John Caleb Barentine

Employer:
PMB 237
9420 E. Golf Links Rd., Ste 108
Tucson, AZ 85730-1317 USA
Email: john@darkskyconsulting.com

Home:
265 N. Fenceline Drive
Tucson, AZ 85748-3729 USA
Email: john.barentine@gmail.com

Education

Ph.D. Astronomy, University of Texas at Austin, 2013

Thesis: "The Role Of Gas In Galaxy Evolution: Infall, Star Formation, And Internal Structure"

M.A. Astronomy, University of Texas at Austin, 2008

Thesis: "A Comparative Astrochemical Study of the High Mass Protostellar Objects NGC 7538 IRS 1 and IRS 9"

M.S. Physics, Colorado State University, 2002

Thesis: "A Diagnostic Analysis Of A SciTech STAR Class 0.5m Telescope For The Purpose Of High Precision Photometry"

B.S. Physics, University of Arizona, 1998

Minor: Astronomy

Employment

Dark Sky Consulting, LLC

Executive Officer and Principal Consultant (2021–present)

Provide an array of consulting and professional services including dark-sky certification advice, outdoor lighting policies, lighting audits and night sky quality measurement

International Dark Sky Association

Director of Public Policy (2018–2021)

Led IDA dark skies and outdoor lighting public policy initiatives

Served as organizational liaison to the international artificial light at night scientific research community

Director of Conservation (2018)

Responsible for the organization's overall conservation strategy and programmatic work

Program Manager (2013–2018)

Managed the International Dark Sky Places certification program

University of Wisconsin at Madison, Department of Astronomy

Postdoctoral Researcher (2013)

Research Intern (2011–2012)

Abundances of Galactic High- and Intermediate-Velocity Clouds from ultraviolet spectroscopy (supervisor: Dr. Bart Wakker)

University of Texas at Austin, Department of Astronomy

Graduate Teaching Assistant (2008–2012)

Graduate Research Assistant (2006–2011)

High-resolution mid-infrared spectroscopy of high-mass starforming regions (supervisor: Prof. John Lacy)

Secular evolution of massive disk galaxies (supervisor: Prof. John Kormendy)

Apache Point Observatory

Observer, Sloan Digital Sky Survey (2004–2006)

Operation of the SDSS 2.5m telescope; development of procedures and documentation; quality assurance

Observing Specialist I/II, Astrophysical Research Consortium (2001–2004)

Engineering, operations, and remote user support, ARC 3.5-meter telescope

Engineering, basic maintenance and observing, New Mexico State University 1-meter telescope

APO liaison to the University of Colorado Center for Astrophysics and Space Astronomy (CASA) for development of the Near Infrared Camera Fabry-Pérot Spectrometer (NIC-FPS)

Colorado State University, Department of Physics

Graduate Teaching Assistant (1999–2001)

Graduate Research Assistant (1999)

Scanning Hall probe microscopy of magnetic flux vortices in superconducting metals (supervisor: Prof. Stuart Field)

Intel Corporation Digital Imaging Operation

Summer Intern (1996)

Research and characterization of consumer digital cameras; design and specification work on the Intel Pocket PC Camera (supervisor: Mr. Brian Finkel)

National Solar Observatory

Research Assistant (1995–1999)

Reduction and archival of helioseismic data obtained at the South Pole during the austral summer of 1994–1995 (supervisor: Dr. Stuart Jeffries)

Reduction and analysis of He I 10830Å solar imaging data (supervisor: Dr. Karen Harvey)

Acoustic holography of terrestrial lightning strikes with application to solar far-side imaging (supervisor: Dr. Charlie Lindsay)

Publications

ORCID: 0000-0002-7042-068X
Google Scholar profile
Scopus profile
NASA Astrophysics Data System (ADS)
arXiv/astro-ph
h-index: 44
i10-index: 62

Books

Mystery of the Ashen Light of Venus: Investigating a 400-Year-Old Phenomenon (Springer International Publishing, 2021)

Uncharted Constellations (Springer International Publishing, 2016)

The Lost Constellations (Springer International Publishing, 2015)

Book Chapters

A Dignity That Insures Their Perpetuation: Obsolete Constellations and the Making of the Modern Night Sky. *Yearbook of Astronomy 2021* (Pen and Sword Books, 2020).

Articles

Barentine, J., Kocifaj, M., and Wallner, S. (2023). Towards future challenges in the measurement and modelling of night sky brightness. *Monthly Notices of the Royal Astronomical Society*, stad3538. 10.1093/mnras/stad3538

Nandakumar, S., Eggl, S., Tregloan-Reed, J., Adam, C., Anderson-Baldwin, J., Bannister, M. T., Battle, A., Benkhaldoun, Z., Campbell, T., Colque, J. P., Damke, G., Plauchu Frayn, I., Ghachoui, M., Guillen, P. F., Kaeouach, A. E., Krantz, H. R., Langbroek, M., Rattenbury, N., Reddy, V., Ridden-Harper, R., Young, B., Unda-Sanzana, E., Watson, A., Walker, C., **Barentine, J.**, Benvenuti, P., Di Vruno, F., Peel, M., Rawls, M., Bassa, C., Flores-Quintana, C., Garcia, P., Kim, S., Longa-Peña, P., Ortiz, E., Otarola, A., Romero-Colmenares, M., Sanhueza, P., Siringo, G., and Soto, M. (2023). The high optical brightness of the BlueWalker 3 satellite. *Nature*. 10.1038/s41586-023-06672-7

Kocifaj, M., Wallner, S., and **Barentine, J.** (2023). Measuring and monitoring light pollution: Current approaches and challenges. *Science*, 380(6650), 1121–1124. 10.1126/science.adg0473

Kocifaj, M., Kundracik, F., and **Barentine, J.** (2023). Aerosol parameters for night sky brightness modeling estimated from daytime sky images. *Monthly Notices of the Royal Astronomical Society*, stad1570. 10.1093/mnras/stad1570

Kocifaj, M., Komar, L., Lamphar, H., **Barentine, J.** and Waller, S. (2023). A systematic light pollution modeling bias in present night sky brightness predictions. *Nature Astronomy*, 7, 269–279. 10.1038/s41550-023-01916-y

