

## Curriculum vitae

Dr. **Abel de Burgos Sierra**

March 2026 – European Southern Observatory  
Alonso de Córdova 3107, Vitacura, Santiago, Chile

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adeburgo@eso.org +56 941681124 [github.com/Abelink23](https://github.com/Abelink23)

### Research interests

- **Massive stars:** Evolutionary nature, physical, chemical, kinematical, pulsational and binary properties.
- **Open clusters and associations:** Using stellar aggregations as laboratories to test evolutionary theories.

### Education

- **Ph.D. in Astrophysics** – University of La Laguna, Tenerife, Spain Oct. 2019 - Oct. 2024
  - Awarded with *summa cum laude* and International Mention.
  - Thesis title: *On the evolutionary nature of massive B-type supergiants: a modern empirical reappraisal using data from IACOB, Gaia and TESS*. Supervisors: Dr. Sergio Simón-Díaz and Dr. Miguel Urbaneja.
- **M.Sc. in Astrophysics** – Complutense University of Madrid, Spain Oct. 2016 - Sep. 2018
  - Thesis title: *Stars and brown dwarfs in the  $\sigma$  Orionis cluster: IDS/INT and OSIRIS/GTC spectroscopy and Gaia DR2 Astrometry*. Supervisors: Dr. José A. Caballero and Prof. David Montes. **Score: 9.6/10**.
- **B.Sc. in Physics** – Complutense University of Madrid, Spain Sep. 2010 - Sep. 2016
  - Thesis title: *Integral field spectroscopy for analyzing the gas kinematics in nearby galaxies*. Supervision by Dr. África Castillo Morales. **Score: 10/10** awarded with Honorable Distinction.

### Scientific work experience – via awarded competitive grants and contracts

- **ESO Postdoctoral Fellow** - European Southern Observatory, Santiago, Chile Nov. 2024 - Present  
Research project (50%): “*A comprehensive exploration of the massive star population in Perseus OB1*”
- **PhD student in Astrophysics** - Instituto de Astrofísica de Canarias, Tenerife, Spain Oct. 2019 - Oct. 2024
- **INT Support and Research Student** - Isaac Newton Group of Telescopes, La Palma, Spain Dec. 2018 - Oct. 2019  
Project title: *The deep northern O and early B stars: Developing a selection method for massive star candidates for WEAVE-SCIP survey*, under the supervision of Prof. Janet Drew, Dr. Maria Monguio, Dr. Cecilia Fariña.
- **Astrophysical Research Student** - Instituto de Astrofísica de Canarias, Tenerife, Spain Jul. - Sep. 2018  
Project title: *Searching for Binary Red Supergiant Stars using multi-epoch high-resolution optical spectra*, under the supervision of Dr. Lee R. Patrick, Dr. Sergio Simón-Díaz, Prof. Artemio Herrero Davó.
- **ESAC Trainee** - European Space Agency, Madrid, Spain Apr. - Oct. 2015  
Project title: *Preparation of Science Cases for the ESA – CESAR Project*, under the supervision of Dr. Michel Breitfellner and Dr. Javier Ventura.

