Curriculum Vitae
Kathy L. Cooksey

Contact Information

Current Position: Associate Professor of Astronomy, University of Hawai'i at Hilo

Department of Physics & Astronomy
College of Natural & Health Sciences
200 West Kāwili Street, STB 219
Hilo, Hawai'i 96720-4091, USA

Phone: (808) 932-7195
Fax: (808) 932-7295
E-mail: kcooksey@hawaii.edu
Web: `http://www2.hawaii.edu/~kcooksey`

Education

Graduate

2003–2009, University of California, Santa Cruz
Ph.D. Astronomy & Astrophysics — August 2009
Probing the Chemical Composition of the $z < 1$ Intergalactic Medium with Observations and Simulations (advisor: Prof. J. Xavier Prochaska)
M.S. Astronomy & Astrophysics — June 2005
Characterizing the Low-redshift Intergalactic Medium towards PKS1302–102 (advisor: Prof. J. Xavier Prochaska)

Undergraduate

1999–2003, Valparaiso University, Indiana
B.S. Physics with Honors, *Summa Cum Laude* — May 2003
Senior Honors Thesis: *The Formation of Substellar Companions due to Protostellar Disk Instabilities: Modeling the Effects of the Gravitational Environment* (advisor: Prof. Brian K. Pickett)
Christ College Scholar (interdisciplinary humanities-based honors program)

Secondary

1996–1999, Beavercreek High School, Ohio
Diploma with Honors, Salutatorian (class of 520) — June 1999

Employment History

- Associate professor, University of Hawai'i, Hilo, 2018–present (tenured: 2019)
- Assistant professor, University of Hawai'i, Hilo, 2014–2018
- NSF Astronomy & Astrophysics Postdoctoral Fellow, MIT Kavli Institute, 2010–2013
  - Section Leader, 8.02t: "Physics II," MIT, spring 2011
- Postdoctoral Fellow for Prof. Robert Simcoe, Department of Physics, MIT, 2009–2010
- Graduate Student Researcher with Prof. J. Xavier Prochaska, Department of Astronomy & Astrophysics, UCSC, 2004–2009
  - Instructor, AY5: "Introductory Astronomy—The Formation and Evolution of the Universe," UCSC, summer 2008
  - Astronomy Lead Instructor (Cluster 7), California State Summer School for Mathematics and Science (COSMOS), UCSC, summers 2005–2007
  - Project Advisor (Cluster 7), COSMOS, UCSC, summer 2004
- Teaching Assistant, AY16: "Life in the Universe," UCSC, fall 2003
- Northeastern University Research Experiences for Undergraduates (REU), CERN, summer 2002
- Laser Interferometer Gravitational-wave Observatory REU, Caltech, summer 2001
- Cerro Tololo Inter-American Observatory REU, Chile, winter 2001
- VU Department of Physics and Astronomy research assistant, summer 2000

TEACHING EXPERIENCE

Undergraduate Mentoring:

10. *Kenji Emerson* (astronomy & physics major, UH Hilo): Stacking analysis of Si IV-selected absorption-line systems in SDSS DR7; funded through NSF AST-1615296 (summer) and Hawai'i/NASA Space Grant Consortium (HSGC) Fellowship (academic year): 2017–2018
9. *Tino Wells* (astronomy & physics major, UH Hilo): Classifying multi-ion absorption-line systems in SDSS DR7 with non-parametric clustering analysis; funded through NSF AST-1615296 (summer) and HSGC Fellowship (academic year): 2017–2018
8. *Kyle Cannoles* (BS Computer Science, UH Hilo class of 2017): Study of hierarchical clustering analysis for CS422: "Database Analytics"; spring 2017
7. *Chantelle Kiessner* (astronomy & physics major, UH Hilo): Analysis of high-resolution spectra, with `VPFIT` and `CLOUDY`, of strong C IV systems; funded through HSGC Traineeship; fall 2016
6. *Alex Hedglen* (BS Astronomy & BA Physics, UH Hilo class of 2016): Organizing and processing spectra of 30 galaxy-quasar pairs; funded through HSGC Traineeship (academic year); summer 2015–spring 2016
5. *Jasmin Silva* (BS Astronomy & BS physics, UH Hilo class of 2017): Stacking analysis of multi-ion absorption-line systems in SDSS DR7; funded through HSGC Fellowship (spring–fall 2015) and UH Hilo Seed Grant (summer); spring 2015–spring 2016
4. *Iosefa Trainer* (math major, UH Hilo): Classifying multi-ion absorption-line systems in SDSS DR7 with non-parametric clustering analysis; funded through UH Hilo Seed Grant; spring 2015
3. *Robert Ponga* (BA Physics & BS Astronomy, UH Hilo class of 2015): Analysis of high-resolution spectra, with `VPFIT` and `CLOUDY`, of strong C IV systems; funded as UCSC Jr. Specialist (summer 2014) and HSGC Fellowship (fall 2014); summer 2014–spring 2015
2. *Natalie Nagata* (physics major, UH Mānoa): Stacking analysis of absorption-line systems in SDSS DR7; funded/organized through Akamai Workforce Initiative Internship; summer 2014
1. *Eduardo Seyffert* (BS Aeronautical & Astronautical Engineering, MIT class of 2014): Survey for intergalactic Mg II absorbers in SDSS DR7 quasars; funded/organized through MIT Undergraduate Research Opportunity Program; 2011–2013
   - Publications: Matejek et al. 2013 (*ApJ*, 764, 9); Seyffert et al. 2013 (*ApJ*, 779, 161); and Gauthier et al. 2014 (*MNRAS*, 439, 342)