Barentine, J., Venkatesan, A., Heim, J., Lowenthal, J., Bará, S., and Kocifaj, M. (2023). Aggregate Effects of Proliferating LEO Objects and Implications for Astronomical Data Lost in the Noise. *Nature Astronomy*, 7, 252–258. 10.1038/s41550-023-01904-2

Kocifaj, M., Kundracik, F., Bará, S., & **Barentine, J.** (2023). Vertical distribution of aerosol extinction coefficients at night derived from radiometry of scattered laser light. *Atmospheric Environment*, 297, 119599. 10.1016/j.atmosenv.2023.119599

Kocifaj, M., Kundracik, F., Bará, S., **Barentine, J.**, and Wallner, S. (2022). Nighttime Atmospheric Scattering Phase Function Derived from the Scattered Light of a Laser Beam. *Geophysical Research Letters*, e2022GL098608. 10.1029/2022gl098608

Barentine, J., Heim, J., Venkatesan, A., Lowenthal, J., Vidaurri, M. (2022). Re-imagining Near-Earth Space Policy in a Post-COVID World. *Virginia Policy Review*, 15(1), 58–86. 10.5281/zenodo.6903582

Elvidge, C., Zhizhin, M., Keith, D., Miller, S., Hsu, F., Ghosh, T., Anderson, S., Monrad, C., Bazilian, M., Taneja, J., Sutton, P., **Barentine, J.**, Kowalik, W., Kyba, C., Pack, D., and Hammerling, D. (2022). The VIIRS Day/Night Band: A Flicker Meter in Space? *Remote Sensing*, 14(6), 1316. 10.3390/rs14061316

Kocifaj, M. and **Barentine, J.** (2021). Air pollution mitigation can reduce the brightness of the night sky in and near cities. *Nature Scientific Reports*, 11:14622. 10.1038/s41598-021-94241-1

Barentine, J., Walczak, K., Gyuk, G., Tarr, C., and Longcore, T. (2021). A Case for a New Satellite Mission for Remote Sensing of Night Lights. *Remote Sensing*, rs13122294. 10.3390/rs13122294

Fryc, I., Bará, S., Aubé, M., **Barentine, J.**, & Zamorano, J. (2021). On the Relation between the Astronomical and Visual Photometric Systems in Specifying the Brightness of the Night Sky for Mesopically Adapted Observers. LEUKOS, 1–12. 10.1080/15502724.2021.1921593

Kocifaj, M., Kundracik, F., **Barentine, J.** and Bará, S. (2021). The proliferation of space objects is a rapidly increasing source of artificial night sky brightness. *Monthly Notices of the Royal Astronomical Society: Letters*, 504(1), L40–L44. 10.1093/mnrasl/slab030

Kyba, C., Ruby, A., Kuechly, H., Kinzey, B., Miller, N., Sanders, J., **Barentine, J.**, Kleinodt, R., & Espey, B. (2020). Direct measurement of the contribution of street lighting to satellite observations of nighttime light emissions from urban areas. *Lighting Research & Technology* , 53(3), 189–211. 10.1177/1477153520958463

Barentine, J. (2020). Who speaks for the night? The regulation of light pollution in the 'Rights of Nature' legal framework. *International Journal of Sustainable Lighting*, 22(2), 28–36. No doi.

Barentine, J., *et al*. (2020). Recovering the city street lighting fraction from skyglow measurements in a large-scale municipal dimming experiment. *Journal of Quantitative Spectroscopy and Radiative Transfer*, 253, 107120. 10.1016/j.jqsrt.2020.107120

Bará, S., Aubé, M., **Barentine, J.**, & Zamorano, J. (2020). Magnitude to luminance conversions and visual brightness of the night sky. *Monthly Notices of the Royal Astronomical Society*, 492(2), 2429–2437. 10.1093/mnras/staa323

Kyba, C., Pritchard, S., Ekirch, A. R., Eldridge, A., Jechow, A., Preiser, C., Kunz, D., Henckel, D., Hölker, F., **Barentine, J.**, Berge, J., Meier, J., Gwiazdzinski, L., Spitschan, M., Milan, M., Bach, S., Schroer, S., & Straw, W. (2020). Night Matters—Why the Interdisciplinary Field of "Night Studies" Is Needed. *J — Multidisciplinary Scientific Journal*, 3(1), 1–6. 10.3390/j3010001

Hyde, E., Frank, S., **Barentine, J.**, Kuechly, H., & Kyba, C. (2019). Testing for changes in light emissions from certified International Dark Sky Places. *International Journal of Sustainable Lighting*, 21(1), 11–19. 10.26607/ijsl.v21i1.92

Barentine, J., Walker, C. E., Kocifaj, M., Kundracik, F., Juan, A., Kanemoto, J., & Monrad, C. K. (2018). Skyglow changes over Tucson, Arizona, resulting from a municipal LED street lighting conversion. *Journal of Quantitative Spectroscopy and Radiative Transfer*, 212, 10–23. 10.1016/j.jqsrt.2018.02.038

Gibson, J., Stencel, R., Ketzeback, W., **Barentine, J.**, Coughlin, J., Leadbeater, R., & Saurage, G. (2018). Structure in the disc of epsilon Aurigae – analysis of ARCES and TripleSpec spectra from the 2010 eclipse. *Monthly Notices of the Royal Astronomical Society*, 479(2), 2161–2182. 10.1093/mnras/sty1552

Barentine, J. (2016). Going for the Gold: Quantifying and Ranking Visual Night Sky Quality in International Dark Sky Places. *International Journal of Sustainable Lighting*, 18, 9–15. 10.26607/ijsl.v18i0.16

Doty, S. D., Doty, S. L., Cochran, J., Lacy, J., **Barentine, J.**, & Field, R. (2014). Warm C_2H_2 toward NGC 7538 IRS9: Grain Surface Origin. *International Journal of Astronomy and Astrophysics*, 4(3), 479–490.

