Carl Andrew Ziegler

Assistant Professor/Observatory Director

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Research Interests

Characterization of exoplanets; formation and evolution of planetary systems in multiple star systems; large adaptive optics surveys; detection of long-period transiting planets

Positions

September 2020 - current
Stephen F. Austin State University, Nacogdoches, TX
Assistant Professor of Astronomy
Director of SFA Observatory

August 2018 - July 2020
University of Toronto, Toronto, ON
Dunlap Postdoctoral Fellow
PI: SOAR TESS survey (speckle imaging survey)
PI: One Hit Wonders (TESS single-transit planet survey)

Education

May 2018
University of North Carolina, Chapel Hill, NC
PhD, Physics and Astronomy
Thesis: "Characterization of Exoplanets and Stellar Systems with New Robots"
Advisor: Prof. Nicholas Law

August 2013
Southern Illinois University, Carbondale, IL
M.S., Physics
Thesis: "Adsorption of Neon on Open Carbon Nanohorn Aggregates"
Advisor: Prof. Aldo Migone

May 2009
William Jewell College, Liberty, MO
B.A., Physics and Mathematics
Research: variable stars, globular clusters
Advisor: Prof. Maggie Sherer

Significant Contribution Publications

10. *An Adaptive Optics Census of Companions to Northern Stars Within 25 pc with Robo-AO*
M. Salama, C. Ziegler, et al., The Astronomical Journal, 2022 **163** 5

9. *Robo-AO and SOAR High-resolution Surveys of Exoplanet Hosting Stars*
C. Ziegler, et al., Frontiers in Astronomy and Space Sciences, 2021 **8** 3

8. *SOAR TESS Survey. II: The impact of stellar companions on planetary populations*
C. Ziegler, et al., The Astronomical Journal, 2021 **162** 5

Significant Contribution Publications – Continued

7. *SOAR TESS Survey. I: Sculpting of TESS planetary systems by stellar companions*
C. Ziegler, et al., The Astronomical Journal, 2020 **159** 19
6. *Measuring the Recoverability of Close Binaries in Gaia DR2 with the Robo-AO Kepler Survey*
C. Ziegler, et al., The Astronomical Journal, 2018 **156** 259
5. *Robo-AO Kepler Planetary Candidate Survey V: The effect of physically associated stellar companions on planetary systems*
C. Ziegler, et al., The Astronomical Journal, 2018 **156** 83
4. *Robo-AO Kepler Planetary Candidate Survey IV: The effect of nearby stars on 3857 planetary candidate systems*
C. Ziegler, et al., The Astronomical Journal, 2018 **155** 161
3. *Robo-AO Kepler Planetary Candidate Survey III: Adaptive Optics Imaging of 1629 Kepler Exoplanet Candidate Host Stars*
C. Ziegler, et al., The Astronomical Journal, 2017 **153** 66
2. *Robo-AO Kepler Planetary Candidate Survey II: Adaptive Optics Imaging of 969 Kepler Exoplanet Candidate Host Stars*
C. Baranec, C. Ziegler, et al., The Astronomical Journal, 2016 **152** 18
1. *Multiplicity of the Galactic Senior Citizens: A High-resolution Search for Cool Subdwarf Companions*
C. Ziegler, et al., The Astrophysical Journal, 2015 **804** 30

SPIE Instrumentation Papers

3. *SRAO: the southern robotic speckle + adaptive optics system*
N. Law, C. Ziegler, A. Tokovinin, Proc. SPIE 9907, Optical and Infrared Interferometry and Imaging V, 99070K, 2016
2. *SRAO: optical design and the dual-knife-edge WFS*
C. Ziegler, et al., Proc. SPIE 9909, Adaptive Optics Systems V, 99093Z, 2016
1. *The Robo-AO KOI survey: laser adaptive optics imaging of every Kepler exoplanet candidate*
C. Ziegler, et al., Proc. SPIE 9909, Adaptive Optics Systems V, 99095U, 2016

