

Raquel Forés Toribio

Email: forestoribio.1@osu.edu ORCID: 0000-0002-6482-2180

Address: Department of Astronomy, The Ohio State University, 140 West 18th Avenue, Columbus, OH, 43210, USA.

Employment

- 2024 – present **Postdoctoral Researcher CCAPP Fellow**
Department of Astronomy, The Ohio State University, OH, USA.
- 2020 – 2024 **Graduate grant-assisted student** Supervisor: Jose Antonio Muñoz Lozano
Departament d'Astronomia i Astrofísica, Universitat de València, València, Spain.

Education

- 2020 – 2024 **PhD in Physics**, Cum Laude, International mention
Universitat de València, València, Spain.
- 2018 – 2020 **Master's Degree in Astrophysics**, Average mark: 9.84/10
Universidad de La Laguna, Tenerife, Spain.
- 2014 – 2018 **Bachelor Degree in Physics**, Average mark: 9.35/10
Universitat de València, València, Spain.

Scientific Products

Journal Articles

- 1 S. W. Yee, J. N. Winn, J. D. Hartman, *et al.*, “The TESS Grand Unified Hot Jupiter Survey. III. Thirty More Giant Planets,” *ApJS*, vol. 280, no. 1, 30, Sep. 2025. DOI: 10.3847/1538-4365/aded0d.
- 2 R. Forés-Toribio, B. JoHantgen, C. S. Kochanek, *et al.*, “ASASSN-24fw: An 8-month long, 4.1 mag, optically achromatic and polarized dimming event,” *OJAp*, vol. 8, 114, Aug. 2025. DOI: 10.33232/001c.143105.
- 3 Z. Essack, D. Dragomir, P. A. Dalba, *et al.*, “Giant Outer Transiting Exoplanet Mass (GOT 'EM) Survey. VI. Confirmation of a Long-period Giant Planet Discovered with a Single TESS Transit,” *AJ*, vol. 170, no. 1, 41, Jul. 2025. DOI: 10.3847/1538-3881/add88b.
- 4 T. R. Fairnington, J. Dong, C. X. Huang, *et al.*, “The eccentricity distribution of warm sub-Saturns in TESS,” *MNRAS*, vol. 540, no. 1, Jun. 2025. DOI: 10.1093/mnras/staf759.
- 5 J. Ehrhardt, L. Thomas, H. Kellermann, *et al.*, “Confirmation of four hot Jupiters detected by TESS using follow-up spectroscopy from MaHPS at Wendelstein together with NEID and TRES,” *A&A*, vol. 692, A220, Dec. 2024. DOI: 10.1051/0004-6361/202451404.
- 6 R. Forés-Toribio, J. A. Muñoz, C. Fian, J. Jiménez-Vicente, and E. Mediavilla, “Microlensing analysis of 14.5-year light curves in SDSS J1004+4112: Quasar accretion disk size and intracluster stellar mass fraction,” *A&A*, vol. 691, A97, Nov. 2024. DOI: 10.1051/0004-6361/202347378.
- 7 C. Fian, J. Jiménez-Vicente, E. Mediavilla, *et al.*, “First Direct Evidence for Keplerian Rotation in Quasar Inner Broad-line Regions,” *ApJL*, vol. 972, L7, Sep. 2024. DOI: 10.3847/2041-8213/ad654d.
- 8 C. Fian, J. A. Muñoz, J. Jiménez-Vicente, *et al.*, “Revealing the inner workings of the lensed quasar SDSS J1339+1310: Insights from microlensing analysis,” *A&A*, vol. 689, A129, Sep. 2024. DOI: 10.1051/0004-6361/202450151.

