

A-8 Faculty CV

CURRICULUM VITÆ

Philippe Binder

Current position (since 2008): Professor of Physics, with tenure
(since 2015): Lead Faculty, Energy Science program

Address: College of Agriculture, Forestry and Natural Resource Management
University of Hawaii at Hilo
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Education

B.S. in Mechanical Engineering (High Distinction), University of Virginia
B.S. in Astronomy, University of Hawaii at Hilo
M.A. in Liberal Arts, St. John's College at Santa Fe
Ph.D. in Applied Physics, Yale University

Funding at UH Hilo

-Determinism tests and external forcing in chaotic systems, Research Corporation, Cottrell College Science Award CC5885, 2003-2008 (\$36,200, PI).
-Effects of invasive species, human activities and climate change on Hawaii, NSF EPSCoR Grant EPS-0903833, 2009-2014 (\$20,000,000 approx., Senior Personnel)
-Knowledge extraction from massive graphs, Spanish Center for Technological and Industrial Development (CDTI), through InnoQuant Analytics LLC, 2016 (\$16,900, PI)

Professional Employment

Postdoctoral Research Fellow, University of Oxford, UK, 1990-1993
Physics Faculty, Universidad de Los Andes, Bogotá, Colombia, 1995-2001
Physics Faculty, University of Hawaii at Hilo, 2001-present

Other professional experience

Member of the Editorial Board, *Complexity*, 1996-1997
Referee for *Physical Review/Letters*, 1995-present
Referee for *American Journal of Physics*, 1999-present
Referee for *CHAOS*, 2001-present
External Evaluator, Colombian Accreditation Board for Universities (CNA), 2000-2001

Distinctions:

Biographee, *Who's Who in America*, since 2007
Biographee, *Who's Who in the World*, since 2008

Named species: *Neostrengeria binderi* (fresh-water crab)

Chancellor's Award for Excellence in Scholarly/Creative Activities (UH Hilo), 2009
Taniguchi Award for Excellence in Innovation (UH Hilo) for work on 3-dimensional visualization, 2013

Visiting Positions

Graduate Student, Center for Nonlinear Studies, Los Alamos National Laboratory, 1986-1989
Visiting Professor, Department of Physics, American University in Cairo (Egypt), 1989
Visiting Scientist, INPE (Brazilian National Institute for Space Research), 1997
Visiting Faculty, Department of Physics, University of Washington at Seattle, 2000
Visiting Colleague, Department of Physics, University of Hawaii at Manoa, ongoing since 2003
Faculty Scholar, Kavli Institute for Theoretical Physics, U. of California, Santa Barbara, 2006
Visiting Professor, Center for Nonlinear Dynamics, University of Texas, Austin, 2008
Visiting Professor, Department of Physics, University of Cape Town (South Africa), 2015

Teaching

University of Oxford (Tutor at St. Hilda's and Magdalen Colleges) 1990-1992:
Solid-State Physics; Theory Option: classical, quantum and statistical mechanics; Foundations of Special Relativity; Philosophy of Quantum Theory.

Universidad de Los Andes, 1995-2001:
Four-semester calculus-based physics sequence; Two-semester algebra-based physics sequence; Physics for biology, Physics for industrial design, Physics Laboratory 1 and 2; Thermal physics; Statistical mechanics; Mathematical methods; Computational physics; Electromagnetism; Contemporary philosophy of science; Intermediate laboratory (one 4-week module); Chaos for science majors; Chaos as a general elective.

University of Hawaii at Hilo, 2001-present (Boldface: courses I introduced.)
Physics for the Liberal Arts, **Conceptual Quantum Mechanics**, Physics 1-2 (algebra-based); Physics 1-2 (calculus-based); Experimental Physics 1-2; Modern Physics; Classical Mechanics; Quantum Mechanics 1-2; Thermodynamics; Electromagnetism; **Chaos; Mathematical Physics**; Optics, **Foundations of Quantum Theory**, Computational Astronomy and Physics, **Electronics**, **Foundations of Statistical Physics**; General Astronomy Laboratory; Archaeoastronomy Seminar, **Introduction to Energy Science**.

Research Supervision

Peer-reviewed articles published with 11 undergraduate students at Universidad de Los Andes, and 30 undergraduates and one post-doctoral fellow at the University of Hawaii. Former research advisees have enrolled in graduate programs at U. of Bonn (Germany), Duke, École Nationale des Sciences Géographiques (France), Florida State, Georgia Tech, Harvard, **U. of Hawaii at Manoa**, London School of Economics, MIT, Michigan, **Missouri**, New York University, U. of Oldenburg (Germany), **Penn State**, **U. of Texas**, U. of Toronto, **U. of Washington** and **Virginia Commonwealth** (boldface correspond to UH Hilo students).

Administrative Experience

University of Hawaii:

Faculty Search Committees (multiple); Member of UH Hilo Faculty Congress (8 semesters) and of the Congress Executive Committee, General Education Standing Committee (chaired); Division Personnel and Tenure and Promotion Review Committees (multiple), and a Campus Awards Committee (chaired). Physics & Astronomy department chair for a total of 8 semesters.

Other Department Service

2005: Single-handedly prepared Physics Program Review for WASC. Document was approved unanimously by the department before submission.

2007: Administered the Major Field Test in Physics and produced a report for the department and the administration.

2013-2014: Led a 3-person team for 15-months to upgrade the Intro Physics Lab curriculum. More than half of 22 experiments were replaced or improved for better alignment with lecture topics, manuals were rewritten for clarity and more accurate physics content, almost 50 introductory videos were produced to avoid lengthy pre-lab lectures and to illustrate procedures on demand, several innovations resulted in publications (4 so far, two more conditionally accepted) and two team members (other than myself) won Taniguchi Awards.

2013-2014: Chaired a curriculum committee for the physics program that established learning outcomes for every required physics course in the major. The document was approved for subsequent use by the physics and astronomy department. Recommendations were made for the creation of two new courses in the major. These were not adopted by the department.

Multiple dates: Conducted several Physics GRE diagnostic, review and practice sessions for our graduating seniors or recent graduates, lasting between 2 and 6 months each.

Leadership Training

University of Hawaii Presidential Emerging Leaders Program, 2009-2010

Event organization

-Organizer, One-day International Workshop on Complex Systems, January 25th, 2000: 40 participants (held in Bogotá, Colombia)

-Program Committee, International Conference on Complex Systems: 2002, 2004, 2007 and 2011; Session Chair in 2007 and 2011 (held in Quincy, MA)

-Program Committee and Session Chair, Latin American Workshop on Nonlinear Phenomena XIV, 2015 (held in Cartagena, Colombia)

Research Interests

Nonlinear dynamics; Statistical mechanics; Complex systems; Time series analysis; Computational theory of physical processes; Biologically-inspired physics; Physics Education.

Media coverage (excluding local press)

J. Rehmeyer, *A frustrating view of complexity*. Science News (Math Trek column), <https://www.sciencenews.org/article/frustrating-view-complexity>, October 2008.

T. Phillips, *The diagonalization of physics*. Math in the Media (an American Mathematical Society web page), <http://www.ams.org/news/math-in-the-media/mmarc-11-2008-media#two>, November 2008.

E. DeMarco. *How do giraffes drink water?* Inside Science: insidescience.org/content/how-do-giraffes-drink-water/3616, February 2016; also posted as *How do giraffes defy gravity?* http://www.realclearscience.com/articles/2016/02/02/how_do_giraffes_defy_gravity_109528.html, February 2016

C. Clark, *How giraffes drink*. Etosha National Park (Namibia) News, <http://www.etoshanationalpark.org/news/how-giraffes-drink>, February 2016.

Book

P.-M. Binder and K. Smith (Editors). *The Language Phenomenon: Human Communication from Milliseconds to Millennia*. Heidelberg: Springer, 2013. ISBN 978-3-642-36085-5 (over 11,000 chapter downloads).

Journal Covers

The Physics Teacher: December 2015 (based on * below)

European Journal of Physics: September 2016 (based on § below)

Indexed Publications

70+ articles indexed in ISI Web of Science.

Selected peer-reviewed articles:***Most influential papers, prior to joining UH Hilo***

P.M. Binder and R.V. Jensen, "Simulating chaotic behavior with finite-state machines", *Physical Review A* 34, 4460-3 (1986).

M.H. Ernst, G.A. van Velzen and P.M. Binder, "Breakdown of the Boltzmann equation in cellular-automata lattice gases", *Physical Review A* 39, 4327-9 (1989).

P.M. Binder, A.L. Owczarek, A.R. Veal and J.M. Yeomans, "Collapse transition in a simple polymer model: exact results", *Journal of Physics A* 23, L975-9 (1990).

P.M. Binder, "Limit cycles in a quadratic discrete iteration", *Physica D* 57, 31-8 (1992).

P.M. Binder and V. Privman, "Second-order dynamics in the collective temporal evolution of complex systems", *Physical Review Letters* 68, 3830-3 (1992).

P.M. Binder and N. Perry, "Comment II on 'Simple measure for complexity' ", *Physical Review E* 62, 2998-9 (2000). doi: 10.1103/PhysRevE.62.2998

Papers with undergraduate co-authors, prior to joining UH Hilo

P.M. Binder and D.H. Campos, "Direct calculation of invariant measures for chaotic maps", *Physical Review E* 53, R4259-62 (1996). doi: 10.1103/PhysRevE.56.2276

P.M. Binder and J.F. Jaramillo, "Stabilization of coherent oscillations in spatially extended dynamical systems", *Physical Review E* 56, 2276-8 (1997). <http://dx.doi.org/10.1103/PhysRevE.56.2276>

P.M. Binder and J.C. Idrobo, "Invertibility of dynamical systems in granular phase space", *Physical Review E* 58, 7987-9 (1998). doi: 10.1103/PhysRevE.58.7987

P.M. Binder and D. Laverde, "Observation of structure in the Lorenz map", *Chaos* 9, 206-7 (1999). doi: 10.1063/1.166391

N. Perry and P.M. Binder, "Finite statistical complexity for sofic systems", *Physical Review E* 60, 459-63 (1999). doi: 10.1103/PhysRevE.60.459

P.M. Binder, P. Sinisterra and F. Esguerra, "The five-legged table", *The Physics Teacher* 37, 360 (1999). doi: 10.1119/1.880319

P.M. Binder, J.M. Pedraza and S. Garzón, “An invertibility paradox”, American Journal of Physics 67, 1091-3 (1999). doi: 10.1119/1.19087

P.M. Binder and J.A. Plazas, “Multiscale analysis of complex systems”, Physical Review E 63, 065203(R) (2001). doi: 10.1103/PhysRevE.63.065203.

P.M. Binder and C.A. Wilches, “Absence of determinism in El Niño Southern Oscillation”, Physical Review E 65, 055207(R) (2002). doi: 10.1103/PhysRevE.65.055207.

Most influential papers written at UH Hilo without student co-authors

P.M. Binder, “Frustration in Complexity”, Science 320, 322-323 (2008). doi: 10.1126/science.1156940

P.M. Binder, “Theories of almost everything”, Nature 455, 884-885 (2008). doi: 10.1038/455884a

P.M. Binder, “Reflections on a wall of light”, Science 332, 1334-1335 (2008). doi: 10.1126/science.1166681

P.M. Binder, “The edge of reductionism”, Nature 459, 332-334 (2009). doi: 10.1038/459332a

P.M. Binder and A. Danchin, “Life’s demons: Information and order in biology”, EMBO Reports 12, 495-499 (2011). doi:10.1038/embor.2011.83

*P.M. Binder and D.L. Taylor, “How giraffes drink”, The Physics Teacher, 53, 518-520 (2015). doi: 10.1119/1.4935758

P.M. Binder and G.F.R. Ellis, “Nature, Computation and Complexity”, Physica Scripta 91, 064004 (2016). doi:10.1088/0031-8949/91/6/064004

Papers written at UH Hilo with undergraduate co-authors (as primary advisor)

P.M. Binder and N.H. Okamoto, “Unstable periodic orbits and discretization cycles”, Physical Review E, 68, 046206 (2003). doi: 10.1103/PhysRevE.68.046206

P.M. Binder, M. Iaukea-Lum and N.G. Purves, “The Poynting-Robertson effect”, The Physics Teacher 42 (1) 119-121 (2004). doi: 10.1119/1.1646489.

P.M. Binder, R. Igarashi, W. Seymour and C. Takeishi, “Determinism test for very short time series”, Physical Review E 71, 036219 (2005). doi: 10.1103/PhysRevE.71.036219.

P.M. Binder, I.J. Crosson and R.R. Cadmus Jr., “Dynamics and forecasting of two chaotic stars”, *Astrophysical Journal Letters* 685, L145-L148 (2008). doi: 10.1086/592745

I.J. Crosson and P.-M. Binder, “Chaos-based forecasting of sunspot cycle 24”, *Journal of Geophysical Research* 114, A01108 (2009); doi:10.1029/2008JA013859.

B.D. Wissman, L.C. MacKay-Jones and P.M. Binder, “Entropy rate estimates from mutual information”, *Physical Review E* 84, 046204 (2011). doi: 10.1103/PhysRevE.84.046204

A. Richert and P.M. Binder, “Siphons, revisited”, *The Physics Teacher* 49 (2) 78-80 (2011). doi: 10.1119/1.3543576.

P.M. Binder and I.M. Cunnyngham, “The shadow knows: Inferring the density distribution of a nonuniform medium from its standing wave pattern,” *The Physics Teacher* 50 (5), 266 (2012). doi: 10.1119/1.3703538.

