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Education:

Summer 1998	Ph.D., Physics, University of Wisconsin, Madison (McCammon)
December 1994	M.S., Physics, University of Wisconsin, Madison
Spring 1990	B.S., Physics, Massachusetts Institute of Technology

Experience:

2009–present Senior Scientist
2008–2009 Research Scientist – Planetary Science Institute

- Measured ionization lifetime of carbon using a comet (Morgenthaler *et al.*, 2011)
- Measured OH and CS production rates of comet 9P/Tempel 1 before, during and after the NASA Deep Impact mission (Feldman *et al.*, 2010)
- Developed PFO_FIT a modular non-linear least-squares curve fitting package and GPAW, its flexible GUI front-end for the Gamma Ray and Neutron Detector (GRaND) project. GRaND is one of three instruments on the *Dawn* spacecraft which will orbit asteroids Vesta and Ceres between 2011 and 2016
- Characterized GRaND detectors using pre-flight data
- Trained 3 students in the operation of the McMath-Pierce solar telescope for observations of Io and the plasma torus
- Principle Investigator on 3 successful NASA proposals: Enabling Wide-Field Studies of Comets by Archiving *GALEX*, *MSX*, *WISP* and Supporting Ground-Based Observations/ Measuring the Lifetime of CO Using Publicly Archived *GALEX* Data, (grant value TBD), *GALEX* Observations of Comet 8P/Tuttle (\$47k in 2008) and *GALEX* Observations of Comet Machholz (\$35k in 2008)

2004–2007 Research Scientist–University of Washington, Seattle (Harris)

- Principle investigator on two successful NASA proposals: Spectroscopic Separation of the Local Interstellar Medium and Heliospheric Components of the Soft X-ray Background (\$33k in 2007) and *GALEX* Observations of Bright Comets (\$22.5k in 2005)
- Co-investigator on successful NASA proposal: Io and the Plasma Torus: Conditions at the Time of *New Horizons* Encounter (2-3 months of support per year 2008-2010)

- Analyzed image data collected by large-format science-grade CCDs and microchannel plate detectors. Worked independently, leveraging efforts by designing software to interface with existing processing systems. Advanced scientific understanding of photochemical and gas-phase chemical processes in comets
- Coordinated several multi-week, multi-telescope observing runs. Teams consisted of up to a dozen students and scientists from several institutions. Especially adept at conveying complexity of our unusual plans to telescope administrative staff, making sure all our scientific goals were met while administrative procedures were respected
- Technical advisor in development of the Spatial Heterodyne Spectrometer (SHS), a new spectroscopic technique similar to Michelson interferometry, but with fixed gratings replacing the movable mirrors. Supported 3 graduate students as they developed and deployed 3 SHSs during multi-telescope observing runs
- Technical advisor in development of the HYdrogen Polarimetric Explorer (HYPE), a sounding rocket experiment using SHS technology to observe hydrogen on Jupiter and in interplanetary space
- Co-taught ESS 102 *Space and Space Travel* (enrollment, 150 undergraduates). Responsible for lecture content, homework assignments, two quizzes, and oversight of 3 TAs for 1/2 of the fall 2006 academic quarter
- Coached 10 graduate students and post-docs in preparation of scientific presentations

2002–2004 National Research Council Fellow–NASA Goddard Space Flight Center (Oliveresen)

- Created robust software for the automatic reduction of >3000 high-resolution spectra of Io, Jupiter's innermost large moon. Worked in IDL, a 4th generation programming language popular with astronomers. Created PFO, an object-oriented non-linear least-squares curve-fitting routine and a database in preparation for machine and human-guided learning
- Supervised undergraduate summer research student in creation of web-accessible database of Io observations
- Encouraged a love of science in a *Teach for America* 6th grade teacher enrolled in NASA summer program. Helped develop a thematically integrated curriculum and several lesson plans for her inner-city Washington DC classroom
- Continue to advise summer research students remotely via email and phone

2001–2002 Assistant Scientist, University of Wisconsin–Madison (Harris)

- Analyzed image and spectroscopic data collected by science-grade CCDs. Worked with Fabry-Pérot spectrometer data with variable calibration problems. Verified models of gas outflow in comet Hale-Bopp. Presented results at scientific meetings, published results in the premier scientific journal of my field (Morgenthaler *et al.*, 2001)