- 9 **R. Forés-Toribio**, E. Mediavilla, J. A. Muñoz, J. Jiménez-Vicente, C. Fian, and C. del Burgo, "Single-epoch and Differential Astrometric Microlensing of Quasars," *ApJ*, vol. 970, 11, Jul. 2024. DOI: 10.3847/1538-4357/ad49a6.
- 10 B. J. Hord, E. M. R. Kempton, T. M. Evans-Soma, *et al.*, "Identification of the Top TESS Objects of Interest for Atmospheric Characterization of Transiting Exoplanets with JWST," *AJ*, vol. 167, 233, May 2024. DOI: 10.3847/1538-3881/ad3068.
- 11 C. Fian, J. A. Muñoz, **R. Forés-Toribio**, *et al.*, "Probing the structure of the lensed quasar SDSS J1004+4112 through microlensing analysis of spectroscopic data," *A&A*, vol. 682, A57, Feb. 2024. DOI: 10.1051/0004-6361/202347382.
- 12 F. Rescigno, G. Hébrard, A. Vanderburg, *et al.*, "A hot mini-Neptune and a temperate, highly eccentric sub-Saturn around the bright K-dwarf TOI-2134," *MNRAS*, vol. 527, pp. 5385–5407, Jan. 2024. DOI: 10.1093/mnras/stad3255.
- 13 S. Yoshida, S. Vissapragada, D. W. Latham, *et al.*, "TESS Spots a Super-puff: The Remarkably Low Density of TOI-142ob," *AJ*, vol. 166, 181, Nov. 2023. DOI: 10.3847/1538-3881/acf858.
- 14 S. W. Yee, J. N. Winn, J. D. Hartman, *et al.*, "The TESS Grand Unified Hot Jupiter Survey. II. Twenty New Giant Planets," *ApJS*, vol. 265, 1, Mar. 2023. DOI: 10.3847/1538-4365/aca286.
- 15 **R. Forés-Toribio**, J. A. Muñoz, C. S. Kochanek, and E. Mediavilla, "A Mass Model for the Lensing Cluster SDSS J1004+4112: Constraints from the Third Time Delay," *ApJ*, vol. 937, 35, Sep. 2022. DOI: 10.3847/1538-4357/ac8c40.
- 16 J. A. Muñoz, C. S. Kochanek, J. Fohlmeister, J. Wambsganss, E. Falco, and **R. Forés-Toribio**, "The Longest Delay: A 14.5 yr Campaign to Determine the Third Time Delay in the Lensing Cluster SDSS J1004+4112," *ApJ*, vol. 937, 34, Sep. 2022. DOI: 10.3847/1538-4357/ac8877.
- 17 S. W. Yee, J. N. Winn, J. D. Hartman, *et al.*, "The TESS Grand Unified Hot Jupiter Survey. I. Ten TESS Planets," *AJ*, vol. 164, 70, Aug. 2022. DOI: 10.3847/1538-3881/ac73ff.
- 18 J. Dong, C. X. Huang, G. Zhou, *et al.*, "NEID Rossiter-McLaughlin Measurement of TOI-1268b: A Young Warm Saturn Aligned with Its Cool Host Star," *ApJL*, vol. 926, L7, Feb. 2022. DOI: 10.3847/2041-8213/ac4da0.

Conferences

- 1 **R. Forés-Toribio**, B. JoHantgen, C. S. Kochanek, *et al.*, *ASASSN-24fw in the context of long and deep stellar dimmings in time-domain surveys (contributed talk)*, *The 16th Gaia Science Alerts and ACME Time-Domain Workshop, Tenerife, Spain*, Sep. 2025.
- 2 **R. Forés-Toribio**, J. A. Muñoz, C. Fian, J. Jiménez-Vicente, and E. Mediavilla, *Quasar microlensing in galaxy clusters as a complementary approach to intracluster light (contributed talk)*, *XVI Reunión Científica de la SEA, Granada, Spain*, Jul. 2024.
- 3 **R. Forés-Toribio**, J. A. Muñoz, C. Fian, J. Jiménez-Vicente, and E. Mediavilla, *Constraining the stellar mass fraction and the quasar accretion disk size of SDSS J1004+4112 with microlensing (poster)*, *26th International Microlensing Conference, Livermore, California, USA (online)*, Jan. 2024.
- 4 **R. Forés-Toribio**, J. A. Muñoz, C. Fian, J. Jiménez-Vicente, and E. Mediavilla, *Stellar mass fraction and quasar accretion disk size in SDSS J1004+4112 from photometric follow-up (contributed talk)*, *IAU Symposium 381: Strong Gravitational Lensing in the Era of Big Data, Otranto, Italy*, Jun. 2023.
- 5 **R. Forés-Toribio**, *Single epoch astrometric microlensing in lensed quasars (contributed talk)*, *25th International Microlensing Conference, Paris, France*, Sep. 2022.
- 6 **R. Forés-Toribio**, J. A. Muñoz, C. S. Kochanek, and E. Mediavilla, *Remodelling the lensing cluster SDSS J1004+4112 (poster)*, *European Astronomical Society Annual Meeting, Valencia, Spain*, Jun. 2022.

Invited Talks, Colloquiums and Seminars

- 1 R. Forés-Toribio, *ASASSN-24fw: a long, deep, achromatic and polarized stellar eclipse*, Ball State University Colloquium, Muncie, Indiana, USA, Sep. 2025.
- 2 R. Forés-Toribio, *Lentes gravitatorias y su utilidad para la astronomía: El sistema B0445+123 y las observaciones con GTC*, Invited talk to the GTC staff, Tenerife, Spain, Jan. 2025.

Achievements

Grants

- 06/2021 – 09/2024  **Graduate grant “Atracció de Talent”**, Universitat de València.
- 09/2020 – 06/2021  **Graduate grant “ACIF”**, Generalitat Valenciana.
- 11/2017 – 07/2018  **Collaboration grant** (Undergraduate research), Ministerio de Educación y Ciencia.

