

Dr. Adam F. Kowalski
Assistant Professor
3665 Discovery Drive, Boulder, CO 80303
303-492-9648 / 419-704-7509
adam.f.kowalski@colorado.edu

My research expertise is the optical and ultraviolet observations and modelling of solar and M dwarf flares. I graduated from the University of Chicago with a degree in Physics (with honors); my research advisor was Prof. Dietrich Muller. I obtained my PhD in Astronomy from the University of Washington under the supervision of Prof. Suzanne Hawley. My PhD was on “Time-Resolved Properties and Global Trends in dMe Flares from Simultaneous Photometry and Spectra”. I was a NASA Postdoctoral Program Fellow at the Heliophysics Science Division at NASA/GSFC from 2012 - 2014, and then I was a Research Associate in the University of Maryland Astronomy Department and Heliophysics Science Division at NASA/GSFC for two more years before joining the APS Department at the University of Colorado as Assistant Professor in 2016. My position is split 50/50 between the APS Department / CU Graduate School / LASP and the National Solar Observatory.

(a) Professional Preparation

University of Chicago	Chicago, IL	Physics	BA 2006
University of Washington	Seattle, WA	Astronomy	PhD 2012
ORAU NASA Postdoctoral Program	NASA/GSFC	Heliophysics	2012-2014
University of Maryland	NASA/GSFC	Heliophysics	2014-2016

(b) Appointments

Assistant Professor, University of Colorado Boulder, Department of Astrophysical and Planetary Sciences, the National Solar Observatory, and the Laboratory for Atmospheric and Space Physics (2016-current)

(c) Publications (52 refereed publications, h-index = 24)

Kowalski, A.F., Butler, E., Daw, A.N., Fletcher, L., Allred, J.C., De Pontieu, B., Kerr, G.S., Cauzzi, G. 2019b, “Spectral Evidence for Heating at Large Column Mass in Umbral Solar Flare Kernels I: IRIS NUV Spectra of the X1 Solar Flare of 2014 October 25”, *Astrophysical Journal*, 878, 135 (18 pp). DOI: [10.3847/1538-4357/ab1f8b](https://doi.org/10.3847/1538-4357/ab1f8b)

Kowalski, A.F., Wisniewski, J.P., Hawley, S.L., Osten, R.A., Brown, A., Farina, C., Valenti, J.A., Brown, S., Xilouris, M., Schmidt, S.J. and Johns-Krull, C. 2019a, “The Near-ultraviolet Continuum Radiation in the Impulsive Phase of HF/GF-type dMe Flares. I. Data”, *Astrophysical Journal*, 871, 167 (23 pp). DOI: [10.3847/1538-4357/aaf058](https://doi.org/10.3847/1538-4357/aaf058)

Kowalski, A. F. & Allred, J.C. 2018 “Parameterizations of Chromospheric Condensations in dG and dMe Model Flare Atmospheres” *Astrophysical Journal* 852, 16 (19 pp). DOI: [10.3847/1538-4357/aa9d91](https://doi.org/10.3847/1538-4357/aa9d91)

Kowalski, A. F., Allred, J.C., Uitenbroek, H., Tremblay, P.E., Brown, S., Carlsson, M., Osten, R.A., Wisniewski, J.P., Hawley, S.L., 2017b, “Hydrogen Balmer Line Broadening in Solar and Stellar Flares” *Astrophysical Journal* 837, 125 (22 pp). DOI: [10.3847/1538-4357/aa603e](https://doi.org/10.3847/1538-4357/aa603e)

Kowalski, A. F., Allred, J. C., Daw, A. N., Cauzzi, G., Carlsson, M., 2017a, “The Atmospheric Response to High Nonthermal Electron Beam Fluxes in Solar Flares I: Modeling the Brightest NUV Footpoints in the X1 Solar Flare of 2014 March 29”, *Astrophysical Journal* 836, 12 (27 pp). DOI: [10.3847/1538-4357/836/1/12](https://doi.org/10.3847/1538-4357/836/1/12)

Kowalski, A.F., Mathioudakis, M., Hawley, S. L., Wisniewski, J. P., Dhillon, V. , Marsh, T. R., Hilton, E. J., Brown, B. P. 2016, “M Dwarf Flare Continuum Variations on One-Second Timescales: Calibrating and Modeling of ULTRACAM Flare Color Indices” *The Astrophysical Journal*, ApJ 820, 95. DOI: [10.3847/0004-637X/820/2/95](https://doi.org/10.3847/0004-637X/820/2/95)