- Improved the input optics of the Stellar Spectrograph at the McMath-Pierce Solar Telescope Facility using engineering and machining skills I learned as a graduate student. Documented instrument setup procedures. Helped undergraduate researchers and a professional engineer improve the physical structure of the Hale-Bopp Fabry-Pérot and the Io Torus Imager
- Conducted ground-based astronomical observations of comets and Jupiter's moons. Used the MOSAIC multi-CCD large-format imager on the newly re-commissioned WIYN 0.9 m telescope. On the McMath-Pierce Solar Telescope, used the improved Hale-Bopp Fabry-Pérot, Io Torus Imager, the Stellar Spectrograph, and the first of several prototype SHS instruments

Spring 2000 Lecturer, Department of Astronomy, University of Wisconsin-Madison

- Taught Astronomy 104: *Our Exploration of the Solar System*. Responsible for syllabus, lectures, web-based lecture notes (<http://wisp.physics.wisc.edu/astro104>), homework, exams, projects, honors section, and oversight of one TA (Text: *Universe*, Kaufmann & Freedman, 5th ed)

1998–2001 Research Associate, University of Wisconsin-Madison (Scherb/Roesler/Harris)

- Calibrated WHAM, a newly commissioned, remotely operated telescope and Fabry-Pérot spectrometer to verify surprising results coming from observations of [O I] 6300 Å emission from comet Hale-Bopp. Presented results and scientific meetings, published results in the premier scientific journal of my field
- Programmed instrument control and data collection system. Interfaced micro-controller based gas pressure controller system built by one of our professional engineers to an off-the-shelf CCD data acquisition system. The system was originally implemented on a Pentium in Windows 3.1. Ported to a newer machine and then to Windows 98 in 2007
- Supervised two high school summer interns as they reduced Fabry-Pérot images and spectra of comet Hyakutake
- Mentored senior thesis student Andrew Steffl as he analyzed images of Io recorded by the ADOPT Adoptive Optics system at the 100 inch Hooker telescope on Mt. Wilson
- Network administrator, system administrator. Purchased, installed, and configured network hardware. Maintained and upgraded DEC Ultrix, DIGITAL UNIX, and Red Hat LINUX operating systems. Maintained network backups for cluster of 5 UNIX workstations and one PC using AMANDA, SAMBA and a DAT drive

1995–1998 Ph.D. Thesis Student, University of Wisconsin-Madison (McCammon/Sanders)

- Wrote 285 page Ph.D. Thesis: *The Study of the Interstellar Diffuse X-ray Background Between 150 eV and 280 eV with the Diffuse X-ray Spectrometer (DXS)*. Presented results at scientific meeting, helped write paper publishing results

- Inherited several thousand lines of *C* code and *KSH* scripts used for telemetry processing and data reduction of *DXS*, an attached Space Shuttle payload of opportunity that flew in 1993 on STS 54. Figured out what code was doing without help of original designers and completed reduction and analysis tasks
- Made physical measurements of *DXS* using a laser in order to track down problems with the post-flight calibration. Modified computer model of instrument function, implemented in *FORTRAN*
- Computer system manager for a cluster of 5 workstations with a variety of UNIX flavors (DEC Ultrix, DEC OSF, Slackware LINUX). Cluster included 12 semi-autonomous X-terminals, several PCs, Macs, various printers, a VMS workstation, and a PDP-11 connected via a serial line. Cross-compiled *SSH* tools to X-terminal environment when the Internet started to get too hostile for *TELNET*

1991–1995 Graduate Research Assistant, University of Wisconsin–Madison (McCammon)

