

JAMES NEGUS

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EDUCATION

[The University of Colorado Boulder](#)

Ph.D., Astrophysics

Department of Astrophysical and Planetary Sciences

Expected May 2023

[The University of Colorado Boulder](#)

M.S., Astrophysics

Department of Astrophysical and Planetary Sciences

December 2019

[The University of Chicago](#)

B.A., Physics with a Specialization in Astrophysics

Department of Physics

June 2013

Dean's List: 2009 - 2010

EDUCATIONAL PROGRAMS

[The University of California Berkeley](#)

AstroTech Summer School

July 2021

Participated in an immersive astronomical instrumentation program, which required building and testing an astronomical spectrograph.

Led the design and programming of an electronic motor that was used to align optics onboard the table-mounted spectrograph.

Assisted in the optomechanical, detector, and calibration setup for the spectrograph.

Performed data processing and reduction of the scientific data measured by the spectrograph.

[The Pennsylvania State University](#)

AstroStats Summer School

June 2021

Participated in an intensive program in statistical inference that covered: principles of probability and inference, regression and model selection, bootstrap resampling, multivariate clustering and classification, Bayesian analysis, Markov chain Monte Carlo methods, time series analysis, spatial statistics, deep learning neural networks, and machine learning with random forest.

Received extensive training for the public domain statistical software, *R*, using Jupyter notebooks.

WORK EXPERIENCE

[Astronomical Society of the Pacific](#)

Board of Directors (Board Member)

San Francisco, CA

May 2021 - Present

Advise the Board on strategies to optimize long term business growth, outreach development opportunities, and operational efficiency for the organization.

Board of Directors (Junior Board Fellow)

February 2019 - May 2021

Added the voice of an early career professional astronomer to the Board.

Served on the following committees: Development, Awards, and Diversity.

The University of Colorado Boulder

Boulder, CO

Graduate Teaching Assistant

August 2017 - April 2020

Served as a teaching assistant for the following undergraduate courses:

Astronomical Observations and Instrumentation (14+ student classroom).

Black Holes (160+ student classroom).

Introductory Astronomy (two 20+ student labs and a 200+ student classroom).

Evaluated lab reports, demonstrated lab procedures, conducted exam reviews, and hosted office hours.

Radiometrics Corporation

Boulder, CO

Sodar Product Line Manager

April 2016 - July 2017

Subject matter and engineering design expert on Sonic Detection And Ranging Systems (SoDARS).

Managed documentation, business growth, software development, product improvements, and roadmap for Radiometrics' sodar product line.

Approved all changes to the sodar product line BOM and software/firmware; ensured change control documents were created and properly completed.

Vetted all customer-facing sodar technical documentation, including technical specifications, operator manuals, and TechNotes/Service Bulletins.

Participated in customer training and installation support as needed to meet customer commitments.

RMA Manager/ Project Analyst/ IT

April 2015 - April 2016

Analyzed boundary layer physics for microwave retrievals of thermodynamic atmospheric profiles utilizing Python routines.

Worked closely with NASA's JPL and the National Radio Astronomy Observatory to improve observations of boundary layer physics.

Generated operating and procedural manuals for instrument production, testing, quality control, engineering, and administration.

Managed in-house IT support for local servers, virtual machines, network firewalls, user PCs, printers, and employee devices.

Engineering Intern

November 2014 - April 2015

Aided in the development of an artificial neural network to deliver boundary layer thermodynamic data vital for accurate high-impact local weather forecasting and atmospheric remote microwave sensing retrievals.

RESEARCH EXPERIENCE

The University of Colorado Boulder

Boulder, CO

Graduate Research Assistant

July 2017 - Present

Analyze galactic spectra in the SDSS's Mapping Nearby Galaxies at APO (MaNGA) catalog, which consists of 10,000 galaxies observed with Integral Field Unit (IFU) spectroscopy.

Identify high ionization and broad lines emission signatures of Active Galactic Nuclei in MaNGA to determine their physical characteristics and population size within the catalog.

The University of Chicago
Exoplanet Student Researcher

Chicago, IL
March - June 2013

Considered transit spectroscopy techniques to detect exomoons around exoplanets using the Kepler Space Telescope.

Laboratory for Atmospheric and Space Physics
Solar Physics REU Research Assistant

Boulder, CO
June - August 2012

Analyzed live streams of solar data from the Geostationary Operational Environmental Satellite (GOES) and instruments on NASA's Solar Dynamics Observatory (SDO) using IDL programming language.

