

Genaro Suárez

Curriculum Vitae (as of March 15, 2026)

Current Position

Postdoctoral Fellow
Department of Astrophysics,
American Museum of Natural History
New York, NY, USA

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[Homepage](#)

Research Interests

Brown dwarf and giant exoplanet atmospheres, clouds in substellar atmospheres, substellar variability, star and brown dwarf formation, initial mass function

Education

- Jan. 2015–Feb. 2019 **Ph.D. in Astrophysics.**
Ensenada, Mexico Institute of Astronomy, Universidad Nacional Autónoma de México
Thesis: “Towards a Complete Study of the Initial Mass Function and Early Kinematics Evolution of the 25 Orionis Stellar Group”.
Advisors: Dr. Carlos. G. Román Zúñiga, Dr. Juan J. Downes
Graduated with Honors and nominated for the “Medalla Alfonso Caso” by UNAM.
Best PhD Thesis in Astronomy in Mexico defended in 2019 or 2020 awarded by the Sociedad Mexicana de Física. [PDF](#)
- Jan. 2013–Jan. 2015 **M.Sc. in Astrophysics.**
Ensenada, Mexico Institute of Astronomy, Universidad Nacional Autónoma de México
Thesis: “Towards a Complete Study of the Initial Mass Function and Early Kinematics Evolution of the 25 Orionis Stellar Group”.
Advisors: Dr. Carlos. G. Román Zúñiga, Dr. Juan J. Downes
Awarded the “Premio Paris Pişmiş” by the Institute of Astronomy, UNAM and nominated for the “Medalla Alfonso Caso”. [PDF](#)
- Aug. 2007–Jan. 2013 **B.Sc. in Physics.**
Zacatecas, Mexico Unidad Académica de Física, Universidad Autónoma de Zacatecas
Thesis: “Spectroscopic and Photometric Study of the Ionized Regions Sh2-90 and Sh2-187”.
Advisors: MSc. Marco A. Moreno Corral, Dr. Alejandro González Sánchez
Awarded the “Premio Paris Pişmiş” by the Institute of Astronomy, UNAM. [PDF](#)

Research Experience

- Sep. 2022–present **Postdoctoral Fellow** (Supervisor: Dr. Jacqueline Faherty)
New York, USA Department of Astrophysics, American Museum of Natural History
- Sep. 2019–Sep. 2022 **Postdoctoral Fellow** (Supervisor: Dr. Stanimir Metchev)
London, ON, Canada Department of Physics & Astronomy, The University of Western Ontario
- Jan. 2015–Feb. 2019 **Ph.D. Student**
Ensenada, Mexico Institute of Astronomy, Universidad Nacional Autónoma de México
- Six international research visits.**

Grants and Fellowships ([PDF](#))

Total amount of USD \approx 780k awarded through grants and fellowships from diverse institutions (co-I amounts reflect my allocated funding). Selected examples:

- 2025 JWST Cycle 4 GO 7686 program (co-I): USD \$25,000.
2024 JWST Cycle 3 GO 5474 program (PI): USD \$291,000.
2024 JWST Cycle 2 GO 4668 program (co-I): USD \$195,000.
2023 JWST Cycle 2 Survey 3930 program (co-PI): USD \$200,000.
2013-2019 Mexican CONACYT Fellowships: USD \$51,000.

Publications ([PDF](#) [ADS](#) [ORCID](#) [Google Scholar](#) [Scopus](#) [Zotero](#))

Total Publications: 70 peer-reviewed journal articles (9 first author, 10 second/third author, and 51 co-author).

Nine first-author articles. Selected papers:

- 2023 **Ultracool Dwarfs Observed with the Spitzer Infrared Spectrograph: Equatorial Latitudes in L Dwarf Atmospheres are Cloudier**
Genaro Suárez, Johanna Vos, Stanimir Metchev, Jacqueline Faherty & Kelle Cruz
2023, *ApJL*, 954, 6S. [DOI](#) [ADS](#)
- 2022 **Ultracool Dwarfs Observed with the Spitzer Infrared Spectrograph. II. Emergence and Sedimentation of Silicate Clouds in L Dwarfs, and Analysis of the Full M5–T9 Field Dwarf Spectroscopic Sample**
Genaro Suárez and Stanimir Metchev
2022, *MNRAS*, 513, 5701. [DOI](#) [ADS](#)
- 2019 **System IMF of the 25 Ori group from planetary-mass objects to high-intermediate-mass stars**
Genaro Suárez, Juan José Downes, Carlos Román-Zúñiga, et al.
2019, *MNRAS*, 486, 1718. [DOI](#) [ADS](#)

Nine second/third-author articles. Selected papers:

- 2018 **The APOGEE-2 Survey of the Orion Star Forming Complex II: Six-dimensional Structure**
Marina Kounkel, Kevin R. Covey, Genaro Suárez, et al.
2018, *AJ*, 156, 84. [DOI](#) [ADS](#)

