

Invited Review Article

1. "Atomic Data Needs for Understanding X-ray Astrophysical Plasmas", Smith, R. K. & Brickhouse, N. S., 2014, *Advances in Atomic, Molecular, and Optical Physics*, 63, 271

Refereed Publications

2. "Line Spread Functions of Blazed Off-Plane Gratings Operated in the Littrow Mounting", DeRoo, Casey T., McEntaffer, Randall L., Miles, Drew M., Peterson, Thomas J., Marlowe, Hannah, Tutt, James H., Donovan, Benjamin D., Menz, Benedikt, Burwitz, Vadim, Hartner, Gisela, Allured, Ryan, Smith, Randall K., Gunther, Ramses, Yanson, Alex, Vacanti, Giuseppe, Ackermann, Marcelo, 2016, *JATIS*, in press
3. "A Joint Chandra and Swift View of the 2015 X-ray Dust Scattering Echo of V404 Cygni", Heinz, Sebastian, Corrales, Lia, Smith, Randall K., Brandt, W. Niel, Jonker, Peter G., Plotkin, R. M., Neilsen, J. 2016, *Astrophysical Journal*, submitted
4. "The Impact of Accurate Extinction Measurements for X-ray Spectral Models", Smith, Randall K., Valencic, Lynne A., Corrales, Lia 2016, *Astrophysical Journal*, 818, 143
5. "Probing the Outskirts of the Early Stage Galaxy Cluster Merger A1750", Bulbul, Esra, Randall, Scott W., Bayliss, Matthew, Miller, Eric, Andrade-Santos, Felipe, Johnson, Ryan, Bautz, Mark, Blanton, Elizabeth L., Forman, William R., Jones, Christine, Paterno-Mahler, Rachel, Murray, Stephen S., Sarazin, Craig L., Smith, Randall K., Ezer, Cemile 2016, *Astrophysical Journal*, 818, 131
6. "Performance Testing of an Off-plane Reflection Grating and Silicon Pore Optic Spectrograph at PANTER" Marlowe, H., McEntaffer, R., Allured, R., DeRoo, C., Donovan, B., Miles, D., Tutt, J., Burwitz, V., Menz, B., Hartner, G., Smith, R., Cheimets, P., Hertz, E., Bookbinder, J., Gunther, R., Yanson, A., Vacanti, G., Ackermann, M. 2016, *Journal of Astronomical Telescopes, Instruments, and Systems*, 1, 045004
7. "Probing Final Stages of Stellar Evolution with X-Ray Observations of SN2013ej", Chakraborti, Sayan, Ray, Alak, Smith, Randall, Margutti, Raffaella, Pooley, David, Bose, Subhash, Sutaria, Firoza, Chandra, Poonam, Dwarkadas, Vikram V., Ryder, Stuart, Maeda, Keiichi, 2016, *Astrophysical Journal*, 817, 22
8. "Aesthetics and Astronomy: How Museum Labels Affect the Understanding and Appreciation of Deep-Space Images", Smith, Lisa F., Smith, Jeffrey K., Arcand, Kimberly K., Smith, Randall K., Bookbinder, Jay A. 2015, *Curator The Museum Journal*, 58(3), 283
9. "Multi-wavelength Analysis of the Galactic Supernova Remnant MSH 11-61A", Auchettl, Katie, Slane, Patrick, Castro, Daniel, Foster, Adam R., Smith, Randall K. 2015, *Astrophysical Journal*, 810, 43
10. "Is It Real", Smith, Lisa F., Smith, Arcand, Kimberly K., Smith, Jeffrey K., Smith, Randall K., Bookbinder, Jay A. 2015, *Journal of Media and Communication Studies*, 7(5), 88
11. "Interstellar Dust Properties from a Survey of X-ray Halos", Valencic, Lynne A. & Smith, Randall K. 2015, *Astrophysical Journal*, 809, 66
12. "Spectral Modeling of the Charge-exchange X-ray Emission from M82", Zhang, Shuinai, Wang, Q. Daniel, Ji, Li, Smith, Randall K., Foster, Adam R., Zhou, Xin 2014, *Astrophysical Journal*, 794, 61