## Technical and observatory work experience – via awarded competitive grants and contracts

- **ESO Postdoctoral Fellow** - European Southern Observatory, Santiago, Chile Nov. 2024 - Present  
Observatory duties (50%): 4MOST and UVES Instrument Fellow, SCUBA master software developer, Night Astronomer of UT1 and UT2 serving as VLT night shift coordinator when required, providing support in recommissioning or data reduction pipelines of the instruments. Total: **80 nights per year**.
- **Support astronomer at the 2.56 m Nordic Optical Telescope** - La Palma, Spain Oct. 2019 - Oct. 2020  
Duties: Service, support and technical nights with ALFOSC, FIES and NOTCam instruments. Total: **49 nights**.
- **Support Astronomer at the 2.54 m Isaac Newton Telescope** - La Palma, Spain Oct. 2018 - Oct. 2019  
Duties: Discretionary, service and support nights with WFC and IDS instruments. Total: **28 nights**.
- **Scientific Operations Support internship** - European Space Agency, Madrid, Spain Feb. - Jul. 2018  
Duties: Support to the ESA Mars Express mission: Visual Monitoring Camera (VMC) data processing, reduction pipeline, archiving, and to the Science Ground Segment team.
- **Telescope Operator and Technician** - European Space Agency, Madrid, Spain Apr. 2016 - Sep. 2018  
Duties: Automatization, daily operations and maintenance of the ESA-CESAR Helios solar activity-tracker observatory and the Robledo Optical Night Observatory (at NASA's MDSCC site). Total: **~100 days/nights**.
- **Telescope Operator and support at El Castillo Observatory** - Borobia, Spain Aug. 2014  
Duties: Weekly operations of the observatory during guided tours. Technical support provided. Total: **20 nights**.

## Grants

- **ESO Postdoctoral Fellowship** - independent postdoctoral fellowship €250.000,00
- **IAC Resident Astrophysicist** - grant to cover the salary and travel expenses during the PhD €75.000,00
- **Erasmus+ Student Mobility for Traineeship** - grant to cover the living and travel expenses €2.500,00
- **MIAPbP visiting researcher** - grant to attend the invitational of two MIAPbP workshops €2.000,00

## Publications in peer-reviewed journals as first or main author

- *The IACOB project XIV. New clues on the location of the TAMS in the massive star domain* – **de Burgos**, Simón-Díaz, Urbaneja, et al. (2025), *Astronomy and Astrophysics*, 695, A87
- *The IACOB project XII. New grid of northern standards for the spectral classification of B-type stars* – Negueruela, Simón-Díaz, **de Burgos**, et al. (2024), *Astronomy and Astrophysics*, 690, A176
- *The IACOB project XI. No increase in mass-loss rates over the bistability region* – **de Burgos**, Keszthelyi, Simón-Díaz, et al. (2024), *Astronomy and Astrophysics*, 687, L16
- *The IACOB project X. Large-scale quantitative spectroscopic analysis of Galactic luminous blue stars* – **de Burgos**, Simón-Díaz, Urbaneja, et al. (2024), *Astronomy and Astrophysics*, 687, A228
- *Gaia colour-magnitude diagrams of young open clusters. Identification in the UBC catalogue and comparison between manual and automated analyses* – Negueruela and **de Burgos** (2023), *Astronomy and Astrophysics*, 675, A19
- *The IACOB project IX. Building a modern empirical database of Galactic O9 - B9 supergiants: Sample selection, description, and completeness* – **de Burgos**, Simón-Díaz, Urbaneja, et al. (2023), *Astronomy and Astrophysics*, 674, A212

- *High-resolution spectroscopic study of massive blue and red supergiants in Perseus OB1 I. Definition of the sample, membership, and kinematics* – de Burgos, Simón-Díaz, Lennon, et al. (2020), *Astronomy and Astrophysics*, 643, A116
- *Stars and brown dwarfs in the  $\sigma$  Orionis cluster. IV. IDS/INT and OSIRIS/GTC spectroscopy and Gaia DR2 astrometry* – Caballero, de Burgos, Alonso-Floriano, et al. (2019), *Astronomy and Astrophysics*, 629, A114