Kowalski, A.F., Hawley, S.L., Carlsson, M., Allred, J.C., Uitenbroek, H., Osten., R.A., Holman, G. 2015, “New Insights into White-Light Flare Emission from Radiative Hydrodynamic Modeling of a Chromospheric Condensation,” *Solar Physics* 290, 3487, DOI: [10.1007/s11207-015-0708-x](https://doi.org/10.1007/s11207-015-0708-x)

Kowalski, A.F., Hawley, S.L., Wisniewski, J.P., Osten, R.A., Hilton, E.J., Holtzman, J.A., Schmidt, S.J., Davenport, J.R.A. 2013, “Time-Resolved Properties and Global Trends in dMe Flares from Simultaneous Photometry and Spectra”, *Astrophysical Journal Supplement Series*, 207, 1 (57 pp). DOI: [10.1088/0067-0049/207/1/15](https://doi.org/10.1088/0067-0049/207/1/15)

Wisniewski JP, **Kowalski AF**, Davenport JRA, Schneider G, Grady CA, Hebb L, Lawson KD, Augereau J-C, Boccaletti A, Brown A, et. al. "High-fidelity Imaging of the Inner AU Mic Debris Disk: Evidence of Differential Wind Sculpting?." *ASTROPHYSICAL JOURNAL LETTERS*. 883 (1) (September 20, 2019): ARTN L8

Lawson, K. D., Wisniewski, J. P., Bellm, E. C., **Kowalski, A.F.**, Shupe, D. L. 2019, “Identification of Stellar Flares Using Differential Evolution Template Optimization”, *Astronomical Journal*, 158, 119

Zhu, Y., **Kowalski, A.F.**, Hui, T., Uitenbroek, H., Carlsson, M., Allred, J.C. 2019, “Modeling Mg II h, k and Triplet Lines at Solar Flare Ribbons”, *Astrophysical Journal* 879, 19 (11 pp). DOI: [10.3847/1538-4357/ab2238](https://doi.org/10.3847/1538-4357/ab2238)

Froning, C. S., **Kowalski, A. F.**, France, K., Loyd, R.O.P., Schneider, C.P., Youngblood, A., Wilson, D., Brown, A., Thompson, Z.-B., Pineda, J.S., Linsky, J., Rugheimer, S., Miguel, Y. 2019, “A Hot Ultraviolet Flare on the M Dwarf Star GJ 674”, *Astrophysical Journal Letters*, 871, 26.

Brown, Stephen A.; Fletcher, Lyndsay; Kerr, Graham S.; Labrosse, Nicolas; **Kowalski, Adam F.**; De La Cruz Rodríguez, Jaime, 2018 “Modeling of the Hydrogen Lyman Lines in Solar Flares”, *Astrophysical Journal*, 862 59.

MacGregor, Meredith A.; Weinberger, Alycia J.; Wilner, David J.; **Kowalski, Adam F.**; Cranmer, Steven R. 2018 "Detection of a Millimeter Flare from Proxima Centauri", *Astrophysical Journal Letters* 855, L2.

Prochazka O, Milligan RO, Allred JC, **Kowalski A. F.**, Kotrc P, Mathioudakis M. 2017 "Suppression of Hydrogen Emission in an X-class White-light Solar Flare." *Astrophysical Journal* 837, 46.

Youngblood A, France K, Loyd ROP, Brown A, Mason JP, Schneider PC, Tilley MA, Berta-Thompson ZK, Buccino A, Froning CS, et. al. (**Kowalski**) 2017 "The MUSCLES Treasury Survey. IV. Scaling Relations for Ultraviolet, CaII K, and Energetic Particle Fluxes from M Dwarfs." *Astrophysical Journal* 843, 31.

Berdyugina SV, Harrington DM, Kuzmychov O, Kuhn JR, Hallinan G, **Kowalski AF**, Hawley SL. 2017 "First Detection of a Strong Magnetic Field on a Bursty Brown Dwarf: Puzzle Solved." *Astrophysical Journal* 847, 61.

Reid, A.; Mathioudakis, M.; **Kowalski, A.**; Doyle, J. G.; Allred, J. C., 2017 "Solar Ellerman Bombs in 1D Radiative Hydrodynamics" *Astrophysical Journal Letters* 835, 37.

