

Brian Kloppenborg

Astrophysicist and Entrepreneur

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Education

- 2012 **Ph.D. Physics**, *University of Denver*, Denver, CO.
Dissertation: *Interferometric, Astrometric, and Photometric studies of epsilon Aurigae: Seeing the disk around a distant star.* **Advisor:** Dr. Robert Stencel
- 2006 **B.A. Physics**, *Hastings College*, Hastings, NE.
Senior Project: *Design, Construction and Implementation of a Radio Telescope to Study Neutral Hydrogen* **Advisor:** Dr. James Dugan

Business Experience

- 2016-2020 **Founder**, *Pratum Labs, LLC*, Colorado Springs, CO.
Company: A consulting firm providing expertise in big data, machine learning, and GPU-accelerated computing. Business operated on nights/weekends while working full-time at GTRI. **Funding:** \$1k startup costs, bootstrapping thereafter. **Administration:** All creation/termination, operation, accounting, business development, and legal responsibilities.

Research Experience

- 2016-present **Research Scientist II**, *Georgia Tech Research Institute*, Atlanta, GA.
Research Areas: Space Domain Awareness, Phased Array Radars, Missile Defense, Cloud/Fog/Edge Computing, Software Engineering, Big Data, Ray Tracing. **Other Items:** Business Development
- 2014-2016 **Research Scientist**, *ArrayFire*, Atlanta, GA.
Research: High performance computing with applications to cybersecurity, graph analytics, physics, and image processing. **Teaching:** Developed training material and presented 2-4 day courses on OpenCL for Xilinx FPGAs; CUDA for NVIDIA GPUs; and OpenCL for AMD, Intel and NVIDIA GPUs. **Software:** Contributions to ArrayFire and Celero. **Administration:** Executive board adviser, grant administrator.
- 2013-2014 **Sponsor Funded Professional - Research Associate**, *Georgia State University*, Atlanta, GA.
Research: Optical interferometry of YSOs (Herbig, T Tauri), eruptive YSO Variables (FUor, EXor, and UXor), and Novae (2013 Del, 2013 Cen) **Software:** GPU computing libraries for optical interferometric model fitting and image reconstruction. 300x faster than competing software. See SIMTOI and LibOI below.
- 2012-2013 **Postdoctoral Fellow**, *Max-Planck-Institut für Radioastronomie*, Bonn, Germany.
Research: Optical Interferometry of YSOs (Herbig, T Tauri) and eruptive YSO variables (FUor, EXor, and UXor). **Software:** Contributions to MultiNest, a Bayesian optimization engine that uses nested sampling.

- 2008-2012 **Graduate Research Assistant**, *University of Denver*, Denver, CO.
Research: Interferometric imaging, modeling, NIR Spectroscopy, and photometry of epsilon Aurigae. Proposals or support for MOST, Spitzer, SOFIA WYRO, Hubble, Hershel Space Telescope, and several ground observatories. **Software:** Telescope control system for DU's rooftop telescope. Control software for Optec's SSP-4 J/H photometer. **Notable Item:** 9 months of high-altitude (14,128 ft, 4306m) observing experience.
- 2006 **Undergraduate Research**, *Hastings College*, Hastings, NE.
Senior Project: *The Design, Construction, and implementation of a Radio Telescope to study Neutral Hydrogen Spectral Emissions* **Software:** New control suite for the Spectracyber II, a Radio Astronomy Supply 21-cm radio spectrometer.

Teaching Experience and Public Outreach

- 2015-2017 **Adjunct Professor**, *Georgia State University*, Atlanta, GA.
Tasks: Advised students on numerical modeling and HPC techniques.
- 2010-2012 **Citizen Sky Professional Liaison**, *American Association of Variable Star Observers*, Cambridge, MA.
This was a NSF ISE funded program. **Tasks:** Taught members of the public how to conduct variable star observations, reduce their own data, and publish their results in a peer-reviewed scientific journal. Functioned as the DSLR Photometry Team leader. Regularly blogged about professional research activities.
- 2007-2008 **Research and Teaching Assistant**, *University of Denver*, Denver, CO.
Tasks: Taught five sections of University Physics labs (electricity, magnetism, circuit, Newtonian mechanics, thermodynamics) over one year. **Awards:** Received AAPT Outstanding Teaching Assistant Award
- 2005-2007 **Assistant to the Curator of Astronomy**, *Hastings Museum*, Hastings, NE.
Presented twice-daily tours of *The Sky Tonight* to the public along with automated shows. Presented presentations to elementary and middle school classes.
- 2005 **Volunteer**, *Hastings Literacy Foundation*, Hastings, NE.
Tutor for the GED program in the topics of science and mathematics.
- 2004-2007 **Observatory Assistant**, *Hastings College*, Hastings, NE.
Assisted the Observatory Director during two monthly public observing sessions. Guided the public through the constellations and explained basic astrophysical phenomena.
- 2003 **Laboratory Assistant**, *Hastings College*, Hastings, NE.
Provided assistance to the instructor of the Introduction to the Night Sky astronomy course.