## Other publications in peer-reviewed journals as co-author

- *The IACOB project: XVI. Surface helium abundances in Galactic O-type stars: indications for identifying binary interaction products* – Simón-Díaz, Holgado, Martínez-Sebastián, et al. (*submitted to Astronomy and Astrophysics*)
- *The IACOB project XV. Hunting for spectroscopic binaries in the O and B supergiant domain* – Simón-Díaz, Britavskiy, Castro, Holgado, de Burgos, et al. (*submitted to Astronomy and Astrophysics*)
- *Spindown of massive main sequence stars in the Milky Way* – Nathaniel, Langer, Simón-Díaz, Holgado, de Burgos, et al. (2025), *Astronomy and Astrophysics*, 702, A197
- *The wide-field, multiplexed, spectroscopic facility WEAVE: Survey design, overview, and simulated implementation* – Jin, Trager, Dalton, et al. (2023), *Monthly Notices of the Royal Astronomical Society*, 530, 2688
- *Detection of optical emission from the supernova remnant G7.7-3.7* – Domček, Santisteban, Chiotellis, et al. (2023), *Monthly Notices of the Royal Astronomical Society*, 526, 1112
- *The EURONEAR Lightcurve Survey of Near Earth Asteroids 2017-2020* – Vaduvescu, Aznar Macias, Wilson, et al. (2022) *Earth, Moon, and Planets*, 126, 6
- *Hubble spectroscopy of LB-1: Comparison with B+black-hole and Be+stripped-star models* – Lennon, Maíz Apellániz, Irrgang, et al. (2021), *Astronomy and Astrophysics*, 649, A167
- *Spectroscopic classification of a complete sample of astrometrically-selected quasar candidates using Gaia DR2* – Heintz, Fynbo, Geier, et al. (2020), *Astronomy and Astrophysics*, 644, A17
- *Variability of OB stars from TESS southern Sectors 1-13 and high-resolution IACOB and OWN spectroscopy* – Burssens, Simón-Díaz, Bowman, et al. (2020), *Astronomy and Astrophysics*, 639, A81
- *IGAPS: the merged IPHAS and UVEX optical surveys of the northern Galactic plane* – Monguió, Greimel, Drew, et al. (2020), *Astronomy and Astrophysics*, 638, A18
- *A detailed non-LTE analysis of LB-1: Revised parameters and surface abundances* – Simón-Díaz, Maíz Apellániz, Lennon, et al. (2020), *Astronomy and Astrophysics*, 634, L7
- *The 2018 Martian Global Dust Storm Over the South Polar Region Studied With MEx/VMC* – Hernández-Bernal, Sánchez-Lavega, del Río-Gaztelurrutia, et al. (2019), *Geophysical Research Letters*, 46, 10, 330

## Non refereed publications

- *Per OB1: a test-bed for improving our understanding of massive stars in the large-scale surveys era* – de Burgos, Simón-Díaz, Urbaneja, Negueruela (*submitted*), *Proceedings of the International Astronomical Union Symposium*, 402
- *Massive stars in the Milky Way: New clues to understand their properties using large spectroscopic samples* – de Burgos, Simón-Díaz, Urbaneja, Holgado (*submitted*), *Proceedings of the International Astronomical Union Symposium*, 365