Worked on the development of an artificial neural network to better classify and predict solar flares.

Presented research results to scientists from the Laboratory for Atmospheric and Space Physics, National Center for Atmospheric Research, High Altitude Observatory, and the Space Weather Prediction Center.

National Radio Astronomy Observatory, Green Bank
Radio Astronomy Research Assistant

Green Bank, WV
July 2010

Mapped the galactic plane along with extragalactic regions using data acquisition software linked to the University of North Carolina's SKYNET operation, an internationally distributed network of radio telescopes in Chile and several regions in the US and Europe.

Assisted in the construction of a ground-based antenna to detect radio emission from Jupiter.

Presented research results to scientists and graduate students from UNC-Chapel Hill.

ORGANIZATIONS & LEADERSHIP

Science Through Shadows (\$2 Million NASA Funded Grant)
Advisor, Actor, and Narrator

Boulder, CO
August 2022 - Present

Serve as an advisor, actor, and narrator for heliophysics and asteroid-related content that will be presented to: (1) the NASA Solar System Ambassadors Program, (2) the Night Sky Network, (3) 200 planetariums, (4) 300 portable planetariums, (5) the NASA@MyLibrary network, and (6) the NASA Community College Network.

"The Clock Tower Project"
Advisor

Boulder, CO
April 2022 - Present

Serve as an advisor to help build a modern, digital, and three-dimensional "clock tower model" that displays a new perspective to coordinate climate action, by offering a long view of the past, present, and future of our global community.

Fiske Planetarium : "Science Under the Dome" Talk Series
President

Boulder, CO
August 2020 - August 2022

Advised members on the direction of the organization, managed formal documentation (e.g., the bylaws, university proceedings, and financial statements), recruited new members, interviewed and evaluated speaker applicants, and facilitated presenter talks.

Public Talk Coordinator

August 2019 - Present

Interview and evaluate speaker applicants.

Help accepted speakers develop a professional-quality presentation to deliver to the CU community and general public.

Mercury Magazine

San Francisco, CA

Writer

July 2019 - Present

Contribute research based articles to the magazine.

Astrobites

National

Writer

July 2019 - February 2022

Wrote articles for the site that summarize current astronomical peer reviewed publications.

Provided edits for pieces written by fellow Astrobites authors.

Astronomical Society of the Pacific

San Francisco, CA

Member

February 2019 - Present

Receive the quarterly magazine, “Mercury”, which provides updates on the latest astronomical research.

“Astropals” Peer Mentoring (The University of Colorado Boulder)

Boulder, CO

Co-Founder & Board Member

August 2018 - August 2020

Strategized the roadmap for the organization, designed workshops to help graduate students navigate the challenges of graduate school, and recruited a diverse group of participants to help promote a sense of community in CU Boulder’s Astrophysical and Planetary Sciences Department.

Science Buffs

Boulder, CO

Writer

June 2018 - June 2021

Contributed research based articles to the site.

Scale Model Solar System Campaign

Boulder, CO

Director

April 2018 - January 2022

Supervised the fundraising effort to build a new scale model solar system on CU Boulder’s campus - \$112,000 was successfully raised.

Worked with the director of the Fiske Planetarium and Sommers Bausch Observatory to develop pedagogical content for the model (e.g., lesson plans and labs).

Assisted in the development of the scientific content for the “Wanderers CU” mobile application that pairs with the model.

American Astronomical Society

National

Member

February 2018 - Present

Attend annual conferences designed to showcase pioneering research within the astronomical research community.

Sommers-Bausch Observatory

Outreach Volunteer

Boulder, CO
August 2017 - Present

Host observing nights utilizing the observatory's two 20" Cassegrain telescopes.

Advocate for public participation in open-house observing nights.

Volunteer for the annual "Astronomy Day" event at the observatory, which hosts over 1,000 local K-12 students.

Fiske Planetarium

Fiske Oversight Committee Member

Boulder, CO
August 2017 - August 2020

Advised the committee on strategies to increase planetarium revenue, the volume of planetarium visitors, upgrade existing hardware, and conduct outreach projects.