10.4236/ijaa.2014.43044

Adams, J., Simon, J., Fabricius, M., van den Bosch, R., **Barentine, J.**, Bender, R., Gebhardt, K., Hill, G., Murphy, J., Swaters, R., Thomas, J., & van de Ven, G. (2014). Dwarf galaxy dark matter density profiles inferred from stellar and gas kinematics. *Astrophysical Journal*, 789(1), 63. 10.1088/0004-637x/789/1/63

Barentine, J. and Lacy, J. (2012). A Comparative Astrochemical Study of the High Mass Protostellar Objects NGC 7538 IRS 9 and IRS 1. *Astrophysical Journal*, 757(2), 111. 10.1088/0004-637X/757/2/111

Berry, M., Ivezić, Ž., Sesar, B., Jurić, M., Schlafly, E., Bellovary, J., Finkbeiner, D., Vrbanec, D., Beers, T., Brooks, K. J., Schneider, D., Gibson, R., Kimball, A., Jones, L., Yoachim, P., Krughoff, S., Connolly, A., Loebman, S., Bond, N., Schlegel, D., Dalcanton, J., Yanny, B. , Majewski, S., Knapp, G., Gunn, J., Smith, J.A., Fukugita, M., Kent, S., **Barentine, J.**, Krzesinski, J., & Long, D. (2012). The Milky Way Tomography with the Sloan Digital Sky Survey. IV. Dissecting Dust. *Astrophysical Journal*, 757(2), 166. 10.1088/0004-637x/757/2/166

Barentine, J. and Kormendy, J. (2012). Two Pseudobulges in the 'Boxy Bulge' Galaxy NGC 5746. *Astrophysical Journal*, 754(2), 140. 10.1088/0004-637X/754/2/140

Kormendy, J., and **Barentine, J.** (2010). Detection of a Pseudobulge Hidden Inside the 'Box-shaped Bulge' of NGC 4565. *Astrophysical Journal*, 715(2), L176. 10.1088/2041-8205/715/2/L176

Bond, N., Ivezić, Ž., Sesar, B., Jurić, M., Munn, J. A., Kowalski, A., Loebman, S., Roškar, R., Beers, T., Dalcanton, J., Rockosi, C., Yanny, B., Newberg, H., Allende Prieto, C., Wilhelm, R., Lee, Y., Sivarani, T., Majewski, S. R., Norris, J., Bailer-Jones, C., Re Fiorentin, P., Schlegel, D., Uomoto, A., Lupton, R., Knapp, G., Gunn, J., Covey, K., Smith, J.A., Miknaitis, G., Doi, M., Tanaka, M., Fukugita, M., Kent, S., Finkbeiner, D., Quinn, T., Hawley, S., Anderson, D., Kiuchi, F., Chen, A., Bushong, J., Sohi, H., Haggard, D., Kimball, A., McGurk, R., **Barentine, J.**, Brewington, H., Harvanek, M., Kleinman, S., Krzesinski, J., Long, D., Nitta, A., Snedden, S., Lee, B., Pier, J., Harris, H., Brinkmann, J., & Schneider, D. (2010). The Milky Way Tomography with the Sloan Digital Sky Survey. III. Stellar Kinematics. *Astrophysical Journal*, 716(1), 1–29. 10.1088/0004-637x/716/1/1

Ivezić, Ž., Sesar, B., Jurić, M., Bond, N., Dalcanton, J., Rockosi, C., Yanny, B., Newberg, H., Beers, T., Allende Prieto, C., Wilhelm, R., Lee, Y., Sivarani, T., Norris, J., Bailer-Jones, C., Re Fiorentin, P., Schlegel, D., Uomoto, A., Lupton, R., Knapp, G., Gunn, J., Covey, K., Smith, J.A., Miknaitis, G., Doi, M., Tanaka, M., Fukugita, M., Kent, S., Finkbeiner, D., Munn, J., Pier, J., Quinn, T., Hawley, S., Anderson, S., Kiuchi, F., Chen, A., Bushong, J., Sohi, H., Haggard, D., Kimball, A., **Barentine, J.**, Brewington, H., Harvanek, M., Kleinman, S., Krzesinski, J., Long, D., Nitta, A., Snedden, S., Lee, B., Harris, H., Brinkmann, J., Schneider, D., & York, D. (2008). The Milky Way Tomography with SDSS. II. Stellar Metallicity. *The Astrophysical Journal*, 684(1), 287–325. 10.1086/589678

Dilday, B., Kessler, R., Frieman, J., Holtzman, J., Marriner, J., Miknaitis, G., Nichol, R., Romani, R., Sako, M., Bassett, B., Becker, A., Cinabro, D., DeJongh, F., Depoy, D., Doi, M., Garnavich, P., Hogan, C., Jha, S., Konishi, K., Lampeitl, H., Marshall, J., McGinnis, D., Prieto, J.L., Riess, A., Richmond, M., Schneider, D., Smith, M., Takanashi, N., Tokita, K., Van Der Heyden, K., Yasuda, N., Zheng, C., **Barentine, J.**, Brewington, H., Choi, C., Crotts, A., Dembicky, J., Harvanek, M., Im, M., Ketzeback, W., Kleinman, S., Krzesinski, J., Long, D., Malanushenko, E., Malanushenko, V., McMillan, R., Nitta, A., Pan, K., Saurage, G., Snedden, S., Watters, S., Wheeler, J.C., & York, D. (2008). A Measurement of the Rate of Type Ia Supernovae at Redshift $z \approx 0.1$ from the First Season of the SDSS-II Supernova Survey. *Astrophysical Journal*, 682(1), 262–282. 10.1086/587733

Soderberg, A., Berger, E., Page, K., Schady, P., Parrent, J., Pooley, D., Wang, X.-Y., Ofek, E., Cucchiara, A., Rau, A., Waxman, E., Simon, J. Bock, D., Milne, P., Page, M., **Barentine, J.**, Barthelmy, S., Beardmore, A., Bietenholz, M., Brown, P., Burrows, A., Burrows, D., Byrngelson, G., Cenko, S., Chandra, P., Cummings, J., Fox, D., Gal-Yarn, A., Gehrels, N., Immler, S., Kasliwal, M., Kong, A., Krimm, H., Kulkarni, D., Maccarone, T., Mészáros, P., Nakar, E., O'Brien, P., Overzier, R., De Pasquale, M., Racusin, J., Rea, N. & York, D. (2008). An extremely luminous X-ray outburst at the birth of a supernova. *Nature*,