- Team member for payload testing, integration, and launch of the X-ray Quantum Calorimeter (XQC), a sounding rocket payload that demonstrated the feasibility of a calorimetric X-ray detection technology capable of unprecedented sensitivity and spectroscopic resolving power in the soft X-ray (below 1 keV). Team included more than two dozen scientists, engineers and students from the University of Wisconsin and NASA
- Led effort to complete design and fabrication of the first stage field effect transistor (FET) containment system for the XQC. Characterized noise produced by FETs as a function of temperature, finding they ran best at 120 K. FETs were reading voltages from high-impedance detectors (10 M) running at 0.06 K. Created CAD design of a light-tight box that shielded detectors from FET infrared radiation. Packaged FETs, which were the size of large grains of sand, in custom flat-packs, 14 per flat-pack (12 functioning, 2 spare). Used a variety of materials, including G-10, Kevlar, and silk to suspend flat-packs rigidly enough to keep the mechanical resonant frequency of the system high so that microphonics from a 20-g RMS shake during the rocket flight would not saturate downstream electronics. Designed jigs for delicate wire manipulation and soldering. In 3 rocket flights, only one of 90 wires failed
- Led effort to calibrate X-ray detector window (*DXS*) and IR blocking filter (*XQC*) transmissions. Used a thin-window “flow” proportional counter with a multi-target alpha particle fluoresced X-ray source.
- Supervised approximately one dozen undergraduate hourly workers in tasks such as fine wire manipulation, plating and stripping metal coatings, CAD, computerized data recording, and UNIX system management
- Contributed an XON/XOFF (C-s, C-q) flow control avoidance package to the source code of emacs

Community Service, Outreach, and Leadership:

- Spring 2009 NASA Peer Review Panel
- Spring 2009 High School Classroom Presentation: “Crater counting: All I needed to know to be a scientist I learned in Kindergarten”
- 2005–2007 President, Secretary: Bridgehaven Condominium Association Board (85 units). Led multi-generational population
- Fall 2005 City of Edmonds *Family Science Night*: dry ice comet and other demonstrations
- Spring 2003 Co-presenter: *Astronomy, Science, and Faith*, an 8-week course exploring the relationships between faith and science
- 1997–present Friendly Observer: answer tourists’ questions at the McMath-Pierce solar telescope facility at the Kitt Peak National Observatory (2 weeks per year, 2-6 visits per day)
- Summer 1996 Nehemiah Project Elementary School Reading Tutor (Faith-Based Community Development Project for African-Americans in Madison Wisconsin)
- 1995–present Technical Arts (Overhead and Soundboard) and Worship Team Member (Saxophone) at local churches
- 1991–1995 UW–Madison *Wonders of Physics* Laboratory demonstrations in Space Physics
- 1989 Chi Phi Fraternity House Manager: led 40 MIT undergraduates in upkeep of 100 year-old Brownstone in Boston’s Back Bay

Publications:

- Morgenthaler, J. P., Harris, W. M., Combi, M. R., Feldman, P. D., & Weaver, H. A., *GALEX FUV Observations of Comet C/2004 Q2 (Machholz): The Ionization Lifetime of Carbon*, *Astrophys. J.*, Vol. 726, p. 8, 2011.
- Feldman, P. D., McCandliss, S. R., Morgenthaler, J. P., Lisse, C. M., Weaver, H. A., & A’Hearn, M. F., *Galaxy Evolution Explorer Observations of CS and OH Emission in Comet 9P/Tempel 1 During Deep Impact*, *Astrophys. J.*, Vol. 711, p. 1051-1056, 2010.
- Edgar, R. J., Sanders, W. T., Smith, R. K., & Morgenthaler, J. P., *The Spectrum of the 1/4 keV Band Diffuse Soft X-ray Background*, in *American Institute of Physics Conference Series*, ed. R. K. Smith, S. L. Snowden, & K. D. Kuntz, Vol. 1156, p. 24-28, 2009.
- Morgenthaler, J. P., Harris, W. M., & Combi, M. R., *Large Aperture [O I] 6300 Å Observations of Comet Hyakutake: Implications for the Photochemistry of OH and [O I] Production in Comet Hale-Bopp*, *Astrophys. J.*, Vol. 657, p. 1162-1171, 2007.
- Glinski, R. J., Ford, B. J., Harris, W. M., Anderson, C. M., & Morgenthaler, J. P., *Oxygen/Hydrogen Chemistry in the Inner Comae of Active Comets*, *Astrophys. J.*, Vol. 608, p. 601-609, 2004.
- Morgenthaler, J. P., Harris, W. M., Scherb, F., Roelser, F. L., Anderson, C. M., Doane, N. E., & Oliverson, R. J., *The Gas Production Rate and Coma Structure of Comet C/1995 O1 (Hale-Bopp)*, *Earth, Moon, Planets*, Vol. 90, p. 77–87, 2002.