P.M. Binder and C.K.S. Tanoue, “Variations on the zilch cycle,” *The Physics Teacher* 51 (7), 434-436 (2013). doi: 10.1119/1.4820862.

P.M. Binder and R.M. Pipes, “How chaos forgets and remembers”, *Nature* 510, 343-344 (2014). doi:10.1038/510343a

§P.M. Binder, R.M. Figueroa-Centeno, K.J. Hui and K.M. Schlechter, “High-density electric potential plots”, *European Journal of Physics* 36, 035029 (2015). doi:10.1088/0143-0807/36/3/035029

P.M. Binder and M.A. Magowan, “The buoyancy approach to U-tube problems”, *The Physics Teacher*, 54, 106-107 (2016). doi: 10.1119/1.4940175

P.M. Binder, A.L. Grace, K.J. Hui and R.K. Loving, “Magnetic field in the plane of a physical dipole”, *European Journal of Physics* 37, 045203 (2016). doi:10.1088/0143-0807/37/4/045203

P.M. Binder, F. Cross and J.K. Silva, “Forces and torques between nonintersecting straight currents”, *European Journal of Physics* 37, 045206 (2016). doi:10.1088/0143-0807/37/4/045206

P.M. Binder, E.M. Holub, M.F. Roberts and V.K. Wasser, “Faraday induction when a loop grazes a magnet”, *Physics Education* 51, 043004 (2016). doi:10.1088/0031-9120/51/4/043004

P.M. Binder and J.F. Guerrero, “Theory of grazing electromagnetic induction”, *European Journal of Physics* (conditionally accepted).

P.M. Binder, R.B. Tate and C.K. Crowder, “Which dipole are you studying in lab?”, *European Journal of Physics* (conditionally accepted).

Papers written at UH Hilo with undergraduate co-authors (not as primary advisor)

A. Baran *et al.* (31 authors including P.M. Binder, A. Dye, J. Stevick, S. Stewart and D. Terry), “The pulsating hot subdwarf Balloon 090100001: results of the 2005 multisite campaign”, *Monthly Notices of the Royal Astronomical Society* 392, 1092-1105 (2009). doi: 10.1111/j.1365-2966.2008.14024.x

J.L. Provencal *et al.* (55 authors including P.M. Binder and R. Knight), “2006 Whole Earth Telescope observations of GD358: A new look at the prototype DBV”, *Astrophysical Journal* 693, 564-585 (2009). doi: 10.1088/0004-637X/693/1/564

M.D. Reed *et al.* (61 authors including P.M. Binder, D. Terry, R. Avila, B. Berkey, S. Stewart and D. Bolton), “Whole Earth Telescope observations of the subdwarf B star KPD 1930+2752: A rich, short-period pulsator in a close binary,” *Monthly Notices of the Royal Astronomical Society* 412, 371-390 (2011). doi: 10.1111/j.1365-2966.2010.17912.x.

Recent Presentations in International Meetings

Scenarios for the Future of a Remote Island (with M. Kimura, post-doctoral fellow). *Frontiers in Computational Physics: Modeling the Earth System*. Boulder, CO, December 2012.

Simulations of Societal Collapse in the Island of Hawaii (with M. Kimura, post-doctoral fellow). Tenth International Conference on Environmental, Cultural, Economic and Social Sustainability. Split, Croatia, January 2014.

A Survey of Complexity: Computability, Frustration and Representation. XIV Latin American Workshop on Nonlinear Phenomena. Cartagena, Colombia, September 2015 (Inaugural PlenaryTalk).

CURRICULUM VITAE
KATHY L. COOKSEY

CONTACT INFORMATION**Current Position:** Assistant Professor of Astronomy, University of Hawai'i at Hilo

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Web: <http://www2.hawaii.edu/~kcooksey>**EDUCATION**

Graduate	2003–2009, University of California, Santa Cruz	
	Ph.D. Astronomy & Astrophysics	August 2009
	<i>Probing the Chemical Composition of the $z < 1$ Intergalactic Medium with Observations and Simulations</i> (advisor: Dr. J. Xavier Prochaska)	
Graduate	M.S. Astronomy & Astrophysics	June 2005
	<i>Characterizing the Low-redshift Intergalactic Medium towards PKS1302–102</i> (advisor: Dr. J. Xavier Prochaska)	
Undergraduate	1999–2003, Valparaiso University, Indiana	
	B.S. Physics with Honors, <i>Summa Cum Laude</i>	May 2003
	Senior Honors Thesis: <i>The Formation of Substellar Companions due to Protostellar Disk Instabilities: Modeling the Effects of the Gravitational Environment</i> (advisor: Dr. Brian K. Pickett)	
	Christ College Scholar (interdisciplinary humanities-based honors program)	
High School	1995–1999, Beaver Creek High School, Ohio	
	Diploma with Honors, Salutatorian	June 1999

EMPLOYMENT HISTORY

- Assistant professor, Department of Physics & Astronomy, University of Hawai'i, Hilo, 2014–present
- National Science Foundation 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. 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

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TEACHING EXPERIENCE**Undergraduate Mentoring:**

- *Alex Hedglen* (astronomy & physics major, UH Hilo): Organizing and processing spectra of 30 galaxy-quasar pairs; funded through HSGC Traineeship (academic year); summer 2015–spring 2016
- *Jasmin Silva* (astronomy & physics major, UH Hilo): Stacking analysis of multi-ion absorption-line systems in SDSS DR7; funded through Hawai‘i/NASA Space Grant Consortium (HSGC) Fellowship (spring–fall 2015) and UH Hilo Seed Grant (summer); spring 2015–spring 2016
- *Iosefa Trainer* (math & astronomy 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
- *Robert Ponga* (BA Physics & BS Astronomy, UH Hilo class of 2015): Analysis of high-resolution spectra, with VPFIT and CLOUDY, of strong CIV systems; funded as UCSC Jr. Specialist (summer 2014) and HSGC Fellowship (fall 2014); summer 2014–spring 2015
- *Natalie Nagata* (physics major, UH Mānoa): Stacking analysis of absorption-line systems in SDSS DR7; funded/organized through Akamai Workforce Initiative Internship; summer 2014
- *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:

- *Assistant Professor*, University of Hawai‘i at Hilo
 - ASTR110L: “General Astronomy Lab”: lab component of the introductory astronomy for non-majors (S15: 17 students; F16: 22 and 15 students in 2 sections; S16: 17 and 13 in 2 sections)
 - 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: 15)
 - 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)
 - ASTR250: “Observational Astronomy”: introduction to modern observational techniques: statistics, instruments, data processing, etc. (S15: 10 students; S16: 7)
 - ASTR260: “Computational Physics & Astronomy”: introduction to scientific programming and numerical analysis (F15: 8 students)
 - 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)
 - ASTR394: “Spectroscopy in Astronomy”: experimental upper-division course covering how spectroscopy is used in modern astronomical research (S14: 9 students)
 - 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)
 - ASTR399: “Directed Studies”: advised the student, Jennifer Solis, on an astrobiology literature review (S14)
 - PHYS170L: “General Physics I Lab”: lab component of the introductory mechanics class (F14: 21 students; S15: 11)

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- PHYS170: “General Physics I” recitation (F16: 20 students)
- PHYS171L: “General Physics II Lab”: lab component of the introductory electromagnetism class (F14: 16 students)
- PHYS171: “General Physics II” recitation (F16: 20 students)
- PHYS331: “Optics”: upper-division physics course on optics, with focus on applications in astronomy (F14: 13 students; F16: 6)
- *Guest lecturer:*
 - “Is Science a Meritocracy?: Issues of Diversity & Equity,” natural sciences senior seminar (ASTR/CHEM/GEOL/MATH/PHYS495A/B), UH Hilo, 19 September 2014 and 25 September 2015
 - “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 (≈ 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 (≈ 50 students)

Innovative Teaching & Outreach:

- *Volunteer:*
 - 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
 - Maunakea Astronomy Outreach Committee Annual AstroDay:
 - * 30 April 2016: supported students leading astrobiology demonstration and telescopes
 - * 2 May 2015: organized and manned all-day Telescopes demonstration at Prince Kuhio Plaza
 - * 3 May 2014: organized and manned all-day Color, Light, & Spectra demonstration at Prince Kuhio Plaza
 - Gemini Observatory “Journey through the Universe”
 - * 9, 10 March 2016: visited 2nd, 3rd, and 5th-grade classrooms to teach about galaxies, at E. B. DeSilva Elementary School (≈ 20 students), Chiefess Kapi’olani Elementary School (≈ 20), and Waiakea Elementary School (≈ 30), respectively
 - * 3, 4 March 2015: visited 5th-grade and 7th-grade classrooms to teach about galaxies, at Ha’aheo Elementary (≈ 30 students) and Waiakea Intermediate (≈ 30), respectively

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- * 11 March 2014: visited three kindergarten classrooms to teach about galaxies; two at Waiakea Elementary (≈ 40 students total) and one at Ha'aheo Elementary (≈ 30)
- Ellison Onizuka Science Day
 - * 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.*
- Astronomy Open House @ MIT, 30 April 2011: demonstrate 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:

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, $1.5 < z < 4.5$ CIV 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 CIV and Si IV Evolution”
 3. CTIO, 19 November 2010

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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, Mauna Kea Visitor Information Station, 4 October 2014
 1. *What Physicists Do* series, Sonoma State University, CA, 15 October 2012 (invited)

PUBLICATIONS**Refereed Articles:**

18. Glidden, A.,* Cooper, T. J.,[†] **Cooksey, K. L.** + 2. “Predominantly Low Metallicities Measured in a Stratified Sample of Lyman Limit Systems at $z = 3.7$,” 2016, *submitted to ApJ*, arXiv:1604.02144
17. Cooper, T. J.,[†] Simcoe, R. A., **Cooksey, K. L.** + 2. “The Incidence of Low-Metallicity Lyman-Limit Systems at $z \sim 3.5$: Implications for the Cold-Flow Hypothesis of Baryonic Accretion,” 2015, *ApJ*, 812, 58
16. Crighton, N. H. M., Hennawi, J. F., Simcoe, R. A., **Cooksey, K. L.** + 4. “Metal-enriched, Sub-kiloparsec Gas Clumps in the Circumgalactic Medium of a Faint $z = 2.5$ Galaxy,” 2015, *MNRAS*, 446, 18

*Undergraduate student at time of publication.

[†]Graduate student at time of publication.

CURRICULUM VITAE — KATHY L. COOKSEY

15. Gauthier, J.-R., Chen, H.-W., **Cooksey, K. L.** + 3. “Halo Masses of Mg II absorbers at $z \sim 0.5$ from Sloan Digital Sky Survey Data Release 7,” 2014, *MNRAS*, 439, 342
14. Seyffert, E. N.,* **Cooksey, K. L.** + 4. “Precious Metals in SDSS Quasar Spectra II. Tracking the Evolution of Strong, $0.4 < z < 2.3$ Mg II Absorbers with Thousands of Systems,” 2013, *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.** + 9. “An Independent Measurement of the Incidence of Mg II Absorbers along Gamma-Ray Burst Sightlines: the End of the Mystery?” 2013, *ApJ*, 773, 82
12. Matejek, M. S.,† Simcoe, R. A., **Cooksey, K. L.** + 1. “Mg II Absorption at $2 < z < 6$ with Magellan/FIRE. II: A Longitudinal Study of H I, Metals, and Ionization in Galactic Haloes,” 2013, *ApJ*, 764, 9
11. **Cooksey, K. L.** + 4. “Precious Metals in SDSS Quasar Spectra I. Tracking the Evolution of Strong, $1.5 < z < 4.5$ C IV Absorbers with Thousands of Systems,” 2013, *ApJ*, 763, 37
10. Simcoe, R. A., Sullivan, P.,† **Cooksey, K. L.** + 3. “Extremely Metal-Poor Gas at a Redshift of $z = 7$,” 2012, *Nature*, 492, 79
9. Simcoe, R. A., **Cooksey, K. L.** + 10. “Constraints on the Universal C IV Mass Density at $z \sim 6$ from Early IR Spectra Obtained with the Magellan FIRE Spectrograph,” 2011, *ApJ*, 743, 21.
8. Prochaska, J. X., Weiner, B., Chen, H.-W., Mulchaey, J. S., & **Cooksey, K. L.** “Probing the IGM/Galaxy Connection V: Associating Galaxies and Their Local Environments with Ly α and O VI Absorption at $z < 0.2$,” 2011, *ApJ*, 740, 91
7. Prochaska, J. X., Weiner, B., Chen, H.-W., **Cooksey, K. L.** + 1. “Probing the IGM/Galaxy Connection IV: The LCO/WFCCD Galaxy Survey of 20 Fields Surrounding UV Bright Quasars,” 2011, *ApJS*, 193, 28
6. **Cooksey, K. L.** + 3. “The Last Eight-Billion Years of Intergalactic Si IV Evolution,” 2011, *ApJ*, 729, 87
5. **Cooksey, K. L.** + 3. “The Last Eight-Billion Years of Intergalactic C IV Evolution,” 2010, *ApJ*, 708, 868
4. Lehner, N., Prochaska, J. X., Kobulnicky, H. A., **Cooksey, K. L.**† + 3. “The Connection Between a Lyman Limit System, a Very Strong O VI Absorber, and Galaxies at $z \sim 0.203$,” 2009, *ApJ*, 694, 734
3. **Cooksey, K. L.**† + 4. “Characterizing the Low-Redshift Intergalactic Medium towards PKS1302–102,” 2008, *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.**† “Multi-wavelength Observations of the Star-forming Region in L1616,” 2004, *A&A*, 516, 677
1. Day, A., Layden, A. C., Hoard, D. W., Brammer, G.,* **Cooksey, K.*** + 4. “Light and Color Curves of Six Field RR Lyrae Variable Stars,” 2002, *PASP*, 114, 645