13. "Detection of an Unidentified Emission Line in the Stacked X-ray spectrum of Galaxy Clusters", Bulbul, Esra, Markevitch, Maxim, Foster, Adam, Smith, Randall K., Loewenstein, Michael, Randall, Scott W. 2014, *Astrophysical Journal*, 789, 13
14. "Resolving the Origin of the Diffuse Soft X-ray Background", Smith, Randall K., Foster, Adam R., Edgar, Richard J. & Brickhouse, Nancy S. 2014, *Astrophysical Journal*, 787, 77
15. "Discriminating the Progenitor Type of Supernova Remnants with Iron K-shell Emission", Yamaguchi, H., Badenes, C., Petre, R., Nakano, T., Castro, D., Enoto, T.,

- Hiraga, J. S., Hughes, J. P., Maeda, Y., Nobukawa, M., Safi-Harb, S., Slane, P. O., Smith, R. K., Uchida, H. 2014, *Astrophysical Journal*, 785, 27
16. “Examining perceptions of astronomy images across mobile platforms”, Smith, Lisa F., Arcand, Kimberly K., Smith, Jeffrey K., Smith, Randall K., Bookbinder, Jay & Watzke, Megan 2014, *Journal of Science Communication*, 2014, 13, 2
17. “Electron Cooling in a Young Radio Supernova: SN 2012aw”, Yadav, Naveen, Ray, Alak, Chakraborti, Sayan, Stockdale, Christopher, Chandra, Poonam, Smith, Randall, Roy, Rupak, Bose, Subhash, Dwarkadas, Vikram, Sutaria, Firoza, Pooley, David 2014, *Astrophysical Journal*, 782, 30
18. “New Evidence for Efficient Collisionless Heating of Electrons at the Reverse Shock of a Young Supernova Remnant”, Yamaguchi, H., Eriksen, K. A., Badenes, C., Hughes, J. P., Brickhouse, N. S., Foster, A. R., Patnaud, D. J., Petre, R., Slane, P. O., Smith, R. K. 2014, *Astrophysical Journal*, 780, 136
19. “Unraveling the Origin of Overionized Plasma in the Galactic Supernova Remnant W49B”, Lopez, Laura A., Pearson, Sarah, Ramirez-Ruiz, Enrico, Castro, Daniel, Yamaguchi, Hiroya, Slane, Patrick O., Smith, Randall K. 2013, *Astrophysical Journal*, 777, L145
20. “The progenitor of SN 2011ja: Clues from circumstellar interaction”, Chakraborti, S., Ray, A., Smith, R., Ryder, S., Yadav, N., Sutaria, F., Dwarkadas, V. V., Chandra, P., Pooley, D., Roy, R. 2013, *Astrophysical Journal*, 774, 30
21. “Interstellar Abundances toward X Per, Revisited”, Valencic, L. A. & Smith, R. K. 2013, *Astrophysical Journal*, 770, 22
22. “Azimuthal Structure of the Cyg X-2 X-ray Dust Halo”, Seward, F. D. & Smith, R. K. 2013, *Astrophysical Journal*, 769, 17
23. “Cygnus X-3’s Little Friend”, McCollough, M. L., Smith, R. K. & Valencic, L. A. 2013, *Astrophysical Journal*, 762, 2
24. “X-Ray emission from SN 2004dj: A Tale of Two Shocks”, Chakraborti, S., Yadav, N., Ray, A., Smith, R. K., Chandra, P. 2012, *Astrophysical Journal*, 761, 100
25. “Updated Atomic Data and Calculations for X-ray Spectroscopy”, Foster, A.R., Ji, L., Smith, R. K., Brickhouse, N. S. 2012, *Astrophysical Journal*, 756, 128
26. “A New Method to Constrain Supernova Fractions Using X-ray Observations of Clusters of Galaxies”, Bulbul, Esra, Smith, Randall K., Loewenstein, M. 2012, *Astrophysical Journal*, 753, 54
27. “Elemental Abundances in the Possible Type Ia Supernova Remnant G344.7-0.1”, Yamaguchi, Hiroya, Tanaka, Masaomi, Maeda, Keiichi, Slane, Patrick O., Foster, Adam, Smith, Randall K., Katsuda, Satoru, Yoshii, Rie, 2012, *Astrophysical Journal*, 749, 137
28. “High-resolution XMM-Newton Spectroscopy of the Cooling Flow Cluster A3112”, Bulbul, G. Esra, Smith, Randall K., Foster, Adam, Cottam, Jean, Loewenstein, Michael, Mushotzky, Richard, Shafer, Richard, 2012, *Astrophysical Journal*, 747, 32
