

CURRICULUM VITA: MICHAEL W. CASTELAZ

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Degree: Ph.D. University of Wyoming, Laramie, WY 82071
Sept. 1984 (Physics - Dr. John Hackwell, Advisor)
Thesis: "The Nature and Geometry of Infrared Reflection Nebulae"

Degree: Master of Science Central Michigan University, Mount Pleasant, MI 48859
May 1979 (Physics - Dr. Wayne Osborn, Advisor)
Thesis: "Photoelectric UBV Light Curves of BX Andromedae"

Degree: Bachelor of Science University of Wisconsin, Stevens Point, Stevens Point, WI 54481, May 1977 (Physics - Dr. Francis Schmitz, Advisor)

Employment:

2003- Research Associate Professor, Physics, UNC-Asheville

2001- Director of Astronomical Studies and Education, Pisgah Astronomical Research Institute

1998- Co-Editor, International Amateur-Professional Photoelectric Photometry Communications

1996-2001 Associate Professor, East Tennessee State University

1993-1999 Observatory Director, Southeastern Association for Research in Astronomy

1991-1996 Assistant Professor, East Tennessee State University

1986-1991 Research Associate Professor, Allegheny Observatory of the University of Pittsburgh

1990-1991 Senior Lecturer in Astronomy, Carnegie-Mellon University, Department of Physics

1984-1986 National Academy of Sciences NRC Research Associate, NASA Ames Research Center

1979-1984 Graduate Assistant, University of Wyoming, Wyoming Infrared Observatory

1977-1979 Graduate Assistant, Central Michigan University

1978 Data Analyst, Lunar and Planetary Laboratory, Dept. of Planetary Science, University of Arizona

RESEARCH & TEACHING EXPERIENCE

PISGAH ASTRONOMICAL RESEARCH INSTITUTE

Hubble Space Telescope Cycle 12 Education/Public Outreach Grant Program, "School of Galactic Radio Astronomy-Orion Explorer", \$20,000, Awarded December 2003.

MPS Internships in Public Science Education, “MPS-IPSE: Sensing the Radio Universe”, Development of a radio sky STARLAB portable planetarium program. \$246,938. Awarded July 2003.

Hubble Space Telescope Cycle 12 Observing Time, “The First Spectroscopic Study of a Unique Set of Young Stars in the Orion Nebula”, HST-GO-09866.03. \$10, 677. Co-I with Bruce McCollum (SIRTF Science Center, Caltech), Awarded April 2003.

NASA Space Telescope Science Institute IDEAS Program, Co-I with Denise Young, Morehead Planetarium and Science Center (MPSC) Outreach Educator, the University of North Carolina at Chapel Hill Department of Physics and Astronomy Proposal “Observation Based Student Experience in Research Via Exploration (OBSERVE)”, \$49,949, Awarded March 2003.

Theodore Dunham, Jr. Grants for Research in Astronomy, “RS CVn Radio Flares”, \$2,510, Awarded January 2003.

American Astronomical Society Small Research Grant for Multi-Year, Continuous Phase Coverage Photometry of Alpha UMi, \$5,000, Awarded June 2002.

American Astronomical Society Small Research Grant for Real Time Solar/Lunar Imaging for Education/Public Outreach, \$4,950, Awarded January 2002.

Z. Smith Reynold’s Foundation, to develop a K-12 Science Teachers Learning Lab at PARI, \$25,000, Awarded December 2001.

NASA Space Telescope Science Institute IDEAS Grant Program to develop “The School of Galactic Radio Astronomy” To use the 4.6-m PARI radio telescope for education and public outreach, \$37,2222. Awarded June 2001.

NASA FUSE grant, Co-I, FUSE observations of the carbon star S Car. Awarded February 2001 (PI: Dr. Donald Luttermoser).

EAST TENNESSEE STATE UNIVERSITY

American Astronomical Society Small Research grant to support Mira star spectroscopy program. Awarded June 1998. \$3585.

ETSU Research Development Committee grant to support astronomical study of suspected planetary nebulae, Awarded July 1998. \$5939.