Academic Courses:[1]

- *Professor*, University of Hawai'i at Hilo
  1. ASTR110L: "General Astronomy Lab": lab component of the introductory astronomy for non-majors (S15: 17 students; F15: 21 and 15 students in 2 sections; S16: 17 and 13 in 2 sections)
  2. ASTR180: "Principles of Astronomy I": introductory astronomy course for majors, covering properties of light, astronomical observing, orbital mechanics, and solar system properties with group problem-solving active learning techniques (F14: 36 students; F15: 33; F16: 23)
  3. ASTR181: "Principles of Astronomy II": introductory astronomy course for majors, covering extragalactic astrophysics (e.g., stellar structure and evolution, formation and evolution of universe), using group problem-solving active-learning techniques (S14: 23 students; S15: 13; S16: 21; S17: 10)
  4. ASTR250: "Observational Astronomy": introduction to modern observational techniques: statistics, instruments, data processing, etc. (S15: 10 students; S16: 7; F17: 12; F18: 6)

[1] Numbering tally total number of courses taught at UH Hilo; they do not reflect chronological order.

5. ASTR260: "Computational Physics & Astronomy" (cross-listed w/PHYS260): introduction to scientific programming and numerical analysis (F15: 8 students; S17: 7)
6. ASTR260L: "Computational Physics & Astronomy Lab" (cross-listed w/PHYS260L): lab component of ASTR/PHYS260, focused on the computer-programming elements (S17: 7 students)
7. ASTR375: "Literature Review Practicum": writing-intensive, upper-division course where students read and synthesize, in writing, a current astronomy or physics topic (F14: 9 students)
8. ASTR394: "Spectroscopy in Astronomy": experimental upper-division course covering how spectroscopy is used in modern astronomical research (S14: 9 students)
9. ASTR495A/B: "Seminar": natural sciences senior seminar (cross-listed with CHEM, GEOL, MATH, and PHYS); presentations include guest lecturers and 495B participants (S14: 15/20 students; S17: 8/9)
10. ASTR399: "Directed Studies"
    - Advised student, Jennifer Solis, on an astrobiology literature review (S14)
    - Supervised student, Chantelle Kiessner, as ASTR110L lab assistant (S16)
11. PHYS170: "General Physics I": calculus-based introductory mechanics course (F17: 54 students, S19: 26, F19: 25)
12. PHYS170L: "General Physics I Lab": lab component of the introductory mechanics class (F14: 21 students; S15: 11, F18: 16; F19: 15)
13. PHYS170"R": "General Physics I" recitation (F16: 19 students; F17: 19; F18: 17; S19: 16; F19: 25)
14. PHYS171L/272L: "General Physics II Lab": lab component of the introductory electromagnetism class (F14: 16 students; F17: 11; S19: 10)
    [course-number change in F17]
15. PHYS171/272"R": "General Physics II" recitation (F16: 20 students; F17: 10 students)
    [course-number change in F17]
16. PHYS331: "Optics": upper-division physics course on optics, with focus on applications in astronomy (F14: 13 students; F16: 8; F18: 10)

