M Dwarf Systems Enabled by Parallaxes"*
**Mann, Andrew W.**; Dupuy, Trent; Muirhead, Philip; et al.; 2017, AJ 153 267.

*"Zodiacal Exoplanets in Time (ZEIT) IV: seven transiting planets in the Praesepe cluster"*
**Mann, Andrew W.**; Gaidos, Eric; Vanderburg, Andrew; et al.; 2017, AJ 153 64.

*"Zodiacal Exoplanets in Time (ZEIT) III: A short-period planet orbiting a pre-main-sequence star in the Upper Scorpius OB Association"*
**Mann, Andrew W.**; Newton, Elisabeth R.; Rizzuto, Aaron C.; et al.; 2016, AJ 152 61.

*"Zodiacal Exoplanets In Time (ZEIT) I: A Neptune-sized planet orbiting an M4.5 dwarf in the Hyades Star Cluster"*
**Mann, Andrew W.**; Gaidos, Eric; Mace, Gregory N.; et al.; 2016, ApJ, 818 46.

*"How to Constrain Your M Dwarf: measuring effective temperature, bolometric luminosity, mass, and radius"*
**Mann, Andrew W.**; Feiden, Gregory A.; Gaidos, Eric; Boyajian, Tabetha; von Braun, Kaspar; 2015, ApJ, 804 64.

*"Revised Photometric Passbands and Zero-Points for Photometry of Bright Stars"*
**Mann, Andrew W.**; von Braun, Kaspar; 2015, PASP 127 102.

*"Prospecting in Ultracool Dwarfs: Measuring the Metallicities of Mid- and Late-M Dwarfs"*

**Mann, Andrew W.**; Deacon, Niall R.; Gaidos, Eric; Ansdell, Megan; Brewer, John M.; Liu, Michael C.; Magnier, Eugene A.; Aller, Kimberly M.; 2014, AJ 147 160.

*"Spectro-thermometry of M Dwarfs and Their Candidate Planets: Too Hot, Too Cool, or Just Right?"*
**Mann, Andrew W.**; Gaidos, Eric; Ansdell, Megan; 2013, ApJ, 779 188.

*"Testing the Metal of Late-Type Kepler Planet Hosts with Iron-Clad Methods"*
**Mann, Andrew W.**; Gaidos, Eric; Kraus, Adam; Hilton, Eric; 2013, ApJ, 770 43.

*"Prospecting in late-type dwarfs:*
*a calibration of infrared and visible spectroscopic metallicities of late-K and M dwarfs spanning* 1.5 *dex"*
**Mann, Andrew W.**; Brewer, John; Gaidos, Eric; Lépine, Sébastien; Hilton, Eric; AJ 2013, 145 52.

*"They Might be Giants: luminosity classes, planet frequency, and planet-metallicity relation of the coolest Kepler target stars"*
**Mann, Andrew W.**; Gaidos, Eric; Lépine, Sébastien; Hilton, Eric; 2012, ApJ, 753, 90.

*"X-ray-optical classification of cluster mergers and the evolution of the cluster merger fraction"*
**Mann, Andrew W.**; Ebeling, Harald; 2012, MNRAS 240, 2120.

*"Ground-Based Sub-Millimagnitude CCD Photometry of Bright Stars using Snapshot Observations"*
**Mann, Andrew W.**; Gaidos, Eric; Aldering Greg; 2011, PASP 123, 1273.

*"The Invisible Majority? Evolution and Detection of Outer Planetary Systems without Gas Giants"*
**Mann, Andrew W.**; Gaidos, Eric; Gaudi, B Scott; 2010, ApJ, 719, 1454.

## Publications with a significant contribution (23)

*"A Catalog of Cool Dwarf Targets for the Transiting Exoplanet Survey Satellite"*
Muirhead, Philip S.; Dressing, Courtney; **Mann, Andrew W.**; et al.; 2018, AJ 155 180.

*"Zodiacal Exoplanets in Time (ZEIT). VIII. A Two-planet System in Praesepe from K2 Campaign 16"*
Rizzuto, Aaron C.; Vanderburg, Andrew; **Mann, Andrew W.**; et al.; 2018, AJ 156 195.

*"Zodiacal Exoplanets in Time (ZEIT). VII. A Temperate Candidate Super-Earth in the Hyades Cluster"*
Vanderburg, Andrew; **Mann, Andrew W.**; et al.; 2018, AJ 156 195.

*"Zodiacal Exoplanets in Time (ZEIT) V: A Uniform Search for Transiting Planets in Young Clusters Observed by K2"*

Rizzuto, Aaron C.; Vanderburg, Andrew; **Mann, Andrew W.**; et al.; 2018, AJ 154 224.

*"The Factory and the Beehive. III. PTFEB132.707+19.810, A Low-mass Eclipsing Binary in Praesepe Observed by PTF and K2"*
Kraus, Adam L.; Douglas, Stephanie T.; **Mann, Andrew W.**; et al.; ApJ 845 72.

