

JEFFERY A. BROWN

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PROFESSIONAL EXPERIENCE

SEATTLE UNIVERSITY, SEATTLE, WASHINGTON **2004 – PRESENT**
Physics Department, Seattle, WA 98122
Visiting Professor/Adjunct Faculty

SEATTLE COMMUNITY COLLEGE, SEATTLE, WASHINGTON **SUMMER 2010**
North Seattle CC, Math, Science, & Social Sciences Department, Seattle, WA
Part-Time Faculty

FRED HUTCHINSON CANCER RESEARCH CENTER, SEATTLE, WASHINGTON **2004 - 2008**
Safeco Plaza, Seattle, WA 98109-1024
Systems Programmer IV

SAFECO INSURANCE, SEATTLE, WASHINGTON **2000 - 2003**
Safeco Plaza, Seattle, WA
Programmer Analyst / IT Analyst

WASHINGTON STATE UNIVERSITY, PULLMAN, WASHINGTON **1996 - 2000**
Astronomy Program, Dept. of Pure & Applied Mathematics, Pullman, WA 99165
Assistant Professor, Astronomy **1996 - 2000**
Director, Program in Astronomy **Acting 1997 – 1998, 1999 - 2000**

UNIVERSITY OF WASHINGTON, SEATTLE, WASHINGTON **1988 - 1996**
Astronomy Department, Box 35580, Seattle, WA 98195
Research Assistant Professor **1991 - 1996**
Postdoctoral Research Associate **1988 - 1991**

INDIANA UNIVERSITY, BLOOMINGTON, INDIANA **1986 - 1988**
Astronomy Department, Swain Hall West 319, Bloomington, IN 47405
Postdoctoral Research Associate **1986 – 1988**

EDUCATION

Ph.D., Astronomy, University of Texas, Austin, 1986
M.A., Astronomy, University of Texas, Austin, 1981
B.S., Astronomy and Physics, University of Washington, Seattle, 1978

AFFILIATIONS AND OTHER EXPERIENCE

- Full member, American Astronomical Society.
- Member, Astronomical Society of the Pacific.
- Member, Sigma Xi.
- Advisory Board member, Earth and Sky radio program, 1993 – 2000.
- Served on grant review panel for National Science Foundation's Division of Astronomical Sciences, Stars & Stellar Systems section, November – December 1999.
- Gave invited review talk at June 2000 meeting of the Northwest Section of the American Physical Society, Vancouver, BC.
- Served as Editor pro tempore of the *Astronomical Journal*, August 1995.
- Member, Seattle area chapter of Association for Women in Science (AWIS-SA), 1988 – 1996, 2003 - present; co-chair, Program Committee 1990 – 1992, Newsletter Editor 1992 – 1994.
- Five years as Technical Editor for Star Date radio program.

COURSES TAUGHT

Seattle University:

- PHYS 101 “Solar System Astronomy”: Core lab science course based on planetary astronomy and the search for life
- PHYS 102 “Astronomy: Stars, Galaxies, Cosmology”: Core lab science course based on stellar and galactic astrophysics and cosmology
- PHYS 106 “Waves, Sound, Electricity & Magnetism” and 107 “Thermodynamics, Optics, & Modern Physics”: second and third quarters of the life/health science (non-calculus) physics series
- PHYS 122 “Electricity and Magnetism”: second quarter of the introductory physics with calculus series
- PHYS 202 (now numbered 123) “Waves and Optics”: third quarter of the introductory physics with calculus series
- PHYS 204 “Relativity”: Special relativity for physics and other science majors, following the physics with calculus series
- PHYS 250 “Mathematical Methods for Physics”: for sophomore/junior level physics majors, complex numbers, Fourier series, curvilinear coordinates, special functions, partial differential equations

North Seattle Community College:

- PHYS 121 “General Physics”: first quarter of the life/health science (non-calculus) physics series, mechanics

Washington State University:

- ASTR 135 “Astronomy”: Traditional large-lecture format survey course of astronomy for non-science students.
- ASTR 150 “Science and the Universe”: Hands-on introductory course with many lab exercises, for non-science students, especially education majors.
- ASTR 345 “Principles of Astronomy”: Introduction to astronomy & astrophysics for science and

engineering students, with prerequisite of freshman physics with calculus.

