María Teresa **Valdivia-Mena**

Giessenbachstrasse 1, 85748 Garching, Germany

+49 (0)89 30000-3546 | mvaldivi@mpe.mpg.de | tere-valdivia.github.io | tere-valdivia

Education

PhD (Dr. rer. nat) in Astrophysics

September 2020 - April 2024

Max Planck Institute for Extraterrestrial Physics and Ludwig-Maximilians-Universität — *Garching, Germany*

- Graduated with summa cum laude (final grade 0.7)
- Thesis title: *Asymmetric infall beyond natal cores to protoplanetary disks: Observations and analysis of streamers toward embedded low-mass protostars*
- Completed through the International Max Planck Research School in Munich

M.Sc. in Astronomy

March 2018 - August 2020

Universidad de Chile — *Santiago, Chile*

- Thesis title: *Molecular Clouds in Extreme Enviroments of the Low-Metallicity Magellanic System*
- Graduated with maximum distinction (Grade 6.8 out of a maximum of 7.0)

B.Sc. in Astronomy

March 2014 - December 2017

Universidad de Chile — *Santiago, Chile*

- Obtained a Minor in Scientific Computing together with the B.Sc.
- Graduated with maximum distinction (Grade 6.2 out of a maximum of 7.0).

Publications

As first author:

- **Valdivia-Mena, M. T. , Pineda, J. E., Segura-Cox, D. M., et al.**, *Flow of gas detected from beyond the filaments to protostellar scales in Barnard 5*, 2023, Astronomy & Astrophysics, 677, A92
- **Valdivia-Mena, M. T. , Pineda, J. E., Segura-Cox, D. M., et al.**, *PRODIGE - Envelope to disk with NOEMA I. A 3000 au streamer feeding a Class I protostar*, 2022, Astronomy & Astrophysics, 667, A12
- **Valdivia-Mena, M. T., Rubio, M., Bolatto, A. D, et al.**, *ALMA resolves molecular clouds in metal-poor Magellanic Bridge A*, 2021, Astronomy & Astrophysics, 641, A97

As co-author:

- **Choudhury, S. et al (incl. Valdivia-Mena, M. T.)**, *Infall of material onto the filaments in Barnard 5*, 2024, accepted for publication in Astronomy & Astrophysics
- **Hsieh, T. H. et al (incl. Valdivia-Mena, M. T.)**, *PRODIGE–envelope to disk with NOEMA-II. Small-scale temperature structure and streamer feeding the SVS13A protobinary based on CH3CN and DCN*, 2023, Astronomy & Astrophysics, 669, A137

Skills

Languages	Spanish (native), English (C1), German (A2)
Programming languages	Python (expert), C, Java, R
CASA	Experience in Data reduction and Imaging of interferometric data
GILDAS	Experience with CLASS, MAPPING and CLIC for data reduction and imaging
Version controlling tools	Git, Google Docs

Talks

Seminars

Nov. 29th 2023	**Seminarios de Fisíca**, *Title: "Rivers in the sky: Disrupting Symmetry in Star Formation Through Asymmetric Infall onto Protostars"*, Departamento de Física, Universidad de Santiago de Chile	*Santiago, Chile*
Sep. 13th 2023	**Departamento de Astronomía Seminar**, *Title: "Rivers in the sky: Disrupting Symmetry in Star Formation Through Asymmetric Infall onto Protostars"*, Departamento de Astronomía, Universidad de Chile	*Santiago, Chile*
Dec. 12th 2022	**Tuesday UVa / NRAO Astronomy (TUNA) Lunch Talk**, *Title: "Rivers in the sky: streamers discovered towards two young embedded sources in Perseus"*, NRAO	*Charlottesville, USA*
Dec. 12th 2022	**IRAM-Wisc-CAS Seminar**, *Title: "Rivers in the sky: streamers discovered towards two young embedded sources in Perseus"*	*Virtual*
Nov. 8th 2022	**Star and Planet Formation Seminar**, *Title: "Rivers in the sky: streamers discovered towards two Class I sources in Perseus"*, ESO	*Garching, Germany*

