Inge Heyer, PhD

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EDUCATION

PhD 2012 University of Wyoming – Science Education: Astronomy Education
Dissertation: Establishing the Empirical Relationship between Non-science Majoring Undergraduate Learners' Spatial Thinking Skills and Their Conceptual Astronomy Knowledge
Advisors: Timothy Slater and Stephanie Slater

MS 1987 University of Hawaii at Manoa – Astronomy
Research Focus: Frequency and Distribution of Binary T Tauri Stars
Advisor: George Herbig

BS 1985 Smith College – Astronomy and Physics
Honors Thesis: Anisotropic Winds from T Tauri Stars
Advisor: Suzan Edwards

AA 1982 Tenri University (Tenri, Japan) – Japanese Language

Bacc. 1979 Arndt Gymnasium Dahlem (Berlin, Germany) – German Baccalaureate

PROFESSIONAL APPOINTMENTS

Universities and Astronomy Research Institutions

2012-current Loyola University Maryland
Dept. of Physics
Senior Lecturer
Responsibilities include teaching undergraduate astronomy and physics survey courses, for majors and non-majors, some with laboratory sections, and conducting astronomy education research. I co-developed and implemented a 2-semester integrated science course for elementary education majors.

2010-2012 University of Wyoming, Laramie, WY
Dept. of Physics and Astronomy
Graduate Teaching Assistant (astronomy teaching, science education teaching)
College of Education – Science Education
Responsibilities included teaching undergraduate astronomy survey laboratory, physical science for future elementary school teachers, graduate statistics for astronomy education research, graduate robotic astronomy observing for educators, graduate qualitative research methods. The last three of these courses were taught online using a variety of web teaching tools.

2006-2010 Joint Astronomy Centre, Hilo, HI
Public Information Officer
Responsibilities included developing, implementing and managing JAC's community, public outreach, education, and media relations; creating print and education content for delivery through public presentations, press releases and the web; building and managing ongoing relations with local, national, and international media, science, governmental and educational agencies; supervising and mentoring student interns.

1992-2006 Space Telescope Science Institute, Baltimore, MD
Senior Research Consultant, Senior Data Analyst
Responsibilities included contributions to early public accessibility of data and to significant research results through image analysis, and supporting data analysis/logistical needs of Hubble observers through documentation and analysis support.
Archive Specialist
Responsibilities include facilitating transition to a new generation of science data archive system, developing tools and training procedures, reprocessing the existing archive data for compatibility with the new system, and facilitating data access for principal astronomical investigators.

1985-1991 University of Hawaii at Manoa - Institute for Astronomy, Honolulu, HI
Graduate Research Assistant *(Search for Dark Companions of K and M Giants; Synoptic Seeing Measurements at the UH 2.2m Telescope)*
Graduate Teaching Assistant *(undergraduate astronomy laboratory, summer and continuing education introductory astronomy classes)*

1982-1985 Smith College- Departments of Astronomy and Physics, Northampton, MA
Teaching Assistant *(undergraduate astronomy laboratory)*
Research Assistant *(analysis of particle interactions in shock waves)*
Summer Internship *(Arecibo Radio Observatory)*

UNIVERSITY TEACHING

Loyola University Maryland, Baltimore, MD
Visiting Assistant Professor/Senior Lecturer, 2012-current
General Physics with lab for majors (U)
Introductory Physics with lab for non-majors (U, face-to-face and online)
Introductory Astronomy for non-majors (U, face-to-face and online)
Integrated Science (physics, chemistry, biology, astronomy) for K-6 education majors (U, face-to-face and online)
Engaging Nature (physics, chemistry, biology, astronomy) Honors Program (U, face-to-face and online)

Towson University, Towson, MD
Adjunct Professor, summer 2015-current

Introductory Physics lab for non-majors (U)
Introductory Astronomy for non-majors (U, face-to-face and online)
Introductory Physics for non-majors (U)
Light and Color (U, face-to-face and online)

University of Wyoming, Laramie, WY
Instructor, 2011-2012
Physical Science for K-6 education majors (U)
Adv. Quantitative Methods for Astronomy Education Research (G, co-instructor, online)
Introductory Astronomy Laboratory (U)

Johns Hopkins University, Baltimore, MD
Instructor, 1993, 2005
Astronomy for middle and high school science teachers (G)

University of Hawaii at Manoa, Honolulu, HI
Instructor, 1991
Introductory Astronomy (U)
Graduate Assistant, 1985-1986
Astronomy Laboratory (U)

Smith College, Northampton, MA
Student Instructor, 1983
Introductory Astronomy (U)

AWARDS

American Astronomical Society Certificate of Appreciation for volunteer services for over 20 years, 2018

Joint Astronomy Centre 2009 nominee for Employee of the Year of the Research Corporation of the University of Hawaii

Joint Astronomy Centre exceptional performance award as public information officer in 2009

Space Telescope Science Institute 2004 award for WFC3 thermal vacuum testing at Goddard Space Flight Center

Space Telescope Science Institute 1995 Hubble Space Telescope Star of Outreach Award for public outreach activities

Smith College 1985 Waterman Prize in physics

ZONTA International 1985 scholarship for astronomy graduate education

PROFESSIONAL AFFILIATIONS

American Astronomical Society, 1987-present (Deputy Press Officer 2009-2018)
Research Fellow, Center for Astronomy & Physics Education Research (CAPER), 2009-present
National Association of Science Writers, 2010-present
Sigma Xi, 1985-1995

REFEREED SCIENTIFIC ARTICLES

Guffey, S.K., Slater, S.J., Schleigh, S.P., Slater, T.F., Heyer, I. (2016). *Surveying Geology Concepts in Education Standards for a Rapidly Changing Global Context*. Contemporary Issues in Education Research, 9(4).

