Curriculum Vitae for William Nielsen Brandt

Personal Details

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Professional Positions

Verne M. Willaman Professor of Astronomy & Astrophysics and Professor of Physics, The Pennsylvania State University, August 2014–present

Distinguished Professor of Astronomy & Astrophysics, The Pennsylvania State University, January 2010–August 2014

Professor of Astronomy & Astrophysics, The Pennsylvania State University, July 2003–January 2010

Associate Professor of Astronomy & Astrophysics, The Pennsylvania State University, May 2001–July 2003

Assistant Professor of Astronomy & Astrophysics, The Pennsylvania State University, August 1997–May 2001

Smithsonian Postdoctoral Fellow, Harvard-Smithsonian Center for Astrophysics, September 1996–August 1997

Visiting Positions

Merle Kingsley Distinguished Visitor, Department of Astronomy at the California Institute of Technology, May 2015–June 2015

Long-Term Visitor, School of Natural Sciences at the Institute for Advanced Study, January 2006–May 2006

Education

1996, Ph.D., Astronomy, King's College, University of Cambridge, United Kingdom
Thesis Title: 'Aspects of the Soft X-ray Activity of Radio-Quiet Active Galaxies'
Thesis Advisor: Prof. A.C. Fabian, FRS

1992, B.S., Honors, Physics, California Institute of Technology ($\gamma\delta\beta\gamma$)
Undergraduate Research Advisors: Prof. A.C.S. Readhead and Dr. C.R. Lawrence

The Scholarship of Research and Creative Accomplishments

A. Research and Scholarly Publications

⋆ *signifies a Penn State graduate student (including long-term visitors).*

† *signifies a Penn State undergraduate student (including long-term visitors).*

‡ *signifies a Penn State postdoctoral research associate (including long-term visitors).*

Articles Published in Refereed Journals

1. 'ROSAT PSPC observations of NGC 7469 and Ark 120', Brandt W.N., Fabian A.C., Nandra K., Tsuruta S., 1993, *Monthly Notices of the Royal Astronomical Society*, 265, 996–1002

2. 'Separation of foreground radiation from cosmic microwave background anisotropy using multifrequency measurements', Brandt W.N., Lawrence C.R., Readhead A.C.S., Pakianathan J.N., Fiola T.M., 1994, *The Astrophysical Journal*, 424, 1–21

3. 'Iron Kα lines from ionized discs in Z-type X-ray binaries', Brandt W.N., Matt G., 1994, *Monthly Notices of the Royal Astronomical Society*, 268, 1051–1059

4. 'ROSAT PSPC observations of Ark 564, NGC 985, Kaz 163, Mrk 79 and RX J2256.6+0525', Brandt W.N., Fabian A.C., Nandra K., Reynolds C.S., Brinkmann W., 1994, *Monthly Notices of the Royal Astronomical Society*, 271, 958–966

5. 'The unusual X-ray and optical properties of the ultrasoft AGN Zwicky 159.034 (RE J 1237+264)', Brandt W.N., Pounds K.A., Fink H., 1995, *Monthly Notices of the Royal Astronomical Society*, 273, L47–L52

6. 'The effects of high-velocity supernova kicks on the orbital properties and sky distributions of neutron-star binaries', Brandt W.N., Podsiadlowski Ph., 1995, *Monthly Notices of the Royal Astronomical Society*, 274, 461–484

7. 'ROSAT observations of X-ray emissions from Jupiter during the impact of Comet Shoemaker-Levy 9', Waite J.H., Gladstone G.R., Franke K., Lewis W.S., Fabian A.C., Brandt W.N., Na C., Link R., Haberl F., Clarke J.T., Hurley K.C., Sommer M., Fishman G.J., Rubin B.C., Bolton S., 1995, *Science*, 268, 1598–1601

8. 'X-ray spectra of two quasars at $z > 1$', Nandra K., Fabian A.C., Brandt W.N., Kunieda H., Matsuoka M., Mihara T., Ogasaka Y., Terashima Y., 1995, *Monthly Notices of the Royal Astronomical Society*, 276, 1–8

9. 'On broad iron Kα lines in Seyfert 1 galaxies', Fabian A.C., Nandra K., Reynolds C.S., Brandt W.N., Otani C., Tanaka Y., Inoue H., Iwasawa K., 1995, *Monthly Notices of the Royal Astronomical Society*, 277, L11–L15

10. 'On the high space velocity of X-ray Nova Sco 1994: Implications for the formation of its black hole', Brandt W.N., Podsiadlowski Ph., Sigurdsson S., 1995, *Monthly Notices of the Royal Astronomical Society*, 277, L35–L40

11. 'Soft X-ray properties of Narrow-Line Seyfert 1 galaxies', Boller Th., Brandt W.N., Fink H., 1996, *Astronomy and Astrophysics*, 305, 53–73

12. 'ROSAT PSPC observations of the infrared quasar IRAS 13349+2438: Evidence for a warm absorber with internal dust', Brandt W.N., Fabian A.C., Pounds K.A., 1996, *Monthly Notices of the Royal Astronomical Society*, 278, 326–336

13. 'X-ray reflection in Galactic black hole candidates: Smeared edge profiles and resonant Auger destruction', Ross R.R., Fabian A.C., Brandt W.N., 1996, *Monthly Notices of the Royal Astronomical Society*, 278, 1082–1086

14. 'The broad iron K emission line in the Seyfert 2 galaxy IRAS 18325–5926', Iwasawa K., Fabian A.C., Mushotzky R.F., Brandt W.N., Awaki H., Kunieda H., 1996, *Monthly Notices of the Royal Astronomical Society*, 279, 837–846

15. 'The iron Kα line complex in Compton-thick Seyfert 2 galaxies', Matt G., Brandt W.N., Fabian A.C., 1996, *Monthly Notices of the Royal Astronomical Society*, 280, 823–834

16. 'ROSAT PSPC and HRI observations of the composite starburst/Seyfert 2 galaxy NGC 1672', Brandt W.N., Halpern J.P., Iwasawa K., 1996, *Monthly Notices of the Royal Astronomical Society*, 281, 687–695

17. 'A powerful and highly variable off-nuclear X-ray source in the composite starburst/Seyfert 2 galaxy NGC 4945', Brandt W.N., Iwasawa K., Reynolds C.S., 1996, *Monthly Notices of the Royal Astronomical Society*, 281, L41–L45

18. 'The variable iron K emission line in MCG–6–30–15', Iwasawa K., Fabian A.C., Reynolds C.S., Nandra K., Otani C., Inoue H., Hayashida K., Brandt W.N., Dotani T., Kunieda H., Matsuoka M., Tanaka Y., 1996, *Monthly Notices of the Royal Astronomical Society*, 282, 1038–1048

19. 'The radio, optical and X-ray properties of the radio source 0927+352', Machalski J., Brandt W.N., 1996, *Monthly Notices of the Royal Astronomical Society*, 282, 1305–1312

20. 'ASCA observations of the iron K complex of Circinus X-1 near zero phase: Spectral evidence for partial covering', Brandt W.N., Fabian A.C., Dotani T., Nagase F., Inoue H., Kotani T., Segawa Y., 1996, *Monthly Notices of the Royal Astronomical Society*, 283, 1071–1082

21. 'X-ray emission from the field of the hyperluminous IRAS galaxy IRAS F15307+3252', Fabian A.C., Cutri R.M., Smith H.E., Crawford C.S., Brandt W.N., 1996, *Monthly Notices of the Royal Astronomical Society*, 283, L95–L98

22. 'A comparison of the hard ASCA spectral slopes of broad and Narrow-Line Seyfert 1 galaxies', Brandt W.N., Mathur S., Elvis M., 1997, *Monthly Notices of the Royal Astronomical Society*, 285, L25–L30

23. 'X-ray properties of AGN with extreme Fe II emission', Lawrence A., Elvis M.S., Wilkes B.J., McHardy I., Brandt W.N., 1997, *Monthly Notices of the Royal Astronomical Society*, 285, 879–890

24. 'ASCA observations of the nearby galaxies Dwingeloo 1 and Maffei 1', Reynolds C.S., Loan A.J., Fabian A.C., Makishima K., Brandt W.N., Mizuno T., 1997, *Monthly Notices of the Royal Astronomical Society*, 286, 349–357

25. 'ASCA observations of two ultraluminous IRAS galaxies: IRAS 15307+3252 and IRAS 20460+1925', Ogasaka Y., Inoue H., Brandt W.N., Fabian A.C., Kii T., Nakagawa T., Fujimoto R., Otani C., 1997, *Publications of the Astronomical Society of Japan*, 49, 179–185

26. 'ROSAT monitoring of persistent giant and rapid variability in the Narrow-Line Seyfert 1 galaxy IRAS 13224–3809', Boller Th., Brandt W.N., Fabian A.C., Fink H., 1997, *Monthly Notices of the Royal Astronomical Society*, 289, 393–405

27. 'ASCA spectroscopy of IRAS 23060+0505: Penetrating the torus of a type 2 quasar with X-rays', Brandt W.N., Fabian A.C., Takahashi K., Fujimoto R., Yamashita A., Inoue H., Ogasaka Y., 1997, *Monthly Notices of the Royal Astronomical Society*, 290, 617–622

28. 'The extreme X-ray luminosity of the $z = 4.72$ radio-loud quasar GB 1428+4217', Fabian A.C., Brandt W.N., McMahon R.G., Hook I.M., 1997, *Monthly Notices of the Royal Astronomical Society*, 291, L5–L7

29. 'AX J 1749+684: A narrow emission-line galaxy with a flat X-ray spectrum', Iwasawa K., Fabian A.C., Brandt W.N., Crawford C.S., Almaini O., 1997, *Monthly Notices of the Royal Astronomical Society*, 291, L17–L22

30. 'Optical and X-ray properties of the RIXOS AGN: II — Emission lines', Puchnarewicz E.M., Mason K.O., Carrera F.J., Brandt W.N., Cabrera-Guera F., Carballo R., Hasinger G., McMahon R.G., Mittaz J.P.D., Page M.J., Perez-Fournon I., Schwope A., 1997, *Monthly Notices of the Royal Astronomical Society*, 291, 177–202

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33. 'X-ray absorption by ionized oxygen in ASCA spectra of the infrared quasar IRAS 13349+2438', Brandt W.N., Mathur S., Reynolds C.S., Elvis M., 1997, *Monthly Notices of the Royal Astronomical Society*, 292, 407–413

34. 'X-ray absorption in the strong Fe II, Narrow-Line Seyfert 1 galaxy Markarian 507', Iwasawa K., Brandt W.N., Fabian A.C., 1998, *Monthly Notices of the Royal Astronomical Society*, 293, 251–256

35. 'Detection of an X-ray periodicity in the Seyfert galaxy IRAS 18325–5926', Iwasawa K., Fabian A.C., Brandt W.N., Kunieda H., Misaki K., Reynolds C.S., Terashima Y., 1998, *Monthly Notices of the Royal Astronomical Society*, 295, L20–L24

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37. 'BeppoSAX observations of Narrow-Line Seyfert 1 galaxies: I. Ton S180', Comastri A., Fiore F., Guainazzi M., Matt G., Stirpe G.M., Zamorani G., Brandt W.N., Leighly K.M., Piro L., Molendi S., Parmar A.N., Siemiginowska A., Puchnarewicz E.M., 1998, *Astronomy and Astrophysics*, 333, 31–37

38. 'Ultrasoft Narrow-Line Seyfert 1 galaxies and X-ray surveys', Brandt W.N., Boller Th., 1998, *Astronomische Nachrichten*, 319, 7–10 and 319, 163–166

39. 'Limits on the X-ray emission from several hyperluminous IRAS galaxies', Wilman R.J., Fabian A.C., Cutri R.M., Crawford C.S., Brandt W.N., 1998, *Monthly Notices of the Royal Astronomical Society*, 300, L7–L10

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41. '1H 0419–577: A 'two state' soft X-ray Seyfert galaxy?', Guainazzi M., Comastri A., Stirpe G., Brandt W.N., Fiore F., Leighly K.M., Matt G., Molendi S., Puchnarewicz E.M., Piro L., Siemiginowska A., 1998, *Astronomy and Astrophysics*, 339, 327–336

42. 'One more surprise from the Circinus Galaxy: BeppoSAX discovery of a transmission component in hard X-rays', Matt G., Guainazzi M., Maiolino R., Molendi S., Perola G.C., Antonelli L.A., Bassani L., Brandt W.N., Fabian A.C., Fiore F., Iwasawa K., Malaguti G., Marconi A., Poutanen J., 1998, *Astronomy and Astrophysics*, 341, L39–L42

43. 'Heavy and complex X-ray absorption toward the nucleus of Markarian 6', ⋆Feldmeier J.J., Brandt W.N., Elvis M., Fabian A.C., Iwasawa K., Mathur S., 1999, *The Astrophysical Journal*, 510, 167–177

44. 'ROSAT HRI monitoring of extreme X-ray variability in the narrow-line quasar PHL 1092', Brandt W.N., Boller Th., Fabian A.C., Ruszkowski M., 1999, *Monthly Notices of the Royal Astronomical Society*, 303, L53–L57

45. 'The optical variability of the Narrow-Line Seyfert 1 galaxy IRAS 13224–3809', Young A.J., Crawford C.S., Fabian A.C., Brandt W.N., O'Brien P.T., 1999, *Monthly Notices of the Royal Astronomical Society*, 304, L46–L52

46. 'Exploratory ASCA observations of Broad Absorption Line Quasi-Stellar Objects', ⋆Gallagher S.C., Brandt W.N., Sambruna R.M., Mathur S., Yamasaki N., 1999, *The Astrophysical Journal*, 519, 549–555

47. 'PKS 1004+13: A high-inclination, highly absorbed radio-loud QSO—The first radio-loud BAL QSO at low redshift?', Wills B.J., Brandt W.N., Laor A., 1999, *The Astrophysical Journal*, 520, L91–L94

48. 'Variability of the extreme $z = 4.72$ blazar GB 1428+4217', Fabian A.C., Celotti A., Pooley G., Iwasawa K., Brandt W.N., McMahon R.G., Hoenig M.D., 1999, *Monthly Notices of the Royal Astronomical Society*, 308, L6–L10

49. 'X-rays from the highly polarized Broad Absorption Line QSO CSO 755', Brandt W.N., Comastri A., ⋆Gallagher S.C., Sambruna R.M., Boller Th., Laor A., 1999, *The Astrophysical Journal*, 525, L69–L72

50. 'BeppoSAX unveils the nuclear component in NGC 6240', Vignati P., Molendi S., Matt G., Guainazzi M., Antonelli L.A., Bassani L., Brandt W.N., Fabian A.C., Iwasawa K., Maiolino R., Malaguti G., Marconi A., Perola G.C., 1999, *Astronomy and Astrophysics*, 349, L57–L60

51. 'First constraints on iron abundance versus reflection fraction from the Seyfert 1 galaxy MCG–6–30–15', Lee J.C., Fabian A.C., Brandt W.N., Reynolds C.S., Iwasawa K., 2000, *Monthly Notices of the Royal Astronomical Society*, 310, 973–981

52. 'The ROSAT International X-ray/Optical Survey (RIXOS): Source catalogue', Mason K.O., Carrera F.J., Hasinger G., Andernach H., Aragon-Salamanca A., Barcons X., Bower R., Brandt W.N., Branduardi-Raymont G., Burgos-Martín J., Cabrera-Guerra F., Carballo R., Castander F., Ellis R.S., González-Serrano J.I., Martínez-González E., Martín-Mirones J.M., McMahon R.G., Mittaz J.P.D., Micholson K.L., Page M.J., Pérez-Fournon I., Puchnarewicz E.M., Romero-Colmenero E., Schwope A.D., Vila B., Watson M.G., Wonnacott D., 2000, *Monthly Notices of the Royal Astronomical Society*, 311, 456–484

53. 'On the nature of soft X-ray weak Quasi-Stellar Objects', Brandt W.N., Laor A., Wills B.J., 2000, *The Astrophysical Journal*, 528, 637–649

54. 'New X-ray constraints on starburst and Seyfert activity in the barred spiral galaxy NGC 1672', †de Naray P.J., Brandt W.N., Halpern J.P., Iwasawa K., 2000, *The Astronomical Journal*, 119, 612–619

55. 'ROSAT HRI monitoring of X-ray variability in the Narrow-Line Seyfert 1 galaxy PKS 0558–504', Gliozzi M., Boller Th., Brinkmann W., Brandt W.N., 2000, *Astronomy and Astrophysics*, 356, L17–L20

56. 'A broad-band X-ray view of NGC 4945', Guainazzi M., Matt G., Brandt W.N., Antonelli L.A., Barr P., Bassani L., 2000, *Astronomy and Astrophysics*, 356, 463–474

57. 'Discovery of narrow X-ray absorption lines from NGC 3783 with the Chandra High Energy Transmission Grating Spectrometer', ‡Kaspi S., Brandt W.N., Netzer H., Sambruna R.M., Chartas G., Garmire G.P., Nousek J.A., 2000, *The Astrophysical Journal*, 535, L17–L20

58. 'The X-ray properties of $z > 4$ quasars', ‡Kaspi S., Brandt W.N., Schneider D.P., 2000, *The Astronomical Journal*, 119, 2031–2037

59. 'Observations of faint, hard-band X-ray sources in the field of CRSS J0030.5+2618 with the Chandra X-ray Observatory and the Hobby-Eberly Telescope', Brandt W.N., ⋆Hornschemeier A.E., Schneider D.P., Garmire G.P., Chartas G., Hill G.J., MacQueen P.J., Townsley L.K., Burrows D.N., Koch T.S., Nousek J.A., Ramsey L.W., 2000, *The Astronomical Journal*, 119, 2349–2359

60. 'ROSAT PSPC detection of soft X-ray absorption in GB 1428+4217: The most distant matter yet probed with X-ray spectroscopy', Boller Th., Fabian A.C., Brandt W.N., Freyberg M.J., 2000, *Monthly Notices of the Royal Astronomical Society*, 315, L23–L27

61. 'BeppoSAX broad-band observations of low-redshift quasars: Spectral curvature and iron Kα lines', Mineo T., Fiore F., Laor A., Costantini E., Brandt W.N., Comastri A., Della Ceca R., Elvis M., Maccacaro T., Molendi S., 2000, *Astronomy and Astrophysics*, 359, 471–482

62. 'Compton-thick X-ray absorption in the Seyfert galaxies Tololo 0109–383 and ESO 138–G1', †Collinge M.J., Brandt W.N., 2000, *Monthly Notices of the Royal Astronomical Society*, 317, L35–L39

63. 'X-ray sources in the Hubble Deep Field detected by Chandra', ⋆Hornschemeier A.E., Brandt W.N., Garmire G.P., Schneider D.P., Broos P.S., Townsley L.K., Bautz M.W., Burrows D.N., Chartas G., Feigelson E.D., Griffiths R.E., Lumb D., Nousek J.A., Sargent W.L.W., 2000, *The Astrophysical Journal*, 541, 49–53

64. 'The X-ray variability of the Seyfert 1 galaxy MCG–6–30–15 from long ASCA and RXTE observations', Lee J.C., Fabian A.C., Reynolds C.S., Brandt W.N., Iwasawa K., 2000, *Monthly Notices of the Royal Astronomical Society*, 318, 857–874

65. '[O II] emission, eigenvector 1, and orientation in radio-quiet quasars', Kuraszkiewicz J.K., Wilkes B.J., Brandt W.N., Vestergaard M., 2000, *The Astrophysical Journal*, 542, 631–643

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68. 'Hot plasma and black hole binaries in the starburst galaxy M82', Griffiths R.E., Ptak A., Feigelson E.D., Garmire G.P., Townsley L.K., Brandt W.N., Sambruna R.M., Bregman J.N., 2000, *Science*, 290, 1325–1328

69. 'X-ray imaging of the Seyfert 2 galaxy Circinus with Chandra', Sambruna R.M., Brandt W.N., Chartas G., Netzer H., ‡Kaspi S., Garmire G.P., Nousek J.A., Weaver K.A., 2001, *The Astrophysical Journal*, 546, L9–L12

70. 'High-resolution X-ray spectroscopy of the Seyfert 2 galaxy Circinus with Chandra', Sambruna R.M., Netzer H., ‡Kaspi S., Brandt W.N., Chartas G., Garmire G.P., Nousek J.A., Weaver K.A., 2001, *The Astrophysical Journal*, 546, L13–L17

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72. 'BeppoSAX observations of Narrow-Line Seyfert 1 galaxies: II. Ionized iron features in Arakelian 564', Comastri A., Stirpe G.M., Vignali C., Brandt W.N., Leighly K.M., Fiore F., Guainazzi M., Matt G., Nicastro F., Puchnarewicz E.M., Siemiginowska A., 2001, *Astronomy and Astrophysics*, 365, 400–408

73. 'An XMM-Newton detection of the $z = 5.80$ X-ray weak quasar SDSSp J104433.04–012502.2', Brandt W.N., Guainazzi M., ‡Kaspi S., Fan X., Schneider D.P., Strauss M.A., Clavel J., Gunn J.E., 2001, *The Astronomical Journal*, 121, 591–597

74. 'Detection of nuclear X-ray sources in nearby galaxies with Chandra', Ho L.C., Feigelson E.D., Townsley L.K., Sambruna R.M., Garmire G.P., Brandt W.N., Filippenko A.V., Griffiths R.E., Ptak A.F., Sargent W.L.W., 2001, *The Astrophysical Journal*, 549, L51–L54

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78. 'The Chandra deep survey of the Hubble Deep Field-North area. II. Results from the Caltech Faint Field Galaxy Redshift Survey area', ⋆Hornschemeier A.E., Brandt W.N., Garmire G.P., Schneider D.P., Barger A.J., Broos P.S., Cowie L.L., Townsley L.K., Bautz M.W., Burrows D.N., Chartas G., Feigelson E.D., Griffiths R.E., Lumb D., Nousek J.A., Ramsey L.W., Sargent W.L.W., 2001, *The Astrophysical Journal*, 554, 742–777

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80. 'A Chandra study of the Circinus Galaxy point source population', ‡Bauer F.E., Brandt W.N., Sambruna R.M., Chartas G., Garmire G.P., ‡Kaspi S., Netzer H., 2001, *The Astronomical Journal*, 122, 182–193

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82. 'High-resolution X-ray and ultraviolet spectroscopy of the complex intrinsic absorption in NGC 4051 with Chandra and the Hubble Space Telescope', †Collinge M.J., Brandt W.N., ‡Kaspi S., Crenshaw D.M., Elvis M., Kraemer S.B., Reynolds C.S., Sambruna R.M., Wills B.J., 2001, *The Astrophysical Journal*, 557, 2–17

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87. 'The Chandra Deep Field-North survey. VI. The nature of the optically faint X-ray source population', ‡Alexander D.M., Brandt W.N., ⋆Hornschemeier A.E., Garmire G.P., Schneider D.P., ‡Bauer F.E., Griffiths R.E., 2001, *The Astronomical Journal*, 122, 2156–2176

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Astronomer's Telegrams

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2. 'Chandra detection of three enigmatic X-ray transients', Muno M.P., Wijnands R., Wang Q.D., Park S., Brandt W.N., Bauer F.E., Wang Z. *The Astronomer's Telegram*, 2007 February 27 (#1013)

3. 'Discovery of a fast X-ray transient in the Chandra Deep Field-South survey', Luo B., Brandt W.N., Bauer F.E., *The Astronomer's Telegram*, 2014 October 5 (#6541)

4. 'A new highly variable X-ray source at $z \sim 1.5$ in the Chandra Deep Field-South survey', Luo B., Brandt W.N., Bauer F.E., *The Astronomer's Telegram*, 2014 October 26 (#6625)

5. 'Rapid bright X-ray flares from V404 Cyg during December 2015 outburst', Heinz S., Jonker P., Corrales L., Brandt W.N., *The Astronomer's Telegram*, 2015 December 31 (#8489)

6. 'A faint X-ray dust scattering echo from V404 Cyg in response to recent flares', Heinz S., Beardmore A., Jonker P., Kuulkers E., Page K.L., Motta S., Corrales L., Brandt W.N., *The Astronomer's Telegram*, 2016 January 5 (#8507)

B. Papers Presented at Technical and Professional Meetings

Papers were presented by W.N. Brandt unless otherwise noted.
Below there are 86 invited talks presented by W.N. Brandt.