Conferences

May 15th 2024	**Early Phases of Star Formation**, *Title: "The first systematic search for streamers toward low-mass protostars"*	*Ringberg Castle, Kreuth, Germany*
Feb. 20th 2024	**Celebrating 30 Years of Protoplanetary Disk Chemistry: past, present, and future**, *Title: "Streamers: catalysts for physical and chemical changes in protoplanetary disks"*	*Ringberg Castle, Kreuth, Germany*
Aug. 4th 2022	**From Clouds to Planets II: The Astrochemical Link**, *Title: "Rivers in the sky: streamers discovered towards two Class I sources in Perseus"*	*Berlin, Germany*
Jun. 30th 2022	**European Astronomical Society Annual Meeting 2022**, *Title: "Rivers in the sky: Streamers discovered towards two embedded protostars in Perseus"*	*Valencia, Spain*
Mar. 4th 2022	**Meeting of ALMA Young Astronomers**, *Title: "Rivers in the sky: streamers discovered towards two Class I sources in Perseus"*	*Virtual*
Nov. 5th 2021	**12th IMPRS Students Symposium**, *Title: "River in the sky: A streamer feeding a Class I protostar"*	*Garching, Germany*
Oct. 29th 2021	**Gaps, Rings, Spirals, and Vortices: Structure Formation in Planet-Forming Disks**, *Title: "A Class I protostar with a high streamer mass infall rate"*, Munich Institute for Astro- and Particle Physics	*Garching, Germany*
Jun. 30th 2021	**European Astronomical Society Annual Meeting 2021**, *Title: "River in the sky: A streamer feeding a Class I protostar"*	*Virtual*
Nov. 8th 2019	**Latin American Regional IAU Meeting 2019**, *Title: "ALMA observations of molecular tracers in R136 in 30Dor: How does cold gas survive?"*, Hotel Antofagasta	*Antofagasta, Chile*

Telescope proposals and experience

Atacama Large Millimeter/Submillimeter Array (ALMA): PI of accepted projects 2023.1.00572.S (grade B), 2022.1.00898.S (grade C), plus experience with calibration and imaging.

Northern Extended Millimetre Array (NOEMA): PI of accepted project W22AH (grade A), member of the calibration and imaging group of the PRODIGE MPI-IRAM Large Program, plus experience with calibration and imaging.

Green Bank Telescope (GBT): PI and on-site observer of accepted project GBT22B-163 (2022B). Also obtained qualification as remote observer, plus experience with data reduction.

IRAM 30m: PI of accepted project 124-21 (2022A) and remote observing experience for this project. On-site and remote observing experience for project 090-21 (PI: J. Pineda), where I participate as Co-I, plus experience with data reduction.

Atacama Pathfinder Explorer (APEX): PI of accepted project C104-9709 (2019B). On-site observer for Chilean time in three occasions: June 2017 (2017A), April 2018 (2018A) and May 2019 (2019A). Also have experience with data reduction.

Scholarships and Awards

July 2018	**Adelina Gutierrez Grant**, *Sociedad Chilena de Astronomía*. The grant funded the assistance to the Second Binational AAA-SOCHIAS Meeting
March 2018	**Scholarship for National Master Studies**, *Comisión Nacional de Investigación en Ciencia y Tecnología (CONICYT)*. The scholarship funds master studies done in chilean universities

