

LUISA FERNANDA ZAMBRANO-MARIN

Space Scientist & Communicator

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San Juan, PR

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SpaceLuisa



EDUCATION

M.Sc. in Space Sciences

International Space University

Sept 2007

Strasbourg, France

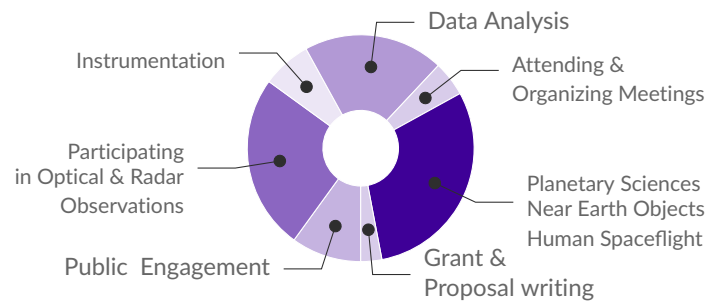
B.Sc. in Applied Physics

UMET, Ana G. Mendez University System

May 2005

San Juan, PR

AREAS OF EXPERTISE



SCIENCE PUBLICATIONS

- Google Scholar Profile
- Open Researcher and Contributor ID (ORCID)
- NASA-Astrophysics Data System

Articles As Main author

- Zambrano-Marin, Luisa Fernanda et al. (June 2022). *Radar and Optical Characterization of Near-Earth Asteroid 2019 OK*. vol. 3. 6. American Astronomical Society, p. 138. DOI: 10.3847/psj/ac63cd. URL: <https://doi.org/10.3847/5C%2Fpsj%5C%2Fac63cd>.

Articles as collaborator

- López-Oquendo, Andy et al. (Aug. 2022). "Physical Characterization of 2015 Jbsub1/sub: A Possibly Inhomogeneous Near-Earth Asteroid". In: *The Planetary Science Journal* 3.8, p. 189. DOI: 10.3847/psj/ac7e4f. URL: <https://doi.org/10.3847/2Fpsj%2Fac7e4f>.
- Virkki, Anne K et al. (2022). "Arecibo Planetary Radar Observations of Near-Earth Asteroids: 2017 December–2019 December". In: *The Planetary Science Journal* 3.9, p. 222. DOI: 10.3847/PSJ/ac8b72.
- Anish Roshi, D. et al. (Mar. 2021). "The Future Of The Arecibo Observatory: The Next Generation Arecibo Telescope". In: *arXiv e-prints*, arXiv:2103.01367, arXiv:2103.01367. arXiv: 2103.01367 [astro-ph. IM].
- Shepard, Michael K. et al. (July 2021). "Asteroid 16 Psyche: Shape, Features, and Global Map". In: *The Planetary Science Journal* 2.4, p. 125. DOI: 10.3847/psj/abfdb. URL: <https://doi.org/10.3847/2Fpsj%2Fabfdb>.
- Brozović, Marina et al. (Apr. 2020). "Arecibo Radar Astrometry of the Galilean Satellites from 1999 to 2016". In: *Astrophysical Journal* 159.4, 149, p. 149. DOI: 10.3847/1538-3881/ab7023.
- Roshi, D Anish et al. (2019). "Astro2020 Activities and Projects White Paper: Arecibo Observatory in the Next Decade". In: *arXiv preprint arXiv:1907.06052*. URL: <https://arxiv.org/abs/1907.06052>.
- Rožek, A. et al. (Oct. 2019). "VizieR Online Data Catalog: PHA contact-binary (85990) 1999 JV6 light curves (Rožek+, 2019)". In: *VizieR Online Data Catalog*, J/A+A/631/A149. URL: <https://ui.adsabs.harvard.edu/abs/2019yCat...36310149R>.
- Rožek, A et al. (2019). "Shape model and spin-state analysis of PHA contact binary (85990) 1999 JV6 from combined radar and optical observations". In: *Astronomy & Astrophysics* 631, A149. DOI: 10.1051/0004-6361/201936302.
- Taylor, Patrick et al. (2019). "Planetary Radar Astronomy with Ground-Based Astrophysical Assets". In: *Astro2020 Science White Paper*. URL: <https://ui.adsabs.harvard.edu/abs/2019BAAS...51g.150T>.
- Taylor, Patrick A. et al. (Mar. 2019). "Arecibo radar observations of near-Earth asteroid (3200) Phaethon during the 2017 apparition". In: *Planetary Science Journal* 167, pp. 1–8. DOI: 10.1016/j.pss.2019.01.009. arXiv: 1902.00969 [astro-ph. EP].