- *An Up-Scaled Endeavor for Exploring OB Stars in the Milky Way Within the WEAVE-SCIP Survey* – de Burgos, Simón-Díaz, Drew, et al. (2025), Proceedings of the XVI Scientific Meeting of Spanish Astronomical Society, 209
- *New evolutionary clues to understand the nature of massive stars* – de Burgos, Simón-Díaz, Urbaneja, et al. (2025), Proceedings of the XVI Scientific Meeting of the Spanish Astronomical Society, 171
- *GRB 250910A: VLT limits on the possible associated supernova* – Habeeb, Malesani, Martin-Carrillo, et al. (2025), GCN, 42036, 1
- *STIS-ISM: STIS ISM Survey in the Milky Way* – De Cia, Balashev, Crowther, et al. (2024), HST proposal, 17703
- *Cluster parameters with Gaia: comprehensive testing of Artificial Intelligence methods to detect and characterise open clusters* – Negueruela, Berlanas, and de Burgos (2023), European Astronomical Society Annual Meeting, 1102
- *The Visual Monitoring Camera on Mars Express: calibrating a new science instrument made from an old webcam orbiting Mars* – Hernández Bernal, Cardesín Moinelo, Hueso Alonso, et al. (2022), Europlanet Science Congress, EPSC2022-684
- *The largest and most ambitious quantitative spectroscopic analysis of B-type supergiants in the Milky Way* – **de Burgos**, Simón-Díaz, and Urbaneja (2022), Proceedings of the International Astronomical Union Symposium, 361
- *The IACOB spectroscopic database. New interface and second data release* – Simón-Díaz, Pérez Prieto, Holgado, et al. (2020), Proceedings of the XIV Scientific Meeting of the Spanish Astronomical Society, 187
- *Spectroscopic and kinematic study of blue and red supergiants in Per OB1* – **de Burgos**, Simón-Díaz, Lennon, et al. (2020), Proceedings of the XIV Scientific Meeting of the Spanish Astronomical Society, 134
- *The IACOB project: searching for empirical signatures of binarity in fast-rotating Galactic O stars and B supergiants* – Britavskiy, Holgado, Simón-Díaz, et al. (2020), Proceedings of the XIV Scientific Meeting of the Spanish Astronomical Society, 123
- *GRB 200324A: NOT optical upper limit* – Fynbo, Malesani, **de Burgos Sierra**, et al. (2020), GCN, 27432, 1
- *Does the binary system LB-1 host a Black Hole?* – Lennon, Allende-Prieto, Bohlin, et al. (2020), HST proposal, 16079
- *LIGO/Virgo S191213g: NOT optical spectroscopy of AT2019wxt (PS19hgw)* – Izzo, Malesani, Heintz, et al. (2019), GCN, 26491, 1
- *The telescopes of the CESAR initiative of the European Space Agency* – **de Burgos**, Breitfellner, Ayúcar, et al. (2019), Proceedings of the XIII Scientific Meeting of the Spanish Astronomical Society, 661
- *A new OSIRIS/GTC and IDS/INT spectroscopic survey of young stars in the sigma Orionis cluster* – **de Burgos**, Caballero, Alonso-Floriano, et al. (2019), Proceedings of the XIII Scientific Meeting of the Spanish Astronomical Society, 403
- *The 2018 Martian Global Dust Storm Over the South Pole Studied with VMC Onboard Mars Express* – Sanchez-Lavega, Hernandez-Bernal, del Rio-Gaztelurrutia, et al. (2018), American Geophysical Union Fall Meeting, 2018, P43K-3885
- *Clouds in the night side of Mars: an analysis using Mars Express VMC* – Hernandez Bernal, Sánchez Lavega, del Río Gaztelurrutia, et al. (2018), Europlanet Science Congress, EPSC2018-337

- *Historical Superbolides* – Sánchez de Miguel, Zamora, Ocaña, et al. (2015), Proceedings of the VIII Scientific Meeting of the Spanish Astronomical Society, 658