Papers Presented at Meetings of the American Astronomical Society

1. 'High resolution ASCA spectroscopy of the iron K complex of Circinus X-1 near zero phase', 1997 June 11, The 190th Meeting of the American Astronomical Society, Winston-Salem, North Carolina (*Bulletin of the American Astronomical Society*, 29, 826)

2. 'ASCA observations of ultrasoft Narrow-Line Seyfert 1 galaxies', 1997 June 12, The 190th Meeting of the American Astronomical Society, Winston-Salem, North Carolina (*Bulletin of the American Astronomical Society*, 29, 846)

3. 'RXTE/ASCA results for the Seyfert 1 Galaxy MCG–6–30–15', 1998 June 9, The 192nd Meeting of the American Astronomical Society, San Diego, California, presented by J.C. Lee (*Bulletin of the American Astronomical Society*, 30, 855)

4. 'Heavy and complex X-ray absorption in Markarian 6: A view through a torus atmosphere?', 1999 January 6, The 193rd Meeting of the American Astronomical Society, Austin, Texas (*Bulletin of the American Astronomical Society*, 30, 1253)

5. 'ASCA observations of the extreme Narrow-Line Seyfert 1 galaxies Mrk 42 and Mrk 957', 1999 January 9, The 193rd Meeting of the American Astronomical Society, Austin, Texas, presented by S.A. Snedden (*Bulletin of the American Astronomical Society*, 30, 1383)

6. 'Exploratory ASCA observations of Broad Absorption Line Quasi-Stellar Objects', 1999 January 9, The 193rd Meeting of the American Astronomical Society, Austin, Texas, presented by S.C. Gallagher* (*Bulletin of the American Astronomical Society*, 30, 1413)

7. 'ROSAT High Resolution Imager observations of the composite starburst/Seyfert 2 galaxy NGC 1672', 1999 May 31, The 194th Meeting of the American Astronomical Society, Chicago, Illinois, presented by P.J. de Naray† (*Bulletin of the American Astronomical Society*, 31, 830)

8. 'On the nature of soft X-ray weak Quasi-Stellar Objects', 1999 May 31, The 194th Meeting of the American Astronomical Society, Chicago, Illinois (*Bulletin of the American Astronomical Society*, 31, 873)

9. 'First results from a deep Chandra observation of the Hubble Deep Field area', 2000 January 12, The 195th Meeting of the American Astronomical Society, Atlanta, Georgia (*Bulletin of the American Astronomical Society*, 31, 1384)

10. 'A survey of soft X-ray weak quasi-stellar objects', 2000 January 12, The 195th Meeting of the American Astronomical Society, Atlanta, Georgia, presented by K.B. Marshall† (*Bulletin of the American Astronomical Society*, 31, 1399)

11. 'On the origin of intrinsic UV narrow absorption lines in low-redshift QSOs. I. A survey', 2000 January 12, The 195th Meeting of the American Astronomical Society, Atlanta, Georgia, presented by N.A. Bond† (*Bulletin of the American Astronomical Society*, 31, 1399)

12. 'On the origin of intrinsic UV narrow absorption lines in low-redshift QSOs. II. A multiwavelength analysis', 2000 January 12, The 195th Meeting of the American Astronomical Society, Atlanta, Georgia, presented by R. Ganguly* (*Bulletin of the American Astronomical Society*, 31, 1400)

13. 'Chandra imaging of Sgr A* and the Galactic center', 2000 January 13, The 195th Meeting of the American Astronomical Society, Atlanta, Georgia, presented by F.K. Baganoff (*Bulletin of the American Astronomical Society*, 31, 1463)

14. 'Hot gas in the core of M82: Observations with the ACIS imager array', 2000 January 14, The 195th Meeting of the American Astronomical Society, Atlanta, Georgia, presented by R.E. Griffiths (*Bulletin of the American Astronomical Society*, 31, 1509)

15. 'First results from a deep Chandra survey of the Hubble Deep Field area' (invited talk), 2000 June 7, The 196th Meeting of the American Astronomical Society, Rochester, New York (*Bulletin of the American Astronomical Society*, 32, 726)

16. 'The high-resolution X-ray spectrum of NGC 3783', 2000 June 7, The 196th Meeting of the American Astronomical Society, Rochester, New York, presented by S. Kaspi‡ (*Bulletin of the American Astronomical Society*, 32, 727)

17. 'Chandra survey for AGNs in nearby galaxies', 2000 June 7, The 196th Meeting of the American Astronomical Society, Rochester, New York, presented by R.M. Sambruna (*Bulletin of the American Astronomical Society*, 32, 733)

18. 'X-rays from the nearest major elliptical Maffei 1 and the starburst spiral Maffei 2', 2000 June 8, The 196th Meeting of the American Astronomical Society, Rochester, New York, presented by M. Mateen† (*Bulletin of the American Astronomical Society*, 32, 751)

19. 'Compton-thick tori in two Seyferts: ESO 138-G1 and Tololo 0109-383', 2000 June 8, The 196th Meeting of the American Astronomical Society, Rochester, New York, presented by M.J. Collinge† (*Bulletin of the American Astronomical Society*, 32, 753)

20. 'First results from a ROSAT large-amplitude X-ray variability survey', 2000 June 8, The 196th Meeting of the American Astronomical Society, Rochester, New York, presented by J.L. Donley† (*Bulletin of the American Astronomical Society*, 32, 760)

21. 'Chandra imaging of Sgr A*', 2001 January 8, The 197th Meeting of the American Astronomical Society, San Diego, California, presented by F.K. Baganoff (*Bulletin of the American Astronomical Society*, 32, 1389)

22. 'The HET echo mapping project', 2001 January 9, The 197th Meeting of the American Astronomical Society, San Diego, California, presented by W. Welsh (*Bulletin of the American Astronomical Society*, 32, 1458)

23. 'The sources comprising the X-ray background in the HDF-N region observed by the Chandra X-ray Observatory', 2001 January 10, The 197th Meeting of the American Astronomical Society, San Diego, California, presented by G.P. Garmire (*Bulletin of the American Astronomical Society*, 32, 1519)

24. 'The AGN content in the HDF-N and flanking fields as seen by Chandra', 2001 January 10, The 197th Meeting of the American Astronomical Society, San Diego, California, presented by D.M. Alexander‡ (*Bulletin of the American Astronomical Society*, 32, 1520)

25. 'The Chandra view of Sgr A-East', 2001 January 10, The 197th Meeting of the American Astronomical Society, San Diego, California, presented by Y. Maeda‡ (*Bulletin of the American Astronomical Society*, 32, 1535)

26. 'Chandra observations of off-nuclear sources within Circinus', 2001 January 10, The 197th Meeting of the American Astronomical Society, San Diego, California, presented by F.E. Bauer‡ (*Bulletin of the American Astronomical Society*, 32, 1536)

27. 'Source characteristics in the Chandra Deep Field-North', 2001 June 6, The 198th Meeting of the American Astronomical Society, Pasadena, California, presented by G.P. Garmire (*Bulletin of the American Astronomical Society*, 33, 866)

28. 'Large-amplitude X-ray outbursts from galactic nuclei: A systematic study using ROSAT archival data', 2001 June 7, The 198th Meeting of the American Astronomical Society, Pasadena, California, presented by J.L. Donley† (*Bulletin of the American Astronomical Society*, 33, 898)

29. 'The Chandra Deep Field-North Survey: Multiwavelength source properties, stacking results, and future plans' (invited talk), 2002 January 10, The 199th Meeting of the American Astronomical Society, Washington, D.C. (*Bulletin of the American Astronomical Society*, 33, 1518)

30. 'Tight constraints on the nature of the optically faint X-ray source population from the GOODS southern field', 2003 January 6, The 201st Meeting of the American Astronomical Society, Seattle, Washington, presented by D.M. Alexander‡ (*Bulletin of the American Astronomical Society*, 34, 1098)

31. 'Lower-mass black holes in the GOODS: The ULX population at $z > 0.1$', 2003 January 6, The 201st Meeting of the American Astronomical Society, Seattle, Washington, presented by A.E. Hornschemeier (*Bulletin of the American Astronomical Society*, 34, 1098)

32. 'Two thousand X-ray stars in the central 20 pc of the Galaxy', 2003 January 6, The 201st Meeting of the American Astronomical Society, Seattle, Washington, presented by M.P. Muno (*Bulletin of the American Astronomical Society*, 34, 1152)

33. 'Multiwavelength monitoring of Sgr A* during Chandra observations of multiple X-ray flares', 2003 January 6, The 201st Meeting of the American Astronomical Society, Seattle, Washington, presented by F.K. Baganoff (*Bulletin of the American Astronomical Society*, 34, 1153)

34. 'Optical properties of all the X-ray sources within the GOODS HST/ACS survey of the Chandra Deep Field-South', 2003 May 28, The 202nd Meeting of the American Astronomical Society, Nashville, Tennessee, presented by A.M. Koekemoer (*Bulletin of the American Astronomical Society*, 35, 761)

35. 'A sensitive Chandra observation of Markarian 231, the most luminous galaxy in the local universe', 2004 January 6, The 203rd Meeting of the American Astronomical Society, Atlanta, Georgia, presented by S.C. Gallagher (*Bulletin of the American Astronomical Society*, 35, 1296)

36. 'X-ray properties of SDSS AGN at low and high redshift', 2004 May 31, The 204th Meeting of the American Astronomical Society, Denver, Colorado, presented by I.V. Strateva (*Bulletin of the American Astronomical Society*, 36, 679)

37. 'X-raying active galaxies both near and far: Exploring the environments of supermassive black holes' (invited prize talk), 2004 May 31, The 204th Meeting of the American Astronomical Society, Denver, Colorado (*Bulletin of the American Astronomical Society*, 36, 689)

38. 'The variable X-ray absorber of the BAL quasar UM 425', 2004 June 2, The 204th Meeting of the American Astronomical Society, Denver, Colorado, presented by G. Chartas (*Bulletin of the American Astronomical Society*, 36, 768)

39. 'Examining the nature of the optically variable, X-ray undetected GOODS sources', 2005 January 11, The 205th Meeting of the American Astronomical Society, San Diego, California, presented by A.T. Steffen

40. 'GOODS optically variable galaxy nuclei and their multiwavelength properties', 2005 January 13, The 205th Meeting of the American Astronomical Society, San Diego, California, presented by N.A. Grogin

41. 'Properties of the dust in the IRAS 13349+2438 warm absorber', 2005 May 30, The 206th Meeting of the American Astronomical Society, Minneapolis, Minnesota, presented by S.M. Linder

42. 'Outflow signatures in highly resolved X-ray spectra of Circinus X-1', 2005 June 1, The 206th Meeting of the American Astronomical Society, Minneapolis, Minnesota, presented by N.S. Schulz

43. 'Cosmic feedback: Constraining AGN outflows', 2006 January 9, The 207th Meeting of the American Astronomical Society, Washington, D.C., presented by S.C. Gallagher

44. 'The high redshift Universe with Constellation-X', 2006 January 9, The 207th Meeting of the American Astronomical Society, Washington, D.C., presented by F.E. Bauer

45. 'A Chandra investigation of the peculiar PG 1004+130', 2006 January 9, The 207th Meeting of the American Astronomical Society, Washington, D.C., presented by B.P. Miller*

46. 'AGN science with the Large Synoptic Survey Telescope', 2006 January 9, The 207th Meeting of the American Astronomical Society, Washington, D.C.

47. 'Constraining the redshift evolution of off-nuclear X-ray sources using the Chandra Deep Fields', 2006 January 12, The 207th Meeting of the American Astronomical Society, Washington, D.C., presented by B.D. Lehmer*

48. 'The hard X-ray spectral slope as an accretion-rate indicator in radio-quiet active galactic nuclei', 2007 January 7, The 209th Meeting of the American Astronomical Society, Seattle, Washington, presented by O. Shemmer‡

49. 'Searching for the sources responsible for the unresolved 6–8 keV cosmic X-ray background', 2007 January 7, The 209th Meeting of the American Astronomical Society, Seattle, Washington, presented by A.T. Steffen‡

50. 'Probing faint active galaxies at redshifts 6–7 and above', 2007 January 7, The 209th Meeting of the American Astronomical Society, Seattle, Washington, presented by A.M. Koekemoer

51. 'AGN science with the Large Synoptic Survey Telescope', 2007 January 8, The 209th Meeting of the American Astronomical Society, Seattle, Washington

52. 'An X-ray, infrared, and submillimeter flare of Sagittarius A*', 2007 January 8, The 209th Meeting of the American Astronomical Society, Seattle, Washington, presented by D.P. Marrone

53. 'Modes of star formation in an early universe laboratory: An HST/ACS survey of Hickson Compact Groups', 2007 January 8, The 209th Meeting of the American Astronomical Society, Seattle, Washington, presented by J.C. Charlton

54. 'Multiwavelength properties of radio-loud quasars', 2007 January 9, The 209th Meeting of the American Astronomical Society, Seattle, Washington, presented by B.P. Miller*

55. 'Lost and found: Another missed Type IIn SN, CG X-2', 2007 January 9, The 209th Meeting of the American Astronomical Society, Seattle, Washington, presented by F.E. Bauer

56. 'Discovery of variable iron fluorescence from reflection nebulae in the Galactic Center', 2007 January 10, The 209th Meeting of the American Astronomical Society, Seattle, Washington, presented by M.P. Muno

57. 'Multi-year absorber variation in broad absorption line quasars', 2007 May 31, The 210th Meeting of the American Astronomical Society, Honolulu, Hawaii, presented by R.R. Gibson‡

58. 'Active galaxy science with the Large Synoptic Survey Telescope', 2008 January 11, The 211th Meeting of the American Astronomical Society, Austin, Texas

59. 'Multiwavelength insights into the nature of weak emission-line quasars at high redshift', 2009 January 5, The 213th Meeting of the American Astronomical Society, Long Beach, California, presented by O. Shemmer

60. 'The UV and X-ray properties of a large, diverse sample of optically selected quasars', 2009 January 6, The 213th Meeting of the American Astronomical Society, Long Beach, California, presented by J. Wu*

61. 'Active galaxy science with the Large Synoptic Survey Telescope', 2009 January 6, The 213th Meeting of the American Astronomical Society, Long Beach, California

62. 'AGN science with the LSST', 2010 January 4, The 215th Meeting of the American Astronomical Society, Washington, D.C., presented by G.T. Richards

63. 'LSST observatory system and science opportunities', 2010 January 4, The 215th Meeting of the American Astronomical Society, Washington, D.C., presented by M.A. Strauss

64. 'Multiwavelength studies of X-ray sources in the Chandra Deep Fields', 2010 January 4, The 215th Meeting of the American Astronomical Society, Washington, D.C., presented by B. Luo*

65. 'The X-ray properties of the optically brightest mini-BAL quasars from the Sloan Digital Sky Survey Data Release 5', 2010 January 4, The 215th Meeting of the American Astronomical Society, Washington, D.C., presented by M.L. Comins*

66. 'Confirmation of a near-relativistic wind in the $z = 3.91$ quasar APM 08279+5255', 2010 January 4, The 215th Meeting of the American Astronomical Society, Washington, D.C., presented by G. Chartas

67. 'X-ray emission from optically selected radio-intermediate and radio-loud quasars', 2010 January 5, The 215th Meeting of the American Astronomical Society, Washington, D.C., presented by B.P. Miller*

68. 'The optical to mid-infrared spectral energy distributions of weak emission-line quasars', 2010 January 5, The 215th Meeting of the American Astronomical Society, Washington, D.C., presented by R.A. Lane

69. 'Understanding the growth and evolution of supermassive black holes with the Wide Field X-ray Telescope', 2010 January 6, The 215th Meeting of the American Astronomical Society, Washington, D.C., presented by G.R. Sivakoff

70. 'X-ray spectral characterization of a complete sample of Swift BAT AGNs', 2010 January 7, The 215th Meeting of the American Astronomical Society, Washington, D.C., presented by R.V. Vasudevan‡

71. 'Relativistic hotspots in FR II radio sources', 2011 January 10, The 217th Meeting of the American Astronomical Society, Seattle, Washington, presented by A.M. Chartrand

72. 'Broad absorption line variability in radio-loud quasars', 2011 January 10, The 217th Meeting of the American Astronomical Society, Seattle, Washington, presented by C. Welling

73. 'Weak-line quasars at high redshift: Extremely high accretion rates or anemic broad-line regions?', 2011 January 11, The 217th Meeting of the American Astronomical Society, Seattle, Washington, presented by O. Shemmer

74. 'Did weak-line quasars just begin an active phase?', 2011 January 11, The 217th Meeting of the American Astronomical Society, Seattle, Washington, presented by R.M. Plotkin

75. 'AGN science with LSST', 2011 January 11, The 217th Meeting of the American Astronomical Society, Seattle, Washington, presented by R.R. Gibson

76. 'Exploratory X-ray monitoring of high-redshift radio-quiet quasars', 2012 January 9, The 219th Meeting of the American Astronomical Society, Austin, Texas, presented by O. Shemmer

77. 'An X-ray study of galaxy evolution from infancy to mid-life: What the deepest X-ray stacking of $1 < z < 4$ star-forming galaxies reveals', 2012 January 9, The 219th Meeting of the American Astronomical Society, Austin, Texas, presented by A. Basu-Zych

78. 'Low-luminosity blazars in WISE: A mid-infrared view of unification', 2012 January 9, The 219th Meeting of the American Astronomical Society, Austin, Texas, presented by R.M. Plotkin

79. 'No quasar left behind', 2012 January 10, The 219th Meeting of the American Astronomical Society, Austin, Texas, presented by C. MacLeod

80. 'An overview of deep X-ray surveys: Time machines for investigating supermassive black hole accretion and endpoints of stellar evolution' (invited talk), 2012 June 11, The 220th Meeting of the American Astronomical Society, Anchorage, Alaska

81. 'Tracking down the source population responsible for the unresolved cosmic 6–8 keV background', 2012 June 11, The 220th Meeting of the American Astronomical Society, Anchorage, Alaska, presented by Y. Xue

82. 'Broad absorption line variability on multi-year timescales: Current results and SDSS-III prospects', 2012 June 12, The 220th Meeting of the American Astronomical Society, Anchorage, Alaska

83. 'EVLA observations of FR II radio sources with candidate relativistic hotspots', 2012 June 12, The 220th Meeting of the American Astronomical Society, Anchorage, Alaska, presented by A.M. Chartrand

84. 'Extragalactic surveys with NuSTAR', 2013 January 8, The 221st Meeting of the American Astronomical Society, Long Beach, California, presented by K. Boydstun

85. 'The NuSTAR obscured AGN observing program', 2013 January 8, The 221st Meeting of the American Astronomical Society, Long Beach, California, presented by D. Walton

86. 'The LSST deep drilling program', 2013 January 8, The 221st Meeting of the American Astronomical Society, Long Beach, California, presented by R.L. Jones

87. 'AGN science with the LSST', 2013 January 8, The 221st Meeting of the American Astronomical Society, Long Beach, California, presented by O. Shemmer

88. 'Quasar FeLoBAL variability constraints from multi-year monitoring', 2013 January 9, The 221st Meeting of the American Astronomical Society, Long Beach, California, presented by S. McGraw

89. 'A WISE BOSS: Finding the cosmic monsters in the mid-infrared lochs', 2013 January 10, The 221st Meeting of the American Astronomical Society, Long Beach, California, presented by N.P. Ross

90. 'Broad absorption line variability on multi-year timescales in a large quasar sample', 2014 January 6, The 223rd Meeting of the American Astronomical Society, Washington, D.C.

91. 'The XMM-Newton view of weak emission-line quasars', 2014 January 6, The 223rd Meeting of the American Astronomical Society, Washington, D.C., presented by M. Stein

92. 'New Worlds/New Horizons science with an X-ray astrophysics probe', 2014 January 6, The 223rd Meeting of the American Astronomical Society, Washington, D.C., presented by R.K. Smith

93. 'The host galaxies of high-luminosity obscured quasars at $z \sim 2.5$', 2014 January 6, The 223rd Meeting of the American Astronomical Society, Washington, D.C., presented by N.P. Ross

94. 'Direct constraints on the evolution of LMXBs from deep Chandra and HST observations of nearby early-type galaxies', 2014 January 8, The 223rd Meeting of the American Astronomical Society, Washington, D.C., presented by B.D. Lehmer

95. 'The AGN census at cosmic noon: The unbiased galaxy-AGN connection from spatially resolved line ratios', 2014 January 9, The 223rd Meeting of the American Astronomical Society, Washington, D.C., presented by J.R. Trump

96. 'Some like it hot: Linking diffuse X-ray luminosity, baryonic mass, and star formation rate in compact groups of galaxies', 2014 January 9, The 223rd Meeting of the American Astronomical Society, Washington, D.C., presented by T.D. Desjardins

97. 'X-ray scaling relations in compact group galaxies: Compact object populations with Chandra', 2014 January 9, The 223rd Meeting of the American Astronomical Society, Washington, D.C., presented by P. Tzanavaris

98. 'NuSTAR reveals intrinsically X-ray weak broad absorption line (BAL) quasars', 2014 January 9, The 223rd Meeting of the American Astronomical Society, Washington, D.C., presented by S.H. Teng

99. 'Using quasars from SDSS-III/SEQUELS to characterize SDSS-IV/eBOSS selection', 2014 June 5, The 224th Meeting of the American Astronomical Society, Boston, Massachusetts, presented by A.D. Myers

100. 'Technical implementation plan for the VLA Sky Survey (VLASS)', 2015 January, The 225th Meeting of the American Astronomical Society, Seattle, Washington, presented by S.T. Myers

101. 'New insights on weak emission-line quasars from X-shooter spectroscopy', 2015 January, The 225th Meeting of the American Astronomical Society, Seattle, Washington, presented by R.M. Plotkin

102. 'Rapid C IV variability in an SDSS-RM quasar', 2015 January, The 225th Meeting of the American Astronomical Society, Seattle, Washington, presented by C.J. Grier

103. 'SpIES: The Spitzer IRAC Equatorial Survey', 2015 January, The 225th Meeting of the American Astronomical Society, Seattle, Washington, presented by J. Timlin

104. 'Beyond JWST: A technology path to the next great UVOIR space telescope', 2015 January, The 225th Meeting of the American Astronomical Society, Seattle, Washington, presented by D. Redding

105. 'Beyond JWST: Science drivers for the next great UVOIR space telescope', 2015 January, The 225th Meeting of the American Astronomical Society, Seattle, Washington, presented by J. Tumlinson

106. 'NuSTAR detection of multiple reflections in NGC 1068', 2015 January, The 225th Meeting of the American Astronomical Society, Seattle, Washington, presented by F.E. Bauer

107. 'The Time Domain Spectroscopic Survey: Spectroscopic variability investigations within SDSS-IV/eBOSS', 2015 January, The 225th Meeting of the American Astronomical Society, Seattle, Washington, presented by P.J. Green

108. 'Current and future X-ray studies of high-redshift AGNs and the first supermassive black holes' (invited talk), 2016 January 5, The 227th Meeting of the American Astronomical Society, Kissimmee, Florida

109. 'Exceptional X-ray weak quasars: Implications for accretion flows and emission-line formation', 2016 January 7, The 227th Meeting of the American Astronomical Society, Kissimmee, Florida

110. 'SpIES: The Spitzer IRAC Equatorial Survey', 2016 January 7, The 227th Meeting of the American Astronomical Society, Kissimmee, Florida, presented by J. Timlin

111. 'The quasar 2175 Å dust absorbers in the Sloan Digital Sky Survey Data Release Twelve', 2016 January 7, The 227th Meeting of the American Astronomical Society, Kissimmee, Florida, presented by Y. Zhao

112. 'Cosmic evolution of X-ray binary populations: Probes of changing chemistry and aging stellar populations in the Universe', 2016 January 8, The 227th Meeting of the American Astronomical Society, Kissimmee, Florida, presented by B.D. Lehmer

113. 'Quasar outflow constraints using broad absorption line variability studies', 2016 January 8, The 227th Meeting of the American Astronomical Society, Kissimmee, Florida, presented by S. McGraw

