Curriculum vitæ

Dr. José A. Caballero

http://exoterrae.eu

March 2024

Résumé

- **Current position:**
  - *Investigador Científico* (senior staff researcher) of the Consejo Superior de Investigaciones Científicas at the Centro de Astrobiología, Madrid
- **Publication summary:**
  - **218** refereed articles; **35** as a first or single author and **32** as a second, third, or *last* author; **201** in first quartile of impact factor (A&A, AJ, ApJ, MNRAS, Nature, Nature Astronomy, PCPC, Science)
  - **271** contributions to international and national meetings: **22** SPIE, **5** refereed, **87** oral (**13** invited, **39** plenary, **36** splinter), **156** poster
  - **15** main technical documents for instrument design reviews and space mission validation, **3** white papers, **2** RNAAS, **6** circulars, **2** source codes, **79** VizieR catalogues, **6** collaborations in science books
  - Total citations $N_{\rm total} = \mathbf{9740}$, first-author citations $N_{\rm 1st} = \mathbf{1368}$, author-normalised citations $N_{\rm norm} = \mathbf{1164.4}$, entries in the Astrophysics Data System $n_{\rm ADS} = \mathbf{477}$, Hirsch index $h = \mathbf{53}$
- **Astronomical instrumentation:**
  - CARMENES Instrument Astronomer (2016+) and co-Project Manager (2009–2015)
  - GO-IRS/Gran Telescopio Canarias Project Scientist (2010)
  - Instrument science teams: *LIFE*, *Gaia-NIR*, HARMONI, *PLATO*, POLLUX, *TESS*...
- **Academy:**
  - (Co-)supervisor of **4** PhD, **38** MSc, **5** BSc and **3** high-school theses and traineeships
  - (Co-)lecturer of **3** master, **1** graduate, **4** summer school, and **3** teacher education courses; assistant lecturer of **1** graduate course; **8** years of university academic experience at UCM and UAM
- **Principal investigatorship:**
  - Projects: PID2022–137241NB–C42, AYA2015–74151–JIN, AYA2011–30147–C03–03, RYC2009–04666, JCI2006–3925–2095, *ExoPhot*, `#iau100rockastronomy`
  - Total budget as a PI: **1.039 MEUR** awarded, 0.577 MEUR administered
- **Degrees:**
  - *Philosophiæ doctor* (PhD Astrophysics – Doctorado), ULL/IAC, Tenerife, Spain, 2006
  - *Magister scientiæ* (M.Sc. Astrophysics – Máster), ULL/IAC, Tenerife, Spain, 2003
  - *Baccalaureus scientiæ* (B.Sc. Physics/Astrophysics – Licenciatura), UCM, Madrid, Spain, 2000

- **Awards and honours:**
  - One of the 100,000 PLoS/Scopus top scientists worldwide (2023)
  - Winner of IAU NameExoWorlds contest 2022 edition (2023)
  - Honorary Citizen of El Escorial (2018)
  - Honorary Professor at the Departamento de Astrofísica y Ciencias de la Atmósfera of the Universidad Complutense de Madrid (2013–2015)
  - *Sociedad Española de Astronomía* award to the best thesis in Astrophysics (2008)
- **Professional services:**
  - ***James Webb*** (×1), ***Hubble*** (×1), **ESO** (×3), IAC (×4) time allocation committees
  - Horizon Europe, NASA XRP and AEI panels; UCM *Máster en Astrofísica* Board; ESAC Science Faculty Council; CARMENES Consortium Board; DAAD Spanien committee
  - Member of **10** contract and **17** PhD thesis review panels, referee of **25** publications
  - External reviewer of project proposals for **17** regional, national and international bodies
  - Director, chair of convenors, SOC/LOC chair/co-chair/member of **58** workshops, meetings and courses
- **Communication:**
  - Science consultant of *Beyond the Sun* (2018), a planetarium full-dome movie for children translated into **29** languages and screened in **100+** planetaria in **28+** countries; numerous international awards
  - Collaborator of *Longitud de onda*, a programme of Radio Clásica RTVE (2016+)
  - Conductor of •united**sounds**of**cosmos**, a *Rock'n'Astronomy* outreach project with Antonio Arias, Lagartija Nick, Soleá Morente, JJ Machuca, Fario, Pájaro Jack and artists of Los Planetas, Lori Meyers, Los Módulos and Kovalski (2008+); **22** astro-concerts
  - Core team member of *Cultura con C de Cosmos: Vida* (C^3:Vida, 2021–2022) and *Cultura con C de Cosmos* (C^3, 2018–2019), third-culture outreach projects
  - Contributing editor of *Ars universalis* (2019+) and *Musica universalis* (2013–2018), sections of *Astronomía* magazine
  - **43** popular talks (including **1** TEDx); **22** outreach articles; essay contributor to book *Life Beyond Us*; numerous interviews in television, radio, journals and newspapers; other outreach activities
- **Personal and contact data:**

Passport name	José Antonio Caballero Hernández
Birth date	24 Feb 1977
Birth site	El Escorial, Madrid, Spain
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Postal address	Centro de Astrobiología (CSIC-INTA) ESAC, camino bajo del castillo s/n E-28692 Villanueva de la Cañada, Madrid, Spain
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ResearcherID	C-2819-2017

Contents of José A. Caballero's CV

Acronyms

2MASS	Two-micron All-Sky Survey
A&A	Astronomy & Astrophysics
AEI	Agencia Estatal de Investigación
AJ	Astronomical Journal
ApJ	Astrophysical Journal
AvH	Alexander von Humboldt
BSc	baccalaureus scientiae
CAB	Centro de Astrobiología (CSIC-INTA)
CARMENES	Calar Alto high-Resolution search for M dwarfs with Exoearths with Near-infrared and optical Echelle Spectrographs
CSIC	Consejo Superior de Investigaciones Científicas
DAAD	Deutscher Akademischer Austauschdienst
EAI	European Astrobiology Institute
ESA	European Space Agency
ESAC	European Space Astronomy Centre
ESO	European Southern Observatory
ExoPhot	Photopigments in exoplanetary systems
FECYT	Fundación Española para la Ciencia y la Tecnología
GTC	10.4 m Gran Telescopio Canarias
HARMONI	High Angular Resolution Monolithic Optical and Near-infrared Integral field spectrograph
IAA	Instituto de Astrofísica de Andalucía
IAC	Instituto de Astrofísica de Canarias
IAG	Institut für Astrophysik Göttingen
IAU	International Astronomical Union
IES	Instituto de Enseñanza Secundaria
ING	Isaac Newton Group of Telescopes
INT	2.5 m Isaac Newton Telescope
INTA	Instituto Nacional de Técnica Aeroespacial
IPARCOS	Instituto de Física de Partículas y del Cosmos
IUE	International Ultraviolet Explorer
J-PLUS	Javalambre-Photometric Local Universe Survey
LIFE	Large Interferometer For Exoplanets
LSW	Landessternwarte Königstuhl, Zentrum für Astronomie der Universität Heidelberg
MEC	Ministerio de Educación y Ciencia
MICINN	Ministerio de Ciencia e Innovación
MINECO	Ministerio de Economía y Competitividad
MNRAS	Monthly Notices of the Royal Astronomical Society
MPIA	Max-Planck-Institut für Astronomie
MSc	magister scientiae
NASA	National Aeronautics and Space Administration
PCPC	Physical Chemistry Chemical Physics
PhD	philosophiae doctor
PLATO	PLAnetary Transits and Oscillations of stars
PNAYA	Plan Nacional de Astronomía y Astrofísica
SEA	Sociedad Española de Astronomía
SPIE	(Society of Photographic Instrumentation Engineers)
TCS	1.5 m Telescopio Carlos Sánchez
TESS	Transiting Exoplanet Survey Satellite
UAH	Universidad de Alcalá
UAM	Universidad Autónoma de Madrid
UCM	Universidad Complutense de Madrid
ULL	Universidad de La Laguna
XRP	Exoplanets Research Program

1 Current and previous scientific activities

- *Investigador Científico de Organismo Público de Investigación* (senior staff researcher) of CSIC at CAB, Madrid (*grupo A1, nivel 28*) (Sep 2023+)
- *Científico Titular de Organismo Público de Investigación* (senior staff researcher) of INTA at CAB, Madrid (*grupo A1, nivel 27*) (Mar 2017–Sep 2023, *en excedencia*)
- *Joven Investigador* (senior post-doc researcher) of CSIC at CAB, Madrid (Jan 2017–Mar 2017)
- *Klaus Tschira Stiftung wissenschaftlicher Mitarbeiter* (post-doc researcher) at LSW, Heidelberg, Germany (Jan 2016–Dec 2016)
- *Investigador Ramón y Cajal* of CSIC at CAB, Madrid (Jan 2010–Dec 2015)
- *Investigador Juan de la Cierva* at the Departamento de Astrofísica y Ciencias de la Atmósfera of UCM, Madrid, Spain (Sep 2007–Dec 2009)
- *Invited post-doc researcher* at the Departamento de Astrofísica y Ciencias de la Atmósfera of UCM, Madrid, Spain (Aug 2007)
- *Alexander von Humboldt Stipendiat* at MPIA, Heidelberg, Germany (Aug 2006–Jul 2007)
- *Invited post-doc researcher* at MPIA, Heidelberg, Germany (May–Jun 2006)
- *College Based Sandwich Student* at the Particle Physics and Astronomy Research Council and support astronomer at the ING at the Observatorio del Roque de Los Muchachos, La Palma, Spain (Feb–Apr 2006)
- *Colaborador-astrofísico residente* — PhD research student and collaborator at IAC, Tenerife, Spain (Nov 2005–Feb 2006)
- *Astrofísico residente* — PhD research student with a contract at IAC, Tenerife, Spain (Oct 2001–Oct 2005)
- *Becario de Formación de Personal Universitario* — PhD research student with a grant at the Departamento de Astrofísica y Ciencias de la Atmósfera of UCM, Madrid, Spain (located at IAC; May–Sep 2001)
- *Becario externo* — PhD research student with a Fundación Iberdrola grant at IAC (Jan–Apr 2001)
- *Investigador invitado* — Invited PhD research student at IAC, Tenerife, Spain (Nov–Dec 2000)
- *Colaborador* — Collaborator at the Laboratorio de Astrofísica Espacial y Física Fundamental, Madrid, Spain (Jul–Nov 2000)
- *Becario-colaborador* — Undergraduate student/collaborator at the Departamento de Astrofísica y Ciencias de la Atmósfera of UCM, Madrid, Spain (Oct 1999–Jun 2000)

2 Excellence

2.1 Awards and honours

Individual prizes:

- **Hijo Predilecto de la Leal Villa de El Escorial**: Honorary Citizen of hometown (El Escorial, Madrid, Jun 2018)
- **Premio Tesis SEA**: *Mejor Tesis Doctoral Española en Astronomía en 2006–2007* — Award of the *Sociedad Española de Astronomía* to the best Spanish PhD thesis in Astrophysics in 2006–2007 (Santander, Jul 2008)

Honours:

- **Profesor honorífico**: Honorary Professor at the UCM
  - IPARCOS: 2022–2023, 2023–2024
  - Departamento de Astrofísica y Ciencias de la Atmósfera: 2013–2014, 2014–2015
- *Colaborador honorífico*: Honorary Collaborator at the UCM
  - Departamento de Ciencias de la Tierra y Astrofísica: 2019–2020, 2020–2021, 2021–2022
  - Departamento de Astrofísica y Ciencias de la Atmósfera: 2015–2016, 2017–2018, 2018–2019

Group awards:

- IAU NameExoWorlds contest 2022 edition (May 2023): *Gar, Su*
- *Segundo premio "I Concurso de Desafíos Transdisciplinares Curso 2020–2021"* (Madrid, Jun 2021): ExoPhot: photosynthetic systems in exoplanets
- Numerous international awards (Gwacheon, Korea; Melbourne, Australia; Minsk, Belarus; Lanzarote, Spain; 2018–2020): *Beyond the Sun* (Sect. 10.1)
- *Mención de honor "Trabajos de Divulgación Científica. Prensa, Radio y Televisión", Ciencia en Acción XVIII* (Ermua, Oct 2017): Longitud de Onda, Radio Clásica (Sect. 10.2)
- *Premio especial del jurado Prismas Casa de las Ciencias* (A Coruña, Nov 2016): *Astronomía* magazine (Sect. 10.7)

Classification:

- One of the 100,000 PLoS/Scopus top scientists worldwide (2023)

2.2 Positive evaluations

- **4** sexennia [*sexenios*] (Comisión Evaluadora de la Actividad Investigadora)
  - *Actividad investigadora*: **3** (2001–2006, 2007–2012, 2013–2018)
  - *Transferencia del conocimiento e innovación*: **1** (2009–2018)
- **2** quinquennia [*quinquenios*] (Comisión Evaluadora del Desempeño de la Actividad Científico-Tecnológica) (2004–2012, 2013–2018)
- **5** triennia [*trienios*] (INTA, Sep 2021)
- i3 certificate (*Programa de Incentivación de la Incorporación e Intensificación de la Actividad Investigadora*; Agencia Nacional de Evaluación y Prospectiva, May 2014)
- Extension of Ramón y Cajal fellowship (CSIC, Dec 2013)

2.3 Competitive processes

- Investigador Científico (CSIC, 2022)
- Científico Titular (INTA, 2016)
- Joven Investigador (MINECO, 2016)
  [the sole astrophysicist and among the best 15 of CSIC]
- Investigador Ramón y Cajal (MICINN, 2009)
  [99.9/100, 10th in *Física y Ciencias del Espacio*, 2nd in Astrophysics]
- Investigador Juan de la Cierva (MEC, 2006)
- Alexander von Humboldt Stipendiat (AvH-Stiftung, 2006)
- Astrofísico Residente (IAC, 2001) [1st]
- Formación de Profesorado Universitario (MEC, 2001)

Deputy scientist of the "Semana C" at the Spanish Congreso de los Diputados (FECYT, 2022). Shortlisted and interviewed in Paris for Astronomy & Astrophysics Associate Editor (A&A, 2019)

