Thomas E. Whittemore
410 Northridge Road
Santa Barbara, CA 93105
805-687-2025
E-mail: kometes@aol.com

EDUCATION

Ph. D., University of Arizona; Physics
M.S., University of Arizona; Physics
B.S., Purdue University; Physics major/Mathematics minor

TEACHING EXPERIENCE

Adjunct Faculty, Physics Department, Westmont College 2007-present
Designed, developed and taught computer-integrated laboratory experiments for the Life Sciences and General Physics students. Introduced and taught the upper-division courses Astrophysics I and II; taught upper-level courses in electricity & magnetism and waves and optics. Responsible for Westmont's Carroll Observatory public observations.

Adjunct Faculty, Earth Sciences Department, SBCC 2003-2006
Planetarium-based astronomy labs presented at the Santa Barbara Museum of Natural History; lecture course in general astronomy taught on the main campus.

Lecture Series: " Enjoying the Night Sky: A Short Course in Practical Astronomy"
Created this six-part lecture series in introductory astronomy for Casa Dorinda residents. It was presented in the Gladwin Planetarium at the Santa Barbara Museum of Natural History.

Visiting Assistant Professor, Lecturer, Physics, UCSB 2003-2005
Introductory and advanced physics courses for engineering and science majors; honors astronomy seminars for College of Creative Studies-bound freshmen; web-enhanced large-lecture physics courses for a variety of pre-med and engineering students.

Assistant Professor, Science/Mathematics, Evergreen Valley College 2000- 2003
San Jose, California
Guided the design and construction of the Montgomery Hill Observatory. Served on several search committees for new physics and astronomy faculty. Restructured the Earth Sciences, Astronomy, and Introductory Physics programs. Designed and defended the curricula for the college's first Introductory Astronomy Laboratory course. Taught a variety of disciplines, including: Earth Science, Introductory Astronomy, Conceptual Physics, Advanced Physics for Science and Engineering Students, and all levels of Mathematics from pre-algebra to differential equations.

Assistant Professor, Science/Mathematics, Ohlone College 1997- 2000
Fremont, California
Restructured the Earth Science and Astronomy programs. Created and taught the following: Special Topics in Astrophysics; Solar System Astronomy; Astronomy Beyond our Galaxy; Earth Science; Introductory Astronomy; Physics for Engineering and Science majors. Designed and taught Ohlone College's first mirror and telescope-making workshop. Served on the search committee for the new geology faculty member.

Adjunct Faculty, Mathematics/Physics, Evergreen Valley College 1995-1997
San Jose, California
Designed and defended the curricula for Earth Science, General Astronomy. Taught Earth Science, Introductory Physics, and all levels of Mathematics. Co-hosted the Two-year College in the Twenty-first Century (TYC21) Conference.

Adjunct Faculty, Mathematics/Physics, De Anza College 1995-1997
Cupertino, California
Taught all levels of mathematics from pre-algebra through differential equations.

Adjunct Faculty, Mathematics/Physics, National Hispanic University 1994-1996
San Jose, California
Designed curricula for the Upward Bound Program. For Upward Bound's summer programs I created and taught a number of hands-on workshops in physics, astronomy, earth science, and advanced mathematics. The workshops provided a college environment for inner city high school students to encourage them to attend college. Students who participated in the program were normally the first in their families to enter college.

Teaching Assistant, University of Arizona, Tucson, Arizona

1972-1980
Conducted a wide variety of recitation and discussion sections with students from nursing, liberal arts, engineering, physics, and pre-med backgrounds. Co-designed a laboratory course for entry-level students. For this effort I received the Outstanding Teaching Award at the University of Arizona.

RESEARCH EXPERIENCE

Associate Research Scientist, Lockheed Palo Alto Research Laboratories 1986-1994
Researched numerous infrared-sensitive detectors. Investigated detector noise sources; conducted spectral response measurements; wrote clocking and data-reduction software for numerous CCD-based focal plane arrays; programming experience in FORTRAN, Basic, FORTH, and Pascal. Researched optical coatings for x-ray telescope mirrors; conducted detector response measurements in the ultraviolet, x-ray and visible parts of the spectrum; extensive experience in the design and maintenance of ultra-high vacuum systems, inert-gas sputtering and evaporation chambers, photon counting detectors, and ultra-sensitive surface measurements.

Research Associate, University of Arizona, Tucson, Arizona 1980-1986
Designed and constructed the University of Arizona's low-temperature laboratories. As part of my dissertation work, I designed and built ultra-sensitive cryogenic detectors which operated in high magnetic field environments; among the skills acquired through my dissertation work are: AC and DC thin film sputtering, He^3-He^4 dilution refrigeration techniques, ultra-high vacuum experience, crystal growth and analysis of metals and alloys, superconductivity, and acoustic and electromagnetic shielding.

COMMUNITY ENRICHMENT AND OUTREACH

Advisor and assistant to the Cate School's new observatory from 2008-present. This student research facility is expected to be fully operational by early 2010.