Talks

Conference Talks

- *SOAR TESS Speckle Survey of Exoplanet Candidates*
C. Ziegler, et al., Texas A&M University-Commerce, March 23-25, 2023
- *SOAR TESS survey: The sculpting of planetary systems by stellar companions*
AAS 235, January 5-9, Honolulu, HI (2020)
- *One Hit Wonders: Hunting the longest-period TESS planets*
TESS Sci Con I, July 29-Aug 2, Cambridge, MA (2019)
- *One Hit Wonders: Hunting the longest-period TESS planets*
CASCA 2019, June 17-20, Montreal, QC (2019)
- *Death Stars? How tight binaries impact TESS planets with SOAR speckle imaging*
AAS 233, January 6-10, Seattle, WA (2019)
- *Robo-AO KOI Survey: LGS-AO imaging of every Kepler planetary candidate host star*
AAS 231, January 9-12, National Harbor, MD (2018)

Talks - Continued

- *High resolution imaging of 4000 Kepler planetary candidate host stars*
  Know Thy Star, Know Thy Planet, October 11, Pasadena, CA (2017)
- *Robo-AO KOI Survey: LGS-AO imaging of every Kepler planetary candidate host star*
  Transiting Exoplanets, July 17, Keele, UK (2017)
- *Adaptive Optics Imaging of Kepler Planetary Candidates*
  North Carolina Astronomers Meeting, September 24, Jamestown, NC (2016)
- *The Robo-AO KOI Survey: Laser Adaptive Optics Imaging of Every Kepler Exoplanet Candidate*
  AAS 227, January 4-8, Kissimmee, FL (2016)
- *Study of Carbon Dioxide adsorption on Purified HiPco Nanotubes*
  American Physical Society Meeting, March 18–22, Baltimore, MD (2013)

Invited Talks

- *The Robo-AO KOI survey and the development of a Southern robotic AO system*
  Institute for Astronomy, September 14, Hilo, Hawaii (2016)

Conference Posters

- *One Hit Wonders: recovering the longest period TESS planets*
  C. Ziegler, et al., Extreme Solar Systems IV, Reykyavik, Iceland (2019)
- *Sculpting of TESS Planetary Systems by Binary Stars*
  C. Ziegler, et al., Tess SciCon I, Cambridge, MA (2019)
- *Robo-AO KOI Survey: Robotic LGS-AO Imaging of Every Kepler Planetary Candidate*
  C. Ziegler, et al., Kepler SciCon IV, NASA Ames (2017)
- *SRAO: the first southern robotic AO system*
  C. Ziegler, et al., SPIE Astronomical Telescopes + Instrumentation, Edinburgh, UK (2016)
- *The Robo-AO KOI survey: laser adaptive optics imaging of every Kepler exoplanet candidate*
  C. Ziegler, et al., SPIE Astronomical Telescopes + Instrumentation, Edinburgh, UK (2016)
- *Multiplicity of the Galactic Senior Citizens: A high-resolution search for cool subdwarf companions*
  C. Ziegler & N. Law, AAS 225, Seattle, WA (2015)

Grants and Telescope Time

- *Robo-AO-2 Observations of TESS Planet Candidates*
  C. Ziegler & C. Baranec, TESS Guest Investigator, $250,000, *In submission*
- *SOAR TESS Survey of Exoplanet Candidate Hosts*
  C. Ziegler et al., NOAO Proposal, Award 3 Nights on SOAR telescope, 2022A
- *Characterization of TESS planets in multiple star systems*
  C. Ziegler et al., NOAO Proposal, Award 4 Nights on SOAR telescope, 2021A
- *SOAR TESS Survey: Characterization of TESS planets in multiple star systems*
  C. Ziegler et al., NOAO Proposal, Award 3 Nights on SOAR telescope, 2020B

