BRIAN M. CUDNIK

Specialist, Laboratory, Department of Physics, Prairie View A&M University

EDUCATION:

M. S. Astronomy, May 1998, San Diego State University, San Diego, California
B. S. Physics and Astronomy, May 1994, Northern Arizona University, Flagstaff, Arizona

WORK EXPERIENCE

Laboratory Specialist, Department of Physics, Prairie View A&M University

- Managed the routine operations of the instructional laboratories, including the supervision of up to 12 student hourly workers per semester and the upgrade of the laboratory manuals that accompanied the courses
- Participated in outreach and recruitment events such as the Career Fair in Bellville, Texas; Pantherland Day on the Hill during the spring semesters; hosted visiting high school students and teachers
- Served as chairperson for the search committee to hire an administrative assistant to the Department during September 2006
- Assisted in the preparation of annual proposals to secure Title III funding for five years, and assisted with five additional education proposals.
- Wrote four proposals for scientific research (not funded).
- Planned, established and developed three specialized laboratories (Computational Physics Laboratory, Physics Learning Center, Science Education Center), assisted with the upgrade of the department curriculum establishing four tracks of emphasis for the Physics major to choose as well as planning and scheduling for the semester.
- Acted as advisor for a group of students participating in the KC135 student flight experiment program (Spring 2003).
- Assisted with the activities of Operation XLR8 ("Accelerate", for more information on this project, visit http://www.pvamu.edu/pages/2794.asp) a Gates/Marshall redesign program, including developing hands-on laboratory activities for a physics class, assisting in TAKS preparation, training and mentoring science teachers, and assisting in developing lesson plans.

Instructor: Physics and Physical Science Lecture and Laboratory Sections:

- Taught Physics I and II laboratories (five semesters) as well as the Physical Science Survey laboratory (three semesters); taught Earth Science Lecture and Laboratory (four semesters of lecture, five semesters of laboratory).
- Developed and taught modules of the *Online Weather Studies* course (course materials provided by the American Meteorological Society) as part of the existing Earth Science and Physical Science courses, taught OWS as a self-contained course (Introduction to Atmospheric Sciences) Fall 2004, Fall 2005, and Fall 2006
- Participated in outreach events to local high schools and middle schools, including: three career days for 4th and 5th graders at O'Bryant Intermediate School in Bellville, Texas; three teacher training workshops to show innovative new methods of teaching physics and engineering, administered science modules at Austin Community College for the Youth Academy.
- Served as Physics/Physical Science teacher for the two-week long summer Pre-College Institute program (June each year from 2002-2006) for two workshops, MITES and ARTEC

Instructor: Astronomy Lecture and Laboratory:

- University of St. Thomas, Houston, Texas: taught introductory college level solar system astronomy and stellar / galactic astronomy lecture and lab courses for five terms, June 2005 to present.
- San Diego State University, Northern Arizona University, Grossmont Community College and Southwestern College (both community colleges in the San Diego Area): Introductory college level astronomy courses and laboratories for a total of eight semesters (1994-1998)

Additional Public Speaking Experience:

Made seven presentations to the Houston Astronomical Society, two talks to the North Houston Astronomy Club, two talks to the Atlanta Astronomy club, and two talks to the PVAMU Society of Physics Students (2000-2006)

Planetarium Operator, Houston Museum of Natural Science:

Narrated planetarium shows (stargazing guides) to the general public, performed astronomically themed laser and multimedia shows (Jan. to Oct. 1999)

Outreach Technician:

Assisted in the development of a vacuum solar telescope observation program at Prairie View A & M University; assisted in the installation and maintenance of "Space Update" software for public museum exhibits at the Houston Museum of Natural Science (1998-1999)

RESEARCH EXPERIENCE:

Data Skills

- Performed data analysis on solar images in preparation for poster presentations and journal submissions.
- Worked with solar images in several formats for use with the Prairie View Solar Observatory website and for use in data analysis with IRAF (Image Reduction and Analysis Facility).
- Assembled, established, managed, and maintained the observing program for the Prairie View Solar Observatory, working with the facility's 35-cm vacuum solar telescope.

