

Ariadna Murguia-Berthier

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EDUCATION

Universidad Nacional Autónoma de México

B.A., Physics

2015

University of California, Santa Cruz

M.S., Astronomy and Astrophysics

2017

University of California, Santa Cruz

Ph.D., Astronomy and Astrophysics

Expected: May 2021

HONORS AND FELLOWSHIPS

Academic Excellence Scholarship-awarded by Academia Mexicana de Ciencias 2010-2014

UC-MEXUS and CONACyT Becas al Extranjero recipient- Scholarship from UC-MEXUS and CONACyT 2015-2020

Elmer A. Fridley Scholarship- Award from UCSC 2018

Denice Denton Award- Award from UCSC 2020

TALKS

Talk at UCSC

Shedding light on the assembly of binary black holes 2017

Deciphering the Violent Universe: Playa del Carmen

Unraveling GW170817: shedding light on the neutron star binary merger 2017

Aspen Winter Conference

Constraining the properties of GW170817 2018

Talk at Nicolaus Copernicus Astronomical Center (Warsaw, Poland)

Shedding light on the assembly of binary black holes 2018

Talk at University of Birmingham (UK)

Shedding light on the assembly of binary black holes 2018

Talk at Insituto de Física (UNAM)

Shedding light on the assembly of binary black holes 2019

Talk at TCAN workshop
Nuclear equations of state: underlying physics and use in fluid codes 2020

TEACHING AND OUTREACH

Teaching Assistant-UCSC
ASTR119: Introduction to Scientific Computing; ASTR111: Order of Magnitude Astrophysics
2016-2019

LAMAT Instructor and mentor-UCSC
This program is a summer internship for community college and minority students 2020

PIE instructor-UCSC
Prison Inmate Education program 2016

Outreach leader of graduate students-UCSC 2017-2020

Mentorship leader coordinator-UCSC 2017-2018

Keynote speaker at Expand Your Horizon-Hartnell College 2019

La Noche de las Estrellas instructor
Star party at Lick Observatory for 300 latino students 2017, 2019

ADVISING EXPERIENCE

Teaching Assistant-UCSC
ASTR119: Introduction to Scientific Computing; ASTR111: Order of Magnitude Astrophysics
2016-2019

REFEREED PUBLICATIONS

1. *On the maximum stellar rotation to form a black hole without an accompanying luminous transient*, **Murguia-Berthier, A.**, Batta, A., Janiuk, A., et al. 2020, ApJ Letters, 901, pages: L24, 8pp
2. *A luminosity distribution for kilonovae based on short gamma-ray burst afterglows*, Ascenzi, S., Coughlin, M. W., Dietrich, T., et al. **inc. Murguia-Berthier, A.** 2019, MNRAS, 486, pages: 672-690 Contribution: Provided kilonovae light curve modelling and the data of gamma-ray bursts afterglows
3. *Electromagnetic evidence that SSS17a is the result of a binary neutron star merger*, Kilpatrick, C. D., Foley, R. J., Kasen, D., et al. **inc. Murguia-Berthier, A.** 2017, Science, 358, pages:1583-1587 Contribution: Provided kilonovae light curve modelling, provided the MCMC algorithm, obtained the expected mass ratio based on simulations

4. *Early spectra of the gravitational wave source GW170817: Evolution of a neutron star merger*, Shappee, B. J., Simon, J. D., Drout, M. R., et al. **inc. Murguia-Berthier, A.** 2017, *Science*, 358, pages: 1574-1578 Contribution: Provided theoretical modelling.
5. *Light curves of the neutron star merger GW170817/SSS17a: Implications for r-process nucleosynthesis*, Drout, M. R., Piro, A. L., Shappee, B. J., et al. **inc. Murguia-Berthier, A.** 2017, *Science*, 358, pages: 1570-1574 Contribution: Provided theoretical modelling.
6. *Swope Supernova Survey 2017a (SSS17a), the optical counterpart to a gravitational wave source*, Coulter, D. A., Foley, R. J., Kilpatrick, C. D., et al. **inc. Murguia-Berthier** 2017, *Science*, 358, pages: 1556-1558 Contribution: Provided theoretical modelling.
7. *A gravitational-wave standard siren measurement of the Hubble constant*, Abbott, B. P., Abbott, R., Abbott, T. D., et al. **inc. Murguia-Berthier, A.** 2017, *Nature*, 551, pages: 85-88 Contribution: Part of 1M2H team.
8. *A Neutron Star Binary Merger Model for GW170817/GRB 170817A/SSS17a*, **Murguia-Berthier, A.**, A., Ramirez-Ruiz, E., Kilpatrick, C. D., et al. 2017, *ApJ Letters*, 848, pages: L34, 8pp
9. *The Old Host-galaxy Environment of SSS17a, the First Electromagnetic Counterpart to a Gravitational-wave Source*, Pan, Y.-C., Kilpatrick, C. D., Simon, J. D., et al. **inc. Murguia-Berthier, A.** 2017, *ApJ Letters*, 848, pages: L30, 7pp Contribution: Provided theoretical modelling.
10. *The Unprecedented Properties of the First Electromagnetic Counterpart to a Gravitational-wave Source*, Siebert, M. R., Foley, R. J., Drout, M. R., et al. **inc. Murguia-Berthier, A.** 2017, *ApJ Letters*, 848, pages: L26, 6pp Contribution: Provided theoretical modelling.
11. *Multi-messenger Observations of a Binary Neutron Star Merger*, Abbott, B. P., Abbott, R., Abbott, T. D., et al. **inc. Murguia-Berthier, A.** 2017, *ApJ Letters*, 848, pages: L12, 59pp Contribution: Part of 1M2H team.
12. *Accretion Disk Assembly During Common Envelope Evolution: Implications for Feedback and LIGO Binary Black Hole Formation*, **Murguia-Berthier, A.**, MacLeod, M., Ramirez-Ruiz, E., et al. 2017, *ApJ*, 845, pages: 173, 10pp
13. *Common Envelope Wind Tunnel: Coefficients of Drag and Accretion in a Simplified Context for Studying Flows around Objects Embedded within Stellar Envelopes*, MacLeod, M., Antoni, A., **Murguia-Berthier, A.**, et al. 2017, *ApJ*, 838, pages: 56, 17pp Contribution: Performed the simulations with different microphysical parameters.
14. *The Properties of Short Gamma-Ray Burst Jets Triggered by Neutron Star Mergers* **Murguia-Berthier, A.**, Ramirez-Ruiz, E., Montes, G., et al. 2017, *ApJ Letters*, 835, pages: L34, 6pp
15. *Necessary Conditions for Short Gamma-Ray Burst Production in Binary Neutron Star Mergers* **Murguia-Berthier, A.**, Montes, G., Ramirez-Ruiz, E., et al. 2014, *ApJ Letters*, 788, pages: L8, 6pp