"CU Cafe" Diversity Initiative (The University of Colorado Boulder)

Outreach Director

Boulder, CO
August 2017 - May 2018

Promoted STEM scholarship, racial and ethnic diversity, community building, and mentorship by recruiting a diverse group of members, coordinating public talks for underrepresented visiting scientists, and collaborating with organizations on campus that shared the group's vision.

American Meteorological Society

Member

National
November 2015 - November 2017

Attended annual conferences showcasing pioneering research in the meteorological research community.

Boulder Astronomy and Space Society

Member

Boulder, CO
October 2014 - October 2017

Attended monthly lectures delivered by astronomers, astrophysicists, and space industry experts.

Connected with local astronomers to view the night sky from the Sommers-Bausch Observatory in Boulder, CO.

The Planetary Society

Member

International
April 2014 - April 2017

Received the quarterly magazine, "The Planetary Report", which offers astronomical updates from leading engineers and scientists in the field of planetary science.

Advocated for additional funding from Congress to fund NASA's planetary science budget and promote a global network of planetary astronomers.

Association of Lunar and Planetary Observers

Member

National
February 2014 - February 2017

Received the quarterly publication, "The Journal", which serves as a medium for advancing astronomical work performed by professional and amateur astronomers.

NASA Night Sky Network/ Astronomical League

Member

National
December 2013 - December 2016

Shared NASA's science, technology, and mission updates with the public.

Received the quarterly newsletter, "The Reflector", which provides the latest information on new astronomical discoveries.

Atlanta Astronomy Club**Member**Atlanta, GA
December 2013 - December 2015

Attended monthly astronomy lectures and participated in dark sky observing events to view neighboring constellations, planetary events, and varying celestial phenomena.

Ryerson Astronomical Society (The University of Chicago)**Vice-President**Chicago, IL
September 2012 - June 2013

Assisted in running weekly meetings, planning quarterly trips, and securing guest speakers.

Dome Engineer

March 2012 - June 2013

Maintained the functionality and integrity of the dome on the Ryerson rooftop observatory.

Society for Physics Students (The University of Chicago)**Outreach Officer**Chicago, IL
March 2012 - June 2013

Networked with physical science organizations on campus to coordinate collaborative events, acquire guest speakers, and recruit new members.

AWARDS & GRANTS

NASA Chandra X-Ray Observatory

Accepted Research Proposal (PI): "AGN Identification in MaNGA Coronal Line Galaxies" July 2022
\$83,550

CU Boulder Department of Astrophysical and Planetary Sciences

Chance Irick Cooke Graduate Fellowship (Excellence in Graduate Research) October 2021
\$3,000

Astrophysical Research Consortium/Sloan Digital Sky Survey Collaboration

Early Career Astronomer Award March 2020
\$1,200

CU Boulder Department of Astrophysical and Planetary Sciences

Travel Grant April 2020
\$1,000

CU Boulder United Government of Graduate Students

Travel Grant February 2020
\$300

Astrophysical Research Consortium/Sloan Digital Sky Survey Collaboration

Early Career Astronomer Award February 2019
\$1,200

The University of Chicago**Odyssey Scholarship**

October 2008 - June 2013

PRESS

Press: [“CU Fiske Planetarium Scale Model Solar System Ribbon Cutting Ceremony”](#), Chancellor’s Office/ Fiske Planetarium, December 8, 2021.

Press: [“CU Boulder’s Fiske Planetarium Installs Updated Version of Solar System on Campus”](#), Mackenzie Eldred, Boulder Daily Camera, December 8, 2021.

Press: [“Hear Planets Sing As You ‘Walk’ Through Space In New Solar System Model ”](#), Daniel Strain, CU Boulder Today, December 7, 2021.

Press: [“CU Boulder Grad Student Aims To Update Campus’ Scale Model Solar System”](#), Amy Bounds, Boulder Daily Camera, June 21, 2019.

PUBLICATIONS & ABSTRACTS

Research:

Publication: [“A Catalog of 71 Coronal Line Galaxies in MaNGA: \[NeV\] is an Effective AGN Tracer”](#), James Negus, Julia M. Comerford, et al., Submitted to ApJ.

Publication: [“Towards a More Complete Optical Census of Active Galactic Nuclei, Via Spatially-Resolved Spectroscopy”](#), Julia M. Comerford, James Negus, et al. 2022, ApJ, 927, 1.

Publication: [“The Physics of the Coronal Line Region for Galaxies in MaNGA”](#), James Negus, Julia M. Comerford, et al. 2021, ApJ, 920, 62.