453(7194), 469–474. 10.1038/nature06997

Zheng, C., Romani, R., Sako, M., Marriner, J., Bassett, B., Becker, A., Choi, C., Cinabro, D., DeJongh, F., Depoy, D. L., Dilday, B., Doi, M., Frieman, J., Garnavich, P., Hogan, C., Holtzman, J., Im, M., Jha, S., Kessler, R., Konishi, J., Lampeitl, H., Marshall, J., McGinnis, D., Miknaitis, G., Nichol, R., Prieto, J.L., Riess, A., Richmond, M., Schneider, D., Smith, M., Takanashi, N., Tokita, K., Van Der Heyden, K., Yasuda, N., Assef, R., **Barentine, J.**, Bender, R., Blanfdord, R., Bremer, M., Brewington, H., Collins, C., Crotts, A., Dembicky, J., Eastman, J., Edge, A., Elson, E., Eyler, M., Filippenko, A., Foley, R., Frank, S., Goobar, A., Harvanek, M., Hopp, U., Ihara, Y., Kahn, S., Ketzeback, W., Kleinman, S., Kollatschny, W., Krzesinski, J., Leloudas, G., Long, D., Lucey, J., Malanushenko, E., Malanushenko, V., McMillan, R., Morgan, C., Morokuma, T., Nitta, A., Ostman, L., Pan, K., Romer, A.K., Saurage, G., Schlesinger, K., Snedden, S., Sollerman, J., Stritzinger, M., Watson, L., Watters, C., Wheeler, J.C., & York, D. (2008). *Astronomical Journal*, 135(5), 1766–1784. 10.1088/0004-6256/135/5/1766

Padmanabhan, N., Schlegel, D. J., Finkbeiner, D., **Barentine, J.**, Blanton, M., Brewington, H., Gunn, J., Harvanek, M., Hogg, D., Ivezić, Ž., Johnston, D., Kent, S., Kleinman, S., Knapp, G., Krzesinski, J., Long, D., Neilsen, E., Nitta, A., Loomis, C., Lupton, R., Roweis, S., Snedden, S., Strauss, & Tucker, D. (2008). An Improved Photometric Calibration of the Sloan Digital Sky Survey Imaging Data. *Astrophysical Journal*, 674(2), 1217–1233. 10.1086/524677

Jurić, M., Ivezić, Ž., Brooks, A., Lupton, R., Schlegel, D., Finkbeiner, D., Padmanabhan, N., Bond, N., Sesar, B., Rockosi, C., Knapp, G., Gunn, J., Sumi, T., Schneider, D., **Barentine, J.**, Brewington, H., Brinkmann, J., Fukugita, M., Harvanek, M., Kleinman, S., Krzesinski, J., Long, D., Neilsen, E., Nitta, A., Snedden, S., & York, D. (2008). The Milky Way Tomography with SDSS. I. Stellar Number Density Distribution. *Astrophysical Journal*, 673(2), 864–914. 10.1086/523619

Wakker, B., York, D., Wilhelm, R., **Barentine, J.**, Richter, P., Beers, T., Ivezić, Ž., & Howk, J. (2008). Distances to Galactic High-Velocity Clouds. I. Cohen Stream, Complex GCP, Cloud g1. *Astrophysical Journal*, 672(1), 298–319. 10.1086/523845

Sako, M., Bassett, B., Becker, A., Cinabro, D., DeJongh, F., Depoy, D. L., Dilday, B., Doi, M., Frieman, J., Garnavich, P., Hogan, C., Holtzman, J., Jha, S., Kessler, R., Konishi, K., Lampeitl, H., Marriner, J., Miknaitis, G., Nichol, R., Prieto, J.L., Riess, A., Ricnmond, M., Romani, R., Schneider, D., Smith, M., SubbaRao, M., Takanashi, N., Tokita, K., Van Der Heyden, K., Yasuda, N., Zheng, C., **Barentine, J.**, Brewington, H., Choi, C., Dembicky, J., Harvanek, M., Ihara, Y., Im, M., Ketzeback, W., Kleinman, S., Krzesinski, J., Long, D., Malanushenko, E., Malanushenko, V., McMillan, R., Morokuma, T., Nitta, A., Pan, K., Saurage, G. & Snedden, S. (2007). The Sloan Digital Sky Survey-II Supernova Survey: Search Algorithm and Follow-Up Observations. *Astronomical Journal*, 135(1), 348–373. 10.1088/0004-6256/135/1/348

Wakker, B., York, D., Howk, J., **Barentine, J.**, Wilhelm, R., Peletier, R., van Woerden, H., Beers, T., Ivezić, Ž., Richter, P., & Schwarz, U. (2007). Distances to Galactic High-Velocity Clouds: Complex C. *Astrophysical Journal*, 670(2), L113–L116. 10.1086/524222

Silvestri, N., Lemagie, M., Hawley, S., West, A., Schmidt, G., Liebert, J., Szkody, P., Mannikko, L., Wolfe, M., **Barentine, J.**, Brewington, H., Harvanek, M., Krzesinski, J., Long, D., Schneider, D., & Snedden, S.(2007). New Close Binary Systems from the SDSS-I (Data Release Five) and the Search for Magnetic White Dwarfs in Cataclysmic Variable Progenitor Systems. *Astronomical Journal*, 134(2), 741–748. 10.1086/519242

Fohlmeister, J., Kochanek, C., Falco, E., Wambsganss, J., Morgan, N., Morgan, C., Ofek, E., Maoz, D., Keeton, C. R., **Barentine, J.**, Dalton, G., Dembicky, J., Ketzeback, W., McMillan, R., & Peters, C. S. (2007). A Time Delay for the Cluster-lensed Quasar SDSS J1004+4112. *Astrophysical Journal*, 682(1), 62–71. 10.1086/518018

Fukugita, M., Nakamura, O., Okamura, S., Yasuda, N., **Barentine, J.**, Brinkmann, J., Gunn, J., Harvanek, M., Ichikawa, T., Lupton, R., Schneider, D., Strauss, M., & York, D. (2007). A Catalog of

Morphologically Classified Galaxies from the Sloan Digital Sky Survey: North Equatorial Region. *Astronomical Journal*, 134(2), 579–593. 10.1086/518962