*"The metallicity distribution and hot Jupiter rate of the Kepler field: Hectochelle High-resolution spectroscopy for 776 Kepler target stars"*
Guo, Xueying; Johnson, John A.; **Mann, Andrew W.**; et al.; ApJ 838 25.

*"M Dwarf Activity in the Pan-STARRS 1 Medium-Deep Survey: First Catalog and Rotation Periods"*
Kado-Fong, Erin; Williams, Peter K. G.; **Mann, Andrew W.**; et al.; ApJ 833 281.

*"Zodiacal Exoplanets in Time (ZEIT) II. A "Super-Earth" Orbiting a Young K Dwarf in the Pleiades Neighborhood"*
Gaidos, Eric; **Mann, Andrew W.**; Rizzuto, Aaron; et al.; 2016, MNRAS, 1448.

*"The Physical Mechanism Behind M Dwarf Metallicity Indicators and the Role of C and O Abundances"*
Veyette, Mark J.; Muirhead, Philip S.; **Mann, Andrew W.**; Allard, France; 2016, ApJ, 828, 95.

*"The Impact of Stellar Multiplicity on Planetary Systems. I. The Ruinous Influence of Close Binary Companions"*
Kraus, Adam L.; Ireland, Michael J.; Huber, Daniel; **Mann, Andrew W.**; Dupuy, Trent J.; 2016, AJ, 152, 8.

*"They are small worlds after all: revised properties of Kepler M dwarf stars and their planets"*
Gaidos, E.; **Mann, Andrew W.**; Kraus, A. L.; Ireland, M.; 2016, MNRAS, 457, 2887.

*"Radial Trends in IMF-sensitive Absorption Features in Two Early-type Galaxies: Evidence for Abundance-driven Gradients"*
McConnell, Nicholas J.; Lu, Jessica R.; **Mann, Andrew W.**; 2016, ApJ, 821, 39.

*"A Pan-STARRS 1 study of the relationship between wide binarity and planet occurrence in the Kepler field"*
Deacon, N. R.; Kraus, A. L.; **Mann, Andrew W.**; et al.; 2016, MNRAS, 455, 4212.

*"The Enigmatic and Ephemeral M Dwarf System KOI 6705: Cheshire Cat or Wild Goose?"*
Gaidos, Eric; **Mann, Andrew W.**; Ansdell, Megan; 2016, ApJ, 817, 50.

*"Kepler-445, Kepler-446 and the Occurrence of Compact Multiples Orbiting Mid-M Dwarf Stars"*

Muirhead, Philip S.; **Mann, Andrew W.**; Vanderburg, Andrew; et al.; 2015, ApJ, 801, 18.

*"The Near-ultraviolet Luminosity Function of Young, Early M-type Dwarf Stars"*
Ansdell, Megan; Gaidos, Eric; **Mann, Andrew W.**; et al.; 2015, 798, 41.

*"Trumpeting M dwarfs with CONCH-SHELL: a catalogue of nearby cool host-stars for habitable exoplanets and life"*
Gaidos, Eric; **Mann, Andrew W.**; Lpine, S.; et. al.; 2014, MNRAS 433, 2561.

*"M Dwarf Metallicities and Giant Planet Occurrence: Ironing Out Uncertainties and Systematics"*
Gaidos, Eric; **Mann, Andrew W.**; Ansdell, Megan; 2014, ApJ, 791, 54.

*"An Understanding of the Shoulder of Giants: Jovian Planets around Late K Dwarf Stars and the Trend with Stellar Mass"*
Gaidos, Eric; Fischer, Debra A.; **Mann, Andrew W.**; et al.; 2013, ApJ, 771, 18.

*"Objects in Kepler's Mirror May be Larger than they Appear: Bias and Selection Effects in Transiting Planet Surveys"*
Gaidos, Eric; **Mann, Andrew W.**; 2013, ApJ, 145, 52.

*"A Spectroscopic Catalog of the Brightest ($J < 9$) M Dwarfs in the Northern Sky"*
Lépine, Sébastien; Hilton, Eric; **Mann, Andrew W.**; Rojas-Ayala, Barbara; Wilde, Matthew; and Gaidos, Eric; 2013, AJ, 145, 102.

*"On the Nature of Small Planets around the Coolest Kepler Stars"*
Gaidos, Eric; Fischer, Debra A.; **Mann, Andrew W.**; Lépine, Sébastien; 2012, ApJ, 746 36.

*"Transit Analysis Package (TAP and autoKep): IDL Graphical User Interfaces for Extrasolar Planet Transit Photometry"*
Gazak, J. Zachary; Johnson, John A.; Tonry, John; Eastman, Jason; **Mann, Andrew W.**; Agol, Eric; 2012, Advances in Astronomy, 30.

31 refereed papers where my contribution was minor are not listed. Click for full ADS listing