29. “Estimating turbulent velocities in the elliptical galaxies NGC 5044 and NGC 5813”, de Plaa, J., Zhuravleva, I., Werner, N., Kaastra, J. S., Churazov, E., Smith, R. K., Raassen, A. J. J., Grange, Y. G. 2012, *Astronomy & Astrophysics*, 539, 34
30. “XMM-Newton Observations of MBM 12: More Constraints on the Solar Wind Charge Exchange and Local Bubble Emissions”, Koutroumpa, D., Smith, R. K., Edgar, R. J., Kuntz, K. D., Plucinsky, P. P., Snowden, S. L. 2011, *Astrophysical Journal*, 726, 91
31. “Constraints on turbulent velocity broadening for a sample of clusters, groups and elliptical galaxies using XMM-Newton”, Sanders, J. S., Fabian, A. C. & Smith, R. K. 2011, *Monthly Notices of the Royal Astronomical Society*, 410, 1797
32. “Aesthetics and Astronomy: Studying the public’s perception and understanding of imagery from space”, Smith, L. F., Smith, J. K., Arcand, K. K., Smith, R. K., Keach, Kelly 2010, *Science Communication*, 33, 201
33. “Ionization Equilibrium Timescales in Collisional Plasmas”, Smith, R. K. & Hughes, J. P.

34. 2010, *Astrophysical Journal*, 718, 583
 “High-Resolution X-ray Spectra of the Symbiotic Star SS73 17”, Eze, R. N. C., Luna, G. J. M., Smith, R. K. 2010, *Astrophysical Journal*, 709, 816
35. “A direct limit on the turbulent velocity of the intracluster medium in the core of Abell 1835 from XMM-Newton”, Sanders, J. S., Fabian, A. C., Smith, R. K. & Peterson, J. R. 2010, *Monthly Notices of the Royal Astronomical Society*, 402, L11
36. “Properties of the Diffuse X-ray Background Toward MBM20 with Suzaku”, Gupta, A., Galeazzi, M., Koutroumpa, D., Smith, R. & Lallement, R. 2009, *Astrophysical Journal*, 707, 644
37. “A New Calculation of Ne IX Line Diagnostics”, Smith, R. K. Chen, G. X., Kirby, K. & Brickhouse, N. S., 2009, *Astrophysical Journal*, 700, 679
38. “Suzaku Observations of Four Heavily Absorbed HMXBs”, Morris, D. S., Smith, R. K., Markwardt, C. B., Mushotzky, R. F., Tueller, J., Kallman, T. R., Dhuga, K. S., 2009, *Astrophysical Journal*, 699, 892
39. “Examining Dust Grain Models Using the Reddening and X-Ray Dust Halo of Terzan 2”, Valencic, L. A., Smith, R. K., Dwek, E. & Graessle D. 2009, *Astrophysical Journal*, 692, 502
40. “Comparison of 3.6-8.0 μm Spitzer/IRAC Galactic Center Survey Point Sources with Chandra X-Ray Point Sources in the Central 40×40 Parsecs”, Arendt, R. G., Gezari, D. Y., Stolovy, S. R., Sellgren, K., Smith, R., Ramirez, S. V., Yusef-Zadeh, F., Law, C. J., Smith, H. A., Cotera, A. S. & Moseley, S. H. 2008, *Astrophysical Journal*, 685, 958
41. “X-Ray Dust Scattering at Small Angles: The Complete Halo Around GX13+1”, Smith, R. K. 2008, *Astrophysical Journal*, 681, 343
42. “An Analysis of the Dust Halo and Extinction Toward X Persei”, Valencic, L. A. & Smith, R. K. 2008, *Astrophysical Journal*, 672, 984
43. “Chandra ACIS Survey of M33 (ChASeM33): A First Look”, Plucinsky, P. et al. 2008, *Astrophysical Journal Supplement*, 174, 366
44. “The Symbiotic System SS73 17 Seen with Suzaku”, Smith, R. K., Mushotzky, R., Mukai, K., Kallman, T., Markwardt, C. B & Tueller, J. 2008, *Proceedings of the Astronomical Society of Japan*, 60S, 43