- ASTR 390 “The Night Sky”: Constellations, planetary motions, practical astronomy; includes considerable night-sky observing and planetarium work. For non-science students; required for Earth Science teaching certification.
- ASTR 435 “Astronomy and Astrophysics”: Selected topics in astrophysics, for upper-division science & engineering students.
- ASTR 450 “Life in the Universe”: Investigation into the origins and existence of life on Earth and elsewhere in the Universe. A “capstone” course for senior undergraduates, intended to be cross-disciplinary, with significant writing and critical thinking.

University of Washington:

- ASTR 101 “Astronomy”: Traditional large-lecture format survey course for non-science students, with quiz sections led by graduate teaching assistants; Solar System is excluded.
- ASTR 150 “The Planets”: Large-format survey course for non-science students on the Solar System, with quiz sections led by graduate teaching assistants.
- ASTR 201 “The Universe and Origin of Life”: Sequel course to ASTR 101, developing ideas of the origin and evolution of the Universe, galaxy, star, and planetary system formation, and origins of life.
- ASTR 301 “Astronomy for Scientists and Engineers”: Introduction to astronomy, with prerequisite of freshman physics series with calculus.
- ASTR 421 “Stellar Observations and Theory”: Stellar astrophysics for upper-division science and engineering students.
- ASTR 597 “Topics in Observational Astrophysics”: Graduate topics course.

Earlier experience:

- Introductory astronomy course at Austin (Texas) Community College, approximately 1981.
- Teaching assistant duties (including Head TA) at University of Texas (Austin) 1978 - 85.

PUBLICATIONS

Papers in Refereed Journals:

Bohm-Vitense, Erika; Carpenter, Kenneth; Robinson, Richard; Ake, Tom; Brown, Jeffery
“Do All Ba II Stars Have White Dwarf Companions?”
2000 Astrophysical Journal, 553, 969

Brown, Jeffery A.; Wallerstein, George; Gonzalez, Guillermo
“Elemental Abundances in Five Stars in M54, A Globular Cluster Associated with the Sagittarius
Galaxy”
1999 Astronomical Journal, 118, 1245

Wachter, Stefanie; Wallerstein, George; Brown, Jeffery A.; Oke, J. B.
“Metallicities of Two Distant Globular Clusters from Spectra of Moderate Dispersion”
1998 Publications of the Astronomical Society of the Pacific, 110, 821

Charbonnel, Corinne; Brown, Jeffery A.; Wallerstein, George
“Mixing processes during the evolution of red giants with moderate metal deficiencies: the role of
molecular-weight barriers”
1998 Astronomy & Astrophysics, 332, 204

Brown, Jeffrey A.; Wallerstein, George; Zucker, Daniel
“High-Resolution CCD Spectra of Stars in Globular Clusters. IX. The ‘Young’ Clusters Ruprecht 106 and Pal 12”
1997 *Astronomical Journal*, 114, 180

Zucker, Daniel; Wallerstein, George; Brown, Jeffery A.
“Abundances of Selected Elements in Five Oxygen-Poor Stars in Omega Centauri”
1996 *Publications of the Astronomical Society of the Pacific*, 108, 911

Brown, Jeffery A.; Wallerstein, George; Geisler, Doug; Oke, J. B.
“Chemical abundances in the Outer Disk Clusters Tombaugh 2, Melotte 71, and NGC 2112”
1996 *Astronomical Journal*, 112, 1551

Whitmer, John C.; Beck-Winchatz, Bernhard; Brown, Jeffery A.; Wallerstein, George
“Star no. 1412 in M4, a post-AGB star with low carbon and enhanced TiO”
1995 *Publications of the Astronomical Society of the Pacific*, 107, 127

Vanture, Andrew D.; Wallerstein, George; Brown, Jeffery A.
“Abundances in three heavy-element stars in Omega Centauri”
1994 *Publications of the Astronomical Society of the Pacific*, 106, 835