Previous Teaching Experience

Fall 2019	**University of Toronto**, Toronto, ON *Exoplanet mini-course, AST 221* Taught 8-week course on detection of exoplanets and exoplanet demographics to Astronomy majors. Mix of lectures an in-class group projects.
Summer 2019	**University of Toronto**, Toronto, ON *AO Lab Lead, Dunlap Summer School* Led both undergraduates and graduate students in a lecture introducing adaptive optics and a lab to build a Shack-Hartmann wavefront sensor.
Summer 2019	**University of Toronto**, Toronto, ON *Summer Undergraduate Mentor* Advised summer undergraduate student in testing and implementing robotic telescope control and on-the-fly data reduction pipeline.
Spring 2017	**University of North Carolina**, Chapel Hill, NC *Undergraduate Research Mentor* Advised capstone course for UNC undergraduate to build novel methods to reduce adaptive optics images of bright stars
Summer 2015	**University of North Carolina**, Chapel Hill, NC *Summer Research Mentor* Advised high school student with *Kepler* host star multiplicity research
Fall 2013- Spring 2014	**University of North Carolina**, Chapel Hill, NC *Astronomy 101L Lab Teaching Assistant* Led five lab sections using robotic “Skynet” telescopes
Fall 2010- Spring 2013	**Southern Illinois University**, Carbondale, IL *Astronomy 101 Lab Teaching Assistant* Taught twenty lab sections in astronomy
Spring 2012- Fall 2012	**Southern Illinois University**, Carbondale, IL *Physics Lab Instructor* Taught three calculus-based physics lab courses

Professional Service and Public Outreach

- Referee for MNRAS, ApJ, AJ, PASP, and A&A
- Assisted monthly public observing nights for Chapel Hill Astronomical and Observational Society
- Two public talks for Raleigh Astronomy Club

Sofware Skills

Computer Programming:	- Python (primary language for astronomical data analysis) - C++ (control software for Andor EMCCD camera, WFS reconstruction) - TheSkyX (automated telescope and observatory control) - MaximDL (camera control and reduction) - Mathematica (hydrodymical simulations for graduate ISM class) - HTML (designed project sites, `roboaokepler.org` and `onehitwonders.space`) - LabVIEW (wrote control GUI for gas adsorption instrumentation)

Instrumentation

Instrumentation Design:	- Zemax (optical design for Robo-SOAR) - SolidWorks (modeling for fabrication of custom mounts and packaging used in Robo-SOAR)
Robo-SOAR construction:	- built optical testbed of NGS-AO system - designed and constructed prototype of reflective pyramid WFS

Professional References

Professor Suresh Sivanandam
Director, Dunlap Institute for Astronomy, University of Toronto
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Professor Nicholas Law
Associate Professor, Department of Astronomy, University of North Carolina
nlaw@unc.edu / 919-962-3019

Professor Christoph Baranec
Assistant Astronomer, Institute for Astronomy, University of Hawaii, Manoa
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Professor Adam Kraus
Professor, Department of Astronomy, University of Texas, Austin
alk@astro.as.utexas.edu / 617-956-7740

All Peer-reviewed Articles

[152] M. P. Battley et al. *NGTS-30b/TOI-4862b: An 1 Gyr old 98-day transiting warm Jupiter*. In: A&A **686**, A230 (2024), A230. arXiv: 2404.02974 [astro-ph.EP].

[151] Benjamin K. Capistrant et al. *TESS Hunt for Young and Maturing Exoplanets (THYME). XI. An Earth-sized Planet Orbiting a Nearby, Solar-like Host in the 400 Myr Ursa Major Moving Group*. In: AJ **167**.2, 54 (2024), p. 54. arXiv: 2401.04785 [astro-ph.EP].

[150] Ilaria Carleo et al. *Mass determination of two Jupiter-sized planets orbiting slightly evolved stars: TOI-2420 b and TOI-2485 b*. In: arXiv e-prints, arXiv:2408.05612 (2024), arXiv:2408.05612. arXiv: 2408.05612 [astro-ph.EP].

[149] I. Carleo et al. *The GAPS programme at TNG. L. TOI-4515 b: An eccentric warm Jupiter orbiting a 1.2 Gyr-old G-star*. In: A&A **682**, A135 (2024), A135. arXiv: 2311.11903 [astro-ph.EP].