Tatge, C. B., Slater, S. J., Schleigh, S. P., Slater, T. F., Bretones, P. S., McKinnon, D., & Heyer, I. (2016). *iSTAR first light: characterizing astronomy education research dissertations in the iSTAR database*. Journal of Astronomy & Earth Sciences Education, 3(1).

Heyer, I.; Slater, S.J.; Slater, T.F. (2013). *Establishing the Empirical Relationship between Non-science Majoring Undergraduate Learners' Spatial Thinking Skills and Their Conceptual Astronomy Knowledge.* Latin-American Journal of Astronomy Education 16, p.45-61.

Jogee, S.; Barazza, F.D.; Rix, H.-W.; Shlosman, I.; Barden, M.; Wolf, C.; Davies, J.; Heyer, I.; Beckwith, S.V.W.; Bell, E.F.; Borch, A.; Caldwell, J.A.R.; Conselice, C.J.; Dahlen, T.; Hussler, B.; Heymans, C.; Jahnke, K.; Knapen, J.H.; Laine, S.; Lubell, G.M.; Mobasher, B.; McIntosh, D.H.; Meisenheimer, K.; Peng, C.Y.; Ravindranath, S.; Sanchez, S.F.; Somerville, R.S.; Wisotzki, L. (2004). *Bar Evolution over the Last 8 Billion Years: A Constant Fraction of Strong Bars in the GEMS Survey.* Astrophysical Journal 615, p.L105-L108.

Lucas, R.A.; Baum, S.A.; Brown, T.M.; Casertano, S.; Conselice, C.; de Mello, D.; Dickinson, M.E.; Ferguson, H.C.; Fruchter, A.S.; Gardner, J.P.; Gilmore, D.; González-Lópezlira, R.A.; Heyer, I.; Hook, R.N.; Kaiser, M.E.; Mack, J.; Makidon, R.; Martin, C.L.; Mutchler, M.; Smith, T. E.; Stiavelli, M.; Teplitz, H.I.; Wiggs, M.S.; Williams, R.E.; Zurek, D.R. (2003). *The Hubble Deep Field South Flanking Fields.* Astronomical Journal 125, p.398-417.

Casertano, S.; de Mello, D.; Dickinson, M.; Ferguson, H.C.; Fruchter, A.S.; Gonzalez-Lopezlira, R.A.; Heyer, I.; Hook, R.N.; Levay, Z.; Lucas, R.A.; Mack, J.; Makidon, R.B.; Mutchler, M.; Smith, T. E.; Stiavelli, M.; Wiggs, M.S.; Williams, R.E. (2000). *WFPC2 Observations of the Hubble Deep Field South.* Astronomical Journal, 120(6), p.2747-2824.

Williams, R.E.; Baum, S.; Bergeron, L.E.; Bernstein, N.; Blacker, B.S.; Boyle, B.J.; Brown, T.M.; Carollo, C. M.; Casertano, S.; Covarrubias, R.; de Mello, D.F.; Dickinson, M. E.; Espey, B.R.; Ferguson, H.C.; Fruchter, A.; Gardner, J.P.; Gonnella, A.; Hayes, J.; Hewett, P. C.; Heyer, I.; Hook, R.; Irwin, M.; Jones, D.; Kaiser, M. E.; Levay, Z.; Lubenow, A.; Lucas, R. A.; Mack, J.; MacKenty, J.W.; Madau, P.; Makidon, R. B.; Martin, C. L.; Mazzuca, L.; Mutchler, M.; Norris, Ray P.; Perriello, Beth; Phillips, M. M.; Postman, Marc; Royle, Patricia; Sahu, Kailash; Savaglio, S.; Sherwin, A.; Smith, T. E.; Stiavelli, M.; Suntzeff, N. B.; Teplitz, H.I.; van der

Marel, R.P.; Walker, A. R.; Weymann, R. J.; Wiggs, M. S.; Williger, G.M.; Wilson, J.; Zacharias, N.; Zurek, D.R. (2000). *The Hubble Deep Field South: Formulation of the Observing Campaign.* Astronomical Journal, 120(6), p.2735-2746).

Whitmore, B.; Heyer, I.; Casertano, S. (1999). *Charge-Transfer Efficiency of WFPC2.* Publications of the Astronomical Society of the Pacific, 111, p. 1559.