Monograph:

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

Conference Proceedings:

4. **Cooksey, K. L.** + 5. “The CfAO’s Astronomy Course in COSMOS: Curriculum Design, Rationale, and Application,” 2010, *ASPCS*, 436, 381 (also arXiv:1011.0752)
3. Quan, T. K., Dorighi, K. M., & **Cooksey, K. L.** “Astrobiology: Identifying Bacteria from Extreme Environments,” 2010, *ASPCS*, 436, 264

CURRICULUM VITAE — KATHY L. COOKSEY

2. **Cooksey, K. L.**[†] & Prochaska, J. X. “Metal-line System Survey: Characterizing the Low-redshift IGM,” 2008, *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.*** “X-ray and Optical Observations of NGC1788,” 2003, *ASPCS*, 287, 140

Other:

1. **Cooksey, K. L.** “Imposter: Understanding, Discussing, and Overcoming Imposter Syndrome,” *SPECTRUM*, the AAS Committee on the Status of Minorities in Astronomy newsletter, January 2014, http://csma.aas.org/spectrum_files/spectrum_Jan14.pdf

GRANTS and OBSERVING PROPOSALS

- University of Hawai‘i at Hilo Research Council Travel Award 2016 to *From Wall to Web* (\$2200)
- Co-I, *Hubble Space Telescope* Cycle 24 (2016): “Birth of the Cool: Galaxies and their Neighborhoods Approaching the Epoch of Reionization” (PI: R. Simcoe; 20 orbits, *declined*)
- Co-I, *Hubble Space Telescope* Cycle 24 (2016): “COS Ultraviolet Baryon Explorer (COS UBER)” (PI: H.-W. Chen; 359 orbits, *declined*)
- **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”
 - 2015: AST-1615296; 3 yr, \$138,300 (Excellent and Excellent/Very Good preliminary ratings)
 - 2014: 3 yr, \$195,518; *declined* (Excellent and Very Good)
- **PI**, University of Hawai‘i at Hilo Seed Money Grant (2014): “Observing Galaxy Evolution in Absorption” (1 yr, \$11,565)
- **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)
- Co-I, *Hubble Space Telescope* 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)
- Co-I, *HST* Cycle 19 (2011): “Probing the Warm-Hot Intergalactic Medium using Weak, Distributed Metal Absorption” (PI: M. Pieri; AR-12643)
- **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)
- 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 2010: “Seeking the Lost Interstellar Medium of Red-Sequence Galaxies” (AST-1003139; 3 yr, \$253,000)

SERVICE

- Optical/Infrared/Submillimeter Time Allocation Committee, University of Hawai‘i: 2015–2018
- University of Hawai‘i at Hilo Seed Money Grant proposal reviewer: 2015
- *Hubble Space Telescope* proposal-review panelist: Cycles 19 (2011); 21 (2013); 22 (2014); 24 (2016; external reviewer)
- National Science Foundation proposal-review panelist: 2013 (2 panels); 2014 (1)
- *The Astrophysical Journal Supplement* referee: 2015 (1 article)
- *The Astrophysical Journal* referee: 2011 (1 article), 2012 (1), 2016 (1)
- Kavli in Astrophysics Symposium delegate for MIT Kavli Institute, 15–18 July 2012, Kavli Royal Society International Centre at Chicheley Hall, UK

CURRICULUM VITAE — KATHY L. COOKSEY

- 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
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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
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PROFESSIONAL ASSOCIATIONS

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

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JOHN CARL HAMILTON

CURRENT POSITIONS

Instructor	Department of Physics and Astronomy Natural Sciences Division College of Arts & Sciences University of Hawai'i – Hilo (UHH) 200 West Kawili Street Hilo, Hawai'i 96720
Manager, Education/Public Outreach & Test Logistics	Pacific International Center for Space Explorations Systems (PISCES) Dept. of Business, Economic Development & Tourism (DBEDT) State of Hawai'i 99 Aupuni Street, Suite 212-213 Hilo, Hawai'i 96720

SUMMARY OF
TEACHING
QUALIFICATIONS

2009 July	University of California Santa Cruz, Center for Adaptive Optics <i>Akamai Observatory Internship Program – Short Course</i>	Hilo, Hawai'i
2003-present	University of Hawai'i – Hilo Department of Physics & Astronomy <i>Instructor</i> Courses taught:	Hilo, Hawai'i
	<ul style="list-style-type: none"> ■ ASTR 110 – Introductory Astronomy (non-Majors) ■ ASTR 110L – Laboratory for ASTR 110 & ASTR 180/181 ■ ASTR 150 – Life In The Universe ■ ASTR 180 – Principles of Astronomy: Solar System (Majors) ■ ASTR 181 – Principles of Astronomy: Stars & Stellar Systems (Majors) ■ ASTR 250L – Observational Astronomy Lab ■ ASTR 352 / GEOL 353 - Comparative Planetology ■ ASTR 400 – Observatory Internship ■ ASTR 494 – Special Topics: Astro-Chemistry ■ ASTR/CHEM/GEOL/MATH/PHYS 495A/495B – Physical Science Seminar ■ ASTR/PHYS 495A/495B – Seminar in Space Science ■ ASTR 496 – Space Studies Seminar ■ ASTR 399V,499V – Directed Research ■ ED 494 – Special Topic – Astronomy Teachers Excellence Workshop ■ PHYS 115 – Physics for Liberal Arts ■ PHYS 106 – General Physics I: Mechanics (Algebra-based) ■ PHYS 107 – General Physics II: Electricity & Magnetism (Algebra-based) ■ PHYS 170 – General Physics I: Mechanics(Calculus-based) ■ PHYS 172 – General Physics I: Mechanics (Calculus-based for Majors) ■ PHYS 170L – General Physics Laboratory I for PHYS 106, 170 & 172 ■ PHYS 171 – General Physics II: Electricity & Magnetism (Calculus-based) ■ PHYS 173 – General Physics II: Electricity & Magnetism (Calculus-based for Majors) ■ PHYS 171L – General Physics Laboratory II for PHYS 107, 171 & 173 ■ PHYS 299v – Directed Studies ■ PHYS 330 – Electromagnetism ■ PHYS 399V, 499V – Directed Studies 	

2005 Summer	<p>Na Pua No'eau – “From Baseballs to Blackholes”</p> <ul style="list-style-type: none"> ▪ 3 Week Residential Course for Native Hawaiian High School
2004 Summer	<p>Keaholoa – “Nānā Pono ko kakou Honua – Observing Our World; The Physics-Math Connection”</p> <ul style="list-style-type: none"> ▪ 4 Week Intensive Course for Keaholoa STEM Program
2004 Fall	<p>Kamehameha Schools East Hawaii Campus, High School <i>Substitute Physics/Astronomy Teacher</i></p>
2002 Spring	<p>University of Hawai'i - Hilo Hilo, Hawai'i <i>Lecturer - Astronomy 110 – Introductory Astronomy</i></p>
1979 Summer	<p>University of Hawai'i - Mānoa Honolulu, Hawai'i <i>Lecturer - Physics 100 – Introductory Physics for Non-Science Majors</i></p>
1977 – 1978	<p>University of Hawai'i - Mānoa Honolulu, Hawai'i <i>Instructor for Physics 100L – Introductory Physics Laboratory for Non-Science Majors</i></p>
1982-2003 2000-2003	<p>Training of Telescope Operators at IRTF, CFHT and Gemini. Training of staff on Laser Cutting Operation and Safety – Gemini Training of staff on Bar-Code technology, Database management, Data Archiving, Training of staff on troubleshooting and emergency repair. Training of staff on Safety and Rescue</p>

DEGREES, CERTIFICATES & POST-DEGREE COURSES

2006 Spring	PHYS 711/ASTR 736 <i>Topics in Particle & Fields: Particle Astrophysics</i> University of Hawaii – Mānoa (Grade= A)	
2001	Certificate: Industrial Control Software Repair & Operation, Acroloop Motion Control Systems Inc, Chaska MN (www.acroloop.com/) for Gemini Observatories Laser Milling Machine / GMOS (Gemini Multi-Object Spectrograph)	
1999	Certificate: Laser Class IV Operator & Trainer, ART (Advanced Recording Technology), Escondido, CA (www.advancedrecording.com/) for Gemini Observatories Laser Milling Machine / GMOS (Gemini Multi-Object Spectrograph)	
1999	Certificate: First Responder, American Red Cross/Hawaii Fire Department	
1977-1979	University of Hawai'i - Mānoa Master of Science (M.S.) – Astronomy ■ Department of Physics & Astronomy / Institute For Astronomy	Honolulu, Hawai'i
1973-1977	University of Texas at Austin Bachelor of Science (B.S.) with Honors in Physics ■ Department of Physics	Austin, Texas
1973-1977	University of Texas at Austin Bachelor of Arts (B.A.) with Honors in Astronomy ■ Department of Astronomy	Austin, Texas
1972-1978	University of Hawai'i – Mānoa ■ Evening and Summer sessions concurrent with High School	Honolulu, Hawai'i
1969-1973	`Aiea High School High School Diploma ■ State of Hawai'i Department of Education	`Aiea, Hawai'i

 WORK EXPERIENCE

2013-present	<p><i>Manager, Education Public Outreach and Test Logistics</i> – Pacific International Space Center for Exploration Systems (PISCES)</p>
2012-2013	<p><i>Acting Director</i> – Pacific International Space Center for Exploration Systems (PISCES)</p>
2010-Fall – 2012	<p><i>Deputy Director</i> – Pacific International Space Center for Exploration Systems (PISCES)</p> <p>In charge of Hawaii operations for all PISCES activities – research, education and outreach. Coordinates with national and international space agencies (NASA, CSA, DLR, ESA), universities (UHM, CMU) and aerospace (Boeing, Lockheed-Martin), robotic (Honeybee, NORCAT) and information technology (Google) corporations.</p>
2008 Spring - 2010	<p><i>Research Operations Manager</i> – Pacific International Space Center for Exploration Systems (PISCES)</p> <p>Responsible for the complete deployment of a Field Test Site for NASA, CSA and DLR, including budget, purchases, infrastructure, recruitment and hiring, on site management, assessment, inventory and storage of experiments and equipment. Total budgets (less salaries) \$240K (2008), \$155K (2010)</p>
2007 Fall	<p><i>Interim Associate Director</i> – Hoku Kea (1 Meter Telescope Project)</p> <p>Assist with NSF grant for construction of 1 meter replacement telescope on Mauna Kea. Software development, student training</p>
2006 Spring	<p><i>Interim Department Chair</i> – Department of Physics & Astronomy</p> <p>Manage budget and personnel (6 faculty/1 APT), schedule classes, report to UHH Administration.</p>
2003 – present	<p>University of Hawai'i – Hilo – Department of Physics & Astronomy</p> <p><i>Instructor</i></p> <ul style="list-style-type: none"> ■ Conduct instruction in Physics and Astronomy Undergraduate classes. ■ Active participation in Outreach with Astro-Talks, Onizuka Day, Astro-Day, County Fair, Journey Through The Universe
1998 – 2003	<p>Gemini Observatory Hilo, Hawai'i</p> <p><i>System Support Associate</i></p> <ul style="list-style-type: none"> ■ Science staff member responsible for the safe and efficient operation of 8.0-meter telescope on summit of Mauna Kea. Also operate 8.0-meter telescope on Cerro Pachon, Chile during annual exchange program. Responsible for safety of all personnel at night. Duties included assisting staff & visiting astronomers in use of instruments, weather monitoring, cryogenic transfers, and training of new operator staff (7).
1983 – 1998	<p>Canada-France-Hawai'i Telescope Corp. (CFHT) Kamuela, Hawai'i</p> <p><i>Senior Observing Asst. / Observing Asst. / Telescope Operator</i></p> <ul style="list-style-type: none"> ■ Science staff member responsible for the safe and efficient operation of 3.8-meter telescope on summit of Mauna Kea and safety of all personnel at night. Duties included training and assisting visiting astronomers in use of instruments, weather monitoring, cryogenic transfers, and training of new operator staff (4).

