

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

Oct. 2023 – Present	University of California, Riverside, U.S. Ph.D. research, “ Census of the UV Sky & Extragalactic Background Light Analysis ” Lead the NASA-funded Far-Ultraviolet Extragalactic Legacy (FUEL) Survey, a two-year HST archival project focused on constructing and publicly releasing uniform far-ultraviolet images, catalogs, and data products from ACS/SBC F150LP imaging of GOODS-N, GOODS-S, and COSMOS. The project includes uniform reduction, calibration, astrometric alignment, dark-glow subtraction, mosaicking, FUV photometry, and catalog construction. Produced science-ready FUV mosaics and catalogs from 365 HST orbits over 151 pointings for public release as a MAST High-Level Science Product. These data products provide the foundation for my ongoing science work on FUV number counts, extragalactic background light measurements, and Lyman-continuum escape-fraction studies of 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.

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.
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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., Bibeau, 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 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.

TEACHING, OUTREACH & WORK EXPERIENCE

Jul. 2023 – Present Research Assistant, Department of Physics and Astronomy, University of California, Riverside, U.S.

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, including PHYS 2A, PHYS 2LA, PHYS 2LB, PHYS 2LC, PHYS 40A Lab, PHYS 40B Lab, PHYS 40C, and PHYS 018. Responsibilities included leading discussion/lab sections, holding office hours, grading, and helping students with problem-solving.

Apr. 2019 – May 2019 Instructor, short course in Astronomical Data Analysis, University of Tehran, Tehran, Iran

2012 – 2017 Member of the Student Committee of the National Astronomy and Astrophysics Olympiad, Young Scholars Club (YSC), Tehran, Iran

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.

SELECTED COURSES

Ph.D.	Radiative Processes in Astrophysics (A+)	Thermodynamics and Statistical Mechanics (A+)
	Statistical Astronomy (A)	Techniques of Observational Astrophysics (A)
	Classical Mechanics (A)	Dynamics and Evolution of Galaxies (A)
	Electromagnetic Theory (A-)	Cosmology and Structure Formation (A-)
	Fundamentals of Astrophysics (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)

CONFERENCES & PRESENTATIONS

Jan. 2026	Oral presentation, 247th Meeting of the American Astronomical Society (AAS 247), Phoenix, Arizona, U.S. Presented Abstract #1994: <i>An Archival Far-UV Legacy Catalog of GOODS and COSMOS: Completing the UV Census and Improving EBL & LyC Constraints</i>
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

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