Osten, R. A., **Kowalski, A. F.**, Drake, S., Krimm, H., Page, K., Gazeas, K., Kennea, J., Oates, S., Page, M., de Miguel, E., Novak, R., Apeltauer, T., Gehrels, N., December 2016, "A Very Bright, Very Hot, and Very Long Flaring Event from the M Dwarf Binary System DG CVn", *Astrophysical Journal* 832, 174

Kuridze, D.; Mathioudakis, M.; Christian, D. J.; **Kowalski, A. F.**; Jess, D. B.; Grant, S. D. T.; Kawate, T.; Simões, P. J. A.; Allred, J. C.; Keenan, F. P. 2016, "Observations and simulations of the Na I D1 line profiles in an M-class solar flare", *Astrophysical Journal*, 832 147

Silverberg, Steven M.; **Kowalski, Adam F.**; Davenport, James R. A.; Wisniewski, John P.; Hawley, Suzanne L.; Hilton, Eric J. 2016, "Kepler Flares IV: A Comprehensive Analysis of the Activity of the dM4e Star GJ 1243", *Astrophysical Journal*, 829 129

Harra, L., Schrijver, K., Janvier, M., Toriumi, S., Hudson, H., Matthews, S., Woods MM, Hara H, Guedel M, **Kowalski A.**, Osten, R.A., Kusano, K., Lueftinger, T. 2016, "The Characteristics of Solar X-Class Flares and CMEs: A Paradigm for Stellar Superflares and Eruptions?" *SoPh* 291, 1761.

France, K., R. O. Parke Loyd,, Allison Youngblood, Alexander Brown, P. Christian Schneider, Suzanne L. Hawley, Cynthia S. Froning, Jeffrey L. Linsky, Aki Roberge, Andrea P. Buccino, James R. A. Davenport,19, Juan M. Fontenla, Lisa Kaltenegger, **Adam F. Kowalski**, Pablo J. D. Mauas, Yamila Miguel, Seth Redfield, Sarah Rugheimer, Feng Tian, Mariela C. Vieytes, Lucianne M. Walkowicz, and Kolby L. Weisenburger 2016, "MUSCLES Treasury Survey I: Motivation and Overview", *Astrophysical Journal* 820, 2

Allred, J. C., **Kowalski, A. F.**, & Carlsson, M. 2015, "A Unified Computational Model for Solar and Stellar Flares", *Astrophysical Journal* 809, 104. DOI: [10.1088/0004-637X/809/1/104](https://doi.org/10.1088/0004-637X/809/1/104)

Kuridze, D. Mathioudakis, M., Simoes, P. J. A., Rouppe van der Voort, L., Carlsson, M., Jafarzadeh, S., Allred, J. C., **Kowalski, A. F.**, Fletcher, L., Graham, D., Keenan, F. P. 2015, "H alpha Line Profile Asymmetries and the Chromospheric Flare Velocity Field", *Astrophysical Journal* 813, 125.

Brown, Alexander; Neff, James E.; Ayres, Thomas R.; **Kowalski, Adam**; Hawley, Suzanne; Berdyugina, Svetlana; Harper, Graham M.; Korhonen, Heidi; Piskunov, Nikolai; Saar, Steven; Walkowicz, Lucianne; Wells, Mark A. 2015, *Astronomical Journal* 149, 67

Loebman, S.R., Wisniewski, J.P., Schmidt, S.J., **Kowalski, A.F.**, Barry, R.K., Bjorkman, K.S., Hammel, H.B., Hawley, S.L., Hebb, L., Kasliwal, M.M., Lynch, D.K., Russell, R.W., Sitko, M.L., Szkody, P. 2015, "The continued optical to mid-IR evolution of V838 Monocerotis", *Astronomical Journal*, 149, 17

Lurie, John C.; Davenport, James R. A.; Hawley, Suzanne L.; Wilkinson, Tessa D.; Wisniewski, John P.; **Kowalski, Adam F.**, Hebb, Leslie, 2014 *Astrophysical Journal* 800, 95
Hawley, S.L., Davenport, J.R.A., **Kowalski, A.F.**, Wisniewski, J.P., Hebb, L., Deitrick, R., Hilton, E.J. 2014, "Kepler Flares I. Active and Inactive M dwarfs", *Astrophysical Journal*, 797, 121

Davenport, J.R.A., Hawley, S.L., Hebb, L., Wisniewski, J.P., **Kowalski, A.F.**, Johnson, E.C., Malatesta, M., Peraza, J., Keil, M., Silverberg, S.M., Jansen, T.C., Scheffler, M.S., Berdis, J.R., Larsen, D.M., Hilton, E.J. 2014, "Kepler Flares II: The Temporal Morphology of White-Light Flares on GJ 1243", *Astrophysical Journal*, 797 122

Anfinogentov, S.; Nakariakov, V. M.; Mathioudakis, M.; Van Doorselaere, T.; **Kowalski, A. F.** 2013, "The Decaying Long-period Oscillation of a Stellar Megafare", *Astrophysical Journal* 773, 156.