Vaz, L.P.R.; Andersen, J.; Casey, B.W.; Clausen, J.V.; Mathieu, R.D.; Heyer, I. (1998). *Four-colour photometry of eclipsing binaries: XXXIX. Light curves of the pre-main sequence triple system TY Coronae Australis.* Astronomy and Astrophysics Supplement 130, p. 245.

Stiavelli, M.; Panagia, N.; Carollo, C.M.; Romaniello, M.; Heyer, I.; Gonzaga, S. (1998). *WFPC2 Observations of NGC 454: An Interacting Pair of Galaxies.* Astrophysical Journal Letters, 492, p.L135.

Williams, R. E.; Blacker, B.; Dickinson, M.; Dixon, W. V. D.; Ferguson, H. C.; Fruchter, A. S.; Giavalisco, M.; Gilliland, R. L.; Heyer, I.; Katsanis, R.; Levay, Z.; Lucas, R. A.; McElroy, D. B.; Petro, L.; Postman, M.; Adorf, H.-M.; Hook, R. (1996). *The Hubble Deep Field: Observations, Data Reduction, and Galaxy Photometry.* Astrophysical Journal, 112, p.1335.

Henry, J.P.; Heyer, I.; Cecil, G.; Barnes, B.; Cheigh, F. (1987). *Synoptic Seeing Measurements at the UH 2.2m Telescope.* Publications of the Astronomical Society of the Pacific, 99, p.1354.

Edwards, S.; Cabrit, S.; Strom, S.E.; Heyer, I.; Strom, K.M.; Andersen, E. (1987). *Forbidden Line and H-alpha Profiles in T Tauri Spectra: A Probe of Anisotropic Mass Outflows and Circumstellar Disks.* Astrophysical Journal, 321, p.473.

BOOKS, CHAPTERS AND CURRICULUM DEVELOPMENT CONTRIBUTIONS

Slater, T.F, Heyer, I. (2018). *Being a Successfully Busy Professor*. Pono Publishing. Laramie, WY. ISBN 978-1721808311

Slater, T.F, Heyer, I., Slater, S.J. (2018). *Investigating Astronomy (4th Edition)*. Pono Publishing. Laramie, WY. ISBN 978-1978189515 (media-enhanced edition)

Slater, T.F, Heyer, I., Zeilik, M. (Eds.) (2018). *Insights Into the Universe: Effective Ways to Teach Astronomy (revised printing)*. Pono Publishing. Laramie, WY. ISBN 978-1719149860

Slater, T.F, Heyer, I., Slater, S.J. (2017). *Investigating Astronomy (3rd Edition)*. Pono Publishing. Laramie, WY. ISBN 978-1974370009

Slater, S.J., Kao, L., Morgan, W., Oppenheimer, R., & Heyer, I. (Editor), (2017). *Active Learning Tutorials for Astronomy & the Planetary Sciences*. Pono Publishing. Laramie, WY. ISBN 978-1515190653 (in press)

Heyer, I. (2016). The Solar System Dance, in Slater, S.J., Bailey, J.M., Gibbs, M., & Heyer, I. (Eds.). *Galileo's Classroom*. Pono Publishing. Laramie, WY. ISBN 978-1515163657

Slater, S.J., Slater, T.F., Heyer, I., & Bailey, J.M. (2015). *Discipline-Based Education Research*. Pono Publishing. Laramie, WY. ISBN 978-1515024569

Slater, S.J., Slater, T.F., Heyer, I., & Bailey, J.M. (2015). *Conducting Astronomy Education Research*. Pono Publishing. Laramie, WY. ISBN 978-1515025320

PUBLICATIONS AND PROCEEDINGS

Slater, T.F.; Heyer, I. (2020). *Proceedings of the 2019 International Astronomy Teaching Summit*, Baltimore, MD. Pono Publishing. Laramie, WY. ISBN 978-1079174052

Heyer, I.; Slater, T.F.; Slater, S.J. (2012). *Spatial Sense and Perspective: A 3-D Model of the Orion Constellation.* Proceedings of the Astronomical Society of the Pacific Conference, Connecting People to Science, Baltimore, MD, ASP Conference Series Vol.457, p.263.

Heyer, I.; Slater, T.F.; Slater, S.J. (2011). *A 3-D Model of the Orion Constellation.* Mercury, 40(4), p.21.

Heyer, I.; Slater, T.F.; Slater, S.J. (2011). *Chaos can be fun - Solar System Ballet!* The Classrooom Astronomer, Vol.9, p.24-25.

Heyer, I., Harvey, J., Usuda, K.S., Fujihara, G., Hamilton, J. (2010). *The Mauna Kea Observatories Outreach Committee Brings Astronomy to the Hawaiian Public.* Proceedings of the Astronomical Society of the Pacific Conference, Science Education and Outreach: Forging a Path to the Future, San Francisco, CA, ASP Conference Series Vol. 431, p.70.

Jogee, S.; Barazza, F. D.; Rix, H.-W.; Davies, J.; Heyer, I.; *et al*. (2004). *Evolution and Impact of Bars over the last nine Gyr: Early Results from GEMS*. Penetrating bars through masks of cosmic dust: the Hubble tuning fork strikes a new note, Proceedings of a conference held at Pilanesburg National Park (South Africa). Astrophysics and Space Science Library (ASSL) vol. 319. Dordrecht: Kluwer Academic Publishers, 2004, p.291.