114. 'Unveiling the variable sky with the Time-Domain Spectroscopic Survey', 2016 January 8, The 227th Meeting of the American Astronomical Society, Kissimmee, Florida, presented by J.J. Ruan

115. 'A good hard look at cosmic supermassive black hole growth' (invited prize talk), 2017 January 5, The 229th Meeting of the American Astronomical Society, Grapevine, Texas

116. 'Selected first results from the 7 Ms Chandra Deep Field-South survey', 2017 January 5, The 229th Meeting of the American Astronomical Society, Grapevine, Texas

117. 'Infrared reverberation mapping of 17 quasars from the SDSS Reverberation Mapping Project', 2017 January 5, The 229th Meeting of the American Astronomical Society, Grapevine, Texas, presented by V. Gorjian

118. 'NGC 1448 and IC 3639: Two concealed black holes lurking in our cosmic backyard unveiled by NuSTAR', 2017 January 7, The 229th Meeting of the American Astronomical Society, Grapevine, Texas, presented by D. Stern

119. 'The XMM-SERVS Survey: First results in the 5 deg^2 XMM-LSS region', 2018 January, The 231st Meeting of the American Astronomical Society, Washington, DC, presented by C.-T. Chen

120. 'Investigations of short-timescale outflow variability in quasars from the Sloan Digital Sky Survey', 2018 January, The 231st Meeting of the American Astronomical Society, Washington, DC, presented by Z. Hemler

121. 'GNIRS-DQS: A Gemini Near-Infrared Spectrograph Distant Quasar Survey', 2018 June, The 232nd Meeting of the American Astronomical Society, Denver, Colorado, presented by B. Matthews

122. 'Steep hard X-ray spectra indicate extremely high accretion rates in weak emission-line quasars', 2018 June, The 232nd Meeting of the American Astronomical Society, Denver, Colorado, presented by A. Marlar

123. 'Gemini Near Infrared Spectrograph Distant Quasar Survey: The first year', 2019 January, The 233rd Meeting of the American Astronomical Society, Seattle, Washington, presented by B. Matthews

124. 'The XMM-SERVS survey of the LSST Deep Drilling Fields' (invited talk), 2020 January 5, The 235th Meeting of the American Astronomical Society, Honolulu, Hawaii

125. 'Science opportunities for Athena plus LSST' (invited talk), 2020 January 7, The 235th Meeting of the American Astronomical Society, Honolulu, Hawaii

126. 'The Rubin Observatory LSST AGN Science Collaboration' (invited talk), 2020 June 1, Supermassive Black Hole Studies with the Legacy Survey of Space and Time: A Meeting-in-a-Meeting as part of the 236th Meeting of the American Astronomical Society, Madison, Wisconsin (presented remotely owing to COVID-19)

127. 'XMM-SERVS: A sensitive XMM-Newton survey of the LSST Deep Drilling Fields', 2021 January 12, The 237th Meeting of the American Astronomical Society, Phoenix, Arizona (presented remotely owing to COVID-19)

128. 'The complete XMM-SERVS survey: A sensitive X-ray survey of the LSST Deep-Drilling Fields', 2021 June 8, The 238th Meeting of the American Astronomical Society, Anchorage, Alaska (presented remotely owing to COVID-19)

129. 'A sensitive X-ray survey of the LSST Deep-Drilling Fields: Complete XMM-Newton results and ongoing science investigations', 2022 June 16, The 240th Meeting of the American Astronomical Society, Pasadena, California (presented remotely owing to COVID-19)

130. 'X-ray coverage of the LSST Deep-Drilling Fields: Current XMM-Newton results and STAR-X future prospects', 2022 January 9, The 241st Meeting of the American Astronomical Society, Seattle, Washington (presented remotely)

Papers Presented at Other Meetings

1. 'Multifrequency foreground removal from cosmic microwave background anisotropy searches', 1993 April 14, American Physical Society Annual Meeting, Washington, D.C.

2. 'A large X-ray outburst from the ultrasoft active galaxy Zwicky 159.034', 1995 September 27, Röntgenstrahlung from the Universe Conference, Würzburg, Germany

3. 'High velocity supernova kicks and their effects on the orbital properties and sky distributions of neutron star and black hole binaries', 1995 July 13, NATO Advanced Study Institute on Evolutionary Processes in Binary Stars, Cambridge, United Kingdom

4. 'ASCA observations of the iron K complex of Circinus X-1 near zero phase', 1996 March 13, X-ray Imaging and Spectroscopy of Cosmic Hot Plasmas, Tokyo, Japan

5. 'X-ray properties of Narrow-Line Seyfert 1 galaxies', 1996 May 1, 1996 Meeting of the American Astronomical Society High Energy Astrophysics Division, San Diego, California

6. 'ASCA spectroscopy of Circinus X-1 near zero phase', 1996 October 1, Cambridge High Throughput X-ray Spectroscopy Workshop, Cambridge, Massachusetts

7. 'Ultrasoft Seyferts: Narrow-Line Seyfert 1 galaxies' (invited talk), 1996 June 12, X-rays and Gamma-rays from Accreting Black Holes, Koninki, Poland

8. 'Spectroscopy of the iron K complex of Circinus X-1', 1997 April 2, ASCA Cherry Blossom Conference, Washington, D.C.

9. 'ASCA spectroscopy of IRAS 23060+0505: Penetrating the torus of a type 2 quasar with X-rays', 1997 April 2, ASCA Cherry Blossom Conference, Washington, D.C.

10. 'Ultrasoft Seyferts in X-ray surveys', 1997 June 18, Potsdam X-ray Surveys Conference, Potsdam, Germany

11. 'Ultrasoft Narrow-Line Seyfert 1 galaxies: Studying an extreme of Seyfert activity' (invited talk), 1997 November 6, 1997 Meeting of the American Astronomical Society High Energy Astrophysics Division, Estes Park, Colorado

12. 'Ultrasoft Narrow-Line Seyfert 1 galaxies: What physical parameter ultimately drives the structure and kinematics of their broad line regions?' (invited talk), 1998 March 23, Structure and Kinematics of Quasar Broad Line Regions, Lincoln, Nebraska

13. 'Ultrasoft Narrow-Line Seyfert 1 galaxies: A review of recent progress' (invited talk), 1998 July 2, High-Energy Processes in Accreting Black Holes, Gräftavallen, Sweden

14. 'Exploratory ASCA and SAX observations of Broad Absorption Line Quasi-Stellar Objects', 1999 April 13, 1999 Meeting of the American Astronomical Society High Energy Astrophysics Division, Charleston, South Carolina

15. 'Ultrasoft active galaxies: An extreme of accretion onto supermassive black holes', 1999 July 8, International Astronomical Union Symposium 195: Highly Energetic Physical Processes and Mechanisms for Emissions from Astrophysical Plasmas, Bozeman, Montana

16. 'X-ray absorption in radio-quiet quasars' (invited talk), 1999 September 10, X-ray Astronomy 1999: Stellar Endpoints, AGN and the X-ray Background, Bologna, Italy

17. 'Observational similarities and potential connections between luminous ultrasoft Narrow-Line Seyfert 1s and Broad Absorption Line QSOs' (invited talk), 1999 December 10, Observational and Theoretical Progress in the Study of Narrow-Line Seyfert 1 Galaxies, Bad Honnef, Germany

18. 'The X-ray properties of $z > 4$ quasars', 2000 June 26, Advanced Lectures on the Starburst-AGN Connection, Tonantzintla, Mexico

19. 'Trying to peer through the clouds: Hard X-ray observations of soft X-ray weak AGN', 2000 June 26, Advanced Lectures on the Starburst-AGN Connection, Tonantzintla, Mexico, presented by S.C. Gallagher*

20. 'X-ray emission from galaxies in the Hubble Deep Field-North as detected by Chandra: Implications for star formation and AGN activity', 2000 June 26, Advanced Lectures on the Starburst-AGN Connection, Tonantzintla, Mexico, presented by A.E. Hornschemeier*

21. 'The high-resolution X-ray spectrum of NGC 3783', 2000 June 26, Advanced Lectures on the Starburst-AGN Connection, Tonantzintla, Mexico, presented by S. Kaspi‡

22. 'Hard X-ray observations of soft X-ray weak AGN', 2000 September 7, X-ray Astronomy 2000, Palermo, Italy, presented by S.C. Gallagher*

23. 'Chandra detects X-ray emission from Sgr A*', 2000 November 6, 2000 Meeting of the American Astronomical Society High Energy Astrophysics Division, Honolulu, Hawaii, presented by F.K. Baganoff

24. 'The high-resolution X-ray spectra of NGC 3783 and NGC 4051', 2000 November 6, 2000 Meeting of the American Astronomical Society High Energy Astrophysics Division, Honolulu, Hawaii, presented by S. Kaspi‡

25. 'Chandra HETGS observations of the Seyfert 2 galaxy Circinus', 2000 November 6, 2000 Meeting of the American Astronomical Society High Energy Astrophysics Division, Honolulu, Hawaii, presented by R.M. Sambruna

26. 'Chandra snapshot survey of nearby galaxies', 2000 November 7, 2000 Meeting of the American Astronomical Society High Energy Astrophysics Division, Honolulu, Hawaii, presented by A. Ptak

27. 'The discovery of broad P Cygni X-ray lines from Circinus X-1 with the Chandra HETGS', 2000 November 8, 2000 Meeting of the American Astronomical Society High Energy Astrophysics Division, Honolulu, Hawaii

28. 'The $\log N$–$\log S$ relation for the HDF-N region as observed by the Chandra X-ray Observatory', 2000 November 8, 2000 Meeting of the American Astronomical Society High Energy Astrophysics Division, Honolulu, Hawaii, presented by G.P. Garmire

29. 'X-ray emission from galaxies in the HDF-N area as detected by Chandra: Source identification for objects making the hard X-ray background', 2000 November 8, 2000 Meeting of the American Astronomical Society High Energy Astrophysics Division, Honolulu, Hawaii, presented by A.E. Hornschemeier⋆

30. 'Off-source fluctuation analysis of the deep Chandra observation on the Hubble Deep Field', 2000 November 8, 2000 Meeting of the American Astronomical Society High Energy Astrophysics Division, Honolulu, Hawaii, presented by T. Miyaji

31. 'Chandra X-Ray study of Sgr A-East', 2000 November 9, 2000 Meeting of the American Astronomical Society High Energy Astrophysics Division, Honolulu, Hawaii, presented by Y. Maeda

32. 'X-raying active galaxies with the new generation of X-ray observatories: Ionized outflows and high-redshift studies' (invited talk), 2001 March 7, New Century of X-ray Astronomy, Yokohama, Japan

33. 'Results from the Chandra deep survey of the Hubble Deep Field-North area' (invited talk), 2001 July 17, The 113th Annual Meeting of the Astronomical Society of the Pacific (Symposium on The High-Energy Universe at Sharp Focus: Chandra Science), St. Paul, Minnesota, presented by A.E. Hornschemeier⋆

34. 'The Chandra Deep Field-North Survey' (invited talk), 2001 September 5, Two Years of Science with Chandra, Washington, D.C.

35. 'Chandra and XMM-Newton observations of the highest redshift quasars: X-rays from the dawn of the modern Universe' (invited talk), 2001 December 5, X-ray Spectroscopy of Active Galactic Nuclei with Chandra and XMM-Newton, Garching, Germany

36. 'The Chandra Deep Field-North Survey and the cosmic X-ray background' (invited talk), 2002 February 20, Royal Society of London Discussion Meeting on X-ray Astronomy in the New Millennium, London, United Kingdom

37. 'Grating X-ray spectroscopy of high-velocity outflows from active galaxies and X-ray binaries' (invited talk), 2002 June 4, The 16th International Conference on Spectral Line Shapes, Berkeley, California

38. 'Deep surveys of the cosmic X-ray background' (invited talk), 2002 July 9, Making Light of Gravity: MJR60, Cambridge, United Kingdom

39. 'X-rays from the first massive black holes' (solicited talk), 2002 October 10, New X-ray Results from Clusters of Galaxies and Black Holes: 34th COSPAR Scientific Assembly, Houston, Texas

40. 'The X-ray view of NGC 4261 and NGC 6251', 2003 March 23–26, 2003 Meeting of the American Astronomical Society High Energy Astrophysics Division, Mount Tremblant, Canada, presented by M. Gliozzi

41. 'Probing the complex and variable absorption of Markarian 6 with XMM-Newton', 2003 March 23–26, 2003 Meeting of the American Astronomical Society High Energy Astrophysics Division, Mount Tremblant, Canada, presented by S. Immler[‡]

42. 'The cosmic X-ray background and results from the 2 Ms Chandra Deep Field-North survey' (invited talk), 2003 March 25, 2003 Meeting of the American Astronomical Society High Energy Astrophysics Division, Mount Tremblant, Canada

43. 'Chandra and XMM-Newton observations reveal the relativistic winds of quasars APM 08279+5255 and PG 1115+080', 2003 March 26, 2003 Meeting of the American Astronomical Society High Energy Astrophysics Division, Mount Tremblant, Canada, presented by G. Chartas

44. 'X-rays from the first massive black holes: Current status and future prospects', 2003 May 31, The First Stars II, State College, Pennsylvania

45. 'Chandra and XMM-Newton surveys of the highest redshift active galaxies' (invited talk), 2003 July 1, The Guillermo Haro Workshop on AGN Surveys, Tonantzintla, Mexico

46. 'X-raying active galaxies found (and missed?) by the SDSS' (invited talk), 2003 July 28, AGN Physics with the Sloan Digital Sky Survey, Princeton, New Jersey

47. 'X-ray survey results on active galaxy physics and evolution' (invited talk), 2003 December 5, Physics of Active Galactic Nuclei at all Scales, Santiago, Chile

48. 'X-raying active galaxies: Exploring the environments of supermassive black holes' (invited talk), 2004 March 27, Spring 2004 Joint Meeting of the New England Sections of the American Association of Physics Teachers and the American Physical Society, Exeter, New Hampshire

49. 'X-ray surveys and wide-field optical/near-infrared imaging' (invited talk), 2004 May 17, Wide-Field Imaging from Space, Berkeley, California

50. 'X-rays from the first massive black holes' (invited talk), 2004 June 21, Growing Black Holes: Accretion in a Cosmological Context, Garching, Germany

51. 'Formation and evolution of supermassive black holes and their relationships to host galaxies' (invited talk), 2005 February 24, Meeting on a Joint Constellation-X and XEUS Mission, Cambridge, Massachusetts

52. 'X-raying active galaxies both near and far: Exploring the environments of supermassive black holes' (invited talk), 2005 April 18, The April 2005 Meeting of the American Physical Society, Tampa, Florida

53. 'Persistence and change of AGN X-ray emission over cosmic time: Results from deep and serendipitous surveys' (invited talk), 2005 May 26, Superunification of Active Galactic Nuclei: Black Hole Mass, Spin, and Accretion Rate, Elba, Italy

54. 'HET observations of active galaxies: Supporting X-ray surveys and first results from long-term reverberation mapping', 2005 June 20, Hobby-Eberly Telescope Science Workshop, University Park, Pennsylvania

55. 'Supermassive black holes and the cosmic X-ray background radiation' (invited talk), 2006 February 17, The 2006 Annual Meeting of the American Association for the Advancement of Science, St. Louis, Missouri

56. 'Active galactic nuclei: Making the most of the Great Observatories' (invited talk), 2006 May 23, Making the Most of the Great Observatories, Pasadena, California

57. 'At the edge of the X-ray universe: Results from the deepest extragalactic surveys' (invited talk), 2006 October 11, At the Edge of the Universe, Sintra, Portugal

58. 'Deep-survey constraints on X-ray outbursts from galactic nuclei', 2006 November 6, Chandra X-ray Center Workshop on Extragalactic X-ray Surveys, Cambridge, Massachusetts

59. 'Active galaxy physics and demography with the Large Synoptic Survey Telescope', 2006 December 6, Large Synoptic Survey Telescope All-Hands Meeting—2006, Menlo Park, California

60. 'Active galaxy science possibilities for Swift: BAT source follow-up and variability studies' (invited talk), 2007 May 1, What Next for Swift? Charting the Future for the World's Most-Responsive Space Astrophysics Observatory, State College, Pennsylvania

61. 'Deep cosmological X-ray surveys' (invited talk), 2007 June 14, 40 Years of X-ray Astronomy: Workshop in Honor of Gordon Garmire's 70th Birthday, State College, Pennsylvania

62. 'The history of active galaxies: Points of light in a dark universe' (invited talk), 2007 July 20, Galaxy Growth in a Dark Universe, Heidelberg, Germany

63. 'Recent results from the deepest Chandra surveys: Adventuring through the distant X-ray universe' (invited talk), 2008 April 2, 2008 Meeting of the American Astronomical Society High Energy Astrophysics Division, Los Angeles, California

64. 'Recent results from the Chandra Deep Field surveys', 2008 April 13, The April 2008 Meeting of the American Physical Society, St. Louis, Missouri

65. 'Exploring the high-redshift X-ray universe: Results from snapshot to ultradeep surveys' (invited talk), 2008 May 30, The X-ray Universe 2008, Granada, Spain

66. 'Recent results from the deepest X-ray surveys: Adventuring through the distant X-ray universe' (invited talk), 2008 July 21, Putting Gravity to Work—From Black Holes to Galaxy Clusters: ACF60, Cambridge, United Kingdom

67. 'X-raying the winds of luminous active galaxies' (invited talk), 2009 June 1, The Monster's Fiery Breath: Feedback in Galaxies, Groups, and Clusters, Madison, Wisconsin

68. 'Black-hole ecology in the distant universe' (invited talk), 2009 July 8, Perspectives of High Energy Astrophysics, Garching, Germany

69. 'Recent results from the deepest X-ray surveys: Adventuring through the distant X-ray universe' (invited talk), 2009 July 13, The 12th Marcel Grossmann Meeting on General Relativity, Paris, France

70. 'Supermassive black hole growth over cosmic time: X-ray constraints on the demographics, physics, and ecology of active galaxies' (invited talk), 2009 September 22, Chandra's First Decade of Discovery, Boston, Massachusetts

71. 'A decade of extragalactic surveys with Chandra and XMM-Newton: The demography, physics, and ecology of growing supermassive black holes' (invited talk), 2010 January 8, The X-ray Astronomy Revolution: The Ongoing Impact of XMM-Newton and Chandra (Specialist Discussion Meeting of the Royal Astronomical Society), London, United Kingdom

72. 'Supermassive black-hole ecology through the galaxy-formation epoch: New constraints from the Chandra Deep Fields', 2010 February 19, Formation and Evolution of Black Holes, Aspen, Colorado

73. 'Constraining active-galaxy feedback and black-hole vs. bulge growth through the galaxy formation era: New results from the Chandra Deep Fields', 2010 June 3, Cosmic Chemical Evolution, St. Michaels, Maryland

74. 'Investigating the growth of the first supermassive black holes with the International X-ray Observatory' (invited talk), 2010 June 10, The First Galaxies, Quasars, and Gamma-Ray Bursts, State College, Pennsylvania

75. 'Large-scale investigations of quasar winds with the Sloan Digital Sky Survey-III', 2010 June 23, Sloan Digital Sky Survey-III Quasar and Lyman-Alpha Forest Workshop, Pittsburgh, Pennsylvania

76. 'Black-hole ecology in the distant universe: Results from cosmological X-ray surveys' (invited talk), 2010 July 27, What Drives the Growth of Black Holes?, Durham, United Kingdom

77. 'Supermassive black-hole ecology in the Chandra Deep Fields', 2011 April 9, 31st Annual Central Pennsylvania Consortium Astronomers Meeting, Lancaster, Pennsylvania

78. 'The LSST Deep-Drilling Fields', 2011 June 13, Very Wide Field Surveys in the Light of Astro 2010, Baltimore, Maryland

79. 'Active galaxies over cosmic time: The demography, physics, and ecology of growing supermassive black holes as revealed by X-ray surveys' (invited talk), 2011 July 22, Black Hole Astrophysics: Tales of Power and Destruction, Winchester, United Kingdom

80. 'The future of high-energy astrophysics: Prospects for supermassive black hole discoveries' (invited talk), 2011 September 9, 2011 Meeting of the American Astronomical Society High Energy Astrophysics Division, Newport, Rhode Island

81. 'Broad absorption line variability on multi-year timescales: Current results and future SDSS-III prospects', 2011 October 16, Active Galactic Nuclei Winds in Charleston, Charleston, South Carolina

82. 'Broad absorption line quasars with redshifted troughs', 2012 January 4, Baryon Oscillation Spectroscopic Survey Meeting—NYU2012, New York, New York

83. 'A large-scale investigation of quasar wind variability', 2012 April 21, 32nd Annual Central Pennsylvania Consortium Astronomers Meeting, Carlisle, Pennsylvania

84. 'Broad absorption line quasar variability on multi-year timescales: X-ray and ultraviolet constraints on quasar wind evolution', 2012 June 4, Energetic Astronomy, Annapolis, Maryland

85. 'The LSST Deep-Drilling Fields: Current status and future plans' (invited talk), 2012 August 16, Large Synoptic Survey Telescope All-Hands Meeting—2012, Marana, Arizona

86. 'X-ray and multiwavelength constraints upon the strongest particle jets of the early universe', 2012 October 22, Nature's Particle Accelerators, Annapolis, Maryland

87. 'New opportunities for supermassive black hole discoveries' (invited talk/panelist), 2012 November 9, SpaceVision 2012, Buffalo, New York

88. 'Quasar inflows? Redshifted trough broad absorption line quasars', 2012 December 11, Baryon Oscillation Spectroscopic Survey Meeting—CMU2012, Pittsburgh, Pennsylvania

89. 'X-ray evolution of the highest redshift radio-loud quasars', 2013 April 4, Center for Theoretical and Observational Cosmology—Neighborhood Workshop on Astrophysics and Cosmology, State College, Pennsylvania

90. 'Broad absorption line quasars with redshifted troughs', 2013 April 13, 33rd Annual Central Pennsylvania Consortium Astronomers Meeting, Gettysburg, Pennsylvania

91. 'Supermassive black hole studies with the LSST' (invited talk), 2013 May 7, Radio Astronomy in the LSST Era, Charlottesville, Virginia

92. 'Ultraviolet and X-ray variability of broad absorption line quasars' (invited talk), 2013 May 21, The Restless Nature of AGNs: Variability as a Probe of the Central Engine, Naples, Italy

93. 'Broad absorption line quasars with redshifted troughs: High-velocity infall or rotationally dominated outflows?', 2013 June 12, The SDSS-III Collaboration Meeting—2013, Baltimore, Maryland

94. 'Supermassive black-hole growth over cosmic time as revealed by cosmological X-ray surveys' (invited talk), 2013 August 8, US-Korea Conference on Science, Technology, and Entrepreneurship 2013, East Rutherford, New Jersey

95. 'Enhanced jet-linked X-rays from highly radio-loud quasars at the highest redshifts', 2013 October 29, Swift Science Planning Meeting, State College, Pennsylvania

96. 'Exceptional X-ray weak quasars and their implications for accretion disks, coronae, and winds', 2013 November 4, Putting Accretion Theory to the Test, Annapolis, Maryland

97. 'A good hard look at growing supermassive black holes in the distant universe' (invited keynote talk), 2014 April 5, 34th Annual Central Pennsylvania Consortium Astronomers Meeting, Lancaster, Pennsylvania

98. 'An observational overview of active galactic nuclei' (invited series of five talks), 2014 June 23–27, Formation and Co-Evolution of Galaxies and Supermassive Black Holes, Hefei, China

99. 'Exceptional X-ray weak quasars and their implications for accretion flows, broad line regions, and winds' (invited talk), 2014 September 13, The Inner Regions of Quasars, Austin, Texas

100. 'New probes of quasar winds: Multi-year variability and redshifted troughs', 2014 October 5, Annual Meeting of the Mid-Atlantic Section of the American Physical Society, State College, Pennsylvania

101. 'Exceptional X-ray weak quasars: Implications for accretion flows and winds', 2014 November 19, 15 Years of Science with Chandra, Boston, Massachusetts

102. 'Exceptional X-ray weak quasars: Implications for accretion flows and emission lines', 2015 April 14, The April 2015 Meeting of the American Physical Society, Baltimore, Maryland

103. 'Exceptional weak-line quasars: Rapidly accreting supermassive black holes with thick accretion disks?', 2015 April 25, 35th Annual Central Pennsylvania Consortium Astronomers Meeting, Carlisle, Pennsylvania

104. 'LSST and simultaneous multiwavelength astronomy' (invited talk), 2015 July 16, Paving the Way to Simultaneous Multiwavelength Astronomy, Leiden, The Netherlands

105. 'The landscape of large sky surveys in the Athena era' (invited talk), 2015 September 9, Exploring the Hot and Energetic Universe: The First Scientific Conference Dedicated to the Athena X-ray Observatory, Madrid, Spain

106. 'Exceptional X-ray weak quasars and their implications for accretion flows, winds, and broad line regions', 2015 October 13, The Physics of Supermassive Black Hole Formation and Feedback, Annapolis, Maryland

107. 'Enhanced jet-linked X-rays from highly radio-loud quasars at the highest redshifts', 2015 October 22, Mid-Atlantic Radio-Loud AGN Meeting (MARLAM-2015), Baltimore, Maryland

108. 'Exceptional X-ray weak quasars and their implications for accretion flows, winds, and broad line regions', 2016 April 17, The April 2016 Meeting of the American Physical Society, Salt Lake City, Utah

109. 'Exceptional X-ray weak quasars: Implications for accretion flows and emission lines', 2016 May 2, Great Lakes Quasar Symposium, London, Canada

110. 'Open questions about quasar winds and changing-look active galactic nuclei' (invited discussion leader), 2016 May 4, Great Lakes Quasar Symposium, London, Canada

111. 'High-redshift quasars and the X-SERVS survey' (invited talk), 2016 May 10, XMM-Newton: The Next Decade, Madrid, Spain

112. 'LSST connections with STAR-X and AGN variability', 2016 May 27, The First STAR-X Science Team Meeting, Baltimore, Maryland

113. 'General review of the proposed deep-drilling fields and other LSST mini-surveys', 2016 August 18, The LSST 2016 Project and Community Workshop, Tucson, Arizona

114. 'The Sloan Digital Sky Survey Reverberation Mapping Project' (invited talk), 2016 October 24, AGN Reverberation Mapping: The Parsec Scale Garden of Massive Black Holes, Lijiang, China (I presented this talk on behalf of Yue Shen, who was unable to attend the conference)

115. 'X-raying weak-line quasars: Implications for accretion flows, winds, and broad line regions' (invited talk), 2016 October 25, AGN Reverberation Mapping: The Parsec Scale Garden of Massive Black Holes, Lijiang, China

116. 'Selected first results from the 7 Ms Chandra Deep Field-South survey', 2017 January 30, The April 2017 Meeting of the American Physical Society, Washington, D.C.