[148] Ashley Chontos et al. *The TESS-Keck Survey XXI: 13 New Planets and Homogeneous Properties for 21 Subgiant Systems*. In: arXiv e-prints, arXiv:2402.07893 (2024), arXiv:2402.07893. arXiv: 2402.07893 [astro-ph.EP].

[147] Arvind F. Gupta et al. *A hot-Jupiter progenitor on a super-eccentric retrograde orbit*. In: Nature **632**.8023 (2024), pp. 50–54.

[146] Alejandro Hacker et al. *TOI-2374 b and TOI-3071 b: two metal-rich sub-Saturns well within the Neptunian desert*. In: MNRAS **532**.2 (2024), pp. 1612–1634. arXiv: 2406.12996 [astro-ph.EP].

[145] Beth A. Henderson et al. *TOI-2490b - the most eccentric brown dwarf transiting in the brown dwarf desert*. In: MNRAS **533**.3 (2024), pp. 2823–2842. arXiv: 2408.04475 [astro-ph.EP].

[144] Benjamin J. Hord et al. *Identification of the Top TESS Objects of Interest for Atmospheric Characterization of Transiting Exoplanets with JWST*. In: AJ **167**.5, 233 (2024), p. 233. arXiv: 2308.09617 [astro-ph.EP].

[143] Yasunori Hori et al. *The Discovery and Follow-up of Four Transiting Short-period Sub-Neptunes Orbiting M Dwarfs*. In: AJ **167**.6, 289 (2024), p. 289. arXiv: 2405.12637 [astro-ph.EP].

[142] Matıas I. Jones et al. *A long-period transiting substellar companion in the super-Jupiters to brown dwarfs mass regime and a prototypical warm-Jupiter detected by TESS*. In: A&A **683**, A192 (2024), A192. arXiv: 2401.09657 [astro-ph.EP].

[141] M. Mallorquın et al. *TOI-1135 b: A young hot Saturn-size planet orbiting a solar-type star*. In: A&A **685**, A90 (2024), A90. arXiv: 2402.17448 [astro-ph.EP].

[140] Priyashkumar Mistry et al. *VaTEST III: Validation of eight potential super-earths from TESS data*. In: PASA **41**, e030 (2024), e030. arXiv: 2311.00688 [astro-ph.EP].

[139] M. Montalto et al. *The GAPS programme at TNG. LVII. TOI-5076b: A warm sub-Neptune planet orbiting a thin-to-thick-disk transition star in a wide binary system*. In: A&A **687**, A226 (2024), A226. arXiv: 2405.18950 [astro-ph.EP].