- Virkki, AK et al. (2019). "2016 AZ_8". In: *Central Bureau Electronic Telegrams* 4593. URL: <https://ui.adsabs.harvard.edu/abs/2019CBET.4593...1V>.
- Bhiravarasu, Sriram S. et al. (Dec. 2018). "Arecibo Radar Observations of Dwarf Planet 1 Ceres During the 2018 Apparition". In: *Research Notes of the American Astronomical Society* 2.4, 232, p. 232. DOI: 10.3847/2515-5172/aaf815.
- Giorgini, J. D. et al. (Oct. 2014). "(2340) Hathor". In: *International Astronomical Union Circulars* 9272, p. 1. URL: <https://ui.adsabs.harvard.edu/abs/2014IAUC.9272...1G>.
- Elliot, J. L. et al. (June 2010). "Size and albedo of Kuiper belt object 55636 from a stellar occultation". In: 465.7300, pp. 897–900. DOI: 10.1038/nature09109.

CONFERENCE PROCEEDINGS

As Main Author

- Zambrano Marin, Luisa F, Ellen Howell, et al. (2022). "Fast Rotating Near Earth Asteroids Observed with the Arecibo Planetary Radar System". In: *73rd International Astronautical Congress, Symposium On Planetary Defense And Near-Earth Objects*. Vol. E10, 2-A6.10.3 Joint Technical Session: "Near-Earth Objects & Space Debris", p. x70353. URL: <https://iafastro.directory/iac/paper/id/70353/summary/>.
- Zambrano Marin, Luisa F, Patrick Taylor, et al. (2021). "2020 BX12: The Last Binary Asteroid Discovered by Arecibo Observatory". In: *AAS Division for Planetary Sciences Meeting Abstracts*. Vol. 53, 7, pp. 207–01. URL: <https://baas.aas.org/pub/2021n7i207p01/release/1>.
- Zambrano-Marin, L. F., E. S. Howell, et al. (Mar. 2021). "Radar Observations of Near-Earth Asteroid 2019 OK". in: *52nd Lunar and Planetary Science Conference*. Lunar and Planetary Science Conference, 2451, p. 2451. URL: <https://www.hou.usra.edu/meetings/lpsc2021/pdf/2451.pdf>.
- Zambrano-Marin, Luisa et al. (Sept. 2020). "Arecibo Science Highlights of Observatory Planetary Radar Observations: 2019-2020". In: *European Planetary Science Congress, EPSC2020-992, EPSC2020-992*. URL: <https://meetingorganizer.copernicus.org/EPSC2020/EPSC2020-992.html>.
- Zambrano-Marin, Luisa F, Anne K Virkki, et al. (2019). "Arecibo Observatory Radar Observations: 2017-2018". In: *American Astronomical Society Meeting Abstracts# 233*. Vol. 233. URL: <https://ui.adsabs.harvard.edu/abs/2019AAS...23334707Z>.
- Zambrano-Marin, Luisa F. et al. (Sept. 2019). "Scattering functions fits for Arecibo Observatory Planetary Radar data". In: *EPSC-DPS Joint Meeting 2019*. Vol. 2019, EPSC-DPS2019-1077, EPSC-DPS2019-1077. URL: <https://ui.adsabs.harvard.edu/abs/2019EPSC...13.1077Z>.
- Zambrano-Marin, L. F., A. Virkki, E. G. Rivera-Valentin, and P. A. Taylor (Mar. 2018). "Scattering Laws Fit for Dual Polarization Radar Echoes of Asteroids Using Arecibo Observatory Planetary Radar Data". In: *49th Annual Lunar and Planetary Science Conference*. Lunar and Planetary Science Conference, 2569, p. 2569. URL: <https://ui.adsabs.harvard.edu/abs/2018LPI...49.2569Z>.
- Zambrano-Marin, L. F., A. Virkki, and E. G. Rivera-Valentin (Mar. 2017). "Comparing Near-Surface and Bulk Densities of Comets Using Radar Scattering Properties". In: *48th Annual Lunar and Planetary Science Conference*. Lunar and Planetary Science Conference, 2835, p. 2835. URL: <https://ui.adsabs.harvard.edu/abs/2017LPI...48.2835Z>.
- Zambrano-Marin, LF et al. (2016). "The Arecibo Observatory Space Academy: 4 years of STEM engagement". In: *Lunar and Planetary Science Conference*. Vol. 47, p. 2617. URL: <https://www.hou.usra.edu/meetings/lpsc2016/pdf/2617.pdf>.
- Zambrano-Marin, Luisa F and MH Acuna (2007). "Juno Mission Fluxgate Magnetometer". In: *Bulletin of the American Astronomical Society*. Vol. 39, p. 977. URL: <https://ui.adsabs.harvard.edu/abs/2007AAS...21113527F>.