117. 'Selected first results from the 7 Ms Chandra Deep Field-South survey', 2017 April 15, 37th Annual Central Pennsylvania Consortium Astronomers Meeting, Lancaster, Pennsylvania

118. 'A large-scale spectroscopic survey of quasar wind variability' (invited talk), 2017 May 23, Outflows from Active Galactic Nuclei, Haifa, Israel

119. 'High-redshift AGNs and the first supermassive black holes' (invited talk), 2017 June 13, Multifrequency Behaviour of High Energy Cosmic Sources—XII, Palermo, Italy

120. 'Latest results from a large-scale spectroscopic survey of quasar wind variability', 2017 June 27, AGN Winds on the Georgia Coast, Jekyll Island, Georgia

121. 'From the Chandra Deep Fields to Lynx' (invited talk), 2017 August 8, From Chandra to Lynx—Taking the Sharpest X-ray Vision Fainter and Farther, Cambridge, Massachusetts

122. 'Cosmic black hole growth is mainly linked to stellar mass', 2017 August 24, 2017 Meeting of the American Astronomical Society High Energy Astrophysics Division, Sun Valley, Idaho

123. 'Supermassive black-hole studies with the LSST' (invited talk), 2017 September 25, LSST: Multiwavelength Data Fusion Workshop, Cambridge, United Kingdom

124. 'Supermassive black-hole studies with the LSST' (invited talk), 2017 December 14, Third Chilean Workshop on the Large Synoptic Survey Telescope, Santiago, Chile

125. 'X-raying high-redshift AGNs and the first black holes: From Chandra to Lynx' (invited talk), 2018 February 7, Cosmological Signals from Cosmic Dawn to the Present, Aspen, Colorado

126. 'X-raying the seeds of the first supermassive black holes', 2018 April 21, 38th Annual Central Pennsylvania Consortium Astronomers Meeting, Carlisle, Pennsylvania

127. 'The remarkable X-ray properties of weak-line quasars: Implications for accretion flows, winds, and BLRs' (invited talk), 2018 May 22, The Radio and X-ray Connection in Accreting Objects, Monopoli, Italy

128. 'X-ray surveys of distant active galactic nuclei: Deep to wide' (invited talk), 2018 July 19, AGN X-ray Surveys—Soft to Hard and Deep to Wide: 42nd COSPAR Scientific Assembly, Pasadena, California

129. 'An overview of blending challenges for LSST science on active galaxies', 2018 August 14, The LSST 2018 Project and Community Workshop, Tucson, Arizona

130. 'The LSST Active Galactic Nuclei Science Collaboration and its future plans on deep fields', 2018 August 30, WFIRST/LSST Deep Fields Workshop, Princeton, New Jersey

131. 'A good hard look at cosmic supermassive black hole growth' (invited talk), 2019 January 15, X-ray Surveys of the Hot and Energetic Universe, Harbin, China

132. 'X-ray surveys of the hot and energetic universe: Progress report and future prospects' (invited talk), 2019 January 18, X-ray Surveys of the Hot and Energetic Universe, Harbin, China

133. 'Evident black hole-bulge coevolution in the distant universe', 2019 February 15, American Association for the Advancement of Science Annual Meeting, Washington, D.C.

134. 'The history of accretion: XMM-Newton achievements and perspectives' (invited talk), 2019 March 20, 2019 Meeting of the American Astronomical Society High Energy Astrophysics Division, Monterey, California

135. 'Evident black hole vs. bulge coevolution in the distant universe', 2019 April 27, 39th Annual Central Pennsylvania Consortium Astronomers Meeting, Gettysburg, Pennsylvania

136. 'Supermassive black hole studies with the LSST' (invited talk), 2019 June 26, European Week of Astronomy & Space Science: Quasars in Cosmology, Lyon, France

137. 'A new extragalactic population of faint, fast X-ray transients', 2019 August 19, Hot-Wiring the Transient Universe, Evanston, Illinois

138. 'Multiwavelength surveys for active galactic nuclei' (invited talk), 2019 October 9, Nuclear Activity in Galaxies Across Cosmic Time: International Astronomical Union Symposium 356, Addis Ababa, Ethiopia

139. 'The XMM-SERVS survey of the LSST Deep Drilling Fields' (invited talk), 2019 October 21, XMM-Newton 20th Anniversary Goddard Symposium, Greenbelt, Maryland

140. 'Supermassive black hole studies with the LSST' (invited talk), 2019 October 31, Mid-Atlantic Radio Loud AGN Meeting (MARLAM-2019), College Park, Maryland

141. 'Novel insights into quasar physics from large-sample studies combining SDSS-IV and the Chandra/XMM-Newton archives', 2020 June 24, SDSS-IV/V Collaboration Meeting 2020, New York, New York (presented remotely owing to COVID-19)

142. 'The XMM-SERVS Survey of the LSST Deep Drilling Fields', 2020 July 2, European Astronomical Society Annual Meeting: Current Scientific Highlights and Future Prospects for XMM-Newton, Leiden, The Netherlands (presented remotely owing to COVID-19)

143. 'XMM-SERVS: A Large XMM-Newton Survey of the LSST Deep Drilling Fields', 2020 August 11, Rubin Observatory Project & Community Workshop 2020, Tucson, Arizona (presented remotely owing to COVID-19)

144. 'Science Collaborations Report: The Active Galactic Nuclei Science Collaboration', 2020 August 12, Rubin Observatory Project & Community Workshop 2020, Tucson, Arizona (presented remotely owing to COVID-19)

145. 'A new extragalactic population of faint, fast X-ray transients', 2020 October 7, Chandra Frontiers in Time-Domain Science, Cambridge, Massachusetts (presented remotely owing to COVID-19)

146. 'A new extragalactic population of faint, fast X-ray transients', 2020 December 5, Annual Meeting of the Mid-Atlantic Section of the American Physical Society (presented remotely owing to COVID-19)

147. 'X-ray survey follow-up as a driver for extragalactic spectroscopic surveys', 2021 April 15, Extragalactic Spectroscopic Surveys: Past, Present, and Future of Galaxy Evolution, Santiago, Chile (presented remotely owing to COVID-19)

148. 'A new extragalactic population of faint, fast X-ray transients', 2021 April 17, 41st Annual Central Pennsylvania Consortium Astronomers Meeting, Carlisle, Pennsylvania (presented remotely owing to COVID-19)

149. 'XMM-SERVS: A sensitive XMM-Newton survey of the LSST Deep-Drilling Fields', 2021 April 18, The April 2021 Meeting of the American Physical Society, Sacramento, California (presented remotely owing to COVID-19)

150. 'The nature of the X-ray emission from typical radio-loud quasars: Jets vs. coronae', 2021 June 16, Extragalactic Jets on All Scales, Heidelberg, Germany (presented remotely owing to COVID-19)

151. 'The nature of the X-ray emission and innermost accretion regions of typical radio-loud quasars', 2021 June 30, European Astronomical Society Annual Meeting: Black Holes Under the Magnifying Glass of XRISM and Athena, Leiden, The Netherlands (presented remotely owing to COVID-19)

152. 'The nature of the X-ray emission and innermost accretion regions of typical radio-loud quasars', 2021 July 5, The 16th Marcel Grossmann Meeting on General Relativity (presented remotely owing to COVID-19)

153. 'The 2021 state of the LSST AGN Science Collaboration' (invited talk), 2021 July 12, Supermassive Black Hole Studies with the Legacy Survey of Space and Time: 2021 (presented remotely owing to COVID-19)

154. 'A new extragalactic population of faint, fast X-ray transients', 2021 July 23, Royal Astronomical Society's 2021 National Astronomy Meeting, Bath, United Kingdom (presented remotely owing to COVID-19)

155. 'The nature of the X-ray emission from typical SDSS radio-loud quasars: Jets vs. coronae', 2021 August 17, SDSS-IV/V Collaboration Meeting 2021 (presented remotely owing to COVID-19)

156. 'Wind-driven extreme X-ray variability events in weak-line quasars', 2021 September 6, Black Hole Accretion Disk Winds, Durham, United Kingdom (presented remotely owing to COVID-19)

157. 'Active galactic nucleus science and requirements for the Legacy Survey of Space and Time Deep-Drilling Fields', 2021 November 17, The Second SCOC-Science Collaborations Workshop (presented remotely owing to COVID-19)

158. 'Black-hole growth depends little upon 0.1–10 Mpc cosmic environment', 2022 January 26, Quasars and Galaxies Through Cosmic Time (presented remotely owing to COVID-19)

159. 'MOONS follow-up of X-ray sources from the XMM-SERVS survey', 2022 March 29, MOONS Science Team Meeting, Florence, Italy (presented remotely owing to COVID-19)

160. 'The complete XMM-SERVS survey: A sensitive X-ray survey of the LSST Deep-Drilling Fields', 2022 April 12, The April 2022 Meeting of the American Physical Society, New York, New York

161. 'The complete XMM-SERVS survey: A sensitive X-ray survey of the LSST Deep-Drilling Fields', 2022 April 23, 42nd Annual Central Pennsylvania Consortium Astronomers Meeting, Gettysburg, Pennsylvania

162. 'A sensitive X-ray survey of the LSST Deep-Drilling Fields' (invited talk), 2022 June 23, Physics and Quantum Physics, Berlin, Germany (presented remotely owing to travel constraints)

163. 'Supermassive black hole science with the Legacy Survey of Space and Time' (invited talk), 2022 July 19, Spectral/Timing/Polarimetry Properties of AGN—Theory and Observations: 44th COSPAR Scientific Assembly, Athens, Greece (presented remotely owing to travel constraints)

164. 'The 2022 state of the LSST AGN Science Collaboration' (invited talk), 2022 July 26, Supermassive Black Hole Studies with the Legacy Survey of Space and Time 2022: Getting Ready for Rubin Operations (presented remotely)

165. 'Future investigations of the new extragalactic population of faint, fast X-ray transients', 2022 August 23, Time-Domain and Multi-Messenger Astrophysics NASA Workshop: Physics of the Cosmos Program, Annapolis, Maryland (presented remotely)

166. 'The nature of the X-ray emission and innermost accretion regions of typical radio-loud quasars', 2022 October 21, Mid-Atlantic Radio Loud AGN Meeting (MARLAM-2022), Baltimore, Maryland

167. 'The LSST AGN Science Collaboration: European contributions and opportunities' (invited talk), 2022 October 26, Rubin Observatory LSST@Europe 4: Shaping the European Contribution to LSST, Rome, Italy (presented remotely)

168. 'The nature of the X-ray emission and innermost accretion regions of typical radio-loud quasars', 2022 December 4, Annual Meeting of the Mid-Atlantic Section of the American Physical Society, State College, Pennsylvania

169. 'The nature of the X-ray emission and innermost accretion regions of typical radio-loud quasars', 2023 January 16, Magnetism & Accretion: A Conference in Memory of Darragh O'Donoghue, Cape Town, South Africa

170. 'STAR-X X-ray and UV surveys design' (invited talk), 2023 March 26, 2023 Meeting of the American Astronomical Society High Energy Astrophysics Division, Waikoloa, Hawaii

171. 'Overview of results from the XMM-SERVS survey' (invited talk), 2023 June 13, The X-ray Universe 2023, Athens, Greece

Invited Papers Where Invitation Had to Be Declined

1. Cosmic Matter: Annual International Conference of the Astronomische Gesellschaft, 2007 September 24–29, Würzburg, Germany (declined due to a date conflict with another professional obligation)

2. Science with eROSITA and ART-XC aboard Spectrum-RG: From Stars and Black Holes to Cosmology, 2012 September 3–7, Kazan, Russia (declined due to a date conflict with the start of the Penn State academic year when I had multiple prior obligations)

3. USTC Summer School on Galaxy Formation and Evolution, 2013 May 27–June 7, Hefei, China (declined due to previously arranged travel schedule saturation in this time period)

4. Denmark and LSST, 2013 May 16–17, Copenhagen, Denmark (declined due to a date conflict with another conference where I was an organizer and had an invited talk)

5. SDSS-III and SDSS-IV Collaboration Meetings, 2014 July 27–August 1, Park City, Utah (declined due to previously arranged travel and work schedule saturation in this time period)

6. The Thirty Meter Telescope in the Astronomical Landscape of the 2020s, 2014 July 17–19, Tucson, Arizona (declined due to previously arranged travel and work schedule saturation in this time period)

7. Multifrequency Behavior of High-Energy Cosmic Sources—XI, 2015 May 25–30, Palermo, Italy (declined due to a date conflict with an invited visit to Caltech)

8. Formation and Fueling of Supermassive Black Hole Seeds, 2015 July 6–24, Tonantzintla, Mexico (declined due to a date conflict with another conference where I had an invited talk)

9. SDSS-IV Collaboration Meeting, 2015 July 20–23, Madrid, Spain (declined due to previously arranged travel and work schedule saturation in this time period)

10. Hot Spots in the XMM Sky: Cosmology from X-ray to Radio, 2016 June 15–18, Mykonos Island, Greece (declined due to work schedule saturation in this time period and high travel costs)

11. The X-ray Universe 2017, 2017 June 6–9, Rome, Italy (declined due to work schedule saturation in this time period and personal reasons)

12. Elusive Active Galactic Nuclei in the Next Era, 2017 June 12–15, Fairfax, Virginia (declined due to a date conflict with another conference where I had an invited talk)

13. Multifrequency Behavior of High-Energy Cosmic Sources—XIII, 2019 June 3–8, Palermo, Italy (declined due to a date conflict with a personal obligation)

14. From AGN to Starburst: A Multiwavelength Synergy, 2019 August 12–16, Guiyang, China (declined due to a date conflict with another workshop)

15. Cosmic Evolution of Quasars: From the First Light to Local Relics, 2019 October 21–25, Beijing, China (declined due to previously arranged travel and work schedule saturation in this time period)

16. Techkriti '20, 2020 March 19–22, Kanpur, India (declined due to work schedule saturation in this time period)

17. The X-ray Universe 2020, 2020 May 25–29, Noordwijk, The Netherlands (declined and meeting canceled owing to COVID-19)

18. Supermassive Black Holes at High Redshift: 44th COSPAR Scientific Assembly, 2022 July 16–24, Athens, Greece (declined due to a date conflict with another work obligation)

19. Techkriti '22, 2022 March 24–27, Kanpur, India (declined due to work schedule saturation in this time period)

20. AGN Santa Fe: Where Are the Objects in AGN Disks?, 2023 March 22–24, Santa Fe, New Mexico (declined due to a date conflict with another conference)

21. Multifrequency Behavior of High-Energy Cosmic Sources—XIV, 2023 June 12–17, Palermo, Italy (declined due to a date conflict with another conference where I had an invited talk)

C. Participation in and Description of Seminars and Workshops

Papers were presented by W.N. Brandt unless otherwise noted.

1. High-Energy Phenomena Near Black Holes, 1993 July 8, Koninki, Poland, Role: Student participant

2. Leicester Workshop on New Results from ROSAT and ASCA, 1995 June 1, Leicester, United Kingdom, Role: Presented a talk on 'An X-ray outburst from Zwicky 159.034'

3. The Seventh Annual New England Regional Quasar/AGN Meeting, 1997 May 22, Haystack Observatory in Westford, Massachusetts, Role: Presented a talk on 'Recent ASCA and ROSAT results on ultrasoft Narrow-Line Seyfert 1 galaxies'

4. The Royal Astronomical Society Specialist Discussion Meeting on Galactic Centers, 1997 October 10, London, United Kingdom, Role: My research on the X-ray properties of the Local Group galaxy IC 10 was presented, presented by M.J. Ward (co-leading author with Ward; *The Observatory*, 118, 62)

5. The Constellation-X Workshop on the High-Redshift X-ray Universe, 2004 December 9, Baltimore, Maryland, Role: Presented a talk on 'X-rays from the highest redshift AGN and prospects for Constellation-X' and worked to determine high-redshift science goals for Constellation-X

6. JANUS Kick-Off Meeting, 2007 October 23, State College, Pennsylvania, Role: Presented a talk on 'X-ray outbursts from galactic nuclei: Rate constraints and JANUS science'

7. Constellation-X Facility Science Team Meeting, 2008 February 21–22, Boulder, Colorado, Role: Presented a talk on 'Exploring the high-redshift X-ray universe with Constellation-X'

8. First Pittsburgh Large Synoptic Survey Telescope Symposium, 2008 April 28, Pittsburgh, Pennsylvania, Role: Presented a talk on 'Active galaxy physics and demography with the Large Synoptic Survey Telescope' and led associated discussion (by videoconference)

9. International X-ray Observatory Facility Science Team Meeting, 2008 August 20–22, Greenbelt, Maryland, Role: Presented a talk on 'Results from the high-redshift science panel of the International X-ray Observatory'

10. The Friday Harbor Labs Science Book Workshop, 2008 December 10–15, Friday Harbor, Washington, Role: Worked on the Science Book for the Large Synoptic Survey Telescope

11. International X-ray Observatory Facility Science Team Meeting, 2009 January 28–29, Cambridge, Massachusetts, Role: Presented a talk on 'The roles of black holes in the high-redshift universe'

12. Baryon Oscillation Spectroscopic Survey (BOSS) Meeting on Quasars and Active Galactic Nuclei, 2011 November 3–5, Princeton, New Jersey, Role: Presented a talk on 'A large-scale investigation of quasar wind variability: Project motivation, overview, and general results'

13. Meeting of the Science and Technology Definition Team for the X-ray Astrophysics Probe, 2013 November 7–8, Greenbelt, Maryland, Role: Presented a talk on 'Exploring the high-redshift X-ray universe with the X-ray probe'

14. Meeting of the NuSTAR Team, 2014 January 27–28, New York, New York, Role: Participated in scientific discussions and planning

15. Meeting of the Pennsylvania State University science faculty, 2014 May 3, University Park, Pennsylvania, Role: Presented an invited talk on 'A good hard look at cosmic supermassive black hole growth'

16. Meeting of the Lynx X-ray Surveyor Science and Technology Definition Team, 2016 July 25–26, Cambridge, Massachusetts, Role: Remotely presented a talk on 'Observing the first accretion light with X-ray Surveyor'

17. Meeting of the LSST Science Advisory Council, 2016 August 15, Tucson, Arizona, Role: Presented a talk on 'The LSST Deep-Drilling Fields: White papers and science council selected fields' and participated in scientific discussions and planning

18. Meeting of the Lynx X-ray Surveyor Science and Technology Definition Team, 2016 November 14–15, Washington, D.C., Role: Presented a talk on 'Observing the first accretion light with X-ray Surveyor' and participated in scientific discussions and planning

19. Meeting of the Lynx X-ray Surveyor Science and Technology Definition Team, 2018 January 24–26, Houston, Texas, Role: Active participant in critical decisions on mission design and cost for the Lynx X-ray Surveyor

20. LSST Transients and Variable Stars Survey Strategy Proposal Preparation Workshop, 2018 June 4–5, Bethlehem, Pennsylvania, Role: Participated in scientific discussions and represented the LSST Science Collaboration on active galactic nuclei

21. WFIRST/LSST Deep Fields Workshop, 2018 August 30–31, Princeton, New Jersey, Role: Led the break-out discussion section on active galactic nuclei and the WFIRST/LSST deep fields

22. LSST Cadence Workshop at the Flatiron Institute, 2018 September 17–19, New York, New York, Role: Worked to plan the LSST cadence; Led a break-out discussion section on cadence requirements for active galactic nuclei in the LSST Deep Drilling Fields

23. SDSS-V Science Festival 2022, 2022 November 2–5, Toronto, Canada, Role: Worked to plan and advance SDSS-V Black Hole Mapper science projects

24. Fourth Shaw-IAU Workshop on Astronomy for Education: Leveraging the Potential of Astronomy in Formal Education, 2022 November 15–17, Online Only, Role: Learned about teaching and outreach approaches in astronomy

D. Speaking Engagements at Universities, Colleges, and National Labs

Talks were presented by W.N. Brandt.