3 Supervision

3.1 PhD – Doctorate

Programa de Doctorado en Astrofísica at the Universidad Complutense de Madrid

1. Javier González Payo: *Multiplicity of stars, ultracool dwarfs and planetary systems*, UCM (co-supervised with Dr. Miriam Cortés-Contreras; part-time work), 2019–[2024]
2. Carlos Cifuentes San Román: *Astrophysical parameters of M dwarfs with exoplanets*, UCM (co-supervised with Dr. Jorge Sanz-Forcada; *Beca del Programa de Formación del Personal Investigador*), 2018–2023
3. Miriam Cortés Contreras: *CARMENES-UCM: scientific preparation of the sample. Multiplicity, chromospheric activity and kinematics*, UCM (co-supervised with Prof. D. Montes; *Beca del Programa de Formación del Personal Investigador*), 2012–2016
4. Francisco Javier Alonso-Floriano: *La población estelar joven en los grupos cinemáticos cercanos. Caracterización de la muestra CARMENES*, UCM (co-supervised with Prof. D. Montes; *Beca del Programa de Formación del Profesorado Universitario*), 2011–2015

3.2 MSc – Master

Trabajo de Fin de Máster en Astrofísica at the Universidad Complutense de Madrid (UCM), *Trabajo de Fin de Máster en Ciencia y Teconología desde el Espacio* at Escuela Técnica Superior of the Universidad de Alcalá, Madrid (UAH), *Masterarbeiten* at the Zentrum für Astronomie der Universität Heidelberg (ZAH), *Trabajo de Fin de Máster* at the "Máster Interuniversitario en Astrofísica Universidad Complutense de Madrid + Universidad Autónoma de Madrid" (UCM+UAM)

1. Samuel Góngora, UCM (co-supervised with Prof. D. Montes): *Mejorando los parámetros de planetas transitantes con masa conocida alrededor de enanas M cercanas*, 2020–2023
2. Guadalupe García Bote, UAH (co-supervised with Prof. Miguel Ángel de Pablo Hernández): *Detección de biomarcadores en exoplanetas*, 2022–2023
3. Iván Encinas Mayoral, UCM (co-supervised with Prof. D. Montes): *CARMENES target characterisation: Carmencita and transiting planets*, 2022–2023

4. Luis González Ramírez, UCM (co-supervised with Dr. J. Sanz-Forcada): *CARMENES target characterisation: Carmencita and X-rays*, 2022–2023

5. Aarón Vinagre Maqueda, UCM (co-supervised with Dr. M. Cortés-Contreras): *CARMENES target characterisation: Carmencita and Gaia*, 2022–2023

6. Sebastián López Skrzypinski, UCM (co-supervised with Prof. D. Montes): *Análisis de curvas de luz de TESS: periodos de rotación y fulguraciones de las estrellas M de CARMENES*, 2020–2021

7. Daniel Revilla, UCM (co-supervised with Prof. D. Montes): *Estudio de las curvas de luz de TESS de estrellas M de la muestra CARMENES*, 2019–2020

8. Álvaro Espada Amador, UCM (co-supervised with Prof. D. Montes): *Calibración fotométrica de la metalicidad de estrellas M compañeras de sistemas binarios con primarias FGK*, 2018–2019

9. Francisco Javier Lázaro, UCM (co-supervised with Prof. D. Montes & Dr. H. M. Tabernero): *Explotación científica de los espectros VIS & NIR de CARMENES: determinación de parámetros estelares ($T_{\rm eff}$, $\log g$, [Fe/H]) de enanas M con síntesis espectral*, 2017–2018

10. Abel de Burgos, UCM (co-supervised with Prof. D. Montes): *Espectroscopia OSIRIS/GTC e IDS/INT de estrellas jóvenes en el cúmulo σ Orionis*, 2017–2018

11. Jorge Carro Maroto, UCM (co-supervised with Prof. D. Montes): *CARMENES target characterisation: close and wide multiplicity in M dwarfs*, 2017–2018

12. José Cano González, UCM (co-supervised with Prof. D. Montes): *Explotación científica de CARMENES: control de los espectros VIS y NIR de enanas M y extracción de información sobre rotación y actividad*, 2016–2018

13. Carlos Cifuentes, UCM (co-supervised with Prof. D. Montes): *Caracterización de la muestra CARMENES: actualización del catálogo de entrada con la astrometría y fotometría de Gaia DR1*, 2016–2017

14. Rodrigo González-Peinado, UCM (co-supervised with Prof. D. Montes): *Preparación y explotación científica de CARMENES: la metalicidad de las enanas M*, 2015–2016

15. Minjae Kim, ZAH (co-supervised with Prof. A. Quirrenbach): *The CARMENES input catalogue*, 2014–2015

16. Julia Marín-Yaseli de la Parra, UCM: *Definition of the mission statement for the "La Pinta" insterstellar project*, 2014–2015

17. Rubén Fedriani, UCM (co-supervised with Dr. E. Solano): *Search for bright nearby M dwarfs with virtual observatory tools*, 2014–2015

18. Iván Gallardo, UCM (co-supervised with Prof. D. Montes): *CARMENES target characterization: kinematics of M dwarfs*, 2014–2015

19. Esther González Álvarez, UCM (co-supervised with Dr. J. Sanz-Forcada): *CARMENES target characterization: X-rays emission in M dwarfs*, 2013–2014

20. Gonzalo Holgado, UCM (co-supervised with Prof. D. Montes): *CARMENES target characterization: photometry of M dwarfs*, 2013–2014

21. Héctor Martínez Rodríguez, UCM (co-supervised with Prof. D. Montes): *CARMENES target characterization: mining public archives for high-resolution spectra of M dwarfs*, 2013–2014

22. Diego Hidalgo, UCM+UAM (co-supervised with Prof. D. Montes): *CARMENES target characterization: rotation periods of M dwarfs*, 2013–2014

23. Francisco J. Abellán de Paco, UCM+UAM (co-supervised with Prof. D. Montes): *Photometry of M dwarfs in the CARMENES input catalogue*, 2012–2013

24. Carlos A. Gómez González, UCM+UAM (co-supervised with Dr. L. Dinis): *Novel analysis of radial-velocity curves for the detection of super-earths and exo-earths*, 2012–2013

25. Javier Alonso-Santiago, UCM+UAM (co-supervised with Dr. M. R. Zapatero Osorio): *Búsqueda de compañeros lejanos en torno a enanas marrones frías de la vecindad solar mediante movimientos propios*, 2011–2012

26. Ricardo Dorda, UCM+UAM (co-supervised with Prof. D. Montes): *CARMENCITA: CARMENES Cool star Information and daTa Archive*, 2010–2011

27. Isaías Rojas-Peña, UCM+UAM (co-supervised with Prof. D. Montes): *Cinemática de las estrellas con exoplanetas*, 2010–2011

28. Elena Manjavacas, UCM+UAM: *Identificación de las frecuencias y modos de oscilación de estrellas variables en los cúmulos σ Orionis y NGC 6811*, 2010–2011

29. F. Javier Alonso-Floriano, UCM+UAM (co-supervised with Prof. D. Montes): *Búsqueda de estrellas con movimiento propio común en grupos cinemáticos jóvenes con Aladin*, 2009–2010

Prácticas de Empresa del Máster en Astrofísica, UCM

30. Sergio Turrado Prieto: *artofcosmos II* [2024]

31. Manuel Alberto Corbinos: *artofcosmos I* [2024]

32. Julián José Miranzo Pastor: *CAPCAB: Comunicando Astronomía para el Público en el Centro de Astrobiología III*, 2023

33. Iván Encinas Mayoral: *CAPCAB: Comunicando Astronomía para el Público en el Centro de Astrobiología II*, 2023

34. Montserrat Capilla Morgado: *CAPCAB: Comunicando Astronomía para el Público en el Centro de Astrobiología I* (extracurricular)), 2023

35. Pelayo Álvarez Brecht: *ATOM: Automatic Telescope for stellar Occultations by the Moon. II*, 2021

36. Gonzalo J. Carracedo Carballal: *ATOM: Automatic Telescope for stellar Occultations by the Moon. I*, 2021

Traineeship at the European Space Astronomy Centre

37. Carlos Moreno Jódar, ESAC (co-supervised with Dr. E. Solano): *Garraf Wide Pairs observed with Gaia*, 2017

38. Rubén Fedriani, ESAC (co-supervised with Dr. E. Solano): *Search for bright nearby M dwarfs with virtual observatory tools*, 2014–2015

Cancelled MSc theses:

- Rafael Campillos Cano, UCM (co-supervised with Prof. D. Montes): *Espectroscopia OSIRIS/GTC e IDS/INT de estrellas jóvenes en el cúmulo σ Orionis*, 2016–2017
- José Antonio Sánchez Risco, *Trabajo de Fin de Máster* Valencian International University (co-supervised with Dr. Elisa Nespoli): *Terraformar Marte*, 2016

3.3 BSc – Bachelor

Bachelor thesis at the Zentrum für Astronomie der Universität Heidelberg:

1. Martin Brinkmöller (co-supervised with Prof. A. Quirrenbach): *Activity in CARMENES spectra*, 2016

Trabajos Académicamente Dirigidos (tutored undergraduate practices) at the Grade in Physics at UCM:

2. Javier Alonso-Santiago (co-supervised with Prof. D. Montes): *Búsqueda de compañeros de estrellas Gliese con el Observatorio Virtual*, 2010–2011
3. F. Javier Alonso-Floriano (co-supervised with Prof. D. Montes): *Búsqueda de estrellas con movimiento propio común en grupos cinemáticos jóvenes con Aladin*, 2008–2009

Prácticas de Empresa del Grado en Física, UCM:

4. Marcos Soldevilla Martínez (co-supervised with Dr. J. Lillo-Box): *Sistemas planetarios detectados por velocidad radial*, 2021-2022
5. Marina Ruiz García: *GATO: Gateway Automatic Telescope for stellar Occultations by the Moon*, 2021

Unofficial oversight of BSc theses:

- Carlos Moreno Jódar, *Trabajo Académicamente Dirigido*, UCM (supervised by Prof. E. de Castro): *Garraf Wide Pairs observed with Gaia*, 2016–2017
- Drew Reilly, Astrophysics Senior Project Suffolk University, Boston, MA (supervised by Dr. F. Jiménez-Esteban): *Identification of unknown "green" subdwarf candidates in Tycho-2 & 2MASS catalogs using Virtual Observatory tools*, 2013

3.4 High school

Trabajo de Investigación del Programa de Excelencia de Bachillerato:

1. Manuel Báez de Pablo, IES Diego Velázquez, Torrelodones, Madrid, Feb. 2019 (co-supervised with D. Valdés Carrera & M. Mas-Hesse): *Detección y caracterización de exoplanetas potencialmente habitables*

Sesión de observación en entorno profesional 3° y 4° ESO:

2. Sergio Agustí Morales, Liceo Francés de Madrid, Jun. 2019: *Recherche de compagnons de mouvement propre de naines M brillantes avec Gaia DR2*
3. Sergio Agustí Morales, Liceo Francés de Madrid, Feb. 2018: *Recherche de compagnons de mouvement propre de naines M brillantes*

4 Participation in funded research projects

4.1 Principal investigator

4.1.1 *Plan Nacional* projects

- PID2022–137241NB–C42: "Evolución y caracterización de sistemas planetarios. *Caracterización de estrellas y planetas*" (PNAYA-MICIN; CAB-CSIC)
  - Co-PI (PI: M. R. Zapatero Osorio)

  - Granted amount: 276 250 EUR
  - Administered budget: 276 250 EUR
  - Employments: (1 engineer)
  - Coordinated with UCM (coordinator), IAC and IAA
  - Oct 2023–Sep 2026

- AYA2015–74151–JIN "Targets with exoplanets in the MAIA M-, L- and T-dwarf Archive of Interest for Astrophysics" (PNAYA-MINECO; CAB-CSIC)
  - Granted amount: 201 586 EUR
  - Administered budget: 65 500 EUR
  - Jan–May 2017

- AYA2011–30147–C03–03: "Detección y estudio de planetas alrededor de estrellas poco masivas: contribución española a CARMENES, un espectrógrafo bicanal para el telescopio de 3.5 m de CAHA. *CARMENES-CAB: exoplanetas, enanas marrones y estrellas de baja masa*" (PNAYA-MICINN; CAB-CSIC)
  - Granted amount: 260 150 EUR
  - Administered budget: 215 000 EUR
  - Employments: 1 two-year science postdoc (Belén López-Martí), 1 nine-month computer engineer (Mauro López del Fresno)
  - Coordinated with IAA (coordinator) and UCM
  - Jan 2012–Jul 2015

- RYC2009–04666: Ramón y Cajal individual project "From superjupiters to exoearths" (MICINN; CAB)
  - Granted amount: 192 480 EUR
  - Administered budget: 15 000 EUR
  - Jan 2010–Dec 2014 (Dec 2015)

- JCI2006–3925–2095: Juan de la Cierva individual project "Towards the imaging of exo-jupiters and exo-earths around cool stars in the solar neighbourhood" (MEC; UCM)
  - Granted amount: 96 000 EUR
  - Administered budget: 0 EUR
  - Sep 2007–Dec 2009

4.1.2 Other projects

- María de Maeztu Academy Challenge 4 *Exoplanets* "ExoPhot: Photosynthetic systems on exoplanets" (CAB)
  - Granted amount: 2000 EUR
  - 2020–2022

- `#iau100rockastronomy` IAU100+ESA+SEA+CAB+ESAC "Rock and astronomy under one sky/Rock y astronomía bajo el cielo"
  - Granted amount:
    - International Astronomical Union: 2500 EUR
    - European Space Agency: 1000 EUR
    - Sociedad Española de Astronomía: 1000 EUR

    - ∗ Centro de Astrobiología: 590 EUR
    - ∗ European Space Astronomy Centre Faculty: 540 EUR
    - ∗ Capsule-Tyrell-Weyland-Yutani Corp.: 200 EUR
  - Total administered budget: 5830 EUR
  - May 2019

- SEA "AstroArte (Fotografía y astronomía + Dibujo y astronomía)" (Sociedad Española de Astronomía; CAB)
  - Granted amount: 400 EUR
  - Administered budget: 400 EUR
  - Aug 2017

- AvH: Erneuter Forschungsaufenthalt in Deutschland/Renewed Research Stay in Germany "Blaue Erden bei roten Zwergen" (Alexander von Humboldt-Stiftung, Germany)
  - Short-budget AvH-sponsored visits to CARMENES institutions in Germany: IAG, LSW (HS, MPIA and TLS)
  - Mar–Dec 2015