Grant and IRAD Funding

- 2018-2021 **\$1M**, *Co-PI*, Optical Detection for Space Situational Awareness, GTRI SI IRAD.
A three-year Strategic Initiative IRAD focusing on Space Situational Awareness that will (1) Demonstrate verified modeling and simulation capabilities for satellites through lab-based measurements, advanced radiometric modeling, and ground-based observations; (2) Expand upon low-light detection and tracking capabilities. (3) Develop SSA-focused big data analytics capabilities. This project is a collaboration between GT and GTRI.
- 2017 **\$150k**, *PI Pro Tempore*, Smart Cities - Fog Computing, GTRI IRAD.
Investigated the suitability of Fog Computing to DoD applications involving real-time distributed video processing. Matured Georgia Tech's Mobile Fog software from TRL 3 to TRL 5. Evaluated performance of "the Fog" under degraded networking conditions.

- 2016 **\$146k**, *PI*, Accelerating Biometical Image Processing using Massively Parallel Processors, NIH SBIR R43-LM012359-01.
Accelerate commonly used medical imaging and medical image reconstruction software using GPUs. Created drop-in replacement for Kitware’s popular Insight Segmentation and Registration Toolkit (ITK) software. Grant transferred to Dr. Melonakos upon my departure from ArrayFire.
- 2015 **\$92k**, *PI*, ArrayFire Graph - A GPU Accelerated Graph Framework, DARPA SBIR D152-004-0022.
Created a prototype *dynamic* graph data structure suitable for deployment on massively parallel processors. Ported this data structure to the GPU. Delivered superior (4x faster) performance compared to NVIDIA’s *static* graph library, NVGraph.
- 2015 **\$149k**, *PI*, ArrayFire Argos - A High-Performance Cybersecurity Framework, DOE SBIR DE-SC0013181.
Developed a statistics-based cybersecurity solution for high-throughput (40 Gbps+) network connections. Provided similar performance to a \$120k dedicated box from Cisco using \$15k of hardware, but at a cost of significantly greater latency (200 ms vs. 1 ms).

Service

- 2013 **Editor**, **DSLR Observing Manual**, *American Association of Variable Star Observers*, Cambridge, MA.

Papers

- Labdon, A., Kraus, S., Davies, C. L., Kreplin, A., Kluska, J., Harries, T. J., Monnier, J. D., Brummelaar, T., Baron, F., Millan-Gabet, R., **Kloppenborg, B.**, Eisner, J., Sturmman, J., Sturmman, L., “Dusty disk winds at the sublimation rim of the highly inclined, low mass young stellar object SU Aurigae”. In: *Astronomy & Astrophysics* 627 (July 2019), A36. ISSN: 0004-6361.
- Levine, S., Henden, A., Terrell, D., Welch, D., **Kloppenborg, B.**, “AAVSO – Solar System Objects and the AAVSO Photometric All-Sky Survey (APASS) (Abstract)”. In: *Journal Of The American Association Of Variable Star Observers* 47.1 (2019), pp. 1–10.
- Davies, C. L., Kraus, S., Harries, T. J., Kreplin, A., Monnier, J. D., Labdon, A., **Kloppenborg, B.**, Acreman, D. M., Baron, F., Millan-Gabet, R., “Simultaneous spectral energy distribution and near-infrared interferometry modeling of HD 142666”. In: *The Astrophysical Journal* 866.1 (2018), p. 23.
- Setterholm, B. R., Monnier, J. D., Davies, C. L., Kreplin, A., Kraus, S., Baron, F., Aarnio, A., Berger, J.-P., Calvet, N., Curé, M., Kanaan, S., **Kloppenborg, B.**, Bouquin, J.-B. L., Millan-Gabet, R., Rubinstein, A. E., Sitko, M. L., Sturmman, J., Brummelaar, T. A., Touhami, Y., “Probing the Inner Disk Emission of the Herbig Ae Stars HD 163296 and HD 190073”. In: *The Astrophysical Journal* 869.2 (Dec. 2018), p. 164. ISSN: 1538-4357.
- Neilson, H. R., Baron, F., Norris, R., **Kloppenborg, B.**, Lester, J. B., “Stellar Atmospheres, Atmospheric Extension, and Fundamental Parameters: Weighing Stars Using the Stellar Mass Index”. In: *The Astrophysical Journal* 830.2 (Aug. 2016), p. 103. ISSN: 0004-637X.
- Kloppenborg, B. K.**, Stencel, R. E., Monnier, J. D., Schaefer, G. H., Baron, F., Tycner, C., Zavala, R. T., Hutter, D., Zhao, M., Che, X., Ten Brummelaar, T. A., Farrington, C. D., Parks, R., McAlister, H. A., Sturmman, J., Sturmman, L., Sallave-Goldfinger, P. J., Turner, N., Pedretti, E., Thureau, N., “Interferometry of Aurigae: Characterization of the asymmetric eclipsing disk”. In: *Astrophysical Journal, Supplement Series* 220.1 (Aug. 2015), pp. 1–22. ISSN: 00670049.