1. 'Galactic foreground removal from noisy cosmic microwave background anisotropy measurements', 1993 November 12, University of Cambridge Institute of Astronomy, Cambridge, United Kingdom

2. 'X-ray absorption in the infrared quasar IRAS 13349+2438', 1995 December 13, Harvard-Smithsonian Center for Astrophysics High Energy Astrophysics Division, Cambridge, Massachusetts

3. 'A dusty ionized absorber in the infrared quasar IRAS 13349+2438', 1996 February 14, Durham University Astronomy Department, Durham, United Kingdom

4. 'The remarkable X-ray properties of two WFC Seyfert galaxies', 1996 February 16, University of Leicester X-ray Astronomy Group, Leicester, United Kingdom

5. 'Recent X-ray results on ultrasoft Narrow-Line Seyfert 1 galaxies', 1996 July 30, Mullard Space Science Laboratory Astrophysics Group (part of University College, London), Dorking, Surrey, United Kingdom

6. 'X-ray spectroscopy and variability studies of ultrasoft Seyfert galaxies', 1997 February 25, Pennsylvania State University Astronomy & Astrophysics Department Colloquium, University Park, Pennsylvania

7. 'Ultrasoft Narrow-Line Seyfert 1 galaxies: Studying an extreme of Seyfert activity', 1997 October 21, University of Texas at Austin Astronomy Department Colloquium, Austin, Texas

8. 'New results on ultrasoft Narrow-Line Seyfert 1 galaxies', 1997 December 8, Goddard Space Flight Center X-ray Astrophysics Branch Colloquium, Greenbelt, Maryland

9. 'X-ray connections to the primary Boroson & Green eigenvector', 1998 January 7, Cambridge University Institute of Astronomy, Cambridge, United Kingdom

10. 'Ultrasoft active galaxies: An extreme of accretion onto supermassive black holes', 1998 October 16, Montana State University Physics Department Colloquium, Bozeman, Montana

11. 'X-ray probes of the black hole regions of ultrasoft Seyferts', 1999 March 5, Carnegie Mellon Astrophysics Group and University of Pittsburgh Astronomy & Astrophysics Group, Pittsburgh, Pennsylvania

12. 'X-ray absorption in radio-quiet QSOs', 1999 November 1, University of Colorado Astronomy Department Colloquium, Boulder, Colorado

13. 'X-ray absorption in Broad Absorption Line QSOs and soft X-ray weak QSOs', 2000 February 8, Princeton University Astronomy Department Colloquium, Princeton, New Jersey

14. 'X-raying the nuclear material of radio-quiet QSOs', 2000 April 17, University of Virginia Astronomy Department Colloquium, Charlottesville, Virginia

15. 'X-ray spectroscopy of active galaxy outflows with Chandra', 2000 September 25, University of Rochester Physics & Astronomy Department Colloquium, Rochester, New York

16. 'X-raying radio-quiet active galaxies with the new generation of X-ray observatories', 2000 December 4, Columbia University Colloquium on the Results of Modern High-Energy Astrophysics, New York, New York

17. 'Grating spectroscopy of Seyfert galaxies with Chandra and XMM-Newton', 2001 January 19, Yale University Astronomy Department Colloquium, New Haven, Connecticut

18. 'New results from the Chandra Deep Field-North Survey', 2001 July 31, Goddard Space Flight Center X-ray Astrophysics Branch Colloquium, Greenbelt, Maryland

19. 'The Chandra Deep Field-North Survey', 2001 November 8, Steward Observatory and National Optical Astronomy Observatory Joint Colloquium, Tucson, Arizona

20. 'The Chandra Deep Field-North Survey', 2002 February 6, Space Telescope Science Institute Colloquium, Baltimore, Maryland

21. 'The Chandra Deep Field-North Survey', 2002 February 18, Oxford University Department of Astrophysics, Oxford, United Kingdom

22. 'X-ray observations of the highest redshift quasars', 2002 May 3, Johns Hopkins University and Space Telescope Science Institute Starburst Journal Club, Baltimore, Maryland

23. 'The Chandra Deep Field-North survey: Implications for active galaxy evolution', 2003 April 14, Canadian Institute for Theoretical Astrophysics Colloquium, Toronto, Canada

24. 'The Chandra Deep Field-North survey', 2003 April 28, Boston University Department of Astronomy, Boston, Massachusetts

25. 'Results from the Chandra Deep Field-North', 2003 October 9, Ohio State University Department of Astronomy, Columbus, Ohio

26. 'X-rays from the first supermassive black holes: Current status and future prospects', 2004 April 14, Goddard Space Flight Center X-ray Astrophysics Branch Colloquium, Greenbelt, Maryland

27. 'X-rays from the first massive black holes', 2004 October 21, University of Kentucky Astronomy Group, Lexington, Kentucky

28. 'Deep extragalactic surveys with Chandra and XMM-Newton: Keyhole views of the distant X-ray universe', 2004 October 22, University of Kentucky Department of Physics & Astronomy, Lexington, Kentucky

29. 'X-rays from the first massive black holes', 2004 October 27, University of Michigan Astronomy Group, Ann Arbor, Michigan

30. 'Deep extragalactic surveys with Chandra and XMM-Newton: Keyhole views of the distant X-ray universe', 2004 October 27, University of Michigan Department of Physics, Ann Arbor, Michigan

31. 'Deep extragalactic surveys with Chandra and XMM-Newton: Keyhole views of the distant X-ray universe', 2005 January 17, University of British Columbia Department of Physics & Astronomy, Vancouver, Canada

32. 'Deep extragalactic surveys with Chandra and XMM-Newton: Keyhole views of the distant X-ray universe', 2005 January 18, The Herzberg Institute of Astrophysics, Victoria, Canada

33. 'Deep extragalactic surveys with Chandra and XMM-Newton: Keyhole views of the distant X-ray universe', 2005 February 1, The Institute for Advanced Study Astrophysics Group, Princeton, New Jersey

34. 'Deep extragalactic surveys with Chandra and XMM-Newton: Keyhole views of the distant X-ray universe', 2005 March 30, The California Institute of Technology Department of Astronomy, Pasadena, California

35. 'X-raying active galaxies in the high-redshift universe: Results from snapshot and deep surveys', 2005 September 6, University of Texas at Austin Astronomy Department Colloquium, Austin, Texas

36. 'X-raying active galaxies in the high-redshift universe: Results from snapshot and deep surveys', 2005 September 29, Yale University Astronomy Department Colloquium, New Haven, Connecticut

37. 'X-raying active galaxies in the high-redshift universe: Results from snapshot and deep surveys', 2005 December 6, NASA Jet Propulsion Laboratory Astrophysics Group Colloquium, Pasadena, California

38. 'First results from the Extended Chandra Deep Field-South survey', 2006 March 28, Columbia University Astronomy Department Lunchtime Colloquium, New York, New York

39. 'Adventuring through the distant X-ray universe: Recent results from the Chandra Deep Field surveys', 2006 November 9, Harvard-Smithsonian Center for Astrophysics Colloquium, Cambridge, Massachusetts

40. 'Adventuring through the distant X-ray universe: Recent results from the Chandra Deep Field surveys', 2007 November 1, University of Michigan Department of Astronomy, Ann Arbor, Michigan

41. 'From galaxies to the Universe: A rich and evolving tapestry of cosmic structure', 2007 November 2, University of Michigan Distinguished Public Lecture, Ann Arbor, Michigan

42. 'Adventuring through the distant X-ray universe: Recent results from the Chandra Deep Field surveys', 2008 January 17, Stanford University, The Kavli Institute for Particle Astrophysics and Cosmology, and The Stanford Linear Accelerator Center, Menlo Park, California

43. 'Adventuring through the distant X-ray universe: Recent results from the Chandra Deep Field surveys', 2008 August 29, Swift Mission Operations Center, University Park, Pennsylvania

44. 'Adventuring through the distant X-ray universe: Recent results from the Chandra Deep Field surveys', 2008 October 17, St. Mary's University Department of Astronomy & Physics Colloquium, Halifax, Canada

45. 'Recent results from the deepest cosmological X-ray surveys: Adventuring through the distant X-ray universe', 2008 November 3, Pennsylvania State University—Institute for Gravitation and the Cosmos, University Park, Pennsylvania

46. 'Recent results from the deepest Chandra surveys: Adventuring through the distant X-ray universe', 2008 November 20, Munich Joint Astronomy Colloquium (MPA, MPE, ESO, Univ. Obs.), Garching, Germany

47. 'Recent results from the deepest Chandra surveys: Adventuring through the distant X-ray universe', 2009 January 27, York University Department of Physics & Astronomy Colloquium, Toronto, Canada

48. 'Recent results from the deepest Chandra surveys: Adventuring through the distant X-ray universe', 2009 March 26, Carroll College Department of Physics & Mathematics Seminar, Helena, Montana

49. 'Black-hole ecology in the distant universe', 2010 January 7, University of Leicester Department of Physics & Astronomy, Leicester, United Kingdom

50. 'A decade of extragalactic surveys with Chandra and XMM-Newton: The demography, physics, and ecology of growing supermassive black holes', 2010 January 20, Pennsylvania State University Department of Astronomy & Astrophysics, University Park, Pennsylvania

51. 'Surveys of supermassive black holes with the Chandra X-ray Observatory', 2010 April 29, Union College Department of Physics & Astronomy, Schenectady, New York

52. 'Black-hole ecology in the distant universe', 2010 September 24, University of Pittsburgh Department of Physics & Astronomy, Pittsburgh, Pennsylvania

53. 'Surveys of supermassive black holes with the Chandra X-ray Observatory', 2011 March 29, Youngstown State University Department of Physics & Astronomy, Youngstown, Ohio

54. 'A decade of ultradeep Chandra surveys: Active galaxy demography, physics, and ecology in the distant universe', 2011 March 30, Ohio University Department of Physics & Astronomy, Athens, Ohio

55. 'A decade of ultradeep Chandra surveys: Active galaxy demography, physics, and ecology in the distant universe', 2011 March 31, Ohio State University Department of Astronomy, Columbus, Ohio

56. 'A remarkable population of X-ray weak quasars: The PHL 1811 analogs', 2011 April 18, Harvard-Smithsonian Center for Astrophysics active galaxies group, Cambridge, Massachusetts

57. 'A decade of ultradeep Chandra surveys: Active galaxy demography, physics, and ecology in the distant universe', 2011 May 19, University of Washington Department of Astronomy, Seattle, Washington

58. 'Active galaxies over cosmic time: The demography, physics, and ecology of growing supermassive black holes as revealed by X-ray surveys', 2011 September 19, Pennsylvania State University—Institute for Gravitation and the Cosmos, University Park, Pennsylvania

59. 'Active galaxy demography, physics, and ecology in the distant universe: A dozen years of progress with ultradeep Chandra surveys', 2011 September 27, Goddard Space Flight Center Astrophysics Science Division, Greenbelt, Maryland

60. 'A good hard look at cosmic supermassive black hole growth', 2012 April 13, Goddard Space Flight Center—Goddard Scientific Colloquium, Greenbelt, Maryland

61. 'New probes of quasar winds: Multi-year variability, redshifted troughs, and hard X-ray spectroscopy of broad absorption line quasars', 2013 October 15, Carnegie Observatories, Pasadena, California

62. 'New probes of quasar winds: Multi-year variability, redshifted troughs, and hard X-ray spectroscopy of broad absorption line quasars', 2013 October 17, NASA Jet Propulsion Laboratory Astrophysics Group Colloquium, Pasadena, California

63. 'New probes of quasar winds: Multi-year variability, redshifted troughs, and hard X-ray spectroscopy of broad absorption line quasars', 2014 April 10, University of Western Ontario Department of Physics & Astronomy, London, Canada

64. 'New probes of quasar winds: Multi-year variability, redshifted troughs, and hard X-ray spectroscopy of broad absorption line quasars', 2014 April 11, University of Toronto Department of Astronomy & Astrophysics, Toronto, Canada

65. 'New probes of quasar winds: Multi-year variability and hard X-ray spectroscopy of broad absorption line quasars', 2014 May 21, University of California at Santa Cruz Department of Astronomy & Astrophysics, Santa Cruz, California

66. 'A good hard look at cosmic supermassive black hole growth', 2014 September 11, University of North Texas Department of Physics, Denton, Texas

67. 'A good hard look at cosmic supermassive black hole growth', 2014 September 26, University of Maine Department of Physics & Astronomy, Orono, Maine

68. 'A good hard look at cosmic supermassive black hole growth', 2014 October 16, Pennsylvania State University Department of Physics, University Park, Pennsylvania

69. 'Exceptional X-ray weak quasars and their implications for accretion flows, broad line regions, and winds', 2015 April 13, Goddard Space Flight Center, Greenbelt, Maryland

70. 'Exceptional X-ray weak quasars and their implications for accretion flows, broad line regions, and winds', 2015 May 20, The California Institute of Technology Department of Astronomy, Pasadena, California

71. 'Exceptional X-ray weak quasars and their implications for accretion flows, broad line regions, and winds', 2015 May 28, NASA Jet Propulsion Laboratory Astrophysics Group Colloquium, Pasadena, California

72. 'Exceptional X-ray weak quasars: Implications for accretion flows, broad line regions, and winds', 2015 July 9, Anton Pannekoek Institute for Astronomy, Amsterdam, The Netherlands

73. 'Exceptional X-ray weak quasars: Implications for accretion flows and emission lines', 2015 July 10, Leiden Observatory, Leiden, The Netherlands

74. 'Exceptional X-ray weak quasars: Implications for accretion flows, broad line regions, and winds', 2015 September 23, Pennsylvania State University Department of Astronomy & Astrophysics, University Park, Pennsylvania

75. 'Exceptional X-ray weak quasars: Implications for accretion flows, winds, and broad line regions', 2016 March 31, Columbia University Department of Astronomy, New York, New York

76. 'Exceptional X-ray weak quasars: Implications for accretion flows, winds, and broad line regions', 2016 April 1, American Museum of Natural History, New York, New York

77. 'A good hard look at cosmic supermassive black hole growth', 2016 April 15, University of Utah, Salt Lake City, Utah

78. 'Exceptional X-ray weak quasars: Implications for accretion flows, winds, and broad line regions', 2016 April 22, University of Nevada Las Vegas, Las Vegas, Nevada

79. 'A good hard look at cosmic supermassive black hole growth', 2016 April 22, University of Nevada Las Vegas, Las Vegas, Nevada

80. 'A good hard look at cosmic supermassive black hole growth: First results from the 7 Ms Chandra Deep Field-South survey', 2016 October 19, National Astronomical Observatories of the Chinese Academy of Sciences (NAOC), Beijing, China

81. 'A good hard look at cosmic supermassive black hole growth: First results from the 7 Ms Chandra Deep Field-South survey', 2016 October 20, The Kavli Institute for Astronomy and Astrophysics at Peking University, Beijing, China

82. 'A good hard look at cosmic supermassive black hole growth: First results from the 7 Ms Chandra Deep Field-South survey', 2016 October 21, The Institute of High-Energy Physics of the Chinese Academy of Sciences (IHEP), Beijing, China

83. 'A good hard look at cosmic supermassive black hole growth: First results from the 7 Ms Chandra Deep Field-South survey', 2016 October 27, School of Astronomy and Space Science at Nanjing University, Nanjing, China

84. 'A good hard look at cosmic supermassive black hole growth: First results from the 7 Ms Chandra Deep Field-South survey', 2016 October 28, Department of Astronomy at the University of Science and Technology of China (USTC), Hefei, China

85. 'X-raying weak-line quasars: Implications for accretion flows, winds, and broad line regions', 2016 December 2, Washington University in St. Louis, St. Louis, Missouri

86. 'A good hard look at cosmic supermassive black hole growth: First results from the 7 Ms Chandra Deep Field-South survey', 2016 December 2, Washington University in St. Louis, St. Louis, Missouri

87. 'Supermassive black hole studies with the Large Synoptic Survey Telescope (LSST)', 2016 December 8, Remote colloquium given to 20 astronomers at Brazilian universities and national observatories on behalf of the LSST Science Collaborations

88. 'A good hard look at cosmic supermassive black hole growth', 2017 May 21, Tel Aviv University, Tel Aviv, Israel

89. 'A good hard look at cosmic supermassive black hole growth', 2017 September 27, University of Cambridge Institute of Astronomy, Cambridge, United Kingdom

90. 'Cosmic black-hole growth is mainly linked to stellar mass', 2017 December 11, Pontificia Universidad Católica de Chile, Santiago, Chile

91. 'A good hard look at cosmic supermassive black hole growth', 2018 January 31, University of Maryland, College Park, Maryland

92. 'A good hard look at cosmic supermassive black hole growth', 2018 February 2, George Mason University, Fairfax, Virginia

93. 'Galaxy stellar mass and the drivers of cosmic black hole growth', 2018 February 23, Princeton University—LSST and Hyper Suprime-Cam Group, Princeton, New Jersey

94. 'Supermassive black hole studies with the Large Synoptic Survey Telescope (LSST)', 2018 May 3, Remote colloquium given to the Brazilian Inter-institutional Laboratory for e-Astronomy (LIneA); about 25 Brazilian astronomers attended

95. 'A good hard look at cosmic supermassive black hole growth', 2019 January 8, Shanghai Astronomical Observatory, Shanghai, China

96. 'A good hard look at cosmic supermassive black hole growth', 2019 January 9, Shanghai Jiao Tong University, Shanghai, China

97. 'A good hard look at cosmic supermassive black hole growth', 2019 January 11, Xiamen University, Xiamen, China

98. 'A good hard look at cosmic supermassive black hole growth', 2019 April 18, Cornell University, Ithaca, New York

99. 'The Rubin Observatory LSST and high-redshift quasars', 2020 May 27, Stanford University—The Kavli Institute for Particle Astrophysics and Cosmology LSST Early Science Group, Menlo Park, California (presented remotely owing to COVID-19)

100. 'A good hard look at cosmic supermassive black hole growth', 2020 August 27, University of Kentucky, Lexington, Kentucky (presented remotely owing to COVID-19)

101. 'A good hard look at cosmic supermassive black hole growth', 2020 November 4, Durham University, Durham, United Kingdom (presented remotely owing to COVID-19)

102. 'A good hard look at cosmic supermassive black hole growth', 2021 August 30, Texas A&M University, College Station, Texas (presented remotely owing to COVID-19)

103. 'A good hard look at cosmic supermassive black hole growth', 2022 January 19, Pennsylvania State University Department of Astronomy & Astrophysics, University Park, Pennsylvania (presented remotely owing to COVID-19)

104. 'A good hard look at cosmic supermassive black hole growth', 2022 March 17, The Brazilian Inter-institutional Laboratory for e-Astronomy (LIneA) (presented remotely owing to COVID-19)

105. 'New discoveries from the Chandra Deep Field-South and XMM-SERVS surveys', 2022 December 14, Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil (presented remotely)

E. Projects, Grants, Commissions, and Contracts

Please contact me directly if this information is needed.

F. Citation Information

- Current total number of citations, considering only refereed papers, is about 67,000. This is the second highest for the tenure-line faculty of the Department.
- Citation rate of about 5,300 yr^{-1}.
- Hirsch index of $h = 126$.

G. Professional Societies and Major Collaborations

- European Astronomical Society, 2019–present
- Participant in the Sloan Digital Sky Survey-V, 2017–present
- Lead Scientist for Penn State participation in the Sloan Digital Sky Survey-IV, 2012–2020
- Chair of the Interest Group on Deep Drilling Fields for the Large Synoptic Survey Telescope, 2010–2013
- Penn State Institute for Gravitation and the Cosmos, 2009–present
- Science Topical Team member for the Nuclear Spectroscopic Telescope Array, 2008–present
- Science Definition Team member for the International X-ray Observatory, 2008–2011
- Chair of the Science Panel on the High-Redshift Universe for the Constellation-X X-ray satellite, 2007–2008
- Chair or Co-Chair of the Science Collaboration on Active Galaxies for the Large Synoptic Survey Telescope, 2006–present

- American Association for the Advancement of Science (Fellow), 2005–present
- American Physical Society (Fellow), 2005–present
- International Astronomical Union, 2003–present
- Swift Gamma-Ray Burst Explorer Associated Scientist, 1999–present
- Chandra Advanced CCD Imaging Spectrometer (ACIS) team, 1997–present
- Royal Astronomical Society, 1997–present
- American Astronomical Society, 1996–present
- Sigma Xi, 1991–present
- Tau Beta Pi, 1991–present
- Cum Laude Society, 1988–present

H. Awards for Scholarship and Professional Activity

- American Astronomical Society Fellowship, 2020
- American Association for the Advancement of Science Fellowship, 2019
- NASA Group Achievement Award to the Lynx X-ray Surveyor Mission Study Team, 2019
- NASA Group Achievement Award to the NuSTAR Extragalactic Survey Team, 2017
- Bruno Rossi Prize of the High-Energy Astrophysics Division of the American Astronomical Society, 2016
- NASA Group Achievement Award to the NuSTAR Science Team, 2014
- Thomson Reuters (formerly ISI) Highly Cited Researcher in Space Science, 2007, 2014, 2015, and 2016
- American Physical Society Fellowship, 2009
- Newton Lacy Pierce Prize of the American Astronomical Society, 2004
- NSF Faculty Early Career Development (CAREER) Award, 2000–2007
- Alfred P. Sloan Research Fellowship, 1999–2004
- NSF Graduate Research Fellowship, 1994–1996
- Cambridge University Isaac Newton Studentship, 1992–1993
- American Physical Society LeRoy Apker Award finalist, 1992
- Caltech George Green Prize for Creative Scholarship, 1992
- Barry Goldwater Merit Scholarship, 1990–1992
- Caltech Carnation Merit Awards, 1989–1990, 1990–1991, 1991–1992

The Scholarship of Teaching and Learning

Courses Taught in Resident Instruction

Course Number and Title	Semester/Year	Enrollment	Credits
Astro 001: The Astronomical Universe	Spring/98	371	3
Astro 485: Introduction to High-Energy Astronomy	Fall/98	15	3
Astro 001: The Astronomical Universe	Spring/99	370	3
Astro 496: Independent Studies	Spring/99	1	1
Astro 597A: X-ray Investigations of Active Galaxies	Fall/99	11	1
Astro 496: Independent Studies	Fall/99	1	1
Astro 550: High-Energy Astrophysics	Spring/00	7	3
Astro 496: Independent Studies	Spring/00	1	1
Astro 597B: Inservice Workshops in Astronomy	Summer/00	18	2
Astro 485: Introduction to High-Energy Astronomy	Fall/00	13	3
Astro 496: Independent Studies	Fall/00	1	3
Astro 496: Independent Studies	Spring/01	1	3
Astro 597B: Inservice Workshops in Astronomy	Summer/01	12	2
Astro 197A: Black Holes in the Universe	Fall/01	24	3
Astro 597B: Inservice Workshops in Astronomy	Summer/02	18	2
Astro 001: The Astronomical Universe	Fall/02	369	3
Astro 197A: Black Holes in the Universe	Spring/03	31	3
Astro 597B: Inservice Workshops in Astronomy	Summer/03	9	2
Astro 485: Introduction to High-Energy Astronomy	Fall/03	15	3
Astro 597B: Inservice Workshops in Astronomy	Summer/04	10	2
Astro 597A: X-ray Investigations of Active Galaxies	Fall/04	10	3
Astro 130: Black Holes in the Universe	Spring/05	29	3
Astro 597B: Inservice Workshops in Astronomy	Summer/05	9	2
Astro 485: Introduction to High-Energy Astronomy	Fall/05	20	3
Astro 597B: Inservice Workshops in Astronomy	Summer/06	17	2
Astro 550: High-Energy Astrophysics	Fall/06	8	3
Astro 130: Black Holes in the Universe	Spring/07	70	3
Astro 597B: Inservice Workshops in Astronomy	Summer/07	10	2
Astro 485: Introduction to High-Energy Astronomy	Fall/07	18	3
Astro 897D: Inservice Workshops in Astronomy	Summer/08	21	2
Astro 550: High-Energy Astrophysics	Fall/08	5	3
Astro 130: Black Holes in the Universe	Spring/09	41	3
Astro 897D: Inservice Workshops in Astronomy	Summer/09	21	2
Astro 485: Introduction to High-Energy Astronomy	Fall/09	10	3

Continued. . .

Course Number and Title	Semester/Year	Enrollment	Credits
Astro 897D: Inservice Workshops in Astronomy	Summer/10	22	2
Astro 550: High-Energy Astrophysics	Fall/10	9	3
Astro 130: Black Holes in the Universe	Spring/11	44	3
Astro 897D: Inservice Workshops in Astronomy	Summer/11	19	2
Astro 485: Introduction to High-Energy Astronomy	Fall/11	5	3
Astro 897D: Inservice Workshops in Astronomy	Summer/12	20	2
Astro 550: High-Energy Astrophysics	Fall/12	6	3
Astro 130: Black Holes in the Universe	Spring/13	37	3
Astro 897D: Inservice Workshops in Astronomy	Summer/13	17	2
Astro 485: Introduction to High-Energy Astronomy	Fall/13	13	3
Astro 897D: Inservice Workshops in Astronomy	Summer/14	18	2
Astro 130: Black Holes in the Universe	Fall/14	32	3
Astro 550: High-Energy Astrophysics	Spring/15	4	3
Inservice Workshops in Astronomy	Summer/15	18	1⋆
Astro 485: Introduction to High-Energy Astronomy	Fall/15	13	3
Astro 897A: Inservice Workshops in Astronomy	Summer/16	10	2
Astro 550: High-Energy Astrophysics	Fall/16	8	3
Astro 130: Black Holes in the Universe	Spring/17	36	3
Astro 897B: Inservice Workshops in Astronomy	Summer/17	12	2
Astro 485: Introduction to High-Energy Astronomy	Fall/17	15	3
Astro 130: Black Holes in the Universe	Spring/18	42	3
Inservice Workshops in Astronomy	Summer/18	14	1⋆
Astro 550: High-Energy Astrophysics	Fall/18	3	3
Astro 589: Seminar in Current Astronomical Research	Fall/18	5	1
Inservice Workshops in Astronomy	Summer/19	10	1⋆
Astro 485: Introduction to High-Energy Astronomy	Fall/19	27	3
Astro 130: Black Holes in the Universe	Spring/20	31	3
Astro 550: High-Energy Astrophysics	Fall/20	3	3
Astro 130: Black Holes in the Universe	Spring/21	33	3
Astro 485: Introduction to High-Energy Astronomy	Fall/21	17	3
Inservice Workshops in Astronomy	Summer/22	16	1⋆
Astro 550: High-Energy Astrophysics	Fall/22	10	3
Astro 130: Black Holes in the Universe	Spring/23	30	3

⋆ For 2015 and for 2018 onward, the Inservice Workshops in Astronomy provided 30 hours of Pennsylvania Act 48 credit, which is the equivalent of a 1-credit course at Penn State (the Pennsylvania Department of Education does not count the time participants spend doing pre-course reading and other work toward the total number of hours).