[138] Emma Nabbie et al. *Surviving in the Hot-Neptune Desert: The Discovery of the Ultrahot Neptune TOI-3261b*. In: AJ **168**.3, 132 (2024), p. 132. arXiv: 2407.04225 [astro-ph.EP].
[137] Molly Nies et al. *HD 21520 b: a warm sub-Neptune transiting a bright G dwarf*. In: MNRAS (2024). arXiv: 2406.09595 [astro-ph.EP].
[136] Emma Page et al. *TOI-1994b: A Low-mass Eccentric Brown Dwarf Transiting A Subgiant Star*. In: AJ **167**.3, 109 (2024), p. 109. arXiv: 2305.08836 [astro-ph.SR].
[135] Angelica Psaridi et al. *Discovery of two warm mini-Neptunes with contrasting densities orbiting the young K3V star TOI-815*. In: A&A **685**, A5 (2024), A5. arXiv: 2401.15709 [astro-ph.EP].
[134] Jack Schulte et al. *Migration and Evolution of giant ExoPlanets (MEEP). I. Nine Newly Confirmed Hot Jupiters from the TESS Mission*. In: AJ **168**.1, 32 (2024), p. 32. arXiv: 2401.05923 [astro-ph.EP].
[133] Ján ubjak et al. *Evolution of BD-14 3065b (TOI-4987b) from giant planet to brown dwarf as possible evidence of deuterium burning at old stellar ages*. In: A&A **688**, A120 (2024), A120. arXiv: 2403.12311 [astro-ph.EP].
[132] Evan Tey et al. *GJ 238 b: A 0.57 Earth Radius Planet Orbiting an M2.5 Dwarf Star at 15.2 pc*. In: AJ **167**.6, 283 (2024), p. 283. arXiv: 2407.18199 [astro-ph.EP].
[131] Pa Chia Thao et al. *TESS Hunt for Young and Maturing Exoplanets (THYME). X. A Two-planet System in the 210 Myr MELANGE-5 Association*. In: AJ **168**.1, 41 (2024), p. 41. arXiv: 2406.05234 [astro-ph.EP].
[130] M. Timmermans et al. *TOI-4336 A b: A temperate sub-Neptune ripe for atmospheric characterization in a nearby triple M-dwarf system*. In: A&A **687**, A48 (2024), A48. arXiv: 2404.12722 [astro-ph.EP].
[129] S. C. C. Barros et al. *The young mini-Neptune HD 207496b that is either a naked core or on the verge of becoming one*. In: A&A **673**, A4 (2023), A4. arXiv: 2303.03775 [astro-ph.EP].
[128] Rafael Brahm et al. *Three Long-period Transiting Giant Planets from TESS*. In: AJ **165**.6, 227 (2023), p. 227. arXiv: 2304.02139 [astro-ph.EP].
[127] M. Damasso et al. *A compact multi-planet system transiting HIP 29442 (TOI-469) discovered by TESS and ESPRESSO. Radial velocities lead to the detection of transits with low signal-to-noise ratio*. In: A&A **679**, A33 (2023), A33. arXiv: 2308.13310 [astro-ph.EP].
[126] H. J. Deeg et al. *TOI-1416: A system with a super-Earth planet with a 1.07 d period*. In: A&A **677**, A12 (2023), A12. arXiv: 2305.18542 [astro-ph.EP].
[125] D. del Ser et al. *TFAW survey II: six newly validated planets and 13 planet candidates from K2*. In: MNRAS **518**.1 (2023), pp. 669–690. arXiv: 2210.10805 [astro-ph.EP].
[124] Jan Eberhardt et al. *Three Warm Jupiters around Solar-analog Stars Detected with TESS*. In: AJ **166**.6, 271 (2023), p. 271. arXiv: 2402.17592 [astro-ph.EP].
[123] Mohammed El Mufti et al. *TOI 560: Two Transiting Planets Orbiting a K Dwarf Validated with iSHELL, PFS, and HIRES RVs*. In: AJ **165**.1, 10 (2023), p. 10.