Computer Skills

- Experience with webpage design, editing, and maintenance. Experience with FORTRAN, UNIX, and IRAF.
- Fluent with Microsoft Windows XP, and Office 2003 (includes Word, Excel, Power Point), and Adobe Acrobat.
- Experience with PASCO's Data Studio data acquisition and analysis software.
- Experience with campus software modules FAMIS, SIS, Banner, and Canopy

CONFERENCE PRESENTATIONS & BIBLIOGRAPHY:

- Cudnik, B. M. *Lunar Meteoroid Impacts and How to Observe Them* (Book), Springer Publishing, 2009. (in press)
- Cudnik, B. M. "The Status of Lunar Meteor Research (and Applications to the Rest of the Solar System)" 38th Lunar and Planetary Science Conference, (Lunar and Planetary Science XXXVIII), held March 12-16, 2007 in League City, Texas. LPI Contribution No. 1338, p.1115
- Cudnik, B. M. "Observations of the inner coma of C/199501 (Hale-Bopp) - gas and dust production". *Planetary and Space Science,* **53**, Issue 6, 653-658, 2005.
- Cudnik, B. M. "Black drops and gray drops - multi-color CCD observations of the 1999 Mercury transit and application to the 2004 Venus event" *Journal of the Association of*

Lunar & Planetary Observers, The Strolling Astronomer (ALPOJ, ISSN 0039-2502), **46**, 1, 9 - 12 (Winter 2004)

- Cudnik, B. M. “Multi-Wavelength CCD Observations of the 15 November 1999 Mercury Transit and the ‘Gray Drop’ Phenomenon”. *Solar Physics,* **29**, issue 2, p. 197-214, 2004.
- Cudnik, B. “Multi-Wavelength Observations of the Mercury Transit of November 1999”. 2003LPI…1240.
- Cudnik, B. M.; Dunham, D. W.; Palmer, D. M.; Cook, A.; Venable, R.; Gural, P. S. “Ground-Based Observations Of Lunar Meteoritic Phenomena” *Earth, Moon, and Planets*, **93**, Issue 3, 145-161 (2003).
- Cudnik, B. M.; Dunham, D. W.; Palmer, D. M.; Cook, A.; Venable, R.; Gural, P. S. “The Observation and Characterization of Lunar Meteoroid Impact Phenomena” *Earth, Moon, and Planets*, **93**, Issue 2, 97-106 (2003).
- Pojoga, S. and Cudnik, B. “The Clustering Properties of Active Regions During the First Part of Solar Cycle 23” *Solar Physics*, **208**, 1, 17-32 (2002).
- Cudnik, B. M.; Dunham, D. W.; Palmer, D. M.; Cook, A. C.; Venable, R. J.; Gural, P. S. “Ground-based Observations of High Velocity Impacts on the Moon's Surface -- The Lunar Leonid Phenomena of 1999 and 2001”. 2002LPI....33.1329C, March 2002
- Cudnik, Brian M. “A program for monitoring the Moon for meteoritic impacts: the first year”. 2002 ALPOJ..44a...7C, February, 2002.
- Dunham, D.W., et al. "The First Confirmed Videorecordings of Lunar Meteor Impacts" 2000LPI…31.1547D.
- Cudnik, B. “A Comprehensive Program for the Observation of Lunar Meteoritic Phenomena”. 2003LPI…1242.
- C. Cudnik, et al. "The M2.4/2B Flaring Event of 20 March 2000 from Region NOAA 8910" 2000SPD…32.0257
- H. Huang, T.S., Cudnik, B.M., Pojoga, S. "Active Region Evolution of Several Regions Lasting More than One Solar Rotation" 2000SPD…32.0207
- Cudnik, B.M. "Observations of the Inner Coma of C/1995 O1 (Hale-Bopp)" 1998AAS… 192.0804C.

AFFILIATIONS

- American Astronomical Society, 1993-present
- American Meteorological Society, 2003-present
- American Association of Physics Teachers, 2006-present
- Coordinator, Lunar Meteoritic Impact Search program of the Association of Lunar & Planetary Observers, 1999-present
- Secretary, Houston Astronomical Society, 2002-2005