45. “Suzaku Observations of the Local and Distant Hot ISM”, Smith, R. K. et al., 2007, *Proceedings of the Astronomical Society of Japan*, 59S, 141
46. “Fully relativistic R-matrix calculation of electron impact excitation of NeIX”, Chen, G. X., Smith, R. K., Kirby, K., Brickhouse, N. S. & Wargelin, B. J. 2006, *Physical Review A*, 74, 042709
47. “The X-ray Halo of GX5-1”, Smith R. K., Dame, T. M., Costantini, E., Predehl, P. 2006, *Astrophysical Journal*, 648, 452
48. “Far-Ultraviolet and X-Ray Observations of the Reverse Shock in the Small Magellanic Cloud Supernova Remnant 1E 0102.2-7219”, Sasaki, M., Gaetz, T. J., Blair, W. P., Edgar, R. J., Morse, J. A., Plucinsky, P. P. & Smith, R. K. 2006, *Astrophysical Journal*, 642, 260
49. “Chandra Observations of the X-ray Halo around the Crab Nebula” Seward, F. D., Gorenstein, P. & Smith, R. K. 2006, *Astrophysical Journal*, 636, 873
50. “An Assessment of the Fe XVIII and Fe XIX Line Ratios from the Chandra Grating Observations of Capella”, Desai, P., Brickhouse, N. S., Drake, J. J., Dupree, A. K., Edgar, R. J., Hoogerwerf, R., Kashyap, V., Wargelin, B. J., Smith, R. K., Huenemoerder, D. P., Liedahl, D. A. 2005, *Astrophysical Journal*, 625, L59
51. “Chandra Observations of MBM 12 and Models of the Local Bubble” Smith, R. K., Edgar, R. J., Plucinsky, P. P., Wargelin, B. J., Freeman, P. E., Biller, B. A. 2005, *Astrophysical Journal*, 623, 225
52. “XMM-Newton Observations of the Galactic Supernova Remnant CTB 109 (G109.1-1.0)” Sasaki, M., Plucinsky, P. P., Gaetz, T. J., Smith, R. K., Edgar, R. J., & Slane, P. O.

53. 2004, *Astrophysical Journal*, 617, 322
 "A Million Second Chandra View of Cassiopeia A", Hwang, U. et al. 2004, *Astrophysical Journal*, 615, L117
54. "Chandra View of Kesteven 79: A Nearly Isothermal Supernova Remnant with Rich Spatial Structure" Sun, M., Seward, F. D., Smith, R. K., & Slane, P. O. 2004, *Astrophysical Journal*, 605, 742
55. "An X-Ray Jet Discovered by Chandra in the z=4.3 Radio-selected Quasar GB 1508+5714", Siemiginowska, A., Smith, R. K., Aldcroft, T. L., Schwartz, D. A., Paerels, F., & Petric, A. O. 2003, *Astrophysical Journal*, 598, L15
56. "A Compact Central Object in the Supernova Remnant Kesteven 79", Seward, F. D., Slane, P. O., Smith, R. K., Sun, M. 2003, *Astrophysical Journal*, 584, 414
57. "Chandra Spectra of the Soft X-ray Diffuse Background", Markevitch, M., Bautz, M. W., Biller, B., Butt, Y., Edgar, R., Gaetz, T., Garmire, G., Grant, C. E., Green, P., Juda, M., Plucinsky, P. P., Schwartz, D., Smith, R., Vikhlinin, A., Virani, S., Wargelin, B. J., Wolk, S. 2003, *Astrophysical Journal*, 583, 70
58. "Discovery of Nonthermal X-Ray Emission from the Embedded Massive Star-forming Region RCW 38", Wolk, S. J., Bourke, T. L., Smith, R. K., Spitzbart, B., & Alves, J. 2002, *Astrophysical Journal*, 580, L161
59. "The X-ray Halo of GX 13+1", Smith, R. K., Edgar, R. J. & Shafer, R. A. 2002, *Astrophysical Journal*, 581, 562
60. "An X-Ray Study of the Supernova Remnant G290.1-0.8", Slane, P. Smith, R. K., Hughes, J. P., Petre, R. 2002, *Astrophysical Journal*, 564, 284