Koekemoer, A. M.; Gonzaga, S.; Heyer, I.; Lubin, L. M.; Kozhurina-Platais, V.; Whitmore, B. C. (2002). *WFPC2 Re-Commissioning After Servicing Mission 3B.* Proceedings from the 2002 Hubble Space Telescope Calibration Workshop, p.341.

Heyer, I.; Richardson, M.; Whitmore, B. C.; Lubin, L. M. (2002). *The Accuracy of WFPC2 Photometric Zeropoints*. Proceedings from the 2002 Hubble Space Telescope Calibration Workshop, p.333.

Wiggs, M.S.; Whitmore, B.; Heyer, I. (1997). *The WFPC2 Clearinghouse.* Proceedings from the 1997 Hubble Space Telescope Calibration Workshop, Baltimore, MD, p.398.

Whitmore, B.; Heyer, I. (1995). *A Demonstration Analysis Script for Performing Aperture Photometry.* Proceedings from the 1995 Hubble Space Telescope Calibration Workshop, p.305.

Heyer, I.; Hall, D.N.B.; Hinkle, K. (1988). *Search for Dark Companions of K and M Giants: Preliminary Results on A-Bootis.* Proceedings from the IAU Regional Meeting, Beijing, China, Vistas in Astronomy, 31, p.317.

Edwards, S.; Strom, S.E.; Heyer, I.; Strom, K.M. (1985). *Anisotropic Winds from T Tauri Stars.* Proceedings from the Fourth Cambridge Workshop on Cool Stars, Stellar Systems and the Sun, Springer Verlag, p.436.

REFEREED NATIONAL/INTERNATIONAL PRESENTATIONS AND PAPERS

Heyer, I. (2012). *Understanding the Correlations Among Undergraduates' Spatial Reasoning Skills and Their Ability to Learn Astronomy Concepts*. Dissertation talk presented at the 219th Meeting of the American Astronomical Society, Austin, TX, January, 2012, #227.02D.

Heyer, I., Slater, T. F.; Slater, S. J. (2011). *Preliminary correlational data on the relationships between undergraduates' spatial reasoning skills and their ability to learn space science concepts.* Poster presented at the meeting of the American Geophysical Union, San Francisco, CA, December, 2011, #ED13C-0827.

Heyer, I., Slater, T. F.; Slater, S. J. (2011). *The Solar System Ballet: A Kinesthetic Spatial Astronomy Activity.* Poster presented at the 218th Meeting of the American Astronomical Society, Boston, MA, June, 2011, #411.02, Bulletin of the American Astronomical Society, 43.

Heyer, I.; Michaud, P.; Usuda, K.S.; Fujihara, G.; Laatsch, S. (2010). *The Mauna Kea Observatories Outreach Committee brings Astronomy to Hawaii's Public.* Talk and poster presented at the National Astronomy Meeting of the United Kingdom, University of Hertfordshire, UK, April, 2010.

Harvey, J.; Heyer, I.; Michaud, P. (2010). Hawaii IYA 2009 Brings Astronomy to Hawaii's Public. Talk and poster presented at Communicating Astronomy with the Public, Cape Town, South Africa, March 2010.

Heyer, I.; Harvey, J.; Usuda, K.S.; Fujihara, G., Michaud, P. (2010). *The Mauna Kea Observatories Outreach Committee brings Astronomy to the Hawaiian Public.* Talk presented at the 215th Meeting of the American Astronomical Society, Washington, DC, January 2010, #215.05, Bulletin of the American Astronomical Society, 42, p.437.

Brammer, G. B.; Kozhurina-Platais, V.; Koekemoer, A. M.; Hack, W.; Heyer, I. (2004). *Effects of Precise Astrometry on Photometry: WFPC2*. Poster presented at the 203rd Meeting of the American Astronomical Society, Atlanta, GA, January, 2004, #46.03, Bulletin of the American Astronomical Society, 35, p.1280.

Heyer, I.; Brammer, G.; Koekemoer, A. M.; Kozhurina-Platais, V.; Rhoads, J.; Whitmore, B. (2003). *HST Wide Field and Planetary Camera II Status Update*. Poster presented at the 202nd Meeting of the American Astronomical Society, Nashville, TN, May, 2003, #04.06; Bulletin of the American Astronomical Society, Vol. 35, p.704.

Heyer, I.; Richardson, M.; Whitmore, B.; Lubin, L. (2003). *The Accuracy of WFPC2 Photometric Zeropoints.* Poster presented at the 201st Meeting of the American Astronomical Society, Seattle, WA, January, 2003, #90.02, Bulletin of the American Astronomical Society, 34, p.1255.

Whitmore, B.; Brammer, G.; Heyer, I.; Koekemoer, A. M.; Kozhurina-Platais, V.; Lubin, L.; McMaster, M.; Schultz, A. (2003). *HST Wide Field and Planetary Camera II Status Update.* Poster presented at the 201st Meeting of the American Astronomical Society, Seattle, WA, January, 2003, #90.04, Bulletin of the American Astronomical Society, 34, p.1256.