Schneider, D., Hall, P., Richards, G., Strauss, M., Vanden Berk, D., Anderson, S., Brandt, W., Fan, X., Jester, S., Gray, J., Gunn, J., SubbaRao, M., Thakar, A., Stoughton, C., Szalay, A., Yanny, B., York, D., Bahcall, N. A., **Barentine, J.**, Blanton, M., Brewington, H., Brinkmann, J., Brunner, R., Castander, F., Csabai, I., Frieman, J., Fukugita, M., Harvanek, M., Hogg, D., Ivezić, Ž., Kent, S., Kleinman, S., Knapp, G., Kron, R., Krzesinski, J., Long, D., Lupton, R., Nitta, A., Pier, J., Saxe, D., Shen, Y., Snedden, S., Weinberg, D., & Wu, J. (2007). The Sloan Digital Sky Survey Quasar Catalog. IV. Fifth Data Release. *Astronomical Journal* , 134(1), 102–117. 10.1086/518474

Koester, B., McKay, T., Annis, J., Wechsler, R., Evrard, A., Bleem, L., Becker, M., Johnston, D., Sheldon, E., Nichol, R., Miller, C., Scranton, R., Bahcall, N., **Barentine, J.**, Brewington, H., Brinkmann, J., Harvanek, M., Kleinman, S., Krzesinski, J., Long, D., Nitta, A., Schneider, D., Snedden, S., Voges, W., & York, D. (2007). A MaxBCG Catalog of 13,823 Galaxy Clusters from the Sloan Digital Sky Survey. *Astrophysical Journal*, 660(1), 239–255. 10.1086/509599

Belokurov, V., Evans, N., Irwin, M., Lynden-Bell, D., Yanny, B., Vidrih, S., Gilmore, G., Seabroke, G., Zucker, D., Wilkinson, M., Hewett, P., Bramich, D., Fellhauer, M., Newberg, H., Wyse, R., Beers, T., Bell, E., **Barentine, J.**, Brinkmann, J., Cole, N., Pan, K. & York, D. (2007). An Orphan in the "Field of Streams." *Astrophysical Journal*, 658(1), 337–344. 10.1086/511302

Zucker, D., Kniazev, A., Martínez-Delgado, D., Bell, E., Rix, H.-W., Grebel, E., Holtzman, J., Walterbos, R., Rockosi, C., York, D., **Barentine, J.**, Brewington, H., Brinkmann, J., Harvanek, M., Kleinman, S., Krzesinski, J., Long, D., Neilsen, E., Nitta, A., & Snedden, S.(2007). Andromeda X, a New Dwarf Spheroidal Satellite of M31: Photometry. *Astrophysical Journal*, 659(1), L21–L24. 10.1086/516748

Belokurov, V., Evans, N., Bell, E., Irwin, M., Hewett, P., Koposov, S., Rockosi, C., Gilmore, G., Zucker, D., Fellhauer, M., Wilkinson, M., Bramich, D., Vidrih, S., Rix, H.-W., Beers, T., Schneider, D., **Barentine, J.**, Brewington, H., Brinkmann, J., Harvanek, M., Krzesinski, J., Long, D., Pan, K., Snedden, S., Malanushenko, E., & Malanushenko, V. (2007). The Hercules-Aquila Cloud. *Astrophysical Journal*, 657(2), L89–L92. 10.1086/513144

Irwin, M., Belokurov, V., Evans, N., Ryan-Weber, E., de Jong, J., Koposov, S., Zucker, D., Hodgkin, S., Gilmore, G., Prema, P., Hebb, L., Begum, A., Fellhauer, M., Hewett, P., Kennicutt, R., Wilkinson, M., Bramich, D., Vidrih, S., Rix, H.-W., Beers, T., **Barentine, J.**, Brewington, H., Harvanek, M., Krzesinski, J., Long, D., Nitta, A., & Snedden, S.(2007). Discovery of an Unusual Dwarf Galaxy in the Outskirts of the Milky Way. *Astrophysical Journal*, 656(1), L13–L16. 10.1086/512183

Belokurov, V., Zucker, D., Evans, N., Kleyna, J. T., Koposov, S., Hodgkin, S. T., Irwin, M., Gilmore, G., Wilkinson, M., Fellhauer, M., Bramich, D., Hewett, P., Vidrih, S., De Jong, J., Smith, J. A., Rix, H. -W., Bell, E., Wyse, R., Newberg, H., Mayeur, P., Yanny, B., Rockosi, C., Gnedin, O., Schneider, D., Beers, T., **Barentine, J.**, Brewington, H., Brinkmann, J., Harvanek, M., Kleinman, S., Krzesinski, J., Long, D., Nitta, A., & Snedden, S.(2007). Cats and Dogs, Hair and a Hero: A Quintet of New Milky Way Companions. *Astrophysical Journal*, 654(2), 897–906. 10.1086/509718

Nysewander, M. C., Reichart, D., Park, H.-S., Williams, G., Kinugasa, K., Lamb, D., Henden, A., Klose, S., Kato, T., Harper, A., Yamaoka, H., Laws, C., Torii, K., York, D., **Barentine, J.**, Dembicky, J., McMillan, R., Moran, J., Hartmann, D., Ketzeback, W., Bayliss, M., Bartelme, J., Crain, J., Foster, A., Schwartz, M., Holvorcem, P., Price, P., Canterna, R., Crew, G., Ricker, G., & Barthelmy, S.(2006). Early Time Chromatic Variations in the Wind-swept Medium of GRB 021211 and the Faintness of Its Afterglow. *Astrophysical Journal*, 651(2), 994–1004. 10.1086/506980

Eisenstein, D., Liebert, J., Harris, H., Kleinman, S., Nitta, A., Silvestri, N., Anderson, S., **Barentine, J.**, Brewington, H., Brinkmann, J., Harvanek, M., Krzesiński, J., Neilsen, E., Long, D., Schneider, D., & Snedden, S.(2006). A Catalog of Spectroscopically Confirmed White Dwarfs from the Sloan Digital Sky Survey Data Release 4. *Astrophysical Journal Supplement Series*, 167(1), 40–58. 10.1086/507110