4.2 Co-investigator

4.2.1 International projects

- MW-Gaia COST Action CA1804, "Revealing the Milky Way with *Gaia*" (European Cooperation in Science and Technology, EU Framework Programme Horizon 2020), 2019+
- DFG Forschergruppe 2544 "Blaue Planeten bei Roten Sternen - das Forschungsprogramm des CARMENES Projekts" (Deutsche Forschungsgemeinschaft; Georg-August-Universität Göttingen, Institut für Astrophysik), 2017+
- Uni-HD Mobilität "CARMENES – A search for nearby twins of the Earth", Verstärkung des internationalen Austausches (Universität Heidelberg; Landessternwarte Königstuhl), 2015–2016
- DAAD Hochschuldialogs Südeuropa 57062469, "Organisation of *2nd CARMENES scientific meeting and 1st CARMENES school*, Göttingen, 14–18 Oct 2013" (DAAD; IAG)
- "*Gaia* Research for European Astronomy Training" (GREAT) infrastructure funded by a European Science Foundation programme (2010–2015) and by an FP7 Marie Curie Initial Training Network (2011–2015)
- GTC 010664100001: "Una alternativa de diseño conceptual de un espectrógrafo de resolución intermedia en el infrarrojo" (Gran Telescopio Canarias; Centro de Astrobiología), 2010
- MPG-CSIC 2009: "Design study of the High-Resolution Spectrograph", Calar Alto (Max-Planck-Gesellschaft & Consejo Superior de Investigaciones Científicas; Zentrum für Astronomie Heidelberg), 2009

4.2.2 *Plan Nacional* projects

- PID2019–109522GB–C51 "Enanas marrones y planetas aislados y alrededor de estrellas" (PNAYA-MICINN; CAB-CSIC)
- AYA2016–79425–C3–2–P "Enanas marrones y planetas aislados y como compañeros de estrellas" (PNAYA-MINECO; CAB-CSIC)

- AYA2014–54348–C3–2–R "Search for terrestrial planets around cool stars with new-technology astronomical instruments. Brown dwarfs and planets in clusters and around stars" (PNAYA-MINECO; CAB-CSIC)
- AYA2008–06423–C03–03: "Scientific Participation of Spain in the *WSO-UV* project. I" (MICINN; Universidad Complutense de Madrid)
- AYA2008–00695: "Estrellas frías de la vecindad solar. Actividad magnética, cinemática y multiplicidad" (MICINN; Universidad Complutense de Madrid)
- AYA2006–12612: "NAHUAL: un espectrógrafo échelle infrarrojo para el GTC" (*Ministerio de Educación y Ciencia* MEC; Instituto de Astrofísica de Canarias)
- AYA2005–02750: "Caracterización espectroscópica y cinemática de las estrellas frías de la vecindad solar" (MEC; Universidad Complutense de Madrid)
- AYA2005–04523: "Formación y evolución de estrellas de baja masa y objetos subestelares" (MEC; Instituto de Astrofísica de Canarias)
- AYA2001–1657: "Anisotropías del fondo cósmico de microondas, nucleosíntesis, objetos subestelares, implicaciones sobre materia oscura bariónica y no bariónica" (MEC; Instituto de Astrofísica de Canarias)

4.3 Other national projects

Redes temáticas, acciones complementarias, consolider, unidades de excelencia, etc.

- RED2022–134612–T: "Red Española de Explotación Científica de *Gaia*" (MICIN, Acción de Dinamización "Redes de Investigación"; Universitat de Barcelona)
- RED2018–102672–T: "Red Española de Explotación Científica de *Gaia*" (MICIU, Acción de Dinamización "Redes de Investigación"; Universitat de Barcelona)
- FCT–17–11922: "Cultura con C de Cosmos" (FECYT, Fundación Española para la Ciencia y la Tecnología "Convocatoria de ayudas para el fomento de la cultura científica, tecnológica y de la innovación"; Centro de Astrobiología)
- MDM–2017–0737: Unidad de Excelencia María de Maeztu "Evaluando la emergencia de vida como un fenómeno universal mediante la exploración planetaria" (Minsiterio de Ciencia, Investigación y Universidades; Centro de Astrobiología;)
- AYA2017–90833–REDT: "Red Española de Exoplanetas" (MINECO, Acción de Dinamización "Redes de Excelencia"; Instituto de Ciencias del Espacio)
- AYA2015–71820–REDT "Red Española de Explotación Científica de *Gaia*" (MINECO, Acción de Dinamización "Redes de Excelencia"; Universitat de Barcelona)
- AYA2009–08481–E: "Fase de diseño preliminar de CARMENES: un espectrógrafo échelle infrarrojo para Calar Alto" (MICINN)
- AYA2009–08488–E: "Creación de la Red Española de *Gaia*" (MICINN)
- CSD2006–70: Consolider-Ingenio 2010 programme "Primera Ciencia con GTC" (MEC; Instituto de Astrofísica de Canarias)
- AYA2005–24102–E: "Creación de la Red Temática del Observatorio Virtual Español" (MEC)
- AYA2004–21912–E: "Red Española de Planetas: subvención para reuniones de una red temática" (MEC)
- AYA2004–22113–E: "Desarrollo del diseño conceptual del espectrógrafo NAHUAL" (MEC)

4.4 Regional and institutional projects

- UCM-GR17-910491: Grupo de Investigación "Sistemas estelares, espectroscopia y fotometría" (Universidad Complutense de Madrid; 2007+)
- I-LINK0867 2013–2014: "CARMENES: a radial-velocity survey for terrestrial planets in the habitables zones of M dwarfs" (Consejo Superior de Investigaciones Científicas; Instituto de Astrofísica de Andalucía)
- IAC Severo Ochoa 2012 advanced fellowship: "The IACOB project: a new era in the study of Galactic OB stars" (Instituto de Astrofísica de Canarias, PI: Sergio Simón-Díaz)
- P2009/ESP–1496: "Ayuda para la realización de Programas de Actividades de I+D entre Grupos de Investigación de la Comunidad de Madrid *AstroMadrid*" (Comunidad de Madrid)
- S–0505/ESP/0237: "Ayuda para la realización de Programas de Actividades de I+D entre Grupos de Investigación de la Comunidad de Madrid *AstroCAM*: Red de Astrofísica de la Comunidad Autónoma de Madrid" (Comunidad de Madrid)

5 Professional service

5.1 Boards and councils

CARMENES

- CARMENES Consortium Board (2020+)

European Astrobiology Institute

- "Art & astrobiology" project team chair (2022+)

Máster en Astrofísica, Universidad Complutense de Madrid

- *Comisión Coordinadora del Máster*: full member (2017–[2022])

European Space Astronomy Centre

- ESAC Science Faculty: council "terminator" responsible for monitoring progress on Faculty funded projects (2017–2018)

5.2 Permanent position panels

Organismos públicos de investigación

- One *científico titular*: Tribunal n° 75, "Sismología, dinámica y actividad estelar", IAC (2022)

5.3 Research project proposal panels

- Panelist of ... [confidential] – Horizon Europe (2023)
- Panelist of Exoplanets Research Program XRP Star – NASA (2021, 2022)
- Panelist of Ayudas para contratos Ramón y Cajal – Agencia Estatal de Investigación (2022)
- Interviewer and expert evaluator in the scholarship selection committee for the *Study Scholarships for Graduates of All Disciplines* and *Research Grants for Doctoral Candidates and Young Academics and Scientists* – DAAD Spanien (2019)

5.4 Institutional representation

European Astrobiology Institute

- *"Fuencaliente: una apuesta firme por el turismo científico e inteligente"*, Fuencaliente de La Palma (May 2021)

Centro de Astrobiología

- CARMENES Science Coordination Team (Dec. 2017+)
- Evaluation of *Máster en Astrofísica*, Universidad Complutense de Madrid, by Agencia Nacional de Evaluación de la Calidad y Acreditación (ANECA) (Jun. 2017)

5.5 Time allocation committees

[confidential]

- ... [confidential] (Apr 2023): panelist

STScI: Space Telescope Science Institute, *James Webb Space Telescope*, Planets and disks 1

- *James Webb* Cycle 1 Review (Feb 2021): panelist

STScI: Space Telescope Science Institute, *Hubble Space Telescope*, Planets 1

- *Hubble* Cycle 27 Review (Jun 2019): panelist

OPTICON: Optical Infrared Coordination Network for Astronomy

- 2018B (Apr 2018): external reviewer

ESO OPC: Observing Programme Committee of the European Southern Observatory, Panel C

- P98 (May 2016): panelist
- P97 (Nov. 2015): panelist
- P96 (May 2015): panelist

IAC CAT: Night time *Comisión de Asignación de Tiempos* of the Instituto de Astrofísica de Canarias, Panel III Stars & Planets (ESPLA)

- 2024A (Nov. 2023): *vocal* (member)
- 2015A (Nov. 2014): *vocal* (member)
- 2014B (May 2014): *vocal* (member)
- 2014A (Nov. 2013): *vocal* (member)

5.6 Contract panels

Centro de Astrobiología

1. One science postdoc contracted under MDM-2017-0737 (member, 2021)
2. One graduate for outreach contracted under MDM-2017-0737 (secretary, 2021)
3. One science postdoc contracted under ESP2017–86582–C4–1–R (member, 2019)
4. One science postdoc contracted under AYA2016–75931–C2–2–P (member, 2019)
5. One science postdoc contracted under [CAM]2016–T1/TIC–1890 (member, 2019)

6. One science postdoc contracted under H2020-EU.1.4.1.1-653477 (member, 2018)
7. Two science postdocs contracted under AYA2016-79425–C3–2–P (member, 2018)
8. One science postdoc contracted under AYA2011–30147–C03–03 (chair, 2013)
9. One computer engineer contracted under AYA2011–30147–C03–03 (chair, 2012)

Besides: official member of **one** cancelled science postdoc contract panel at Centro de Astrobiología (2017); *unofficial* consultant of **two** contract panels of mechanical engineers at the Landesstern-warte Königstuhl (2013 –external–, 2016 –internal–)

5.7 PhD thesis review panels

1. Marta Lúthien Gutiérrez Albarrán: *The lithium-age relation: Calibration with open clusters and associations* (UCM, 2022 – full member)
2. Patricia Chinchilla Gallego: *Search for super-Jupiters around yound nearby stars* (ULL, 2021 – secretary)
3. María de las Nieves Vergara Vázquez: *La yuxtaposición de ubicuidades en la imagen caleidoscópica* (Facultad de Bellas Artes, UCM, 2019 – full member)
4. Zofia Szczęsna: *Degenerate objects. Electron Degeneracy of Brown Dwarf Interiors Expressed in Chemo-Degenerate Printing. Results of the Influence of Scientific Knowledge on Artistic Creation* (Akademia Sztuk Pięknych im. Jana Matejki w Karkowie, Poland, 2019 – full member)
5. Marcelo Armengot: *Procesamiento de la señal ultravioleta para el estudio del medio interestelar (de GALEX a WSO-UV)* (UCM, 2018 – substitute member)
6. Javier Alonso-Santiago: *Clusters with K supergiants* (Universidad d'Alacant, 2018 – secretary)
7. Miguel Ángel López García: *Caracterización de la población estelar joven en la Nebulosa Molecular de Orión B* (UCM, 2017 – external reviewer and full member)
8. Ricardo Dorda Laforet: *New perspectives on red supergiants: stellar properties based on large samples, empirical relations and applications* (Universidad d'Alacant, 2016 – substitute member)
9. María Magdalena Hernán-Obispo: *Detección de planetas en estrellas activas y estudio de la interacción estrella-planeta: el caso de BD+20 1790* (UCM, 2015 – substitute member)
10. Miriam Aberasturi: *Identificación y caracterización de estrellas poco masivas y enanas marrones con el Observatorio Virtual* (UCM, 2015 – substitute member)
11. Paulo Alberto Míes Páez: *Linear polarization measurements of cool atmospheres* (ULL, 2015 – full member)
12. álvaro Ribas Gómez: *Protoplanetary disk evolution in nearby star-forming regions* (UAM, 2015 – substitute member)
13. Patricia Cruz Gamba: *Characterization of the planet-host stars WTS-1 and WTS-2, and detection of the secondary eclipses of WASP-10b and Qatar-1b* (UAM, 2015 – substitute member)
14. Fátima López-Martínez: *Restricciones a las propiedades en las magnetosferas de las estrellas T Tauri a través del estudio de líneas espectrales en el ultravioleta* (UCM, 2015 – full member)
15. Hugo Martín Tabernero Guzmán: *Caracterización de miembros de grupos cinemáticos estelares a partir del análisis detallado de abundancias químicas* (UCM, 2014 – full member)

16. Karla Peña-Ramírez: *Población y función de masa subestelar en regiones de formación estelar* (ULL, 2012 – full member)

17. Raquel Martínez-Arnáiz: *Chromospheric activity and rotation of FGK stars in the solar neighbourhood: characterising exoplanetary system host stars* (UCM, 2012 – substitute member)

5.8 External review of research project proposals

1. [Confidential] – National Research, Development and Innovation Office, Hungary (2023)
2. [Confidential] – European Space Agency (2022, 2023)
3. *Agencia Estatal de Investigación* – Ministerio de Ciencia, Innovación y Universidades de España (2021, 2022a,b)
4. *Proyectos Propios UNIR* – Universidad Internacional de La Rioja (2022)
5. *Concurso Nacional de Proyectos Fondecyt Regular* – Agencia Nacional de Investigación y Desarrollo, Chile (2021)
6. *Acciones Margarita Salas* – ULL (2021)
7. *Infraestructuras científico-tecnológicas* – Ministerio de Ciencia, Innovación y Universidades de España (2021)
8. *Proyectos de I+D en áreas prioritarias* – Gobierno de Canarias (2021)
9. *Comisión de Investigación de Física* – Junta de Andalucía (2021)
10. *Study Scholarships for Graduates of All Disciplines* and *Research Grants for Doctoral Candidates and Young Academics and Scientists* – DAAD Spanien (2017, 2018, 2020, 2021)
11. *Secretaría General de Coordinación de Política Científica* – Ministerio de Ciencia, Innovación y Universidades de España (2019)
12. *Exoplanets Research Program* – NASA (2018)
13. *Fondo Nacional de Desarrollo Científico y Tecnológico* – Ministerio de Educación de Chile (2016)
14. *Conseil franco-québécois de coopération universitaire* – Fonds de recherche du Québec, Nature et technologies (2016)
15. *Fondo Gemini-Comisión Nacional de Investigación Científica y Tecnológica* – Ministerio de Educación de Chile (2014)
16. *Fondo para la Investigación Científica y Tecnológica, Agencia Nacional de Promoción Científica y Tecnológica* – Ministerio de Ciencia, Tecnología e Innovación Productiva de Argentina (2011)
17. *Grantová agentura České republiky* – Czech Science Foundation (2010)

5.9 Refereeing of international publications

- Astronomy & Astrophysics (A&A): 5
- Astrophysical Journal (ApJ): 4
- Astronomical Journal (AJ): 3
- Astrophysical Journal Letters (ApJL): 2