After School Enrichment Program at Roosevelt Elementary – designed and taught a hands-on astronomy course to 1st, 2nd and 3rd graders, fall, 2006.

CAMA docent program – taught music appreciation for two years as a volunteer to Ellwood Elementary's 4th grade classes from 2006-2007.

Designed and presented of a series of planetarium-based enrichment classes for the Space Explorers Camp at the Santa Barbara Museum of Natural History, summers, 2005-2009. Designed short courses in mirror-making and telescope-building for the Quasars to Seastars program at the Museum of Natural History, summer 2005 and 2006.

Judge for the Santa Barbara County Science Fair, 2005 and 2006.

Presenter, UCSB South Coast Science Project, 8th Grade Science Institute in the Earth Sciences, summers, 2006-2008.

Created and taught numerous mirror-making and telescope-building workshops for the Astronomical Unit, Santa Barbara's astronomy club, at the Santa Barbara Museum of Natural History, beginning the summer, 2003 to the present. Newsletter editor for the Astronomical Unit, Santa Barbara's astronomy club from 2005 to present.

Created and taught mirror-making and telescope-building workshops for the San Jose Astronomical Association, San Jose's astronomy club.

Acting Astronomer for the Astronomical Society of the Pacific's Project Astro, 1999-2000. As an acting astronomer, I was paired with elementary school teachers at a number of schools in the Bay Area. The focus of this program was to bring hands-on astronomy activities to elementary school-age children.

Acting astronomer at public stargazing activities for various groups throughout the San Francisco Bay area and the Santa Barbara area.

RECENT WORKSHOPS AND ACTIVITIES

Participating astronomer for the Santa Barbara Astronomical Unit at the California Star Party (CalStar), 2006 - 2009.

Participating astronomer for the San Jose Astronomical Association at the Mount Lassen Star Party, 2001, and at the California Star Party, 2001.

Lapidary Workshop, Peninsula Gem and Geology Society, 2001.

"Volcanoes in the Solar System" Workshop, NASA Ames Research Center, 2000.

Project Astro Summer Workshop, NASA Ames Research Center, 1999.

University of Arizona Astronomy Camp for Educators, Tucson, Arizona, 1999.

Cosmologies and World Views: Stanford Presidential Symposium on the Sciences and Humanities, Stanford, University, 1999.

AWARDS

Publication Awards, Lockheed Palo Alto Research Laboratories
Outstanding Teaching Award, University of Arizona
Physics Award, Purdue University
Modern Languages Award, Purdue University

AFFILIATIONS AND INTERESTS

American Association of Physics Teachers: Southern California Chapter member
Sigma Pi Sigma: lifetime member of the National physics honorary
Santa Barbara Astronomical Unit: member and Newsletter editor
Astronomical Society of the Pacific: member
Peninsula Gem and Geology Society: former member
Amateur musician: play banjo, guitar, mandolin and piano; member of the Glendessary Jam, a Santa Barbara-based old-time music group
Palo Alto Run Club; former member and newsletter editor
Hobbies and interests include: cycling, running, hiking, birding, and rock-hounding
Former president of the Tucson Wheelmen, a bicycle racing club; licensed with the United States Cycling Federation: raced three years

PUBLICATIONS

RECENT ADVANCES IN EXTREME ULTRAVIOLET ASTRONOMY WITH MULTILAYERS, Bernhard M. Haisch, Thomas E. Whittemore and Gary J. Rottman, from Extreme Ultraviolet Astronomy, R. F. Malina and S. Bowyer (eds.), 368-379. (New York: Pergamon Press), 1991.

GAMMA RADIATION INDUCED NOISE IN IR DETECTORS, F. Junga, D. Kemmer, R. Martin and T. Whittemore, 1991. The Second Lockheed Corporation Electro-optics and Photonics Symposium held on June 5, 6 and 7, 1991.

LABORATORY CHARACTERIZATION OF DIRECT READOUT Si:Sb AND Si:Ga INFRARED DETECTOR ARRAYS, Mark E. McKelvey, Nicholas N. Moss, Robert E. MacMurray, Jr., John A. Estrada, John H. Goebel, Craig R. McCreight, Maureen L. Savage, Frank Junga, Thomas E. Whittemore; October 1989.

ULTRAVIOLET QUANTUM EFFICIENCY AND VACUUM STABILITY OF ION-IMPLANTED, LASER-ANNEALED CCDs, R.A. Stern, T.E. Whittemore, M. Winzenread and M.M. Blouke; 1989.

A MULTILAYER X-RAY MIRROR FOR SOLAR PHOTOMETRIC IMAGING FLOWN ON A SOUNDING ROCKET, B.M. Haisch, T.E. Whittemore, E.G. Joki and W.L. Brookover; 1988.

EXTREME-ULTRAVIOLET MULTILAYER MIRROR PERFORMANCE: RECENT TEST RESULTS, R.C. Catura, E.G. Joki, T.E. Whittemore and W.J. Brookover; 1988.

RECENT RESULTS IN MULTILAYER RESEARCH, R.C. Catura, T.E. Whittemore and W.J. Brookover; 1988.