

Aliakbar Kavei

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EDUCATION

2022 – Present	University of California, Riverside, U.S. Ph.D. in Physics and Astronomy Advisor: Professor Brian Siana
2018 – 2021	University of Tehran, Tehran, Iran M.Sc. in Physics – Astrophysics
2012 – 2017	Sharif University of Technology, Tehran, Iran B.Sc. in Physics (Minor)
2011 – 2017	Sharif University of Technology, Tehran, Iran B.Sc. in Mechanical Engineering

RESEARCH INTERESTS

Observational Astrophysics, Galaxy Evolution, Ultraviolet Astronomy, Extragalactic Background Light, Lyman-Continuum Escape

RESEARCH EXPERIENCE

Jul. 2023 – Present	Graduate Student Researcher, University of California, Riverside, U.S. Department of Physics and Astronomy; Advisor: Professor Brian Siana Ph.D. research, “ Census of the UV Sky & Extragalactic Background Light Analysis ” My Ph.D. research has three connected components: <ol style="list-style-type: none">FUEL Survey data release: Lead the NASA-funded Far-Ultraviolet Extragalactic Legacy (FUEL) Survey, a two-year HST archival project to construct and publicly release uniform ACS/SBC F150LP images, catalogs, and data products for GOODS-N, GOODS-S, and COSMOS.FUV number counts and EBL: Use the FUEL survey to measure far-ultraviolet galaxy number counts and estimate the resolved-galaxy contribution to the extragalactic background light.Lyman-continuum escape: Use the FUEL data products with multiwavelength photometric and spectroscopic catalogs to study LyC escape from galaxies at $1.2 < z < 1.5$.
Oct. 2019 – Feb. 2021	Institute for Research in Fundamental Sciences (IPM), Tehran, Iran M.Sc. thesis, “ Telluric Correction for Absorption Lines in the Visible Range ” Developed a tool to correct telluric absorption lines using synthetic models of the Earth’s atmospheric transmission for the National Observatory of Iran.

PUBLICATIONS

Kavei, A., Siana, B., Teplitz, H. I., Alavi, A., Dominguez, A., Driver, S. P., Saldana-Lopez, A., Colbert, J., Primack, J. R., and Ajello, M. (2026).
The Far-Ultraviolet Extragalactic Legacy (FUEL) Survey: Hubble Far-UV Images and Catalogs of the Extragalactic Legacy Fields.
Under review at *The Astrophysical Journal Supplement Series (ApJS)*.
[arXiv:2603.04511](https://arxiv.org/abs/2603.04511)

Driver, S. P., Robotham, A. S. G., Tompkins, S., Baes, M., Battisti, A. J., Bellstedt, S., Biseau, J., D’Silva, J. C. J., Davies, L. J. M., Domínguez, A., Gebek, A., **Kavei, A.**, Lagos, C. del P., Lambert, T. S., Marshall, A., O’Brien, R., Quinn, P. J., Rowan-Robinson, M., Willingham, J., and Windhorst, R. A. (2026).
Everything, Everywhere, All at Once: Measurements and Modelling of the Extragalactic Background Light.
Submitted to *Monthly Notices of the Royal Astronomical Society (MNRAS)*.

PUBLIC DATA PRODUCTS & ARCHIVES

- 2026 **Far-Ultraviolet Extragalactic Legacy (FUEL) Survey MAST HLSP**
Led the construction and public release of science-ready HST/ACS-SBC F150LP mosaics and photometric catalogs for GOODS-N, GOODS-S, and COSMOS as a MAST High-Level Science Product (HLSP). The release is based on 365 HST orbits over 151 pointings and includes mosaics, variance maps, exposure-time maps, segmentation maps, and source catalogs designed for community use. As of May 2026, the MAST HLSP portal lists 158 HST HLSPs produced over Hubble’s 36-year mission.
[doi:10.17909/2yqw-3g14](https://doi.org/10.17909/2yqw-3g14)

HONORS, AWARDS, AND SCHOLARSHIPS

- 2026 **Outstanding Teaching Assistant Award**, Graduate Division, University of California, Riverside, U.S. Recognized for consistently superior teaching performance during the 2025–2026 academic year.
- 2026 **GSA Conference Travel Grant Award**, University of California, Riverside, U.S. Awarded to support an oral presentation at the 247th American Astronomical Society (AAS) Meeting, Phoenix, Arizona, U.S.
- 2022 **Dean’s Distinguished Fellowship**, University of California, Riverside, U.S. Competitive graduate fellowship awarded in recognition of academic accomplishments.
- 2015 **Team Leader of Iran**, 9th International Olympiad on Astronomy and Astrophysics (IOAA), Magelang, Indonesia. Iran ranked **1st** among **41** participating countries.
- 2011 **International Gold Medalist**, 5th International Olympiad on Astronomy and Astrophysics (IOAA), Katowice, Poland.
- 2010 **Gold Medalist**, 6th National Astronomy and Astrophysics Olympiad, Tehran, Iran.
- 2010 **Level-One Fellowship of the National Elites Foundation of Iran**, awarded full scholarship and educational stipend for undergraduate studies.
- 2006 **1st Rank**, Colored Pencils, 24th Art & Cultural Competitions, Tehran, Iran.

