

## Curriculum Vitae

John Feldmeier

Department of Astronomy,  
Case Western Reserve University  
10900 Euclid Ave., Cleveland, OH 44106, U.S.A.  
phone (216) 368-0310  
fax (216) 368-5406  
johnf@bottom.astr.cwru.edu  
<http://burro.astr.cwru.edu/johnf/>

**Born:** San Antonio, Texas, U.S.A.

### Education:

Pennsylvania State University, (1994 - 2000) Ph.D., Astronomy & Astrophysics  
Dissertation Title: "A Survey of Intracluster Planetary Nebulae in the Virgo Cluster"  
Dissertation Advisor: Robin Ciardullo  
University of Texas, Austin (1989-1994) B.S. (Physics), B.A. (Astronomy)

### Employment:

National Science Foundation Astronomy and Astrophysics Postdoctoral Fellow (2003 - )  
Research Associate, Department of Astronomy, Case Western Reserve University  
(2000 - 2003)  
Research Assistant, Department of Astronomy and Astrophysics, Pennsylvania State  
University (1996 - 2000)  
Teaching Assistant, Department of Astronomy and Astrophysics, Pennsylvania State  
University (1994 - 1996)

### Awards, Scholarships and Grants:

Recipient of a (\$954) travel grant from the American Astronomical Society - Spring 2004  
Recipient of a (\$2,700) travel grant from the American Astronomical Society - Summer  
2003  
Recipient of the (\$180,000) National Science Foundation Astronomy and Astrophysics  
Postdoctoral Fellowship (2003-2006)  
Recipient of a (\$1,800) travel grant from the American Astronomical Society - Fall 2001  
Co-Investigator on the (\$392,143): NASA Long-Term Space Astrophysics grant, "The  
Origins and Properties of Intracluster Stars," (FY 2000 - FY2004)  
Pennsylvania State University, Braddock Graduate Fellowship (1996-1997, 1998-2000)  
Pennsylvania State University, Zaccheus Daniel Scholarship (1997-1998)  
Pennsylvania State University, Eberly College of Science Graduate Fellowship (1994-  
1996)

### Professional Societies and Committee Service:

American Astronomical Society  
Sigma Xi Research Society  
Hobby Eberly Telescope Phase II Software Testing Committee, (1996 - 1997)  
Hobby Eberly Telescope First Spectrum Committee, (1997 - 2000)

Referee for *Astrophysical Journal*, *Astrophysical Journal Letters*, and *Astronomy & Astrophysics*  
Outside Reviewer for Canadian Gemini TAC

### Research Experience:

- Research Associate (Postdoctoral Fellow) to J.C. Mihos, Case Western Reserve University (2000 - 2003) - Planned and carried out a deep imaging survey of galaxy clusters to quantify intracluster light. Analyzed results from N-body simulations of galaxy clusters. Did dynamical analysis of the interacting galaxy pair M 51.
- Research Assistant to W.N. Brandt, Pennsylvania State University (1997 - 1998) - Reduced and analyzed *ASCA* data of the Seyfert 1.5 galaxy Mrk 6. Analyzed optical spectra of Mrk 6 using relative spectrophotometry from the MMT and the FLWO.
- Research Assistant to L.W. Ramsey, D.P. Schneider, & C.W. Churchill, Pennsylvania State University (1996 - 1997) - Helped test the UFOE spectrograph, reduction software, and planning software for the Hobby-Eberly Telescope (HET).
- Research Assistant to R.B. Ciardullo (thesis advisor) Pennsylvania State University (1994 - 2000) - Thesis research on intracluster planetary nebulae in the Virgo cluster. Studied the distance scale in spiral galaxies, using planetary nebulae, and comparing them to Cepheid observations. Examined the planetary nebulae production rate in elliptical galaxies. Helped to propose and carry out *HST* WFPC2 observations in Cycles 5, 6 & 8.
- Research Assistant to P.M. Harvey, University of Texas (1993 - 1994) - Constructed IDL software to reduce and analyze stellar infrared speckle interferometry data, and to test a new infrared camera. Was also a UNIX systems administrator for the research group's computers.
- Research Assistant to M. Davis, University of California, Berkeley (1992) - Observed and reduced spectroscopic data for a redshift survey using IRAF, as an REU student.
- Research Assistant to J.C. Wheeler, University of Texas (1991 - 1992) - Made theoretical calculations on type Ia supernovae progenitors, and assisted with CCD broad-band observations of current supernovae.
- Research Assistant to J.H. Lacy, University of Texas (1990 - 1992) - Reduced and analyzed infrared [Ne II] data of the galactic center region.
- Research Assistant to D.H. Hough, Trinity University (1990) - Performed VLBI data reduction and analysis of the lobe-dominated quasar 3C 334.

