

Kelly E. Korreck  
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## **Education**

PhD University of Michigan: Space and Planetary Physics 2005  
*Dissertation: Ion Heating in Collisionless Shocks in Supernova Remnants and the Heliosphere*  
M.S. University of Michigan: Space And Planetary Physics 2002  
B.S. University of Michigan: Physics and Astronomy 1999

## **Research Experience**

### **Astrophysicist**

2006-Present

*Harvard-Smithsonian Center for Astrophysics*

*X-Ray Telescope (XRT) Group*

*-Analyzed solar x-ray data to explore the energetics of magnetic reconnection in the solar corona*

*-Participated in observational planning and coordination*

### **Post-Doctoral Research Fellow**

2005-2006

*Harvard-Smithsonian Center for Astrophysics*

*Dr. Edwin Kellogg and Dr. Jennifer Sokoloski*

*-Analyzed Chandra and XMM X-ray spectra to determine the shock heating in the jets of R Aquarii and compared to MHD simulations*

### **Doctoral Student**

2002-2005

*University of Michigan-Space Physics Department*

*Professor Thomas Zurbuchen*

*Harvard-Smithsonian Center for Astrophysics*

*Dr. John Raymond*

*-Investigated the heating of ion species at the shock front of SN1006 using UV spectral data from the FUSE satellite*

*-Examined ion heating at the shock front of Coronal Mass Ejections using ACE satellite data*

*-Modeled the interaction of neutrals at a collisionless shock to examine their role in heating and creating a precursor at the shock front*

### **Masters Student**

2000-2002

*University of Michigan-Space Physics Department*

*Professor R. Paul Drake*

*-Modeled microchannel plate signal characteristics for soft X-ray applications and optimized detector using this model*

*-Supervised and mentored 10 undergraduates in their day to day research*

*-Coordinated safety training and chemical disposal for the laboratory*

### **Nuclear Engineer**

1999-2000

*Knolls Atomic Power Laboratory*

*Schenectady, New York*

*-Selected by top management to join a 12 person strategic task force to create and implement new technology for naval ships*

*-Composed 200 page technical document summarizing yearlong work of seven engineers*

*-Performed extensive tests of the reactor prototype*

**Undergraduate Thesis**  
1996-1998

*University of Michigan-Physics Department*  
*Professor Timothy Chupp*

-Optically pumped Rb to test preferred de-excitation path

**Undergraduate Research**  
1994-1996

*University of Michigan*

-Biophysics: Studied the deterioration of Mylenated Basic Protein with applications to the pathology of Alzheimer's  
-Chemistry: Synthesized novel material for use in Liquid Crystal Displays (LCDs)

**Summer Intern**  
1994-1996

*Ford Motor Company-Material Science Department*  
*Scientific Research Laboratory*

-Designed and performed material characterization experiments  
-Made changes to production parts to strengthen materials

**Teaching Experience**

**Teaching Fellow - Physics 11a (Mechanics)**  
*Harvard University, Physics Department*

*Fall Semester 2003*

**Graduate Student Instructor - Astronomy 101**  
*University of Michigan, Astronomy Department*

*Fall Semester 2002*

**Other Relevant Activities**

**Treasurer**  
2002-2005

*American Physical Society's Forum*  
*for Graduate Student Affairs*

-Co-Chair for the CAM2003 International Conference Committee

**Mentor**  
2000-2002

*Undergraduate Research*  
*Opportunities Program (UROP)*  
*University of Michigan*

-Mentored 10 students in laboratory work on the X-ray framing camera testing facility  
-Provided day-to-day supervision and advice  
-Taught basic physics of experimental work involving vacuum and electrical hardware

**Facilitator and Organizer**  
Summer 2002

*Women in Science Day Camp*  
*University of Michigan*

-Set up hands on experiments for students  
-Designed a program to introduce science in an active and interesting way

**Facilitator and Organizer**  
Winter 1999

*Intercultural Leadership Seminar*  
*University of Michigan*

-Designed a weeklong program to teach intercultural communication skills and management

**Researcher**  
1998-1999

*Millennium Project*  
*University of Michigan*  
*Advisor James Duderstadt*

-Created web based learning program for Alumni of the University of Michigan  
-Developed theories on how technology will change the future of education