Heyer, I.; Gonzaga, S.; Koekemoer, A.; Kozhurina-Platais, V.; Lubin, L.; McMaster, M.; Schultz, A.; Whitmore, B. (2002). *HST Wide Field and Planetary Camera II Status Update.* Poster presented at the 200th Meeting of the American Astronomical Society, Albuquerque, NM, June, 2002, #62.09, Bulletin of the American Astronomical Society, 34, p.746.

Heyer, I.; Biretta, J.; Baggett, S.; Gonzaga, S.; Koekemoer, A.; Lubin, L.; Mack, J.; McMaster, M.; Khozurina-Platais, V.; Schultz, A. (2002). *HST Wide Field and Planetary Camera II Status Update.* Poster presented at the 199th Meeting of the American Astronomical Society, Washington, DC, January, 2002, #08.01, Bulletin of the American Astronomical Society, 33, p.1316.

Biretta, J.; Baggett, S.; Riess, A.; Schultz, A.; Casertano, S.; Gonzaga, S.; Heyer, I.; Koekemoer, A.; Mack, J.; McMaster, M. (2001). *Charge Transfer Efficiency in the WFPC2 CCD Arrays.* Poster presented at the 198th Meeting of the American Astronomical Society, Pasadena, CA, June, 2001, #04.02, Bulletin of the American Astronomical Society, 33, p.788.

Heyer, I.; Biretta, J.; Baggett, S.; Casertano, S.; Gonzaga, S.; Koekemoer, A.; Mack, J.; McMaster, M.; Riess, A.; Schultz, A. (2001). *HST Wide Field and Planetary Camera II Status Update.* Poster presented at the 198th Meeting of the American Astronomical Society, Pasadena, CA, June, 2001, #04.01, Bulletin of the American Astronomical Society, 33, p.788.

Biretta, J.; Baggett, S.; Riess, A.; Schultz, A.; Casertano, S.; Gonzaga, S.; Heyer, I.; Koekemoer, A.; Mack, J.; McMaster, M.; Wiggs, M. (2000). *Charge Transfer Efficiency in the WFPC2 CCD Arrays.* Poster presented at the 197th Meeting of the American Astronomical Society, San Diego, CA, January, 2001, #12.14, Bulletin of the American Astronomical Society, 32, p.1421.

Heyer, I.; Biretta, J.; Baggett, S.; Casertano, S.; Gonzaga, S.; Koekemoer, A.; Mack, J.; McMaster, M.; Riess, A.; Schultz, A.; Wiggs, M. (2000). *HST Wide Field and Planetary Camera II Status Update.* Poster presented at the 197th Meeting of the American Astronomical Society,

San Diego, CA, January, 2001, #12.13, Bulletin of the American Astronomical Society, Vol. 32, p.1421.

Biretta, J.; Riess, A.; Baggett, S.; Whitmore, B.; Casertano, S.; Heyer, I.; Schultz, A.; Gonzaga, S.; Wiggs, M.; McMaster, M.; O'Dea, C.; Koekemoer, A. (2000). *Charge Transfer Efficiency in the WFPC2 CCD Arrays.* Poster presented at the 196th Meeting of the American Astronomical Society, Rochester, NY, June, 2000, #32.09, Bulletin of the American Astronomical Society, Vol. 32, p.721.

Wiggs, M. S.; Biretta, J.; Baggett, S.; Casertano, S.; O'Dea, C.; Schultz, A.; Gonzaga, S.; Heyer, I.; McMaster, M.; Koekemoer, A.; Riess, A. (2000). *The Wide Field Planetary Camera II Status Update.* Poster presented at the 196th Meeting of the American Astronomical Society, Rochester, NY, June, 2000, #32.10, Bulletin of the American Astronomical Society, Vol. 32, p.721.

Heyer, I.; Biretta, J.; Baggett, S.; Casertano, S.; O'Dea, C.; Schultz, A.; Gonzaga, S.; McMaster, M.; Wiggs, M.; Koekemoer, A.; Riess, A. (2000). *HST Wide-Field Planetary Camera II Status Update*. Poster presented at the 195th Meeting of the American Astronomical Society, Atlanta, GA, January, 2000, #85.03; Bulletin of the American Astronomical Society, Vol. 31, p.1499.

Heyer, I.; Whitmore, B.; Casertano, S.; Biretta, J. (1999). *Charge Transfer Efficiency of the Wide Field and Planetary Camera 2.* Poster presented at the 194th Meeting of the American Astronomical Society, Chicago, IL, June, 1999, #08.02, Bulletin of the American Astronomical Society, 31, p.833.

Biretta, J.; Baggett, S.; Casertano, S.; Gonzaga, S.; Heyer, I.; Wiggs, M.; McMaster M. (1999). *Wide-Field Planetary Camera II Status Update.* Poster presented at the 194th Meeting of the American Astronomical Society, Chicago, IL, June, 1999, #08.01, Bulletin of the American Astronomical Society, 31, p.833.

