

Wayne R. Keith

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B.S., Physics, Tarleton State University, 1995

M.S., Space Physics, Rice University, 1999

Ph.D., Space Physics, Rice University, 2001

INTERESTS: Experimental Magnetospheric Physics, Spacecraft Instrumentation, physics education.

EXPERIENCE:

1995 – 1996	Rice University, Graduate Fellow
1996 – 2001	Southwest Research Institute, Research Assistant
2001 – 2003	University of Texas at San Antonio, Adjunct Assistant Professor
2001 – 2003	Southwest Research Institute, Postdoctoral Associate
2003 – 2005	NASA Goddard SFC, NRC Resident Research Associate
2005 – 2006	Angelo State University, Visiting Assistant Professor
2006 – present	McMurry University, Assistant Professor
2007 – present	Cisco Jr. College, Adjunct Instructor

Dr. W. R. Keith conducted his graduate research at SwRI beginning in 1996. During this time, he participated in the development of two magnetospheric plasma instruments (MEDUSA-1 and -2), which were successfully flown on Swedish satellites. He also developed the data processing software for these and other instruments. For his doctoral research, he studied the connection between the magnetopause current layer and the low-altitude cusp. In the summer of 2000, he was selected to participate in the Summer School for Planetary Sciences at Caltech/JPL. After graduation, Keith continued working at SwRI as a postdoc, and also taught four semesters part-time at the University of Texas at San Antonio. His work at SwRI included the validation of instrument data from the Cluster multi-satellite mission and research on the mid-altitude magnetospheric cusps. In 2003 he was selected as a National Research Council Postdoctoral Research Associate to conduct multi-altitude studies of the cusps at Goddard Space Flight Center, Greenbelt, Maryland. Keith is an active member of the Cluster scientific community, contributing various data visualization and analysis techniques while pursuing his cusp research. In 2005 he accepted a visiting faculty position at Angelo State University, where he taught physical science and astronomy. Keith currently teaches physics and astronomy at McMurry University as a tenure-track Assistant Professor. In the fall of 2006 and spring of 2007, Keith attended workshops for new physics and astronomy faculty in College Park, MD.

SOCIETIES: American Geophysical Union, American Association of Physics Teachers

AWARDS AND FELLOWSHIPS:

Presidential Honors Program, Tarleton State University, 1991-1995

Outstanding Graduate, Department of Mathematics and Physics, Tarleton State University class of 1995

Graduate Fellowship, Rice University, 1995-1996

NASA/Texas Space Grant Consortium Fellowship 1997-1998

COURSES TAUGHT:

McMurry Introduction to Astronomy, Astronomy Lab, Introduction to Physics, Physics Lab, Modern Physics, Solar System Physics.

CJC Introduction to Astronomy, Astronomy Lab.

ASU Fundamentals of Astronomy, Stellar Astronomy Lab, Introduction to Physical Science, Physical Science Lab, Physics Lab, Physical Science Concepts.

UTSA Exploration of the Solar System.

SELECTED PUBLICATIONS AND PRESENTATIONS:

Keith, W., M. Goldstein, T. Stubbs, M. Wilber, A. Fazakerley, H. Rème, and A. Balogh, Simultaneous Multi-Altitude Cusp Conjunctions, *J. Geophys. Res.*, in preparation.

Keith, W., and T. Stubbs, Identification of Spacecraft Conjunctions in the Cusps, *Adv. Space Res.*, accepted.

Heikkila, W., B. Sonnerup, C. Owen, H. Rème, I. Dandouras, Q. Zong, A. Fazakerley, W. Keith, P. Decreau, P. Canu, M. Andre, Y. Khotyaintsev, A. Balogh, Plasma transfer event seen by Cluster, *Cluster-Double Star Symposium Proceedings*, submitted.

Keith, W., J. D. Winningham, M. Goldstein, M. Wilber, A. Fazakerley, H. Rème, T. Fritz, A. Balogh, N. Cornilleau-Wehrin, and M. Maksimovic, Observations of a Unique Cusp Signature at Low and Mid Altitudes, *Surv. Geophys.* V. 26, 307, January 2005.

Keith, W., M. Goldstein, T. Stubbs, D. Winningham, A. Fazakerley, H. Rème, and A. Balogh, Identification and Visualization of Magnetic Conjunctions for Multi-Altitude Cusp Studies, presented at the American Geophysical Union Fall Meeting, San Francisco, California, December 2004.

Keith, W., Cluster/DMSP Conjunctions in the Cusp, presented at the 8th Cluster Workshop, Durham, NH, September 2004.

Cattell, C., J. Dombeck, J. Wygant, J. F. Drake, M. Swisdak, M. L. Goldstein, W. Keith, A. Fazakerley, M. Andre, E. Lucek, and A. Balogh, Cluster Observations of Electron Holes in Association with Magnetotail Reconnection and Comparison to Simulations, *J. Geophys. Res.*, 110, A01211, doi: 10.1029/2004JA010519.

Keith, W., M. Goldstein, J. D. Winningham, M. Wilber, A. Fazakerley, H. Rème, and A. Balogh, Multi-Altitude Cusp Observations with Cluster and DMSP, presented at the American Geophysical Union Spring Meeting, Montreal, Canada, May 2004.

Keith, W., J. D. Winningham, A. Fazakerley, H. Rème, M. Goldstein, T. Fritz, and N. Cornilleau-Wehrin, Observations of a Unique Cusp Signature at Low and Mid Altitudes, presented at the Spatio-Temporal Analysis and Multipoint Measurements in Space Conference, Orleans, France, May 2003.

Keith, W., J. D. Winningham, G. Parks, F. Mozer, M. Wilber, J. Pickett, J. Quinn, and A. Balogh, The True Cusp, a Unique Signature at Low- and Mid-Altitudes, presented at the American Geophysical Union Fall Meeting, San Francisco, California, December 2001.

Keith, W., Theory and Measurements of the Cusp/Magnetopause Current Layer, Doctor of Philosophy Thesis, Rice University, Houston, Texas, April 2001.

Norberg, O., J. D. Winningham, H. Lauche, W. Keith, W. Puccio, J. Olsen, K. Lundin, and J. Scherrer, The MEDUSA Electron- and Ion Spectrometer and the PIA Photometers on Astrid-2, *Ann. Geophys.*, V. 19, 593, June 2001.

Keith, W., J. D. Winningham and O. Norberg, A New, Unique Signature of the True Cusp, *Ann. Geophys.*, V. 19, 611, June 2001.

Keith, W., J. D. Winningham, O. Norberg, G. Marklund and T. Karlsson, Observations of Electrons Accelerated Upwards to keV Energies at 1000 km, presented at the American Geophysical Union Fall Meeting, San Francisco, California, December 1999.

Keith, W., Development of an Ion/Electron Plasma Spectrometer, Master of Science Thesis, Rice University, Houston, Texas, April 1999.