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|-------------|---|-----------------------|
| 1982 – 1983 | NASA Infrared Telescope Facility (IRTF)
<i>Telescope Operator</i> | Hilo, Hawai'i |
| | <ul style="list-style-type: none"> ■ Technical staff member responsible for the safe & efficient operation of 3.0-meter telescope on summit of Mauna Kea. Responsible for safety of all personnel at night. Duties included cryogenic (LN & LHe) transfers, weather monitoring, program observing (comets), training of new operator staff (2). | |
| 1981 – 1982 | Univ. Hawai'i Lunar Ranging Experiment (LURE)
<i>Research Associate IV / III</i> | Kula, Maui, Hawai'i |
| | <ul style="list-style-type: none"> ■ Member of 4-person team using high-powered lasers to distance range a variety of satellites for the purposes of updating the geo-metrodynamic model of the earth's gravitational field. | |
| 1980 – 1981 | Wailea Beach Hotel
<i>Public Lecturer</i> | Wailea, Maui, Hawai'i |
| | <ul style="list-style-type: none"> ■ Led astronomy lecture and stargazing activities for hotel guests and general public with a variety of portable telescopes. | |
| 1980 – 1981 | Univ. Hawai'i Mees Solar Observatory
<i>Research Associate II / I</i> | Kula, Maui, Hawai'i |
| | <ul style="list-style-type: none"> ■ Solar observer (solo) with data collection and analysis of real-time data for the NASA Solar Max satellite in coordination with worldwide ground support. Duties included film handling and developing methods, optics cleaning, and detailed record keeping. | |
| 1979 – 1980 | Univ. Hawai'i-Mānoa Institute for Astronomy (IfA)
<i>Graduate Research Assistant</i> | Honolulu, Hawai'i |
| | <ul style="list-style-type: none"> ■ Assisted in various astronomical observations and data reduction on NASA IRTF 3.0m, UH 2.24m and both UH 0.6m telescopes on Mauna Kea. Assembled and optimized cryo-dewar in Infrared Lab and manufactured custom 30-micron IR filter. | |
| 1977 – 1979 | Univ. Hawai'i-Mānoa Dept. of Physics & Astronomy
<i>Graduate Teaching Assistant</i> | Honolulu, Hawai'i |
| | <ul style="list-style-type: none"> ■ Taught Lab sections for PHY 100L – Physics for Non-Science Majors for four semesters. Developed laboratory exercises, lectured on experiment background, assisted students in execution of experiments, graded lab reports. Taught PHY 100 lecture section during summer using the text <u>Conceptual Physics</u> - Hewitt. Led numerous stargazing parties for students. | |
| 1974 – 1977 | Univ. Texas at Austin Dept. of Astronomy
<i>Laboratory Research Assistant</i> | Austin, Texas |
| | <ul style="list-style-type: none"> ■ Organized and maintained the department astronomy library. | |

 CONFERENCES & WORKSHOPS

- 2016 June 7-9 The 7th joint meeting of the Space Resources Roundtable (SRR) and the Planetary & Terrestrial Mining Sciences Symposium (PTMSS). Colorado School of Mines in Golden, CO. June 7-9, 2016. Presented 3 papers.
- 2016 March 11-13 Physics Teacher Education Coalition Conference (PTEC), Baltimore MD, March 11-13, 2017. Poster presentation.
- 2015 Dec 3 Polar Regolith (Workshop without Walls), NASA Solar System Exploration Research Virtual Institute (SSERVI), December 3, 2015.
- 2015 Oct 27-30 First Landing Site (LS)/Exploration Zone (EZ) Workshop for Human Missions to the Surface of Mars. Lunar and Planetary Institute, Houston TX October 27-30, 2015. Presented two EZ sites.
- 2015 May 10-13 The 6th joint meeting of the Space Resources Roundtable (SRR) and the Planetary & Terrestrial Mining Sciences Symposium (PTMSS). May 10-13, 2015 in conjunction with the Canadian Institute of Mining (CIM) 2015 Convention in Montreal, QC, Canada. Invited Session Chair as In-situ Resource Utilization (ISRU) Expert
- 2014 June 10-11 The fifth joint meeting of the Space Resources Roundtable and the Planetary & Terrestrial Mining Sciences Symposium. Colorado School of Mines in Golden, Colorado on June 10-11, 2014.
- 2013 May 5-8 The fourth joint meeting of the Space Resources Roundtable and the Planetary & Terrestrial Mining Sciences Symposium. May 5-8, 2013 in conjunction with the Canadian Institute of Mining (CIM) 2013 Convention in Toronto, Ontario, Canada.
- 2013 Nov 4-7 International Society of Terrain-Vehicle Systems (ISTVS) 7th Regional Americas Conference, jointly with the 105th Annual Meeting of the American Society of Agronomy, Tampa FL. November 4-7, 2013.
- 2012 June 4-7 The third joint meeting of the Thirteenth Space Resources Roundtable and the Planetary & Terrestrial Mining Sciences Symposium. Colorado School of Mines in Golden, Colorado on June 4-7, 2012.
- 2011 Nov 13-17 PISCES ILRP Leaders Summit, Kailua-Kona HI Invited speaker
- 2011 Nov 7-9 Lunar Exploration Analysis Group (LEAG), Lunar & Planetary Institute, Houston TX – invited speaker
- 2011 Sept 6-10 Invited guest (by NASA Administrator Charles Bolden) for GRAIL mission Launch. Invited participant with Lunar Science Institute associated education outreach Kennedy Space Center, FL
- 2011 July 30-Aug 3 Astronomical Society of the Pacific's Annual Conference "Connecting People to Science" (with American Geophysical Union) - Baltimore MD
- 2011 July 19-21 Lunar Science Forum, NASA Lunar Science Institute, NASA Ames, Moffett Field CA

 CONFERENCES & WORKSHOPS (CONT.)

2011 July 21	ILRP Executive Workshop, NASA Ames, Moffett Field CA
2011 July 16-19	Teacher Excellence Workshop with Center for Astronomy Education, NASA Jet Propulsion Laboratory. UH-Hilo, HI
2011 June 19-22	The second joint meeting of the Twelfth Space Resources Roundtable and the Planetary & Terrestrial Mining Sciences Symposium. Ottawa, Ontario, Canada in June 19-22, 2011. – invited presenter
2011 May 25	NASA-Hawaii Space Act Annex – w/ Gov. Abercrombie – Hawaii and Rebecca Kaiser – NASA Asst Administrator – State Capitol, Honolulu HI
2011 April 5	International Lunar Research Park Exploratory Workshop, NASA Ames (invited keynote speaker) – NASA Ames, Moffett Field, CA
2010 Feb 10-12	3 rd Pacific International Center for Space Exploration Systems (PISCES) conference, Hilo HI
2009 Sept 12-16	Astronomical Society of the Pacific (ASP) , 120 th Anniversary Meeting, Millbrae CA
2009 May 8-12	Institute for Scientist and Engineer Educators / Center for Adaptive Optics Professional Development Program (ISEE/ CfAO PDP) Inquiry Workshop in Science and Engineering Learning & Teaching, Lahaina HI
2009 Mar 13-14	Physics Teacher Education Coalition (PTEC) Conference, Pittsburg PA <i>PRESENTER</i> – Creating Better Learning Environment for Physics Majors
2008 Sep 29-30	2 nd Pacific International Center for Space Exploration Systems (PISCES) conference, Hilo HI
2008 June 5-8	NASA Combined Centers Robotic Field Test, Moses Lake WA
2008 June 1-5	American Astronomical Society , 212 th Meeting, St. Louis MO <i>PRESENTER</i> – Ashra Detector Status
2008 May 31-Jun 4	Astronomical Society of the Pacific , 119 th Meeting, St. Louis MO International Year of Astronomy Symposia
2008 Feb 29	Lunar Crater Observation and Sensing Satellite (LCROSS) Astronomer Meeting, NASA Ames, CA
2008 Jan 7-11	American Astronomical Association , 211 th meeting, Austin, TX <i>PRESENTER</i> – Hoku Kea, UHH 1 Meter Educational Telescope
2007 Nov 7-10	1 st Pacific International Center for Space Exploration Systems (PISCES) conference, Hilo HI
2007 Sept 27-28	Mauna Kea Observatories Users Meeting Keahou-Kona HI <i>PRESENTER</i> – UHH Hoku Kea Annual Report
2007 August 2-5	Cosmos in the Classroom – A National Symposium on Teaching Astronomy for Non-science Majors Pomona College Claremont CA

 CONFERENCES & WORKSHOPS (CONT.)

2007 July 9-12	The 20th International Conference on The First-Year Experience Kona, Hawaii
2007 Mar 15-16	The 6th International Workshop on Very High Energy Particle Astronomy - Connection between Wide Field Survey and Cosmic Ray Observation Hilo HI (LOC member) <i>PRESENTER</i>
2006 Oct 29 – Nov 3	Joint Meeting of the Pacific Region Particle Physics Communities (American Physical Society – Division of Particle & Field/Japan Physical Society) APS-DPF2006+PJS2006 <i>PRESENTER</i> Honolulu HI
2006 July 17-21	The NASA Center for Astronomy Education (CAE) 2006 College Astronomy Teaching Excellence Workshop: Advanced Strategies for Teaching Learner-Centered Astronomy Under Hawaiian Skies and The Great Observatories of Mauna Kea Kona HI
2005 May 10-12	3rd International Ashra Conference Hilo HI (LOC member) <i>PRESENTER</i>
2004 Oct	KamLAND International Collaboration Meeting Hilo HI
2004 Aug 23-24	2nd International Ashra Conference <i>PRESENTER</i> Institute for Cosmic Ray Research, Kashiwa Japan
2002 November 3-8	Galactic Center Workshop 2002 – The Central 300 Parsecs (LOC member) Kona HI
2002 August 22-30	Society of Photo-optical Instrumentation Engineers (SPIE) - Astronomical Telescopes & Instrumentation Kona HI
2001 Sept 30 –Oct 3	Astronomical Data Analysis Software & Systems XI (ADAS) Victoria BC Canada
2001 February 5-9	Astrophysical Ages & Time Scales Hilo HI
2000 March 25-31	Society of Photo-optical Instrumentation Engineers (SPIE) – Astronomical Telescopes & Instrumentation 2000 Munich Germany
1998 March 20-28	Society of Photo-optical Instrumentation Engineers (SPIE) - Astronomical Interferometry II Kona HI
1997 August 18-30	International Astronomical Union (IAU) XXIII General Assembly Kyoto Japan
1994 May 15-16	Society of Photo-optical Instrumentation Engineers (SPIE) Conference on Amplitude & Intensity Interferometry II Kona
1994 March 13-18	Society of Photo-optical Instrumentation Engineers (SPIE) Astronomical Telescopes & Instrumentation for the 21st Century Kona HI
1987 March 24-26	Workshop on Ground-based Astronomical Observations with Infrared Array Detectors Hilo, Hawaii

CONFERENCES & WORKSHOPS (CONT.)

1980 June 23-27

**International Astronomical Union (IAU Symposium 96) – Infrared
Astronomy** (LOC staff) Kona HI

PROFESSIONAL DEVELOPMENT ACTIVITIES

- 2016 Field Deployment for NASA Biologic Analog Science Associated with Lava Terrains (BASALT), Craters of the Moon, Idaho (June). Mars analogue
- 2016 Invited Judge, NASA Kennedy Space Center Robotic Mining Competition (RMC)
- 2015 PI for NASA Cooperative Agreement Biologic Analog Science Associated with Lava Terrains (BASALT),
- 2015 Invited Judge, NASA Kennedy Space Center Robotic Mining Competition (RMC)
- 2014 Invited Judge, NASA Kennedy Space Center Robotic Mining Competition (RMC)
- 2013 Invited Judge, NASA Kennedy Space Center Lunabotics Mining Competition
- 2011 PI on NASA Cooperative Agreement for Analog Mission Testing
- 2008 **Pacific International Space Center for Exploration Systems (PISCES)/**
NASA ISRU Robotic Field Test researcher
- 2008 **Taiwan American Occultation Survey (TAOS)** research collaborator
- 2008 **American Astronomical Society (AAS)** - Member
- 2007 **Astronomical Society of the Pacific (ASP)** – Member
- 2006 **International Lunar Observatory Association (ILOA)**- Member
- 2006 Collaborative member of PanSTARRS
(**Panoramic Survey Telescope and Rapid Response System**)
- 2005-present **Mauna Kea Observatories Outreach Committee (MKOOC)** – UHH Representative
- 2004 June 8 *Transit of Venus expedition – Orlando FL*
Organized and successfully completed field observations of the first pair of rare Transits of Venus (next in 2012)
- 2004-present Collaborative member of Ashra (**All-sky Survey High Resolution Air shower detector**)
University of Tokyo - Institute for Cosmic Ray Research and UH-Hilo Dept of Physics & Astronomy
- 2004-2006 **Co-I, Michelson Educational Award**, "Curricular Enhancements in Exo-Planet Theory and Observation", \$72K; (w/ W. D. Heacox, R. A. Crowe); awarded by the Michelson Science Center at California Institute of Technology.
- 1998-2003 **Society of Photo-optical Instrumentation Engineers (SPIE)** – Member
- 1990 July 11 Total Solar Eclipse expedition Waimea HI
Expedition Leader
Organized & outfitted 5-person team and successfully completed field observations of the Total Solar Eclipse of 1990
- 1979 Feb 26 Total Solar Eclipse Expedition Dufur, Oregon
Expedition Co-Leader

PAPERS & PUBLICATIONS

*Published or Presented**(in preparation)*

Scientific Analogs and the Development of Human Mission Architectures for the Moon, Deep Space and Mars. Lim, Darlene et. al.. American Geophysical Union, Fall AGU San Francisco, CA 12-16 December, 2016.

The Journey to Mars with ISRU Pathway. John Hamilton, Planetary & Terrestrial Mining Sciences Symposium (PTMSS), Golden CO June 2016

MoonRIDERS: NASA and Hawaii Lunar Surface Flight Experiment for Late 2017 in ISRU Dust Removal Technologies. R Kelso, J. Hamilton Planetary & Terrestrial Mining Sciences Symposium (PTMSS), Golden CO June 2016

PISCES: Paving the Way to Planetary Basalt ISRU Construction - Lunar Launch/Landing Pad. R. M. Kelso, R.Romo, C. Andersen, R.P. Mueller, T. Lippitt, N.J. Gelino, J.D. Smith, I. I. Townsend, J.M. Schuler, M.W. Nugent, A.J. Nick, K. Zacny, M. Hedlund, J. Hamilton. Planetary & Terrestrial Mining Sciences Symposium (PTMSS), Golden CO June 2016

Biologic Analog Science Associated with Lava Terrain. N. Thomas, J. Hamilton, A. Veillet and C. Muir. Bio-signature Preservation and Detection in Mars Analog Environments, Lake Tahoe, May 16-18, 2016.