### Observing Experience:

- Visiting Astronomer, Kitt Peak National Observatory - 2 meter telescope - surface photometry - 8 nights (4/03), 7 nights (11/02), 7 nights (3/02), 5 nights (6/01), 8 nights (8/00), 4 nights (4/00)
- Visiting Astronomer, Kitt Peak National Observatory - 4 meter telescope - multi-slit spectroscopy - 4 nights (10/99)
- Visiting Astronomer, Kitt Peak National Observatory - 4 meter telescope - direct narrow-band imaging - 2 nights (2/04), 4 nights (2/02), 3 nights (4/01), 1 night (2/00), 4 nights (3/99), 4 nights (3/98), 4 nights (3/97), 2 nights (11/96)
- Visiting Astronomer, Cerro Tololo Interamerican Observatory - 4 meter telescope - direct narrow-band imaging - 4 nights (11/98)
- Undergraduate, McDonald Observatory - 2.7 meter telescope - ROKCAM - infrared speckle imaging - instrument testing - 7 nights

Undergraduate, Lick Observatory - 3 meter telescope - KAST double spectrograph - obtaining galaxy redshifts - 1 night (6/92)  
Undergraduate, University of Texas - 0.9 meter telescope - imager - broad-band observations of supernovae - approximately 10 nights (1991 - 1992)

### Management Experience:

Supervised Stuart Robbins, CWRU undergraduate, Fall 2003.  
Supervised Cameron McBride, CWRU undergraduate, Summer 2002.  
Supervised Nathan Kaib, CWRU honor undergraduate, Spring 2002.  
Supervised Kara Krelove & Rachel Kuzio, two honors Penn State undergraduates, Summer & Fall 1999.  
Research mentor in the Penn State Upward Bound Math and Science program, Summer 1997. Supervised Than Nguyen, a high school student. Project Title: "Planetary Nebulae Luminosity Function Distance to the galaxy NGC 2403."

### Refereed Publications:

19. Feldmeier, J.J., Ciardullo, R., Jacoby, G.H., Durrell, P.R. "Intracluster Planetary Nebulae in the Virgo Cluster III: Luminosity of the Intracluster Light and Tests of the Spatial Distribution" 2004, *Ap. J.*, in press
18. Ciardullo, R., Durrell, P.R., Laychak, M.B., Herrman, K.A., Moody, K., Jacoby, G.H., & Feldmeier, J.J. "The Planetary Nebula System of M33" 2004, *Ap. J.*, in press
17. Feldmeier, J.J., Mihos, J.C., Morrison, H.L., Harding, P., Kaib, N., & Dubinski, J. "Deep CCD Surface Photometry of Galaxy Clusters II: Studies of Intracluster light in non-cD clusters" 2004, *Ap. J.*, **609**, 617
16. Immler, S., Brandt, W.N., Vignali, C., Bauer, F.E., Crenshaw, D.M., Feldmeier, J.J., & Kraemer, S.B. "Probing the complex and variable X-ray absorption of Markarian 6 with XMM-Newton" 2003, *A. J.*, **126**, 153
15. Feldmeier, J.J., Ciardullo, R., Jacoby, G.H., Durrell, P.R. "Intracluster Planetary Nebulae in the Virgo Cluster II. Imaging Catalog" 2003, *Ap. J. Suppl.*, **145**, 65
14. Durrell, P.R., Mihos, J.C., Feldmeier, J.J., Jacoby, G.H. & Ciardullo, R. "Kinematics of Planetary Nebulae in M51's Tidal Debris" 2003, *Ap. J.*, **582**, 170
13. Jacoby, G.H., Feldmeier, J.J., Claver, C., Garnavich, P.M., Noriega-Crespo, A., Bond, H.E., & Quinn, J. "Confirmation of SBS 1150+599A As An Extremely Metal-Poor Planetary Nebula" 2002, *A. J.*, **124**, 3340
12. Ciardullo, R., Feldmeier, J.J., Jacoby, G.H., Kuzio, R., Laychak, M.B., Durrell, P.R. "Planetary Nebulae As Standard Candles. XII. Connecting the Population I and Population II Distance Scales" 2002, *Ap. J.*, **577**, 31
11. Feldmeier, J.J., Mihos, J.C., Morrison, H.L., Rodney, S.A., Harding, P. "Deep CCD Surface Photometry of Galaxy Clusters I: Methods and Initial Studies of Intracluster Starlight" 2002, *Ap. J.*, **575**, 779
10. Durrell, P.R., Ciardullo, R., Feldmeier, J.J., Jacoby, G.H., & Sigurdsson, S. "Intracluster Red Giant Stars in the Virgo Cluster" 2002, *Ap. J.*, **570**, 119
9. Ciardullo, R., Feldmeier, J.J., Krelove, K., Bartlett, R., Jacoby, G.H., & Gronwall, C. "A Measurement of the Density of Strong Emission Line Galaxies at  $z = 3.13$  and their effect on [O III]  $\lambda 5007$  Surveys for Intracluster Stars" 2002, *Ap. J.*, **566**, 784