- Monthly Notices of the Royal Astronomical Society (MNRAS): 2
- Nature Astronomy (NatAst): 1
- Astronomische Nachrichten (AN): 1
- Astronomical Society of the Pacific (ASP): 1 (book chapter)
- Astrobiology (AsBio): 1
- New Astronomy (NewA): 1
- The Observatory (Obs): 1
- Advanced Space Research (ASR): 1
- Advances in Astronomy (AdAst): 1

Declined because of conflict of interest: 4. Also referee of SEA 2022 Proceedings

6 Academic experience

6.1 At the Universidad Complutense de Madrid

Course 2013–2014:

- Co-lecturer of subject *Sistema Solar y exoplanetas* (*asignatura optativa de máster UCM*); second semester. Given course credits: 3.5

Course 2012–2013:

- Lecturer of subject *Física del Sistema Solar* (*asignatura optativa de máster UCM+UAM*); first semester. Given course credits: 3.0

Course 2011–2012:

- Lecturer of subject *Física del Sistema Solar* (*asignatura optativa de máster UCM+UAM*); first semester. Given course credits: 3.0

Course 2010–2011:

- Lecturer of the subject *Física del Sistema Solar* (*asignatura optativa de máste UCM+UAM*); first semester. Given course credits: 3.0

Course 2009–2010:

- Assistant lecturer of subject *Astrofísica* (*asignatura optativa del primer ciclo de licenciatura*); second semester. Given course credits: 1.0

Course 2008–2009:

- Co-lecturer of subject *Del quark al Cosmos* (*asignatura genérica de libre elección de licenciatura*); first semester. Given course credits: 1.6
- Assistant lecturer of subject *Astrofísica* (*asignatura optativa del primer ciclo de licenciatura*); second semester. Given course credits: 1.0

Course 2007–2008:

- Associate professor of subject *Del quark al Cosmos* (*asignatura genérica de libre elección de licenciatura*); first semester. Given course credits: 1.3

Board of examiners:

- *Trabajos de Fin de Máster* (MSc theses) and *Prácticas de empresa* (tutored training): 2019–2020, 2021–2022, 2022–2023
- *Trabajos de Fin de Máster* (MSc theses): 2017–2018
- *Trabajos Académicamente Dirigidos* (tutored practices for last-year undergraduate students): 2008–2009

6.2 At the Universidad Autónoma de Madrid

Course 2016–2017:

- Co-lecturer of subject *Estructura y evolución estelar* (*asignatura optativa de máster UAM*); second trimester. Given course credits: 0.8

6.3 In summer schools

- *VII Curso de Astrofísica: Astrobiología y sistemas planetarios*, Universidad de Verano de Teruel, Universidad de Zaragoza (2021):
  - De estrellas a exoplanetas. I
  - De estrellas a exoplanetas. II
- *IV Curso de Astrofísica: Grandes preguntas de la astrofísica del siglo XXI*, Universidad de Verano de Teruel, Universidad de Zaragoza (2017):
  - Exotierras habitables: de ciencia-ficción a realidad
- *Complutense Curso de Verano de El Escorial "AstroArte"*, Universidad Complutense de Madrid (2017):
  - Lecturer of "Inauguración: arte y astronomía"
  - Member in round table "Nuevos-viejos artes y astronomía. I"
  - Co-lecturer of "Música clásica y astronomía"
  - Moderator in round table "Rock y astronomía"
  - Moderator in round table "Nuevos-viejos artes y astronomía. II"
- *Complutense Curso de Verano de El Escorial "The Moon: from labs to towns"*, Universidad Complutense de Madrid (2016):
  - Member in round table "Lunar-based vs. space-based observatories"
- *AstroCAM school on "Young Stellar Objects: from cool stars to exoplanets"* (2009):
  - Professor of lab session "Searching for discs with Aladin"

6.4 For teachers

- *Los planetas gigantes y sus lunas*, curso online para profesorado de primaria, secundaria, bachillerato y formación profesional (2023):
  - Lecturer of "Los planetas gigantes y sus lunas heladas"
- *La Agencia Espacial Europea: Una aproximación al estudio de la Tierra*, curso online para profesorado de primaria, secundaria, bachillerato y formación profesional (2022):
  - Lecturer of "La búsqueda y el estudio de exoplanetas terrestres - I"
- *Las artes y las ciencias en el Real Monasterio de San Lorenzo de El Escorial*, Actividades de formación del profesorado, Centro Territorial de Innovación y Formación Madrid-Oeste, Dirección General de Innovación, Becas y Ayudas a la Educación, Conserjería de Eduacicón, Juventud y Deporte, Comunidad de Madrid (2019):
  - Lecturer of "La Astronomía en el siglo XVI y su reflejo en el Monasterio"

6.5 For high-school students

- *Programa de enriquecimiento educativo para alumnos con altas capacidades*, Madrid-Oeste, Conserjería de Educación y Juventud, Comunidad de Madrid (2020):
  - Lecturer of "Sesión I: astrobiología", "Sesión II: astromúsica", "Sesión III: astrocine" (sesión de experto)

7 Astronomical instrumentation

7.1 Membership in instrument and mission groups

CARMENES

- CARMENES Consortium Board member (2021+), **Instrument Astronomer** (2016+), Co-Project Manager (2009–2016)
- CARMENES is the last generation instrument for the 3.5 m Calar Alto telescope: `http://carmenes.caha.es`
- In (co-)charge of:
  - Science exploitation: CARMENES guaranteed time observations (GTO) coordination, any-time on-call astronomer; leader and participant of all science working groups (stellar parameters, photometric follow-up, activity, exoplanet atmospheres...)
  - Science preparation: GTO input catalogue, non-CARMENES preparatory observations
  - Data: observatory network, image headers, GTO server, data flow
  - Management: control, coordination, communication, documentation, resources (project costs, financial and human resources), work breakdown structure, organisation of teleconferences and meetings; CAB representative; consortium board
  - System engineering: interfaces (hardware, software, graphical user interface), commissioning
  - Publications: edition, coordination
  - Website, outreach, corporate identity, press releases

Other science groups

- Member of the HARMONI science team (an integral field spectrograph for the 39 m Extremely Large Telescope), 2022+
- Member of the *Arago* definition group (proposal for an ESA M-class ultraviolet space mission), 2015–2017 [M5] and 2022+ [M7]
- Member of the *PLATO* WG 122 "Non-seismic diagnostics and model atmospheres" working group, 2022+
- Member of the *LIFE* Science WG 2 "Target database – Stellar properties/data" working group (*LIFE* is a candidate for an ESA space mission in the 2035–2050 time frame), 2020+
- Member of the *TESS* Follow-up Observing Program (TFOP) SG4 "Precise Radial Velocity" working group, 2020+
- Member of the *Gaia-NIR* science team (*Gaia-NIR* is a candidate for an ESA space mission in the 2035–2050 time frame), 2019+
- Member of the J-PLUS Science Team (J-PLUS is the Javalambre Photometric Local Universe Survey with T80Cam at the JAST/T80 telescope), 2018+
- Member of the POLLUX science team and of the "Exoplanets" and "Cool stars" working groups, 2017–2022 (POLLUX is a high-resolution ultraviolet spectro-polarimeter planned for the NASA-ESA *Habitable Worlds Observatory*)
- Member of the WEAVE Science Team (WEAVE is a new multi-object spectrograph at the 4.2-m William Herschel Telescope), 2011+

Past instrument and mission groups

- Member of the *WSO-UV* Spanish Science Working Group, 2007–2022. *WSO-UV (World Space Observatory-Ultraviolet)* is a 1.7-m space telescope that will operate mainly in the 102–320 nm range: `http://www.wso-uv.es`
- CARMENES liaison of LUCA (Local Universe from Calar Alto, an integral-field-unit instrument proposed for the Calar Alto 3.5 m telescope), 2018–2019
- Member of the EMIR Associated Scientific Team (EMIR is a near-infrared camera-spectrograph at the GTC), 2003–2016
- Member of the CanariCam Science Team (CanariCam is a mid-infrared camera-spectrograph at the GTC), 2001–2016
- Member of the ISSIS science team, ISSIS definition group (with UCM, CSIC, IAA and SENER), ISSIS data interface group (with UCM and GMV) and of the *WSO-UV* Webpage and Ground Segment working groups, 2007–2015. ISSIS (Imaging and Slitless Spectroscopy Instrument for Surveys) was the proposed field camera unit onboard *WSO-UV*: `http://www.wso-uv.es/,http://www.wso-uv.es/instruments/issis`
- Coordinator of the research line *"Estrellas de baja masa, enanas marrones y exoplanetas"* of the "Red de Explotación Científica de *Gaia*" `https://gaia.am.ub.es/Twiki/bin/view/RecGaia/BajaMasa`, 2010–2015
- Advisor of the PANIC definition group (PANIC is a wide-field near-infrared camera at the 2.2-m Calar Alto Teleskop), 2007–2015
- Collaborator in working groups WG4 (Cluster stars target selection) and WG12 (Pre-main sequence star spectrum analyses) of the *Gaia*-ESO survey, 2010–2014
- Member of the *Exploring Habitable Worlds beyond our Solar System* definition group (white paper for an ESA class-L2/L3 mission), 2013

- Member of the *European Ultraviolet-Visible Observatory (EUVO)* definition group (white paper for an ESA class-L2/L3 mission), 2013
- **Project scientist**, chair of the research line "Milky Way" and Spain-China liaison of GO-IRS, GTC Optical integral field unit and multi-object Spectrograph ("GTC MOS"), a next generation instrument candidate for the 10.4 m Gran Telescopio Canarias (PIs: J. Ge, Y. P. Jing, J. Chu), 2010: `http://marvels.astro.ufl.edu/GO-IRS`, `http://www.gtc.iac.es/instruments/media/GOIRS-Resumen.pdf`
- Webmaster and member of several work packages and of the definition group of NAHUAL-NIRINTS, a next-generation near-infrared intermediate- and high-resolution spectrograph proposed for the 10.4 m Gran Telescopio Canarias, 2004–2010: `http://www.ucm.es/info/Astrof/nahual`
- Collaborator in the German transit follow-up group of Pan-STARRS (Pan-STARRS is the Panoramic Survey Telescope and Rapid Response System in Hawai'i), 2006–2007
- Collaborator in Work Package 19 (ultracool dwarfs) of the *Gaia* mission, 2005–2006
- Collaborator in the LIRIS commissioning group (LIRIS is a near-infrared camera-spectrograph at the 4.2-m William Herschel Telescope), 2003

7.2 Participation in design reviews

As the deputy project manager for CARMENES:

- Final Design Review: Granada, 19–20 Feb 2013
- Preliminary Design Review: Madrid, 18–19 Jul 2011
- Conceptual Design Review: Granada, 02 Oct 2009

As the project scientist for GTC MOS / GO-IRS:

- Conceptual Design Review: La Laguna, 28–30 Jul 2010

7.3 Observing experience

Summary of observations

- Principal investigator or co-investigator in dozens of observing proposals for 1 to 10 m-class ground telescopes and space missions, accepted by international time allocation committees
- Over **300** nights of on-site observational experience with **27** instruments of **12** telescopes at **four** observatories (Observatorio del Roque de los Muchachos [ORM]; La Silla Observatory [LS, Chile]; Calar Alto [CA]; Observatorio del Teide [OT])
- Commissioning of one instrument: CARMENES

Observing modes by wavelength

- *In the optical*: wide field imaging, long-slit spectroscopy (low and intermediate resolution), fibre-fed high-resolution spectroscopy, wide field multi-fibre spectroscopy (intermediate resolution), polarisation, high-precision photometric variability with space missions
- *In the near infrared*: imaging, high-resolution imaging with adaptive optics and space missions, long-slit spectroscopy (low and very low resolution), fibre-fed high-resolution spectroscopy, polarisation
- *In the mid infrared*: imaging with space missions

- *In the X-rays*: imaging, low-resolution spectroscopy with space missions

Telescopes and instruments
In situ used ground telescopes and instruments:

- 4.2-m William Herschel Telescope (ORM): NAOMI+INGRID, INGRID, LIRIS, ISIS, PF-CAM, AF2+WYFFOS
- 3.6-m Telescopio Nazionale Galileo (ORM): AdOpt@TNG, NICS, OIG, GIARPS (GIANO-B + HARPS-N)
- 3.6-m ESO Telescope (LS): EFOSC-2
- 3.6-m New Technology Telescope (LS): SofI
- 3.5-m Calar Alto Teleskop (CA): ALFA+Ω-Cass, Ω-2000, CARMENES
- 2.6-m Nordic Optical Telescope (ORM): ALFOSC, FIES
- 2.5-m Isaac Newton Telescope (ORM): WFC, IDS
- 2.2-m Calar Alto Teleskop (CA): MAGIC, CAFE
- 1.5-m Telescopio Carlos Sánchez (OT): CAIN-2
- 1.0-m European Space Agency Orbital Ground Station (OT): ESACCD
- 1.0-m Jacobus Kapteyn Telescope (ORM): JAG
- 0.8-m Telescopio IAC 80 (OT): CAMELOT, old CCD

Used space missions:

- *CHEOPS* (principal investigator of a 46-orbit AO-2 proposal)
- *Transiting Exoplanet Survey Satellite (TESS)* (TFOP)
- *Hubble Space Telescope*: NICMOS (w/Coronograph)
- *Spitzer Space Telescope*: IRAC, MIPS
- *XMM-Newton Space Telescope*: EPICS
- *Chandra Space Telescope*: HRC-I, ACIS
- *International Ultraviolet Explorer*: LWP, LWR
- *Akari*, *Einstein*, *Gaia*, *GALEX*, *Hipparcos*, *IRAS*, *ROSAT*, *Spitzer*, *WISE*

Reduction and/or analysis of data obtained at the telescopes and instruments above plus:

- 10.4 m Gran Telescopio Canarias: OSIRIS (principal investigator)
- 10.0 m Keck Observatory (Mauna Kea): LRIS
- 8.4 m Large Binocular Telescope (Mount Graham): LBC
- 8.2 m Very Large Telescope (Paranal): ISAAC
- 3.6 m Canada-France-Hawai'i Telescope (Mauna Kea): CFHT-IR
- 2.2 m Calar Alto: CAFOS
- Several 0.3–0.4 m telescopes with commercial detectors

Co-investigator of accepted proposals at the telescopes and instruments above plus:

