# Curriculum Vitae

## Reference


1. Family name: Vioque
2. First name: Miguel
3. Date of birth: 03/06/1993
4. Nationality: Spanish
5. Email: miguel.vioque@gmail.com


### 1. HIGHLIGHTS

PhD stellar astrophysics from the University of Leeds (2020). Marie Curie ITN PhD. Two published papers and two in preparation as first author. Two published papers, one submitted and two in preparation as co-author. Three accepted PI observing proposals (one for IDS at INT, La Palma, one for CAFOS at CAHA2.2m in Calar Alto and one for EFOSC2 at NTT, La Silla). Six talks at international conferences and five science seminars. Member of the WEAVE/SCIP consortium. LOC and host member of international conference and experienced in outreach and dissemination.

### 2. PROFESSIONAL EXPERIENCE

2020-2023 ALMA Fellow, Joint ALMA Observatory, Santiago, Chile

### 3. EDUCATION

2016-2020 Marie Sklodowska Curie Fellowship, PhD in Star Formation, University of Leeds, United Kingdom

2017-2018 Industrial Training Secondment, European Space Astronomy Centre (ESAC)-Centro de Astrobiología, Spain

2015-2016 Master in Theoretical Physics, specializing in Astrophysics and Cosmology, Universidad Autónoma de Madrid, Spain

2011-2015 Bachelor in Physics, Universidad Complutense de Madrid, Spain (fourth year at University of Calgary, Canada)

### 4. LIST OF PUBLICATIONS:

**Refereed publications**

1. Guzmán-Díaz, J., Mendigutía, I., Montesinos, B., Oudmaijer, R. D., **Vioque, M.**, Rodrigo, C., Solano, E., Meeus, M., Marcos-Arenal, P., *Homogeneous study of Herbig Ae/Be stars from spectral energy distributions. Disk clearing by photoevaporation,* in preparation

2. Panić, O., Haworth, T. J., Petr-Gotzens, M. G., Miley, J., van den Ancker, M., **Vioque, M.**, Siess, L., Parker, R., Clarke, C. J., Kamp, I., Kennedy, G., Oudmaijer, R. D., Pascucci, I., Richards, A. M. S., Ratzka, T., Qi, C., *Planet formation in intermediate-separation binary systems*, MNRAS accepted.

3. **Vioque, M.**, Oudmaijer, R. D., Schreiner, M., Mendigutía, I., Baines, D., Mowlavi, N., Pérez-Martínez, R., *Catalogue of new Herbig Ae/Be and classical Be stars: A machine learning approach to Gaia DR2*, 2020, A&A, 638, A21 – link here

4. Wichittanakom, C., Oudmaijer, R. D., Fairlamb, J. R., Mendigutía, I., **Vioque, M.**, Ababakr, K. M., *The accretion rates and mechanisms of Herbig Ae/Be stars*, 2020, MNRAS, 493, 234 – link here

5. **Vioque, M.**, Oudmaijer, R. D., Baines, D., Mendigutía, I., Pérez-Martínez, R., *Gaia DR2 study of Herbig Ae/Be stars*, 2018, A&A, 620, A128 – link here

**Non-Refereed publications**

1. **Vioque M.**, Wichittanakom C., Oudmaijer R. D., Schreiner M., Mendigutía I., Baines D., Mowlavi N., Pérez-Martínez R., *Cataloguing new high-mass Pre-Main Sequence and Classical Be stars using Machine Learning and Gaia*, 2020, Contributions to the XIV.0 Scientific Meeting (virtual) of the Spanish Astronomical Society, id. 192 – link here

2. **Vioque M.**, Oudmaijer R. D., Schreiner M., Mendigutía I., Baines D., Mowlavi N., Pérez-Martínez R., *VizieR Online Data Catalogue: New Herbig Ae/Be and classical Be stars catalogue (Vioque+, 2020)*, 2020, VizieR On-line Data Catalogue – link here

3. **Vioque M.**, Oudmaijer R. D., Baines D., Pérez-Martínez R., *New catalogue of intermediate mass Pre-Main Sequence objects in Gaia DR2 using Machine Learning,* 2019, 53rd ESLAB Symposium: The Gaia Universe, id. 52 – link here

4. **Vioque M.**, Oudmaijer R. D., Baines D., Mendigutía I., Pérez-Martínez R., *Gaia study on the formation of intermediate mass stars*, 2019, Highlights on Spanish Astrophysics X, Proceedings of the XIII Scientific Meeting of the Spanish Astronomical Society, p. 437-437 – link here

5. **Vioque M.**, Oudmaijer R. D., Baines D., Mendigutía I., Pérez-Martínez R., *VizieR Online Data Catalogue: Gaia DR2 study of Herbig Ae/Be stars (Vioque+, 2018)*, 2018, VizieR On-line Data Catalogue – link here

6. **Vioque M.**, Oudmaijer R. D., Baines D.*, Herbig Ae/Be stars with TGAS parallaxes in the HR diagram*, 2018, Astrometry and Astrophysics in the Gaia sky, Proceedings of the International Astronomical Union, Volume 330, pp. 277-278 – link here