- *Guest lecturer:*
  - "Is Science a Meritocracy?: Issues of Diversity & Equity," natural sciences senior seminar (ASTR/CHEM/GEOL/MATH/PHYS495A/B), UH Hilo, 19 Sep. 2014, 25 Sep. 2015, and 16 Sep. 2016
  - "The Universe in Absorption," Astronomy 101: "Techniques in Observational Astrophysics," Pomona College, CA, 20 November 2012
- *Section Leader:* 8.02t: "Physics II" (technology-enabled active learning version), MIT, spring 2011; instructor for one section of introduction to electromagnetism, content required for all MIT undergraduates ($\approx$50 students)
- *Instructor:* Astronomy 005: "Introductory Astronomy—The Formation and Evolution of the Universe," UCSC, summer 2008; 5-week introductory course for non-science majors (13 students)
- *Astronomy Lead Instructor:* Cluster 7: "Stars and Cells," California State Summer School for Mathematics and Science (COSMOS) at UCSC, 2007; month-long introductory course on astronomy, astrobiology, evolutionary biology, and paleontology for high-school students, focusing on inquiry-based teaching methods (17 students)
- *Astronomy Lead Instructor:* Cluster 7: "Stars, Sight, and Science," COSMOS at UCSC, 2005, 2006; month-long introductory course on astronomy and vision science for high-school students, focusing on inquiry-based teaching methods (15–17 students)
- *Teaching Assistant:* Astronomy 016: "Life in the Universe," UCSC, fall 2003, Laurence Doyle (instructor); introductory course for science majors ($\approx$50 students)

Innovative Teaching and Outreach:

- *Volunteer:*
  - Maunakea Astronomy Outreach Committee Annual AstroDay at local mall:
    - 4 May 2019: supported student-led Solar-System activity
    - 6 May 2017: organized and manned all-day "Ingredients of an Observatory" demonstrations (e.g., optical path, spectroscopy, infrared camera)
    - 30 April 2016: supported students leading astrobiology demonstration and telescopes
    - 2 May 2015: organized and manned all-day 6-in telescopes demonstration
    - 3 May 2014: organized and manned all-day "Color, Light, & Spectra" demonstration (e.g., gas emission tubes, spectroscopy)
  - Gemini Observatory "Journey through the Universe":
    - 5 Mar 2019: visited two $3^{\rm rd}$- and one $2^{\rm nd}$-grade classrooms to teach about galaxies, at Hilo Union Elementary School ($\approx$ 20–24 students each)
    - 14, 16 March 2017: visited one $2^{\rm nd}$- and four $6^{\rm th}$-grade classrooms to teach about galaxies, at Chiefess Kapi'olani Elementary School ($\approx$20 students), Hilo Union Elementary ($\approx$20), and Waiakea Intermediate School (three periods, $\approx$25–30 each)
    - 9, 10 March 2016: visited $2^{\rm nd}$-, $3^{\rm rd}$-, and $5^{\rm th}$-grade classrooms to teach about galaxies, at E. B. DeSilva Elementary School ($\approx$ 20 students), Chiefess Kapi'olani Elementary School ($\approx$20), and Waiakea Elementary School ($\approx$30), respectively
    - 3, 4 March 2015: visited $5^{\rm th}$-grade and $7^{\rm th}$-grade classrooms to teach about galaxies, at Ha'aheo Elementary ($\approx$30 students) and Waiakea Intermediate ($\approx$30), respectively
    - 11 March 2014: visited three kindergarten classrooms to teach about galaxies; two at Waiakea Elementary ($\approx$40 students total) and one at Ha'aheo Elementary ($\approx$30)
  - Ellison Onizuka Science Day at UH Hilo Campus Center:
    - 28 January 2017: interactive scale model of Solar System
    - 30 January 2016: demonstrated simple reflecting telescopes
    - 24 January 2015: answered questions and led activities for the Department of Physics & Astronomy table; activities included galaxy classification, solar observing, and angular momentum demonstration
    - 25 January 2014: *ibid.*
  - UH Hilo Women in STEM Conference "Work-Family-Life Balance" panelist, 12 February 2019
  - Upward Bound Program panelist with undergraduate researchers Emerson & Wells, UH Hilo, 5 July 2017
  - After-school `Python` programming class at Kamehameha High School, Kea'au, organized by Michelle Correia (chemistry and astronomy), fall 2015–spring 2016
  - Amelia Earhart Girls Engineering Day speaker, co-sponsored by Waiakea High Robotics Club and Hilo Zonta Club, 10 October 2015
  - "Labor Pains: Fighting for Women in Science" panelist, AAUW-Hilo & UH Hilo's Women's Studies co-sponsored event, 23 April 2015
  - Thirty Meter Telescope panelist, HawaiiCon 2014, 14 September 2014
  - Astronomy Open House @ MIT, 30 April 2011: demonstrated optical versus ultraviolet light with UV-sensitive beads; field questions from community
- *Discussion Leader:* Organized and led discussion on issues of imposter syndrome for MIT Department of Physics Diversity & Inclusion Luncheon series, December 2011
  - Described discussion in *SPECTRUM* (see Publications:Other)
  - MIT School of Science Infinite Kilometer Award 2012