8. Arnaboldi, M., Aguerri, J.A.L., Napolitano, N.R., Gerhard, O., Freeman, K.C., Feldmeier, J.J., Capaccioli, M., Kudritzki, R.-P., Méndez, R.H. "Intracluster Planetary Nebulae in Virgo: Photometric selection, spectroscopic validation and cluster depth" 2002, *A. J.*, **123**, 760
7. Kudritzki, R.-P., Méndez, R.H., Feldmeier, J.J., Ciardullo, R., Jacoby, G.H., Freeman, K.C., Arnaboldi, M., Capaccioli, M., Gerhard, O., Ford, H.C. "Discovery of 9 Ly  $\alpha$  emitters at redshift  $\sim 3.1$  using narrow-band imaging and VLT spectroscopy" 2000, *Ap. J.*, **536**, 19
6. Feldmeier, J.J., Brandt, W.N., Elvis, M., Fabian, A.C., Iwasawa, K. & Mathur, S. "Heavy and Complex X-ray Absorption Towards the Nucleus of Markarian 6." 1999, *Ap. J.*, **510**, 167
5. Feldmeier, J.J., Ciardullo, R., & Jacoby, G.H. "Intracluster Planetary Nebulae in the Virgo Cluster I. Initial Results." 1998, *Ap. J.*, **503**, 109
4. Ciardullo, R., Jacoby, G.H., Feldmeier, J.J., & Bartlett, R. "The Planetary Nebula Luminosity Function of M87 and the Intracluster Stars of Virgo." 1998, *Ap. J.*, **492**, 62
3. Feldmeier, J.J., Ciardullo, R., & Jacoby, G.H. "Planetary nebulae as standard candles XI. Tests using spiral galaxies." 1997, *Ap. J.*, **479**, 231
2. Feldmeier, J.J., Ciardullo, R., & Jacoby, G.H., "The Planetary Nebula Distance to M101." 1996, *Ap. J. (Letters)*, **461**, L25
1. Hough, D.H., Readhead, A.C., Wood, D.A., & Feldmeier, J.J., "Three-epoch VLBI observations of the nucleus in the lobe-dominated quasar 3C334." 1992, *Ap. J.*, **393**, 81

### Papers in Preparation:

- Durrell, P.R., DeCesar, M.E., Ciardullo, R., Hurley-Keller, D., & Feldmeier, J.J. 2004, "Serendipitous discovery of tidal star formation in the M81 group" 2004, *Ap. J.*, in preparation
- Harding, P., Mihos, J.C., Morrison, H.L., Hurley-Keller, D., Feldmeier, J.J., & Knox, C.A. 2004, "Optimizing a Telescope for Deep Surface Photometry" 2004, *P.A.S.P.*, in preparation

### Conference Proceedings:

- Bhargavi, S.G., Rhoads, J., Perna, R., Feldmeier, J.J., & Grenier, J. 2003, "Searching for GRB remnants in nearby galaxies" *Gamma Ray Burst Symposium: Thirty Years after the Discovery* (AIP, <http://xxx.lanl.gov/abs/astro-ph/0312400>)
- Feldmeier, J.J., Mihos, J.C., Morrison, H.L., Harding, P., & Kaib, N. 2003, "Using Intracluster Light to Study Cluster Evolution" *Carnegie Observatories Astrophysics Series, Vol. 3: Clusters of Galaxies: Probes of Cosmological Structure and Galaxy Evolution*, ed. J. S. Mulchaey, A. Dressler, and A. Oemler (Pasadena: Carnegie Observatories, <http://www.ociw.edu/ociw/symposia/series/symposium3/proceedings.html>)
- Feldmeier, J.J. 2002, "Intracluster Planetary Nebulae" *IAU Symposium No. 209 Planetary Nebulae: Their Evolution and Role in the Universe*, Canberra, Australia November 19 - 23, 2001 - invited review
- Feldmeier, J.J., Durrell, P.R., Ciardullo, R., & Jacoby, G.H. 2002, "A Search for Intra-group Planetary Nebulae in the M81 Group" *IAU Symposium No. 209 Planetary Nebulae: Their Evolution and Role in the Universe*, Canberra, Australia November 19 - 23, 2001