Prizes

- 2025  **Premio Extraordinario de Doctorado del curso 2024/2025** (*Thesis Extraordinary Prize academic year 2024/2025*).
Awarded by Universitat de València, Valencia, Spain.
- 2020  **Premio Extraordinario en la Titulación de Máster Universitario en Astrofísica** (*Extraordinary Prize for the Master's Degree in Astrophysics*).
Awarded by Universidad de La Laguna, Tenerife, Spain.
-  **Premio de Excelencia de Máster en la rama de conocimiento de Ciencias** (*Prize of Excellence for the Master in the branch of knowledge in Sciences*).
Awarded by Universidad de La Laguna, Tenerife, Spain.

Skills

- Languages  Strong reading, writing and speaking competencies for English (Advanced Cambridge English Level), Spanish (native) and Catalan (native).
- Coding  Good knowledge of Python, FORTRAN and LaTeX.
Some knowledge of Mathematica, Julia, C++ and IRAF.

Miscellaneous

Referee experience

- 2024 – present  **Referee for the AAS journals.**

Teaching experience

- Course 2024-25  **Observational Techniques in Astronomy and Photometric Observations, 15 hours.** Experto Universitario en Astrofísica Observacional (Postgraduate course), Universitat de València.
- Course 2023-24  **Observational Techniques in Astronomy and Photometric Observations, 15 hours.** Experto Universitario en Astrofísica Observacional (Postgraduate course), Universitat de València.
-  **General Physics III (Electromagnetism and Optics), 15 hours.** Degree in Physics, Universitat de València.
- Course 2022-23  **Mechanics Laboratory, 25 hours.** Degree in Physics, Universitat de València.

Miscellaneous (continued)

- **General Physics III (Electromagnetism and Optics), 30 hours.** Degree in Physics, Universitat de València.
- Course 2021-22 ■ **Mechanics Laboratory, 25 hours.** Degree in Physics, Universitat de València.
- **General Physics III (Electromagnetism and Optics), 30 hours.** Degree in Physics, Universitat de València.
- Course 2020-21 ■ **Mechanics Laboratory, 50 hours.** Degree in Physics, Universitat de València.

Supervised works

- Course 2023-24 ■ **Final Degree Project (co-supervised).** Title: *Validación de candidatos a exoplanetas y determinación de parámetros orbitales (Exoplanet candidate validation and orbital parameters determination)* Author: Inés Pastor Espinosa. Degree in Physics, Universitat de València.
- Course 2022-23 ■ **Final Degree Project (co-supervised).** Title: *Seguimiento fotométrico de exoplanetas (Photometric follow-up of exoplanets)* Author: Paula Talavera Capilla. Degree in Physics, Universitat de València.

Specialized training

- 2024 ■ **Responsible Conduct of Research.** Awarded by CITI program.
- 2023 ■ **Nocións essencials d'accessibilitat digital per a la docència** (Essential notions of digital accessibility for teaching). Awarded by Universitat de València.
- 2022 ■ **Julia for Scientists.** Awarded by Universitat de València.
- 2021 ■ **XXI Spanish Virtual Observatory School.** Awarded by Centro de Astrobiología.
 - **The 5th Azarquiel School Of Astronomy.** Awarded by Azarquiel School.
 - **Introduction to Machine Learning.** Awarded by Universitat de València.
 - **Introduction to Statistics.** Awarded by Universitat de València.
 - **Time-Domain Cosmology with Strong Gravitational Lensing.** Awarded by KAVLI IPMU.
- 2019 ■ **XII COEFIS** (Physics Students Congress). Awarded by Universidad de La Laguna.
- 2017 ■ **External practices at the Observatori Astronòmic de la Universitat de València.** Awarded by Universitat de València.

Observing proposals

- 2025 ■ **Request for observational time at Large Binocular Telescope** as PI (awarded time).
- 2024 ■ **Request for observational time at Gran Telescopio Canarias** as PI (observed).
 - **Request for observational time at Gran Telescopio Canarias** as co-investigator (observed).
- 2023 ■ **Request for observational time at Gran Telescopio Canarias** as PI (awarded time).
- 2022 ■ **Request for observational time at Gran Telescopio Canarias** as PI (awarded time).
- 2021 ■ **Request for observational time at Gran Telescopio Canarias** as PI (awarded time).

Extracurricular activities

- 2022 – present ■ **Member of the Spanish Astronomical Society.**

Miscellaneous (continued)

- 2020 – 2024  **Member of Astrobotos.** Blog of outreach in Spanish supported by AAS.
- 09/2023  **Member of the Department council.** Graduate students representative at the Departament d'Astronomia i Astrofísica, Universitat de València.
- 09/2023  **Member of the organizing committee of E3F Escola Estiu Erasmus en Física** (Student Summer School), Universitat de València.
- 2018  **Collaborator at the Feria-Concurso Experimenta** (Science Fair), Universitat de València.
- 2017  **Collaborator at the Feria-Concurso Experimenta** (Science Fair), Universitat de València.

International stays

- 08/2022 – 11/2022  **Department of Astronomy at the Ohio State University**
with Prof. Christopher Kochanek.