Zucker, D., Belokurov, V., Evans, N., Kleyna, J., Irwin, M., Wilkinson, M., Fellhauer, M., Bramich, D., Gilmore, G., Newberg, H., Yanny, B., Smith, J. A., Hewett, P., Bell, E., Rix, H.-W., Gnedin, O., Vidrih, S., Wyse, R., Willman, B., Grebel, E., Schneider, D., Beers, T., Kniazev, A., **Barentine, J.**, Brewington, H., Brinkmann, J., Harvanek, M., Kleinman, S., Krzesinski, J., Long, D., Nitta, A., & Snedden, S.(2006). A Curious Milky Way Satellite in Ursa Major. *Astrophysical Journal*, 650(1), L41–L44. 10.1086/508628

Belokurov, V., Zucker, D., Evans, N., Wilkinson, M., Irwin, M., Hodgkin, S., Bramich, D., Irwin, J. M., Gilmore, G., Willman, B., Vidrih, S., Newberg, H., Wyse, R., Fellhauer, M., Hewett, P., Cole, N., Bell, E., Beers, T., Rockosi, C., Yanny, B., Grebel, E., Schneider, D., Lupton, R., **Barentine, J.**, Brewington, H., Brinkmann, J., Harvanek, M., Kleinman, S., Krzesinski, J., Long, D., Nitta, A., Smith, J., & Snedden, S.(2006). A Faint New Milky Way Satellite in Bootes. *Astrophysical Journal*, 647(2), L111–L114. 10.1086/507324

Eisenstein, D., Liebert, J., Koester, D., Kleinman, S., Nitta, A., Smith, P., **Barentine, J.**, Brewington, H., Brinkmann, J., Harvanek, M., Krzesiński, J., Neilsen, E., Long, D., Schneider, D., & Snedden, S.(2006). Hot DB White Dwarfs from the Sloan Digital Sky Survey. *Astronomical Journal*, 132(2), 676–691. 10.1086/504424

Richards, G., Strauss, M., Fan, X., Hall, P., Jester, S., Schneider, D., Vanden Berk, D., Stoughton, C., Anderson, S., Brunner, R., Gray, J., Gunn, J., Ivezić, Ž., Kirkland, M., Knapp, G., Loveday, J., Meiksin, A., Pope, A., Szalay, A., Thakar, A., York, D., **Barentine, J.**, Brewington, H., Brinkmann, J., Fukugita, M., Harvanek, M., Kent, S., Kleinman, S., Krzesinski, J., Long, C., Lupton, R., Nash, T., Neilsen, E., Nitta, A., Schlegel, D., & Snedden, S.(2006). The Sloan Digital Sky Survey Quasar Survey: Quasar Luminosity Function from Data Release 3. *Astronomical Journal*, 131(6), 2766–2787. 10.1086/503559

Zucker, D., Belokurov, V., Evans, N., Wilkinson, M., Irwin, M., Sivarani, T., Hodgkin, S., Bramich, D., Irwin, J. M., Gilmore, G., Willman, B., Vidrih, S., Fellhauer, M., Hewett, P., Beers, T., Bell, E., Grebel, E., Schneider, D., Newberg, H., Wyse, R., Rockosi, C., Yanny, B., Lupton, R., Smith, J., **Barentine, J.**, Brewington, H., Brinkmann, J., Harvanek, M., Kleinman, S., Krzesinski, J., Long, D., Nitta, A., & Snedden, S.(2006). A New Milky Way Dwarf Satellite in Canes Venatici. *Astrophysical Journal*, 643(2), L103–L106. 10.1086/505216

Inada, N., Oguri, M., Becker, R. H., White, R. L., Gregg, M. D., Schechter, P. L., Kawano, Y., Kochanek, C., Richards, G., Schneider, D., **Barentine, J.**, Brewington, H., Brinkmann, J., Harvanek, M., Kleinman, S., Krzesinski, J., Long, D., Neilsen, E., Nitta, A., Snedden, S., & York, D. (2006). SDSS J0806+2006 and SDSS J1353+1138: Two New Gravitationally Lensed Quasars from the Sloan Digital Sky Survey. *Astronomical Journal*, 131(4), 1934–1941. 10.1086/500591

Gunn, J., Siegmund, W., Mannery, E. J., Owen, R., Hull, C., Leger, R., Carey, L., Knapp, G., York, D., Boroski, W., Kent, S., Lupton, R., Rockosi, C., Evans, M., Waddell, P., Anderson, J., Annis, J., **Barentine, J.**, Bartoszek, L., Bastian, S., Bracker, S., Brewington, H., Briegel, C., Brinkmann, J., Brown, Y., Carr, M., Czarapata, P., Drennan, C., Dombeck, T., Federwitz, G., Gillespie, B., Gonzles, C., Hansen, S., Harvanek, M., Hayes, J., Jordan, W., Kinney, E., Klaene, M., Kleinman, S., Kron, R., Krzesinski, J., Lee, G., Limmongkol, S., Lindenmeyer, C., Long, D., Loomis, C., McGehee, P., Mantsch, P., Neilsen, E., Neswold, R., Newman, P., Nitta, A., Peoples, J., Pier, J., Prieto, P., Prosapio, A., Rivetta, C., Schneider, D., Snedden, S., & Wang, S. (2006). The 2.5 m Telescope of the Sloan Digital Sky Survey. *Astronomical Journal*, 134(4), 2332–2359. 10.1086/500975

Fan, X., Strauss, M., Richards, G., Hennawi, J., Becker, R., White, R., Diamond-Stanic, A., Donley, J., Jiang, L., Kim, J., Vestergaard, M., Young, J., Gunn, J., Lupton, R., Knapp, G., Schneider, D., Brandt, W., Bahcall, N. A., **Barentine, J.**, Brinkmann, J., Brewington, H., Fukugita, M., Harvanek, M., Kleinman, S., Krzesinski, J., Long, D., Neilsen, E., Nitta, A., Snedden, S., & Voges, W. (2006). A Survey of $z > 5.7$ Quasars in the Sloan Digital Sky Survey. IV. Discovery of Seven Additional Quasars. *Astronomical Journal*, 131(3), 1203–1209. 10.1086/500296

Silvestri, N., Hawley, S., West, A., Szkody, P., Bochanski, J., Eisenstein, D., McGehee, P., Schmidt, G., Smith, J. A., Wolfe, M., Harris, H., Kleinman, S., Liebert, J., Nitta, A., **Barentine, J.**, Brewington, H.,