ETSU Multimedia Presentation Equipment for Instruction grant for a telescope camera and large screen plasmavision television for the new ETSU astronomical observatory. Awarded May 1998. \$9589.

ETSU Instructional Development grant for the development of a virtual reality lab in physics and astronomy. Awarded March 1998. \$3494.

Second National Science Foundation REU Supplement grant to support research experience for undergraduates. Awarded March 1997. \$8600.

East Tennessee State University College of Arts and Sciences, **Teacher of the Year 1996-97**.

National Science Foundation REU Supplement grant to support research experience for undergraduates. Awarded March 1996. \$9000.

National Science Foundation Early Career Development (CAREER) grant to establish an active education plan in addition to a scientific research project. Awarded June 1995. \$75000.

ETSU Research Development Committee grant to support a study of the July 1994 Comet Shoemaker-Levy/9 collision with Jupiter, 1994. \$5000.

Space Telescope Science Institute, Hubble Space Telescope grant to study the dust shells surrounding stars in the Orion Nebula using HST data, 1993-1995. \$37000.

ETSU Research Development Committee grant to support research involving the search for companions to Mira stars. 1992. \$5000.

NASA International Ultraviolet Explorer grant for a research program studying regions of star formation. 1992-1993. \$13000.

National Science Foundation grant for the design, construction, and implementation of a photoelectric photometer to be used on the Southeastern Association for Research in Astronomy 0.9-m telescope at Kitt Peak, Arizona 1991-1994. \$26000.

NASA Jet Propulsion Laboratory grant to study terrestrial atmospheric seeing conditions for the astrometry of interplanetary spacecraft. 1991-1992. \$7000.

Instructor of Applied Physics, Physical Science & Society, Introduction to Astronomy Lab, Electricity and Magnetism I, Electromagnetic Theory, Atomic and Nuclear Physics, Astronomy I and Astronomy II.

Advisor to Independent Study Students, Advisor to the local chapter of the Society of Physics Students.

ALLEGHENY OBSERVATORY OF THE UNIVERSITY OF PITTSBURGH

- Study of newly discovered type of stars ("socket stars"). 1990-1994.
- JPL Navigation Systems Division grant for asteroid tracking program, contracted 1989-1991.
- Part of development team to design and study operation characteristics of the proposed space-based Astrometric Imaging Telescope 1986-1991.

- Automated the AO 0.75-m Thaw refractor: hardware interfacing and software (C and Assembler) on IBM/AT compatible, 1988-1991.
- Observed at Kitt Peak National Observatory 0.9-m.
- Established visible photometry program to study the characteristics of reference stars used in the AO astrometric program, included using the national astronomical facilities at the Kitt Peak National Observatory. 1987-1990.
- Developed the Multichannel Astrometric Photometer FORTRAN, C, Assembler, BASIC, programming on VAX, PDP 11/73, and IBM/ATs and hardware upgrades. 1986-1990.

NASA AMES RESEARCH CENTER

- National Academy of Science/NRC Research fellowship grant to Study of infrared reflection nebulae. 1984-1988.
- Development of IR electro-optical polarimeter for use at the NASA Infrared Telescope facility, 1984-1986
- Study of visible reflection nebulae using the Infrared Astronomical Satellite database. 1984-1986.

THE WYOMING INFRARED OBSERVATORY, UNIVERSITY OF WYOMING

- PhD Thesis. 1984.
- Development of Wyoming IR polarimeter, and FORTH and FORTRAN software development. 1982-1984.
- Observed at the NASA IRTF, Cerro Tololo Inter-American Observatory (1.5-m and 4-m), Wyoming Infrared Observatory 2.3-m. 1979-1984.
- University of Wyoming, 1979 - 1984, Instructor in first year FORTRAN programming, Teaching Assistant in Modern Physics, Introductory Astronomy.