- Schaefer, G. H., Brummelaar, T., Gies, D. R., Farrington, C. D., **Kloppenborg, B.**, Chesneau, O., Monnier, J. D., Ridgway, S. T., Scott, N., Tallon-Bosc, I., McAlister, H. A., Boyajian, T., Maestro, V., Mourard, D., Meilland, A., Nardetto, N., Stee, P., Sturmann, J., Vargas, N., Baron, F., Ireland, M., Baines, E. K., Che, X., Jones, J., Richardson, N. D., Roettenbacher, R. M., Sturmann, L., Turner, N. H., Tuthill, P., Belle, G., Braun, K., Zavala, R. T., Banerjee, D. P. K., Ashok, N. M., Joshi, V., Becker, J., Muirhead, P. S., “The expanding fireball of Nova Delphini 2013”. In: *Nature* 515.7526 (Nov. 2014), pp. 234–236. ISSN: 1476-4687.
- Kloppenborg, B. K.**, Pieri, R., Eggenstein, H.-B., Maravelias, G., Pearson, T., “A Demonstration of Accurate Wide-field V-band Photometry Using a Consumer-grade DSLR Camera”. In: *Journal Of The American Association Of Variable Star Observers* 40 (Mar. 2013), pp. 815–833. ISSN: 0271-9053.
- Kloppenborg, B. K.**, Hopkins, J. L., Stencel, R. E., “An Analysis of the Long-term Photometric Behavior of epsilon Aurigae”. In: *The Journal of the American Association of Variable Star Observers* 40 (Mar. 2012), p. 647. ISSN: 0271-9053.
- Price, A., Turner, R., Stencel, R. E., **Kloppenborg, B. K.**, Henden, A. A., “The origins and future of the citizen sky project”. In: *Journal of the American Association of Variable Star Observers* 40 (2012), pp. 614–617.
- Chadima, P., Harmanec, P., Bennett, P. D., **Kloppenborg, B.**, Stencel, R., Yang, S., Božić, H., Šlechta, M., Kotková, L., Wolf, M., Škoda, P., Votruba, V., Hopkins, J. L., Buil, C., Sudar, D., “Spectral and photometric analysis of the eclipsing binary epsilon Aurigae prior to and during the 2009–2011 eclipse”. In: *Astronomy & Astrophysics* 530 (May 2011), A146. ISSN: 0004-6361.
- Stencel, R. E., **Kloppenborg, B. K.**, Wall, R. E., Hopkins, J. L., Howell, S. B., Hoard, D. W., Rayner, J., Bus, S., Tokunaga, A., Sitko, M. L., Bradford, S., Russell, R. W., Lynch, D. K., Hammel, H., Whitney, B., Orton, G., Yanamandra-Fisher, P., Hora, J. L., Hinz, P., Hoffmann, W., Skemer, A., “Infrared studies of epsilon Aurigae in eclipse”. In: *Astronomical Journal* 142.5 (Nov. 2011), p. 174. ISSN: 00046256.
- Kloppenborg, B.**, Stencel, R., Monnier, J. D., Schaefer, G., Zhao, M., Baron, F., McAlister, H., Ten Brummelaar, T., Che, X., Farrington, C., Pedretti, E., Sallave-Goldfinger, P. J., Sturmann, J., Sturmann, L., Thureau, N., Turner, N., Carroll, S. M., “Infrared images of the transiting disk in the aurigae system”. In: *Nature* 464.7290 (Apr. 2010), pp. 870–872. ISSN: 00280836.
- Mais, D. E., **Kloppenborg, B.**, Stencel, R., “Adventures in Interferometry”. In: *The Society for Astronomical Sciences 27th Annual Symposium on Telescope Science Held May 2022 27* (2008), p. 77.
- Stencel, R. E., Creech-Eakman, M., Hart, A., Hopkins, J. L., **Kloppenborg, B. K.**, Mais, D. E., “Interferometric Studies of the Extreme Binary epsilon Aurigae: Pre-Eclipse Observations”. In: *The Astrophysical Journal* 689.2 (Oct. 2008), pp. L137–L140. ISSN: 0004-637X.