- Morgenthaler, J. P., Harris, W. M., Scherb, F., Doane, N. E., & Oliverson, R. J., *Velocity-Resolved Observations of H α Emission from Comet C/1995 O1 (Hale-Bopp)*, *Earth, Moon, Planets*, Vol. 90, p. 89–97, 2002.
- Harris, W. M., Morgenthaler, J., Mierkiewicz, E., Scherb, F., Oliverson, R., & Nordsieck, K., *Evidence for Collisional Effects in the Radial Distributions of OH and C in the Coma of C/1995 O1 (Hale-Bopp)*, *Earth, Moon, Planets*, Vol. 90, p. 45–56, 2002.
- Oliverson, R. J., Doane, N. E., Scherb, F., Harris, W. M., & Morgenthaler, J. P., *Measurements of [C I] 9850 Å Emission from Comet Hale-Bopp*, *Astrophys. J.*, Vol. 581, No. 1, p. 770–775, 2002.
- Harris, W. M., Scherb, F., Mierkiewicz, E. J., Oliverson, R. J., & Morgenthaler, J. P., *Production, Outflow Velocity, and Radial Distribution of H₂O and OH in the Coma of Comet C/1995 O1 (Hale-Bopp)*, *Astrophys. J.*, Vol. 578, p. 996–1008, 2002.
- McCammon, D., Almy, R., Apodaca, E., Bergmann Tiest, W., Cui, W., Deiker, S., Galeazzi, M., Juda, M., Lesser, A., Mihara, T., Morgenthaler, J. P., Sanders, W. T., Zhang, J., Figueroa-Feliciano, E., Kelley, R. L., Moseley, S. H., Mushotzky, R. F., Porter, F. S., Stahle, C. K., & Szymkowiak, A. E., *A High Spectral Resolution Observation of the Soft X-Ray Diffuse Background with Thermal Detectors*, *Astrophys. J.*, Vol. 576, p. 188–203, 2002.
- Morgenthaler, J. P., Harris, W. M., Scherb, F., Anderson, C. M., Oliverson, R. J., Doane, N. E., Combi, M. R., Marconi, M. L., & Smyth, W. H., *Large Aperture [O I] 6300 Å Photometry of Comet Hale-Bopp: Implications for the Photochemistry of OH*, *Astrophys. J.*, Vol. 563, p. 451–461, 2001.
- Oliverson, R. J., Scherb, F., Smyth, W. H., Freed, M. E., Woodward, R. C., Marconi, M. L., Retherford, K. D., Lupie, O. L., & Morgenthaler, J. P., *Sunlit Io Atmospheric [O I] 6300 Å Emission and the Plasma Torus*, *J. Geophys. Res.*, Vol. 106, No. A11, p. 26183–26193, 2001.
- Sanders, W. T., Edgar, R. J., Kraushaar, W. L., McCammon, D., & Morgenthaler, J. P., *Spectra of the 1/4 keV X-ray Diffuse Background from the Diffuse X-Ray Spectrometer Experiment*, *Astrophys. J.*, Vol. 554, p. 694–709, 2001.
- Morgenthaler, J. P., *The Study of the Diffuse X-ray Background between 150 eV and 280 eV with the Diffuse X-ray Spectrometer (DXS)*, Ph.D. thesis, University of Wisconsin–Madison, Available at http://alum.mit.edu/www/jpmorgen/pdf/jpmorgen_thesis.pdf, 1998.
- Sanders, W. T., Edgar, R. J., Liedahl, D. A., & Morgenthaler, J. P., *The Soft X-ray Background Spectrum from DXS*, in *Lecture Notes in Physics*, Vol. 506 (Berlin: Springer-Verlag), p. 83, 1998.
- McCammon, D., Almy, R., Deiker, S., Morgenthaler, J., Kelley, R. L., Marshall, F. J., Moseley, S. H., Stahle, C. K., & Szymkowiak, A. E., *A Sounding Rocket Payload for X-ray Astronomy Employing High-Resolution Microcalorimeters*, *Nucl. Instrum. Methods Phys. Res., Sect. A*, Vol. 370, p. 266–268, 1996.

Cui, W., Almy, R., Deiker, S., McCammon, D., Morgenthaler, J. P., Sanders, W. T., Kelley, R. L., Marshall, F. E., Moseley, S. H., Stahle, C. K., & Szymkowiak, A. E., *Sounding Rocket Experiment Employing Microcalorimeter Detectors to Obtain a High-Resolution Spectrum of the Diffuse X-ray Background*, Proceedings of SPIE, Vol. 2280, p. 362, 1994.