Kuridze, D.; Mathioudakis, M.; **Kowalski, A. F.**; Keys, P. H.; Jess, D. B.; Balasubramaniam, K. S.; Keenan, F. P. 2013, "Failed filament eruption inside a coronal mass ejection in active region 11121", *Astronomy & Astrophysics* 552, 55

Poppenhaeger, K.; Günther, H. M.; Beiersdorfer, P.; Brickhouse, N. S.; Carter, J. A.; Hudson, H. S.; **Kowalski, A.**; Lalitha, S.; Miceli, M.; Wolk, S. J. 2013, "Non-thermal processes in coronae and beyond", *Astronomische Nachrichten* 334, 101

Osten, R. A., **Kowalski, A. F.**, Sahu, K., Hawley, S. L. 2012, "DRAFTS: A Deep, Rapid Archival Flare Transient Search of the Galactic Bulge", *Astrophysical Journal* 754, 4

Hunt-Walker, Nicholas M.; Hilton, Eric J.; **Kowalski, Adam F.**; Hawley, Suzanne L.; Matthews, Jaymie M. 2012, "MOST Observations of the Flare Star AD Leo", *Publications of the Astronomical Society of the Pacific* 124, 545

Schmidt, S. J., **Kowalski, A. F.**, Hawley, S. L., Hilton, E. J., Wisniewski, J. P., Tofflemire, B. M., 2012, “Probing the Flare Atmospheres of M Dwarfs using Infrared Emission Lines”, *Astrophysical Journal* 745-754, 14

Tofflemire, B. M., Wisniewski, J. P., **Kowalski, A. F.**, Schmidt, S. J., Kundurthy, P., Hilton, E. J., Holtzman, J. A., Hawley, S. L., 2012, “The Implications of M Dwarf Flares on the Detection and Characterization of Exoplanets at Infrared Wavelengths”, *Astronomical Journal* 143-154, 12

Milligan, R. O., Chamberlin, P. C., Hudson, H. S., Woods, T. N., Mathioudakis, M., Woods, Fletcher, L., **Kowalski, A. F.**, Keenan, F. P. 2012, “Observations of Enhanced Free-Bound Continua During an X-Class Solar Flare Using SDO/EVE”, *Astrophysical Journal Letters* 748, 14

Davenport, J. R. A., Becker, A. C., **Kowalski, A.F.**, Hawley, S.L., Schmidt, S.J., Hilton, E.J., Sesar, B., Cutri, R. 2012, “Multi-wavelength characterization of stellar flares on low-mass stars using SDSS and 2MASS time domain surveys”, *Astrophysical Journal* 748, 58

Becker, A. C., Bochanski, J. J., Hawley, S. L., Ivezić, Ž., **Kowalski, A. F.**, Sesar, B., West, A. A. 2011, “Periodic Variability of Low-mass Stars in Sloan Digital Sky Survey Stripe 82”, *Astrophysical Journal*, 731, 17-33

West, A.A., Morgan, D.P., Bochanski, J.J., Andersen J.M., Bell, K.J., **Kowalski, A.F.**, Davenport, J.R.A., Hawley, S.L., Schmidt, S.J., Bernat, D., and 10 coauthors 2011, “The Sloan Digital Sky Survey Data Release 7 Spectroscopic M Dwarf Catalog. I. Data”, *Astronomical Journal*, 141, 97-108

Hilton, E.J., West, A.A., Hawley, S.L., **Kowalski, A.F.** 2010, “M Dwarf Flares from Time-resolved Sloan Digital Sky Survey Spectra”, *Astronomical Journal*, 140, 1402-1413

Bond, N.A., Ivezić, Z., Sesar, B., Jurić, M., Munn, J.A., **Kowalski, A.F.**, Loebman, S., Roškar, R., Beers, T.C., Dalcanton, J., and 47 coauthors, 2010, “The Milky Way Tomography with SDSS. III. Stellar Kinematics”, *Astrophysical Journal*, 715, 1-29