CENTRAL MICHIGAN UNIVERSITY

- M.S. Thesis. 1979.
- Photometry of eclipsing binary stars which includes observations at Yerkes Observatory, and writing data reduction code for analysis. 1978.
- Central Michigan University. 1977 - 1979. Teaching assistant in Introductory Physics and Astronomy labs.

UNIVERSITY OF WISCONSIN-STEVENS POINT

- UW-Stevens Point. 1974 - 1977. Planetarium Operator.

Refereed Publications
Michael W. Castelaz

Smith, B., Leisawitz, J., Castelaz, M. W. & Luttermoser, D. G. 2001, *COBE DIRBE Light Curves of Mira Variables*. *Astronomical Journal*, 123, 948..

Castelaz, M. W., Luttermoser, D., Caton, D. & Piontek, R. 2000, Low Resolution Spectroscopy of Mira Variable Stars: 6200A To 8800A, *Astronomical Journal*, 120, 2627.

Castelaz, M. W., Luttermoser, D. G., & Piontek, R. A. 2000, Vanadium Oxide in the Spectra of Mira Variables, *Astrophysical Journal*, 538, 341

Messer, E. L. & Castelaz, M. W. 1998, Spectroscopy of Mira Variables, *International Amateur Professional Photoelectric Photometry Communications*.

Castelaz, M. W. & Luttermoser, D. G. 1997, Phase Dependent Spectroscopy of Mira Variables, in the 10th Cambridge Workshop, *Cool Stars, Stellar Systems, and the Sun*, ed. R. A. Donahue & J. A. Bookbinder. p. 53.

Lingerfelt, E., Clark, C. J., & Castelaz, M. W. 1997, Spectroscopy and Photometry of the Mira Variables U CVn, V CVn, and R Leo, *International Amateur Professional Photoelectric Photometry Communications*, Issue 71.

Castelaz, M. W. & Luttermoser, D. G. 1997, Phase Dependent Spectroscopy of Mira Variable Stars., *Astronomical Journal*, 114, 1584.

Crowe, K., Heaton, B., Castelaz, M. W. 1996. Spectra of Mira Stars, in *International Amateur Professional Photoelectric Photometry Communications*.

Grady, C. A., Pérez, M. R., Talavera, A., Bjorkman, K. S., de Winter, D., Thé, P.-S., Molster, f., van den Ancker, M., Sitko, M. L., Calvet, N., Morrision, N. D., McCollum, B., Castelaz, M W. 1996, The Beta Pictoris Phenomenon Among Herbig Ae/Be Stars. UV and Optical High Dispersion Spectra, *Astronomy & Astrophysics Supplement Series*, 120, 157.

McCollum, B. & Castelaz, M. W. 1996, Infrared Polarimetry and Imaging of Ultracompact Partially Ionized Optical Sources In The Orion Nebula, *Astrophysics and Space Science*, 224, 509.

Castelaz, M. W. & McCollum, 1995 A Search for Companion Stars to the Mira Variables S Leonis and U Cancri, *Astronomical Journal*, 109. 341.

Szkody, P., Garnavich, P., and Castelaz, M.W. 1994, Ginga and Rosat Observations of The Cataclysmic Variable S193, *Publications of the Astronomical Society of the Pacific*, 106, 616.

Castelaz, M. W., Powell, H. D., Henson, G., and Williams, J., 1994, Computer Control Of An Optec Photometer Viewer Mirror And Scale, International Amateur Professional Photoelectric Photometry Communications, No. 57.

McCollum, B. & Castelaz, M.W. 1993, IUE Observations of the Socket Star Mt Ori and Its Circumstellar Environment, in *frontiers of Space and Ground-Based Astronomy: Proceedings of the XXVII ESLAB Symposium*, eds. W. Wamsteker, M.S. Longair, and Y. Kondo, Kluwer Academic Publishers.

Gatewood, G, Castelaz, M. W., De Jonge, J. K., Persinger, T., Stein, J., & Stephenson, B. 1992, Map-Based Trigonometric Parallaxes of Open Clusters. II. The Hyades: 51 Tauri, *Astrophysical Journal*, 392, 710.