Brown, Jeffery A.; Wallerstein, George
“High resolution CCD spectra of stars in globular clusters. VIII - The self-enrichment history of Omega Centauri”
1993 *Astronomical Journal*, 106, 133

Brown, Jeffery A.; Wallerstein, George
“High-resolution CCD spectra of stars in globular clusters. VII - Abundances of 16 elements in 47 Tuc, M4, and M22”
1992 *Astronomical Journal*, 104, 1818

Vanture, Andrew D.; Wallerstein, George; Brown, Jeffery A.; Bazan, Grant
“Abundances of Tc and related elements in stars of type M, MS, and S”
1991 *Astrophysical Journal*, 381, 278

Brown, J. A.; Wallerstein, G.; Cunha, K.; Smith, V. V.
“Oxygen and iron in omega Centauri Giants”
1991 *Astronomy and Astrophysics*, 249, L13

Brown, Jeffery A.; Wallerstein, George; Oke, J. B.
“High-resolution spectra of stars in globular clusters. VI - Oxygen-deficient red giant stars in M13”
1991 *Astronomical Journal*, 101, 1693

Gilroy, Kalpana Krishnaswamy; Brown, Jeffery A.
“Carbon isotope ratios along the giant branch of M67”
1991 *Astrophysical Journal*, 371, 578

Brown, Jeffery A.; Wallerstein, George; Oke, J. B.

“High-resolution CCD spectra of stars in globular clusters. V - Carbon, nitrogen, and oxygen abundances in stars in 47 Tuc, M4, and M22”
1990 *Astronomical Journal*, 100, 1561

Brown, Jeffery A.; Smith, Verne V.; Lambert, David L.; Dutchover, Edward, Jr.; Hinkle, Kenneth H.; Johnson, Hollis R.
“S stars without technetium - The binary star connection”
1990 *Astronomical Journal*, 99, 1930

Brown, Jeffery A.; Johnson, Hollis R.; Cutright, Lori C.; Alexander, David R.; Sharp, Christopher M.
“Model atmospheres for K and M giants”
1989 *Astrophysical Journal Supplement Series*, 71, 623

Brown, Jeffery A.; Wallerstein, George
“High-resolution CCD spectra of stars in globular clusters. IV - Carbon isotope ratios in red giants”
1989 *Astronomical Journal*, 98, 1643

Brown, Jeffery A.; Sneden, Christopher; Lambert, David L.; Dutchover, Edward, Jr.
“A search for lithium-rich giant stars”
1989 *Astrophysical Journal Supplement Series*, 71, 293

Elitzur, Moshe; Brown, Jeffery A.; Johnson, Hollis R.
“On the onset of mass loss in late-type stars”
1989 *Astrophysical Journal*, 341, L95

Brown, Jeffery A.
“Carbon-to-nitrogen ratios along the evolutionary sequence of M67”
1987 *Astrophysical Journal*, 317, 701

Brown, Jeffery A.
“Carbon, nitrogen, and oxygen abundances in M67 giants”
1985 *Astrophysical Journal*, 297, 233

Lambert, D. L.; Brown, J. A.; Hinkle, K. H.; Johnson, H. R.
“Carbon, nitrogen and oxygen abundances in Betelgeuse”
1984 *Astrophysical Journal*, 284, 223

Brown, J. A.; Twarog, B. A.
“The Hyades CN Anomaly?”
1983 *Astronomical Journal*, 88, 678

Brown, J. A.; Tomkin, J.; Lambert, D. L.
“Evidence of non-LTE in photospheric lines of G and K giants”
1981 *Astrophysical Journal*, 265, L93

Wallerstein, G.; Brown, J. A.; Bates, B. A.
“The chemical composition and luminosity of the CH-type Cepheid, V553 Centauri”
1979 *Publications of the Astronomical Society of the Pacific*, 91, 47

Unrefereed papers presented at meetings (except as noted, these are abstracts of contributed papers, and the presenter was the first author):

Wallerstein, George; Brown, Jeffery A.; Gonzalez, Guillermo

“Elemental Abundances in Two Stars in M54, a Globular Cluster Associated with the Sagittarius Galaxy”

1999, in Unsolved Problems in Stellar Evolution, M. Livio ed. (Baltimore: Space Telescope Science Institute), p. 88

Charbonnel, Corinne; Brown, Jeffery A.; Wallerstein, George

“New Clues on Non-Standard Mixing on the RGB”

1999, in Unsolved Problems in Stellar Evolution, M. Livio ed. (Baltimore: Space Telescope Science Institute), p. 5

Brown, J. A.; Wallerstein, G.; Gonzalez, G.