As Collaborator

- Venditti, Flaviane, Sean Marshall, Luisa F Zambrano Marin, et al. (2022). "The Arecibo Observatory's legacy and future radar capabilities". In: *73rd International Astronautical Congress, Symposium On Planetary Defense And Near-Earth Objects*. Vol. E10, 2-A6.10.2 Joint Technical Session: "Near-Earth Objects & Space Debris", p. x72723. URL: <https://iafastro.directory/iac/paper/id/72723/summary/>.
- Venditti, Flaviane, Sean Marshall, Maxime Devogele, et al. (2021). "Science Requirements for the Next Generation Arecibo Planetary Radar". In: *AAS/Division for Planetary Sciences Meeting Abstracts*. Vol. 53, 7, pp. 412–01. URL: <https://baas.aas.org/pub/2021n7i412p01/release/1>.
- Yang, Chaowei Phil et al. (May 2021). "Critical Data Identification, Information Communication, and Readily Available Knowledge Base for Effectively Mitigating Impact of Near Earth Objects". In: *Bulletin of the American Astronomical Society*. Vol. 53, 404, p. 404. DOI: 10.3847/25c2cfcb.28292b50. URL: <https://ui.adsabs.harvard.edu/abs/2021BAAS...53d.404Y>.
- Hickson, DC et al. (2020). "Space Weathering Effects from UV to Radar Wavelengths". In: *51st Lunar and Planetary Science Conference*. 2326, p. 1704. URL: <https://www.hou.usra.edu/meetings/lpsc2020/pdf/1704.pdf>.