Publication: [“A Catalog of 406 AGNs in MaNGA: A Connection between Radio-mode AGNs and Star Formation Quenching”](#), Julia M. Comerford, James Negus, et al. 2020, ApJ, 901, 159.

Conference Abstract: [“Studying AGN Activation in Galaxy Mergers”](#), James Negus and Laura Blecha, American Astronomical Society, June, 2018.

Publication: [“A New Narrow Beam, Multi-Frequency Scanning Radiometer and Its Application to In-Flight Icing Detection”](#), David Serke, James Negus, et al., 2017, Atmospheric Research, Volume 185, Pages 84-91.

Conference Abstract: [“Icing Characterization Based on In-Situ Aircraft and Remote Sensing Platform Observations”](#), R. Ware, D. Berchoff, E. Campos, R. Carpenter, N. Cimini, J. Fisher, M. Freer, I. Gultepe, J. Henrie, P. Holbrook, M. Klein, G. Kok, S. McLaughlin, M. Murakami, J. Negus, S. Nesbitt, M. Nelson, S. Parkinson, K. Reed, L. Sankey, D. Serke, M. Sharkey, S. Tessendorf, R. Stone, and B. Williams, American Meteorological Society, January, 2017.

Conference Abstract: [“Integrated Wind and Thermodynamic Profiling for High-Impact Nowcasting”](#), R. Baxter, J. Bhate, L. Blanchette, D. Berchoff, C. B. Clements, B. Demoz, P. Drewniak, M. D. Eilts, J. M. Freedman, D. M. Holland, K. R. Knupp, E. Lau, S. A. McLaughlin, J. Negus, M. Nelson, G. Pandithurai, R. Parmentier, M. Rajeevan, K. Reed, P. Roller, N. Sette, L. Thobois, S. Vandenburg, P. Wiker, and T. Wilfong, American Meteorological Society, January, 2017.

Conference Abstract: [“Boundary Layer Thermodynamic and Wind Observations for Improved Fog and Marine Layer Modeling and Forecasting”](#), R. Ware, L. Blanchette, D. Berchoff, W. Callahan, C. Clements, P. Croft, M. Eilts, P. Flatau, I. Gultepe, R. Hipschman, D. Holland, J. Kleissl, B. Koch, S. McLaughlin, M. Nelson, J. Negus, E. Osler, R. Parmentier, K. Reed, P. Roller, N. Sette, L. Thobois, S. Vandenburg, Y. Xie, and J. Zack, American Meteorological Society, January, 2016.

Outreach:

Publication: [“The Solar System to Scale”](#), James Negus, Mercury Magazine, Winter 2022.

Publication: [“A New Scale-Model Solar System”](#), James Negus, Sky & Telescope, January 20, 2022.

Publication: [“Bringing a Scale Model Solar System to CU Boulder”](#), James Negus, Astrobites, January 19, 2022.

Publication: [“Uncovering Hidden Active Galactic Nuclei in Dwarf Galaxies”](#), James Negus, Astrobites, September 25, 2021.

Publication: [“Unidentified Flaring Object”](#), James Negus, Astrobites, September 7, 2021.

Publication: [“Shine On You Crazy Outflow!”](#), James Negus, Astrobites, August 9, 2021.

Publication: [“ALMA’s Glimpse Into Protoplanetary Disk Evolution”](#), James Negus, Mercury Magazine, Winter 2021.

Publication: [“Gas and Dust Evolution Near a Cosmic Engine”](#), James Negus, Astrobites, March 1, 2021.

Publication: [“The Eyes of GAIA: Peering Into Our Galaxy’s Variable Nature”](#), James Negus, Astrobites, December 12, 2020.

Publication: [“AGN Ionization: A Dance Between Photoionization and Shocks”](#), James Negus, Astrobites, October 24, 2020.

Publication: [“Active Galactic Bulbs: Tracking Glowing Quasars”](#), James Negus, Astrobites, September 9, 2020.

Publication: [“The Impact of Polar Ice on Our Planet’s Evolution”](#), James Negus, Science Buffs, July 28, 2020.

Publication: [“Faint Jewels: Discovering The Brilliance of Dwarf Galaxies”](#), James Negus, Astrobites, July 27, 2020.