Books and Chapters

- Kloppenborg, B.**, Belle, G., “Optical Interferometry of Giants and Supergiants”. In: *Giants of Eclipse: The zeta Aurigae Stars and Other Binary Systems*. Vol. 408. 2015, pp. 157–168.
- AAVSO Citizen Sky Team, ., Littlefield, C., Norris, P., Kinne, R., Templeton, M., Pieri, R., Jackson, R., Brewster, M., Templeton, M., Blackford, M., Eggenstein, H.-B., Connors, M., Doktor, I., Buchheim, R., Collins, D., Hager, T., Manske, B., Templeton, M., **Kloppenborg, B.**, Henden, A., Loughney, D., Simonsen, M., Brown, T., Valleli, P., *The AAVSO DSLR Observing Manual*. Ed. by Brian Kloppenborg. Version 1. Cambridge, MA: AAVSO, 2014, pp. 1–93.

Technical Publications

- Kloppenborg, B.** *Software Development Pipelines*. Tech. rep. Colorado Springs, CO: Georgia Tech Research Institute, 2018, pp. 1–14.

Melonakos, J., **Kloppenborg, B.**, Aatish, K., Garigipati, P., *Online Threat in Social Networks Using Accelerators*. Tech. rep. Atlanta, GA: AccelerEyes, LLC DBA ArrayFire, Aug. 2015.

Preprints

Parks, J. R., White, R. J., Baron, F., Monnier, J. D., **Kloppenborg, B.**, Henry, G., Scheafer, G., Che, X., Pedretti, E., Thureau, N., Zhao, M., Brummelaar, T., McAlister, H., Ridgway, S. T., Turner, N., Sturmman, J., Sturmman, L., “First Images of Cool Starspots on a Star Other than the Sun: Interferometric Imaging of λ Andromedae”. In: *eprint arXiv:1508.04755* (Aug. 2015), pp. 1–62.

Invited Talks

Kloppenborg, B. K. “Interferometric results from the epsilon Aurigae eclipse: Its more than just images!” In: *AAS topical meetings: Giants of Eclipse*. Vol. 45. 2013.

Conference Proceedings

Kloppenborg, B., Churchill, L., Valenta, C., Gunter, B., Holzinger, M. J., “Optical Detection for Space Situational Awareness (ODESSA)”. In: *AMOS Technical Conference*. Atlanta, GA: Georgia Tech Research Institute, 2018, pp. 1–12.

Kloppenborg, B. “Real-Time Visualization of CUDA Data using ArrayFire Forge”. In: *GPU Technology Conference*. 2016.

Kloppenborg, B. “Interferometric Techniques for Binary Stars”. In: *Resolving The Future Of Astronomy With Long-Baseline Interferometry Proceedings of a conference held 28-31 March 2011*. Vol. 487. 2014.

Monnier, J. D., Berger, J.-P., Le Bouquin, J.-B., Tuthill, P. G., Wittkowski, M., Grellmann, R., Müller, A., Renganswany, S., Hummel, C., Hofmann, K.-H., Schertl, D., Weigelt, G., Young, J., Buscher, D., Sanchez-Bermudez, J., Alberdi, A., Schoedel, R., Köhler, R., Soulez, F., Thiébaud, É., Kluska, J., Malbet, F., Duvert, G., Kraus, S., **Kloppenborg, B. K.**, Baron, F., Wit, W.-J., Rivinius, T., Merand, A., “The 2014 interferometric imaging beauty contest”. In: *Optical and Infrared Interferometry IV*. Ed. by Jayadev K. Rajagopal, Michelle J. Creech-Eakman, and Fabien Malbet. Vol. 9146. International Society for Optics and Photonics, July 2014, 91461Q. ISBN: 9780819496140.