[122] Ginger Frame et al. *TOI-2498 b: a hot bloated super-Neptune within the Neptune desert*. In: MNRAS **523**.1 (2023), pp. 1163–1174. arXiv: 2305.06950 [astro-ph.EP].
[121] J. Hagelberg et al. *TOI-858 B b: A hot Jupiter on a polar orbit in a loose binary*. In: A&A **679**, A70 (2023), A70. arXiv: 2309.11390 [astro-ph.EP].
[120] Mallory Harris et al. *Separated Twins or Just Siblings? A Multiplanet System around an M Dwarf Including a Cool Sub-Neptune*. In: ApJ **959**.1, L1 (2023), p. L1. arXiv: 2310.15118 [astro-ph.EP].
[119] Faith Hawthorn et al. *TOI-908: a planet at the edge of the Neptune desert transiting a G-type star*. In: MNRAS **524**.3 (2023), pp. 3877–3893. arXiv: 2306.09758 [astro-ph.EP].
[118] Alexis Heitzmann et al. *TOI-4562b: A Highly Eccentric Temperate Jupiter Analog Orbiting a Young Field Star*. In: AJ **165**.3, 121 (2023), p. 121. arXiv: 2208.10854 [astro-ph.EP].
[117] Xinyan Hua et al. *A Transiting Super-Earth in the Radius Valley and an Outer Planet Candidate Around HD 307842*. In: AJ **166**.1, 32 (2023), p. 32. arXiv: 2306.14655 [astro-ph.EP].
[116] Sz. Kálmán et al. *Discovery of a substellar companion in the TESS light curve of the δ Scuti/γ Doradus hybrid pulsator HD 31221*. In: A&A **673**, L14 (2023), p. L14. arXiv: 2305.04000 [astro-ph.EP].
[115] Zitao Lin et al. *Three low-mass companions around aged stars discovered by TESS*. In: MNRAS **523**.4 (2023), pp. 6162–6185. arXiv: 2210.13939 [astro-ph.SR].
[114] Christian Magliano et al. *A systematic validation of hot Neptunes in TESS data*. In: MNRAS **519**.1 (2023), pp. 1562–1577. arXiv: 2211.08490 [astro-ph.EP].
[113] Christopher R. Mann et al. *Giant Outer Transiting Exoplanet Mass (GOT 'EM) Survey. III. Recovery and Confirmation of a Temperate, Mildly Eccentric, Single-transit Jupiter Orbiting TOI-2010*. In: AJ **166**.6, 239 (2023), p. 239. arXiv: 2311.10232 [astro-ph.EP].
[112] Christopher Mann et al. *Validation of TOI-1221 b: A Warm Sub-Neptune Exhibiting Transit Timing Variations around a Sun-like Star*. In: AJ **165**.5, 217 (2023), p. 217. arXiv: 2209.13651 [astro-ph.EP].
[111] E. Martioli et al. *TOI-1736 and TOI-2141: Two systems including sub-Neptunes around solar analogs revealed by TESS and SOPHIE*. In: A&A **680**, A84 (2023), A84. arXiv: 2311.07011 [astro-ph.EP].
[110] Priyashkumar Mistry et al. *VaTEST. II. Statistical Validation of 11 TESS-detected Exoplanets Orbiting K-type Stars*. In: AJ **166**.1, 9 (2023), p. 9. arXiv: 2301.09865 [astro-ph.EP].
[109] Luca Naponiello et al. *A super-massive Neptune-sized planet*. In: Nature **622**.7982 (2023), pp. 255–260. arXiv: 2309.01464 [astro-ph.EP].
[108] Luca Naponiello et al. *Author Correction: A super-massive Neptune-sized planet*. In: Nature **623**.7986 (2023), E6–E6.
[107] Dominic Oddo et al. *Characterization of a Set of Small Planets with TESS and CHEOPS and an Analysis of Photometric Performance*. In: AJ **165**.3, 134 (2023), p. 134. arXiv: 2301.08162 [astro-ph.EP].
[106] H. P. Osborn et al. *Two warm Neptunes transiting HIP 9618 revealed by TESS and Cheops*. In: MNRAS **523**.2 (2023), pp. 3069–3089. arXiv: 2306.04450 [astro-ph.EP].

