Petrus C. Martens

Research Professor, Physics Department, Montana State University
Smithsonian Research Associate, Harvard-Smithsonian Center for Astrophysics
Affiliate Professor, Computer Science Department, Montana State University
http://solar.physics.montana.edu/martens

Research: Solar physicist with experience in MHD and plasma theory and simulations, automated feature recognition, data mining, science operations, and space instrumentation. Current research interests include feature recognition, astro-informatics, stellar dynamos, the "Faint Young Sun Paradox", the solar-stellar connection, coronal heating, solar flares. NASA space mission involvement with Yohkoh, SoHO, TRACE, and SDO.

Education and Postdoctoral Positions:

B.A. Astronomy 1977 University of Utrecht, The Netherlands
M.A. Astronomy 1979 University of Utrecht
Ph.D. Astrophysics 1983 University of Utrecht (Cum Laude)
Postdoc, Laboratory for Space Research, Utrecht University, 1983-1984
National Academy of Sciences-NRC Research Associate, NASA-GSFC, 1984-1987
Special Studies in Management and Administration, Harvard University Extension School, 1988-1990

Professional History:

2010 - current:	Research Professor, Montana State University
2008 - 2009	Astrophysicist, Harvard-Smithsonian Center for Astrophysics
2004 - 2007	Research Professor, Physics Dept, Montana State University
1999 - 2004	Associate Research Professor, Montana State University
1993 - 1998	European Space Agency, SoHO Science Operations Coordinator
1990 - 1993	Lockheed Solar & Astrophysics Lab, Research Scientist
1987 - 1990	Harvard-Smithsonian Center for Astrophysics, Astrophysicist

Fund Raising, a few current examples

- PI, "Design and Operation of an SDO Science Center", NASA, 2008-current, $ 3,118,600 (project to implement automated feature recognition for SDO and related observatories.)
- Science Co-PI, **"**Large-scale Content-based Image Retrieval System for Interactive Search through the Virtual Solar Observatory", NASA, 2010-current, $ 1,125,000.
- Co-Investigator on the Atmospheric Imaging Assembly on SDO, NASA, 2004-current, subcontract renewed annually, FY2014 amount $ 240,000

Synergistic Activities:

- PI, "Design and Operation of an SDO Science Center", a $ 3 million project to implement automated feature recognition for SDO and related observatories.
- Co-founder and Institutional PI for the Virtual Solar Observatory
- International Council for Science; Co-Chair of the Committee on Solar Evolution & Extrema, part of VarSITI, the SCOSTEP Science Focus for 2014-2018.
- Co-organizer of Solar Information Processing Workshops
- Member, Advanced Technology Solar Telescope Science Working Group, 2013-current. Focus on data processing, data systems, and operations.
- Associate Editor, The Astrophysical Journal Letters, 2003-2012
- Chair, NASA-LWS focus team on "Solar modulation of the galactic cosmic rays and the production of cosmogenic isotope archives of long-term solar activity, used to interpret past climate changes", 2008-2012

Publications: Author and co-author of 271 publications listed in ADS, more than 100 refereed and more than 50 co-authored with students. Editor of two books. **List conference speaking**

Graduate Student Mentoring:

- Jonathan Cirtain, PhD in May 2005, winner 2011 Presidential Early Career (PECASE) award, link
- Henry Winter, PhD November 2008, link
- Andres Munoz, PhD July 2010, winner 2011 AGU Fred L. Scarf award for best thesis in North America in Space Science, link
- Jason Scott, PhD November 2011,
- Barry Vanderhorst and Patricia Jibben, Masters degrees in 2005.
- Current Solar Physics graduate students are Ernest Amouzou, Alec Engell, Ricky Egeland, and Fernando Delgado.
- Also chairing the PhD committees of Computer Science graduate students Michael Schuh, Karthik Ganesan Pillai, and Patrick McInerney.

Postdoc Mentoring: In the past I have worked with Daniel Gomez, now a professor at the University of Buenos Aires, I have worked for eight years with Dibyendu Nandi, initially as my postdoc, now Dean of the Science Faculty at IIser in Kolkata. My postdoc Joe Plowman just moved on to a position at the High Altitude Observatory, and currently I am supervising Juan Banda in Computer Science, and Andres Munoz in solar physics. Many joint publications have resulted from this.

Teaching: Taught graduate courses in physics at **Harvard, Stanford, Embry-Riddle, the University of Buenos Aires, and Montana State**. Recent graduate courses include: Hydrodynamics and Magneto-hydrodynamics (MHD), and Electricity and Magnetism (Jackson).