Wisniewski, J.P., Draper, Z.H., Bjorkman, K.S., Meade, M.R., Bjorkman, J.E., **Kowalski, A.F.** 2010, “Disk-Loss and Disk-Renewal Phases in Classical Be Stars. I. Analysis of Long-Term Spectropolarimetric Data”, *Astrophysical Journal*, 709, 1306-1320

Parker, A.; Ivezić, Ž.; Jurić, M.; Lupton, R.; Sekora, M. D.; **Kowalski, A.F.** 2008, “The size distributions of asteroid families in the SDSS Moving Object Catalog 4”, *Icarus*, 198, 138-155

Wisniewski, J. P., **Kowalski, A. F.**, Bjorkman, K. S., Bjorkman, J. E., Carciofi, A. C. 2007, “Toward Mapping the Detailed Density Structure of Classical Be Circumstellar Disks”, *Astrophysical Journal*, 656, 21-24

(d) Selected Non-refereed Articles

Kowalski, Adam F., Schrijver K., Pillet, V., Criscuoli, S. 2019 “Developing a vision for exoplanetary transit spectroscopy: a shared window on the analysis of planetary atmospheres and of stellar magnetic structure”, Astro 2020 Decadal Science White Paper. <https://arxiv.org/abs/1904.05976>

Kowalski, Adam F., Mathioudakis, M., & Hawley, S.L., 2018 “The Evolution of $T = 10,000$ K Blackbody-Like Continuum Radiation in the Impulsive Phase of dMe Flares”, Conference Proceedings to the Cambridge Workshops of Cool Stars, Stellar Systems and the Sun #20 (Cool Stars 20, July 29 - August 3, 2018, Boston, MA). arxiv.org/abs/1810.07226, 6 pp.

(e) Invited Talks & Colloquia

Invited talk on “Response of the lower solar atmosphere (in particular chromosphere) to the energy released during solar flares” in Session A14 “[Advances and Upcoming Developments in Solar and Heliospheric Physics](#)” at the 27th General Assembly of the International Union of Geodesy and Geophysics (IUGG), Montreal, Quebec, July 16 2019.

Invited science talk on “Peering into the Surface Features of Stars” at the Associated Universities for Research in Astronomy (AURA) member representative meeting, Tucson, AZ, April 30, 2019.

Invited talk on “Similarities and Differences in Solar and Stellar Flares”, European Week for Astronomy and Space Sciences, April 3, 2018, Special Session 12 “Flares in the lower atmosphere of the Sun and stars”.

Invited speaker on "Optical/UV Emission and Variability of Exoplanet Host Stars" at the SORCE 2018 Sun-Climate Symposium (session on Stellar Variability and Connections to the Sun), March 19-23, 2018, Lake Arrowhead, CA.

Invited talk at “High resolution solar physics: past, present, future”, Sunspot, NM, August 10, 2017, on “Flare Observations at High Resolution”.

Colloquium Minnesota Institute for Astrophysics at the University of Minnesota on “The Spectral Signatures of Deep Atmospheric Heating in Solar and Stellar Flares” on May 5, 2017.

Invited talk on “A Superflare from DG CVn (& the characteristics of secondary flares on the Sun and stars)” at Boulder Solar Day on April 4, 2017 Boulder, CO.

Colloquium on “The Spectral Signatures of Deep Atmospheric Heating in Solar and Stellar Flares” at the High Altitude Observatory on March 15, 2017, Boulder, CO.

Talk at the AURA Observatory Council meeting October 12, 2016, on “Flare Science with the DKIST”, Las Cruces, New Mexico, Boulder, CO, Oct 25, 2016.

Talk at the DKIST Working Group meeting October 12, 2016, on “Flare Science with the DKIST”, Las Cruces, New Mexico.

Talk at the Space Science Institute “The White-Light Flares of Proxima Centauri” on Oct 3, 2016, Boulder, CO.

Plenary session review talk on a “Advances in Understanding Solar and Stellar Flares” in the plenary session "Solar/Stellar Magnetic Activity and the Impact on Planetary Environments" at the 19th Cambridge Workshop on Cool Stars, Stellar Systems, and the Sun (6/9/2016), Uppsala, Sweden

Colloquium "The Optical and Near-Ultraviolet Continuum Emission in Stellar Flares" at the University of Colorado Boulder Astrophysics and Planetary Sciences department and the National Solar Observatory on March 30th 2016.

“Modeling of Optical and NUV Continuum during Stellar Flares”, Invited talk at the “Superflares on Solar-type Stars and Solar Flares, and Their Impacts on Exoplanets and the Earth”, Kyoto University, March 1st, 2016.