McCammon, D., Cui, W., Juda, M., Morgenthaler, J. P., Zhang, J., Kelley, R. L., Holt, S. S., Madejski, G. M., Moseley, S. H., & Szymkowiak, A. E., *Thermal Calorimeters for High Resolution X-ray Spectroscopy*, Nucl. Instrum. Methods Phys. Res., Sect. A, Vol. 326, p. 157, 1993.

Juda, M., Cui, W., McCammon, D., Morgenthaler, J. P., Sanders, W. T., Zhang, J., Kelley, R. L., Madejski, G., Moseley, S. H., Stahle, C., & Szymkowiak, A. E., *Thermal Detectors for X-ray Astronomy: Current Performance and Limitations*, Proceedings of SPIE, Vol. 1743, p. 398–406, 1992.

Posters, presentations, and abstracts, (Unrefereed work), , .

McKay, A., Chanover, N., Morgenthaler, J., Cochran, A., Harris, W., & Dello Russo, N., *Forbidden Oxygen Lines in Comets C/2006 W3 Christensen and C/2007 Q3 Siding Spring*, Bull. Am. Astron. Soc., Vol. 42, AAS/Division of Planetary Sciences Meeting 42, poster #28.15, 2010.

Morgenthaler, J. P., Harris, W. M., Combi, M. R., Feldman, P. D., & Weaver, H. A., *The GALEX Comets*, Bull. Am. Astron. Soc., Vol. 41, AAS/Division of Planetary Sciences Meeting 41, poster #15.11, 2009.

Harris, W. M., & Morgenthaler, J., *Measuring The Effect Of Collisional Acceleration In The Coma Of Active Comets: Study Of The CN And C₂ Radial Distributions And Production Rates In Comet C/1995O1 (Hale-Bopp)*, Bull. Am. Astron. Soc., Vol. 41, p. #15.02, 2009.

Morgenthaler, J. P., Harris, W. M., Combi, M. R., Feldman, P. D., & Weaver, H. A., *Wide-field Spectroscopic Observations of Comet 8P/Tuttle by GALEX*, Bull. Am. Astron. Soc., Vol. 40, AAS/Division of Planetary Sciences Meeting 40, poster #16.22, 2008.

Harris, W. M., & Morgenthaler, J. P., *Interacting Gas Flows In Split Comets: A Re-evaluation Of The Perigee Outburst Of C/1996b2 (Hyakutake)*, in AAS/Division for Planetary Sciences Meeting Abstracts, Vol. 40, AAS/Division for Planetary Sciences Meeting Abstracts, p. #16.05, 2008.

Morgenthaler, J. P., Harris, W. M., Combi, M. R., Feldman, P. D., & Weaver, H. A., *Wide-field spectroscopic observations of comet C/2004 Q2 (Machholz) by GALEX*, Bull. Am. Astron. Soc., Vol. 38, No. 4, AAS Meeting 209, poster #25.15, 2006.

Morgenthaler, J. P., Harris, W. M., & Combi, M. R., *Large Aperture [O I] 6300 Å Observations of Comet Hyakutake: Implications for the Photochemistry of OH and [O I] Production in Comet Hale-Bopp*, Bull. Am. Astron. Soc., Vol. 38, No. 3, AAS/Division of Planetary Sciences Meeting 38, talk #20.07, 2006.