Antoniucci, S., Arkharov, A. A., Di Paola, A., Giannini, T., Kishimoto, M., **Kloppenborg, B.**, Larionov, V. M., Li Causi, G., Lorenzetti, D., Vitali, F., “EXORCISM: EXOR optiCal Infrared Systematic Monitoring”. In: *Protostars and Planets VI*. 2013.

Kloppenborg, B., Baron, F., “Accelerating optical interferometric image reconstruction and modeling using graphical processing units (GPUs)”. In: *Biomedical and Astronomical Signal Processing*. Villars-sur-Ollon, Switzerland, 2013, p. 42.

Baron, F., **Kloppenborg, B.**, Monnier, J., “Toward 5D image reconstruction for optical interferometry”. In: *Optical and Infrared Interferometry III*. Ed. by Françoise Delplancke, Jayadev K. Rajagopal, and Fabien Malbet. Vol. 8445. Sept. 2012, p. 84451D. ISBN: 9780819491466.

Brummelaar, T. A., Sturmman, J., McAlister, H. A., Sturmman, L., Turner, N. H., Farrington, C. D., Schaefer, G., Goldfinger, P. J., **Kloppenborg, B.**, “Data analysis for the CHARA Array CLIMB beam combiner”. In: *Optical and Infrared Interferometry III*. Ed. by Françoise Delplancke, Jayadev K. Rajagopal, and Fabien Malbet. Vol. 8445. Sept. 2012, p. 84453C. ISBN: 9780819491466.

Kloppenborg, B. K., K. B., “Summary and the Future of Studies of Epsilon Aurigae”. In: 2011, p. 224.06.

Baron, F., **Kloppenborg, B.**, “GPU-accelerated image reconstruction for optical and infrared interferometry”. In: *Optical and Infrared Interferometry II*. Ed. by William C. Danchi, Françoise Delplancke, and Jayadev K. Rajagopal. Vol. 7734. SPIE, July 2010, p. 77344D. ISBN: 9780819482242.

- Baron, F., Monnier, J. D., **Kloppenborg, B.**, “A novel image reconstruction software for optical/infrared interferometry”. In: *Optical and Infrared Interferometry II*. Vol. 7734. 1. International Society for Optics and Photonics, July 2010, p. 77342I. ISBN: 9780819482242.
- Malbet, F., Cotton, W., Duvert, G., Lawson, P., Chiavassa, A., Young, J., Baron, F., Buscher, D., Rengaswamy, S., **Kloppenborg, B.**, Vannier, M., Mugnier, L., “The 2010 interferometric imaging beauty contest”. In: *Optical and Infrared Interferometry II*. Ed. by Eli Atad-Ettedgui and Dietrich Lemke. Vol. 7734. International Society for Optics and Photonics, July 2010, 77342N. ISBN: 9780819482242.
- Kloppenborg, B. K.** “Design construction and implementation of a radio telescope to study neutral hydrogen”. In: *Nebraska Academy of Sciences*. 2006.