- Repp, D. W. et al. (Mar. 2020). "Shape Modeling of Potentially Hazardous Asteroid 2015 DP155 from Radar and Lightcurve Observations". In: *51st Annual Lunar and Planetary Science Conference*. Lunar and Planetary Science Conference, 2897, p. 2897. URL: <https://ui.adsabs.harvard.edu/abs/2020LPI...51.2897R>.
- Marshall, Sean et al. (2019). "Shape model of 3200 Phaethon from radar and lightcurve observations". In: vol. 2019, EPSC-DPS2019. URL: <https://meetingorganizer.copernicus.org/EPSC-DPS2019/EPSC-DPS2019-1246-1.pdf>.
- Venditti, Flaviane, Sean Marshall, Anne Virkki, et al. (June 2019). "Radar Astrometry of Near-Earth Asteroids from the Arecibo Observatory: 2018-2019". In: *AAS/Division of Dynamical Astronomy Meeting*. Vol. 51, 100.07, p. 100.07. URL: <https://ui.adsabs.harvard.edu/abs/2019DDA...5010007V>.
- Venditti, Flaviane, Anne Virkki, et al. (2019). "Arecibo Observatory: Supporting Planetary Defense". In: *American Geophysical Union, Fall Meeting*. Vol. 2019, NH51C-0784. URL: <https://ui.adsabs.harvard.edu/abs/2019AGUFMNH51C0784V/abstract>.
- Virkki, Anne, Flaviane Venditti, et al. (Sept. 2019). "Radar observations and characterization of a selection of potentially hazardous asteroids". In: *EPSC-DPS Joint Meeting 2019*. Vol. 2019, EPSC-DPS2019-638, EPSC-DPS2019-638. URL: <https://ui.adsabs.harvard.edu/abs/2019EPSC...13..638V>.
- Brozovic, Marina et al. (July 2018). "Goldstone radar observations of triple near-Earth asteroid 3122 Florence". In: *42nd COSPAR Scientific Assembly*. Vol. 42, B1.1-80-18, B1.1-80-18. URL: <https://ui.adsabs.harvard.edu/abs/2018cosp...42E.442B>.
- Aponte-Hernandez, B et al. (2017). "The Arecibo Observatory Space Academy: STEM Engagement in Puerto Rico". In: *Lunar and Planetary Science Conference*. Vol. 48. URL: <https://www.hou.usra.edu/meetings/lpsc2017/pdf/2585.pdf>.
- Rodriguez-Ford, L. A. et al. (Mar. 2015). "Arecibo Observatory Space Academy: Inspiring the next Generation of Scientists from Puerto Rico". In: *46th Annual Lunar and Planetary Science Conference*. Lunar and Planetary Science Conference, p. 2783. URL: <https://ui.adsabs.harvard.edu/abs/2015LPI...46.2783R>.

PROFESSIONAL EXPERIENCE

Science Operations

Arecibo Observatory/UCF- Planetary Radar Group

📅 April 2018- Present 📍 Arecibo, PR

- 10 years of experience with planetary radar observations and techniques in support of post detection characterization of near-earth objects and other solar system bodies
- Experience and interest in multi-wavelength observations of near-earth objects
- Preparation and participation in observations, data processing, archiving, and study of near-Earth asteroids and other Solar System bodies with the Arecibo Planetary radar system
- Guest lecturer and speaker in observatory's education programs

Science Staff

Arecibo Observatory/ USRA- Planetary Radar Group

📅 Sep 2013- Mar 2018 📍 Arecibo, PR

- Participate and support observations with the Arecibo Planetary Radar System

Founder & Curriculum Creator- Arecibo Observatory Space Academy

Arecibo Observatory

📅 Aug 2013-Dec 2017 📍 Arecibo,PR

- Develop and conduct inter-grade, inter-discipline activities utilizing external resources for integration of curriculum with private sector and higher learning institutions
- Mentor High schools students in the development of scientific research projects focused in space exploration

Consultant to the Presidents Office

Caribbean University

📅 June 2012-July 2013 📍 Bayamon, PR

- Confidential

Assistant Director Teacher Quality Grants Program Astrobiology

University of Texas Brownsville

📅 June 2011-June 2012 📍 Brownsville, TX

- Preparation of workshops, lectures and curriculum in Physics, Astronomy & Space Sciences
- Training educators of English Language (EEL) and English as Second Language (ESL) settings

Instructor, Observatory Manager

Department of Physics and Astronomy, University of Texas Brownsville

📅 Jan 2008 - June 2011 📍 Brownsville, TX

- Instructor of University Physics, Physical Science for Educators and Introduction to Astronomy undergraduate courses.