- Harris, W. M., Solontoi, M., Snowden, D., Morgenthaler, J. P., Müller, B. E., Samarasinha, N., Mierkiewicz, E. J., Oliverson, R. J., Kokorowski, M., Kidder, A., Schnackenberg, T., Christensen, C., Farnham, T. L., Fernandez, Y. R., Lisse, C., Knight, M., A'Hearn, M. F., & Roesler, F. L., *Integral Field Spectroscopy of the B and C Fragments of Comet 73P/Schwassmann-Wachmann 3*, Bull. Am. Astron. Soc., Vol. 38, No. 3, AAS/Division of Planetary Sciences Meeting 38, poster #12.01, 2006.
- Oliverson, R. J., Mierkiewicz, E. J., Morgenthaler, J. P., Harris, W. M., Kokorowski, M., Kidder, A., Schnackenberg, T., Carpena Nuñez, J., Hall, T., & Haffner, L., *High Resolution Fabry-Pérot Spectroscopy of Comet Fragments 73P/Schwassmann-Wachmann 3-B,C*, Bull. Am. Astron. Soc., Vol. 38, No. 3, AAS/Division of Planetary Sciences Meeting 38, poster #12.02, 2006.
- Storm, S. P., Samarasinha, N., Müller, B., Farnham, T., Fernandez, Y., Kidder, A., Snowden, D., A'Hearn, M., Harris, W., Knight, M., Morgenthaler, J., Lisse, C., & Roesler, F., *Time Variability of Component C of the Fragmented Comet 73P/Schwassmann-Wachmann 3*, Bull. Am. Astron. Soc., Vol. 38, No. 3, AAS/Division of Planetary Sciences Meeting 38, poster #12.08, 2006.
- Farnham, T. L., Samarasinha, N. H., Morgenthaler, J. P., & Müller, B. E. A., *Comet Observations [695 Kitt Peak]*, Minor Planet Circulars, Vol. 5673, p. 9, 2006.
- Lehky, M., *et al.*, *Observations of Comets*, Minor Planet Electronic Circulars, p. 31, 2006.
- Morgenthaler, J. P., Harris, W. M., Combi, M. R., Weaver, H. A., & Feldman, P. D., *Wide-field spectroscopic observations of comets in the UV: GALEX observations of C/2004 Q2 (Machholz)*, Bull. Am. Astron. Soc., Vol. 37, No. 3, AAS/Division of Planetary Sciences Meeting 37, poster #16.13, 2005.
- Harris, W. M., & Morgenthaler, J. P., *Wide-field structure in dust color and coma volatile distributions from C/1995 O1 (Hale-Bopp)*, AAS/Division for Planetary Sciences Meeting Abstracts, Vol. 37, No. 3, AAS/Division of Planetary Sciences Meeting 37, poster #16.09, 2005.
- Neef, T., Harris, W., Corliss, J., Dawson, O., Morgenthaler, J., Mierkiewicz, E., Oliverson, R., Cash, M., & Fallest, D., *Spatial Heterodyne Spectroscopy of NASA Deep Impact Encounter with comet Tempel 1.*, AAS/Division for Planetary Sciences Meeting Abstracts, Vol. 37, No. 3, AAS/Division of Planetary Sciences Meeting 37, poster #44.06, 2005.
- Neef, T. P., Harris, W., Dawson, O., Morgenthaler, J., Corliss, J., & Mierkiewicz, E., *Development of Spatial Heterodyne Spectroscopy and Observation of O₂ Nightglow*, in American Geophysical Union, Fall Meeting, abstract #B1176, 2005.
- Morgenthaler, J. P., Harris, W. M., Scherb, F., & Combi, M. R., *Large aperture [O I] photometry of comets Hyakutake, Halley, and Austin: implications for the photochemistry of OH*, Bull. Am. Astron. Soc., Vol. 36, No. 3, AAS/Division of Planetary Sciences Meeting 36, poster #33.12, 2004.