- *Mentor:* MIT Office of Minority Education Mentor Advocate Partnership, 2011–2012; paired with freshman to assist her transition to undergraduate life
  - MAP "Titanium" Mentor Award 2012
- *Co-Facilitator:* "Three-kinds of Hands-on Learning" activity, ED212A: "Science Learning and Teaching in Elementary Classrooms," UCSC, January 2007, Jerome Shaw (instructor); teaching inquiry techniques to undergraduate education majors
- *Co-Facilitator:* "Color and Light Inquiry," physics/engineering lab, December 2004 & 2005, Maui Community College, Mark Hoffman (instructor); teaching properties of light and additive and subtractive color mixing with inquiry
- *Project Advisor:* "Stars, Sight, and Science," COSMOS at UCSC, 2004; small-group, inquiry-based project on variable stars (3 students)

PRESENTATIONS

Colloquia and Seminars:

18. "Precious Metals (or Lack Thereof) in SDSS Quasar Spectra," Galaxy Journal Club, Space Telescope Science Institute, Baltimore, MD, May 2017
17. "Designing Undergraduate Research Projects: A Case Study," IfA Mānoa Colloquium, 29 March 2017 (invited)
16. "Precious Metals (or Lack of) in SDSS Quasar Spectra," IfA Mānoa Colloquium, 8 April 2015 (invited)

- "Precious Metals in SDSS Quasar Spectra"
  15. Gemini Observatory North, 23 October 2014 (invited)
  14. Subaru Observatory, 4 August 2014 (invited)
  13. IfA Hilo Tech Talk, 29 January 2014 (invited)
  12. IfA Mānoa WEDGE, 22 April 2013
- "Tracking the Evolution of Strong, $1.5 < z < 4.5$ C IV Absorbers with Thousands of Systems"
  11. UC Irvine *Astrophysics Seminar*, January 2013
  10. Caltech *Tea Talk*, November 2012
  9. UCLA Journal Club, October 2012
  8. Carnegie Observatories, September 2012
  7. Leiden Observatory, August 2012 (invited)
  6. MPIA *Galaxy Coffee*, July 2012
  5. LERMA, Observatoire de Paris, July 2012
  4. Yale Center for Astronomy and Astrophysics, May 2012 (invited)
- "The Last Eight-Billion Years of Intergalactic C IV and Si IV Evolution"
  3. CTIO, 19 November 2010
  2. Brown University, 10 November 2010 (invited)
  1. Boston University, 1 November 2010 (invited)

Conferences and Symposia:

12. "Precious Metals (or Lack Thereof) in SDSS Quasar Spectra," *From Wall to Web*, Max Planck Institute for Astronomy, Berlin, Germany, July 2016 (invited)
11. "Precious Metals in SDSS QSOs: The Hunt for Intergalactic C IV in DR7," *MKI Postdoc Symposium*, MIT, April 2012

- "The Last Eight-Billion Years of Intergalactic C IV and Si IV Evolution"
  10. *Santa Cruz Galaxy Workshop 2011*, Santa Cruz, CA, August 2011

9. *The Cosmic Odyssey of the Baryons*, Marseilles, France, June 2011
8. *Gas in Galaxies: From Cosmic Web to Molecular Clouds*, Kloster Seeon, Germany, June 2011
7. *MKI Postdoc Symposium*, April 2011

