Felipe A. Ávila Vera

Date of Birth: 04 of September 1993
Nationality: Chilean

Address : Conquista de América 253, Valparaíso, Chile
Email: felipe.avilav@postgrado.uv.cl

EDUCATION

Universidad de Valparaíso, Valparaíso, Chile.
PhD candidate in Astrophysics
March, 2022 - present

Universidad de Valparaíso, Valparaíso, Chile.
Master in Astrophysics
March, 2020 - April, 2022

Universidad de Concepción, Concepción, Chile.
Bachelor in Astronomy.
March, 2017 - December, 2019

Universidad de Concepción, Concepción, Chile.
Metallurgical Engineering (Incomplete).
March, 2013 - December, 2016

LANGUAGE SKILLS

- Native speaker Spanish.

- Medium level English.

TECHNICAL SKILLS

Languages : Python, C++, R, Julia.

Software for Astrophysics :
Strong gravitational lens model software:
- Lensmodel, Pyautolens, Lenstronomy, Mulens, LensTool

Other softwares:
- IRAF (Image Reduction and Analysis Facility), TOPCAT, DS9 LaTex, CASA (Common Astronomy Software Applications package), MESA (Modules for Experiments in Stellar Astrophysics), EsoReflex (Xshooter pipeline and Molecfit pipeline).

PUBLICATIONS

Co-Author
A, Melo, V. Motta, J. Mejía-Restrepo, R. J. Assef, N. Godoy, E. Mediavilla, E. Falco, C. S. Kochanek, **F. Ávila-Vera** *, and R. Jerez.: "Black Hole masses for 14 gravitational lensed quasars", 2023A&A...680A..51M*

A. Melo, V. Motta, N. Godoy,J. Mejia-Restrepo, Roberto J.Assef, E.Mediavilla, E. Falco, **F. Ávila-Vera***,and R. Jerez: "First black hole mass estimation for the quadruple lensed system WGD2038-4008", 2021A&A...656A.108M*

First Author
F. Ávila-Vera*, V. Motta, et al.: "Microlensing time scale of known gravitational lensed quasars", in prep.*

OBSERVING EXPERIENCE	**Las Campanas observatory**
	2023, 3 nights, P.I., Clay 6.5-m telescope, LDSS3 instrument. These observations were performed for a proposal "Supermassive black holes mass estimation of newly discovered gravitationally lensed AGNs" submitted as P.I. in cycle 2023B Chilean National Time Allocation Committee.
	La Silla observatory
	2021, 10 nights, observer, ESO/MPG 2.2m, WFI, FEROS and GROND instruments. This run was part of the COSmological MOnitoring of GRAvItational Lenses (COSMOGRAIL) program for the observation of gravitational lenses.
OBSERVING PROPOSAL	• Magellan Telescope, LDSS3, 3 nights,7E7H39JG, 2023 (PI).
	• Very Large Telescope, XSHOOTER, 12.0 hours, 109.23A0.001/P109, 2021 (coI).
	• Very Large Telescope, XSHOOTER, 12.0 hours, 108.22BQ.001/P108, 2021 (coI).
TEACHING EXPERIENCE	• Assistant teacher for General Astrophysics course for Bachelor in Astronomy at Universidad de Valparaíso.
	August, 2024 - September, 2024
	• Assistant teacher of lens quasars analysis course for Master/PhD in Astrophysics at Universidad de Valparaíso.
	April, 2024 - August, 2024
	• Assistant teacher for Reduction of spectroscopic data from AGNs course for Master in Astrophysics at Universidad de Valparaíso.
	April, 2023 - August, 2023
	• Assistant teacher for General Astrophysics course for Bachelor in Astronomy at Universidad de Valparaíso.
	August, 2023 - December, 2023
	• Assistant teacher for General Astrophysics course for Bachelor in Astronomy at Universidad de Valparaíso.
	August, 2022 - December, 2022
	• Assistant teacher for ELECTROMAGNETISM I on Universidad de Concepción.
	August, 2019 - December, 2019
	• Assistant teacher for PHYSICS II at Universidad de Concepción.
	September, 2019 - December, 2019
	• Assistant teacher for PHYSICS I at Universidad de Concepción.
	June, 2019 - September, 2019
	• Assistant teacher for PHYSICS INTRODUCTION at Universidad de Concepción.
	March, 2019 - June, 2019
COLLAB. MEMBERSHIP	• Chilean AGN/Galaxy Extragalactic Survey (ChANGES).
	April, 2024 - present.
	• Vera C. Rubin Observatory (LSST) Strong Lensing Science Collaboration.
	September, 2023 - present.
	• Time-delay Cosmography (TDCosmo)
	https://obswww.unige.ch/~lemon/tdcosmo-master/index.html
	Modeling and coordinating gravitational lens system WG0214-2105, modeling analysis subgroup.
	December, 2022 - present.