Conference Posters

- Levine, S., Henden, A., Terrell, D., Welch, D., **Kloppenborg, B.**, “Applications of the AAVSO Photometric All-Sky Survey (APASS) to observations of objects in our Solar System - NASA/ADS”. In: *American Astronomical Society, DPS meeting #50*. 2019, pp. 1–1.
- Henden, A. A., Levine, S., Terrell, D., Welch, D. L., Munari, U., **Kloppenborg, B. K.**, “APASS Data Release 10”. In: *American Astronomical Society, AAS Meeting #232, id. 223.06*. Vol. 232. 2018.
- Fischer, T. C., Crenshaw, D. M., Baron, F., **Kloppenborg, B. K.**, Pope, C. L., “Bayesian Model Selection in ‘Big Data’ Spectral Analysis”. In: *American Astronomical Society*. 2015, pp. 1–1.
- Parks, J., White, R. J., Plavchan, P., Monnier, J. D., Baron, F., Henry, G. W., **Kloppenborg, B. K.**, Che, X., Schaefer, G., Zhao, M., Jones, J., Pedretti, E., Thureau, N., Ten Brummelaar, T., Farrington, C. D., McAlister, H. A., Sturmann, J., Sturmann, L., Turner, N. H., Ridgway, S. T., “Stellar Rotation and Proto-Planetary Disks: What Interferometric Imaging and High Cadence Photometry Can Tell Us”. In: *American Astronomical Society* 221 (2013).
- Clover, J., Jackson, B. V., Buffington, A., Hick, P. P., **Kloppenborg, B.**, Stencel, R., “Analysis of Epsilon Aurigae light curve from the Solar Mass Ejection Imager”. In: *American Astronomical Society*. Vol. 43. 2011.
- Kloppenborg, B. K.** “Spots, Eclipses, and Pulsation: The Interplay of Photometry and Optical Interferometric Imaging”. In: *American Astronomical Society Meeting Abstracts #218*. Vol. 43. 2011, p. 114.03.
- Kloppenborg, B. K.**, Hemenway, P., Jensen, E., Osborn, W., Stencel, R., “Towards A Full Orbital Solution For Epsilon Aurigae”. In: *American Astronomical Society*. Vol. 43. 2011.
- Kloppenborg, B. K.**, Price, A., Turner, R., Henden, A., Stencel, R., “Collaborative Research Efforts For Citizen Scientists”. In: *American Astronomical Society*. Vol. 43. 2011.
- Kloppenborg, B. K.**, Stencel, R. E., Price, A., Turner, R., Henden, A., “Development of DSLR Photometry as an Example of a Citizen Sky Team”. In: *American Astronomical Society*. Vol. 43. 2011.
- Price, A., Billings, G., Gary, B., **Kloppenborg, B.**, Henden, A., “High Speed UBV Photometry Of Epsilon Aurigae’s 2009-2011 Eclipse”. In: *American Astronomical Society*. Vol. 43. 2011.
- Stencel, R. E., **Kloppenborg, B.**, Sitko, M., Rayner, J., Tokunaga, A., “Discovery Of Strong Helium 10830A Absorption In The Mid-eclipse Disk Of Epsilon Aurigae”. In: *American Astronomical Society*. Vol. 43. 2011.
- Turner, R., Price, A., Henden, A., Stencel, R., **Kloppenborg, B.**, “Citizen Sky, An Update on the AAVSO’s New Citizen Science Project”. In: *American Astronomical Society*. Vol. 43. 2011.
- Kloppenborg, B. K.**, Stencel, R. E., Hopkins, J. L., “Epsilon Aurigae - Two-year Totality Transpiring”. In: *American Astronomical Society*. Vol. 42. 2010, p. 282.
- Turner, R., Price, A., **Kloppenborg, B.**, Henden, A., “Citizen Sky, Solving the Mystery of epsilon Aurigae”. In: *American Astronomical Society* 42 (2010), p. 509.

Software

- Kloppenborg, B.**, Yalamanchili, P., Mohammed, Z., *ArrayFire Benchmark Suite*. Atlanta, GA, 2016.
- Yalamanchili, P., Arshad, U., Mohammed, Z., Garigipati, P., Entschew, P., **Kloppenborg, B.**, Malcolm, J., Melonakos, J., *ArrayFire - A high performance software library for parallel computing with an easy-to-use API*. Atlanta, GA, 2015.
- Kloppenborg, B.**, Baron, F., *LibOI: The OpenCL Interferometry Library*. Denver, CO, 2012.
- Kloppenborg, B.**, Baron, F., *OIFITS-SIM: The OIFITS-SIMulator*. Denver, CO, 2012.
- Kloppenborg, B.**, Baron, F., *SIMTOI: SIMulation and Modeling Tool for Optitcal Interferometry*. Denver, CO, 2012.
- Kloppenborg, B.** *SSP4 Control Software*. Hastings, NE, 2011.
- Kloppenborg, B.** *Spectra Cyber Control Software*. Hastings, NE, 2006.

Popular Press Articles

- Kloppenborg, B.**, Pearson, T., Eggenstein, H. B., “Photometry for all in the Digital Age”. In: *Sky & Telescope* (Apr. 2011), pp. 64–66.
- Pearson, T., **Kloppenborg, B.**, Eggenstein, H. B., “Measuring Star Brightness with a Digital Camera”. In: *The Classroom Astronomer* (2011), pp. 3–7.