- Very Large Array (Socorro): VLA
- Giant Metrewave Radio Telescope (Pune): uGMRT
- CHARA Array (Mount Wilson): MIRC-X
- 10.4 m Gran Telescopio Canarias: CanariCam
- 8.2 m Very Large Telescope (Paranal): X-Shooter
- 3.6-m Telescopio Nazionale Galileo: HARPS-N
- 3.5-m Calar Alto Teleskop: LAICA
- 3.2-m NASA Infrared Telescope Facility (Mauna Kea): SpeX
- 2.2-m ESO/MPG La Silla: FEROS, WFI
- 1.5-m Telescopio Carlos Sánchez: FastCam
- 1.2-m Mercator Telescope: HERMES
- 0.8-m JAST/T80: T80cam (legacy surveys)

8 Organisation of events

8.1 CARMENES consortium meetings

Chair, co-chair, member of organising committees or webmaster:

1. La Laguna, Feb 2024: 19th Science
2. Heidelberg, Jun 2023: 18th Science
3. Almería, Nov 2022: 17th Science
4. Göttingen, Jun 2022: 16th Science
5. Nov 2021 (online): 15th Science
6. May 2021 (online): 14th Science
7. Nov 2020 (online): 13th Science
8. Mar 2020 (online): 12th Science
9. Weimar, Nov 2019: 11th Science
10. Sevilla, May 2019: 10th Science
11. Barcelona, Nov. 2018: 9th Science
12. Hamburg, Mar. 2018: 8th Science
13. Göttingen, Nov. 2017: 7th Science
14. Madrid, Apr. 2017: 6th Science
15. Heidelberg, Nov. 2016: 5th Science
16. Granada, Mar. 2016: 4th Science
17. Calar Alto, Oct. 2015: 5th Core Management Team

18. Madrid, Jun. 2015: 4th Core Management Team
19. Granada, Feb. 2015: 3rd Core Management Team
20. Heidelberg, Nov. 2014: 2nd Core Management Team
21. Barcelona, Oct. 2014: 3rd Science and 1st Control
22. Heidelberg, Jun. 2014: 1st Core Management Team
23. Barcelona, Feb. 2014: 5th Technical
24. Göttingen, Oct. 2013: 2nd Science and 1st School
25. Barcelona, Oct. 2013: 4th Technical
26. Heidelberg, May. 2013: 9th Consortium
27. Granada, Feb. 2013: Final Design Review
28. Madrid, Nov. 2012: 8th Consortium
29. Heidelberg, Jul. 2012: 7th Consortium
30. Heidelberg, May 2012: 6th Consortium
31. Barcelona, Feb. 2012: 3rd Technical
32. Granada, Dec. 2011: 5th Consortium
33. Göttingen, Oct. 2011: 1st Science
34. Madrid, Jul. 2011: Preliminary Design Review
35. Madrid, Apr. 2011: 2nd Technical
36. Heidelberg, Feb. 2011: 1st Technical
37. Granada, Nov. 2010: 4th Consortium
38. Heidelberg, Jun. 2010: 3rd Consortium
39. Madrid, Jan. 2010: 1st Management

8.2 Cool Stars 22

- Scientific Organiser Committee member
- San Diego, CA, USA, 24–28 Jun 2024
- `https://coolstars22.github.io`

8.3 I Biennial European Astrobiology Conference

- Local Organiser Committee chair
- Fuencaliente de La Palma, 08–12 May 2023
- `https://europeanastrobiology.eu/beacon`

8.4 Homenaje a Carmen Morales

- Member of Organiser Committee, speaker
- Villanueva de la Cañada, 27 Apr 2023

8.5 XV reunión científica de la Sociedad Española de Astronomía

- Moderator of plenary session S5
- Co-moderator of plenary session S6 discussion
- Santa Cruz de Tenerife, 05–09 Sep 2022
- https://www.sea-astronomia.es/reunion-cientifica-2022

8.6 European Astronomical Society Annual Meeting 2022

- Co-chair and webmaster of symposium S8 "Exoplanets in the 2020s"
- Senior volunteer Local Organiser Committee member (auditorium responsible)
- Valencia, 27 Jun–01 Jul 2022
- https://eas.unige.ch/EAS_meeting/, https://eas.unige.ch/EAS_meeting/session.jsp?id=S8

8.7 El turismo como eje transversal de cultura y ciencia

- Organiser, moderator, speaker, technician
- Participants from Ayuntameinto de Fuencaliente de La Palma, Universidad de Las Palmas de Gran Canaria, ULL, Instituto Volcanológico de Canarias, Fundaciń Starlight, Gran Telescopio Canarias, CAB and European Astrobiology Institute
- Ateneo de Madrid, 14 mayo 2022
- https://www.ateneodemadrid.com/evento

8.8 Michel Mayor and Didier Queloz in Spain 2021

- Attaché of **Prof. Michel Mayor** and **Prof. Didier Queloz** (organiser, manager, chauffeur, secretary, moderator, press coordinator, sanchopanza, etc.)
- Funded by and co-organised with European Space Agency Faculty, Fundación Ramón Areces, Real Academia de Ciencias Físicas, Naturales y Exactas, Embajada de Suiza para España y Andorra, Consejo Superior de Investigaciones Científicas, Casa de Su Majestad el Rey, Fundación Caja Segovia, Ateneo de Almagro, BMW Movilnorte
- Moderator of "El Premio Nobel de Física 2019: Contribución a descubrimientos que ampliaron el conocimiento del Universo" by M. Mayor and D. Queloz with M. Aguilar (Fundación Ramón Areces, Madrid, 30 Sep 2021)
- Master of ceremonies of "Mirando las estrellas" with M. Mayor, R. Menéndez, D. Haener, J. M. Sanz Serna, R. Yotti, R. Rebolo, M. R. Zapatero Osorio, I. Ribas, Colegio Suizo, IES Ramiro de Maeztu (CSIC Headquarters, Madrid, 01 Oct 2021)
- Madrid, Segovia, El Escorial, Almagro, 28 Sep–07 Oct 2021

8.9 Tackling the Complexities of Substellar Objects

- Chair of splinter session "How to build a good multi-disciplinary community"
- Leiden, The Netherlands, 10–14 Feb 2020
- https://www.lorentzcenter.nl/tackling-the-complexities-of-substellar-objects.html

8.10 Present and future science with CARMENES (RIA) + 1st meeting of the Spanish exoplanet network (Exonet)

- Member of Scientific and Local Organising Committees
- Granada, 20–22 Feb 2019
- http://carmenes.caha.es/ext/conferences/201902_granada/

8.11 XII Reunión Científica de la Sociedad Española de Astronomía

- Member of Local Organising Committee, gatekeeper, keymaster, peacemaker
- Salamanca, 16–20 Jul 2018
- https://sea2018.usal.es/en

8.12 1st Euclid Substellar Object Independent Legacy Science Workshop

- Member of Local Organising Committee
- Villafranca del Castillo, Madrid & La Laguna, Tenerife, 11–12 Dec 2017
- http://exoterrae.eu/euclid.html

8.13 Curso de verano El Escorial Universidad Complutense *AstroArte*

- Director, lecturer, moderator, veejay
- El Escorial, 26–30 Jun 2017
- https://astroarte.cab.inta-csic.es

8.14 IV international Pro-Am meeting on binary and multiple stars

- Member of Science Organising Committee
- Vilanova i la Geltrù, Barcelona, 18–20 Sep 2015
- http://www.oagarraf.net

8.15 Pathways towards habitable planets

- Chair of convenors of "3 satellite meetings" on *Habitable planets, M dwarfs and near-infrared spectrographs*
- Bern, Switzerland, 13–15 Jul 2015
- http://carmenes.caha.es/ext/conferences/pathways2015/
- http://pathways2015.sciencesconf.org/

8.16 Amazing science with CARMENES

- Member of Science Organising Committee
- Granada, 21–22 May 2015
- http://riastronomia.es/opencms/opencms/Workshops/R_20150210.html

8.17 Science with the optical–infrared telescopes at CAHA and ORM in the coming decade

- *De facto* chair of Local Organising Committee
- Moderator of session "Telescope operation, time assignment, data management"
- Madrid, 22–23 Mar 2012
- `http://www.riastronomia.es/opencms/opencms/Workshops/R_20120127.html`

8.18 Primera reunión científica de la Red de Explotación Científica de *Gaia*

- Member of Science Organising Committee
- San Fernando, Cádiz, 17–18 Jun 2010
- `https://gaia.am.ub.es/Twiki/bin/view/RecGaia/SanFernando`

8.19 AstroCAM school on Young Stellar Objects: from cool stars to exoplanets

- Chair of Local Organising Committee
- Co-chair of Science Organising Committee
- Host of T. Henning, R. Jayawardhana, V. Joergens and F. Anguita
- El Escorial, Madrid, 29 Jun–03 Jul 2009
- `http://www.astrocam.es/school09`

8.20 IAC/TNG workshop on ultra low-mass star formation and evolution

- Member of Local Organising Comittee
- La Palma, 28 Jun–01 Jul 2005
- `http://www.iac.es/workshop/ulmsf05`

8.21 Additional organisational tasks

- Moderator of *Benchmarks* session of "M dwarfs PLATO (informal) meeting: From observations to constraints on stellar properties" (on-line; 03 Mar 2023)
- Organiser and moderator of round table "Astrobiology outside the Solar System" with Nobel Prize Prof. Michel Mayor (Torrejón de Ardoz, 10 Oct 2019)
- Moderator of splinter session *Enseñanza y divulgación* in XII Reunión Científica de la Sociedad Española de Astronomía (Bilbao, 18–22 Jul. 2016):
  `http://sea-astronomia.es/drupal/SEA2016`
- Member in student poster contest panel in Cool Stars 19 (Uppsala, 06–10 Jul. 2016):
  `http://www.cs19.com`
- Webmaster of satellite meeting "Validation and compilation of *Kepler* habitable zone candidates" in Pathways towards habitable planets (Bern, 13 Jul. 2015):
  `http://carmenes.caha.es/ext/conferences/pathways2015/KHZWG.html`
- Moderator of discussion session in Star and planet formation workshop (European Science Astronomy Centre, Villanueva de la Cañada, Madrid, 21 Jan. 2013):
  `http://www.sciops.esa.int/index.php?project=CONF2012&page=SF2013`

- Webmaster of the European Astronomical Society S4 symposium "From macro-to micro-stellar transits" (Lisbon, 6–7 Sep. 2010):
`http://www.ucm.es/info/carmenes/lisboa`

9 Other scientific activities

9.1 Invited seminars and talks

In-person

- 3× Centro de Astrobiología INTA campus (Torrejón de Ardoz; 2022, 2015, 2011)
- 1× **Real Academia de Ciencias** Físicas Exactas y Naturales (Madrid; 2021)
- 3× Centro de Astrobiología ESAC campus (Villafranca del Castillo; 2017, 2013, 2012)
- 1× INAF – Osservatorio Astrofisico di Torino (Torino, Italy; 2019)
- 1× W. M. Keck Observatory Headquarters (Waimea, HI, USA; 2019)
- 2× Facultad de Física of the Universidad Complutense de Madrid (Madrid; 2018, 2008)
- 1× Escuela de Ingenieros Industriales and Instituto de Investigaciones Energéticas y Aplicaciones Industriales, Universidad de Castilla-La Mancha (Ciudad Real; 2017)
- 1× European Southern Observatory Headquarters (Garching-bei-München, Germany; 2016)
- 1× University of Hertforshire (Hatfield, UK; 2016)
- 1× INAF – Osservatorio Astronomico di Palermo (Palermo, Italy; 2016)
- 1× Centro de Astrofísica da Universidade do Porto (Oporto, Portugal; 2016)
- 4× Max-Planck-Institut für Astronomie (Heidelberg, Germany; 2016, 2013, 2007, 2006)
- 2× European Space Astronomy Centre (Villafranca del Castillo; 2016, 2012)
- 6× Instituto de Astrofísica de Canarias (La Laguna; 2015, 2012, 2007, 2005, 2004, 2003)
- 2× Mayántigo headquarters of the Isaac Newton Group of Telescopes, Nordic Optical Telescope [and Telescopio Nazionale Galileo] (Santa Cruz de la Palma; 2014, 2006)
- 3× Facultad de Geología of the Universidad Complutense de Madrid (Madrid; 2012, 2006, 2000)
- 1× Universidad Autónoma de Madrid (Madrid; 2012)
- 1× Australian Astronomical Observatory (Sydney, Australia; 2011)
- 1× Instituto de Astrofísica de Andalucía (Granada; 2010)
- 1× Department of Physics and Astronomy, University of Missouri – St. Louis (St. Louis, MO, USA; 2010)
- 1× Facultad de Matemáticas of the Universidad Complutense de Madrid (Madrid; 2009)
- 1× Facultad de Ciencias of the Universidad de Alicante (Alicante; 2009)

On-line

- 1× Physical Research Laboratory (Ahmedabad, India; 2024)

- 1× Sociedad Española de Astronomía-Federación de Asociaciones Astronómicas de España (2022)
- 1× Univerzita Karlova (Prague, Czech Rebublic; 2022)
- 1× European Astrobiology Institute Academy (2022)
- 1× Centro de Astrobiología (2020)

Summary: **44** invited seminars and talks in **26** different research centres and Royal Academies in **9** countries

9.2 Hosting

- Prof. Marc Balcells, Isaac Newton Group of Telescopes, Spain (Apr 2023)
- Prof. Francisco Anguita, Universidad Complutense de Madrid (ex), Spain (Jan 2023)
- Mr. William J. Cooper, University of Hertfordshire, UK (Jun 2022, Feb 2019)
- **Prof. Didier Queloz**, ETZH, Switzerland; **Prof. Michel Mayor**, Université de Genève, Switzerland; Prof. Ramiro de la Reza, Observatório Nacional, Brazil; Dr. Félix Llorente de Andrés, Ateneo de Almagro, Spain (Sep–Oct 2021)
- Prof. Adam J. Burgasser, University of California San Diego, USA (Mar 2020 –cancelled due to COVID-19–, Dec 2017, Nov 2014)
- **Prof. Michel Mayor**, Université de Genève, Switzerland (Oct 2019) [see Sect. 10.10]
- Prof. Guillem Anglada-Escudé, Queen Mary University of London, UK (Nov 2018)
- Mr. Minjae Kim, Landessternwarte Königstuhl Heidelberg, Germany (Jul 2015)
- Dr. Richard L. Smart, INAF-Osservatorio Astrofisico di Torino, Italy (Jul 2015)
- Dr. Carlos del Burgo, INAOE Puebla, Mexico & DIAS Dublin, Ireland (several between 2008 and 2015)

9.3 Sojourns

- Department of Physics and Astronomy, University of Missouri–St. Louis, hosted by Prof. Bruce Wilking (Aug. 2010)