6. "The Cosmic Enrichment Cycle: Probing the Galaxy-IGM Boundary," *MKI Postdoc Symposium*, MIT, March 2010
5. "The Last Eight-Billion Years of Intergalactic C IV Evolution," *The Chemical Enrichment of the Intergalactic Medium*, Leiden, the Netherlands, May 2009
4. "Metals in the Low-redshift Universe: From Galaxies to the Intergalactic Medium," *213th Meeting of the American Astronomical Society*, Long Beach, California, January 2009 (dissertation-year talk)
3. "Properties of Metal-line Absorption Systems and Their Neighboring Galaxies," *The Cosmic Odyssey of the Elements*, Aegina, Greece, June 2008
2. "Metal-Line System Survey: Characterizing the Low-z IGM," *Space Astronomy: The UV Window to the Universe*, El Escorial, Spain, May 2007
1. "Gravitational-wave Signal Simulation for LIGO," *16th National Conference of Undergraduate Research*, U. of Wisconsin–Whitewater, April 2002

Public Lectures:

5. "The Universe in Absorption," UH Hilo Faculty Lecture Series, 15 July 2015

- "Is Science a Meritocracy?: Issues of Diversity & Equity"
  4. American Association of Undergraduate Women, Hilo branch, 21 January 2015 (invited)
  3. UH Hilo Department of Physics & Astronomy, 23 October 2014
- "The Universe in Absorption"
  2. *The Universe Tonight* series, Maunakea Visitor Information Station, 4 October 2014
  1. *What Physicists Do* series, Sonoma State University, CA, 15 October 2012 (invited)

PUBLICATIONS

Refereed Articles:

26. Lehner, N., Wotta, C. B., Howk, J. C., O'Meara, J. M., Oppenheimer, B. D., and **Cooksey, K. L.** 2019. "The COS CGM Compendium (CCC). III: Metallicities and Physical Properties of the Cool Circumgalactic Medium at $z < 1$." arXiv:1902.10147 (*submitted to ApJ*).
25. Cooper, T. J., Simcoe, R. A., **Cooksey, K. L.**, et al. (*+5*) 2019. "Heavy Element Absorption Systems at $5.0 < z < 6.8$: Metal-Poor Neutral Gas and a Diminishing Signature of Highly Ionized Circumgalactic Matter." arXiv:1901.05980 (*submitted to ApJ*).
24. Chen, H.-W., Boettcher, E., Johnson, S. D., Zahedy, F. S., Rudie, G. C., **Cooksey, K. L.**, et al. (*+2*). "A Giant Intragroup Nebula Hosting a Damped Lyα Absorber at $z = 0.313$." *ApJL*, 878, 33.
23. Wotta, C. B., Lehner, N., Howk, J. C., O'Meara, J. M., Oppenheimer, B. D., and **Cooksey, K. L.** 2019. "The COS CGM Compendium (CCC). II: Metallicities of the Partial and Lyman Limit Systems at $z < 1$." *ApJ*, 872, 81.
22. Lehner, N., Wotta, C. B., Howk, J. C., O'Meara, J. M., Oppenheimer, B. D., and **Cooksey, K. L.** 2018. "The COS CGM Compendium (CCC). I: Survey Design and Initial Result." *ApJ*, 866, 33.
21. Rubin, K. H. R., O'Meara, J. M., **Cooksey, K. L.**, et al. (*+8*) 2018. "Andromeda's Parachute: A Bright Quadruply Lensed Quasar at $z = 2.377$." *ApJ*, 859, 146.
20. Chen, S.-F. S.,[†] Simcoe, R. A., Torrey, P., Bañados, E., **Cooksey, K. L.**, et al. (*+10*) 2017. "Mg II Absorption at $2 < z < 7$ with Magellan/FIRE, III: Full Statistics of Absorption towards 100 High-Redshift QSOs." *ApJ*, 850, 188.

[†]Undergraduate or post-baccalaureate student at time of publication.