SCIENTIFIC INTERNSHIP

- Early-Career Scientific Visitor Programme Garching
Working with Dr. Paula Sanchez.
Garching, Germany, November 01, 2024 - February 28, 2025.

- Visit collaborator at European Southern Observatory
Working with Dr. Paula Sanchez.
Garching, Germany, June 10 - August 08, 2024.

- Visit collaborator at Max-Planck-Institut für Astrophysik
Working with Dr. Aymeric Galan. Model quasar lens WG0214-2105 using Lenstronomy.
Garching, Germany, June 01 - February 26, 2024.

- Visit at Max-Planck-Institut für Astrophysik
Working with Dr. Alejandra Melo. Analysis X-shooter spectra lens quasars.
Garching, Germany, June 26 - 30, 2023.

- Internship at Laboratoire d'Astrophysique de Marseille
Working with Dr. Eric Jullo. Learned to use LensTool to constrain cosmological models.
Funded by FOVI20220144 (PI V. Motta).
Marseille, France, June 05 - 16, 2023.

SCHOOLS

- 9th Indo-French Astronomy School (IFAS9)
Lyon, France.
October 4 - 11, 2024.
On-site school focused on IFU: 3D spectroscopy. I worked on the project "Exploring the circumstellar environment by direct imaging at high-contrast: a focus on data-driven approaches and application on VLT/SPHERE-IFS data" under the supervision of Dr. Olivier Flasseur (Centre de Recherche Astrophysique, Lyon, France). From 4D (x, y, time, λ) datacubes recorded by the VLT/SPHERE-IFS instrument I detected faint point-like sources (exoplanets) and estimated their astrometry and spectral energy distribution. Meanwhile, I learned Julia, a newer and faster programming language.

CONFERENCE WORKSHOP PARTICIPANT	• F2F TDcosmo annual mitting Garching, Germany. **Oral presentation**:"Modeling of WG0214-2105 using Lenstronomy" July 15 - 20, 2024, • Second workshop in observational cosmology, Gravitational lensing: a looking-glass into the dark universe Valparaíso, Chile. Teacher Assistant in the "hands-on" part related to cosmological modeling December 11 - 13, 2023 • LARIM 2023: XVII Reunión Regional Latinoamericana De La UAI Montevideo, Uruguay. **Oral presentation**: "Microlensing scale estimation for 190 lensed quasars" November 27 - December 1, 2023 • Strong Gravitational Lensing in the era of big data Otranto Castle, Italy **Oral presentation**: "Microlensing timescales in gravitationally lensed quasars" June 19 - 23, 2023 • Annual Meeting Sociedad Chilena de Astronomía (SOCHIAS) 2023 Temuco, Chile. **Poster presentation**: "Microlensing time scales estimation for 190 strong lensed quasars" March 13 - 16, 2023
SCHOOLS WORKSHOP ATTENDANCE	• What was that? - planning ESO follow-up for transients, variables, and solar system objects in the era of LSST ESO Garching, Germany. January 22 - 26, 2023 • Machine Learning in Astronomy, from classical to physics-informed Valparaíso, Chile. July 28 - 29, 2021 • Time-Domain Cosmology with Strong Gravitational Lensing Kashiwa City, Japan (Remote). Jan 25 - Feb 2, 2021 • Annual Meeting Sociedad Chilena de Astronomía (SOCHIAS) 2020 Temuco, Chile (Remote). December 9 - 11, 2020 • Automatic Learning for the Rapid Classification of Events (ALeRCE) tutorial Santiago, Chile (Remote). September 23 - 24, 2020