- Feldmeier, J.J., Mihos, J.C., Durrell, P.R., Ciardullo, R., & Jacoby, G.H. 2002, "Kinematics of Planetary Nebulae in M51's Tidal Tail" *IAU Symposium No. 209 Planetary Nebulae: Their Evolution and Role in the Universe*, Canberra, Australia November 19 - 23, 2001
- Freeman, K.C., Capaccioli, M., Ciardullo, R., Feldmeier, J.J., Ford, H.C., Gerhard, O., Kudritzki, R.-P, Jacoby, G.H., Méndez, R.H., Sharples, R. 2000, "Intracluster Planetary Nebulae in the Virgo cluster," *A.S.P. Conference Series #197, Galaxy Dynamics: from the Early Universe to the Present*, ed. F. Combes, G.A. Mamon, & V. Charmandaris, (San Francisco: Astronomical Society of the Pacific). p. 389
- Jacoby, G.H., Ciardullo, R., & Feldmeier, J.J. 1998, "Future Directions for the Planetary Nebula Luminosity Function," *A.S.P. Conference Series # 167, Harmonizing Cosmic Distance Scales in a Post-Hipparcos Era*, ed. D. Egret & A. Heck, (San Francisco: Astronomical Society of the Pacific), p. 175
- Feldmeier, J.J., Ciardullo, R., Jacoby G.H., & Bartlett, R. 1998, "Intracluster Stars and the Galactic Halos of Virgo," *A.S.P. Conference Series # 136, Galactic Halos: A UC Santa Cruz Workshop*, ed. D. Zaritsky, (San Francisco: Astronomical Society of the Pacific), p. 87

### Abstracts and Circulars:

- DeCesar, M.E., Durrell, P.R., Ciardullo, R., Hurley-Keller, D., & Feldmeier, J.J. 2003, "A Search for Stars in the M81 Group's HI Tidal Tails" *Bull. AAS*, **35**, p. 1396
- Durrell, P.R., Ciardullo, R., DeCesar, M.E., & Feldmeier, J.J. 2003, "Searching for Intergalactic Stars in the M81 Galaxy Group" *Bull. AAS*, **35**, p. 1287
- Feldmeier, J.J., Mihos, J.C., Morrison, H.L., & Harding, P. 2003, "New results from an Intracluster Star Imaging Survey" *Bull. AAS*, **35**, p. 1282
- Feldmeier, J.J., Ciardullo, R., Jacoby, G.H., & Durrell, P.R. 2003, "Intracluster Planetary Nebulae in Galaxy Clusters and Groups" IAU 25th General Assembly, Symposium 217, p. 24
- Ciardullo, R., Mihos, J.C., Feldmeier, J.J., Durrell, P.R., & Sigurdsson, S. 2003, "The Systematics of Intracluster Starlight" IAU 25th General Assembly, Symposium 217, p. 31
- Durrell, P.R., DeCesar, M., Ciardullo, R., & Feldmeier, J.J., 2003, "A CFH12k Survey of RGB Stars in the M81 Group" IAU 25th General Assembly, Symposium 217, p. 32
- Feldmeier, J.J. Mihos, J.C., Morrison, H.L., Harding P., & McBride, C. 2003, "Results from a diffuse intracluster light survey" IAU 25th General Assembly, Symposium 217, p. 32
- Durrell, P.R., Ciardullo, R., Laychak, M.B., Jacoby, G.H., Feldmeier J.J., & Moody, K. 2003, "The kinematics of M33's Disk Planetary Nebulae" *Bull. AAS*, **34**, p. 1116
- Durrell, P.R., Mihos, J.C., Feldmeier, J.J., Jacoby, G.H., & Ciardullo, R. 2002, "Kinematics of Planetary Nebulae in M51's Tidal Tail" *J.R.A.S.C.*, **96**,
- Laychak, M.B., Ciardullo, R., Feldmeier, J.J., & Jacoby G.H. 2002, "A Comparison Between Extragalactic Distances Derived From Cepheids, Planetary Nebulae, and Surface Brightness Fluctuations" *Bull. AAS*, **33**, p. 1518
- Durrell, P.R., Feldmeier J.J., Ciardullo R., Jacoby G.H. & Mihos J.C. 2002, "Kinematics of Planetary Nebulae in M51's Tidal Tail" *Bull. AAS*, **33**, p. 1378
- Durrell, P.R., Ciardullo, R., Feldmeier, J.J., Jacoby, G.H., Sigurdsson, S. 2001, "Intracluster Stars in the Virgo Cluster" *J.R.A.S.C.*, **95**, p. 141
- Feldmeier, J.J. Mihos, J.C., Morrison, H.L., Rodney, S. & Harding P. 2001, "First results from an Intracluster Light Survey" *Bull. AAS*, **32**, p. 1579