Workshops

Aug. 22th - 26th, 2022	**17th IMPRS Heidelberg Astronomy Summer School: Astronomy, astrochemistry & the origin of life**, International Max Planck Research School for Astronomy and Cosmic Physics, University of Heidelberg	*Heidelberg, Germany*
Aug. 3rd - 5th 2022	**Green Bank Telescope (GBT) Remote Observer Training Workshop**, NRAO	*Virtual*
Nov. 15th - 23rd 2021	**10th IRAM 30-meter School on Millimeter Astronomy**, Institut de Radioastronomie Millimétrique	*Virtual*
Mar. 14th - 19th 2021	**2021 Submillimeter Array Interferometry School**, Harvard & Smithsonian Center for Astrophysics, in conjunction with the ASIAA and the University of Hawaii	*Virtual*
Oct. 7th - 11th, 2019	**European Radio Interferometry School 2019**, Onsala Space Observatory and Chalmers University of Technology	*Gothenburg, Sweden*
Oct. 1st - 5th 2018	**II International Astrochemistry School**, Universidad Autónoma de Chile	*Santiago, Chile*
Aug. 20th - 29th 2018	**La Serena School for Data Science: Applied Tools for Data Driven Sciences**, Association of Universities for Research in Astronomy, National Science Foundation (USA) and Agencia Nacional de Investigación y Desarrollo (Chile)	*La Serena, Chile*

Outreach

Jul. 2018 - Present	**Member of "Cazadoras de Estrellas" Project**, *DIRVEX, Universidad de Chile.* This outreach project is lead by a group of female graduate students and alumni from the Astronomy Department in Universidad de Chile. The goal is to give high school girls a hands-on experience with astronomical data and meet female astronomers so that they can solve any vocational doubts about this career	*Chile*
Aug. 30th 2022	**Public Talk "Discos protoplanetarios, el origen de los mundos"**, Programa Ciencia Abierta, Par Explora RM Norte. Liceo Bicentenario Provincial Santa Teresa de los Andes	*Colina, Chile*
Jul. 23rd 2022	**Public Talk "How to feed baby stars"**, *Soapbox Science Munich*	*Munich, Germany*
Jun. 27th, 2019	**Public Talk "Eclipses: Luces y Sombras en el Universo"**, *Municipalidad de El Bosque.*	*Santiago, Chile*
Mar. 21st 2019 - Apr. 9th 2019	**Public Talk "Astroinformática para principiantes"**, Done at *DUOC UC Puente Alto* and at *Centro de Extensión de la Universidad de Talca*.	*Santiago, Chile*
Jun. 2018 - Nov. 2018	**Scientific Counselor for "Festival de Teatro y Ciencias" (FETYC)**, *Par Explora Sur Oriente, CONICYT*. The FETYC is a theatre competition organized by the National Comission of Scientific and Technologic Investigation (CONICYT) where several schools prepare a play around a scientific inquiry. The Scientific Counselor guides the scientific content of the plays.	*Santiago, Chile*
Mar. 2018 - Aug. 2018	**Tourist Guide at National Astronomical Observatory**, *Departamento de Astronomía, Universidad de Chile*.	*Santiago, Chile*

Teaching

Sep. 2018 - Jul. 2019	**Teaching Assistant for the course "Experimental Astronomy"**, *Undergraduate course*, Includes giving classes, marking and supervising activities	*Universidad de Chile*
Mar. 2019 - Jul. 2019	**Teaching Assistant for the course "Introduction to Cosmology"**, *Undergraduate course*, Includes giving classes, marking and supervising activities	*Universidad de Chile*
Jan. 2019	**Teaching Assistant for "Planetary Sciences"**, *High School*, Escuela de Verano	*Universidad de Chile*
Mar. 2017 - Jul. 2017	**Teaching Assistance for the course "Mechanics"**, *Undergraduate course*, Includes giving classes, marking and supervising activities	*Universidad de Chile*

References

Prof. Dr. Paola Caselli, Scientific Director, Max Planck Institute for Extraterrestrial Physics, *caselli@mpe.mpg.de*

Prof. Dr. Mónica Rubio, Full Professor, Departamento de Astronomía, Universidad de Chile, *mrubio@das.uchile.cl*

Dr. Jaime E. Pineda, Staff Scientist, Max Planck Institute for Extraterrestrial Physics, *jpineda@mpe.mpg.de*