19. Murphy, M. T. & **Cooksey, K. L.** 2017. "Subaru Telescope limits on cosmological variations in the fine-structure constant." *MNRAS*, 471, 4930.
    - Murphy, M. T. & **Cooksey, K. L.** "Subaru quasar spectra and absorption profile fits for limiting fine-structure constant variations," doi:10.5281/zenodo.574904.
18. Glidden, A.,† Cooper, T. J.,‡ **Cooksey, K. L.,** et al. (*+2*) 2016. "Predominantly Low Metallicities Measured in a Stratified Sample of Lyman Limit Systems at $z = 3.7$." *ApJ*, 833, 270.
17. Cooper, T. J.,‡ Simcoe, R. A., **Cooksey, K. L.**, et al. (*+2*), 2015. "The Incidence of Low-Metallicity Lyman-Limit Systems at $z \sim 3.5$: Implications for the Cold-Flow Hypothesis of Baryonic Accretion." *ApJ*, 812, 58.
16. Crighton, N. H. M., Hennawi, J. F., Simcoe, R. A., **Cooksey, K. L.**, et al. (*+4*) 2015. "Metal-enriched, Sub-kiloparsec Gas Clumps in the Circumgalactic Medium of a Faint $z = 2.5$ Galaxy." *MNRAS*, 446, 18.
15. Gauthier, J.-R., Chen, H.-W., **Cooksey, K. L.**, et al. (*+3*) 2014. "Halo Masses of Mg II absorbers at $z \sim 0.5$ from Sloan Digital Sky Survey Data Release 7." *MNRAS*, 439, 342.
14. Seyffert, E. N.,† **Cooksey, K. L.**, et al. (*+4*) 2013. "Precious Metals in SDSS Quasar Spectra II. Tracking the Evolution of Strong, $0.4 < z < 2.3$ Mg II Absorbers with Thousands of Systems." *ApJ*, 779, 161.
13. Cucchiara, A., Prochaska, J. X., Zhu, G., Ménard, B., Fynbo, J. P. U., Fox, D. B., Chen, H.-W., **Cooksey, K. L.**, et al. (*+9*) 2013. "An Independent Measurement of the Incidence of Mg II Absorbers along Gamma-Ray Burst Sightlines: the End of the Mystery?" *ApJ*, 773, 82.
12. Matejek, M. S.,‡ Simcoe, R. A., **Cooksey, K. L.**, et al. (*+1*) 2013. "Mg II Absorption at $2 < z < 6$ with Magellan/FIRE. II: A Longitudinal Study of H I, Metals, and Ionization in Galactic Haloes." *ApJ*, 764, 9.
11. **Cooksey, K. L.**, et al. (*+4*) 2013. "Precious Metals in SDSS Quasar Spectra I. Tracking the Evolution of Strong, $1.5 < z < 4.5$ C IV Absorbers with Thousands of Systems." *ApJ*, 763, 37.
10. Simcoe, R. A., Sullivan, P.,‡ **Cooksey, K. L.**, et al. (*+3*) 2012. "Extremely Metal-Poor Gas at a Redshift of $z = 7$." *Nature*, 492, 79.
9. Simcoe, R. A., **Cooksey, K. L.**, et al. (*+10*) 2011. "Constraints on the Universal C IV Mass Density at $z \sim 6$ from Early IR Spectra Obtained with the Magellan FIRE Spectrograph." *ApJ*, 743, 21.
8. Prochaska, J. X., Weiner, B., Chen, H.-W., Mulchaey, J. S., & **Cooksey, K. L.** 2011."Probing the IGM/Galaxy Connection V: Associating Galaxies and Their Local Environments with Lyα and O VI Absorption at $z < 0.2$." *ApJ*, 740, 91.
7. Prochaska, J. X., Weiner, B., Chen, H.-W., **Cooksey, K. L.** et al., (*+1*) 2011. "Probing the IGM/Galaxy Connection IV: The LCO/WFCCD Galaxy Survey of 20 Fields Surrounding UV Bright Quasars." *ApJS*, 193, 28.
6. **Cooksey, K. L.**, et al. (*+3*) 2011. "The Last Eight-Billion Years of Intergalactic Si IV Evolution." *ApJ*, 729, 87.
5. **Cooksey, K. L.**, et al. (*+3*) 2010. "The Last Eight-Billion Years of Intergalactic C IV Evolution." *ApJ*, 708, 868.
4. Lehner, N., Prochaska, J. X., Kobulnicky, H. A., **Cooksey, K. L.**,‡ et al. (*+3*) 2009. "The Connection Between a Lyman Limit System, a Very Strong O VI Absorber, and Galaxies at $z \sim 0.203$." *ApJ*, 694, 734.
3. **Cooksey, K. L.**,‡ et al. (*+4*) 2008. "Characterizing the Low-Redshift Intergalactic Medium towards PKS1302–102." *ApJ*, 676, 262.
2. Alcalá, J. M., Wachter, S., Covino, E., Sterzik, M. F., Durisen, R. H., Freyberg, M. J., Hoard, D. W., & **Cooksey, K.**‡ 2004. "Multi-wavelength Observations of the Star-forming Region in L1616." *A&A*,

‡Graduate student at time of publication.

516, 677.