Forty-nine co-author articles. Selected collaborations:

- 2025 **Detection of the Silicate Precursor Silane in a Cold, Low-Metallicity Brown Dwarf**
Jacqueline Faherty, Aaron M. Meisner, Ben Burningham, Channon Visscher, Michael Line, Genaro Suárez et al.
2025, *Nature*, 628, 511. [DOI](#) [ADS](#)
- 2024 **Methane emission from a cool brown dwarf**
Jacqueline Faherty, Ben Burningham, Jonathan Gagné, Genaro Suárez et al.
2024, *Nature*, 628, 511. [DOI](#) [ADS](#)
- 2021 **Weather on Other Worlds. V. The Three Most Rapidly Rotating Ultra-cool Dwarfs**
Megan E. Tannock, Stanimir Metchev, Aren Heinze, Paulo A. Miles-Páez, Jonathan Gagné, Adam Burgasser, Mark S. Marley, Dániel Apai, Genaro Suárez, Peter Plavchan
2021, *AJ*, 161, 224. [DOI](#) [ADS](#)

Five first-author conference proceeding.

Awards and Honors

- 2021 **Best PhD Thesis in Astronomy in Mexico (2019 and 2020).** [PDF](#)
By the Sociedad Mexicana de Física/División de Astrofísica.
- 2019 and 2015 **UNAM grant.**
For on-time completion of Master's and Ph.D. programs at UNAM.
- 2019 and 2015 **Nominated for the Medalla Alfonso Caso by UNAM.** [PDF](#)
For exceptional master's and PhD thesis defenses.
- 2016 and 2014 **Premio Paris Pişmiş.** [PDF](#) [PDF](#)
Excellence Award for undergraduate/graduate students by the Institute of Astronomy, UNAM.

Research Talks and Posters (PDF) (PDF)

Forty-two research talks (20 invited presentations) at national and international conferences and seminars. Selected talks:

- Jun. 26, 2025
Cork, Ireland
Invited review talk “What Observations Have Taught us About 4D Extrasolar Atmospheres?” at the 225 European Astronomical Society Annual Meeting.
- Jun. 28, 2024
San Diego, USA
Contributed talk “Explaining the Diversity of Cold Exoworlds with JWST” at Cool Stars 22.
- Jan. 9, 2024
New Orleans, USA
Press conference “Extrasolar Worlds Exhibit Exotic Sandy Clouds at the Equator” at the 243rd AAS meeting.
- Jun. 30, 2023
Exeter, UK
Contributed talk “Equatorial Latitudes in Extrasolar Atmospheres are Cloudier” at Exoclimes VI.
- Jul. 04, 2022
Toulouse, France
Contributed talk “Emergence and Sedimentation of Silicate Clouds in Substellar Atmospheres Using Spitzer IRS Spectra” at Cool Stars 21.
- Apr. 8, 2019
Pasadena, CA, USA
Invited talk “System IMF and Dynamics of 25 Ori” at California Institute of Technology.

Participation in 29 conferences, 7 congresses, 11 summer schools, and 9 workshops.

Eleven first-author posters in conferences. Selected posters:

- Jul. 7–11, 2025
Montreal, Canada
“Cloudy Extrasolar Skies in the JWST Era” at the Exoclimes VII conference.
- Dec. 12–15, 2022
Baltimore, MD, USA
“Gravity-dependent Sedimentation of Dust Clouds in Ultra-cool Atmospheres” at the First Science Results from JWST Conference.
- Jun. 05–09, 2017
Florence, Italy
“Photometric Determination of the IMF of the 25 Orionis Stellar Group” at the conference Francesco’s Legacy: Star Formation in Space and Time.

Awarded Telescope Time and Observing Experience (PDF)

Telescope time awarded as PI:

- 57 hr with IRTF/SpeX
- 3 night with MMT/Hectospec
- 1 hr with CT-4m/DECam
- 7 hr with GTC/OSIRIS
- 10 hr with SDSS-IV/APOGEE-2
- 12 nights with OAN-SPM/Echelle
- **20 hr with JWST MIRI as PI (Cycle 3 GO 5474).**
- **Survey program with JWST MIRI as co-PI (Cycle 2 Survey 3930).**

Academic and Community Service (PDF)

Panel reviewer for NASA (1), referee for academic journals (9), reviewer for telescope time allocations (4), SOC member (3) and session chair (4) at conferences, and additional departmental and community service. Selected examples:

- 2022–present
Referee for the American Astronomical Society (AAS) (5 papers).
- 2022–present
Referee for Astronomy & Astrophysics (3 papers).
- Mar. 2026
Panel reviewer for NASA Exoplanets Research Program (XRP).
- 2023 and 2024
External expert reviewer for JWST Cycle 3 and Cycle 4.
- 2024 and 2025
Session Chair at the 243rd and 245th AAS meetings.
- 2020 and 2021
Reviewer for the Canadian Time Allocation Committee of the Canada-France-Hawaii Telescope and the Gemini Observatory.