“Elemental Abundances in five stars in M54”

1998 Bulletin of the American Astronomical Society, 30, 1348

Brown, Jeffery A.; Wallerstein, George; Zucker, Daniel

“Echelle Spectroscopy and Abundances in Ruprecht 106 and Arp 2”

1996, in Formation of the Galactic Halo... Inside and Out, H. Morrisson and A. Sarajedini, eds. (San Francisco: Astronomical Society of the Pacific), p. 355

Zucker, D.; Wallerstein, G.; Brown, J. A.

“Selected Elemental Abundances in Five Oxygen-Poor Stars in Omega Centauri”

1996, in Proceedings of the sixth annual October Astrophysics Conference in College Park, Maryland, S. S. Holt and G. Sonneborn, eds. (San Francisco: Astronomical Society of the Pacific), p. 203

Brown, J. A.; Wallerstein, G.; Zucker, D.

“Abundances in the Young Globulars Ruprecht 106 and Pal 12”

1995 Bulletin of the American Astronomical Society, 27, 1404

Snedden, C.; Basri, G.; Boesgaard, A.; Brown, J. A.; Carney, B. W.; Kraft, R. P.; Smith, V. V.; Suntzeff, N. B.

“Stellar Population and Abundance Studies at High Resolution with Very Large Telescopes”

1995 Publications of the Astronomical Society of the Pacific, 107, 997

(N.b.: this is a summary of the invited papers, from each of the named authors, presented at the meeting)

Brown, Jeffery A.; Wallerstein, George; Geisler, Doug

“Life on the Fringe: Abundances in the Distant Anti-Center Cluster Tompaugh 2”

1994, in The Local Group: Comparative and Global Properties, A. Layden, R. C. Smith, and J. Storm, eds. (Garching: European Southern Observatory), p. 95

Brown, J. A.; Wallerstein, G.; Geisler, D.

“The Chemical Composition of the Remote Disk Cluster Tompaugh 2”

1993 Bulletin of the American Astronomical Society, 25, 1455

Vanture, Andrew D.; Wallerstein, George; Brown, Jeffery A.

“Abundances in Three Heavy-Element Stars in omega Centauri”

1993 Bulletin of the American Astronomical Society, 25, 885

Brown, Jeffery A.; Wallerstein, George

“CNO and Metals in Stars in Omega Centauri”

1993 in The globular cluster-galaxy connection, G. H. Smith and J. P. Brodie, eds. (San Francisco: Astronomical Society of the Pacific), p. 188

Brown, J. A.; Wallerstein, G.

“Elemental Abundances in Six Stars in omega Centauri”

1992 Bulletin of the American Astronomical Society, 24, 1208

Brown, J. A.; Wallerstein, G.

“Metal Abundances in Stars in 47 Tuc, M4, and M22”

1991 Bulletin of the American Astronomical Society, 23, 1328

Green, P. J.; Margon, B.; Brown, J.; MacConnell, D. J.

“Luminosity Indicators for Warm Carbon Stars: Dwarfs Among the Giants”

1991 Bulletin of the American Astronomical Society, 23, 1385

Vanture, A. D.; Wallerstein, G.; Brown, J. A.; Bazan, G.

“Abundances of Technetium and Related Elements in Stars of Types M, MS, and S”

1991 Bulletin of the American Astronomical Society,

Brown, J. A.; Wallerstein, G.; Smith, V. V.

“[O/Fe] in Giants in omega Centauri”

1991 Bulletin of the American Astronomical Society, 23, 966

Brown, Jeffery A.; Wallerstein, G.; Oke, J. B.