9.4 Membership in professional societies, organisations and faculties

- International Astronomical Union, IAU (2020+); Divisions C: Education, Outreach and Heritage, F: Planetary Systems and Astrobiology, and G: Stars and Stellar Physics
- European Astronomical Society, EAS (senior: 2019+)
- European Astrobiology Institute, EAI (2019+)
- Asociación de personal investigador de organismos públicos de investigación, InvestOPI (2019+), "Plataforma 5sy6s" (2017–2019)
- Comunidad de Ciencias Planetarias y Exploración del Sistema Solar, CPESS (2013+)
- European Space Astronomy Centre Faculty (2010+)
- *Consejo de Departamento*, Departamento de Astrofísica y Ciencias de la Atmósfera, Universidad Complutense de Madrid (2007–2009)
- Sociedad Española de Astronomía, SEA (junior: 2000–2006, senior: 2006+)

9.5 Workshops, schools and summer courses

- Pollux B at Habitable Worlds Observatory (Paris, 2023)
- Jornada Espacio y Ciencia en España (Madrid, 2022)
- Centro de Astrobiología María de Maeztu Academia Challenge (on-line, 2020)
- Tackling the Complexities of Substellar Objects (Leiden, 2020)
- Voyage 2050 Workshop. Shaping the ESA's space science plan for 2035–2050 (Madrid, 2019)
- FRIDA + GTCAO: ciencia con la primera instrumentación de óptica adaptativa en Gran Telescopio Canarias (Madrid, 2018)
- A Hitchhiker's Guide through the *Gaia* Galaxy, GAVO *Gaia* Workshop (Heidelberg, 2016)
- Taller de preparación de propuestas Marie Sklodowska Curie Innovative Training Networks (ITN) y Research and Innovation Staff Exchange (RISE) (Madrid, 2015)
- Writing competitive ERC Starting (StG) and Consolidator (CoG) Grant proposals (Madrid, 2014)
- XVI Canary Islands Winter School of Astrophysics: *Extrasolar Planets* (Puerto de la Cruz, Tenerife, 2004)
- Cursos de verano Universidad Complutense El Escorial
  - *La fábrica celular: modificando la industria de producción de la célula viva* (2000)
  - *Nonlinearity: patterns and defects, solitons, chaos, and turbulence* (1999)
  - *La supercomputación: aplicaciones científicas y tecnológicas* (1999)
  - *Tendencias actuales en la teoría del caos* (1998)
  - *Origen y predicción de terremotos* (1998)
  - *El Sistema Solar como frontera científica* (1997)
  - *Un puente entre el big bang y la Biología* (1997)
  - *Astrofísica espacial: de las estrellas a los cuásares* (1996)

9.6 Other duties

- ExoGuider of the Exoplanet Explorers (ExoExplorers) Science Series, sponsored by the ExoPAG Executive Committee and the NASA's Exoplanet Exploration Program (2022) `exoplanets.nasa.gov/exep/exopag/exoexplorers/`
- Member of "Formation and Evolution of Planetary Systems and Detection of Habitable Worlds" Scientific Working Group and "Outreach, Media and Corporate Identity" Activity Working Group of the European Astrobiology Institute (EAI; 2020+)
- Consultant of International Astrophysical Code Hunting Game of the Istituto Nazionale di Astrofisica (INAF, 2021)
- Member of SAG 22 "Investigating an exoplanet target star archive" Study Analysis Group of the NASA Exoplanet Exploration Program Analysis Group (ExoPAG; 2020–2021)
- Principal investigator of *Gateway Small Automatic Telescope for Stellar Occultations by the Moon* (GATO), an evaluated new space mission concept (ESA; 2020)
- Coordinator of the weekly CARMENES Königstuhl meetings at MPIA+LSW (Heidelberg, 2016)

- Member of the Comisión Científica de la Red de Explotación Científica de *Gaia* (2010–2014): `https://gaia.am.ub.es/Twiki/bin/view/RecGaia/WebHome`
- Coordinator and webmaster of the German-Spanish "CarolusV" collaboration between IAC, MPIA, CAB, UPCT and TLS (2006–2011): `http://www.ucm.es/info/Astrof/users/cab/carolusV`
- Member of the *Foro de discusión de terminología astronómica en castellano* of the Sociedad Española de Astronomía (SEA forum on astronomical terminology in Spanish; 2004–2009)
- Coordinator of the monthly Planet and Star Formation group Low-Mass Meeting at the MPIA, Heidelberg (2006–2007)
- Support astronomer at the 2.5-m Isaac Newton Telescope (2006)
- Collaborator in the campaign proposal WFCAM (Wide Field Camera at the United Kingdom Infrared Telescope) Transit Survey that eventually led to FP7-PEOPLE-2007-1-1-ITN Rocky Planets Around Cool Stars ROPACS (2005–2006)
- Support astronomer at the 1.0-m Jacobus Kapteyn Telescope during service time observations for the Spanish astronomical community (2005)
- Observer in charge during the European monitorisation of the CLOUDS international collaboration (Continuous-Longitude Observations of Ultracool DwarfS 2002 & 2003)
- Member of the Seminario [Grupo] de Ciencias Planetarias de Madrid:
  - Coordinator of the "ExoPlanetas" team (2008–2010)
  - "Characterisation of exoplanet host stars with Virtual Observatory tools" (2007–2010)
  - "Exoplanet atmospheres: *Darwin* and biomarkers" (in collaboration with researchers at Universidad Autónoma de Madrid and Centro de Astrobiología, Madrid) (1998–1999)
  - "Formation and geochemical evolution of supermassive telluric planets" (in collaboration with researchers at Institut d'Estudis Espacials de Catalunya, Barcelona, and Facultad de Geología of the Universidad Complutense de Madrid) (1998–1999)
  - "Ultraviolet albedo of the Jovian satellite Europa using the *International Ultraviolet Explorer*-Ultraviolet Low Dispersion Archive" (in collaboration with researchers at Johns Hopkins University/Applied Physics Laboratory, USA, and European Space Agency, VILSPA–ESAC) (1997–1998)

10 Popular science

10.1 Science consultant of planetarium movies

Dark Biosphere

- *Dark Biosphere. Betting for living Universe*, in prep. [May. 2024]

Beyond the Sun

- *Beyond the Sun. In search of a new Earth* (Sep 2018); computer-generated fulldome movie: for all ages, 26 min long, 4 k resolution, 30 fps frame rate, stereo 5.1 audio format, guide book
- Main science consultant; involved in concept, design, script, dubbing, communication
- Screens – USA: **29**, Spain: **18**, South Korea: **9**, France: **6**, Turkey: **4**, Germany: **3**, Japan: **3**, Russia: **3**, Switzerland: **3**, Belgium: **2**, Indonesia: **2**, Poland: **2**, United Arab Emirates: **2**, Armenia: **1**, Australia: **1**, Belarus: **1**, Canada: **1**, China: **1**, Croatia: **1**, Estonia: **1**, Finland: **1**, Israel: **1**, Kuwait: **1**, Lithuania: **1**, Portugal: **1**, Saudi Arabia: **1**, South Africa: **1**, Ukraine: **1**

- Languages – English, Spanish, Arabic, Armenian, Belarusian, Catalan, Cantonese, Croatian, Czech, Estonian, Euskera, Flemish, French, German, Hebrew, Indonesian, Italian, Japanese, Korean, Mandarin, Persian, Polish, Portuguese, Russian, Suomi, Turkish, Ukranian, Valencian, *and four more*
- Awards – Friendship, Korea Fulldome Festival (Gwacheon, Korea; Aug 2020); Best Narrative, Dome Under Fulldome Festival (Melbourne, Australia; Feb 2020); 2nd Film Rating According to Viewers and 2nd Best Animated Fulldome Film, Minsk International Fulldome Festival (Minsk, Belarus; Nov 2018); 2nd Best Film, Chinijo's Fulldome Festival (Lanzarote; Nov 2018)
- Festival selection – Baikal International Film Festival (Russia, 2019); Macon Film Festival (Georgia, USA; 2019); Brno Film Festival (Czech Republic; 2019); International Festival of Science Visualization (Tokyo, Japan; 2019)
- Science consultant of guide book (English, Spanish, French, German, Indonesian, Turkish, Russian)
- `www.beyondthesunmovie.com`

10.2 Collaborator of Radio Clásica RTVE *Longitud de Onda* programme

Musical selection, script, presentation

- *Hoy no es 29 de febrero* (24 Feb 2023)
- *Cultura con C de Cosmos* (29 Mar 2022)
- *El lanzamiento del James Webb* (22 Dec 2021)
- *La danza de los mundos* (17 May 2021)
- *Bandera española en un nuevo exoplaneta* (05 Mar 2021)
- *La banda sonora de tu vida: música, memoria y demencia** (10 May 2019)
- *Felicidades HAL 9000* (14 Jan 2019)
- *Escalas, frecuencias... y memoria** (15 Nov 2018)
- *Planetas con dos soles* (12 Nov 2018)
- *Cármenes* (12 Jun 2018)
- *Los Herschel* (15 May 2018)
- *El jazz de la astrofísica* (10 Apr 2018)
- *Cielo oscuro* (06 Mar 2018)
- *Pedro Duque* (06 Feb 2018)
- *Más allá de Orión* (09 Jan 2018)
- *Tuba Christmas en Gijón** (18 Dec 2017)
- *Recortes y música anticabreo* (05 Dec 2017)
- *Mercurio* (07 Nov 2017)
- *Cástor y Pólux* (10 Oct 2017)
- *Final de temporada** (30 Jun 2017)

- *AstroArte* (28 Jun 2017)
- *Modelo estándar* (22 Jun 2017)
- *Urmas Sisask y otros frikis musicales* (08 Jun 2017)
- *De Hindemith a Vincenzo Galilei pasando por Glass* (25 May 2017)
- *Españoles en el espacio* (11 May 2017)
- *A qué instrumento correspondería esa estrella* (27 Apr 2017)
- *Una odisea en el espacio* (30 Mar 2017)
- *Sonidos cósmicos* (16 Mar 2017)
- *¿Cómo suenan los planetas?* (02 Mar 2017)
- *La muerte térmica del Universo* (15 Feb 2017)
- *Titán* (02 Feb 2017)
- *Asteroides musicales* (19 Jan 2017)
- *Exotierras* (15 Dec 2016)
- *Júpiter sin Holst ni Mozart* (01 Dec 2016)
- *Herschel* (17 Nov 2016)
- *Interestelar* (03 Nov 2016)
- *Planetas y olé* (20 Oct 2016)
- *Música viajera* (06 Oct 2016)

10.3 Astro-concerts

Director, organiser, productor, screenwriter, speaker, roadie, orator, veejay, master of ceremonies and/or singer ("el de los jaleos")

1. *"Astrobioconcierto"*, Fuencaliente, La Palma: Antonio Arias, Anni B Sweet, JJ Machuca, Isabel Daza, **J. A. Caballero** (06 May 2023)
2. *"ESA Day"*, ESAC, Madrid: **J. A. Caballero** & Günther Hasinger and The Spiders From Mars (22 Jun 2022)
3. *"Música astrobiológica y astrobiología musical"*, Café Gijón, Madrid: **J. A. Caballero** & Fario (31 Mar 2022)
4. *"Multiversos & Enoritmos. Música. Poesía. Astronomía. Vino"*, Fuencaliente, La Palma: Antonio Arias & **J. A. Caballero** (16 Jan 2021)
5. *"Al Sur Conciertos – Antonio Arias con Multiverso"*, 30-min TV programme for Canal Sur, Sevilla: Antonio Arias, Juan Codorníu, David Fernández, JJ Machuca & **J. A. Caballero** (20 Jul 2019)
6. *"Rock y astronomía bajo el cielo – IAU100 Special Event"*, Planetario de Madrid, Madrid: Antonio Arias, Juan Codorníu, David Fernández, JJ Machuca, **J. A. Caballero** & McGuiller (10 May 2019)
7. *"Del impresionismo al rock espacial – Clausura de Cultura con C de Cosmos"* [C^3], Real Academia de Bellas Artes de San Fernando, Madrid: **J. A. Caballero**, Dúo Flautopía, Bea & Javi, Fario, Juan Codorníu & JJ Machuca (23 Mar 2019)

8. *"Música y astronomía con buen fario"* [C^3], Residencia de Estudiantes, Madrid: **J. A. Caballero** and Fario: J. Luengo, C. Mestas, M. Sánchez, M. Schultz (15 Feb 2019)

9. *"Música y astronomía con buen fario"* [C^3], Real Academia de Bellas Artes de San Fernando, Madrid: **J. A. Caballero** and Fario: J. Luengo, C. Mestas, M. Sánchez, M. Schultz (16 Nov 2018)

10. *"Astroconcierto clásico"*, Hospedería Fonseca, Salamanca: **J. A. Caballero**, B. Hernández Polo, J. Bueno Gómez, R, González Paraíso, L. Medina Bermejo, R. Domínguez Sánchez, A. M. Sánchez Casanova (17 Jul 2018)

11. *"Astroconcierto de unitedsoundsofcosmos"*, Aula Magna, R. C. U. María Cristina, San Lorenzo de El Escorial: A. Arias, J. J. Machuca, J. Codorníu and **J. A. Caballero** (28 Jun 2017)

12. *"Astronomía y música"*, Museo Nacional del Teatro, Almagro: **J. A. Caballero** and A. Candelas (19 May 2017)

13. *"ESO OPC P98 get-together"*, Municon, Munich: A. Arias, J. J. Machuca, S. Morente and **J. A. Caballero** (19 May 2016)

14. *"Multiverso^3"*, Aguere Cultural, La Laguna: A. Arias, J. J. Machuca, J. Codorníu, C. Gracia and **J. A. Caballero** (24 Oct 2015)

15. *"CARMENES musical"*, 3rd CARMENES CMT meeting, Instituto de Astrofísica de Andalucía, Granada: **J. A. Caballero**, A. Arias, D. Guirado and A. Muñoz (10 Feb 2015)

16. *"Desgranando multiversos"*, Desgranando ciencia, Parque de las Ciencias, Granada: **J. A. Caballero**, E. Alfaro and D. Guirado with Pájaro Jack (13 Dec 2014)

17. •united**sounds**of**cosmos**, I Encuentro internacional de administraciones para la protección cielo nocturno, Calar Alto, Almería: A. Arias, **J. A. Caballero**, D. Fernández and J. J. Machuca (01 Dec 2011)

18. *Multiverso: Rock'n'Astronomía*, Noche de los Museos, CosmoCaixa, Barcelona, by A. Arias and **J. A. Caballero** with Lagartija Nick, and *Lírica y estrellas*: by A. Arias, **J. A. Caballero** and Prof. D. Jou (14 May 2011)