Lucas, R. A.; Baum, S. A.; Casertano, S.; de Mello, D.; Dickinson, M.; Ferguson, H. C.; Fruchter, A. S.; Gonzalez-Lopezlira, R.; Heyer, I.; Mack, J.; Makidon, R.; Martin, C. L.; Mutchler, M.; Smith, E.; Stiavelli, M.; Teplitz, H. I.; Wiggs, M. S.; Williams, R.; Zurek, D.; Brown, T. M.; Gardner, J. P.; Kaiser, M. E.; Hook, R. N. (1998). *The Hubble Deep Field South: Flanking Fields.* Presented at the 193rd Meeting of the American Astronomical Society, Austin, TX, January, 1999, #75.06, Bulletin of the American Astronomical Society, 30, p.1367.

Casertano, S.; de Mello, D.; Ferguson, H. C.; Fruchter, A. S.; Heyer, I.; Hook, R. N.; Lucas, R. A.; Makidon, R.; Mutchler, M.; Stiavelli, M.; Wiggs, M. S.; Williams, R. (1998). *HDF-S: A WFPC2 Deep Image of a Field near QSO J2233-606.* Presented at the 193rd Meeting of the American Astronomical Society, Austin, TX, January, 1999, #75.05, Bulletin of the American Astronomical Society, 30, p.1367.

Williams, R.; Baum, S. A.; Bergeron, L. E.; Blacker, B.; Boyle, B. J.; Brown, T. M.; Bernstein, N.; Carollo, C. M.; Casertano, S.; de Mello, D.; Dickinson, M.; Espey, B. R.; Ferguson, H. C.; Fruchter, A. S.; Gardner, J. P.; Gonnella, A.; Gonzalez, R.; Hayes, J.; Hewett, P.; Heyer, I.;

Hook, R. N.; Jones, D.; Kaiser, M. E.; Lubenow, A.; Lucas, R. A.; Mack, J.; MacKenty, J. W.; Madau, P.; Makidon, R.; Martin, C. L.; Mazzuca, L.; Mutchler, M.; Norris, R. P.; Perriello, B.; Postman, M.; Royle, P.; Sahu, K. C.; Savaglio, S.; Sherwin, A.; Smith, E.; Stiavelli, M.; Teplitz, H. I.; van der Marel, R.; Weymann, R. J.; Wiggs, M. S.; Williger, G. M.; Wilson, J.; Zurek, D. (1998). *The Southern Hubble Deep Field: HDF-S.* Presented at the 193rd Meeting of the American Astronomical Society, Austin, TX, January, 1999, #75.01, Bulletin of the American Astronomical Society, 30, p.1366.

Heyer, I.; Baggett, S.; Gonzaga, S.; Biretta, J.A. (1998). *WFPC2 Long-Term Photometric Stability.* Poster presented at the 193rd Meeting of the American Astronomical Society, Austin, TX, January, 1999, #36.03, Bulletin of the American Astronomical Society, 30, p.1299.

TECHNICAL PUBLICATIONS

Heyer, I.; Biretta, J. (2004). *WFPC2 Instrument Handbook, Version 9.0.* Space Telescope Science Institute.

Heyer, I.; Richardson, M.; Whitmore, B.; Lubin, L. (2004). *The Accuracy of WFPC2 Photometric Zeropoints*. WFPC2 Instrument Science Report 04-01, Space Telescope Science Institute.

Koekemoer, A.; Heyer, I.; Brammer, G.; Kozhurina-Platais, V.; Rhoads, J.; Whitmore, B. (2003). *WFPC2 Cycle 12 Calibration Plan*. WFPC2 Instrument Science Report 03-03, Space Telescope Science Institute.

Koekemoer, A.; Heyer, I. (2003). *WFPC2 Instrument Handbook, Version 8.0*. Space Telescope Science Institute.

Koekemoer, A. M.; Gonzaga, S.; Heyer, I.; Lubin, L. M.; Kozhurina-Platais, V.; Whitmore, B. (2002). *Results of the Observatory Verification for WFPC2 after Servicing Mission 3B*. WFPC2 Instrument Science Report 02-06, Space Telescope Science Institute.

Gonzaga, S.; Koekemoer, A.; Whitmore, B.; Heyer, I.; Lubin, L.; McMaster, M.; Platais, V.; Baggett, S.; Brammer, G. (2002). *WFPC2 Cycle 11 Calibration Plan*. WFPC2 Instrument Science Report 02-05, Space Telescope Science Institute.

Whitmore, B.; Heyer,I. (2002). *Charge Transfer Efficiency for Very Faint Objects and a Reexamination of the Long-vs-Short Problem for the WFPC2.* WFPC2 Instrument Science Report 02-03, Space Telescope Science Institute.

Koekemoer, A.M.; Gonzaga, S.; Heyer, I.; Lubin, L.M.; Kozhurina-Platais, V. (2001). *Summary of WFPC2 SM3B Plans.* WFPC2 Instrument Science Report 01-11, Space Telescope Science Institute.