Survival in Extreme Environments: Physics Program at the University of Hawai'i - Hilo. Physics Teacher Education Coalition Conference (PTEC), Baltimore MD, March 11-13, 2017

Hawai'i Ice Caves as Analogs to Perpetually Shadowed Craters Polar Regolith (Workshop Without Walls), NASA Solar System Exploration Research Virtual Institute (SSERVI), December 3, 2015.

Formation of a Phyllosilicate-, K-feldspar-, and Sulfate-Bearing Hematite Ridge on Mauna Kea Volcano, Hawaii, Under Hydrothermal, Acid-Sulfate Conditions: Process and Mineralogical Analog for the Hematite Ridge on Mt. Sharp, Gale Crater, Mars. RV Morris, ME Adams, DW Ming, JG Catalano, TG Graff, RE Arvidson, EA Guinness, JC Hamilton, and SA Mertzman. Fall 2015 AGU Abstract: Draft 20150729

Ausonia Cavus and Kasei Valles: Complementary Exploration Zone Sites for Biology, Geology and ISRU. J.C. Hamilton S. Lundblad, D.L. Clark, N.G. Purves, C.T. Milovsoroff, N.K. Thomas. First Landing Site (LS)/Exploration Zone (EZ) Workshop for Human Missions to the Surface of Mars. Lunar and Planetary Institute, Houston TX October 27-30, 2015.

PRISM - PISCES Robotic International Space Mining competition; Leveraging University, State and Natural Resources for Student Success in Space Research. John Hamilton Planetary & Terrestrial Mining Sciences Symposium (PTMSS), Montreal, Quebec, Canada 2015

Chemical And Mineralogical Characterization Of A Hematite-Bearing Ridge On Mauna Kea, Hawaii: A Potential Mineralogical Process Analog For The Mount Sharp Hematite Ridge. T. G. Graff, R. V. Morris, D. W. Ming, J. C. Hamilton, M. Adams, A. A. Fraeman, R. E. Arvidson, J. G. Catalano, and S. A. Mertzman, Jacobs, 45th Lunar & Planetary Science Conference. The Woodlands, Texas. March 17-21, 2014

PRISM: PISCES Robotic International Space Mining Competition, John Hamilton, Planetary & Terrestrial Mining Sciences Symposium (PTMSS), Golden CO 2014

PAPERS & PUBLICATIONS (CONTINUED)

The International Lunar Research Park Concept, Schowengerdt, Hamilton, Rasky, Crisafulli. Lunar Science Forum, NASA Lunar Science Institute (NLSI), NASA Ames, Moffett Field CA July 2011.

Analog Field Testing in Hawai'i, John Hamilton, Planetary & Terrestrial Mining Sciences Symposium (PTMSS), Ottawa Canada 2011

Use of Hawaii Analog Sites for Lunar Science and In-Situ Resource Utilization, Sanders, Larson, Picard and Hamilton, EPSC_DPS 2011 European Planetary Science Congress and American Astronomical Society Division of Planetary Sciences Joint Meeting 2011. NASA Technical Report JSC-CN-24415, EPSC Abstracts, Vol 6.

Observational Search for PeV-EeV Tau Neutrino from GRB081203A, Aita, Aoki, Asaoka, Chonana, Jobashi, Masuda, Morimoto, Noda, Sasaki, Asoh, Ishikawa, Ogawa, Learned, Matsuno, Olsen, Binder, Hamilton, Sugiyama and Watanabe *Physical Review Letters (in press)* 2011

Combining Outreach and Education with Space Field Test Activities by PISCES, Hamilton, J, R. Fox, C. Andersen, F. Schowengerdt. Earth & Space Science: Making Connections in Education and Public Outreach - A Symposium on Improving the Community of Practice for EPO Professionals, Astronomical Society of the Pacific (ASP), University of Colorado-Boulder, Boulder CO. 31 July-4 August, 2010.

Participatory Space Exploration and Education at PISCES, F. Schowengerdt, R. Fox, John Hamilton. Planetary & Terrestrial Mining Sciences Symposium (PTMSS) & XI Space Resources Roundtable (SRR), Colorado School of Mines, Golden CO. June 8-10, 2010.

Conducting Lunar Analog Tests in a Culturally Sensitive Environment, R. Fox, F. Schowengerdt, John Hamilton. Global Lunar Conference, 11th ILEWG Conference on Exploration & Utilisation of the Moon, Beijing, China. 31 May-3 June, 2010.

The 2009 Akamai Observatory Short Course Inquiry Activity: "Design and Build a Telescope" Sonnett, S, Betsy Mills, John Hamilton and Heather Kaluna, The Astronomical Society of the Pacific Conference Series 2010.

PISCES Outreach: Bringing the Moon Down to Earth Hamilton, J, Robert Fox, Christian Andersen, Frank Schowengert. The 120th Meeting of the Astronomical Society of the Pacific, Millbrae CA

Lunar Surface Equipment Testing and Demonstrations at the PISCES Lunar Analog Facilities. Bland, Dan, Robert Carlson, Robert Fox, John Hamilton, Frank Schowengert. The 27th International Symposium on Space Technology and Science, Tsukuba Japan

Creating a Better Learning Environment for Physics Majors Hamilton, J, Robert Fox, Christian Andersen. Physics Teacher Education Coalition conference, Pittsburgh PA

Ashra Detector Current Status on Mauna Loa, Hawai'i. Hamilton, J (UHH), Fox, R., Sasaki, M., and Asaoka, Y., (2008) AAS 212th Meeting, St. Louis MO

Hoku Kea – UHH 1 Meter Educational Telescope. Hamilton, J (UHH) and Fox, R.(UHH) — AAS 211th Meeting, Austin Texas

PAPERS & PUBLICATIONS (CONTINUED)

Construction Status of Ashra Hamilton, J (UHH). (2007) The 6th International Workshop on Very High Energy Particle Astronomy - Connection between Wide Field Survey and Cosmic Ray Observation

Observatory, Astronomical. Hamilton, J, , in AccessScience@McGraw-Hill, <http://www.accessscience.com>, DOI 10.1036/1097-8542.057500

Gemini Observatory, Hamilton, J, " in AccessScience@McGraw-Hill, www.accessscience.com, DOI 10.1036/1097-8542.YB020910

Observatory, Astronomical. Hamilton, J, – The McGraw-Hill Encyclopedia of Science & Technology (2000, 2007)

Ashra Report 2: Current Status, Hamilton, J (UHH),, Fox, R., Sasaki, M., and Asaoka, Y., (2006), Joint Meeting of Pacific Particle Physics Communities, Honolulu Hawaii, 31 October, 2006

Ashra Report 4 : VHE Gamma Ray Detection Okumura, Akira (ICRR) et al., Joint Meeting of Pacific Particle Physics Communities, Honolulu Hawaii, 31 October, 2006

Ashra Report 5: VHE Neutrino Detection Noda, Koji (ICRR) et al., Joint Meeting of Pacific Particle Physics Communities, Honolulu Hawaii, 31 October, 2006

Ashra Project Learned, J (UH-Mānoa) et al., Joint Meeting of Pacific Particle Physics Communities, Honolulu Hawaii, 31 October, 2006

Status of Ashra (All-sky Survey High Resolution Air shower detector) Project, Sasaki, M. (ICRR), et. al., 29th International Cosmic Ray Conference (ICRC), Pune, India, 101-106 (2005)

Ashra Report 3: Hybrid Photo Pixel Detector As the Trigger Sensor Masuda, Masataka (ICRR) et al, Joint Meeting of Pacific Particle Physics Communities, Honolulu Hawaii, 31 October, 2006

Construction of the Ashra Detector, Hardman, J (UHH),, Hamilton, J., Fox, R., and Asaoka, Y., Joint Meeting of Pacific Particle Physics Communities, Honolulu Hawaii, 30 October, 2006

Ashra: All-Sky High Resolution Air Shower Detector, Trang, D (UHH),, Hamilton, J., Fox, R., and Asaoka, Y. (2006) Joint Meeting of Pacific Particle Physics Communities, Honolulu Hawaii, 30 October, 2006

"Industrial Lasers: Carbon-Fiber Spectrographic Masks Are Precision Laser Cut "
Hamilton, J (Gemini Observatories), Laser Focus World (October 1999 Issue, web: www.laserfocusworld.com/display_article/43144/12/ARCHI/none/Feat/INDUSTRIAL-LASERS:-Carbon-fiber-spectrographic-masks-are-precision-laser-cu)

UV Detection of Quasar 3C273 with the Skylab S-019 Spectrograph Hamilton, J., NASA Internal Publication, Skylab Student Project (1977)

AWARDS RECEIVED

2014	NASA Certificate of Appreciation - Mauna Kea Mars Analog
2011 August	NASA Lunar Science Institute Travel Award – ASP "Connecting People to Science", Baltimore MD
2011 June	NASA Group Achievement Award 2010 International Lunar Surface Operations ISRU Utilization Field Test
2010 May	NASA Group Achievement Award In-Situ Resource Utilization Analog Demo Team
2010 May	NASA Group Achievement Award In-Situ Resource RESOLVE Team (R egolith and E nvironment S cience & O xygen and L unar V olatile E xtraction)
2010 Aug	Scholarship for Cosmos in the Classroom 2010 from Astronomical Society of the Pacific – Boulder CO
2009 Sept	Travel Scholarship – Outreach Workshops ASP 2009 from The Spitzer Science Center and ASP – Millbrae CA
2009 Mar	Travel Scholarship – PTEC organization, COMPADRE - Pittsburg PA
2008	Outstanding Service Award - Japan-US Science, Technology & Space Applications Program (JUSTSAP) Commendation
2008 February	Travel Award – NASA LCROSS Astronomer Meeting, Ames Research Center, CA
2007 August	Scholarship for Cosmos in the Classroom 2007 from The Spitzer Science Center and Astronomical Society of the Pacific – Pomona CA
1999 October	Commendation for Excellence in Technical Communication – <u>Laser Focus World</u>
1997 August	Competitive grant to attend the XXIII General Assembly of the International Astronomical Union (IAU) in Kyoto, Japan.
1972-1977	NASA Skylab Student Experiment Project – National Finalist (25) to fly an experiment (ED-23 UV from Quasars) onboard orbiting manned space station Skylab. Participated in pre-launch design reviews, launch activities, and post-launch data analysis with Dr. Karl Henize (scientist-astronaut) and his team at University of Texas at Austin and Johnson Space Center, Houston, TX. http://history.nasa.gov/SP-401/ch2.htm
1973 Summer	Hawaii State Delegate, National Youth Science Camp - http://www.sciencecamp.org/index.html One of 2 State delegates

LANGUAGES

Working knowledge in French, Spanish and Ōlelō Hawai'i.
Programming Languages - Fortran, EPICS, Linux, & Python

Curriculum Vitae

Department of Physics & Astronomy Phone : 808-932-7028
University of Hawaii at Hilo E-mail : rpm33@hawaii.edu
200 W. Kawili Street
Hilo, HI, 96720

R. Pierre Martin

Full Name: René Pierre Martin
Permanent residency: USA (green card holder: exp. 2020)
Data of Birth: July 11, 1964
Citizenship: Canadian
Marital Status: Married to Dr. Patricia E. Pérez (US Citizen)
Spoken and written languages: French & English, Spanish (basic)

A - Professional Experience

2012 – Present University of Hawaii at Hilo, Hilo, HI

Assistant Professor of Astronomy/Observatory Director (Tenure track)

- Undergraduate teaching in physics and astronomy, department mission and vision, definition of content department curriculum, recruitment, student advising and mentoring, outreach and general services. Responsible for the implementation and operations of the UH-Hilo Hoku Kea Observatory, instrumentation for HK and integration within UH-Hilo curriculum. Supervision and maintenance of astronomy laboratory equipment, Mauna Kea director's committee, OMKM participation, budgets, academic services, community interaction.
- Research in astrophysics: Galaxy evolution; Milky Way abundances; instrumentation and modern observational processes for astronomy; large-scale study of abundances in nearby galaxies with SITELLE at CFHT (2015 -); Extragalactic astronomy from the Moon (In collaboration with ILOA and NAOC).

2011 – 2012 Giant Magellan Telescope Organization, Pasadena, CA

Contractor

- Revise the current conceptual operational plan for GMTO and develop a new plan for the Preliminary Design Review phase (planned for the end of 2012). Define observing modes (classical, remote, queue), general operations and facilities, operations survey of existing facilities, proposal submission and telescope scheduling, metrics, upgrades, new instrumentation development, data management, scientific and technical support, staffing, organizational structure, scalability, costs, contingency.

2008 – 2011 WIYN Observatory, Tucson, AZ

Executive Director/One Degree Imager Principal Investigator

- Responsible for the health and progress of the WIYN observatory. Management, strategic planning. Instrumentation developments and operation models. Prioritization, project reviews, staffing, science activities, safety. Meetings, reports & scheduling. Observing efficiency and metrics. Evaluation of staff performance. Recruitment. Budget administration. Science Advisory Committee, Board of Directors.
- *Research*: Molecular near-IR imaging of planetary nebulae, interacting galaxies, Semi-regular variable stars abundances, instrumentation.