Castelaz, M.W., Persinger, T., Stein, J., and Powell, H. 1991, Spectral Types and Luminosity Classifications of Reference Stars in Map Regions, *Astronomical Journal*, 102, 2103.

Oswalt, T.D., Rafert, J.B., Wood, M.A., Castelaz, M.W., Henson, G.D., Powell, H.D., Caillault, J.P., Shaw, J.S., Leake, M.A., Marks, D.W., Rumstay, K.S. 1991, The SARA Kitt Peak 0.9-M Telescope Project: Collaborative Research In Astronomy, *Proceedings of the Joint Commission 9 & 25 Meeting on Automated Telescopes for Photometry & Imaging*, IAU General Assembly XXI, Buenos Aires, Argentina, 23 July- 1 August 1991.

Persinger, T., & Castelaz, M. W. 1990, UBVRI, DDO, ubvy, and H-Beta Photometry of Map Region Stars, *Astronomical Journal*, 100, 1621.

Castelaz, M. W., 1990, The Possible Nature of "Socket" Stars in HII Regions, *Astrophysical Journal Letters*, 348, L29.

Castelaz, M. W., and Persinger, T. 1989, Spectral Types and Luminosity Classifications of Map Region Stars Using UBVRI And DDO Photometry, *Astronomical Journal*, 98, 1768.

Castelaz, M. W., 1989, first Detection of the Astrometric Orbit of the Single-Lined Spectroscopic Binary Epsilon Librae, *Astronomical Journal*, 97, 1184.

Gatewood, G., Kiewet de Jonge, J., Castelaz, M. W., Han, I., Persinger, T., Prosser, J., Reilend, T., Stein, J. 1988, A Study of Upsilon 1, *Astrophysical Journal*, 332, 917.

Castelaz, M. W. and Grasdalen, G. L., 1988, The Source of flux To Red Nebulosity In NGC 2264, *Astrophysical Journal*, 335, 150.

Castelaz, M. W., and Hackwell, J. A., 1987, The Discovery of an Infrared Reflection Nebula Surrounding R Coronae Australis IRS 5, *Astrophysical Journal*, 314, 317.

Castelaz, M. W., Sellgren, K., and Werner, M. W., 1987, IRAS Surface Brightness Maps of Reflection Nebulae in the Pleiades, *Astrophysical Journal*, 313, 853.

Castelaz, M. W., Hackwell, J. A., Grasdalen, G. L., and Gehrz, R. D., 1986, An Infrared Reflection Nebula Surrounding SGS1 in the NGC 1333 Dark Cloud *Astrophysical Journal*, 300, 406.

Castelaz, M. W., Gehrz, R. D., Grasdalen, G. L., and Hackwell, J. A., 1985, Spatially Extended 10 Micron Emission from The Infrared Reflection Nebula GSS30 *Publications of the Astronomical Society of the Pacific*, 97, 924.

Castelaz, M. W., Grasdalen, G. L., Hackwell, J. A., Capps, R., and Thompson, D., 1985, GL 961-W: A Pre-Main Sequence Object, *Astronomical Journal*, 90, 1113.

Smith, J., Bentley, A., Castelaz, M. W., Gehrz, R. D., Grasdalen, G. L., and Hackwell, J. A., 1985, Infrared Sources and Excitation of the W40 Complex *Astrophysical Journal* 291, 571.

Castelaz, M. W., Hackwell, J. A., Grasdalen, G. L., Gehrz, R. D., and Gullixson, C., 1985, GSS30: An Infrared Reflection Nebula in the Ophiuchus Dark Cloud, *Astrophysical Journal*, 290, 261.

Grasdalen, G. L., Strom, S. E., Strom, K. M., Capps, R., Thompson, D., and Castelaz, M. W., 1984, High Spatial Resolution IR Observations of Young Stellar Objects: A Possible Disk Surrounding HL Tau, *Astrophysical Journal Letters*, 283, L57.

The Nature And Geometry Of Infrared Reflection Nebulae, Castelaz, M. W., 1984, Ph.D. Thesis, University of Wyoming.