“C, N, and O Abundances in Red Giants in Globular Clusters”, 23, 966

1991, in Cambridge Workshop on Cool Stars, Stellar Systems, and the Sun, 1989, G. Wallerstein, ed. (San Francisco: Astronomical Society of the Pacific), p. 372

Brown, J. A.; Wallerstein, G.; Oke, J. B.

“CNO Abundances of Red Giants of Globular Clusters”

1991, in The Formation and Evolution of Star Clusters, K. Janes, ed. (San Francisco: Astronomical Society of the Pacific), p. 554

Johnson, Hollis R.; Ake, Thomas B.; Ameen, Mudhaffer M.; Brown, Jeffery A.

“A continuing search for companions to PRG stars”

1990, in From Miras to Planetary Nebulae: Which Path for Stellar Evolution?, editor unknown, (Gif-Sur-Yvette, France: International Astronomical Union), pp. 332-334

Johnson, H. R.; Brown, J. A.; Hinkle, K. H.

“A Survey of MS and S Stars for He I 10830”

1989 Bulletin of the American Astronomical Society, 21, 748

Brown, J. A.; Johnson, H. R.; Hinkle, K. H.

“He I λ 10830 in the S Star HR 1105”

1989, in Evolution of Peculiar Red Giant Stars, H. R. Johnson and B. Zuckerman, eds. (San Francisco:

Astronomical Society of the Pacific), p. 378

Augason, G. C.; Brown, J. A.; Alexander, D. R.

“Comparison of Blanketing in a 3000K Oxygen Rich, Spherically Symmetric Model with the Blanketing in Non-Mira M Giant Stars”

1989, in Evolution of Peculiar Red Giant Stars, H. R. Johnson and B. Zuckerman, eds. (San Francisco: Astronomical Society of the Pacific), p. 157

Alexander, D. R.; Augason, G. C.; Brown, J. A.; Johnson, H. R.

“Fluxes in M Giants with Improved Water Vapor Opacity”

1989, in Evolution of Peculiar Red Giant Stars, H. R. Johnson and B. Zuckerman, eds. (San Francisco: Astronomical Society of the Pacific), p. 153

Brown, J. A.; Johnson, H. R.; Alexander, D. R.; Augason, G. C.; Wehrse, R.

“Opacity Sampled, Spherically Extended Model Atmospheres for Cool Stars”

1987 Bulletin of the American Astronomical Society, 19, 1026

Brown, J. A.; Johnson, H. R.; Alexander, D. R.; Wehrse, R.

“Opacity Sampled, Spherically Extended Model Atmospheres for Cool Stars”

1987 Bulletin of the American Astronomical Society, 19, 705

Brown, J. A.

“Carbon and nitrogen abundances along the evolutionary sequence of M67”

1985 Bulletin of the American Astronomical Society, 17, 840

Brown, J. A.

“Carbon, nitrogen, and oxygen abundances in M67 giants”

1984 Publications of the Astronomical Society of the Pacific, 96, 785

Snedden, C.; Brown, J. A.; Dutchover, E.; Lambert, D. L.

“A Search of Lithium-rich Giant Stars”

1984 Bulletin of the American Astronomical Society, 16, 490

Brown, J. A.

“Carbon Isotope Ratios in Two Giants in M67”

1982 Bulletin of the American Astronomical Society, 14, 650

Thesis

Brown, Jeffery Allan

“Carbon and nitrogen abundances along the evolutionary sequence of M67”

1986 Ph.D. thesis, University of Texas at Austin

Papers in preparation

Urban, Nicole; Karnofski, Kent E.; Etzioni, Ruth D.; McIntosh, Martin; Gable, Matt; Brown, Jeffery A; Clarke, Lauren; Drescher, Charles W.; Drucker, Mariann; Zeliadt, Steven

“Quantifying the Risks of Breast Cancer Mortality and Overdiagnosis due to Screen-detected DCIS”

2008, to be submitted

Charles W Drescher, Martin McIntosh, Jason Thorpe, Jeffery A Brown, Samantha Schmidt, Yan Liu,

Nicole Urban

“Stage Lengths of Ovarian Cancer from a Survey of Practicing Oncologists”

2008, in preparation