## Workshops and conferences

- *ESO Observing School at La Silla* (Santiago, Chile, Feb. 2026) – **Contributed talk and school tutor**
- *Binary Stars mini-Workshop* (Santiago, Chile, Jan. 2026) – **SOC and LOC member**
- *IAU Symposium 402: Massive stars across redshifts in the era of JWST and large surveys* (Ensenada, Mexico, Sep. 2025) – **Contributed talk**
- *Munichfest2025: celebrating 40 years of research on hot luminous stars* (La Palma, Spain, Apr. 2025) – **Contributed talk**
- *IAU Symposium 395: Stellar populations in the Milky Way and beyond* (Paraty, Brazil Nov. 2024) – **One poster as main author**
- *VFTS collaboration annual meeting* (Madrid, Spain, Sep. 2024) – **Contributed talk**
- *MIAPbP workshop: Stellar Astrophysics in the Era of Gaia, Spectroscopic and Asteroseismic Surveys* (Garching, Germany, Aug. 2023) – **Contributed talk**
- *European Astronomical Society meeting* (Kraków, Poland, Jul. 2023) – **Two contributed talks, and two posters as co-author**
- *VFTS collaboration annual meeting* (Garching, Germany, Mar. 2023) – **Contributed talk**
- *Spanish Astronomical Society XV Biannual Congress* (Tenerife, Spain, Sep. 2022) – **One poster as main author**
- *TASC6/KASC13 Asteroseismology workshop* (Leuven, Belgium, Jul. 2022) – **Contributed talk**
- *IAU Symposium 361: Massive Stars Near and Far* (Ballyconnell, Ireland, May 2022) – **One poster as main author**
- *ESCAPE summer school: Data Science for Astronomy, Astroparticle and Particle Physics* (Online, Jun. 2021)
- *BRITE and BRITE-related Science meeting* (Online, Jul. 2021) – **Contributed talk**
- *European Astronomical Society meeting* (Online, Jun. 2021) – **Two posters as co-author**
- *IAC “Day of Our Science” meetings* (Tenerife, Spain, Jun. 2021, 2022, and 2023) – **Contributed talks**
- *VFTS collaboration annual meeting* (Online, Mar. 2021) – **Contributed talk**
- *VFTS collaboration annual meeting* (Online, Oct. 2020)
- *Spanish Astronomical Society XIV Biannual Congress* (Online, Jul. 2020) – **One poster as main author**
- *Gaia-RIA: Expanding the Gaia legacy workshop* (Barcelona, Spain, Feb. 2020) – **Contributed talk**
- *LAPIS VIII: Pulsations Along Stellar Evolution* (La Plata, Argentina, Nov. 2019)
- *MARS Science workshop: From Mars Express to Exomars* (Madrid, Spain, Feb. 2018) – **LOC member**
- *Gaia DR2 Exploration Lab* (Madrid, Spain, Jun. 2018) – **Contributed talk**
- *ESA SPICE Training - by NASA’s Navigation and Ancillary Information Facility* (Madrid, Spain, Jun. 2018)
- *ESA Rosetta: Science Operations Scheduling workshop* (Redu, Belgium, Oct. 2017)

- *ASTERICS school: Virtual Observatory tools* (Madrid, Spain, Nov. 2017)

## Supervision

- **ESO internship supervision** - Main supervisor of a B.Sc. student for two months to carry out a project within Paranal Scientific Operations. Student: Gonzalo Barrueto (Pontificia Universidad Católica, Chile) – 2026
- **IAC internship supervision** - Co-supervisor of a B.Sc. student for three months to undertake a project to extract TESS lightcurves of Massive Stars. Student: Mercedes Contreras (University of Murcia, Spain) – 2023
- **ESA Trainee supervision** - Co-supervisor of a M.Sc. student for six months to develop an Image Processing Pipeline for the ESA-CESAR Solar Observatory. Student: Enrico Fini (Politecnico di Milano, Italy) – 2018
- **ESA Trainee supervision** - Co-supervisor of a B.Sc. student for six months to produce Science Cases for the ESA-CESAR project. Student: Alejandro Romar (Universidad Autónoma de Madrid, Spain) – 2017

## Scientific community work

- **ESO Student Selection Committee** 2026
- **ESO Observing School at La Silla** – member of the selection committee and tutor of the school 2026
- **ESO Comité Mixto ESO-Gobierno de Chile** – independent reviewer of proposals 2025
- **ESO PSO Summer Student** – member of the selection committee 2026
- **ESO Director Discretionary Time** – technical feasibility of 9 proposals 2025–2026
- **IAC monthly meetings of PhDs** of the Stellar and ISM research line – founder and organizer 2021

## Research projects and collaborations

- Active participant of the **VLT-FLAMES Tarantula Survey** (VFTS, PI: C. Evans) collaboration. Participation in the last three annual meetings 2020, 2021, 2023
- Member of the **GEEMAS** (Grupo Español con interés en Estrellas Masivas) collaboration. Participation in the bi-weekly online meetings and biannual meetings 2022–2023
- Active member of the **WEAVE Project** through my involvement in the **Stellar, Circumstellar and Interstellar Physics survey** (SCIP, PI: J. Drew). Active participation in the survey development since my research studentship at the Isaac Newton Group of Telescopes 2018
- Full member of the **IACOB project** of the Instituto de Astrofísica de Canarias (PI: S. Simón-Díaz). Active participation in the progress and group meetings 2018–2024