Publication: [“Remnant Tales: Uncovering the Link Between Type Ia Supernova Ejecta and Planetary Nebulae”](#), James Negus, Astrobites, May 14, 2020.

Publication: [“Can Nuclear Star Clusters Help Trace Galactic Evolution?”](#), James Negus, Mercury Magazine, Winter 2020.

Publication: [“Galactic Outflows: A Stellar Matter?”](#), James Negus, Astrobites, March 4, 2020.

Publication: [“Uncovering a Cosmic Matter Reservoir”](#), James Negus, Astrobites, February 3, 2020.

Publication: [“Are Supermassive Black Holes Galactic Regulators?”](#), James Negus, Mercury Magazine, Summer 2019.

Publication: [“Are Supermassive Black Holes Galactic Regulators?”](#), James Negus, Mercury Magazine, Summer 2019.

Publication: [“Ten-Hundred Word Challenge”](#), James Negus, Science Buffs, February 4, 2019.

Publication: [“The Mysteries of Space: Supernovas Explained”](#), James Negus, Enslow Publishing, New York, NY, 2018.

Publication: [“The Mysteries of Space: Black Holes Explained”](#), James Negus, Enslow Publishing, New York, NY, 2018.

Other:

Science Editor/ Reviewer: [“Totality! An Eclipse Guide in Rhyme and Science”](#), Jeffrey Bennett, Big Kid Science, Boulder, Colorado, 2021.

PRESENTATIONS & PODCASTS

Research:

Presentation (Invited): “Tracing AGN in MaNGA With Coronal Lines”, NASA Jet Propulsion Lab, Pasadena, CA, October 11, 2022.

Presentation (Invited): “Tracing AGN in MaNGA With Coronal Lines”, California Institute of Technology, Pasadena, CA, October 12, 2022.

Presentation (Invited): “[Investigating Coronal Line Emission for Galaxies in MaNGA](#)”, Astrocoffee, The Institute for Astronomy (The University of Hawai’i), September 23, 2022.

Presentation: “Uncovering Active Galactic Nuclei in Large Spectroscopic Surveys”, Black Holes Across Space and Time Workshop, Harvard University (Black Hole Initiative), July 28, 2022.

Presentation (Invited): “Using Coronal and Broad Line Detections to Investigate AGN in MaNGA”, Galaxies and AGN Seminar and Journal Club, Space Telescope Science Institute, June 09, 2022.

Lightning Talk + Poster: “[Leveraging Integral Field Spectroscopy to Detect AGN in MaNGA](#)”, Large-Volume Spectroscopic Analyses of AGN and Star Forming Galaxies in The Era of JWST Conference, Space Telescope Science Institute, March 30, 2022.

Presentation (Invited): “[Coronal Lines: An Ideal Tracer for AGN Activity?](#)”, Astronomy and Space Physics Seminar, University of Kansas, December 10, 2021.

Presentation (Invited): “Coronal Line Emission: A New Tool for Identifying AGN Activity?”, The University of California Santa Cruz, October 26, 2021.

Presentation: “[Can Coronal Line Emission Effectively Trace AGNs in MaNGA?](#)”, SDSS-IV/ SDSS-V Collaboration Meeting, August 12, 2021.

Presentation: “The Physics of the Coronal Line Region for Galaxies in MaNGA”, SDSS-IV/ SDSS-V Collaboration Meeting, June 22, 2020.

Presentation (Master’s Defense: High Pass): “The Physics of the Coronal Line Region for Galaxies in MaNGA”, The University of Colorado Boulder, October 16, 2019.

Presentation: “Discovering AGN in MaNGA Through Coronal Line Observations”, SDSS-IV/ MaNGA Collaboration Meeting, University of Oxford, April 1, 2019.

Presentation: “Tackling Galactic and Black Hole Coevolution”, Speak Easy: A Science Communication Workshop for Researchers, The University of Colorado Boulder, February 24, 2019.

Presentation: “Tracing AGN in MaNGA Using Coronal Line Observations”, 232nd American Astronomical Society Conference, Denver, CO, June 4 - 6, 2018.

Outreach:

Presentation Host: Anneke Kakebeen (Featured Speaker), “Journey to the Center of the Embryo”, Fiske Planetarium - Science Under the Dome, December 9, 2022.