- Durrell, P.R., Ciardullo, R., Feldmeier, J.J. & Jacoby, G.H. 2001, "Intracluster Stars in the Virgo Cluster" *Bull. AAS*, **32**, p. 1579
- Krelove, K., Feldmeier, J.J., Ciardullo, R., & P.R. Durrell 2001, "Intracluster Planetary Nebulae in the Fornax Cluster" *Bull. AAS*, **32**, p. 1580
- Feldmeier, J.J. 2000, "A Search for Intracluster Planetary Nebulae in the Virgo Cluster" *Bull. AAS*, **31**, p. 1551
- Krelove, K., Ciardullo, R., Feldmeier, J.J., & Jacoby, G.H. 2000, "Setting a Limit on Contamination of Intracluster Star Surveys" *Bull. AAS*, **31**, p. 1493
- Kuzio, R.E., Ciardullo, R., Feldmeier, J.J., & Jacoby, G.H. 2000, "Planetary Nebula Luminosity Function Distances to M 33, NGC 2403 and NGC 3627 and a Comparison to the Cepheid Distance Scale" *Bull. AAS*, **31**, p. 1391
- Jacoby, G., Ciardullo, R., Feldmeier, J., Hinkle, K., & Joyce, R. 1999, "V4334 Sagittarii," *IAU Circ.* 7155.
- Brandt, W.N., Feldmeier, J.J., Elvis, M., Mathur, S., Fabian, A.C., Iwasawa, K. 1999, "Heavy and Complex Absorption in Markarian 6: A View Through a Torus Atmosphere?" *Bull. AAS*, **30**, p. 1253.
- Duric, N., Pannuti, T.G., Jones, L.V., Elston, R.J., Lacey, C.K., Feldmeier, J.J., Ciardullo, R., & Jacoby G.H. 1999, "The Unusual Properties of the H II Region SP-44 in the Scd Galaxy NGC 2403," *Bull. AAS*, **30**, p. 1277.
- Feldmeier, J.J., Ciardullo, R., & Jacoby, G.H. 1999, "Planetary Nebulae and the Intracluster Stars of Virgo," *Bull. AAS*, **30**, p. 1304.
- Feldmeier, J.J., Ciardullo, R., & Jacoby, G.H. 1996, "Planetary Nebula Distances to the Spiral Galaxies M51, M96, and M101," *Bull. AAS*, **27**, p. 1293.
- Ciardullo, R., Jacoby, G.H., & Feldmeier, J.J. 1995, "Constraining the Stellar Populations of Elliptical Galaxies with Planetary Nebulae," *Bull. AAS*, **26**, p. 1400.

### **Teaching Assignments, Teaching Publications, and Outreach:**

- Teaching a seminar course in Astronomy Career Development to Case Undergraduates - Spring 2004
- Outreach in popular press, WTAM-1100 Cleveland, May 15, 2003 - outreach on lunar eclipse
- Outreach in popular press, *Sky & Telescope* magazine - May 2003, p. 19
- Instructor, Cleveland Learning Co-operative, Fall 2001, Spring 2002, Fall 2002, Spring 2003, & Fall 2003 - taught astronomy and physics courses to middle-school and high-school age homeschoolers.
- Outreach in popular press, press release at AAS meeting 193, January 1999, "Trail of Dying Green Stars Leads to Millions of Stars Hiding in Galaxy Clusters."
- Lecturer in Penn State Inservice Workshops in Astronomy - June 1998, June 1999
- Judge in Pennsylvania Junior Academy of Science state competition - May 1998
- Outreach in popular press, *Astronomy* magazine - August 1996 & May 1998
- Outreach in popular press, *Sky & Telescope* magazine - July 1996
- Author of three labs for "Astronomy 11 Laboratory," edited by J. Harlow, Hayden-McNeill Publishing, Inc., 1996.
- Teaching Assistant for Astronomical Methods & The Solar System (3 credit lecture class for astronomy majors), Astronomy of the distant universe (3 credit lecture course for astronomy majors), & Elementary Astronomy Laboratory (1-credit laboratory for non-majors)
- Popular outreach to elementary school-age children as part of Penn State's astronomy outreach program