Brinkmann, J., Harvanek, M., Krzesiński, J., Long, D., Neilsen, E., Schneider, D., & Snedden, S.(2006). A Catalog of Spectroscopically Selected Close Binary Systems from the Sloan Digital Sky Survey Data Release Four. *Astronomical Journal*, 131(3), 1674–1686. 10.1086/499494

Szkody, P., Henden, A., Agüeros, M., Anderson, S., Bochanski, J., Knapp, G., Mannikko, L., Mukadam, A., Silvestri, N., Schmidt, G., Stephanik, B., Watson, T., West, A., Winget, D., Wolfe, M., **Barentine, J.**, Brinkmann, J., Brewington, H., Downes, R., Harvanek, M., Kleinman, S., Krzesinski, J., Long, D., Neilsen, E., Nitta, A., Schneider, D., Snedden, S., & Voges, W. (2006). Cataclysmic Variables from Sloan Digital Sky Survey. V. The Fifth Year (2004). *Astronomical Journal*, 131(2), 973–983. 10.1086/499308

Knapp, G., Tremonti, C., Rockosi, C., Schlegel, D. J., Yanny, B., Beers, T., Allende Prieto, C., Wilhelm, R., Lupton, R., Gunn, J., Niederste-Ostholt, M., Schneider, D., Covey, K., Seth, A., Ivezić, Ž., Eisenstein, D., Helmboldt, J., Finkbeiner, D., Padmanabhan, N., Kleinman, S., Long, D., Snedden, S., Nitta, A., Harvanek, M., Krzesinski, J., Brewington, H., **Barentine, J.**, Newman, P., Neilsen, E., Fukugita, M., & Brinkmann, J. (2006). SDSS J103913.70+533029.7: A Super Star Cluster in the Outskirts of a Galaxy Merger. *Astronomical Journal*, 131(2), 859–865. 10.1086/499304

Pindor, B., Eisenstein, D., Gregg, M., Becker, R., Inada, N., Oguri, M., Hall, P., Johnston, D., Richards, G., Schneider, D., Turner, E., Brasi, G., Hinz, P., Kenworthy, M. A., Miller, D., **Barentine, J.**, Brewington, H., Brinkmann, J., Harvanek, M., Kleinman, S., Krzesinski, J., Long, D., Neilsen, E., Newman, P., Nitta, A., Snedden, S., & York, D. (2006). SDSS J102111.02+491330.4: A Newly Discovered Gravitationally Lensed Quasar. *Astronomical Journal*, 131(1), 41–48. 10.1086/497965

Pourbaix, D., Knapp, G., Szkody, P., Ivezić, Ž., Kleinman, S., Long, D., Snedden, S., Nitta, A., Harvanek, M., Krzesinski, J., Brewington, H., **Barentine, J.**, Neilsen, E. H., & Brinkmann, J. (2005). Candidate spectroscopic binaries in the Sloan Digital Sky Survey. *Astronomy & Astrophysics*, 444(2), 643–649. 10.1051/0004-6361:20053098

Anderson, S., Haggard, D., Homer, L., Joshi, N. R., Margon, B., Silvestri, N., Szkody, P., Wolfe, M., Agol, E., Becker, A., Henden, A., Hall, P., Knapp, G., Richmond, M., Schneider, D., Stinson, G., **Barentine, J.**, Brewington, H., Brinkmann, J., Harvanek, M., Kleinman, S., Krzesinski, J., Long, D., Neilsen, E., Nitta, A., & Snedden, S.(2005). Ultracompact AM Canum Venaticorum Binaries from the Sloan Digital Sky Survey: Three Candidates Plus the First Confirmed Eclipsing System. *Astronomical Journal*, 130(5), 2230–2236. 10.1086/491587

Willman, B., Dalcanton, J., Martinez-Delgado, D., West, A., Blanton, M., Hogg, D., **Barentine, J.**, Brewington, H., Harvanek, M., Kleinman, S., Krzesinski, J., Long, D., Neilsen, E., Nitta, A., & Snedden, S. (2005). A New Milky Way Dwarf Galaxy in Ursa Major. *Astrophysical Journal*, 626(2), L85–L88. 10.1086/431760

Hobbs, L., Thorburn, J., Oka, T., **Barentine, J.**, Snow, T., & York, D. (2004). Atomic and Molecular Emission Lines from the Red Rectangle. *Astrophysical Journal*, 615(2), 947–957. 10.1086/424733

Field, S., and **Barentine, J.** (2000). Capacitive position sensor with simultaneous, linear X-Y readout. *Review of Scientific Instruments*, 71(6), 2603–2607. 10.1063/1.1150656

Barentine, J. and Esquerdo, G. (1999). Barnard's Merope Nebula (IC 349): an Interstellar Interloper. *Astronomical Journal*, 117(3), 1402–1407. 10.1086/300760

Reviews

Barentine, J. (2022). Night sky brightness measurement, quality assessment and monitoring. *Nature Astronomy*, 6, 1120–1132. 10.1038/s41550-022-01756-2

Barentine, J. (2019). Methods for Assessment and Monitoring of Light Pollution around Ecologically Sensitive Sites. *Journal of Imaging*, 5(5), 54. 10.3390/jimaging5050054

Proceedings

Barentine, J. (2023). "Regulating Human Activities in the Final Frontier: Towards a Nature-Centered 'Space Jurisprudence"'. Proceedings of the 2023 ILAS-HUFS HK+ 3rd International Conference, Santiago, Chile, 16-18 January 2023.

Barentine, J., & Kormendy, J. (2009). "Detection of a Distinct Pseudobulge Hidden Inside the 'Box-Shaped Bulge' of NGC 4565" in *Galaxy Evolution: Emerging Insights and Future Challenges*, ASP Conference Series, 419,149-153.

Barentine, J., Wakker, B., York, D., Howk, J., Wilhelm, R., van Woerden, H., Peletier, R., Beers, T., Richter, P., Ivezić, Ž., & Schwarz, U. "Distances to the High Velocity Clouds: A Forty-Year Mystery on the Way to Solution" in *New Horizons in Astronomy: Frank N. Bash Symposium 2007*, ASP Conference Series, 393, 179-182.