1997 – 2008: Canada-France-Hawaii Telescope, Kamuela, HI

Resident/Staff Astronomer (regular position)

- *Director of Science Operations / Astronomy Group Manager / CFHT Executive*: Supervision of Resident/Staff Astronomers, Observing Assistants, Service Observers, and Librarian. Prioritization, project reviews, manpower, science activities, safety supervision. Proposal submission process, technical evaluations. Meetings, reports & scheduling. Observing efficiency and metrics. Evaluation of staff performance. Recruitment. Budget administration. Science Advisory Committee, Board of Directors, Observatory Council, User's meetings.
- *Project Scientist/Manager*. Queued Service Observing (QSO) Project with CFH12K/MegaCam/WIRCam/ESPaDONs: Software design, implementation, testing, and integration. Queue operations: coordination, proposal evaluation, Phase 1 and Phase 2, short and long-term planning, training, reviews and reports, operational scheduling, statistics, data quality control, program management, calibration plan, night reports, email management, data distribution. . Budgetary and personnel issues. WIRCam/ESPaDONs NOP (New Observing Process): development leadership/management. Observatory Automation Project: Science requirements, logistics.
- *Instrument Scientist*: Integral Field Spectrograph (OASIS), Fabry-Perot Interferometers, Spectral calibration system.
- *Support Astronomer*: OASIS Integral Field Spectrograph, Fabry-Perot Interferometers, Multi-Object Spectrograph (MOS/OSIS), Adaptive Optics Bonnette (PUEO), CFH12K Mosaic Camera. Introductions/Support/Documentation/Proposal Submission.
- *Research*: Galaxy Evolution and Dynamics, Bars, Extragalactic Star Formation, HII Regions, Active Galactic Nuclei, Jets, Galactic Chemical Evolution, Cepheids, Planetary Nebulae.

1996 - 1997: European Southern Observatory, Santiago, Chile

New Technology Telescope (NTT) Postdoctoral Fellow

- *Instrument Scientist*: ESO Multi-Mode Instrument (EMMI) : CCD imaging, long-slit and multi-object spectroscopy, echelle and dichroic spectroscopic mode. Instrument commissioning, engineering, testing. Documentation.

- *NTT Team Coordinator*: Operations on La Silla during support run; management of the scientific and technical staff operations.
- *Service Observer*: Queue mode (EMMI/SUSI).
- *Research*: Galaxy Evolution and Dynamics, Bars, Extragalactic Star Formation, HII Regions, Active Galactic Nuclei, Tidal Galaxies, Galactic Chemical Evolution.

1993 – 1996: Steward Observatory, University of Arizona, Tucson

FCAR/NSERC Postdoctoral Fellow

- *Research*: (Supervisor: Dr. R. C. Kennicutt, Jr.). Galaxy Evolution and Dynamics, Bars, Extragalactic Star Formation, HII Regions. Observations: Book 90-inch Telescope, MMT, CFHT

B - Education

1988 -1992: Laval University, Québec, Canada

PhD in Astrophysics

- Supervisor: Dr. Jean-René Roy. Thesis: “*The Chemical Abundance Gradients in Barred Spiral Galaxies*”. Optical Imaging (narrow-band)/Spectroscopy.

1987 – 1988: Laval University, Québec, Canada

Master in Astrophysics

- Supervisor: Dr. Jean-René Roy. Thesis: “*The Optical Jet in the Spiral Galaxy NGC 4258*”. Narrow-band imaging.

1984 – 1987: Université du Québec, Rimouski, Canada

Bachelor’s degree in Physics

C – Fellowships/Grants

- UH Hilo Seed Money Grant (\$10,771)(2013): Preparation for the galaxy survey with the CFHT FTS SITELE.
- Postdoctoral fellowship provided by the European Southern Observatory (1996-1997, La Silla, Chile)
- Postdoctoral fellowship provided by the Natural Sciences and Engineering Research Council of Canada (1994-1995, Steward Observatory)

- Postdoctoral fellowship provided by the Fonds pour la Formation de Chercheurs et l'Aide la Recherche (1993, Steward Observatory)
- PhD fellowship provided by the Natural Sciences and Engineering Research Council of Canada (1989-1991, Laval University)
- PhD fellowship provided by provided by the Fonds pour la Formation de Chercheurs et l'Aide a la Recherche (summer 1991, Laval University)

D - Teaching Experience/Mentorship

- UH-Hilo "General Astronomy" (ASTR110): Astronomy survey for non-science students (2012, 2013, 2015; 2016) (160 students)
- UH-Hilo "Observational Astronomy" (ASTR 250): Introduction to observational techniques of modern astrophysics for astronomy majors (2013, 2014) (25 students)
- UH- Hilo "Stellar Astrophysics" (ASTR350): Stellar physics for astronomy majors (junior level) (2014, 2015, 2016) (25 students)
- UH-Hilo "Observational Astronomy Laboratory" (ASTR 250L): Introduction to observational techniques of modern astrophysics for astronomy majors (2016) (12 students)
- UH-Hilo "Galactic and Extragalactic Astrophysics" (ASTR 351): Physics of the Milky Way and galaxies and introduction to cosmology for astronomy majors (2016) (8 students)
- UH-Hilo "Seminar" (ASTR 495): Seminar presentations on topics in the physical sciences for natural science majors (2015) (20 students)
- Mentor for UH-Hilo undergraduate student Cale Clementson (2014-2015): SITELE (UHH Seed money grant)
- Mentor for UH-Hilo undergraduate student Travis Thieme (F2016): "*Small-scale properties of nebula in nearby disk galaxies*" (NASA Space Grant fellowship)
- Mentor for UH-Hilo undergraduate student Callie Crowder (F2016): "*Integration and Commissioning of the new UH Hilo Hoku Kea Observatory*" (NASA Space grant traineeship)
- Mentor of Dr. Laurie Nepton-Rousseau, Canadian postdoctoral fellow within the UH Hilo Department of Physics & Astronomy (upcoming, 2017)

E – Additional Professional Activities

- Chairman of Search Committee for UH Hilo Faculty position within the Department of Physics & Astronomy (2016)

- Member of UHH-UHM committee charging of defining the process of telescope time allocation on Maunakea Observatories for UH Hilo (2016)
- Active participation in educational discussions on astronomy and the future of Maunakea observatory with local communities.
- Adviser for equipment procurement and maintenance and for the astronomical imaging program for the Maunakea Visitor Center.
- Member of the instrumentation development and commissioning team for the SITELE imaging spectrograph built by Université Laval/ABB (2010-present)
- Collaboration with the *International Lunar Observatory Association* for the Astronomy from the Moon program
- Member of the University of Hawaii Time Allocation Committee (2012-2015)
- Informal consultant for the Maunakea Spectroscopic Explorer (MSE)(2015-), Colby College Observatory (2015), University of Sao Paulo observatory (2013-2014), ILOA Moon Observatory (2015-).
- Member of the AURA Coordinating Council of Observatory Research Directors (ACCORD) (2008-2011)
- Chairman of the working group and project scientist/manager for implementation of the remote observing facility at CFHT.
- Associate professor (1999 – 2004) at Laval University (co-supervisor of M. Lelièvre PhD Thesis on “*Sub-critical star formation regime in galaxy disks*”).
- Member of the CASCA “Optical and Infrared Astronomy Committee” chaired by René Racine (2003 - 2007)
- CFHT representative on the New Generation CFHT Committee (“NGC”), charged with evaluating the long-term future of CFHT and propose a replacement design for the actual telescope (1999).
- Co-editor of the CFHT Information Bulletin (#40) and proceedings for the CFHT Users Meeting in Quebec City (May 1998).
- Member of Local Organizing Committee for the ADASS IX Conference hosted by CFHT in October 1999.
- Invited astronomer by Université de Paris VII for one-month stay at Meudon Observatory (July, 1996).
- Assistant teacher for an introductory course in astronomy at Laval University (1989).
- NTT representative on the working group for the ESO computer network system on La Silla.
- Student representative for the Scientific Committee of the Mount Megantic Observatory (1989 - 1992)
- Member of three departmental committees at Laval University (1988 -1991)

F – Other Qualifications

- Very familiar with IRAF.
- Familiar with relational database design.
- Computer platforms: UNIX/Solaris/Windows/Mac OS/Linux
- Programming languages: Perl, Tcl/Tk, HTML, Fortran, SQL, Coldfusion, Python (basic).
- Tools: Latex, FrameMaker, MS Office, Dreamweaver, Data Designer, Adobe products, Skycat, SigmaPlot, Sybase, Kaleidagraph, Hummingbird, MaximDL, and others.
- Management and leadership training from Frontier Associates, Inc.
- Expertise with small aperture (<0.8m) telescopes and instrumentation.
- Formal training in modern teaching techniques for Physics and Astronomy.
- Some expertise in historical astronomy.

G – Professional Memberships

- Member of the International Astronomical Union (IAU), the American Astronomical Society (AAS), and the Canadian Astronomical Society (CASCA).

H – Colloquia

- Invited speaker at the “2nd Beijing Forum on Lunar and Deep Space Exploration” in Beijing, China for a talk on “Exploring Galaxies From the Moon”, Sept 7-10, 2015.
- Invited speaker for a talk on WIYN at the Centre de Recherche en Astrophysique du Quebec (CRAQ), (Quebec City, 2009)
- Invited speaker for a review talk on abundance gradients in barred spirals at the International workshop on “Abundance Profiles: diagnostic tools for galaxy history (Quebec City, October 1997).
- Invited speaker for a review on star formation regions in galactic bars at the IAU Coll. No. 157, “Barred Galaxies”, (Tuscaloosa, May 1995)
- Conferences/Workshop (non-exhaustive): “ngCFHT”, (Hilo, 2013), “Science with Sitelle” (Canada, 2013), Telescopes from Afar (Hawaii, 2011), SPIE (San Diego, 2010), SPIE (Hawaii, 2002), ADASS XI (Victoria, 2001); ADASS IX (Waikoloa, 1999); SPIE (Kona, 1998); “Abundance Profiles” (Quebec City, 1997); “Barred Galaxies” (Tuscaloosa, 1995); “Effets d’environnement” (Paris, 1993); “Mass-transfer induced activity” (Lexington, 1993); “Dynamics of Galaxies” (Paris, 1990); “Le Monde des Galaxies” (Paris, 1989); AAS & CASCA (numerous meetings), WIYN Yale Survey Workshop (2010)

I – Publications

Refereed Papers

1. Nepton-Rousseau, L., Drissen, L., Robert, C., Martin, T & Martin, R. P., 2016, *Integral Field observations of NGC 628 with SITELLE. I.*, *MNRAS*, submitted.
2. Andrievsky, S.M., Martin R. P., Kovtyukh, V.V., Korotin, S.A., Lépine, J. R. D, 2016, *Oxygen, α -element and iron abundance distributions in the inner part of the Galactic thin disc. II*, *MNRAS*, in press.
3. Martin, R.P., Andrievsky, S.M., Kovtyukh, V.V., Korotin, S.A., Yegorova, I.A., Saviane, I., 2015, *Oxygen, α -element and iron abundance distributions in the inner part of the Galactic thin disc*, *MNRAS*, 449, 4071.
4. Drissen, L., Rousseau-Nepton, L., Lavoie, S., Martin, T., Robert, C., Martin, R.P., Mandar, J., Grandmont, F., 2014, *Imaging FTS: a different approach to integral field spectroscopy*, *Advances in Astronomy*, vol. 2014, 9.
5. Britavskiy, N.E., Andrievsky, S.M., Tsymbal, V.V., Korotin, S.A., Martin, P., Andrievska, A. S., 2012, *Chemical composition of semi-regular variable giants. III*, *A&A*, 542, 104.
6. Britavskiy, N.E., Andrievsky, S.M., Korotin, S.A., Martin, P., 2010, *Chemical composition of semi-regular variable giants. II*, *A&A*, 519, 74.
7. Drissen, L., Crowther, P., Ubeda, L., Martin, P., 2008, *Wolf-Rayet stars in M33 II. Optical spectroscopy of emission-line stars in giant HII regions*, *MNRAS*, 389, 1033.
8. Andrievsky, S.M., Korotin, S.A., Martin, P., 2007, *Chemical composition of semi-regular variable giants*, *A&A*, 464, 709.
9. Meech, K., et al., 2005, *Deep Impact: Observations from a Worldwide Earth-Based Campaign*, *Science*, 309.
10. Andrievsky, S. M., Luck, R. E., Martin, P., Lepine, J.R.D., 2004, *The Galactic Abundance Gradient from Cepheids. V. Transition zone between 10 and 11 kpc.*, *A&A*. 413, 159-172.
11. Abbott, J. B., Crowther, P. A., Drissen, L., Dessart, L., Martin, P., Boivin, G., 2004, *Wolf-Rayet Stars in M33. I: Optical Spectroscopy using CFHT-MOS*, *MNRAS*, 350, 552
12. Menard, F., Dougados, C., Magnier, E., Duchene, G., Cuillandre, J.-C., Fahlman, G., Forveille, T., Lai, O., Manset, N., Martin, P., Veillet, C., Martin, E. & Magazzu, A., *IRAS 04158+2805 : A Low-Mass Star with an Edge-on Disk*, submitted to *A&A*.
13. Bacon, R., Emsellem, E., Combes, F., Copin, Y., Monnet, G., & Martin, P., 2001, *The M31 double nucleus probed with OASIS: A natural $m=1$ mode?*, *A&A*, 371, 409.
14. Martin, P., Lelievre, M., & Roy, J.-R., 2000, *The O/H distribution in NGC 7479: Evidence of a minor merger event*, *ApJ*, 538, 141.
15. Kennicutt, R. C., Jr., Bresolin, F., French, H., & Martin, P., 2000, *An Empirical Test and Calibration of HII Region Diagnostics*, *ApJ*, 537, 589.
16. Weilbacher, P. M., Duc., P.-A., Fritze-v.Alvensleben, U., Martin, P., & Fricke, K.J., 2000, *Tidal dwarf candidates in a sample of interacting galaxies*, *A&A*, 358, 819.