1. Day, A., Layden, A. C., Hoard, D. W., Brammer, G.,† **Cooksey, K.**,† et al. (*+4*) 2002. "Light and Color Curves of Six Field RR Lyrae Variable Stars." *PASP*, 114, 645.

Monograph:

1. **Cooksey, K. L.**‡ 2009. "Probing the Chemical Composition of the $z < 1$ Intergalactic Medium with Observations and Simulations" (Ph.D. thesis): `http://guavanator.uhh.hawaii.edu/~kcooksey/MLSS/thesis_kcooksey_pub.pdf`.

Conference Proceedings:

4. **Cooksey, K. L.**, et al. (*+5*) 2010. "The CfAO's Astronomy Course in COSMOS: Curriculum Design, Rationale, and Application." *ASPCS*, 436, 381 (also arXiv:1011.0752).
3. Quan, T. K., Dorighi, K. M., & **Cooksey, K. L.** 2010. "Astrobiology: Identifying Bacteria from Extreme Environments." *ASPCS*, 436, 264.
2. **Cooksey, K. L.**‡ & Prochaska, J. X. 2008. "Metal-line System Survey: Characterizing the Low-redshift IGM." *Ap&SS*, 320, 31.
1. Alcalá, J. M., Covino, E., Wachter, S., Hoard, D. W., Sterzik, M. F., Durisen, R. H., Freyberg, M. J., & **Cooksey, K.**† 2003."X-ray and Optical Observations of NGC1788." *ASPCS*, 287, 140.

Other:

1. **Cooksey, K. L.** 2014. "I!mposter: Understanding, Discussing, and Overcoming Imposter Syndrome," *SPECTRUM*, the AAS Committee on the Status of Minorities in Astronomy newsletter, January, `https://csma.aas.org/sites/csma.aas.org/files/SPECTRUM/spectrum_Jan14.pdf`.

GRANTS and OBSERVING PROPOSALS[2]

19. Co-I, *HST* Cycle 26 (2018): "An NUV Legacy for Cosmic Ultraviolet Baryon Studies" (PI: H.-W. Chen; 138 orbits, *declined*)
18. Co-I, *HST* Cycle 26 (2018): "A Comprehensive Survey of the Multiphase Nature of the Circumgalactic Medium at $z < 1$" (PI: N. Lehner; AR-15634, archival)
17. **PI**, 2017 Cottrell Scholar Award by Research Corporation for Science Advancement, "Studying Evolution of Galaxies through Their Circumgalactic Gas, while Training Diverse STEM Professionals," pre-proposal (*accepted*), $100,000 award (*declined*)
16.+ **PI**, University of Hawai'i at Hilo observing time, semesters 2017A (1 n Keck I), 2017B (1 n Keck I), 2019B (1 n Keck II)
15.+ **PI**, University of Hawai'i observing time, semesters 2014B (2 n UH88, 3 n Subaru, 1.5 n Keck II), 2015A (2 n Keck II), 2015B (1 n Keck I), 2016A (1 n Keck I), 2016B (0.5 n Keck I, 0.5 n Keck II), 2017A (1 n Keck I, 2 n Keck II), 2018B (1 n Keck II)
14. Co-I, *HST* Cycle 25 (2017): "COS Ultraviolet Baryon Survey (CUBS)" (PI: H.-W. Chen; GO-15163; 145 orbits)
13. Surprise Grant from UH Hilo's College of Arts & Sciences Dean's Council, Spring 2017 (one of 10 $700 awards for research)
12. University of Hawai'i at Hilo Research Council Travel Award 2016 to *From Wall to Web* ($2200)
11. Co-I, *HST* Cycle 24 (2016): "Birth of the Col: Galaxies and their Neighborhoods Approaching the Epoch of Reionization" (PI: R. Simcoe; 20 orbits, *declined*)
10. Co-I, *HST* Cycle 24 (2016): "COS Ultraviolet Baryon Explorer (COS UBER)" (PI: H.-W. Chen; 359 orbits, *declined*)

[2]Items numbered with a plus (+) indicate multiple semesters of successful observing proposals.