Undergraduate Advising

Semesters	Name	Status After Graduation
Fall 97–Fall 98	Shan Chih Hu	Transferred to Liberal Arts
Fall 97–Spring 01	Paul de Naray	Graduated and hired at Lockheed Martin
Fall 97–Spring 98	Brian Dewhurst	Transferred to University of Virginia
Fall 97–Spring 00	Matthew Ward	Graduated and hired at Unisys on telecommunications
Fall 98–Fall 99	Thomas Collins	Transferred to Meteorology
Fall 98–Fall 99	Eve Locastro	Transferred to Barnard College
Fall 98–Fall 99	Paul Weber	Withdrew from the University
Fall 99–Spring 01	Matthew Collinge	Ph.D. student at Princeton University (honors)
Fall 99–Fall 00	Theresa Diehl	Transferred to Geosciences (honors)
Fall 99–Fall 04	Thomas Hickey	Graduated and hired by a NASA contractor
Fall 00–Spring 02	Nicholas Bond	Ph.D. student at Princeton University (honors)
Fall 00–Spring 04	Joseph Masiero	Ph.D. student at University of Hawaii (honors)
Fall 00–Spring 02	Stephanie Zonak	Ph.D. student at University of Maryland (honors)
Spring 01–Spring 04	Matthew Tibbits	Graduated and hired by Penn State Physics (honors)
Fall 01–Spring 04	Stephen Bongiorno	Ph.D. student at the Pennsylvania State University (honors)
Fall 01–Spring 02	Timothy Reichert	Ph.D. student at Johns Hopkins University (honors)
Fall 01–Spring 04	Eric Rotthoff	Graduated and hired by Raytheon (honors)
Fall 01–Spring 04	Jonathan Trump	Ph.D. student at University of Arizona (honors)
Fall 02–Summer 03	James Gaffney	Ph.D. student at University of Colorado (honors)
Fall 02–Spring 03	Sean McWilliams	Ph.D. student at University of Maryland (honors)
Spring 04–Fall 06	Ezra Lee	Ph.D. student at University of California, Irvine (honors)
Spring 04–Fall 04	Jesse Pankyo	Withdrew for medical reasons (honors)
Fall 04–Spring 08	Vincent Viscomi	Ph.D. student at University of California, Berkeley (honors)
Spring 05–Spring 07	Dennis Just	Ph.D. student at University of Arizona (honors)
Fall 05–Spring 09	Timothy Bunting	Graduated and hired by Cutting Edge Installations, LLC
Fall 05–Fall 06	Harrison Zeff	Transferred to Civil Engineering (honors)
Fall 06–Spring 07	John Cybulski	Graduated and hired by Penn State Astronomy (honors)
Fall 06–Spring 07	Jessica Hart	Ph.D. student at University of Michigan
Fall 06–Spring 09	Jason Hwang	Ph.D. student at Northwestern University (honors)
Fall 06–Spring 09	Therese Jones	Ph.D. student at University of California, Berkeley (honors)
Fall 09–Spring 12	Patrick Breysse	Ph.D. student at Johns Hopkins University (honors)
Fall 10–Spring 11	Joshua Fixelle	Transferred to Aerospace Engineering (honors)
Fall 10–Fall 12	Eunkyu Han	Graduated and hired by Penn State A&A (honors)
Fall 11–Spring 15	Peter Hohman	Graduated and hired by Erie Insurance (honors)
Fall 11–Spring 15	Zoe Todd	Ph.D. student at Harvard University (honors)

Continued...

Semesters	Name	Status After Graduation
Fall 13–Fall 14	Cecilia McGough	CEO of Students with Schizophrenia (honors)
Summer 15–Spring 18	Michael Toomey	Ph.D. student at Brown University (honors)
Fall 16–Spring 20	Jack Mo	Ph.D. student at the University of Florida (honors)
Spring 17–Spring 18	George Filippatos	Ph.D. student at Colorado School of Mines (honors)
Fall 17–Spring 21	Cullen Abelson	Ph.D. student at Purdue University (honors)
Fall 17–Spring 21	Collin Heckman	Graduated; moved to industry (honors)
Fall 17–Summer 19	Teresa Matte-Ramsdell	Transferred to Liberal Arts (honors)
Fall 17–Spring 21	Laurel Weiss	Ph.D. student at University of Texas, Austin (honors)
Fall 19–Spring 22	Fredric Hancock	Plans to get Ph.D. after gap year (honors)
Fall 19–present	Erica Heller	Transferred to Physics (honors)
Fall 19–present	Shengdi You	Junior (honors)
Fall 20–Spring 22	Thomas Nguyen	Graduated; moved to Applied Research Lab (honors)
Fall 21–present	Angelina Estadt	Sophomore (honors)
Fall 21–present	Evan Jennerjahn	Senior (honors)
Fall 22–present	Madison Gillner	Freshman (honors)
Fall 22–present	Luke Royer	Freshman (honors)

First-and-Second Year Graduate Academic Advising

Semesters	Name	Status
Fall 98–Fall 99	Xinyu Dai	Graduated with Ph.D.
Fall 99–Fall 00	John Debes	Graduated with Ph.D.
Fall 01–Fall 02	Avi Mandell	Graduated with Ph.D.
Fall 03–Fall 04	Emily Alicea-Muñoz	Graduated with M.S.
Fall 05–Fall 07	Michael Stroh	Graduated with M.S.
Fall 08–Fall 10	Sharon Xuesong Wang	Graduated with Ph.D.
Fall 09–Fall 10	Nurten Filiz Ak	Graduated with Ph.D.
Fall 12–Fall 14	A.I. Malz	Graduated with M.S.
Fall 15–Fall 17	Samuel Hull	Graduated with Ph.D.
Fall 17–Fall 19	Christian Gilbertson	Graduate student
Fall 21–present	Lukas Stone	Graduate student

Graduate Mentoring

Semesters	Name
Fall 20–Fall 21	Will Bowman
Fall 20–present	Mark Wells

Student Evaluations of Teaching

Summary of Student Ratings of Teaching Effectiveness

Course/ Section	Sem./ Year	Enrollment/ Elective %	Number of Respondents	Overall Quality of the Course⋆	Overall Quality of the Instructor⋆
Astro 001/1	Spring/98	371/100%	210 (57%)	5.34	5.75
Astro 485	Fall/98	15/100%	12 (80%)	5.75	5.92
Astro 001/1	Spring/99	370/100%	208 (57%)	5.35	5.66
Astro 496	Spring/99	1/100%	0 (0%)	···	···
Astro 597A	Fall/99	11/75%	8 (73%)	5.50	5.88
Astro 496	Fall/99	1/100%	0 (0%)	···	···
Astro 550	Spring/00	7/100%	7 (100%)	5.57	5.43
Astro 496	Spring/00	1/100%	0 (0%)	···	···
Astro 597B	Summer/00	18/100%	0 (0%)	···	···
Astro 485	Fall/00	13/100%	7 (54%)	6.14	6.14
Astro 496	Fall/00	1/100%	0 (0%)	···	···
Astro 496	Spring/01	1/100%	0 (0%)	···	···
Astro 597B	Summer/01	12/100%	0 (0%)	···	···
Astro 197A	Fall/01	24/100%	11 (46%)	6.27	6.27
Astro 597B	Summer/02	17/100%	0 (0%)	···	···
Astro 001/3	Fall/02	369/100%	184 (50%)	5.05	5.54
Astro 197A	Spring/03	31/100%	18 (58%)	5.72	6.11
Astro 597B	Summer/03	9/100%	0 (0%)	···	···
Astro 485	Fall/03	15/100%	13 (87%)	5.92	6.23
Astro 597B	Summer/04	10/100%	0 (0%)	···	···
Astro 597A	Fall/04	10/50%	9 (90%)	6.11	6.44
Astro 130	Spring/05	29/80%	22 (76%)	5.40	5.87
Astro 597B	Summer/05	9/100%	0 (0%)	···	···
Astro 485	Fall/05	20/100%	19 (95%)	5.53	5.16
Astro 597B	Summer/06	17/100%	0 (0%)	···	···
Astro 550	Fall/06	8/100%	8 (100%)	6.25	6.25
Astro 130	Spring/07	70/100%	56 (80%)	5.80	5.86
Astro 597B	Summer/07	10/100%	0 (0%)	···	···
Astro 485	Fall/07	18/100%	15 (83%)	5.87	5.60
Astro 897D	Summer/08	21/100%	0 (0%)	···	···
Astro 550	Fall/08	5/100%	5 (100%)	5.40	5.40
Astro 130	Spring/09	41/100%	23 (56%)	5.52	5.61
Astro 897D	Summer/09	21/100%	0 (0%)	···	···
Astro 485	Fall/09	10/100%	6 (60%)	5.33	5.33

Continued...

Course/ Section	Sem./ Year	Enrollment/ Elective %	Number of Respondents	Overall Quality of the Course⋆	Overall Quality of the Instructor⋆
Astro 897D	Summer/10	22/100%	0 (0%)	···	···
Astro 550	Fall/10	9/100%	7 (78%)	6.67	6.50
Astro 130	Spring/11	44/67%	22 (50%)	5.86	5.38
Astro 897D	Summer/11	19/100%	0 (0%)	···	···
Astro 485	Fall/11	5/100%	4 (80%)	6.75	6.25
Astro 897D	Summer/12	20/100%	0 (0%)	···	···
Astro 550	Fall/12	6/100%	4 (67%)	6.00	6.00
Astro 130	Spring/13	37/83%	16 (43%)	5.25	5.31
Astro 897D	Summer/13	17/100%	0 (0%)	···	···
Astro 485	Fall/13	13/100%	10 (77%)	6.10	6.20
Astro 897D	Summer/14	18/100%	18 (100%)	6.83	6.94
Astro 130	Fall/14	32/75%	12 (36%)	6.33	5.67
Astro 550	Spring/15	4/100%	1 (25%)†	···	···
Inserv Wrkshp	Summer/15	18/100%	18 (100%)	6.72	6.72
Astro 485	Fall/15	13/100%	6 (46%)	5.17	4.67
Astro 897A	Summer/16	10/100%	10 (100%)	6.80	6.90
Astro 550	Fall/16	8/100%	5 (63%)	6.20	6.20
Astro 130	Spring/17	36/100%	14 (39%)	6.29	6.43
Astro 897B	Summer/17	12/100%	12 (100%)	6.83	6.92
Astro 485	Fall/17	15/100%	5 (33%)	5.60	5.60
Astro 130	Spring/18	42/100%	8 (19%)	6.13	5.75
Inserv Wrkshp	Summer/18	14/100%	13 (93%)	6.76	6.76
Astro 550	Fall/18	3/100%	2 (67%)	6.50	6.00
Astro 589	Fall/18	5/100%	2 (40%)	7.00	7.00
Inserv Wrkshp	Summer/19	10/100%	10 (100%)	6.80	6.60
Astro 485	Fall/19	27/100%	14 (52%)	4.64	4.29
Astro 130	Spring/20	31/100%	...†	···	···
Astro 550	Fall/20	3/100%	3 (100%)	7	7
Astro 130	Spring/21	33/100%	6 (18%)	7	7
Astro 485	Fall/21	17/100%	5 (29%)	6	6
Inserv Wrkshp	Summer/22	16/100%	16 (100%)	7	7
Astro 550	Fall/22	10/100%	2 (20%)	6.5	6.5
Astro 130	Spring/23	30/100%	TBD	TBD	TBD

⋆ Mean SRTE score for semesters before Fall/20. For Fall/20 onward, the median SRTE score is given. Scores range from 0–7 with 7 being the highest.

† For Spring/15, statistically meaningful mean SRTE scores could not be reported owing to the small number of respondents (as per instructions from Dr. Blannie Bowen, Vice Provost

for Academic Affairs). For Spring/20, SRTE scores could not be reported owing to the sudden mid-semester interruption of in-person teaching by the COVID-19 pandemic.

Supervision of Graduate and Undergraduate Research

Graduate Research Supervised

1. John Feldmeier, 'Heavy and Complex X-ray Absorption Toward the Nucleus of the Seyfert 1.5 Galaxy Markarian 6', Spring 98. Research results published in *The Astrophysical Journal*, 510, 167–177 (1999). Won a National Science Foundation Astronomy & Astrophysics Postdoctoral Fellowship in 2003 at NOAO. Now a professor at Youngstown State University.

2. Sarah Gallagher, 'The View Through the Wind: X-ray Observations of Broad Absorption Line Quasi-Stellar Objects', Summer 98 to Spring 02. Ph.D. thesis successfully defended and multiple publications completed. Multiple job offers upon graduation; accepted a postdoctoral research position at the Massachusetts Institute of Technology with C.R. Canizares. Won a *Spitzer* Fellowship at UCLA. Now a professor at the University of Western Ontario. Named the first Science Advisor to the Canadian Space Agency in 2018. Named the director of Western's Institute for Earth and Space Exploration (Western Space) in 2021.

3. Ann Hornschemeier, '*Chandra* X-ray Constraints on Normal and Starburst Galaxies at Cosmologically Interesting Distances', Fall 99 to Spring 02. Ph.D. thesis successfully defended and multiple publications completed. Multiple job offers upon graduation and won a *Chandra* Fellowship; accepted a *Chandra* Fellowship at Johns Hopkins University. Now at Goddard Space Flight Center as a civil-servant astrophysicist. Won the Annie J. Cannon Award of the American Astronomical Society in 2007. Served as Chief Scientist for NASA's Physics of the Cosmos Program from 2011–2017. Won the Outstanding Science Alumni Award of the Eberly College of Science Alumni Society in 2014. Named X-ray Astrophysics Laboratory Chief in 2018.

4. Junfeng Wang, 'Long-Term X-ray Variability of Circinus X-1 as Observed by the *RXTE* All-Sky Monitor', Spring 02. Was a postdoctoral research associate at the Harvard-Smithsonian Center for Astrophysics and a research assistant professor at Northwestern University. Now a professor at Xiamen University.

5. Bret Lehmer, 'Characterizing the X-ray Properties and Evolution of Distant Galaxies Using Deep Extragalactic Surveys', Summer 02 to Summer 07. Won the 2007 Downsborough Graduate Fellowship in Astrophysics. Ph.D. thesis successfully defended and multiple publications completed. Multiple job offers upon graduation and won a U.K. Science and Technology Facilities Council (STFC) Fellowship; accepted an STFC Fellowship at Durham University. Won an Einstein Fellowship at Johns Hopkins University and Goddard Space Flight Center. Was a research associate at Johns Hopkins University and Goddard Space Flight Center. Now an associate professor at the University of Arkansas. Won the Early Career Award of the Graduate School Alumni Society for 2015.

6. Laura Lopez, 'Chandra Snapshot Observations of High-Redshift, Radio-Loud Quasars', Summer 04 to Fall 05. Research results published in *The Astronomical Journal*, 131, 1914–1922 (2006). Transferred to become a graduate student at UC Santa Cruz. Won an Einstein Fellowship at MIT. Now an associate professor at Ohio State University.

7. Brendan Miller, 'X-ray Insights into Jets and Outflows in Radio-Loud Quasars', Summer 05 to Spring 10. Ph.D. thesis successfully defended and multiple publications completed. Multiple job offers upon graduation; accepted a visiting assistant professor position at the College of Wooster. Was a postdoctoral research associate at the University of Michigan with E. Gallo. Was a visiting assistant professor at Macalester College. Was an assistant professor at the College of St. Scholastica (2014–2019). Was a data scientist at US Bank. Now a Machine Learning Quality Assurance Lead at 3M.

8. Bin Luo, 'X-ray and Multiwavelength Studies of Active Galactic Nuclei in the Chandra Deep Fields', Summer 06 to Summer 10. Won the 2009 Downsborough Graduate Fellowship in Astrophysics. Ph.D. thesis successfully defended and multiple publications completed. Multiple job offers upon graduation; accepted a postdoctoral research associate position at the Harvard-Smithsonian Center for Astrophysics with G. Fabbiano. Was a postdoctoral research associate at the Pennsylvania State University with me. Now a professor at Nanjing University. Won a 1000-Plan Professorship for Young Talents. Won the Early Career Award of the Graduate School Alumni Society for 2019.

9. Jianfeng Wu, 'The X-ray and UV Properties of Large, Diverse Samples of Optically Selected Quasars', Spring 07 to Fall 12. Won the 2012 Downsborough Graduate Fellowship in Astrophysics. Ph.D. thesis successfully defended and multiple publications completed. Was a postdoctoral research associate at the Harvard-Smithsonian Center for Astrophysics with J. McClintock. Was a postdoctoral research associate at the University of Michigan with E. Gallo. Now Minjiang Distinguished Professor at Xiamen University. Won a 1000-Plan Professorship for Young Talents.

10. Megan Comins, 'The X-ray Properties of the Optically Brightest Mini-BAL Quasars from the Sloan Digital Sky Survey', Summer 09 to Fall 10. Transferred to become a graduate student at Cornell University. Now a data scientist at Pekin Insurance.

11. Nurten Filiz Ak, 'Broad Absorption Line Variability in a Large Quasar Sample', Fall 09 to Fall 13. Ph.D. thesis successfully defended and multiple publications completed. Now an assistant professor at Erciyes University (Kayseri, Turkey). Won a Career Development Program grant from the Scientific and Technological Research Council of Turkey.

12. Sharon Xuesong Wang, 'Supermassive black hole vs. galaxy growth in deep X-ray surveys', Summer 11 to Fall 12. Completed Ph.D. with J.T. Wright. Was a Carnegie Fellow at the Department of Terrestrial Magnetism, Carnegie Institution of Washington. Now an assistant professor at Tsinghua University.

13. Mouyuan Sun (visiting student from Xiamen University), 'Supermassive black-hole ecology in deep X-ray surveys', Fall 13 to Fall 15. Ph.D. thesis successfully defended and multiple publications completed. Now an associate professor at Xiamen University. Selected as Nanqiang Young Top-Notch Talent of Xiamen University.

14. Guang Yang, 'What drives the growth of black holes?', Fall 14 to Spring 19. Winner of Dean's Graduate Fellowship. Won the 2017 Downsborough Graduate Fellowship in Astrophysics. Ph.D. thesis successfully defended and multiple publications completed. Won the 2019 IAU Ph.D. Prize for High-Energy Phenomena and Fundamental Physics (Division D). Finalist for the 2020 Dissertation Prize of the High-Energy Astrophysics

Division of the American Astronomical Society. Multiple job offers upon graduation; accepted an independent postdoctoral fellowship position at Texas A&M University. Now a JWST/MIRI postdoctoral researcher at Leiden Observatory and the University of Groningen.

15. Demetra De Cicco, 'A large sample of disappearing broad absorption lines in quasars', Spring 15 to Fall 18 (visiting student from the University of Naples Federico II). Ph.D. thesis successfully defended and multiple publications completed. Was a postdoctoral researcher at Pontificia Universidad Católica de Chile. Now an assistant professor at the University of Naples "Federico II".

16. Ningxiao Zhang, 'X-ray insights into the nature of quasars with redshifted broad absorption lines', Fall 15 to Fall 16. Completed Ph.D. with R.L. McEntaffer. Now working as a systems engineer at Ground Positioning Radar™ (GPR).

17. Paula Sánchez, 'Optical Variability Selection of Active Galactic Nuclei in Deep Survey Fields', Spring 17 (visiting student from Universidad de Chile). Now an ESO-Garching Postdoctoral Fellow at the European Southern Observatory.

18. Qingling Ni, Spring 17 to Summer 21. Won the 2020 Downsborough Graduate Fellowship in Astrophysics. Ph.D. thesis successfully defended and multiple publications completed. Multiple job offers upon graduation; accepted a postdoctoral research associate position at the University of Edinburgh with J. Aird. Now a postdoctoral researcher at the Max Planck Institute for Extraterrestrial Physics.

19. Sameer, Spring 17 to Fall 18. Completed Ph.D. with J.C. Charlton.

20. Shifu Zhu, Spring 17 to Fall 22. Won the 2021 Downsborough Graduate Fellowship in Astrophysics. Ph.D. thesis successfully defended and multiple publications completed. Multiple job offers upon graduation; accepted a postdoctoral research associate position at the University of Science and Technology of China with Y. Xue.

21. Fei-Fan Zhu, Fall 17 to Fall 19 (visiting student from the University of Science and Technology of China).

22. Fan Zou, Fall 19 to present. Won the 2022 Downsborough Graduate Fellowship in Astrophysics. Won the 2022 Frymoyer Award for students of the Institute for Gravitation and the Cosmos. Multiple publications completed.

23. Hezhen Liu, Fall 19 to Fall 20 (visiting student from Nanjing University). Now working on software reliability for Huawei Technologies Corporation.

24. Zhibo Yu, Fall 22 to present.

Undergraduate Research Supervised

1. Paul de Naray (was an engineering specialist at The Aerospace Corporation; currently Director of Cybersecurity at ClearStar Inc.), 'Variable Sources and Deep X-ray Imaging of the Starburst/Seyfert 2 Galaxy NGC 1672', Summer 98 to Fall 99. Research results published in *The Astronomical Journal*, 119, 612–619 (2000). One of the winners in the Penn State Eighth Annual Undergraduate Research Fair.

2. Kevin Marshall (completed Ph.D. at Georgia State University; currently an associate professor at Widener University), 'A Comprehensive Search for Soft X-ray Weak Quasi-Stellar Objects', Spring 99 to Spring 00.

3. Matthew Collinge (Goldwater scholar; 2001 student marshal for the Department of Astronomy & Astrophysics; completed Ph.D. as a National Defense Science & Engineering and Martin Schwarzschild Ph.D. Fellow at Princeton University; was a Columbia Science Fellow at Columbia University; currently the Deputy Director of the Maryland Space Grant Consortium), '*ASCA*, *Chandra*, and *HST* Studies of Nuclear Absorption in Seyfert Galaxies', Spring 99 to Spring 01. Research results published in *Monthly Notices of the Royal Astronomical Society*, 317, L35–L39 (2000) and *The Astrophysical Journal*, 557, 2–17 (2001).

4. Mala Mateen (completed Ph.D. at New Mexico Tech; currently working at the Air Force Research Laboratory), 'A *ROSAT* Study of the Nearby Galaxies Maffei 1 and Maffei 2', Summer 99 to Spring 00.

5. Jennifer Donley (Sylvia Stein Memorial Space Grant scholar; Goldwater scholar; Fulbright scholar; 2002 student marshal for the Eberly College of Science; completed Ph.D. as a National Science Foundation Fellow at the University of Arizona; Giacconi Fellow at the Space Telescope Science Institute; Hubble Fellow at Los Alamos National Laboratory; currently a staff scientist at Los Alamos National Laboratory), 'A *ROSAT* Survey for X-ray Sources with Large-Amplitude Outbursts', Summer 99 to Spring 02. Research results published in *The Astronomical Journal*, 124, 1308–1321 (2002).