## Participation in seminars

- ESO-Chile Stellar Coffee – Three talks 2025–2026
- ESO-Chile ASTRO-PH seminars – One talk Mar. 2025
- University of Valparaiso seminars given at the Astrophysics Center – One invited talk Jul. 2025
- IAU Working Group on Active B Stars – One invited talk Feb. 2025
- IPARCOS seminars by Universidad Complutense de Madrid – One invited talk Sep. 2024
- Severo Ochoa research line monthly seminars, at the Instituto de Astrofísica de Canarias – Two talks 2022–2023

- Spanish Massive Stars Community biweekly seminars – Two talks Mar., Jun. 2022
- University of Innsbruck weekly seminars, within the Astrophysics department – Two invited talks Oct. 2021
- Bonn massive stars weekly meetings, at Argelander-Institut, Bonn University – One invited talk May 2021
- Astronomy Club seminars, at European Space Astronomy Centre – Several talks 2017–2018

## Participation in peer-reviewed funded projects

- *The Multiple Early Channels of Evolution of Massive Stars* (PID2021.122397NB-C21, Spanish MICINN, 193.8 k€), Sep. 2022 – Aug. 2025, PIs: Prof. A. Herrero & Dr. S. Simón-Díaz.  
**Participation in the scientific exploitation** of the IACOB and WEAVE-SCIP spectroscopic data.
- *Solving the longstanding mystery of the massive blue Supergiants* (ProID2020010016, GobCan-ASICII), Jan. 2020 – Apr. 2023, PI: Dr. S. Simón-Díaz.  
**Participation through the research** that I have carried out within the scope of my PhD project.
- *Linking birth and death: an Empirical approach To luminous blue Massive star Evolution* (PGC2018-093741-B-C22, Spanish MICINN, 157.3 k€), Jan. 2019 – Aug. 2022, PIs: Dr. S. Simón-Díaz & Prof. A. Herrero.  
**Participation through the acquisition of data** at observing facilities and the subsequent **data analysis**, also participating in the **preparation of catalogs** for the WEAVE-SCIP survey.

## Observing experience

- **Observing nights *in situ*:**
  - 8.4 m **Very Large Telescope** (Paranal–Chile) - All UT1 and UT2 instruments - **92 nights** 2025–2026
  - 4.2 m **William Herschel Telescope** (ORM–La Palma) - ISIS instrument - **3 nights** 2019
  - 3.58 m **Galileo National Telescope** (ORM) – HARPS/GIANO instruments - **5 nights** 2024
  - 2.56 m **Nordic Optical Telescope** (ORM) – FIES/ALFOSC/NOTCam inst. - **56 nights** 2018–2023
  - 2.54 m **Isaac Newton Telescope** (ORM) – IDS/WFC instruments - **29 nights** 2018–2019
  - 2.2 m **Calar Alto Telescope** (Calar Alto–Almería) – CAFOS instrument - **2 nights** 2017
  - 1.52 m **ESO 1.52-metre telescope** (La Silla–Chile) – PLATOSpec instrument - **4 nights** 2026
  - 1.5 m **Carlos Sánchez telescope** (OT–Tenerife) – FASTCAM instrument - **1 night** 2016
  - 1.2 m **Mercator Telescope** (ORM) – HERMES instrument - **20 nights** 2020–2023
- **Observing proposals as PI or main co-I:**
  - Program 127-NOT15/25B, **Nordic Optical Telescope**, FIES instrument. 2025  
Awarded with **2 nights**. **PI of the proposal.**
  - Program 117-MULTIPLE-2/25B, **Gran Telescopio Canarias**, Osiris and EMIR instruments. 2025  
Awarded with **36 hours.**
  - Program 7-MULTIPLE-8/25A, **Nordic Optical and Mercator telescopes**, 2024  
FIES and HERMES instruments, respectively. Awarded with **6 nights.**
  - Program 67-MULTIPLE-8/24B, **Nordic Optical and Mercator telescopes**, 2024  
FIES and HERMES instruments, respectively. Awarded with **19 nights.**
  - Large program 45-MULTIPLE-8, **Nordic Optical and Mercator telescopes**, 2021–2023  
FIES and HERMES instruments, respectively. Awarded with **50 nights.**
  - Program 67-INT9, **Isaac Newton Telescope**, IDS instrument. Awarded with **5 nights.** 2021