17. Greusard, D., Wozniak, H., Friedli, D., Martinet, L., & Martin, P., 2000, *Near-infrared probing of embedded structures in starburst and Seyfert galaxies*, A&AS, 145, 425.
18. Martin, P., & Friedli, D. 1999, *Star formation in bar environments II. Physical properties, age and abundances of HII regions*, A&A, 346, 769-777.
19. Martin, P., & Friedli, D., 1997, *Star formation in bar environments I. Morphology, star formation rates and general properties*, A&A, 326, 449-464.
20. Martin, P., & Belley, J., 1997, *Nebular gas abundances and mixing processes in the ringed galaxy NGC 4736*, A&A, 321, 363-373.
21. Martin, P., & Belley, J., 1996, *Arm-interarm and large-scale O/H variations in disk galaxies*, ApJ, 468, 598.
22. Jablonka, P., Martin, P., & Arimoto, N., 1996, *The luminosity-metallicity relation for bulges of spiral galaxies*, AJ, 112, 1415.
23. Roy, J.-R., Belley, J., Dutil, Y., & Martin, P., 1996, *The O/H distribution in the low-mass galaxies NGC 2366 and NGC 4395*, ApJ, 460, 284.
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27. Wozniak, H., Friedli, D., Martinet, L., Martin, P., & Bratschi, P., 1995, *Disc galaxies with multiple triaxial features I. BVRI and H α photometry*, Astro Lett. and Communications 31, 153.
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32. Martin, P., Roy, J.-R., Noreau, L., & Lo, K.-Y., 1989, *The optical jet of the galaxy NGC 4258: interaction with the interstellar medium*, ApJ, 345, 707.

Non-refereed papers

33. Rousseau-Nepton, L., Robert, C., Drissen, L., Martin, R. P., Martin, T., et al., 2016, *SITELLE at CFHT*, IAU No. 321, in press.

34. Harbeck, D., ... Martin, R. P, Muller, G., Knezek, P., Hunten, M., 2014, *The WYIN one degree imager 2014: performance of the partially populated focal plane and instrument upgrade path*, SPIE, 9147.
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36. Harbeck, D., Martin, P., Cavin, J., Jacoby, G., Muller, G., Yeatts, A., McCloskey, R., Ivens, J., Blanco, D., Corson, C., 2010, *The WIYN One Degree Imager: Project Update 2010*, SPIE, 7735, 15.
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39. Vermeulen, T, Teeple, D, Mahoney, B, Thomas, J, Albert, L., Martin, P., Forveille, T., Yan, C-H., 2006, *CFHT WIRCam Software Architecture and Implementation*, SPIE, 627, 16.
40. Martin, P., Savalle, R., Vermeulen, T, & Shapiro, J., 2002, *The Queued Service Observing Project at CFHT*, SPIE, 4844, 74.
41. Abbott, J., Crowther, P., Drissen, L., Dessart, L, & Martin, P., 2002, *Spectral Analysis of WC Stars in M33 using CFHT-MOS*, IAU Symp. 212, van Der Hulst, Herrero & Kateban, eds.
42. Savalle, R., Martin, P., Shapiro, J., & Vermeulen, T., 2002, *The Queue Observing Project at CFHT: Phase 2 database and observation submission tool*, ADASS XI,
43. Vermeulen, T., Savalle, R., Martin, P., & Shapiro, J., 2002, *The Queue Observing Project at CFHT: Queue preparation and observation tools*, ADASS XI.
44. Dougados, C., Menard, F., Cuillandre, J.-C., Magnier, E., Lai, O., Manset, N., Forveille, T., Fahlman, G., Martin, P., Veillet, C., McDonald, & J., Bouvier, J., *A search for substellar mass objects in Taurus*.
45. Lelievre, M., Roy, J.-R., & Martin, P., 2000, *Star formation in subcritical environments*, in Stars, Gas and Dust in Galaxies: Exploring the links, ASP Conf. Series. Vol. 221, D. Alloin, K. Olsen, G. Galaz, eds. p.129
46. Greusard, D., Friedli, D., Martinet, L., Wozniak, H., & Martin, P., 1999, *Near-IR probing of embedded structures in active galaxies*, in Galaxy Dynamics: from the Early Universe to the Present, ASP Conf. Series., vol. 197, F. Combes, G. Mamon, V. Charmandaris, eds., p.57.
47. Magrath, B., Arsenault, R., Barrick, G., Martin, P., Grundseth, B., Ward, J., Wilcox, D., Healy, S., & Knight, W., 1998, *Novel telescope mounted spectral calibration source for the CFHT*, Proc. SPIE, Vol. 3355, p.979.
48. Martin, P., 1998, *Element distributions in barred galaxies*, in " Abundance Profiles: Diagnostic Tools for Galaxy History", ASP No, 147, p.68.

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50. Martin, P., 1996, *Properties of HII regions along galactic bars*, in "Barred Galaxies", IAU Coll. No. 157, p.70.
51. Jablonka, P., Arimoto, N., & Martin, P., 1996, The overabundance of magnesium over iron in bulges of spiral galaxies, in New light on galaxy evolution, IAU 171, Kluwer, p.396.
52. Martin, P., & Belley, J., 1996, *O/H abundances in the ringed galaxy NGC 4736: Mixing processes in the interstellar medium*, in "Barred Galaxies", IAU Coll. No. 157, p.111.
53. Jablonka, P., Martin, P., & Arimoto, N., 1995, *On the analogy between bulges of spiral galaxies and ellipticals*, in Fresh Views on Elliptical Galaxies, ASP No. 86, p185.
54. Martin, P., 1993, *The abundance gradients in barred galaxies : the role of radial flows*, in Mass-transfer induced activity in galaxies, ed. I. Schlosman, Cambridge: Cambridge Univ. Press), p177.
55. Martin, P., Roy, J.-R., & Belley, J., 1992, *The abundance gradients in barred spiral galaxies*, in Physics of Nearby Galaxies : Nature or Nurture?, eds. T. X. Thuan, C. Balkowski, J. T. T. Van., Rencontres de Moriond, Les Arcs, France, (Ed. Frontieres), p101.
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IAU/MPEC Circulars

57. Veillet, C., Shapiro, J., Martin, P., & Marsden, B.G., 2001, Minor planet Electronic Circ., C32.
58. Veillet, C., Shapiro, J., Martin, P., & Marsden, B.G., 2001, Minor planet Electronic Circ., C21
59. Veillet, C., Shapiro, J., Martin, P., & Marsden, B.G., 2001, Minor planet Electronic Circ., C20
60. Hainaut, O.R., Meech, K.J., Bauer, J., Martin, P., Mueller, K., Van de Steene G., Hurtado, N., & Miranda, J., et al., 1997, *The recovery of comet 55P/Tempel-Tuttle*, IAU Circular 6579.

Others

61. Martin, P., & Friedli, D., *At the Hearts of Barred Galaxies*, 1999, Sky & Telescope, vol.97, number3, p.32.
62. Martin, P., & Rucinski, S., 1998, *Proceedings of the fifth CFHT user's meeting*
63. Martin, P., 1991, *A la Recherche des Supernovae Extragalactiques*, Le Qu'ebec Astronomique, 11, 12.
64. Martin, P., 1991, *Vers Mars*, 1991, Astronomie-Qu'ebec, 1, 12.
65. Martin, P., 1991, *Recherche des Supernovae Extragalactiques*, Ciel & Terre, Societe Royale Belge d'Astronomie, 107, 131.
66. Martin, P., 1990, *Recherche en astronomie amateur*, Hyper-Espace, 2, no.2 , 3.

67. Martin, P., & Levesque, S., 1987, *Etudes Photographiques des Galaxies Exterieures*, Le Quebec Astronomique, 7, 4

J – Related Activities

- Invited speaker for Federation des Astronomes Amateurs du Quebec, annual meeting 2007.
- Popular papers on astronomy in Le Quebec Astronomique, Astronomie-Quebec, Ciel & Terre, Hyper-Espace magazines.
- Popular talks on astronomy in Hilo, MKVIS, Quebec City, Rimouski, Montreal, Mount Megantic Observatory, Matane, Tucson, etc.
- Radio columnist on astronomy in Quebec City (CKRL-FM)
- Invited astronomer for interviews about future explorations of Mars and the Hubble Space Telescope at Radio-Canada (CBC) (Quebec City).
- First-price winner of the scientific journalism contest conducted by the Planetarium Dow (Montreal, 1991).
- Vice-president of the Rimouski Club for Amateur Astronomers (1986-1987).
- Co-founder and Member of the West Hawaii Astronomy Club

K – Other Interests

- Music: Drums and Percussion
- Amateur astronomy
- History: Science/World War II/Biographies/Music

L – References

Primary

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ASSOCIATE PROFESSOR IN ASTRONOMY AT UHH

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Formal Education

The University of Chicago

PH.D. IN ASTRONOMY AND ASTROPHYSICS

Galaxy Structural Parameters: Star Formation Rate and Evolution with Redshift

(advisor: Dr. Richard Kron)

Chicago, Illinois, USA

Jul. 1993 - Aug. 1998

The University of Chicago

M.S. IN ASTRONOMY AND ASTROPHYSICS

The faint Globular Cluster Pal 13 (advisor: Dr. Kyle Cudworth)

Chicago, Illinois, USA

Aug. 1992 - Jul. 1993

Universidad de Chile - School of Physical and Mathematical Sciences

M.S. IN ASTRONOMY

ESO 207-61: A brown dwarf candidates in the Hyades moving group (advisor: Dr. Maria Teresa Ruiz)

Santiago, Chile

Mar. 1989 - Aug. 1992

Universidad de Chile - School of Physical and Mathematical Sciences

B.S. IN PHYSICS

Santiago, Chile

Mar. 1985 - Dec. 1989

Employment History

Department of Physics and Astronomy, University of Hawai'i at Hilo

CHAIR DEPARTMENT OF PHYSICS AND ASTRONOMY

- Develops course schedule of physics and astronomy classes
- Calls bi-weekly meetings with all faculty
- Responds to students' concerns
- Responds to faculty, lecturers', and APT concerns
- Manages access to offices and research spaces and use of two Departmental vehicles
- Responds to concerns of Division Chair, College of Arts and Sciences Dean and Associate Dean, Vice Chancellor of Academic Affairs on matters related to class and major enrollments and on Department budget
- Triggered, negotiated, and secured guaranteed access to telescopes through agreement with the Institute for Astronomy from the University of Hawai'i at Mānoa that culminated with the Memorandum of Understanding, signed by University of Hawai'i President Lassner
- Triggered and secured participation of UHH as single undergraduate institution as part of the 10+10 collaboration of the China Scholarship Council for exchange of students, researchers and faculty from ten Chinese Universities to ten US universities
- Negotiated with Chancellor Straney the purchase of the 0.7m PlaneWave telescope as part of the Capital Improvement Projects as a replacement of the inoperable 0.9m telescope on Maunakea
- Increase visibility of the Department and increase collaborative opportunities for faculty and students with University of Hawai'i at Mānoa and Maunakea observatories by meeting with Subaru, CFHT, and Gemini observatory directors
- Further developed the undergraduate program in astronomy to incorporate more laboratory courses through unique opportunities with the Subaru observatory

Hilo, HI, USA

Aug. 2014 - present

Department of Physics and Astronomy, University of Hawai'i at Hilo

ASSOCIATE PROFESSOR

- From a total of 23 required courses for our majors and non-majors, taught 20 of them
- Gained access to several nights on Maunakea telescopes to carry out research on star formation in nearby galaxies and on the properties of distant galaxies detected as intervening sources against the light of quasar at Keck, Gemini, Subaru, CFHT, UKIRT, and the UH2.2m
- Manage awarded extramural (NSF, Cottrell Scholar) and two intramural grants to carry out research while heavily involving several undergraduate students
- Developed freshman astronomy lab ASTR 110L; trained lecturers and faculty, and student lab assistants on experiments and equipment in ASTR 110L
- Developed a course on Communicating Astronomy to the Public as a special topics course

Hilo, HI, USA

Aug. 2013 - present

Department of Physics and Astronomy, University of Hawai'i at Hilo*Hilo, HI, USA*

ASSISTANT PROFESSOR

Aug. 2008 - Jul. 2013

- Taught service and major courses in physics and astronomy to undergraduate students and in 2012 recognized with the Francis Davis Award for excellence in teaching at the UH system level
- Through a competitive time allocation process, received 3-5 nights per semester to use Maunakea telescopes to carry out research on galaxies and the interstellar medium
- Awarded National Science Foundation, Cottrell Scholars funding and intramural grants adding up to \$200,000
- Lead internal assessment of the status of the University of Hawai'i Hilo telescope commissioning process
- Included 17 undergraduate students in research experiences at University of Hawai'i Hilo and Maria Mitchel Observatory in Nantucket
- Prepare them to deliver presentations as first authors in professional astronomy meetings, such as the American Astronomical Society meeting in 2010 in Washington, D.C. and 2011 in Seattle, WA, and the International Astronomical Union General Assembly in Honolulu in 2015
- Developed two special topics courses for astronomy majors on the interstellar medium of extragalactic sources and data processing
- Served in UH Hilo committees including various selection committees (UHH hiring committee, 3 years in the Telescope allocation committee, Akamai internship) and UHH strategic plan implementation committees