Selected Presentations

"Who speaks for the night? The regulation of light pollution in the 'Rights of Nature' legal framework" (contributed talk), 5th International Conference on Artificial Light at Night, online (2020)

"'The Things We Have Always Known': Design and Evaluation of Dark-Sky Friendly Lighting" (invited talk), Light Pollution: Theory, Modeling and Measurement, Hajmás, Hungary (2019)

"A Large-Scale Municipal Street Lighting Dimming Experiment" (contributed talk), Light Pollution: Theory, Modeling and Measurement, Hajmás, Hungary (2019)

"Do International Dark Sky Places Stay Dark After Accreditation?" (poster), 5th International Conference on Artificial Light at Night, Snowbird, Utah (2018)

"The Consortium for Dark Sky Studies: A Transdisciplinary Institute for Understanding the Loss of the Night" (poster with D. Kieda, S. Goldsmith, B. Foott and J. Muir), AAS 231, Washington, DC (2018)

"Skyglow Changes Over Tucson, Arizona, Resulting From A Municipal LED Street Lighting Conversion" (contributed talk), Light Pollution: Theory, Modeling and Measurement, Cellers, Spain (2017)

"Going for The Gold: Quantifying and Ranking Visual Night Sky Quality in International Dark Sky Places", (poster) 4th International Conference on Artificial Light at Night, Cluj-Napoca, Romania (2016)

"Long-Term Optical and Near-Infrared Spectroscopic Monitoring of ϵ Aurigae During the 2009-11 Eclipse" (poster +12 coauthors), AAS 219, Austin, Texas (2012)

"High Resolution Molecular Absorption Line Spectroscopy Of The Ultraluminous Infrared Galaxy NGC 4418" (poster with J. Lacy), AAS 211, Austin, Texas (2008)

"A possible rock art depiction of the AD 1006 supernova event in the American Southwest", AAS 208, Calgary, Canada (2006)

"A Gamma Ray Burst Fields Study In The Near-infrared" (poster with F. Hearty), AAS 208, Calgary, Canada (2006)

"The APO-PSI TNO Survey" (poster with G. Esquerdo, C. Neese), AAS 204, Denver, Colorado (2004)

"Near-Infrared Observations of Barnard's Merope Nebula (IC 349)" (poster with G. Esquerdo), AAS 203, Atlanta, Georgia (2004)

"A Characterization Of The GNAT SciTech STAR Class 0.5m Prototype Telescope" (poster with R. Culver), AAS 200, Albuquerque, New Mexico (2002)

"Properties and Time Variability of Solar Activity Structures" (poster with K. Harvey), AAS Solar Physics Division 31, Lake Tahoe, Nevada (2000)

Education and Public Outreach

Instruction

AST 301: Introduction to Astronomy, UT, Spring 2013 (teaching assistant)

AST 307: Introductory Astronomy, UT, Fall 2012

AST 309N: The Lives and Deaths of Stars, UT, Spring 2012 (teaching assistant)

AST 352K: Stellar Astronomy, UT, Fall 2011 (teaching assistant)

AST 152M: Stellar Astronomy Laboratory, UT, Fall 2011 (teaching assistant)

AST 351: Astronomical Instrumentation, UT, Fall 2008 (teaching assistant)

AA 101: Astronomy Laboratory, CSU, Fall 2000–Summer 2001 (instructor of record)

PH 315: Modern Physics Laboratory, CSU, Spring 2000 (teaching assistant)

PH 110: Descriptive Physics, CSU, Fall 1999 (teaching assistant)

Advising

Graduate student: José Robles Rodríguez (Universidad Complutense de Madrid Ph.D. examining committee, 2021)

Graduate student: Gloria Kaasch-Buerger (University of Colorado at Denver M.S. committee, 2015–16)

Undergraduate student: Amy Juan (NOAO; 2014)

Graduate student: John Kanemoto (NOAO; 2014)

Undergraduate student: Justin Hickey (UT; 2012–13)

Outreach

Apache Point Observatory (community outreach activities, 2001–2006)

Kitt Peak National Observatory Visitor Center (Docent, 1994–1997)

Flandrau Planetarium, University of Arizona (Telescope Operator, 1994–1997)

Service

DarkSky International Southern Arizona chapter (Advisor to the Board of Directors, 2023–present)

IAU Centre for the Protection of the Dark and Quiet Sky from Satellite Constellation Interference Community Engagement Hub (Co-lead, 2022-present)

Light Pollution: Theory, Modeling and Measurements Scientific Organizing Committee (2022)

SATCON2 Community Engagement Working Group (2021)

SATCON1 Satellite Constellation Metrics Working Group (2020)

Dark and Quiet Skies for Science and Society Scientific Organizing Committee (2020–2022)

Artificial Light At Night Research Literature Database (Co-curator, 2014–present)

Journal of Dark Sky Studies (JDSS) Editorial Board (2020–present)

International Astronomical Union Commission B7: Commission Protection of Existing and Potential Observatory Sites (Member, 2018–present)

American Astronomical Society Committee on Light Pollution, Radio Interference and Space Debris (Member, 2017–present)

University of Utah Consortium for Dark Sky Studies Governing Committee (Founding Member, 2017–present)

Colorado Plateau Dark Sky Cooperative Steering Committee (Member, 2017–present)

International Union for Conservation of Nature Dark Skies Advisory Group (Member, 2016–2018; 2021)

Professional Affiliations

American Association for the Advancement of Science (Member, 1993–present)

International Astronomical Union (Member, 2018–present)

American Astronomical Society (Junior Member, 2000–2012; Full Member, 2013-present)

- Historical Astronomy Division (Member, 2015–present)

Royal Astronomical Society (Fellow, 2018–present)

Illuminating Engineering Society (Associate Member, 2021–present)

Honors

Galileo Award, DarkSky International (2023)

Board of Visitors Graduate Student Endowment Fund Scholarship (UT Austin, 2008–09 and 2011–12)

Asteroid (14505) Barentine (2007)

2nd Place, National Outstanding Young Astronomer Award, Astronomical League (1994)

1st Place, Physical Sciences Division, Student Poster Competition, AAAS Annual Meeting (San Francisco, CA, 1994)

Arizona delegate, Honors Research Program, U.S. Dept. of Energy, Brookhaven National Laboratory (Upton, NY, 1994)