- Program 64-Mercator6, **Mercator Telescope**, HERMES instrument. Awarded with **3 nights**. 2021
- Program 54-Mercator2, **Mercator Telescope**, HERMES instrument. Awarded with **7 nights**. 2020
- Program 59-NOT7, **Nordic Optical Telescope**, FIES instrument. 2020  
Awarded with **3 nights**. **PI of the proposal**.
- Program 143-INT14, **Isaac Newton Telescope**, IDS instrument. Awarded with **3 nights**. 2020
- Program 61-411 (Fast-Track), **Nordic Optical Telescope**, ALFOST instrument. 2020  
Awarded with **4 hours**. **PI of the proposal**.
- Program 61-406 (Fast-Track), **Nordic Optical Telescope**, ALFOST instrument. 2020  
Awarded with **3 hours**. **PI of the proposal**.
- Program 60-409 (Fast-Track), **Nordic Optical Telescope**, ALFOST instrument. 2020  
Awarded with **30 minutes**. **PI of the proposal**.
- Program 36-NOT5, **Nordic Optical Telescope**, FIES instrument. 2020  
Awarded with **4 nights**. **PI of the proposal**.
- Program N6, **Isaac Newton Telescope**, WFC instrument. Awarded with **4 nights**. 2019
- Program 164-WHT7, **William Herschel Telescope**, ISIS instrument. Awarded with **4 nights**. 2019
- Program 163-Stella7, **Stella telescope**, SES instrument. Awarded with **84.7 hours**. 2019
  
- **Other observing proposals as co-investigator:**
  - Program 133-GTC119/26A, **Gran Telescopio Canarias**, Osiris instrument. Awarded with **35 hours**. 2026
  - Program 115.284Z, **VLT-UT2**, UVES instrument. Awarded with **10 hours**. 2025
  - Program 3-MULTIPLE-8/25B, **Nordic Optical and Mercator telescopes**, 2025  
FIES and HERMES instruments, respectively. Awarded with **9 nights**.
  - Program 103-GTC108/25A, **Gran Telescopio Canarias**, Osiris instrument. Awarded with **35 hours**. 2025
  - Program 97-GTC95/24B, **Gran Telescopio Canarias**, Osiris instrument. Awarded with **35 hours**. 2024
  - Program 82-GTC68/24A, **Gran Telescopio Canarias**, Osiris instrument. Awarded with **35 hours**. 2024
  - Program G06037, Cycle6, **NASA Transit Exoplanet Survey Satellite**. 2023  
Awarded with **2-minute cadence** photometry on **~400 targets**.
  - Program G05036, Cycle5, **NASA Transit Exoplanet Survey Satellite**. 2022  
Awarded with **2-minute cadence** photometry on **~1800 targets**.
  - Program 20-Mercator2, **Mercator Telescope**, HERMES instrument. Awarded with **3 nights**. 2021
  - Program 85-Mercator3, **Mercator Telescope**, HERMES instrument. Awarded with **3 nights**. 2020
  - Program 135-Mercator5, **Mercator Telescope**, HERMES instrument. Awarded with **4 nights**. 2020
  - Program 16079, Cycle27, **Hubble Space Telescope**, STIS and WFC3 instruments. 2020  
Awarded with **~1h / 3 orbits**.
  
- **Data reduction:**
  - **Optical ground photometry** from WFC, ALFOSC, and CAFOS instruments. Reduction using my **own developed** Python pipelines or IRAF.
  - **Intermediate and low-resolution optical spectra** from OSIRIS (10.4 m GTC), ISIS, ALFOSC, IDS, and CAFOS instruments. Reduction using my **own developed** Python pipelines or IRAF.
  - **High-resolution optical spectra** from FIES and HERMES instruments. Reduction using internal pipelines and tasks included in my **own written** “*pyIACOB*” package.