- Harris, W., Roesler, F., Harlander, J., Oliverson, R., Mierkiewicz, E., Ballester, G., Morgenthaler, J., & Corliss, J., *Applications of High Etendue Line-Profile Spectroscopy and Spectropolarimetry to the Study of the Atmospheric and Magnetospheric Environments of the Jovian Icy Moons.*, in American Geophysical Union, Fall Meeting, abstract #SM22B-0250, 2003.
- Glinski, R. J., Harris, W. M., Anderson, C. M., & Morgenthaler, J. P., *Oxygen/Hydrogen Chemistry in Inner Comae of Active Comets*, IAU XXV, Poster presentation at the IAU 25th General Assembly, Joint Discussion 14 of Division III, Participating Commissions 15 and 34, 2003.
- Oliverson, R. J., Morgenthaler, J. P., Woodward, R. C., Scherb, F., Smyth, W. H., & Lupie, O. L., *Groundbased Observations of Io and the Plasma Torus During the Galileo I24, I25, and Cassini Encounters*, in Magnetospheres of the Outer Planets Conference, 2002, p. 79, 2002.
- Oliverson, R. J., Morgenthaler, J. P., Scherb, F., Woodward, R. C., Smyth, W. H., & Lupie, O. L., *Groundbased Observations of Io [O I] 6300 Å Emission During the Galileo I24, I25, and Cassini Encounters*, in American Geophysical Union, Fall Meeting, abstract #P21B-0377, 2002.
- Morgenthaler, J. P., Harris, W. M., Scherb, F., Anderson, C. M., Doane, N. E., Roesler, F. L., Oliverson, R. J., & Combi, M. R., *The Production of $O(^1D)$ in Comet Hale-Bopp*, Bull. Am. Astron. Soc., Vol. 32, No. 3, AAS/Division of Planetary Sciences Meeting 32, poster #41.04, 2000.
- Harris, W. M., Combi, M. R., & Morgenthaler, J. P., *Temporal Evolution of Interacting Gas Flows in the Tail of Comet C/1996 B2 (Hyakutake)*, Bull. Am. Astron. Soc., Vol. 32, No. 3, AAS/Division of Planetary Sciences Meeting 32, poster #41.07, 2000.
- Scherb, F., Oliverson, R. J., Freed, M. E., Corliss, J., Woodward, R. C., Smyth, W. H., Morgenthaler, J. P., Lupie, O. L., & Retherford, K. D., *Ground-Based Observations of [O I] 6300 Å Emission from Io*, Bull. Am. Astron. Soc., Vol. 31, No. 4, AAS/Division of Planetary Sciences Meeting 31, poster #58.12, 1999.
- Morgenthaler, J. P., Harris, W. M., Scherb, F., Anderson, C. W., Roesler, F. L., Oliverson, R. J., Doane, N. E., Smyth, W. H., & Marconi, M. L., *The Water Production Rate of Comet Hale-Bopp as Determined by [O I] 6300 Å Measurements*, Bull. Am. Astron. Soc., Vol. 31, No. 4, AAS/Division of Planetary Sciences Meeting 21, poster #17.10, 1999.
- Morgenthaler, J. P., Scherb, F., Anderson, C. W., Roesler, F. L., Oliverson, R. J., Doane, N. E., Smyth, W. H., & Marconi, M. L., *The Spatial Distribution of $O(^1D)$ in Comet Hale-Bopp from 2,000 to 1×10^6 km*, Bull. Am. Astron. Soc., Vol. 31, No. 3, AAS meeting 194, poster #15.01, 1999.
- Doane, N. E., Oliverson, R. J., Scherb, F., Morgenthaler, J. P., Roesler, F. L., Woodward, R. C., Harris, W. M., & Hilton, G. M., *Groundbased Observations of [C I] 9850 Å Emission from Comet Hale-Bopp*, Bull. Am. Astron. Soc., Vol. 31, No. 3, AAS Meeting 194, poster #15.03, 1999.

- Harris, W. M., Morgenthaler, J., Mierkiewicz, E., Scherb, F., Oliverson, R., & Nordsieck, K., *Evidence for Collisional Effects in the Radial Distributions of OH and C in the Coma of C/1995 O1 (Hale-Bopp)*, Bull. Am. Astron. Soc., Vol. 31, No. 4, AAS/Division of Planetary Sciences Meeting 31, poster #17.02, 1999.
- Morgenthaler, J. P., Scherb, F., Anderson, C. W., Roesler, F. L., Oliverson, R. J., Doane, N. E., Smyth, W. H., & Marconi, M. L., *The Spatial Distribution of [O I] in Comet Hale-Bopp from 2,000 to 1×10^6 km*, Bull. Am. Astron. Soc., Vol. 30, No. 3, AAS/Division of Planetary Sciences Meeting 30, poster #31.13, 1998.
- Harris, W. M., Nordsieck, K. H., Scherb, F., Mierkiwicz, E. J., Morgenthaler, J. P., & Oliverson, R. J., *Multispectral study of CO production from C/1995 O1 (Hale-Bopp)*, Bull. Am. Astron. Soc., Vol. 30, No. 3, AAS/Division of Planetary Sciences Meeting 30, poster #31.06, 1998.
- Morgenthaler, J. P., Sanders, W. T., & Edgar, R. J., *Diffuse X-ray Spectrometer (DXS) Recent Results*, Bull. Am. Astron. Soc., Vol. 29, No. 2, AAS meeting 190, poster #44.07, 1997.