CONFERENCES & PRESENTATIONS

- Jun. 2026 Invited oral presentation, 248th Meeting of the American Astronomical Society (AAS 248 Summer Meeting), Pasadena, California, U.S.
Presented Abstract #558: *Improving the Far-UV Extragalactic Background Light with the FUEL Survey*
- Jan. 2026 Invited oral presentation, 247th Meeting of the American Astronomical Society (AAS 247), Phoenix, Arizona, U.S.
Presented Abstract #1994: *An Archival Far-UV Legacy Catalog of GOODS and COSMOS: Completing the UV Census and Improving EBL & LyC Constraints*
- Jan. 2020 Executive Committee member, National Conference on Gravity and Cosmology, University of Tehran, Tehran, Iran
- Dec. 2019 Participant, Annual Meeting of the Physics Society of Iran, University of Tehran, Tehran, Iran

TEACHING & OUTREACH EXPERIENCE

- Jan. 2022 – Present Teaching Assistant, Department of Physics and Astronomy, University of California, Riverside, U.S.
Assisted with undergraduate physics instruction across lecture, discussion, and laboratory courses. Led discussion and laboratory sections, held office hours, graded assignments and exams, and supported students in problem-solving and conceptual understanding.
Selected courses:
PHYS 018 — Energy and the Environment
PHYS 2A — General Physics
PHYS 2LA, 2LB, 2LC — General Physics Laboratories
PHYS 40A Lab, PHYS 40B Lab, PHYS 40C — Physics for Scientists and Engineers Laboratories/Discussion Sections
- Apr. 2019 – May 2019 Instructor, short course in Astronomical Data Analysis, University of Tehran, Tehran, Iran
Taught introductory astronomical data-analysis techniques to students, including basic data handling and interpretation in observational astronomy.
- 2012 – 2017 Member of the Student Committee of the National Astronomy and Astrophysics Olympiad, Young Scholars Club (YSC), Tehran, Iran
Helped organize and support advanced astronomy and astrophysics training activities for high-school students preparing for national and international Olympiad competitions.

2011 – 2021

Instructor and Astronomy Outreach Mentor, Iran

Taught astronomical data analysis, observational skills, telescope use, and celestial mechanics to Olympiad-level high-school students. Led more than 200 amateur observing nights and training camps, providing hands-on instruction in telescope operation, sky navigation, object identification, and observational planning.

INTERNSHIP

Jul. 2016 – Jun. 2017

Javad Movafaghian Research Center of Intelligent Neuro-Rehabilitation Technologies, Tehran, Iran

B.Sc. senior project, “**Analysis of Knee Abduction Torque in Patients with Genu Varum**”

Analyzed the correlation between knee abduction torque and axial deformity in patients with Genu Varum using gait-analysis data collected with Vicon Nexus software.

SELECTED COURSES

Ph.D.	Radiative Processes in Astrophysics (A+) Statistical Astronomy (A) Classical Mechanics (A) Electromagnetic Theory (A-) Fundamentals of Astrophysics (A-)	Thermodynamics and Statistical Mechanics (A+) Techniques of Observational Astrophysics (A) Dynamics and Evolution of Galaxies (A) Cosmology and Structure Formation (A-) Astrophysics of the Interstellar Medium (A-)
M.Sc.	Cosmology (18.8/20) Advanced Classical Mechanics (19/20) Advanced Quantum Mechanics (19/20)	Gravitation (17/20) Electrodynamics (19.5/20)
B.Sc. in Physics	Introductory Astronomy (20/20) Analytical Mechanics I (20/20)	Analytical Mechanics II (20/20)
B.Sc. in Mechanical Engineering	Interfacial Fluid Mechanics (18.7/20) Fluid Mechanics I (17.7/20) Heat Transfer (17.3/20) Measurement and Control Systems (19/20)	Fluid Mechanics II (17.5/20) Thermodynamics (18/20) Strength of Materials (18.7/20) Statics (20/20)

COMPUTER SKILLS

Programming Languages	Python
Mathematical Analysis	MATLAB
Operating Systems	Mac, Windows, Linux
Astronomical Software	SAOImageDS9, Starry Night, CCDOPS
Engineering Software	SolidWorks, Vicon Nexus
Office Suite	Microsoft Office (Word, Excel, PowerPoint)
Other	L ^A T _E X

LANGUAGES

Persian (native) English (advanced) Arabic (beginner)

EXTRA-CURRICULAR ACTIVITIES

Painting	Oil painting, drawing, colored pencil
Swimming	Basic Certificate in Second-Grade Lifesaving
Racing	Kart racing license, Rotax class