6. Lee Bassett (Goldwater scholar; 2004 winner of the Reddy Mission Award from the Schreyer Honors College; completed Ph.D. as an Annenberg Marshall Scholar and a National Science Foundation Fellow at the University of Cambridge; postdoctoral researcher in the California NanoSystems Institute at the University of California, Santa Barbara; currently an associate professor of Electrical & Systems Engineering at the University of Pennsylvania), 'An X-ray Survey of High-Redshift Quasars with Radio Detections', Fall 02 to Spring 04. Research results published in *The Astronomical Journal*, 128, 523–533 (2004).

7. Dennis Just (2007 student marshal for the Department of Astronomy & Astrophysics; completed Ph.D. at the University of Arizona; postdoctoral researcher at the University of Toronto; currently physics department head at Pima Community College), 'The X-ray Properties of the Most-Luminous Quasars from the Sloan Digital Sky Survey', Fall 05 to Spring 07. Research results published in *The Astrophysical Journal*, 665, 1004–1022 (2007).

8. Harrison Gonzaga, 'The X-ray Properties of Active Galaxies with Double-Peaked Emission Lines', Spring 10 to Summer 10.

9. Richard George, 'Investigations of Remarkable X-ray Populations in the Sloan Digital Sky Survey-III', Fall 11 to Spring 12.

10. Nicholas Tremaglio, 'Investigations of Remarkable X-ray Populations in the Sloan Digital Sky Survey-III', Summer 12. Was an Assistant Kitchen Manager at the Darkhorse Tavern. Now a Sous Chef at Hidegard's German Cuisine.

11. Zach Hemler (2016 winner of the Kadtke Family Scholarship in Astronomy & Astrophysics; was a postbaccalaureate researcher at the University of Florida; now a graduate student at Princeton University), 'Rapid Broad Absorption Line Variability of Quasars in the Sloan Digital Sky Survey Reverberation Mapping Project', Summer 16 to Fall 18. Research results published in *The Astrophysical Journal*, 872, #21 (2019).

12. Zhefu Yu (currently a graduate student at the Ohio State University), 'X-ray Emission from High-Redshift Galaxies in the Chandra Deep Field-South', Summer 16 (visiting student from Peking University).

13. Fan Zou (currently a graduate student at the Pennsylvania State University), 'The Host Galaxy Properties of Type 1 vs. Type 2 Active Galactic Nuclei', Summer 18 (visiting student from the University of Science and Technology of China). Research results published in *The Astrophysical Journal*, 878, #11 (2019).

14. Shuqi Fu (currently a graduate student at Peking University), 'The Nature of Luminous Quasars with Very Large C IV Equivalent Widths', Fall 21 to Fall 22 (visiting student from the University of Science and Technology of China; mentored remotely when COVID-19 made her planned visit impossible). Research results published in *The Astrophysical Journal*, 934, #97 (2022).

15. Nathan Cristello, 'Recent Star Formation in X-ray Tidal Disruption Event Hosts', Spring 22 to present.

16. Zihao Zuo, 'Investigating the X-ray Enhancements of High-Redshift Highly Radio-Loud Quasars', Spring 22 to present.

17. Junyu Zhang (2022 student marshal for the Eberly College of Science), 'X-ray selected high-redshift quasars in the XMM-SERVS survey', Fall 22 to present.

Undergraduate Honors Projects Supervised

1. Joseph Maywalt, 'Modeling the Internal Structure of White Dwarfs Using a Computer', Fall 98 honors project for Astro 485

2. Nicholas Bond, 'The Degenerate Universe: White Dwarf Stars', Fall 00 honors project for Astro 485

3. Jennifer Donley, 'The Structure of White Dwarfs', Fall 00 honors project for Astro 485

4. Natalie Hepler, 'Pulsars, Binary Pulsars, and Relativity', Fall 01 honors project for Astro 197A

5. Matthew Tibbits, 'Numerical Studies of White Dwarf Structure', Fall 03 honors project for Astro 485

6. David Atlee, 'Degenerate Matter: A Study of White Dwarf Stars', Fall 05 honors project for Astro 485

7. Jessie Hart, 'A Computational Investigation of White Dwarf Stars', Fall 05 honors project for Astro 485

8. Dennis Just, 'Numerical Investigation into the Structure of White Dwarf Stars', Fall 05 honors project for Astro 485
9. Karan Jani, 'Numerical Investigation of the Structure of White Dwarf Stars', Fall 09 honors project for Astro 485
10. George Filippatos, 'Astro 485 Honors Option', Fall 17 honors project for Astro 485
11. Zach Hemler, 'White Dwarf Structure', Fall 17 honors project for Astro 485
12. Adam McCarron, 'A Computational Investigation of White Dwarf Structure', Fall 17 honors project for Astro 485
13. Stephen Thornton, 'An In-Depth Investigation of the Structure of White Dwarf Stars', Fall 17 honors project for Astro 485
14. Michael Toomey, 'A Study of White Dwarf Properties', Fall 17 honors project for Astro 485
15. Timothy Emeigh, 'Investigation of the Structure of White Dwarf Stars Through Numerical Methods', Fall 19 honors project for Astro 485
16. Mustafa Memon, 'A Computational Investigation of the Properties of White Dwarfs', Fall 19 honors project for Astro 485
17. Kristen Kitch, 'When Quantum Theory and General Relativity Collide: The Black Hole Information Paradox', Spring 20 honors project for Astro 130
18. Evan Jennerjahn, 'An Investigation of the Structure of White Dwarfs Using the Fourth-Order Runge-Kutta Method', Fall 21 honors project for Astro 485

Membership on Graduate Degree Candidates' Committees

Comprehensive Exam Committees at Penn State

1. Mike Weinstein, Astronomy & Astrophysics
2. Sarah Gallagher, committee chair, Astronomy & Astrophysics
3. Rajib Ganguly, Astronomy & Astrophysics
4. Ann Hornschemeier, Astronomy & Astrophysics
5. Oleg Kargaltsev, Astronomy & Astrophysics
6. Karen Lewis, Astronomy & Astrophysics
7. Britton Smith, Astronomy & Astrophysics
8. Bret Lehmer, committee chair, Astronomy & Astrophysics
9. Manodeep Sinha, Astronomy & Astrophysics

10. John Wise, Astronomy & Astrophysics
11. Brendan Miller, committee chair, Astronomy & Astrophysics
12. Jian Wu, Astronomy & Astrophysics
13. Bin Luo, committee chair, Astronomy & Astrophysics
14. Jianfeng Wu, Astronomy & Astrophysics
15. Nurten Filiz Ak, committee chair, Astronomy & Astrophysics
16. Qirong Zhu, Astronomy & Astrophysics
17. Changguang Dong, Mathematics
18. Guang Yang, committee chair, Astronomy & Astrophysics
19. Ningxiao Zhang, Astronomy & Astrophysics
20. Shifu Zhu, committee chair, Astronomy & Astrophysics
21. Sameer, committee chair, Astronomy & Astrophysics
22. Qingling Ni, committee chair, Astronomy & Astrophysics
23. Gautam Nagaraj, Astronomy & Astrophysics
24. Abhishek Das, Physics
25. Fan Zou, committee chair, Astronomy & Astrophysics

Ph.D. and M.S. Thesis Committees at Penn State

1. Catherine Grant, Astronomy & Astrophysics, Ph.D. completed in June 1999
2. Ann Hornschemeier, Astronomy & Astrophysics, M.S. completed in August 1999
3. Sarah Gallagher, committee chair, Astronomy & Astrophysics, Ph.D. completed in April 2002
4. Rajib Ganguly, Astronomy & Astrophysics, Ph.D. completed in April 2002
5. Ann Hornschemeier, committee chair, Astronomy & Astrophysics, Ph.D. completed in April 2002
6. Michael Sipior, Astronomy & Astrophysics, Ph.D. completed in April 2003
7. Oleg Kargaltsev, Astronomy & Astrophysics, Ph.D. completed in October 2004
8. Karen Lewis, Astronomy & Astrophysics, Ph.D. completed in August 2005
9. Britton Smith, Astronomy & Astrophysics, Ph.D. completed in July 2007
10. Bret Lehmer, committee chair, Astronomy & Astrophysics, Ph.D. completed in August 2007

11. Brendan Miller, committee chair, Astronomy & Astrophysics, Ph.D. completed in April 2010
12. Bin Luo, committee chair, Astronomy & Astrophysics, Ph.D. completed in August 2010
13. Emily Alicea-Muñoz, Astronomy & Astrophysics, M.S. completed in August 2011
14. Jianfeng Wu, committee chair, Astronomy & Astrophysics, Ph.D. completed in November 2012
15. Nurten Filiz Ak, committee chair, Astronomy & Astrophysics, Ph.D. completed in December 2013
16. Sharon Xuesong Wang, committee chair, Astronomy & Astrophysics, Ph.D. completed in June 2016 (switched to working on exoplanets)
17. Qirong Zhu, Astronomy & Astrophysics, Ph.D. completed in June 2016
18. Changguang Dong, Mathematics, Ph.D. completed in April 2018
19. Guang Yang, committee chair, Astronomy & Astrophysics, Ph.D. completed in February 2019
20. Qingling Ni, committee chair, Astronomy & Astrophysics, Ph.D. completed in June 2021
21. Shifu Zhu, committee chair, Astronomy & Astrophysics, Ph.D. completed in September 2022
22. Gautam Nagaraj, Astronomy & Astrophysics, Ph.D. pending
23. Abhishek Das, Physics, Ph.D. pending
24. Fan Zou, committee chair, Astronomy & Astrophysics, Ph.D. pending

External Examiner for Ph.D. Theses at Other Universities

1. Heng Hao, Department of Astronomy, Harvard University, Ph.D. completed in April 2011
2. Erini Lambrides, Department of Physics and Astronomy, Johns Hopkins University, Ph.D. completed in July 2021

Postdoctoral Research Associates

1. Shai Kaspi, Astronomy & Astrophysics, 1999–2001. Currently a staff member at the Wise Observatory of Tel Aviv University and a senior researcher at the Technion.
2. David Alexander, Astronomy & Astrophysics, 2000–2003. Won a Royal Society Research Fellowship in 2003 at the University of Cambridge. Won a Philip Leverhulme Prize in 2007. Currently a professor in the Department of Physics at Durham University. Serving as Head of Astronomy (2017–present).

3. Franz Bauer, Astronomy & Astrophysics, 2000–2003. Won a *Chandra* Fellowship in 2004 at Columbia University. Currently an associate professor at Pontificia Universidad Católica de Chile.

4. Cristian Vignali, Astronomy & Astrophysics, 2001–2003. Currently an associate professor at the Università di Bologna.

5. Stefan Immler, Astronomy & Astrophysics, 2002–2004. Currently a permanent civil servant in the NASA Headquarters Astrophysics Division working as a Program Scientist and Program Officer.

6. Wentao Wu, Astronomy & Astrophysics, 2003–2004. Currently a staff member at the Yunnan Observatory of the Chinese Academy of Sciences.

7. Iskra Strateva, Astronomy & Astrophysics, 2004–2005. Currently a high-school teacher at Gymnasium Kirschgarten in Basel, Switzerland.

8. Aaron Steffen, Astronomy & Astrophysics, 2004–2007. Currently an associate professor of physics and astronomy at the University of Wisconsin—Marathon County.

9. Ohad Shemmer, Astronomy & Astrophysics, 2004–2008. Currently an associate professor at the University of North Texas.

10. Rob Gibson, Astronomy & Astrophysics, 2006–2008. Currently working as a software engineer at Cisco.

11. David Rafferty, Astronomy & Astrophysics, 2007–2009. Currently a permanent scientific staff member at the Hamburg Observatory of the University of Hamburg.

12. Laura Bîrzan, Astronomy & Astrophysics, 2009. Currently a visiting scientist at the Hamburg Observatory of the University of Hamburg.

13. Yongquan Xue, Astronomy & Astrophysics, 2008–2012. Currently a professor at the University of Science and Technology of China (USTC); won a 1000-Plan Professorship for Young Talents.

14. Ranjan Vasudevan, Astronomy & Astrophysics, 2009–2010. Currently working as a senior consultant and software developer for Element Energy in Cambridge, UK.

15. Bin Luo, Astronomy & Astrophysics, 2010–2011. Currently a professor at Nanjing University; won a 1000-Plan Professorship for Young Talents.

16. Monica Young, Astronomy & Astrophysics, 2010–2011. Currently the News Editor for Sky & Telescope magazine.

17. Cristian Saez, Astronomy & Astrophysics, 2010–2011.

18. Bin Luo, Astronomy & Astrophysics, 2012–2015. Currently a professor at Nanjing University; won a 1000-Plan Professorship for Young Talents.

19. Amy Scott, Astronomy & Astrophysics, 2013–2015. Currently working as the Public Services Supervisor for Collections Management at the University of Leicester library.

20. Catherine Grier, Astronomy & Astrophysics, 2014–2018. Currently an assistant professor at the University of Wisconsin—Madison.

21. Chien-Ting Chen, Astronomy & Astrophysics, 2015–2018. Currently working as a Research Scientist in the X-ray Research Group at NASA's Marshall Space Flight Center.

22. Fabio Vito, Astronomy & Astrophysics, 2015–2018. Currently a permanent Staff Researcher at INAF in Bologna.

23. Sean McGraw, Astronomy & Astrophysics, 2016–2017. Currently working on the validation and monitoring of financial models as a Risk Modeling and Analytics Specialist at UBS.

24. Weimin Yi, Astronomy & Astrophysics, 2016–2021 (during 2016–2019, Yi was a visiting postdoctoral researcher from the Yunnan Astronomical Observatory).

25. Vivek Mariappan, Astronomy & Astrophysics, 2017–2019. Was a Ramanujan Fellow of the Indian Science and Engineering Research Board at the Indian Institute of Astrophysics, Bangalore. Currently an assistant professor at the Indian Institute of Astrophysics, Bangalore.

26. John Timlin, Astronomy & Astrophysics, 2018–2021. Currently a Machine Learning Research Scientist at Lockheed Martin Corporation.

27. Labani Mallick, Astronomy & Astrophysics, 2018–2019. Currently a postdoctoral research associate at Caltech.

28. Wei Yan, Astronomy & Astrophysics, 2021–present.

Faculty Scientific and Administrative Contact for Independent Postdoctoral Research Fellowships

1. Jonathan Trump, Astronomy & Astrophysics, 2013–2016 (Hubble Postdoctoral Fellowship). Currently an associate professor at the University of Connecticut; won an NSF CAREER Award in 2019.

2. Yasaman Homayouni, Astronomy & Astrophysics, 2022–present (Eberly Postdoctoral Fellowship).

Additional Relevant Activities

- Helped Ann Hornschemeier (Penn State graduate student) plan and develop a successful NASA Graduate Student Researchers Program proposal entitled 'Deep Observations with NASA's *Chandra* X-ray Observatory: Resolving the Discrete Sources of the Cosmic X-ray Background.' This proposal funded her graduate work from late 1999 to mid 2002.

- Helped Sarah Gallagher (Penn State graduate student) plan and develop a successful NASA Graduate Student Researchers Program proposal entitled 'Peering Through the Clouds: Absorption Studies of Luminous Active Galaxies with the New Generation of X-ray Observatories.' This proposal funded her graduate work from early 2000 to mid 2002.

- Won $1800, $1000, and $900 grants from the 'President's Fund for Undergraduate Research' to engage undergraduate students in my research (January 2000, September 2002, and October 2003).

- Writer of questions and grader for the 1998–2003 and 2020 graduate candidacy exams. Grader for the 1999–2002 graduate placement exams.

- Created a new Penn State course titled 'Black Holes in the Universe'. This course introduces non-science undergraduates to the predicted properties of black holes and the astronomical evidence for their existence. Modern ideas about space, time, and gravity are also studied. In 2003 this course was approved by the Penn State Faculty Senate as Astro 130 (formerly it was temporarily listed as Astro 197A). I have taught this course many times.

- Created a new Penn State course titled 'X-ray Investigations of Active Galaxies: Exploring the Environments of Supermassive Black Holes'. This course reviews some of the key findings of X-ray spectroscopic, variability, and imaging observations of active galaxies. Students read and present research papers from the scientific literature, and they prepare proposals to make X-ray satellite observations of active galaxies. I have taught this course two times.

- Created a new Penn State course titled 'An Observational Overview of Active Galactic Nuclei'. This course provides an in-depth observational overview of Active Galactic Nuclei (AGNs), covering what modern observations (such as spectra, polarization, variability, and imaging) have revealed about the demographics, physical processes, and environmental interactions of AGNs. It also covers the tools used to make these observations and some future prospects for AGN studies. I have taught this course one time.

- Guest lecturer/speaker for the first-year undergraduate astronomy seminar (Astro 20; main instructor was J. Charlton), the first-year graduate astronomy seminar (Astro 590; main instructor was R. Ciardullo), a seminar on outflows from active galaxies (Astro 597; main instructor was G. Chartas), a supervised experience in college teaching course (Astro 602; main instructors were J. Kregenow and C. Palma), the first-year graduate physics seminar (Physics 590; main instructors were K. Gibble, N. Samarth, and D. Weiss), and a course on news writing (Communications 260; main instructor was S. Sampsell).

- Faculty marshal for the Department of Astronomy & Astrophysics (May 2001; student marshal was Matthew Collinge), the Eberly College of Science (May 2002; student marshal was Jennifer Donley), and the Department of Astronomy & Astrophysics (May 2007; student marshal was Dennis Just).

- Reviewer of textbooks on high-energy astrophysics, black holes, and other topics for Cambridge University Press (2006, 2007, 2019) and Princeton University Press (2007, 2008, 2012, 2017). Provide commentary for textbook covers.
- Annually review applications from sophomores and juniors in Astronomy & Astrophysics to join the Schreyer Honors College.
- Regularly attend orientation and recruitment events for the Schreyer Honors College.
- Regular reviewer of Honors theses for the Schreyer Honors College.

Teaching Performed Prior to Penn State

Dates	Teaching Performed	Number of Students
Fall 1995	Teaching assistant for statistical physics course University of Cambridge astronomy tripos	10
Spring 1996	Teaching assistant for high-energy astrophysics course University of Cambridge astronomy tripos	8

Service and the Scholarship of Service to the University, Society and the Profession

Service to the University

University and College Committees

Dates	Committee Name
2000–2001	Schreyer Honors College Faculty Selection Committee for first-year admissions
2003	Astronomy & Astrophysics Department Head search committee
2003	Fulbright undergraduate evaluation committee
2003–2004	NASA Space Grant Fellowship and Sylvia Steinn Scholarship award committee
2004–2006	Promotion and Tenure Committee for the Eberly College of Science
2004–2006	Strategic Vision Committee for the Eberly College of Science
2010	Tester of the myResearch Portal system for grants management
2010–2011	CyberScience Task Force
2011	Astronomy & Astrophysics Department Head search committee
2012–2013	Judge for the annual graduate research exhibition
2015–2017	Judge for the annual graduate research exhibition
2016–2018	Promotion and Tenure Committee for the Eberly College of Science
2018–2020	Cross-College Committee for ICS-Sponsored Faculty Hires
2020–2021	Judge for the annual undergraduate exhibition
2021–2024	Endowed Faculty Review Committee for the Eberly College of Science
2021–2022	Judge for the annual graduate research exhibition

Department Committees

Dates	Committee Name
1997–1998	Computer facilities
1997–1999	Undergraduate program
1998–2003	Journal club (chair)
1998–2005	Graduate admissions
1999–2003	Graduate program
1999–2003	Hobby-Eberly Telescope
1999–2003	Friedman Lectures/outreach
2001–2003	Faculty recruitment
2003–2004	Faculty recruitment (chair)
2003–2004	Marker Lectures
2003–2005	Strategic planning
2003–2004	'Teaching assistant of the year' award
2004–2005	Faculty recruitment
2004–2005	Internal Eberly Chair appointment
2004–2006	Promotion and tenure
2005–2006	Graduate program and admissions
2005–2007	Distinguished lecturer committee
2006–2009	Colloquium committee (chair)
2006–2009	Faculty recruitment
2006–2009	Graduate admissions
2007–2008	Candidacy exam
2008–2009	Climate and diversity
2008–2009	Promotion and tenure
2009–2010	Candidacy exam
2009–2013	Graduate program
2009–2011	Promotion and tenure (chair)
2010–2011	Graduate admissions
2011–2013	Awards (chair)
2011–2014	Promotion and tenure
2012–2013	Faculty recruitment for cyberscience cluster hire (chair)
2014–2015	Awards (chair)
2014–2015	Distinguished lecturer committee
2014–2016	Graduate program
2015–2016	Distinguished lecturer committee (chair)
2015–2016	Graduate admissions
2016–2019	Distinguished lecturer committee
2019–2020	Promotion and tenure (chair)
2020–2023	Distinguished lecturer committee (chair)
2020–2021	Qualifying exam committee
2022–2023	Promotion and tenure

Other Assigned Activities

- Coordinator of the Nanjing Student Exchange Program (2021–present).
- Led preparation of a proposal to make the Department of Astronomy & Astrophysics a site for LSST Corporation (LSSTC) postdoctoral fellows (2020). This proposal was competitively approved by the LSSTC, but unfortunately the LSSTC failed to obtain philanthropic funding for the overall program.

Other Relevant Activities

- Serve as lead Honors advisor for the Department. Annually review applications from sophomores and juniors in Astronomy & Astrophysics to join the Schreyer Honors College, regularly attend orientation and recruitment events, and regularly review Honors theses.
- Regularly give research talks for the Department lunchtime seminar series.
- Regularly participate in graduate recruitment activities and graduate admissions triage reviews.
- Regularly review research reports of 2nd year graduate students.
- Regularly participate in undergraduate student interviews for the Department's First-Year Seminar.
- Attend commencement events for the Eberly College of Science and the University.
- Serve as an evaluator for Department staff members in annual reviews.
- Maintain competency regarding
    1. The Family Educational Rights and Privacy Act (FERPA).
    2. Child-abuse reporting standards (via the Penn State Center for Workplace Learning & Performance).
    3. Compliance standards (via the Penn State Office of Ethics & Compliance).
    4. Title IX policies.
    5. Requirements for disclosure of significant financial interests.
    6. Procedures for Penn State implementation of the Spotted Lanternfly quarantine requirements.

Outreach Service as a Representative of the University

- Lead instructor for the 2000–2019 and 2022–2023 Penn State Inservice Workshops in Astronomy (PSIWA) titled 'Galaxies & Cosmology' (2000–2005), 'The Origin and Fate of Our Cosmos: Understanding Big Bang Cosmology' (2006–2007, 2014–2016, 2019, and 2022), 'Black Holes: Gravity's Fatal Attraction' (2008–2013 and 2017–2018), and 'The Lives and Deaths of Stars' (2023). In 2020 and 2021, the PSIWA had to be canceled owing to COVID-19.

- Director for the 2022–2023 Penn State Inservice Workshops in Astronomy (PSIWA) titled 'The Origin and Fate of Our Cosmos: Understanding Big Bang Cosmology' and 'The Lives and Deaths of Stars'. Relevant tasks included Act 48 accrediation, advertising, applicant reviewing, arranging instructors and guest speakers, fundraising, preparing proof-of-attendance information, running evaluations, and general logistics work.

- Helped to develop proposals for Education & Public Outreach that fund the Penn State Inservice Workshops in Astronomy (PSIWA). These were written in 1998–2012 as part of the *Chandra*, *HST*, Long Term Space Astrophysics, and Astrophysics Data Analysis programs, and they have provided more than $240,000 to the PSIWA. They funded scholarships for high-school teachers, special talks and hands-on workshops, and purchases of astronomy related educational materials. I have continued to support the PSIWA financially through the Broader Impacts components of NSF proposals.

- Developed a successful National Science Foundation CAREER proposal that provided funding to promote and aid the study of astronomy in the Pennsylvania Junior Academy of Science (PJAS; 2000–2005). I helped students find appropriate astronomy projects and served as a judge at the PJAS annual state meetings. Monetary prizes of $500–1,000 and other prizes were given for the best PJAS astronomy projects. I helped Prof. Kevin Luhman with the preparation of his successful CAREER proposal which also funded the PJAS astronomy outreach program.

- Harlow Shapley Visiting Lecturer for the American Astronomical Society (2005–present). Have visited York University (2009 January), Carroll College (2009 March), and the University of Maine (2014 September). During visits I have given public lectures, given research colloquia, given presentations to student science societies, and interacted with students regarding research and careers.