Presentation: Introduced the Arthur B.C. Walker II Award Recipient (Dr. Jedidah C. Isler - Principal Assistant Director for STEM Opportunity and Engagement at the White House Office of Science and Technology Policy), The Astronomical Society of the Pacific Awards Gala, November 19, 2022.

Panelist: “[The Clock Tower Project: A New Perspective to Coordinate Climate Action](#)”, Fiske Planetarium, April 08, 2022.

Presentation: “[Black Holes, Galaxies, and The Expanse with Jimmy Negus](#)”, The LIUniverse, March 26, 2022.

Presentation Host: Corey Trujillo (Featured Speaker), “Arches: The Ancient Bones of Modern Architecture”, Fiske Planetarium - Science Under the Dome, February 17, 2022.

Presentation: “[A View From Earth 2021 Holiday Special \(The Colorado Scale Model Solar System\)](#)”, Fiske Planetarium - A View From Earth, December 14, 2021.

Presentation (Ribbon Cutting Ceremony): “Upgrading The Colorado Scale Model Solar System”, Fiske Planetarium, December 8, 2021.

Keynote Presentation (Invited): “[A Career in Academia: Overcoming Barriers to Success](#)”, Bruin Brains Research Conference (Salt Lake City Community College), Salt Lake City, Utah, December 3, 2021.

Presentation: Introduced the Robert J. Trumpler Award Recipient (Dr. Gudmundur Kári Stefánsson - Princeton University), The Astronomical Society of the Pacific Awards Gala, November 19, 2021.

Presentation Host: Catherine Blume (Featured Speaker), “[Penrose Tilings, Quasicrystals, and Islamic Architecture](#)”, Fiske Planetarium - Science Under the Dome, October 21, 2021.

Presentation: “The Evolution of Space Instrumentation: Where Do We Go From Here?”, Brookdale Senior Living, Boulder, CO, July 15, 2021.

Presentation: “[A Crowded Orbit: The Co-Evolution of Satellites and Space Junk](#)”, Fiske Planetarium - Science Under the Dome, April 15, 2021.

Presentation Host: Prasanth Prahladan (Featured Speaker), “[Future of the Autonomous Self: Personal Autonomy, Social Oppression and Social-Media](#)”, Fiske Planetarium - Science Under the Dome, February 11, 2021.

Presentation Host: Erika Schreiber (Featured Speaker), “[Fires, Flooding, Heat Waves, Drought: Extreme Events in a Changing Climate](#)”, Fiske Planetarium - Science Under the Dome, November 19, 2020.

Presentation Host: Will Holsclaw (Featured Speaker), “[Black Marble: Exploring the Earth’s Dark Side](#)”, Fiske Planetarium - Science Under the Dome, September 17, 2020.

Podcast: “[Ep 56: The Fowl Ward](#)”, Buffs Talk Science, June 16, 2020.

Presentation: “[Ep 1: Supermassive Black Holes and Where to Find Them](#)”, Fiske Planetarium - A View From Earth, June 21, 2020.

Presentation: “Re-Envisioning The Colorado Scale Model Solar System”, [ComSciCon20](#), June 11, 2020.

Presentation: “The Future of NASA and Space Exploration”, King Adult Day Enrichment Program for Multiple Sclerosis Patients, Westminster, CO, January 31, 2020.

Presentation: Introduced the Richard H. Emmons Award Recipient (Dr. Nick Schneider - University of Colorado Boulder), The Astronomical Society of the Pacific Awards Gala, San Francisco, CA, November 19, 2019.

Presentation: “Topics in Astronomy”, Brookdale Senior Living, Boulder, CO, August 15, 2019.

Presentation: “Black Holes!”, King Adult Day Enrichment Program for Multiple Sclerosis Patients, Westminster, CO, May 3, 2019.

Other:

Session Chair: The Astronomical Society of the Pacific Annual Conference, December 5, 2020.

MENTORSHIP

Kalin Landry, The University of Colorado Boulder, BA (Astrophysics) expected Spring 2023.

SKILLS & TRAINING

Skills: research, physics, astrophysics, astronomy, data analysis, Python, L^AT_EX, public speaking, team leadership, organizational effectiveness, creative writing, event management/ planning, proposal writing/ editing, project management, analytics, nonprofit organizations, remote sensing, spectral analysis, IDL programming, instrumentation, atmospheric remote sensing, and statistics.

Formally trained to conduct remote observations at [The Apache Point Observatory](#).

Proficient in French.