19. *"Multiversos – Astronomía y Música"*, Inauguración XIX Congreso Estatal de Astronomía, Facultad de Medicina, Universidad Complutense de Madrid, Madrid: Antonio Arias, **J. A. Caballero**, Nayra and Juano, starring *Nuestro universo improbable* by Prof. Carlos Frenk (17 Sep 2010)

20. *Cena astronómico-musical "Multiversos"*, meeting of the Sociedad Española de Astronomía (16 Sep 2010): Antonio Arias, **J. A. Caballero** and Nayra

21. *"Multiversos"*, Sala El Sol, Madrid (17 Mar 2010): Antonio Arias, Popy, Juano, Xarim and **J. A. Caballero**

22. *"Multiversos"*, Despedida Año Internacional de la Astronomía, Palacio de Congresos, Granada (12 Dec. 2009): **J. A. Caballero** and Antonio Arias with Popy, Juano, Julián, Noni and Álex (Lori Meyers), Florent & Jota (Los Planetas), starring *"El descubrimiento de la radiación cósmica de fondo y su papel en la Cosmología"* by Prof. Robert W. Wilson, Nobel laureate

10.4 Astro-songs

Co-author of astronomical songs

1. *"Bolero de Cassini-Huygens"*, single for the *Cassini* Grand Finale, with J. J. Machuca and A. Arias (Sep 2017)

2. *"Gaia DR1 (A Soundtrack for the ESA billion star surveyor)"*, single for the first data release of *Gaia*, with J. J. Machuca and A. Arias (Oct 2016)
3. *"Q-U-I JOint TEnerife"*, in album Multiverso 3, with A. Arias (Dec 2015)
4. *"Villafranca/Cebreros/New Norcia/Malargüe (también brilla la materia)"*, ESA Estrack Soundtrack contest, with A. Arias (Aug 2015)
5. *"C.A.R.M.E.N.E.S."*, in album Multiverso II. De la soleá de la ciencia a la física de la inmortalidad, with A. Arias (Nov 2013)

10.5 Astro-music

- Scientist-moderator of Efecto Pasillo's *Universo* premiere together with C. Briones and J. Santaolalla (Oct 2021)
- Direction, script, vocals, talks and Mrs. Brown of The Astrophysical Brothers' videoclip for ESA Fête de la Musique (Jun 2021)
- Roady of *Hola Tierra / Hello Earth*, Observatorio de Calar Alto, Almería, concert-interview with A. Arias, L. García Montero, M. Glover and many more (Jun 2021)
- International language facilitator of Antonio Arias' song *Hello Earth* (2021)
- Veejay in *Fario + Ornamento y delito*, Café La Palma, Madrid, concert by Fario: J. Luengo, M. Sánchez, M. Schultz (Oct 2018)
- Science consultant of Fario's music single *Viajera cósmica* (2018)
- Manager of videoclip "Q-U-I JOint TEnerife" (Dec 2015)
- Veejay of *Multiverso*, Sala El Sol, Madrid, concert by A. Arias, M. López, J. J. Machuca, S. Morente, F. Muñoz, and C. Gracia (Mar 2015)
- Producer of videoclip "El ordenador simula el nacimiento de las estrellas" (Feb 2015)
- Science consultant of *Encuentro en el Multiverso*, Palacio de Congresos, Granada, 3D and Radio 3 concert by Antonio Arias, Soleá Morente, David Fernández, JJ Machuca, Miguel López and Pepe Ruiz (Feb 2014)
- Artificer and science consultant of Antonio Arias' music album *Multiverso II. De la soleá de la ciencia a la física de la inmortalidad* (2013)
- Science consultant of Lagartija Nick's music album *Zona de conflicto* (2011)
- Artificer and science consultant of *Multiverso* (2009), music album by Antonio Arias
- Science consultant of *El shock de Leia* (2008), music album by Lagartija Nick

10.6 Cultura con C de Cosmos / Cultura con C de Cosmos: Vida

- Member of core team
- One popular talk, three astro-concerts (C^3)
- Responsible of *Astromúsica* (Music and Astronomy Spotify and YouTube playlists)
- Web co-supervisor (C^3: `culturaccosmos.es`)
- Centro de Astrobiología, Consejo Superior de Investigaciones Científicas (C^3:Vida: 2021–[2022]); Centro de Astrobiología (CSIC-INTA), Fundación Española para la Ciencia Y la Tecnología (C^3: 2018–2019)

10.7 Contributing edition

AstronomíA outreach magazine:

- *Ars universalis* (Jan 2019+, monthly) [Sect. A.15]
- *Musica universalis* (Jan 2013–Dec 2018, monthly) [Sect. A.15]
- *Avances del proyecto CARMENES* (Jan 2015–Dec 2016, monthly)

The Conversation

- *La era de los telescopios extremadamente grandes ya está aquí* (04 Sep 2023)
- *Viaje con nosotros a Su, un planeta real* (20 Aug 2023)

10.8 Exhibitions

- Main science consultant of [confidential] in Fuencaliente de La Palma (2023+)
- Science consultant of *Espacio, superhéroes, comics*, MEC Film Festival, Centro Comercial Palacio de Hielo, Madrid (May–Jun. 2023)
- Member of the working group for the European Astrobiology Institute exhibition "Alien Worlds. Oceans beyond Earth" in Fuencaliente de La Palma (2021–2022)
- Main science consultant of *Dossier de contenidos de tematización, Centro de Visitantes Roque de Los Muchachos* in Garafía, La Palma, for Tragsatec/Nubalo Studios and Cabildo Insular de La Palma (Jan. 2020)

10.9 Documentary films, videos and TV programmes

- "Space Flu" TV documentary for 291 Science Films: interviewee (2021)
- "La danza de los mundos" movie for JJ Machuca: science consultant (2021)
- "Música y Astronomía" 24-min TV programme for Universidad Nacional de Educación a Distancia and Radio y Televisión Española: screenwriter, presenter (2018)
- "Earth, Moon, Mars with Alexander Gerst", Terra X, Zweites Deutsches Fernsehen: collaborator (2018)
- "Exoplanetas" series of twelve 90 s videos for El Mundo: science consultant (2017–2019)
- "Cazadores de planetas" documentary film for RenderArea: science consultant (2007–2009, 2016–2017; cancelled)

10.10 Major press releases

CARMENES DR1 (Feb 2023):

- Television: Telediario 1 & 2 (La 1)
- Radio: *La rosa de los vientos* (Onda Cero), *Longitud de onda* (Radio 3), *Gente despierta* (Radio 1)
- Webmaster

Su ta Gar (Dec 2022):

- Television: ETB1 & ETB2, TVE-País Vasco

- Radio: Euskadi Irratia, Radio 3, Radio Euskadi, Radio popular
- Journals: Arabako Alea, El Correo, Berria; gipuzkoagaur, naiz
- Webmaster, editor of 2-min video, vice-coordinator of IAU NameExoWorld 2022 proposal

Gliese 486 b, encore (Jun 2022):

- Radio: Radio Exterior de España
- EFE, EuropaPress: numerous journals in Spain (La Razón, Muy Interesante, regional newspapers) and abroad (Ibero-America; Canada, France, Polonia, Portugal, Romania...)
- Production of press release multimedia: video and high resolution images (with RenderArea)

James Webb (Dec 2021):

- Radio: *Que parezca un accidente* (Radio 3), *Longitud de onda* (Radio Clásica)
- Journals: science consultant of special web issue (El País)

Gliese 486 b (Mar 2021):

- Radio: *Hoy empieza todo* (Radio 3), *Noticias* (Radio 5), *Herrera en COPE & Noticias* (COPE), *La mecánica del caracol* (Radio Euskadi), *Principio de incertidumbre* (Radio Extremadura)
- Journals: ABC, El Mundo, La Voz de Galicia
- News agencies: Reuters, AFP
- On-line publications: Hipertextual
- Production of press release multimedia: video and ultra-high resolution images (with RenderArea)
- Coordination of global press release (including revision of translation and/or compilation of texts in nine languages)

Prof. Mayor's Nobel Prize (Oct 2019):

- Management: television (Radio Télévison Suisse), journals (El País, El Mundo, ABC), news agencies (Agence France-Press, Associated Press, Reuters)
- Interviews: news agencies (EFE)

Teegarden b, c (Jun 2019):

- Television: La 1 (La 2, 24 h...), Canal Sur (Telemadrid...)
- Radio: Radio de la Ciudad Autónoma de Buenos Aires, Onda Regional de Murcia
- Journals: La Razón, Innovaspain

10.11 Television

Televisión Española

- *Telediario 1 & 2*, La 1 (2023, 2022)
- *Canal 24* (2023)
- *España Directo*, La 1 (2019)
- *La 2 Noticias*, La 2 (2013)
- *La tarde en 24 h*, La 2 (2013)

Other television

- *Relatos para adultos*, Déjate de Historias TV (2022)
- *¡Boom!*, Antena 3 (2020+ –science consultant–)
- *A3 Noticias 2*, Antena 3 (2022, 2019)
- *Telecanarias*, La 1 (2021)
- *Teleberri 2*, Euskal Irrati Telebista (2018)
- *La Sexta Noche*, La Sexta (2017)
- *Canal Sur Noticias*, Canal Sur (2015)
- *Con-ciencia*, Canal Sur (2013a,b)
- *El Intermedio*, La Sexta (2008)

10.12 Radio

Radio Nacional de España (see Sect. 10.2):

- *Que parezca un accidente*, Radio 3 (2023, 2022b, 2022a, 2021b, 2021b)
- *A media mañana*, Radio 1 (2023)
- *A golpe de bit*, Radio Exterior (2022, 2021)
- *Fallo de sistema*, Radio 3 (2022, 2017 –manager–)
- *Meridiano de Turing*, Radio 3 (2021a, 2021b)
- *Universo Scallie*, Radio 3 (2021)
- *Educar para la paz*, Radio 5 (2020)
- *Entre probetas*, Radio Exterior (2019, 2015)
- *24 Horas*, Radio 5 (2016)
- *Especiales*, Radio 3 (2014)
- *Música de las esferas*, Radio Clásica (2014)
- *Disco grande*, Radio 3 (2013)
- *Sobre la mesa*, Radio Exterior (2012)
- *El ojo crítico*, Radio 3 (2009)

Other radio:

- *La Mecánica del Caracol*, Radio Euskadi (2022, 2018)
- *Divulga que algo queda*, Onda Cero (2022)
- *Fin de semana*, COPE (2022)
- *Ágora*, Radio Aragón (2022)
- *La Rosa de los Vientos*, Onda Cero (2022)
- *Le Cosmos District*, Radio Cosmos (2021)
- *Más de uno Alcalá*, Onda Cero (2021)
- Onda Cero La Palma (2021)
- *Magazine*, 7.7 La Palma Radio (2020)
- *Distrito15*, Intercoruña (2019)
- *Más de uno*, Onda Cero (2018)
- *A Noite é Necesaria*, Radiovoz (2017a,b)
- Radio Terrícola (2017)
- *El Radioscopio*, Canal Sur Radio (2014)
- *Universo Paralelo*, Radio Círculo (2013)
- *La Galería*, Radio Euskadi (2013)
- Cadena Ser Andalucía (2002)

10.13 Journals, newspapers and written miscellanea

- El Faro de Vigo (2022)
- Agence France-Presse (2022)
- El Periódico (2022)
- El País (2022, 2019, 2017b, 2017a)
- Diario de Teruel (2021, 2019, 2017)
- El Time (2020)
- New Scientist (2020)
- El Mundo (2019, 2017b, 2017a)
- La Voz de Galicia (2019)
- La Opinión Coruña (2019)
- La Razón (2019)
- EFE / RTVE.es (2019)
- Diario Vasco (2018)
- Salamanca 24 horas (2018)

- De verdad TV (2018)
- Investigación y Ciencia (2016)
- Il Bollettino delle Stelle Doppie (2016)
- La Vanguardia – Almería (2016)
- El Observador de Estrellas Dobles (2016)
- La Vanguardia – Tenerife (2015)
- Foros21 (2014)
- AstronomíA (2012, 2007)
- Profesiones (2008)
- Tribuna Complutense (2008b, 2008a)
- El País Semanal (2005)
- El Día (2002)

10.14 Other media

Web:

- "Life Beyond Us" – Kickstarter (2021)
- Calar Alto (2021)
- Principia (2020, 2021, 2016)

YouTube channels:

- Quantumfracture (2023, 2022): science consulting
- Virtual Pixels (2019): interview

10.15 Invited popular talks

1. ESA Open Days, European Space Astronomy Centre, Villanueva de la Cañada, Oct 2023
2. XXIX Ciclo de conferencias de astronomía y cosmología Carlos Sánchez Magro, Valladolid, Oct 2023
3. Space Summer Camp 2023, Villanueva de la Cañada, Madrid, Jul 2023
4. Dejando huella, Mataelpino, Madrid, Jul 2023
5. "Hack an exoplanet", ESA (online), May 2023
6. "Espacio, superhéroes, comics", Madrid Educa Ciencia Film Festival, Madrid, May 2023
7. Tierra en calma, Colmenar Viejo, Madrid, Sep 2022
8. Kinedomus, Aranda de Duero, Burgos, Aug 2022
9. Auditorio de A Xuventude, Cambados, Pontevedra, Aug 2022
10. "El turismo como eje transversal de cultura y ciencia", Ateneo de Madrid, Apr 2022
11. Coloquio sobre astrobiología/"Jose y la mochila mágica", El Escorial, Madrid, Apr 2022