- Regularly participate in press releases to inform the public about recent discoveries in black holes and cosmic surveys research.

- Presented a lecture titled 'A good hard look at cosmic supermassive black hole growth' to the Centre Region Active Adult Center in State College, Pennsylvania (2022 May).

- Presented a lecture titled 'A good hard look at cosmic supermassive black hole growth' to middle-school students at the Winchester Thurston School in Pittsburgh, Pennsylvania (2022 April).

- Presented a lecture titled 'A good hard look at cosmic supermassive black hole growth' to the Astronomical Society of Long Island in Centerport, New York (2022 April).

- Presented a lecture titled 'A good hard look at cosmic supermassive black hole growth' to high-school astronomy and STEM-club students at Hollidaysburg High School in Hollidaysburg, Pennsylvania (2022 April).

- Participated as a panelist in the Golden Webinars in Astrophysics series of the Pontificia Universidad Católica de Chile (2021 July).

- Presented a lecture titled 'A good hard look at cosmic supermassive black hole growth' to three middle-school and high-school classrooms at the Winchester Thurston School in Pittsburgh, Pennsylvania (2021 April).

- Taught Ethiopian schoolchildren about galaxies and modern large telescopes in Addis Ababa, Ethiopia (2019 October).
- Presented a lecture titled 'Gravity and black holes' to Girl Scout Troop #40418 in State College, Pennsylvania (2019 April). This helped them complete their Girl Scout patch activity on astronomy.
- Gave a presentation titled 'X-ray stares at cosmic supermassive black hole growth' as part of the Department 'Astronomy on Tap' series at the Happy Valley Brewing Company in State College, Pennsylvania (2019 February).
- Presented a lecture titled 'A good hard look at cosmic supermassive black hole growth' to the Physics Club of the State College Area High School in State College, Pennsylvania (2019 February).
- Presented a lecture titled 'A good hard look at cosmic supermassive black hole growth' to participants of the 2018 Cherry Springs Star Party, hosted by the Astronomical Society of Harrisburg in Coudersport, Pennsylvania (2018 June). About 60 amateur astronomers were in attendance.
- Presented a lecture titled 'Gravity and black holes' to Cub Scout Pack #31 in State College, Pennsylvania (2018 October). Separately, I taught them about the origins of the day, the year, seasons, and eclipses (2018 November).
- Presented a lecture titled 'Gravity and black holes' to fourth grade classrooms at Easterly Parkway Elementary School in State College, Pennsylvania (2016 December, 2017 December, 2018 December, and 2020 December).
- Interviewed for 'Smart Talk', a daily National Public Radio program on WITF (2017 January). Explained new results from the deepest cosmological X-ray survey, the Chandra Deep Field-South.
- Presented a lecture titled 'A good hard look at cosmic supermassive black hole growth' to the Astronomy Enthusiasts of Lancaster County and the general public at the Lititz Public Library in Lititz, Pennsylvania (2016 September).
- Presented a lecture titled 'A good hard look at cosmic supermassive black hole growth' to the New York Amateur Astronomers Association and the general public at the American Museum of Natural History in New York, New York (2016 April).
- Helped with a general audience article titled 'On the hunt for X-ray signals from the extragalactic universe' for the Astro Watch and Space Daily World Wide Web sites (article posted on 2016 February 22).
- Presented a lecture titled 'X-raying active galaxies: Exploring the environments of supermassive black holes' to science students in the Pasadena Waldorf School in Pasadena, California (2015 May).
- Posted on YouTube a substantial series of lectures (about 10.5 hours) titled "An Observational Overview of Active Galactic Nuclei (AGNs)". The lectures cover AGN basics, finding AGNs, terminology, the black-hole region, the Broad Line Region (BLR), outflowing winds, the Narrow Line Region (NLR), the torus, jets, and AGN X-ray surveys. These were presented and recorded at the 2014 June USTC Summer School on "Formation and Co-Evolution of Galaxies and Supermassive Black Holes" in Hefei, China.

They have been useful for educating students and postdoctoral researchers about AGN topics. They presently have more than 14,500 views.

- Presented a lecture titled 'Probing quasar winds with the Sloan Digital Sky Survey' to the TriState Astronomers Astronomy Club in Hagerstown, Maryland (2012 September).
- Co-authored (with Anna H. Spitz) a general audience article titled 'Active galactic nuclei: Revealing black hole growth in galaxies and the structure of the Universe' for the electronic newsletter of the Legacy Survey of Space and Time (Volume 3, Number 4; 2011 January).
- Presented a lecture titled 'Finding supermassive black holes and exploring their environments with *Chandra*' to the State College Rotary Club (2007 July).
- Interviewed for 'Pennsylvania Inside Out', a public affairs program on WPSX-TV (2005 May). Explained new results on the growth of supermassive black holes in the distant universe.
- Presented a lecture titled 'X-raying active galaxies with the *Chandra* X-ray Observatory: Two recent advances' to the Eberly College of Science Alumni Society board of directors (2002 October).
- Astrofest lecturing on 'X-raying the Distant Universe with *Chandra*' in Davey Lab (2000 July).
- Spoke to the high-school student attendees of the Summer Opportunities and Research for Space (SOARS) program about 'X-ray Satellite Studies of Supermassive Black Holes' (2000 June).
- Participated in Space Day 2000 (2000 April) and Space Day 2001 (2001 April) at Penn State. With graduate students Sarah Gallagher and Ann Hornschemeier, I presented posters and activities on 'X-rays from Supermassive Black Holes' and 'X-raying the Hubble Deep Field.'
- Friedman outreach lecture on 'X-raying the Environments of Supermassive Black Holes' (2000 March).
- Spoke to the Penn State Astronomy Club on 'Recent Results from *Chandra*' (2000 March).
- Represented the Astronomy & Astrophysics Department for Scholars Day (1999 October) and in the Spend a Summer Day Program (1998 July). Described the Department's educational and research opportunities to interested high-school students. Annually represented the Astronomy & Astrophysics Department in the First-Year Testing, Counseling, and Advising Program (FTCAP) from 1998–2003. In addition, I have led multiple Department tours for interested high-school students and their families.
- Parents' Day observing on the roof of Davey Lab (1997 September and 1998 September). Parents' Day lecturing on 'Exploring Supermassive Black Holes with X-rays' (1999 September). Parents' Day volunteer for the astronomy questions booth and spectroscopy demonstration (2000 September and 2001 September).
- Presented talks on my research and Department initiatives to the Board of Visitors for the Department (1998 April, 2002 October, 2013 April). Presented a talk on my research to a potential donor to the College (2000 October).

- Provided scholarly information on the history of science and technology for publication in the journal *Chemistry and Industry* (Number 24, 974–975; 1999 December) and two introductory astronomy textbooks.
- Served as an admissions representative for Phillips Exeter Academy, a private boarding school in Exeter, New Hampshire.

Service to the Profession

- Scientific organizing committee member for conferences and workshops including

  1. The 'Structure and Kinematics of Quasar Broad Line Regions' conference in Lincoln, Nebraska (1998 March). I was one of the editors for the conference proceedings.
  2. The 'X-ray Astronomy 1999: Stellar Endpoints, AGN, and the Diffuse X-ray Background' conference in Bologna, Italy (1999 September).
  3. The 'Observational and Theoretical Progress in the Study of Narrow-Line Seyfert 1 Galaxies' workshop in Bad Honnef, Germany (1999 December). I was one of the editors for the workshop proceedings.
  4. The 'X-ray Spectroscopy of Active Galactic Nuclei with *Chandra* and *XMM-Newton*' workshop in Garching, Germany (2001 December).
  5. The 'AGN Physics with the Sloan Digital Sky Survey' conference in Princeton, New Jersey (2003 July).
  6. The '2004 Ringberg Castle Workshop on AGN Physics' workshop in Tegernsee, Germany (2004 November).
  7. The 'Superunification of Active Galactic Nuclei: Black Hole Masses, Spins, and Accretion Rates' workshop in Elba, Italy (2005 May).
  8. The 'Extragalactic Surveys: A Chandra Science Workshop' workshop in Cambridge, Massachusetts (2006 November).
  9. The 'X-ray Universe 2008' conference in Granada, Spain (2008 May).
  10. The 'Putting Gravity to Work—From Black Holes to Galaxy Clusters: ACF60' conference in Cambridge, United Kingdom (2008 July).
  11. The 'X-ray Astronomy 2009: Present Status, Multi-Wavelength Approach, and Future Perspectives' conference in Bologna, Italy (2009 September).
  12. The 'Five Years of Swift' conference in State College, Pennsylvania (2009 November).
  13. The 'First Galaxies, Quasars, and Gamma-Ray Bursts' conference in State College, Pennsylvania (2010 June).
  14. The 'Very Wide Field Surveys in the Light of Astro 2010' workshop in Baltimore, Maryland (2011 June).
  15. The 'Restless Nature of AGNs: Variability as a Probe of the Central Engine' conference in Naples, Italy (2013 May).
  16. The 2014 Mid-Atlantic Section meeting of the American Physical Society in State College, Pennsylvania (2014 October).

17. The 'X-ray Surveys of the Hot and Energetic Cosmos' meeting (a Focus Meeting at the XXIX IAU General Assembly) in Honolulu, Hawaii (2015 August).
18. The 'X-ray Vision: Probing the Universe in Depth and Detail with the X-ray Surveyor' workshop in Washington, D.C. (2015 October).
19. The '15th Meeting of the High-Energy Astrophysics Division of the American Astronomical Society' in Naples, Florida (2016 April).
20. The 'LSST AGN Science Collaboration Roadmap Development Meeting' in Grapevine, Texas (2017 January).
21. The '16th Meeting of the High-Energy Astrophysics Division of the American Astronomical Society' in Sun Valley, Idaho (2017 August).
22. The 'High-Energy Astrophysics in the 2020's and Beyond: A Special Meeting of the High-Energy Astrophysics Division of the American Astronomical Society' in Rosemont, Illinois (2018 March).
23. The 'Astrophysical Frontiers in the Next Decade and Beyond: Planets, Galaxies, Black Holes, and the Transient Universe' meeting in Portland, Oregon (2018 June).
24. The 'Impacts of Blending on LSST Science' workshop at the LSST 2018 Project and Community Workshop in Tucson, Arizona (2018 August).
25. The 'Supermassive Black Hole Science with the LSST' session at the LSST 2018 Project and Community Workshop in Tucson, Arizona (2018 August).
26. The 'X-ray Surveys of the Hot and Energetic Universe' workshop in Harbin, China (2019 January).
27. The '17th Meeting of the High-Energy Astrophysics Division of the American Astronomical Society' in Monterey, California (2019 March).
28. The 'Cosmic Evolution of Quasars: From the First Light to Local Relics' workshop in Beijing, China (2019 October).
29. The 'Supermassive Black Hole Studies with the Legacy Survey of Space and Time' Meeting-in-a-Meeting as part of the 236th Meeting of the American Astronomical Society in Madison, Wisconsin (2020 June; held virtually owing to COVID-19). I was the lead organizer.
30. The 'Athena-LSST Synergy Workshop' in Garching, Germany (2021 April; held virtually owing to COVID-19).
31. The 'Supermassive Black Hole Studies with the Legacy Survey of Space and Time: 2021' meeting (2021 July; held virtually owing to COVID-19). I was the lead organizer.
32. The 'Supermassive Black Hole Studies with the Legacy Survey of Space and Time—2022: Getting Ready for Rubin Operations' meeting (2022 July; held virtually owing to COVID-19). I was the lead organizer.
33. The 'VLA Sky Survey in the Multiwavelength Spotlight' conference in Socorro, New Mexico (2022 September).
34. The 'Rubin Observatory LSST@Europe 4: Active Galactic Nuclei Science Collaboration' meeting in Rome, Italy (2022 October).
35. The 'Restless Nature of AGNs: 10 Years Later' conference in Naples, Italy (2023 June).

- Work in support of X-ray missions that are planned or under development including

1. Collaborator on the *Advanced X-ray Imaging Satellite* (AXIS) Probe mission (2022–present).
2. Team member for the *Athena*/LSST synergy assessment exercise (2018–present).
3. NASA-appointed member of the Science and Technology Definition Team (STDT) for the Lynx X-ray Surveyor Mission Concept Study (2016–present).
4. Co-investigator on the *Survey and Time-Domain Astronomical Research Explorer* (STAR-X) mission (2015–present).
5. NASA-nominated member of the Athena Science Study Team (ASST) Working Group on "Formation and Growth of the Earliest Supermassive Black Holes" (2015–present).
6. Collaborator on the *X-ray Time Domain Explorer* (XTiDE) mission (2014–2015).
7. Collaborator on the *Black Hole Coded Aperture Telescope* (BlackCAT) mission (2012–2013).
8. Team member for the *SMART-X* mission (2012–2015).
9. Science Support Group member for the *Advanced Telescope for High-Energy Astrophysics (Athena)* (2011–present).
10. Collaborator on the *High-Energy X-ray Probe* (HEX-P) mission (2011–present).
11. Science Team member for the *New Hard X-ray Mission (NHXM)* (2010–2011).
12. Science Study Team member for the *General Relativistic Astrophysics via Timing and Spectroscopy (GRAVITAS)* mission (2010–2011).
13. Science Topical Team member for the *Nuclear Spectroscopic Telescope Array* (2008–present).
14. Science Definition Team member for the *International X-ray Observatory* representing 'Black-Hole Surveys' science (2008–2011).
15. Chair of the Science Panel on 'The high-redshift universe, reionization, and synergies with JWST first-light science' for the *Constellation-X* X-ray satellite (2007–2008).
16. Co-investigator and science panel member for the *X-ray Evolving Universe Spectroscopy* (XEUS) satellite (2006–2008).
17. Co-investigator for the *Wide-Field X-ray Telescope* (WFXT) satellite (2007–2015).
18. Co-investigator for the *Joint Astrophysics Nascent Universe Satellite* (JANUS) mission (2007–2011).
19. Collaborator for the ART instrument on the *Spectrum Röntgen-Gamma* (SRG) satellite (2007–2008).
20. Co-investigator and science panel member for the *Generation-X* X-ray satellite (2003–2011).

- Work in support of ground-based telescopes including

1. Member of the Survey Science Group (SSG) Governing Council for the Jansky VLA Sky Survey (2014–2015).
2. Member of the Science Advisory Committee (SAC) for the Legacy Survey of Space and Time (2014–present).
3. Member of the Science Team for the Low Resolution Spectrograph-2 instrument on the Hobby-Eberly Telescope (2012–present).

4. Chair of the Interest Group for the Legacy Survey of Space and Time on Deep Drilling Fields (2010–2013).
5. Chair or Co-Chair of the Science Collaboration for the Legacy Survey of Space and Time on active galaxies (2006–present).

- Proposal reviewing activities including

1. Panel member for the National Science Foundation (NSF) Astronomy and Astrophysics Research Grants program (2022 April).
2. Panel member for the National Science Foundation (NSF) Mid-Scale Innovations Program (MSIP) in Astronomical Sciences (2020 June).
3. Panel member for the National Science Foundation (NSF) Astronomy and Astrophysics Research Grants program (2019 April).
4. Red-team reviewer for the *XMM-Newton* proposal to the 2016 Senior Review of NASA's Astrophysics Division Operating Missions (2016 January).
5. Red-team reviewer for the *Swift* proposal to the 2014 Senior Review of NASA's Astrophysics Division Operating Missions (2014 January).
6. Red-team reviewer for the *Chandra* proposal to the 2012 Senior Review of NASA's Astrophysics Division Operating Missions (2011 November).
7. Panel member for the *ASCA* AO6 (1997 October 15–17), *Chandra* Cycle 1 (1998 April 6–7), *Chandra* Cycle 2 (2000 August 2–3), and *Chandra* Cycle 10 (2008 June 17–18) observing proposal reviews.
8. Panel member for the National Science Foundation (NSF) Faculty Early Career Development (CAREER) program (2005 October).
9. Reviewer by mail of grant proposals for the United States Civilian Research and Development Foundation (CRDF), the United States NASA Postdoctoral Program (NPP), the United States National Science Foundation (NSF), the United States-Israel Binational Science Foundation (BSF), the United Kingdom Leverhulme Trust, the United Kingdom Particle Physics and Astronomy Research Council (PPARC), the Chilean Research Council (FONDECYT), the European Young Investigators Awards (EURYI) competition, the Research Foundation Flanders (FWO), the Greek Aristeia Program, the Israeli PAZY Foundation, and the Italian Giovani Ricercatori—Rita Levi Montalcini program.
10. Reviewer by mail for ground-based telescope observing proposals.

- Committee service to national organizations including

1. Member of the Henry Norris Russell Lectureship Committee of the American Astronomical Society (2022–2025).
2. Member of the Committee on Astronomy and Astrophysics for the National Academy of Sciences (2020–2023).
3. Member of the Nominating Committee for the High-Energy Astrophysics Division (HEAD) of the American Astronomical Society (2019).
4. Member of the Executive Committee for the High-Energy Astrophysics Division of the American Astronomical Society (2016–2019).
5. Member of the Executive Committee for the Mid-Atlantic Section of the American Physical Society (2013–2015).

6. Member of the "UV, Optical, and Near-Infrared Space Astrophysics Missions after the James Webb Space Telescope" committee—for the Association of Universities for Research in Astronomy, Inc. (2013–2015).
7. Member of NASA's Science and Technology Definition Team for the X-ray Astrophysics Probe (2013).
8. Chair of the Warner/Pierce Prize Committee of the American Astronomical Society (2011).
9. Member of the Warner/Pierce Prize Committee of the American Astronomical Society (2009–2010).
10. Member of the Nominating Committee for the High-Energy Astrophysics Division (HEAD) of the American Astronomical Society (2009).
11. Member of the Committee on Astronomy and Public Policy of the American Astronomical Society (2006–2011).
12. Member of the Annie Jump Cannon Award Committee of the American Astronomical Society (2006–2009).
13. Member of the Executive Committee for the Division of Astrophysics of the American Physical Society (2006–2008).
14. Member of the Users' Group for NASA's High-Energy Astrophysics Science Archive Research Center (HEASARC) at Goddard Space Flight Center (2000–2002). This group has as its prime directive to evaluate and monitor the performance of the HEASARC, one of the largest astronomy archive centers in the United States. It reports to the Chief of NASA's Astrophysics Science Operations Branch and to the HEASARC director.

- Reviewer and panelist service to national organizations including

  1. Reviewer of the Beyond Einstein Program Assessment Committee report, at the request of the National Research Council (2007 July).
  2. Panelist on long-term data management aspects of space astronomy for the Space Studies Board of the National Research Council (2005 November).

- Editorial board member for the journals *Research Letters in Physics* (2007–2009), *Physics Research International* (2009–2017), and *Frontiers in Astronomy and Space Sciences* (2022–present).

- Referee of scientific papers for *Advances in Space Research*, *The Astronomical Journal*, *Astronomy and Astrophysics*, *The Astrophysical Journal*, *Monthly Notices of the Royal Astronomical Society*, *Nature*, *Publications of the Astronomical Society of Japan*, and *Science*.

- Writer of recommendation and evaluation letters for undergraduate students, graduate students, postdoctoral research associates, research scientists, and professors.

  1. I have successfully recommended Department undergraduate students for Goldwater scholarships (3), National Science Foundation graduate fellowships (3), a National Defense Science & Engineering graduate fellowship, a Marshall Scholarship, a Fulbright Scholarship, and a Sylvia Stein Memorial Space Grant Scholarship.

2. I have successfully recommended Department graduate students for Department scholarships and fellowships, Pennsylvania Space Grant Consortium Fellowships (4), research postdoctoral positions (7), a *Chandra* Fellowship, an Einstein Fellowship, a *Spitzer* Fellowship, an STFC Fellowship, a Carnegie Fellowship, the Annie J. Cannon Award of the American Astronomical Society, the IAU Ph.D. Prize for High-Energy Phenomena and Fundamental Physics, tenure-track faculty positions (6), and visiting faculty positions (2).
3. I have successfully recommended postdoctoral research associates for research postdoctoral positions (7), NASA scientist positions (2), industry positions (4), a Royal Society Research Fellowship, a *Chandra* Fellowship, a Ramanujan Fellowship, a China-CONICYT Joint Postdoctoral Fellowship, a permanent researcher position, and tenure-track faculty positions (9).

- Reviewer of external professorial and research scientist dossiers for promotion and tenure reviews.
- Nominator for American Astronomical Society and Kyoto prizes.
- Regularly invite and act as host for speakers/visitors from other universities and other departments: E. Agol, D. Alexander, D. Ballantyne, N. Battaglia, E. Behar, E. Blackman, R. Cen, M. Elitzur, M. Elvis, H. Ferguson, S. Gallagher, J. Gallimore, E. Gallo, L. Gallo, M. Giavalisco, T. Heckman, S. Heinz, R. Hickox, A. Hornschemeier, E. Kara, V. Kaspi, J. Krolik, A. Laor, C. Lawrence, D. Lorimer, G. Madejski, P. Martini, T. McKay, P. Osmer, F. Paerels, B. Peterson, J. Poutanen, A. Ptak, E. Ramirez-Ruiz, A. Readhead, C. Reynolds, O. Shemmer, P. Sommers, C. Steinhardt, J. Trump, J. Vieira, S. Veilleux, M. Voit, N. White, and D. Wilkins.

Grants for Education and Public Outreach

1. Principal Investigator, '*Chandra*, *XMM-Newton* and *Astro-E* investigations of Seyfert/Quasar central engines: Exploring the environments of supermassive black holes: Education and public outreach component', National Aeronautics and Space Administration grant NAG5-8107-EPO, 2/15/99–2/15/01, $4,000
2. Principal Investigator, '*Chandra* grating spectroscopy of the bright and complex Seyfert 1 galaxy NGC 4051: Education and public outreach component', *Chandra* X-ray Observatory Center grant GO0-1160X, 4/7/00–4/6/01, $7,670
3. Principal Investigator, 'CAREER: Investigating the sources of the X-ray background with *Chandra* and the Hobby-Eberly Telescope: Education and public outreach component', National Science Foundation award AST-9983783 (CAREER award), 4/15/00–3/31/05, $19,000
4. Principal Investigator, 'HETG zero phase spectroscopy of Circinus X-1: Education and public outreach component', *Chandra* X-ray Observatory Center grant GO0-1041X, 4/27/00–4/26/03, $7,670
5. Principal Investigator, 'Active galaxies and other improvements for the Penn State In-service Workshops in Astronomy', Space Telescope Science Institute grant EO-08321.02-97A, 5/1/00–4/30/02, $7,782

6. Co-Investigator, 'New and improved: The future of the Penn State Inservice Workshops in Astronomy', *Chandra* X-ray Observatory Center grant GO3-4009A, 12/1/02–11/30/03, $43,500

7. Co-Investigator, 'Presenting the ninth annual Penn State Inservice Workshops in Astronomy', *Chandra* X-ray Observatory Center grant, 12/1/03–11/30/04, $29,000

8. Co-Investigator, 'Ten years of the Penn State Inservice Workshops in Astronomy', *Chandra* X-ray Observatory Center grant, 12/1/04–11/30/05, $30,000

9. Principal Investigator, 'Penn State's astronomy program for in-service educators: Best practices for professional development', *Chandra* X-ray Observatory Center grant GO7-8101X, 1/3/07–3/26/09, $45,000

10. Principal Investigator, 'Black holes: A new Penn State professional development workshop for science teachers', *Chandra* X-ray Observatory Center grant GO9-0112X, 2/23/09–2/22/11, $13,163

11. Principal Investigator, 'Black holes: A high demand professional development workshop for science teachers', *Chandra* X-ray Observatory Center grant GO0-11010X, 8/16/09–11/24/11, $15,000

12. Principal Investigator, 'The Penn State Inservice Workshops in Astronomy: A long-term professional development program for science teachers', National Aeronautics and Space Administration grant NNX10AC99G (Supplemental Education Award), 9/1/10–8/31/14, $45,000

13. Principal Investigator, 'The Penn State Inservice Workshops in Astronomy: Extragalactic workshop', Space Telescope Science Institute grant HST-EO-12866.21-A, 2/1/13–1/31/15, $20,000