Heyer, I. (2001). *The WFPC2 Photometric CTE Monitor.* WFPC2 Instrument Science Report 01-09, Space Telescope Science Institute.

Baggett, S.; Gonzaga, S.; Biretta, J.; Casertano, S.; Heyer, I.; Koekemoer, A.M.; Mack, J.; McMaster, M.; Riess, A.; Schultz, A.; Wiggs, M.S. (2001). *WFPC2 Cycle 8 Closure Report.* WFPC2 Instrument Science Report 01-06, Space Telescope Science Institute.

Biretta, J.; Heyer, I. (2001). *WFPC2 Instrument Handbook, Version 6.0.* Space Telescope Science Institute.
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ILLUSTRATIVE PUBLIC SPEAKING ENGAGEMENTS

(an exhaustive list is available upon request)

Balticon 54, Baltimore, MD, 22-25 May 2020
Likely Hosts for Life in the Solar System (virtual presentation and Q&A)

World Science Fiction Convention, Dublin, Ireland, 15-19 August 2019
Oppy or Armstrong? Autonomous vs human space exploration
Logistics of space exploration
Unanticipated benefits of space programmes
Really big telescopes
Would an Irish spaceport make sense?
The Solar System Ballet (K-6, children's programming)

Farpoint 2019, Baltimore, MD, 8-10 February 2019
The Mysteries of Mars

Farpoint 2018, Baltimore, MD, 9-11 February 2018
Neutron Stars, Kilo Novas, and Gravity Waves

Capclave, Baltimore, MD, 6-8 October 2017
The Great American Solar Eclipse of 2017

Farpoint 2017, Baltimore, MD, 17-19 February 2017
Pluto: New Visions of an Icy World

Capclave, Baltimore, MD, 7-9 October 2016
The Hunt for Alien Worlds

Balticon 49, Baltimore, MD, 22-25 May 2015
Our Solar System: Scales and Latest Discoveries

Farpoint 2014, Baltimore, MD, 14-16 February 2014
The Hunt for Earths

Monarch Academy School, Baltimore, MD, April 2013
Our Solar System: Motions, Distances and Basic Properties (grades 4)

Journey Through The Universe, Hilo, HI, 1-9 March 2012
The Solar System Ballet (grades K-5)
Our Solar System: Motions, Distances and Basic Properties (grades 6-8)

MileHiCon, Denver, CO, 21-23 October 2011
Astronomy Through the Ages
Alien Worlds: Real and Imagined

Wind River Reservation Elementary School, Ethete, WY, 17 October 2011
The Solar System Ballet

World Science Fiction Convention, Reno, NV, 17-21 August 2011
From the Dawn of Civilization to One Man's Peek at the Heavens
A Journey Through the Universe with the Hubble Space Telescope
Alien Worlds: Real and Imagined
The Solar System Ballet (K-6)

Starfest, Denver, CO, 20-22 April 2011
A Journey Through the Universe with the Hubble Space Telescope
Alien Worlds: Real and Imagined

Imiloa Astronomy Center, Hilo, HI, 27 October 2010
AstroTalk: From the Dawn of Civilization to One Man's Peek at the Heavens

University of Hawaii at Hilo History Club, Hilo, HI, 29 September 2010
The History of Astronomy

Ho`okena School, Captain Cook, HI, 11 May 2010
Our Solar System: Motions, Distances and Basic Properties

Ilisimela Secondary School, Cape Town, South Africa, 12 March 2010
Planetary Motions in our Solar System

Imiloa Astronomy Center of Hawaii Family Science Day, 28 February 2010
Alien Worlds Real and Imagined

Rotary Club of Hilo, Hilo, HI, 4 December 2009
Mauna Kea Observatory Outreach Activities during the International Year of Astronomy

Imiloa Astronomy Center of Hawaii, Hilo, HI, 31 October 2009
The Human Body in Space

Imiloa Astronomy Center of Hawaii, Hilo, HI, 5 August 2009

Being the Solar System, a lunch-time mini-workshop

Shore Leave 31, Baltimore, MD, 10-12 July 2009
Astronomy among Palm Trees and Snow: Mauna Kea in Hawaii
The Latest Discoveries from UKIRT and JCMT in Hawaii

Kea`au Middle School Career Fair, Kea'au, HI, 8 May 2009
Careers in Astronomy, Space Science and Supporting Technologies

St. Mary Magdalene Elementary School in Peckham/London, UK, 28 April 2009
Planetary Motion and Distance Scales in Our Solar System (3rd grade)
Designing Alien Worlds (5th grade)

University of Hawaii at Hilo 7th Grade Girls Math-Science, Hilo, HI, 11 March 2009
Proportional Thinking Exercises in Math and Science

University of Hawaii at Hilo Onizuka Science Day, Hilo, HI 24 January 2009
Creating Solar Systems, an Astronomy and Art mini-workshop

Hilo-Waiakea-Laupahoehoe School District Principals Conference, Hilo, HI 21 November 2009
The Mauna Kea Observatories K-12 Education and Outreach Programs

West Hawaii Amateur Astronomy Club, Waimea, HI, 11 November 2009
The Latest Discoveries from UKIRT and JCMT in Hawaii