Visiting Astronomer

Vatican Observatory Group, VATT

📅 Summer 2004 & 2005 📍 Castel-Gandolfo, Italy

- Visiting astronomer gathered data with the Vatican Advanced Technology Telescope in Mount Graham AZ

MOST PROUD OF



Alumni

Over 300 former students doing science



Chambliss Astronomy Achievement Award

233rd AAS Meeting



Fostering a STEAM mindset

Creation of a pre-college research programs focused on space exploration



Inspiring the next generation of space scientist

To balance science and family

LANGUAGES

English

Spanish

Italian

French

Technical

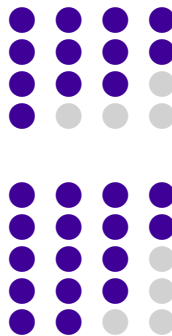
LaTeX

Bash

IDL

Python

Java



PROFESSIONAL AFFILIATIONS

- American Astronomical Society – Jr. Member
- International Space University Alumni
- National Science Foundation– Model Institutions for Excellence Scholar 2002–2006
- National Science Foundation – Fellows Enhancing Science and Technology, Project Fellow 2004
- National Society of Hispanic Physicist – Member
- National Space Society (NSS)
- Ronald McNair Scholar 2003
- Sociedad de Astronomia de Puerto Rico – San Juan Chapter
- Society of Physics Students
- Space Frontier Foundation Advocate

STRENGTHS & INTEREST

Science Communication Persistent Motivator & Leader

Enthusiastic Creative Reliable

Planetary Defense near-Earth Objects Small payloads

Experimental research Human Space Habitation

Public Engagement Dynamics New Space industry

REFERENCES

UPON REQUEST

@ luisafz[at] aosa[dot]naic[dot] edu

SELECTED CONFERENCES & WORKSHOPS

- 53rd Lunar and Planetary Science Conference, Session Chair, Houston, TX, March 2022
- American Astronomical Society, Division of Planetary Sciences 53rd meeting, Session Chair, Virtual, October 2021
- National Science Foundation Arecibo Options Workshop, Participant, Virtual, Summer 2021
- International Space Development Conference 2016, Conference Chair, San Juan PR, May 2016
- Americas Aerospace Summit 2015, Conference Convener, San Juan PR, October 2015
- International Space Development Conference 2015, Student Coordinator, Toronto Canada, May 2015
- Yuri's Night @ Arecibo Observatory 2015, Event Organizer, Arecibo PR, April 2015
- World Space Week 2014 @ Arecibo Observatory, Event Organizer, Arecibo PR October 2014
- Caribbean Space Summit, Conference Chair, San Juan PR, October 2014
- New Space 2014, Space Frontier Foundation Annual conference, Registration Manager, San Jose CA, July 2014
- International Space Development Conference 2014, Student Coordinator, San Diego CA, May 2014
- New Space 2013, Space Frontier Foundation Annual conference, Volunteer, San Jose CA, July 2013
- International Space Development Conference 2013, Student & Volunteer Coordinator, San Diego CA, May 2013
- Space Frontier Foundation, New Space 2012 Conference, Volunteer, San Jose CA, July 2012
- International Space Development Conference 2012, Volunteer Coordinator, Washington DC, May 2012
- World Space Week 2011, 50 Years of Human Space Flight, Event Organizer, UT Brownsville, TX, Oct 2011
- World Space Week 2010, Mysteries of the Cosmos, Chair, UT-Brownsville, TX, Oct 2010
- NASA Space Science Day at UTB 2010, session organizer and presenter, UT Brownsville, TX, Jan 2010
- World Space Week 2009, International Year of Astronomy, Chair, UT-Brownsville, TX, Nov 2009
- 100 Hours of Astronomy, "Star Party & Yuri's Night" Event Host & Coordinator, UT Brownsville, TX, April 2009
- New Space 2008, Invited Panelist, Orphans of Apollo, Washington DC, July 2008
- New Space Conference: Invited Panelist Post Apollo Generation Session, Washington D.C, July 2007
- U.S. Congress and U.S. Senate, Invited Participant, Moon-Mars Blitz, Washington D.C, June 2007
- International Space University Symposium "Why the Moon", Presenter, Strasbourg France, Feb 2007