“New Constraints from IRIS on the Origin of White-Light Flare Emission”, Invited seminar at the University of Cambridge, January 18th, 2016.

“The Optical and Near-Ultraviolet Continuum Emission in Stellar Flares”, University of Maryland Department of Astronomy Colloquium (11/4/2015)

"White-Light Continuum in M Dwarf Flares", Invited Review Talk at the International Astronomical Union Symposium 320, "Solar and Stellar Flares and their Effects on Planets", Honolulu, Hawaii (8/3/2015)

“New Spectral Constraints from IRIS on Models of White-Light Flare Emission” NASA Heliophysics Director’s Seminar at the NASA Goddard Space Flight Center on June 19, 2015.

“Recent Observations and Modeling of Flares on dMe Stars” (06/26/2014)
Invited talk at “Solar and Stellar Flares”, Prague, Czech Republic

"Recent Observations and Modeling of Optical Flares on Red Dwarf Stars" (10/7/2014), Invited Seminar at the University of Delaware Astronomy Department

“Flares on Red Dwarf Stars” (10/3/2013)
Colloquium at the University of Oklahoma Department of Physics and Astronomy

“State-of-the-Art Observations and Modeling of Stellar Flares” (8/20/2012)
Invited Keynote Talk at the IAU General Assembly Joint Discussion 3, “3D Views of the Cycling Sun in Stellar Context”, Beijing, China

(e) Observing Experience

I have experience observing with and/or planning observations for the ARC 3.5-m at APO, the ARCSAT 0.5-m at APO, the Keck I 10-m Telescope, the 8-m Subaru Telescope, the United Kingdom Infrared Telescope, the 3.6-m New Technology Telescope, the Large Binocular Telescope, the 4.2-m William Herschel Telescope, the Dunn Solar Telescope, the Hubble Space Telescope, the Herschel Space Observatory, the XMM-Newton space observatory, the Neil Gehrels Swift Observatory (ToO), the 1.8-m telescope at the Dominion Astrophysical Observatory, the Las Cumbres Observatory Global Telescope Network (LCOGT), the Interface Region Imaging Spectrograph (IRIS), the 2.1-m and 0.9-m telescopes at Kitt Peak National Observatory, and the 0.6-m telescope at the Sommers-Bausch Observatory.

(f) Teaching Experience

Instructor for ASTR 3520: *Observations and Instrumentation II* Spring 2019.

Co-instructor for the Astrophysics Graduate Seminar, ASTR 6000 Fall 2018.

Lecturer at the HAO/NCAR Boulder Space Weather Summer School, 2018 & 2019. I taught two 1-hour classes on "Solar Flares" and "Solar Energetic Particles" on July 18, 2018 and July 11, 2019.

Co-instructor for the Astrophysics Graduate Seminar, ASTR 6000 Fall 2017, on "State of the art stellar atmospheric modeling". 19 students took the seminar, which was co-taught by Prof. Tom Ayres. The syllabus is available at

https://www.dropbox.com/s/ihgzug4xd96d2cz/ASTR6000_Syllabus_Final.pdf?dl=0

Instructor for ASTR 1200 *Stars and Galaxies* at CU Boulder, Fall 2017.

Taught 4 lectures for ASTR 7500 George Ellery Hale COLLAGE course (Collaborative Graduate Education Program) "Solar Flares & CMEs: Physics and Observations" in Spring 2017 at CU Boulder.

Instructor for ASTR 1200 *Stars and Galaxies* at CU Boulder, Spring 2017.

Developed and presented a tutorial on "RADYN Flare Simulations" with Joel Allred, IRIS-4 Workshop, Boulder, CO (May 28th, 2015). This was stored on YouTube and was also developed into a graduate student lab in ASTR 7500 "Solar Flares: their Physics and Observation" (Univ. Colorado, May 2017). https://www.youtube.com/watch?v=uvmSQ3VMx_0&index=2&list=PLUJIX4Fd9acgUw8gGiNYtMGgvtDeshuta

I host an updated version of the tutorials on my website: afkowalski.bitbucket.io.

Teaching Assistant for Astronomy 101 and Astronomy 150: Six quarters at the University of Washington (2006 - 2007, 2009, 2010)

Developed curricular material on accessing and using Sloan Digital Sky Survey (SDSS) spectra for the graduate Astronomy class, ASTR 581. I taught this tutorial (a 3-hour session) in 2010 and 2011.