[105] Angelica Psaridi et al. *Three Saturn-mass planets transiting F-type stars revealed with TESS and HARPS. TOI-615b, TOI-622b, and TOI-2641b*. In: A&A **675**, A39 (2023), A39. arXiv: 2303.15080 [astro-ph.EP].
[104] Joseph E. Rodriguez et al. *Another shipment of six short-period giant planets from TESS*. In: MNRAS **521**.2 (2023), pp. 2765–2785. arXiv: 2205.05709 [astro-ph.EP].
[103] Lizhou Sha et al. *Correction to: TESS spots a mini-neptune interior to a hot saturn in the TOI-2000 system*. In: MNRAS **526**.2 (2023), pp. 2440–2440.
[102] Lizhou Sha et al. *TESS spots a mini-neptune interior to a hot saturn in the TOI-2000 system*. In: MNRAS **524**.1 (2023), pp. 1113–1138. arXiv: 2209.14396 [astro-ph.EP].
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[100] Benjamin M. Tofflemire et al. *A Low-mass, Pre-main-sequence Eclipsing Binary in the 40 Myr Columba Association-Fundamental Stellar Parameters and Modeling the Effect of Star Spots*. In: AJ **165**.2, 46 (2023), p. 46. arXiv: 2210.10789 [astro-ph.SR].
[99] A. Tuson et al. *TESS and CHEOPS discover two warm sub-Neptunes transiting the bright K-dwarf HD 15906*. In: MNRAS **523**.2 (2023), pp. 3090–3118. arXiv: 2306.04511 [astro-ph.EP].
[98] Noah Vowell et al. *HIP 33609 b: An Eccentric Brown Dwarf Transiting a V = 7.3 Rapidly Rotating B Star*. In: AJ **165**.6, 268 (2023), p. 268. arXiv: 2301.09663 [astro-ph.EP].
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[96] Samuel W. Yee et al. *The TESS Grand Unified Hot Jupiter Survey. II. Twenty New Giant Planets*. In: ApJS **265**.1, 1 (2023), p. 1. arXiv: 2210.15473 [astro-ph.EP].
[95] J. M. Almenara et al. *GJ 3090 b: one of the most favourable mini-Neptune for atmospheric characterisation*. In: A&A **665**, A91 (2022), A91. arXiv: 2207.14121 [astro-ph.EP].
[94] O. Barragán et al. *The young HD 73583 (TOI-560) planetary system: two 10-$M_\oplus$ mini-Neptunes transiting a 500-Myr-old, bright, and active K dwarf*. In: MNRAS **514**.2 (2022), pp. 1606–1627. arXiv: 2110.13069 [astro-ph.EP].
[93] Luca Cacciapuoti et al. *TESS discovery of a super-Earth and two sub-Neptunes orbiting the bright, nearby, Sun-like star HD 22946*. In: A&A **668**, A85 (2022), A85. arXiv: 2209.09597 [astro-ph.EP].
[92] Sam Christian et al. *A Possible Alignment Between the Orbits of Planetary Systems and their Visual Binary Companions*. In: AJ **163**.5, 207 (2022), p. 207. arXiv: 2202.00042 [astro-ph.EP].
[91] Jessie L. Christiansen et al. *Scaling K2. V. Statistical Validation of 60 New Exoplanets From K2 Campaigns 2-18*. In: AJ **163**.6, 244 (2022), p. 244. arXiv: 2203.02087 [astro-ph.EP].
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[87] Steven Giacalone et al. *Validation of 13 Hot and Potentially Terrestrial TESS Planets*. In: AJ **163**.2, 99 (2022), p. 99. arXiv: 2201.12661 [astro-ph.EP].
[86] Benjamin J. Hord et al. *The Discovery of a Planetary Companion Interior to Hot Jupiter WASP-132 b*. In: AJ **164**.1, 13 (2022), p. 13. arXiv: 2205.02501 [astro-ph.EP].
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[84] Carina M. Persson et al. *TOI-2196 b: Rare planet in the hot Neptune desert transiting a G-type star*. In: A&A **666**, A184 (2022), A184. arXiv: 2208.05797 [astro-ph.EP].
[83] Maıssa Salama et al. *An Adaptive Optics Census of Companions to Northern Stars Within 25 pc with Robo-AO*. In: AJ **163**.5, 200 (2022), p. 200. arXiv: 2203.11250 [astro-ph.SR].
[82] Luisa Maria Serrano et al. *A low-eccentricity migration pathway for a 13-h-period Earth analogue in a four-planet system*. In: Nature Astronomy **6** (2022), pp. 736–750. arXiv: 2204.13573 [astro-ph.EP].
[81] Sydney Vach et al. *TOI-712: A System of Adolescent Mini-Neptunes Extending to the Habitable Zone*. In: AJ **164**.2, 71 (2022), p. 71. arXiv: 2111.02416 [astro-ph.EP].
[80] Samuel W. Yee et al. *The TESS Grand Unified Hot Jupiter Survey. I. Ten TESS Planets*. In: AJ **164**.2, 70 (2022), p. 70. arXiv: 2205.09728 [astro-ph.EP].
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