Supervision and Mentorship Experience (PDF)

Supervisor/co-supervisor of 2 graduate, 7 undergraduate, and 12 high-school students. Selected examples:

- 2022–present Supervisor of 11 high-school students in the Science in Research Mentoring Program at AMNH.
- 2023–2024 Supervisor of master’s student Alexandra Baldelli, Columbia University (*now Ph.D student at University of Delaware*).
- 2022–2024 Co-supervisor of master’s student Rafael Bertolotto, Universidad de la República, Uruguay (*now Ph.D student at University of Arizona*).
- 2022–2024 Co-supervisor of undergraduate student Sherelyn Alejandro Marchán, CUNY (*now Ph.D student at CUNY*).
- 2023–2024 Supervisor of undergraduate student Jolie L’Heureux, Columbia University (*now Ph.D student at CUNY*).

Teaching Experience (PDF)

Lectured graduate-level courses on Exoplanets, Brown Dwarfs, and the Initial Mass Function at different institutions, and served as instructor for workshops on data analysis, programming, and stellar astrophysics. Selected examples:

- Mar. 2025
New York, NY, US Lectured Brown Dwarf and Gas Giant Planet: Atmospheres, Formation, and Evolution class for graduate students at Columbia University.
- Fall 2024
New York, NY, US Instructor of the “Introductory Computer Programming” course in the Science Honor Program for high school students at Columbia University.
- Summer 2024, 2025
New York, NY, US Instructor for a total of nine MAT residents at the American Museum of Natural History.

Outreach and Engagement (PDF)

Participation in 73 outreach, community engagement, and media initiatives. Selected activities:

- 2022–present
New York, NY, US **Mentor** of citizen scientists in the [NASA’s Backyard Worlds: Planet 9](#) project.
- Summer 2025
New York, NY, US **Spanish translator** for the Hayden Planetarium show “Encounters in the Milky Way at the American Museum of Natural History”.
- 2023–2025
New York, NY, US **Facilitator** of DEI in STEM training sessions for a total of ~150 high school students at AMNH.
- Aug. 05–06, 2024
Zacatecas, Mexico **Leader and organizer** of the project “[Bringing Astronomy Closer to Indigenous Women in Rural Communities in Mexico](#)” as part of WGAP by NA-ROAD.
- Apr. 2024
New York, NY, US **Volunteer speaker** on astronomy-related topics at the Columbia University’s Astronomy in Prisons Program for ≈20 women at MDC Brooklyn.
- 2023–2024
New York, NY, US **Translator** of the [Machine Learning for Physics and Astronomy](#) course into Spanish at CCA Flatiron Institute.

Memberships

Active Memberships

- 2022–present Member of 17 JWST Cycle 1–4 programs
- 2022–present Member of the NASA’s Backyard Worlds: Planet 9 citizen science project
- 2022–present Member of the American Astronomical Society (AAS)

Technical Skills

Projects

- [SEDA](#) Developer of the Spectral Energy Distribution Analyzer (SEDA) python package for forward modeling and empirical analyses of observations for ultracool objects.

Computer Skills

High PYTHON, Jupyter Notebooks, Git, Github, IDL, IRAF, DS9, TOPCAT, STILTS, VOSA, Vizier, Overleaf, L^AT_EX, Linux, UNIX commands, Vi/Vim, JWST pipeline
Intermedium Fortran, Aladin, Gnuplot, WCSTools

Languages

Spanish **Mother tongue**
English **Fluent**

Contact Information of Professional References**Dr. Jacqueline Faherty**

Associate Curator
Department of Astrophysics
American Museum of Natural History
Phone number: +1 201 694 0807
E-mail: jfaherty@amnh.org
Current supervisor and active collaborator since 2022

Dr. Stanimir Metchev

Professor (Physics and Astronomy)
Department of Physics & Astronomy,
The University of Western Ontario
Phone number: +1 519 661 2111, 88438
E-mail: smetchev@uwo.ca
Previous postdoc supervisor and active collaborator since 2019

Dr. Johanna Vos

Associate Professor in Astrophysics
Trinity College Dublin,
The University of Dublin
Phone number: +353 83 379 5056
E-mail: Johanna.Vos@tcd.ie
Close and active collaborator since 2022

Dr. Kelle Cruz

Associate Professor
Department of Physics and Astronomy,
Hunter College, City University of New York
Phone number: +1 917 837 9748
E-mail: kelle.cruz@hunter.cuny.edu
Close and active collaborator since 2022

Dr. Juan J. Downes

Associate Professor
Department of Astronomy
Universidad de la República
Phone number: +598 25 258 624
E-mail: jdownes@fcien.edu.uy
Former PhD advisor and active collaborator