- **Integral field spectroscopy** from PMAS/PPAK instrument (3.5 m Calar Alto telescope). Reduction using the internal pipeline and IRAF.
- **Optical space photometry** from *Gaia* and *TESS* missions. Data retrieve and reduction using my **own developed** Python pipelines. For TESS including my **own written** light-curve extraction package “*LCExtractor*”.

## Technical and computing skills

- Astrophysics techniques:
  - **Spectroscopy** from optical to near infrared covering  $R=700-85\,000$  using (1) echelle spectrographs, (2) long slits, and (3) Integral Field Units: physical and chemical properties of massive stars and sub-stellar objects (1,2); stellar variability and binary detection (1); kinematics and dynamics of galaxies (3).
  - **Photometry** from ground or space observations: physical properties of massive stars and sub-stellar objects; photometric surveys, specialized in *Gaia*, *2MASS*, and *IGAPS*.
  - **Astrometry**: parallaxes, proper motions, and distances to individual stars, clusters, and associations; cluster membership; asteroids detection.
  - **Asteroseismology**: pulsational properties of massive stars.
- Recommissioning of UVES (Jun. 2025) y VISIR (Oct. 2025)
- Astronomy tools: IRAF/PyRAF, ALADIN, TopCat, VOSA, SPLAT, iSpec and KStars.
- Programming languages: **Python** 2/3 – expert, **Matlab** – fluent, **R** – fluent
- Operating Systems: Linux, macOS and Windows.

## Organizational and outreach competences

- ESO representative at the annual Job Fair of the Pontificia Universidad Católica de Chile (Nov. 2025)
- Participation in the “Open Days at the Teide Observatory” guided visits trough the different facilities at the observatory of Izaña, Tenerife, Spain (Jun. 2024)
- Press release about my first PhD publication as a first-author in a peer-reviewed journal. It was published at IAC News [[link](#)] (Jun. 2023)
- Participation in “Allande stars 2022”, an outreach project that aims to revitalize rural areas through its relationship with astronomy (2022)
- Collaboration with the ESA – ESAC Communication divisions for media creation and live-streaming of major astronomical events (2016 – 2018)
- Team leader of the ESA – CESAR expeditions to stream the 2017 Total Solar Eclipse from Wyoming, USA, and the 2016 Mercury Transit from Tenerife, Spain (2016, 2017)
- Organization of several hands-on astronomy experiences for the general public in collaboration with the Planetarium of Madrid, the Astrophysics Department of the Complutense University of Madrid, and the ESA – ESAC Astronomy Club (2011 – 2018)
- Participation in the “Science Week” organized by the Complutense University of Madrid for seven years, giving scientific talks and leading hands-on telescope observations for the general public (2011 – 2017)
- Worked as a stargazing guide at the “El Castillo” observatory for up to 300 hours (2014)
- Coordinated and organized activities for the ASAAF – UCM astronomical association for a varied number of participants (2012 – 2017)

- Participation in the “Introduction to astronomy” lectures organized by ASAAF–UCM (2012–2014)
- President of the amateur astronomical association ASAAF of the Complutense University of Madrid (2012)

## Languages

- **English C1** Advanced level (CEFR) - English Courses at the Foreign Languages CSIM center, Madrid, Spain
- **Spanish** - Mother tongue

## Memberships and miscellanea

- Junior Member of the International Astronomical Union 2025–present
- Member of the European Astronomical Society 2025–present
- Member of the Spanish Astronomical Society 2018–present
- Member of the Astronomical Association of Madrid 2007–present
- Honorific member of the amateur astronomical association ASAAF–UCM 2010–present
- Traveler, nature, hiking, latin dances, diving, tennis, astrophotography
- Driver’s license B since 2010, with training in extreme weather driving techniques. [[link to my pictures](#)]

I certify that all the information mentioned is correct and is honestly presented.