- **PI**, National Science Foundation Astrophysics Research Grant (AAG 12-589) through Research in Undergraduate Institutions (RUI 14-579): "RUI/AAG—Precious Metals in SDSS Quasar Spectra: Observing Galaxy Evolution in Absorption"
  9. 2015: AST-1615296; 4 yr (2016–2020), $138,300 (Excellent and Excellent/Very Good preliminary ratings)
  8. 2014: 3 yr, $195,518; *declined* (Excellent and Very Good)

7. **PI**, University of Hawai'i at Hilo Seed Money Grant (2014): "Observing Galaxy Evolution in Absorption" (1 yr, $11,565)
6. Co-I, *HST* Cycle 21 (2013): "The Structure of Mg II Absorbing Galaxies at $z = 2$: Linking CGM Physics and Stellar Morphology During Galaxy Assembly" (PI: R. Simcoe; GO-13303; 27 orbits)
5. Co-I, *HST* Cycle 19 (2011): "Probing the Warm-Hot Intergalactic Medium using Weak, Distributed Metal Absorption" (PI: M. Pieri; AR-12643)
4.$^+$ **PI**, Magellan Clay 6.5-m Telescope, semesters 2009B (3 n), 2010A (2 n), 2010B (2.25 n), 2011A (2.7 n), 2012A (24 hr), 2012B (8 hr), 2013A (2 n)
3.$^+$ Co-I, Magellan Baade & Clay 6.5-m Telescopes, semesters 2010B (8.5 n), 2012A (8 n), 2013A (2 n)

- **PI**, National Science Foundation Astronomy & Astrophysics Postdoctoral Fellowship (NSF 08-581): "Seeking the Lost Interstellar Medium of Red-Sequence Galaxies"
  2. 2009: AST-1003139; 3 yr (2010–2013), $253,000 (Excellent and Good preliminary ratings)
  1. 2008: 3 yr, $249,000; *declined* (two Very Good's)

SERVICE

- Department Chair, UH Hilo: 2019–2020
- Department of Physics & Astronomy hiring committee, UH Hilo: 2016 (job #83815; successful); 2018 (job #86382; position cancelled mid-search)
- Department of Physics & Astronomy representative to CAS→CNHS Transition Team, 2017–2018
- Akamai Workforce Initiative Internship Program Selection Committee expert reviewer, 2017
- Optical/Infrared/Submillimeter Time Allocation Committee, University of Hawai'i: 2015–2018
- *The Astrophysical Journal* referee: 2011 (1 article), 2012 (1), 2016 (1), 2017 (1)
- National Science Foundation proposal-review panelist: 2013 (2 panels); 2014 (1); 2016 (1); 2017 (1)
- *Hubble Space Telescope* proposal-review panelist: Cycles 19 (2011); 21 (2013); 22 (2014); 24 (2016; external reviewer); 27 (2019)
- University of Hawai'i at Hilo Seed Money Grant proposal reviewer: 2015
- *The Astrophysical Journal Supplement* referee: 2015 (1 article)
- Kavli in Astrophysics Symposium delegate for MIT Kavli Institute, 15–18 July 2012, Kavli Royal Society International Centre at Chicheley Hall, UK
- NSF Astronomy & Astrophysics Postdoctoral Fellows Symposium co-organizer, 7–8 January 2012, Austin, TX
- MIT Kavli Institute morning coffee founder and organizer, 2010–2012
- MIT Kavli Institute Postdoc Symposium co-organizer, 13–15 April 2011

PROFESSIONAL DEVELOPMENT

- Physics and Astronomy New Faculty Workshop, 23–26 June 2014: training in active-learning techniques, with attention to education research; organized by American Association of Physics Teachers
- ISEE/Akamai Mentor Workshop, 25–26 April 2014: develop plan for projects and learn/discuss mentoring-related issues in preparation for Akamai Workforce Initiative interns; organized Institute for Scientist and Engineer Educators, UC Santa Cruz

- Summer School in Statistics for Astronomers VIII, 4–8 June 2012: overview of statistics as applied in astronomy, with hands-on training in `R` statistics software; organized by Center for Astrostatistics, Pennsylvania State University
- Center for Adaptive Optics Professional Development Workshop, 2004–2008; trained in inquiry-based teaching methods, assumed advanced roles in 2005–2008 to help teach other participants; organized by (now) ISEE, UC Santa Cruz
- Heidelberg Summer School on the Interstellar Medium, 25–29 September 2006: series of lectures and training activities pertaining to research in the gas in galaxies; organized by International Max Planck Research School for Astronomy and Cosmic Physics, University of Heidelberg

---

PROFESSIONAL ASSOCIATIONS

- American Astronomical Society: junior member 2001–2013; full 2014–present
- Delta Epsilon Iota Academic Honor Society, 2002–present