Department of Physics and Astronomy, University of Hawai'i at Hilo*Hilo, HI, USA*

ASSISTANT PROFESSOR - NON TENURE TRACK

Aug. 2006 - Jul. 2008

- Taught service and major courses in physics and astronomy to undergraduate students
- Develop research on star formation in distant galaxies using Maunakea telescopes in particular the Gemini, and Subaru telescopes; and research on globular cluster population statistics in the Virgo cluster of galaxies using Maunakea telescopes in particular Keck as well as space-based Hubble Space Telescope
- Involve undergraduate student in research and prepare them to deliver presentations as first author in professional astronomy meetings at the American Astronomical Society meeting in 2007 in Honolulu

Department of Physics and Astronomy, University of Hawai'i at Hilo*Hilo, HI, USA*

NSF RESEARCH ASSOCIATE

Aug. 2003 - Jul. 2006

- Lead the research on globular clusters population statistics in the field of the Virgo Cluster of galaxies using data obtained with the Hubble Space Telescope to calibrate the galaxy globular cluster contents
- Carry out imaging observations at Cerro Tololo Interamerican Observatory in Chile and infrared and visible imaging observations at CFHT and Keck
- Develop own research path on distant galaxies' interstellar medium using Maunakea telescopes through a competitive selection process while including undergraduate students in the research process

Department of Physics and Astronomy, University of Hawai'i at Hilo*Hilo, HI, USA*

VISITING FACULTY

Aug. 2002 - Jul. 2003

- Taught physics and astronomy courses to majors and non-majors while developing own research path on distant galaxies' interstellar medium using Maunakea telescopes

Gemini Observatories - Gemini North Headquarters*Hilo, HI, USA*

GEMINI SCIENCE FELLOW - POSTDOCTORAL RESEARCHER

Mar. 1998 - Jul. 2002

- Member of the commissioning team of the Gemini North telescope meeting the expected first light date
- Member of the commissioning team of various astronomical instruments: CIRPASS, GMOS, NIRI
- Develop and test data reduction software in IRAF scripts for various visible and near infrared imagers and spectrographs
- Carry out monthly one-week observations at the summit of Maunakea with various instruments on Gemini North
- Develop web-based documentation for instrumentation and exposure time calculator

Carnegie Institution of Washington - Las Campanas Observatory*La Serena, Chile*

OBSERVER

1991

- Carry out multi-band CCD imaging observations of open clusters at Las Campanas Observatory using the Swope 1m telescope as one of the first Chilean master degree students to be employed by the observatory

University of Toronto - Las Campanas Observatory*La Serena, Chile*

OBSERVER

1991

- Carry out multi-band plate imaging observations of globular clusters at Las Campanas Observatory using the University of Toronto 60cm telescope

Universidad de Chile - Facultad de Ciencias Físicas y Matemáticas*Santiago, Chile*

RESEARCH ASSISTANT

1990-1991

- Carry out spectroscopic observations with the 4.0 telescope at Cerro Tololo Interamerican Observatory while delivering reduced spectroscopic data before the end of the night

Universidad de Chile - Facultad de Ciencias Físicas y Matemáticas*Santiago, Chile*

RESEARCH ASSISTANT

1989-1990

- As senior student, carry our imaging CCD observations with the 0.9m telescope at Cerro Tololo Interamerican Observatory and with the 1m telescope at Las Campanas Observatory
- Carry out data reduction using IRAF to determine flux and colors of quasars

Universidad de Chile - Facultad de Ciencias Físicas y Matemáticas*Santiago, Chile*

TEACHING ASSISTANT

1986-1991

- Deliver recitation sessions to engineering, physics and mathematics students in freshman physics and astronomy courses while a sophomore, junior and senior undergraduate student

Grants & Awards**UHH***\$8,000*

SEED GRANT

2016-2017

*The ISM in Nearby Galaxies***NSF - AST***\$142,000*

EXTRAMURAL GRANT

2008-2013

*Star Formation Rates: Near and Far***UHH***\$15,000*

SEED GRANT

2008-2009

*Star Formation Rates in Nearby Galaxies***AURA***\$15,000*

EXTRAMURAL GRANT

1995-2000

*Structural Parameters of Distant Galaxies***Government of Chile**

BECA PRESIDENTE DE LA REPUBLICA

1985

*Universidad de Chile***Professional Affiliations****American Astronomical Society***US*

MEMBER

1995 - present

- Participate in annual or bi-annual meetings, exchange ideas with collaborators while fostering new collaborations

Community/Civil Involvement**Journey Through The Universe, AstroDay, Onizuka, UHH***Hilo, HI*

PRESENTER OF ASTRONOMY OUTREACH EVENTS

since 2003

- Engaged public in various astronomy and physics hands-on activities in K-12 classrooms, at the Hilo Prince Kuhio Mall, at the UHH campus, and various high school groups from Japan, Korea, and US mainland at UHH
- Lead the first official representation of the Department of Physics and Astronomy at the University of Hawai'i at Hilo at AstroDay in 2010 by organizing the faculty and students and producing material to inspire astronomy to the public

Public Forums*Hilo and Honolulu, HI*

THIRTY METER TELESCOPE AND DECOMMISSIONING OF UHH TELESCOPE

since 2008

- Since 2008, met and discussed the issue of the TMT with UHH faculty and staff, including Native Hawaiian faculty and staff, the public (Mr. Richard Ha), and kept UHH astronomy majors informed about the situation
- June 2014, provided testimony to DLNR hearing in Honolulu on TMT from a very personal perspective as a mother of two, teacher, minority, and member of the Hilo community
- June 2016, met with PUEO, Perpetuating Unique Educational Opportunities, a group of Native Hawaiians in support of education at all levels for the local community, to exchange ideas of how to balance educational opportunities and technological advances while caring for our community as a whole

Professional Development**ISEE Akamai Mentor Workshop***Waikoloa, HI*

PARTICIPANT

13-14 May 2016

- Organized by the Institute for Scientists & Engineer Educators, ISEE, provided coaching and mentor skills to scientists and engineers for effective work with young undergraduates engaged in projects

Hawai'i National Great Teachers Seminar*Volcano National Park, HI*

PARTICIPANT

5-10 August 2012

- Organized by Leeward Community College; tuition fully funded by UH system

Coaching Skills for Leaders*University of Hawai'i at Hilo, HI*

PARTICIPANT

27 April 2016

- Initiated and organized by Ms. Sulma Ghandi from UHH, it introduced various leadership skills by Ms. Mary Kuentz and Sydney Wiecking with a follow up one-on-one coaching session

Center for Astronomy Education - Astro 101 Teaching Excellence Workshop*Washington, D.C.*

PARTICIPANT

2-3 January 2016

- Program to understand how non-majors learn and to learn skills that develop critical thinking process through astronomy

Conferences & Symposia

PROFESSIONAL CONFERENCES AND MEETINGS (LAST TWO YEARS)

- SPIE - Edinburgh June 2016
- China Scholarship Council - Beijing June 2016
- TMT Science Meeting - Kyoto May 2016
- IAU - Honolulu August 2015

Public Talks

- Maunakea Visitor Information Center: Astronomy at UHH - January 2017
- Maunakea Skies Talk Imiloa: Future of UH Hilo Astronomy Program - August 2016
- Office of Maunakea Management: Star formation in Galaxies - 2014
- Year-round talks to national and international highschool students on astronomy - 2012 - present

Publications**Refereed Articles**

- [1] B. Li, E. W. Peng, H.-x. Zhang, J. P. Blakeslee, P. Côté, L. Ferrarese, A. Jordán, C. Liu, S. Mei, T. H. Puzia, M. Takamiya, G. Tranco, and M. J. West. A Gemini/GMOS Study of Intermediate Luminosity Early-type

- Virgo Cluster Galaxies. I. Globular Cluster and Stellar Kinematics. *ApJ*, 806:133, June 2015.
- [2] J. Vanderbeke, M. J. West, R. De Propriis, E. W. Peng, J. P. Blakeslee, A. Jordán, P. Côté, M. Gregg, L. Ferrarese, M. Takamiya, and M. Baes. G2C2 - II. Integrated colour-metallicity relations for Galactic globular clusters in SDSS passbands. *MNRAS*, 437:1734–1749, January 2014.
- [3] J. Vanderbeke, M. J. West, R. De Propriis, E. W. Peng, J. P. Blakeslee, A. Jordán, P. Côté, M. Gregg, L. Ferrarese, M. Takamiya, and M. Baes. G2C2 - I. Homogeneous photometry for Galactic globular clusters in SDSS passbands. *MNRAS*, 437:1725–1733, January 2014.
- [4] M. Takamiya, M. Chun, V. P. Kulkarni, and S. Gharanfoli. The Nature of a Galaxy along the Sight Line to PKS 0454+039. *AJ*, 144:111, October 2012.
- [5] M. J. West, A. Jordán, J. P. Blakeslee, P. Côté, M. D. Gregg, M. Takamiya, and R. O. Marzke. The globular cluster systems of Abell 1185. *A&A*, 528:A115, April 2011.
- [6] J. Vanderbeke, M. West, P. Côté, E. Peng, J. Blakeslee, A. Jordán, M. Gregg, M. Takamiya, and M. Baes. New look at the Galactic Globular Cluster System. *Boletín de la Asociación Argentina de Astronomía La Plata Argentina*, 54:163–166, 2011.
- [7] M. R. Chun, V. P. Kulkarni, S. Gharanfoli, and M. Takamiya. Adaptive Optics Imaging of a Massive Galaxy Associated With a Metal-Rich Absorber. *AJ*, 139:296–301, January 2010.
- [8] E. W. Peng, A. Jordán, P. Côté, M. Takamiya, M. J. West, J. P. Blakeslee, C.-W. Chen, L. Ferrarese, S. Mei, J. L. Tonry, and A. A. West. The ACS Virgo Cluster Survey. XV. The Formation Efficiencies of Globular Clusters in Early-Type Galaxies: The Effects of Mass and Environment. *ApJ*, 681:197–224, July 2008.
- [9] S. Gharanfoli, V. P. Kulkarni, M. R. Chun, and M. Takamiya. Emission-Line Spectroscopy of a Damped Ly α -absorbing Galaxy at $z = 0.437$. *AJ*, 133:130–138, January 2007.
- [10] M. R. Chun, S. Gharanfoli, V. P. Kulkarni, and M. Takamiya. Adaptive Optics Imaging of Low-Redshift Damped Ly α Quasar Absorbers. *AJ*, 131:686–700, February 2006.
- [11] I. Jørgensen, M. Bergmann, R. Davies, J. Barr, M. Takamiya, and D. Crampton. RX J0152.7-1357: Stellar Populations in an X-Ray Luminous Galaxy Cluster at $z = 0.83$. *AJ*, 129:1249–1286, March 2005.
- [12] B. J. Weiner, A. C. Phillips, S. M. Faber, C. N. A. Willmer, N. P. Vogt, L. Simard, K. Gebhardt, M. Im, D. C. Koo, V. L. Sarajedini, K. L. Wu, D. A. Forbes, C. Gronwall, E. J. Groth, G. D. Illingworth, R. G. Kron, J. Rhodes, A. S. Szalay, and M. Takamiya. The DEEP Groth Strip Galaxy Redshift Survey. III. Redshift Catalog and Properties of Galaxies. *ApJ*, 620:595–617, February 2005.
- [13] G. P. Smith, I. Smail, J.-P. Kneib, C. J. Davis, M. Takamiya, H. Ebeling, and O. Czoske. A Hubble Space Telescope lensing survey of X-ray luminous galaxy clusters - III. A multiply imaged extremely red galaxy at $z=1.6$. *MNRAS*, 333:L16–L20, June 2002.
- [14] S. D. Ryder, J. H. Knapen, and M. Takamiya. Near-infrared spectroscopy of the circumnuclear star formation regions in M100: evidence for sequential triggering. *MNRAS*, 323:663–671, May 2001.
- [15] D. L. Block, I. Puerari, M. Takamiya, R. Abraham, A. Stockton, I. Robson, and W. Holland. Dust-penetrated morphology in the high-redshift universe: Clues from NGC 922. *A&A*, 371:393–403, May 2001.
- [16] M. H. Siegel, S. R. Majewski, K. M. Cudworth, and M. Takamiya. A Cluster's Last Stand: The Death of Palomar 13. *AJ*, 121:935–950, February 2001.
- [17] T. G. Hawarden, S. D. Ryder, R. J. Massey, G. S. Wright, and M. Takamiya. A Near-IR Spectral Atlas of IR-Selected Nearby Spirals. *Ap&SS*, 269:501–504, December 1999.
- [18] M. Takamiya. Morphological Evolution of Galaxies. *Ap&SS*, 269:339–344, December 1999.
- [19] M. Takamiya. Galaxy Structural Parameters: Star Formation Rate and Evolution with Redshift. *PASP*, 111:772–772, June 1999.
- [20] M. Takamiya. Galaxy Structural Parameters: Star Formation Rate and Evolution with Redshift. *ApJS*, 122:109–150, May 1999.
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