7. **Vioque M.**, Oudmaijer R. D., Baines D.*, HR diagram of Herbig Ae/Be stars and their infrared excesses*, 2017, Memorie della Societa Astronomica Italiana, v.88, p.824 – link here

## 5. SCIENTIFIC PI PROJECTS

2020 EFOSC2/NTT: **Vioque et al.**, *New Herbig Ae/Be candidates using Gaia and Machine Learning* [7 nights, long-slit optical spectroscopy]

2019 CAFOS/CAHA2.2m: **Vioque et al.**, *New Herbig Ae/Be candidates using Gaia and Machine Learning* [3 nights, long-slit optical spectroscopy]

2019 IDS/INT: **Vioque et al.**, *New Herbig Ae/Be candidates using Gaia and Machine Learning* [8 nights, long-slit optical spectroscopy]

## 6. SCIENTIFIC CO-I PROJECTS

2019 – now WEAVE/WHT: WEAVE/SCIP consortium. Young Stellar Objects team

2018 GRAVITY/VLTI: Mendigutía et al., *Probing the inner disks of non-magnetospheric Herbig Be stars using GRAVITY spectro-interferometry* [6 hours, spectro-interferometry]

2018 XSHOOTER/VLT: Panic et al., *Testing disc evolution around intermediate mass stars* [14.7 hours, optical and near-infrared spectroscopy]

2017 XSHOOTER/VLT: Panic et al., *Testing disc evolution around intermediate mass stars* [31.5 hours, optical and near-infrared spectroscopy]

2017 LIRIS/WHT: Oudmaijer et al., *Creating the most massive stars: CO first overtone emission as disk accretion diagnostic* [3 nights, linear spectro-polarimetry]

## 7. INTERNATIONAL CONFERENCE TALKS AND SEMINARS

2020 Science seminar (University of Leeds, Leeds, UK): *Catalogue of new high-mass Pre-Main Sequence and Classical Be stars. A Machine Learning approach to Gaia data*

2020 Science seminar (Universidad de Chile, Santiago, Chile): *Catalogue of new high-mass Pre-Main Sequence and Classical Be stars. A Machine Learning approach to Gaia data*

2020 Science seminar (ESO, Santiago, Chile): *Catalogue of new high-mass Pre-Main Sequence and Classical Be stars. A Machine Learning approach to Gaia DR2*

2019 Invited seminar (Sternberg Astronomical Institute, Moscow, Russia): *Machine Learning techniques in Astronomy*

2019 The UX Ori type stars and related topics (St. Petersburg, Russia): *New UX Ori type candidates detected using Gaia DR2 and Machine Learning*

2019 Science seminar (ESAC, Madrid, Spain): *New Herbig Ae/Be and Classical Be candidates using Gaia and Machine Learnin*

2019 Workshop: Artificial Intelligence in Astronomy (ESO, Garching, Germany): *New catalogue of Pre-Main Sequence objects using AI*

2019 Gaia's view of Pre-Main Sequence Evolution (Leeds, UK): *New catalogue of Pre-Main Sequence objects using Gaia*

2018 Internal seminar (Centro de Astrobiología, Madrid, Spain): *Machine Learning Algorithms and its applications to Astronomy*

2018 A Revolution in Stellar Physics with Gaia and Large Surveys (Warsaw, Poland): *Gaia Study on the Formation of Intermediate Mass Stars*

2018 Spring Symposium: The 21st Century H-R Diagram: The Power of Precision Photometry (STScI, Baltimore, USA): *Gaia Study on the Formation of Intermediate Mass Stars*

2018 Internal seminar (Centro de Astrobiología, Madrid, Spain): *Gaia study of Herbig Ae/Be stars*

2017 Star Cluster Formation: Mapping the first few Myrs (Madrid, Spain): *Herbig Ae/Be stars with TGAS parallaxes in the HR diagram*

2017 Internal seminar (University of Leeds, Leeds, UK): *Herbig Ae/Be stars with TGAS parallaxes in the HR diagram*

**8. ADDITIONAL PARTICIPATION IN INTERNATIONAL MEETINGS AND SCHOOLS**

2020 Five Years After HL Tau: A New Era in Planet Formation (virtual conference).

2020 XIV.0 Reunión Científica de la Sociedad Española de Astronomía (virtual meeting). **Vioque et al.** poster: *Cataloguing new high-mass Pre-Main Sequence and Classical Be stars using Machine Learning and Gaia*

2020 European Astronomical Society Annual Meeting (virtual meeting). **Vioque et al.** poster: *New high-mass Pre-Main Sequence and Classical Be stars discovered using Machine Learning and Gaia*

2019 53rd ESLAB Symposium: the Gaia Universe (ESTEC, Noordwijk, The Netherlands). **Vioque et al.** poster: *New catalogue of intermediate mass Pre-Main Sequence objects in Gaia DR2 using Machine Learning*

2018 XXX Canary Islands Winter School of Astrophysics: Big Data Analysis in Astronomy (La Laguna, Spain). **Vioque et al.** poster: *Gaia DR2 Study on the Formation of Intermediate Mass Stars*