West Hawaii Explorations Academy, Kona, HI, 9 September 2009
Historical Astronomical Measurements of the Earth-Sun-Moon System

Volcano School of Arts and Sciences, Volcano, HI, 22 August 2009
Planetary Motion and Distance Scales in Our Solar System (2nd grade)
Designing Alien Worlds (5th grade)

Shore Leave 30, Baltimore, MD, 11-13 July 2008
The Latest Discoveries from UKIRT and JCMT in Hawaii
Discovering Extrasolar Planets: Methods and Results

Imiloa Astronomy Center of Hawaii AstroFest, Hilo, HI, 27 April 2008
Between Heaven and Earth, Between Gamma Ray and Radio Waves: Observatory Collaborations Create New Possibilities

PhoenixCon, Dublin, Ireland, 29-30 March 2008
A Journey Through the Universe with the Hubble Space Telescope
Alien Worlds: Real and Imagined

EasterCon, London, UK, 21-24 March 2008
The Latest Discoveries from UKIRT and JCMT in Hawaii

History of Astronomy

Imiloa Astronomy Center of Hawaii, Star Trek Day at `Imiloa, 3 November 2007
Star Trek Technology Becoming Real

Borders Books, Harry Potter Book Launch, Hilo, HI, 20-21 July 2007
Astronomy Class at Hogwarts

World Science Fiction Convention, Yokohama, Japan, 30 August – 3 September 2007
Modern Cosmology (bilingual in English and Japanese)
A Journey Through the Universe with the Hubble Space Telescope (English/Japanese)
Alien Worlds: Real and Imagined (bilingual in English and Japanese)
Infrared and Submillimeter Astronomy in Hawaii (bilingual in English and Japanese)
Solar System Ballet (for K-6) (in Japanese)

EasterCon, London, UK, 7 April 2007
The Latest Discoveries from UKIRT and JCMT in Hawaii
A Journey Through the Universe with the Hubble Space Telescope

Nexus Convention, Berlin, Germany, 2-4 November 2001
A Journey Through the Universe with the Hubble Space Telescope (in German)
Living and Working in Space: Astronauts as Telescope Mechanics (in German)
Solar System Ballet (for K-6) (in German)

Athene Elementary School. Berlin, Germany, 23 October 2001
The Solar System Ballet (4^{th} grade, in German)

SERVICE

American Astronomical Society:
Deputy Press Officer (2009-2018)
Press Room Supervisor (1995-2009)
Duties during the semi-annual society meetings include managing the press room, chairing press conferences, and distributing press releases to national and international journalists.

Mauna Kea Observatories Outreach Committee:
Chair (2008-2010)
Member (2006-2010)
Chair of committee to provide strategic planning and leadership direction for the outreach efforts of the 13 Mauna Kea observatories in the planning, development and implementation of coordinated outreach programs, sharing of best practices, and collaboration on joint projects.

Journey Through The Universe Astronomy Classroom Initiative:

Core Committee (2009-2010)
Presenter (2007-2010)
Duties include planning, implementation and presenting for annual 1-week astronomy school and community outreach activities in the Hilo-Waiakea-Laupahoehoe School District on the Big Island of Hawaii.

Big Island of Hawaii District Science Fair for middle and high school students:
Judge and photographer (2007-2010)

MATE Big Island Regional ROV Contest, International ROV Contest:
Judge for robotics competition for middle and high school students (2008-2010)

Workshop Development and presentation:
Teacher Training Workshops on the Big Island of Hawaii (2006-2010)
Hands-on-Optics Workshop for Big Island in-service teachers (2007-2010)

Curriculum Development:
International Year of Astronomy In-Service K-12 Teacher Monthly Seminar (2009)

Mentoring
Joint Astronomy Centre
Mentored five high school interns at the workplace, participated in mentoring workshops (2008-2010).

Public Education and Outreach
Space Telescope Science Institute Speakers Bureau Volunteer (1995-2006)
Delivered 30-50 public lectures annually to schools and civic groups.

Conference Organization and Planning
Chair of annual 2000-member regional convention (core committee 1992-2012, chair 2013-current)
Planning and Implementation of International Year of Astronomy Mauna Kea Observatories Block Party (2009)

BIOGRAPHICAL INFORMATION

Astronomical Observing Experience
Hubble Space Telescope, Kitt Peak (2.1m and 4m Mayall), La Serena (Danish 50cm), Mauna Kea (UKIRT, UH 88" & 24"), Arecibo Radio Telescope

Language Fluency
English (native-level fluency, both oral and written)
German (native-level fluency, both oral and written)
Japanese (oral conversation-level fluency, written middle-school level)
Exposure to Latin (4 years), French (3 years), Spanish and Russian (1 semester each)

Experience in teaching English and German to non-native speakers (children and adults)

Software Expertise
- Adobe CS5 (InDesign and Photoshop)
- MS Office (Word, PowerPoint, Excel)

Technical, popular, and press writing and editing (in English and German)
Black Belts in Judo and Karate
Licensed SCUBA diver
Valid US driver's license
Valid US passport
US Citizen