61. "The CHANDRA X-ray Grating Spectrum of Eta Carinae", Corcoran, M. F., Swank, J. H., Petre, R., Ishibashi, K., Davidson, K., Townsley, L., Smith, R. K., White, S., Viotti, R., Damineli, A. 2001, *Astrophysical Journal*, 562, 1031
62. "Electron collisional excitation of the low-lying fine-structure levels in oxygen-like Fe¹⁸⁺", McLaughlin, B. M., Kirby, K. P., Smith, R. K., Brickhouse, N. S. & Liedahl, D. A. 2001, *Journal of Physics B*, 34, 4521
63. "Collisional Plasma Models with APEC/APED: Emission-Line Diagnostics of Hydrogen-like and Helium-like Ions," Smith, R. K., Brickhouse, N. S., Liedahl, D. A., & Raymond, J. C. 2001, *Astrophysical Journal*, 556, L91
64. "Multiple Supernova Remnant Models of the Local Bubble and the Soft X-Ray Background", Smith, R. K. & Cox, D. P. 2001, *Astrophysical Journal Supplement*, 134, 283
65. "A New ASCA and ROSAT Study of the Supernova Remnant G272.2-3.2", Harrus, I. M., Slane, P. O., Smith, R. K., & Hughes, J. P. 2001, *Astrophysical Journal*, 552, 614
66. "X-Ray Halos and Large Grains in the Diffuse Interstellar Medium", Witt, A. N., Smith, R. K., & Dwek, E. 2001, *Astrophysical Journal*, 550, L201
67. "Enhanced Noble Gases in the Coronae of Active Stars", Drake, J. J., Brickhouse, N. S., Kashyap, V., Laming, J. M., Huenemoerder, D. P., Smith, R., & Wargelin, B. J. 2001, *Astrophysical Journal*, 548, L81
68. "Satellite dielectronic spectra created from autoionizing 2lnl' and 1s2lnl' states with n=4-5", Safranova, U. I., Vasilyev, A. A., Smith, R. K. 2000, *Canadian Journal of Physics*, 78, 1055
69. "Chandra X-Ray Observatory Arcsecond Imaging of the Young, Oxygen-rich Supernova Remnant 1E 0102.2-7219", Gaetz, T. J., Butt, Y. M., Edgar, R. J., Eriksen, K. A., Plucinsky, P. P., Schlegel, E. M., & Smith, R. K. 2000, *Astrophysical Journal*, 534, L47
70. "Modeling W44 as a Supernova Remnant in a Density Gradient with a Partially Formed Dense Shell and Thermal Conduction in the Hot Interior I: The Analytical Model," Cox, D. P., Shelton, R. L., Maciejewski, W., Smith, R. K., Plewa, T., Pawl, A., & Rozyczka, M. 1999, *Astrophysical Journal*, 524, 179
71. "Modeling W44 as a Supernova Remnant in a Density Gradient with a Partially Formed Dense Shell and Thermal Conduction in the Hot Interior II: The

- Hydrodynamic Models," Shelton, R. L., Cox, D. P., Maciejewski, W., Smith, R. K., Plewa, T., Pawl, A., & Rozyczka, M. 1999, *Astrophysical Journal*, 524, 192
72. "Modeling the Local Bubble Using Multiple Supernova Remnants", Smith, R. K. & Cox, D. P., *Lecture Notes in Physics*, 506, 133
73. "Soft X-ray Scattering and Halos from Dust," Smith, R. K. & Dwek, E. 1998, *Astrophysical Journal*, 503, 831
74. "A Simplified Model of Time-Dependent Cooling and Grain Destruction in Hot Dusty Plasmas," Smith, R. K., Krzewina, L. G., Cox, D. P., Edgar, R. J., & Miller, W. W. 1996, *Astrophysical Journal*, 473, 864
75. "Energy Deposition and Photoelectric Emission from the Interaction of 10 eV to 1 MeV Photons with Interstellar Dust Particles," Dwek, E. & Smith, R. K. 1995, *Astrophysical Journal*, 459, 686
76. "Dust and Gas Contributions to the Energy Output of SN 1987A on Day 1153," Dwek, E., Moseley, S. H., Glaccum, W., Graham, J. R., Loewenstein, R. F., Silverberg, R. F. & Smith, R. K. 1992 *Astrophysical Journal*, 389, L21