2018 XIII Reunión Científica de la Sociedad Española de Astronomía (Salamanca, Spain). **Vioque et al.** poster: *Gaia study on the formation of intermediate mass stars*

2018 Gaia DR2 Exploration Lab (ESAC, Madrid, Spain)

2018 The Olympian Symposium 2018: Gas and Stars from Milli- to Mega- Parsecs (Paralia Katerini, Greece). **Vioque et al.** poster: *Gaia study on the formation of intermediate mass stars*

2017 ESAC Data Analysis and Statistics (ESAC, Madrid, Spain)

2017 Northern Star Formation Meeting (Liverpool, UK)

2017 National Astronomy Meeting (Hull, UK). **Vioque et al.** poster: *Herbig Ae/Be stars with TGAS parallaxes in the HR diagram*

2017 Francesco's Legacy, Star Formation in Space and Time (Florence, Italy). **Vioque et al.** poster: *Herbig Ae/Be stars with TGAS parallaxes in the HR diagram*

2017 Astrometry and Astrophysics in the Gaia Sky (Nice, France). **Vioque et al.** poster: *Herbig Ae/Be stars with TGAS parallaxes in an HR diagram*

2017 3rd ASTERICS VO School (ESAC, Madrid, Spain)

2016 Gaia Data Release #1 Workshop (ESAC, Madrid, Spain)

## 9. OUTREACH AND DISSEMINATION

2021 Local Organizing Committee member of international conference: *Joint Observatories Kavli Science Forum* (ESO Headquarters, Santiago, Chile, Conference webpage)

2020 Press release (University of Leeds, Leeds, UK): *Unlocking clues to the origins of the stars,* based on Vioque et al. 2020, A&A, 638, A21 (Press release)

2019-2020 Organizer of the weekly science seminars (University of Leeds, Leeds, UK)

2020 Online interactive tutorial – link here

2019 Outreach talk at School of Physics & Astronomy Symposium (University of Leeds, Leeds, UK): *New Baby Stars*

2016-2019 Personal dissemination blog (Blog)

2016-2019 Project Twitter manager (@STARRYProject)

2019 GitHub repository (YODA: Neural Network-based algorithm)

2019 Local Organizing Committee member of international conference: *Gaia's view of Pre-Main Sequence Evolution* (Leeds, UK, Conference webpage)

2019 Pint of Science demonstrator (Leeds, UK)

2019 Digital Festival demonstrator (Leeds, UK)

2018 Press release (Centro de Astrobiología, Madrid, Spain): *Nuevos datos de Gaia nos acercan a desvelar cómo se forman las estrellas masivas,* based on Vioque et al. 2018, A&A, 620, A128 (Press release)

2017 Outreach talk to university students (Colegio Mayor Isabel de España, Madrid, Spain): *¿Cómo se forman las estrellas?*

2017 Pint of Science demonstrator (Leeds, UK)

2017 Stargazing Live, science to primary schools (York, UK)

## 10. STUDENT SUPERVISION AND TEACHING

2021 NRAO REU-Chile program supervisor (Joint ALMA Observatory, Santiago, Chile)

2020 First Year Computing demonstrator (University of Leeds, Leeds, UK)

2019 Co-supervisor of Summer Research Project (University of Leeds, Leeds, UK): *A Comprehensive Study of the Enigmatic Classical Be Stars*. Student: Isaac Radley

2019 Collaborator on Final Bachelor Art Degree Project (Universidad Rey Juan Carlos, Madrid, Spain): *La Representación del Cosmos a través del Arte Digital*. Student: Ana Campos Manso

2019 First Year Fundamental Physics demonstrator (University of Leeds, Leeds, UK)

2017 First Year Laboratory demonstrator (University of Leeds, Leeds, UK)

2016 Star Formation Module demonstrator (University of Leeds, Leeds, UK)

**11. GRANTS AND RECOGNITIONS**

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| 2020 | Recognition of PhD research excellence from the Dean of the Leeds Doctoral College |
| 2016-2019 | Marie Sklodowska Curie Fellowship |
| 2019 | Second best talk award at School of Physics & Astronomy Symposium (University of Leeds, Leeds, UK) |
| 2018 | Astronomy & Astrophysics highlight for Vioque et al. 2018, A&A, 620, A128 |
| 2014-2015 | Master scholarship: *Fomento a la Investigación en Estudios de Máster-UAM* |

**12. DIGITAL SKILLS**

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| Advanced: | Python (including Astropy, TensorFlow, Keras and Scikit-Learn), Casa, ADQL, LaTeX, Microsoft Office and Virtual Observatory tools (TOPCAT, Aladin, VOSpec, VOSA, SPLAT) |
| Intermediate: | MATLAB, UNIX, Mac OS, Microsoft Windows, Microsoft Office, GNU/Linux, astronomical data reduction packages (IRAF, DIPSO, DS9) |

**13. LANGUAGES**

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| Spanish: | Native |
| English: | Fluent (C2) |