12. Senda nocturna “Mirando las estrellas”, Villanueva del Pardillo, Madrid, Oct 2021
13. Territorio Luthier, Aranda de Duero, Burgos, Aug 2021
14. IES Pablo Picasso (with Francisco Anguita), Pinto, Madrid, Dec 2020
15. Fuego de Campamento, Asociación Ecotono (online), May 2020
16. Especial “Beyond the Sun: en busca de una nueva Tierra”, Planetario de Madrid, Feb 2020
17. Sede de la Agrupación Astronómica de Madrid, Feb 2020
18. Teruel Conocimiento y Cultura Científica, Teruel, Nov 2019
19. NASA Spaceapps Challenge Almería, Oct 2019
20. Sesión comentada de “Más allá del Sol”, Casa das Ciencias, A Coruña, Aug 2019
21. **TEDx**SaintLouisUniversityMadrid 2019: “Transcending the Everyday Life State”, Saint Louis University – Madrid Campus, Apr 2019
22. Homenaje a Stephen Hawking, Universidad Autónoma de Madrid, Mar 2019
23. Coloquio con el experto, Parque de las Ciencias, Granada, Feb 2019
24. Pregúntale al experto, Museo Nacional de Ciencias Naturales, Madrid, Dec 2018
25. Qué sabemos de...?, Kutxa Kultur Tabakalera, San Sebastián/Donostia, Nov 2018
26. Real Sociedad Económica Matritense de Amigos del País [C^3], Madrid, Nov 2018
27. OSAE & Supernova, Salamanca, Jun 2018
28. Estrellas en el Pirineo, Aínsa-Boltaña, Huesca, Nov 2017
29. Escociencia, San Lorenzo de El Escorial, Madrid, Nov 2017
30. Centro Cultural, El Escorial, Madrid, Oct 2017
31. CEIP Los Cerros Chicos, San Martín de la Vega, Jun 2017
32. SpaceIN, European Space Astronomy Centre, Villafranca del Castillo, Jun 2017
33. 76^a Feria del libro de Madrid (round table), Jun 2017
34. Jornadas de divulgación de la Astronomía, Sede Universitaria Ciudad de Alicante, Nov 2016
35. Museo de la Ciencia y el Cosmos, La Laguna, Nov 2014
36. Sede de la Agrupación Astronómica de Madrid, Feb 2014
37. AstroMartos, Jaén, Aug 2013
38. Sede de la Agrupación Astronómica de Madrid, Jul 2013
39. Planetario de Madrid, Madrid, Nov 2009
40. IES El Escorial, El Escorial, Madrid, Nov 2009
41. CP Felipe II, El Escorial, Madrid, Nov 2009
42. Sede de la Agrupación Astronómica de Madrid, Dec 2008
43. Museo Nacional de Ciencia y Tecnología, Madrid, Mar 2006

10.16 Celebrations

ESA Open Days

- Stage co-coordinator, CAB liaison: 2023

International Year of Astronomy

- Collaborator in sections *Glosario* and *Fotonoticia* for El País Digital astronomy special (`http://www.elpais.com/especial/astronomia/`), 2009
- *Concentración de telescopios en la Plaza Mayor*, Madrid, Jan 2009

World Space Week

- Guided visits to the domes of the Departamento de Astrofísica y Ciencias de la Atmósfera of the Universidad Complutense de Madrid, slide provider for public conference, interview for high-school students: 2013

Week of Science (*Semana de la Ciencia*)

- Guided visits to the UCM domes: 2007, 2008, 2009

11 General knowledge and expertise

11.1 Degrees

- **PhD:** Doctor en Física — Doctor of Philosophy *summa cum laude* at the Facultad de Física of ULL/IAC, Spain (Mar 2006). Title: *Formation, evolution and multiplicity of brown dwarfs and giant exoplanets*. Supervisors: Prof. R. Rebolo, Dr. V. J. S. Béjar
- **MSc:** Diploma de Estudios Avanzados — Master of Science at ULL/IAC (2003). Title: *De fuscis pusillis astris et giganteis exoplanetis*. Supervisors: Prof. R. Rebolo, Dr. V. J. S. Béjar
- **BSc:** Licenciado en Física, orientación Astrofísica, Plan 1995 — Bachelor of Science, Physics–Astrophysics, at UCM (2000)

11.2 Scientific areas of expertise

- *Specialisation:* Astronomy & Astrophysics
- *A&A keywords:* astrobiology – **astronomical instrumentation, methods and techniques** – astronomical data bases: miscellaneous – stars: activity – **stars: binaries: visual** – **(stars:) brown dwarfs** – stars: fundamental parameters – **stars: late-type** – stars: low-mass – stars: luminosity function, mass function – **(stars:) planetary systems** – stars: pre-main sequence – stars: variables: general – (Galaxy:) open clusters and associations: general – **(Galaxy:) open clusters and associations: individual: σ Orionis** – Galaxy: solar neighbourhood – infrared: stars – X-rays: stars
- *UNESCO codes:* 2101.01 Binary stars – 2101.02 Clusters – 2101.10 Stars – 2101.11 Stellar evolution and HR diagram – 2101.14 Variable stars – 2101.15 X-ray sources – 2103.03 Spectroscopy – 2104 Planetology – 2106 Solar System – 2512.01 Exobiology

11.3 Academic training

- PhD/MSc courses at the Universidad Complutense de Madrid (2000–01) — Stellar populations in galaxies, Theory of artificial satellites and space travels, Dynamics of spiral galaxies: density waves, Remote Universe, Tropical Meteorology, Atomic and nuclear spectrometry
- BSc courses at the Universidad Complutense de Madrid (1995–2000) — Compulsory subjects of classical and modern Physics (Thermodynamics, Electromagnetism, Optics, Classical Mechanics, Nuclear and Quantum Physics...), Astrophysics (Stellar atmospheres and interiors, Interstellar medium, Galactic and extragalactic astrophysics, Cosmology...), Mathematics, Computation, Chemistry and Statistics, and optional subjects focused on Astrophysics and its relation to other branches of Physics (Gravitation, Geophysics, Atmospheric Physics...) and Science (Biology, Neural networks...)
- First class distinction at the end of high school (1995)

11.4 Software

- Operative systems: Linux, MacOS (obsolete: Unix, Windows)
- Virtual Observatory tools: Aladin, Topcat (obsolete: VOPlot)
- Astronomical software: (obsolete: IRAF, MIDAS, LEOPARD, STARLINK)
- Mathematical environments: MATLAB, OCTAVE (obsolete: IDL)
- Websites: `html`, `css`
- Other software and programming: LaTeX, image editors (PowerPoint, AdobePhotoshop) (obsolete: CorelDraw, Pascal)

11.5 Languages

- Spanish: native
- English: advanced understanding, reading, and writing
- German: intermediate understanding, reading, and writing (B2.2 certificate)
- Romance languages (French, Italian, Portuguese, Catalan, Galician): basic/intermediate understanding and reading

11.6 Sports

- Currently: running, hiking, swimming
- Basketball player in local leagues in 2007–2012
- Participant in national- and regional-level running competitions: orienteering cross, marathon, duathlon, long-distance races in 1993–2005
- *Premio al mejor deportista de El Escorial* in 1993, 1994 (junior) and 1995 (senior)
- First and second places at the indoor and outdoor Comunidad de Madrid athletics high jump championships in 1993
- Carrier of the **Olympic Torch** in 1992
- Participant in regional-level sub-15 running competitions (cross, mile run) in 1988–92

11.7 Miscellanea non-scientific activities and merits

- Member of *equipo de primera intervención* at ESAC (2022+)
- Basic first aids training course (2022)
- Basic fire fighting training course (2022)
- Logo and web designer/supervisor, e.g.:
  - `http://culturaccosmos.es` (2018)
  - `http://exoterrae.eu` (2011+)
  - `http://carmenes.caha.es`, "A Bauhaus revisit to El Sol de Miró" (2009+)
- Driving license B (2012+)
- Greenpeace member (2005+)
- Non-R&D working experience:
  - Lifeguard (1995–1997)
  - Private classes (Physics, Biophysics; 1992–1996)
  - Other temporary jobs (restaurant business; 1993–1994)
- Professional qualifications: Aquatic Rescue and First Aids (1994)

A Publications and contributions

A.1 Papers in refereed journals

1. *RedDots: Lonely, eccentric planets orbiting the nearby stars GJ 832, GJ 674, and Ross 128?*, F. Liebing, S. V. Jeffers, P. Gorrini et al. (incl. **J. A. Caballero**) A&A, submitted

2. *The CARMENES search for exoplanets around M dwarfs. Cluster analysis of signals from spectral activity indicators to search for shared periods*, J. Kemmer, M. Lafarga, B. Fuhrmeister, P. Schöfer, Y. Shan, A. Quirrenbach, S. V. Jeffers, P. J. Amado, **J. A. Caballero** et al. A&A, submitted

2024

3. *Teegarden's Star revisited. A nearby planetary system with at least three planets*, S. Dreizler, R. Luque, I. Ribas, V. Koseleva, H. L. Ruh, E. Nagel, F. J. Pozuelos, M. Zechmeister, A. Reiners, **J. A. Caballero** et al. A&A, in press, eprint arXiv:2402.00923

4. *Wolf 327b: A new member of the pack of ultra-short-period super-Earths around M dwarfs*, F. Murgas, E. Pallé, J. Orell-Miquel et al. (incl. **J. A. Caballero**) A&A, in press, eprint arXiv:2401.12150

5. *CARMENES input catalog of M dwarfs. VIII. New rotation periods for the survey stars from ground- and space-based photometry and spectroscopic indicators*, Y. Shan, D. Revilla, S. L. Skrzypinski, S. Dreizler, V. J. S. Béjar, **J. A. Caballero** et al. A&A, in press, eprint arXiv:2401.09550

6. *The elusive atmosphere of WASP–12 b. High-resolution transmission spectroscopy with CARMENES*, S. Czesla, M. Lampón, D. Cont et al. (incl. **J. A. Caballero**) 2024, A&A, 683, A77

7. *Calibrating the metallicity of M dwarfs in wide physical binaries with F-, G-, and K primaries. II: Carbon, oxygen, and odd-Z iron-peak abundances of the primary stars*, C. Duque-Arribas, H. M. Tabernero, D. Montes, **J. A. Caballero** 2024, MNRAS, 528, 3028

2023

8. *The CARMENES search for exoplanets around M dwarfs. Telluric absorption correction high S/N optical and near infrared template spectra of 384 M dwarf stars*, E. Nagel, S. Czesla, A. Kaminski, M. Zechmeister, L. Tal-Or, J. H. M. M. Schmitt, A. Reiners, A. Quirrenbach, A. García López, **J. A. Caballero** et al. 2023, A&A, 680, A76

9. *TOI-1801 b: a temperate mini-Neptune around a young M0.5 dwarf*, M. Mallorquín, E. Goffo, E. Pallé et al. (incl. **J. A. Caballero**) 2023, A&A, 680, A73

10. *The Planetary companions orbiting the M dwarfs GJ 724 and GJ 3988. A CARMENES and IRD collaboration*, P. Gorrini, J. Kemmer, S. Dreizler, R. Burn, T. Hirano, F. J. Pozuelos, M. Kuzuhara, **J. A. Caballero** et al. 2023, A&A, 680, A28

11. *GJ 806 (TOI-4481): A bright nearby multi-planetary system with a transiting hot, low-density super-Earth*, E. Pallé, J. Orell-Miquel, M. Brady et al. (incl. **J. A. Caballero**) 2023, A&A, 678, A80

12. *The CARMENES search for exoplanets around M dwarfs. Behaviour of the Paschen lines during flares and quiescence*, B. Fuhrmeister, S. Czesla, J. H. M. M. Schmitt, P. C. Schneider, **J. A. Caballero** et al. 2023, A&A, 678, A1

13. *Two super-Earths at the edge of the habitable zone of the nearby M dwarf TOI-2095*, F. Murgas, A. Castro-González, E. Pallé et al. (incl. **J. A. Caballero**) 2023, A&A, 677, 182

14. *Stellar variability in Gaia DR3. I. Three-band photometric dispersions for 145 million sources*, J. Maíz Apellániz, G. Holgado, M. Pantaleoni González, **J. A. Caballero** 2023, A&A, 677, A137

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214. *A search for planetary-mass objects and brown dwarfs in the Upper Scorpius association*, M. T. Costado, V. J. S. Béjar, **J. A. Caballero**, R. Rebolo, J. Acosta-Pulido & A. Manchado 2005, A&A, 443, 1021

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216. *Photometric variability of young brown dwarfs in the σ Orionis cluster*, **J. A. Caballero**, V. J. S. Béjar, R. Rebolo & M. R. Zapatero Osorio 2004, A&A, 424, 827

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217. *Photometric variability of a young, low-mass brown dwarf*, M. R. Zapatero Osorio, **J. A. Caballero**, V. J. S. Béjar & R. Rebolo 2003, A&A, 408, 663

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218. *A methane isolated planetary mass object in Orion*, M. R. Zapatero Osorio, V. J. S. Béjar, E. L. Martín, R. Rebolo, D. Barrado y Navascués, R. Mundt, J. Eislöffel & **J. A. Caballero** 2002, ApJ, 578, 536

A.2 SPIE conference proceedings

1. *The CARMENES M-dwarf planet survey*, A. Quirrenbach, P. J. Amado, I. Ribas, A. Reiners, **J. A. Caballero** et al. 2020, SPIE, 11447, E3C (poster)

2. *CARMENES: high-resolution spectra and precise radial velocities in the red and infrared*, A. Quirrenbach, P. J. Amado, I. Ribas, A. Reiners, **J. A. Caballero** et al. 2018, SPIE, 10702, 0W (oral)

3. *CARMENES: an overview six months after first light*, A. Quirrenbach, P. J. Amado, **J. A. Caballero** et al. 2016, SPIE, 9908, E12 (oral)

4. *CARMENES: the VIS channel spectrograph in operation*, W. Seifert, W. Xu, O. Stahl, H.-J. Hagen, M. A. Sánchez Carrasco, G. Veredas, **J. A. Caballero** et al. 2016, SPIE, 9908, E65 (poster)

5. *CARMENES: interlocks or the importance of process visualization and system diagnostics in complex astronomical instruments*, J. Helmling, K. Wagner, L. Hernández-Castaño et al. (including **J. A. Caballero**) 2016, SPIE, 9908, E6B (poster)

6. *CARMENES-NIR channel spectrograph: how to achieve the full AIV at system level of a cryo-instrument in nine months*, S. Becerril, C. Cárdenas, P. J. Amado et al. (including **J. A. Caballero**) 2016, SPIE, 9910, E0Q (oral)

7. *CARMENES: data flow*, **J. A. Caballero**, J. Guàrdia, M. López del Fresno, M. Zechmeister, E. de Juan et al. 2016, SPIE, 9910, E0E (poster)

8. *CARMENES: management of a schedule-driven project*, M. L. García-Vargas, **J. A. Caballero**, A. Pérez-Calpena et al. 2016, SPIE, 9911, E0P (oral)

9. *CARMENES: system engineering during manufacturing and AIV phases*, A. Pérez-Calpena, W. Seifert, P. J. Amado, A. Quirrenbach, M. L. García-Vargas, **J. A. Caballero** et al. 2016, SPIE, 9911, E20 (poster)

10. *CARMENES: NIR channel spectrograph cooling system AIV, thermo-mechanical performance of the instrument*, S. Becerril, E, Mirabet, J.-L. Lizon et al. (including **J. A. Caballero**) 2016, SPIE, 9912, E62 (poster)

11. *The CARMENES instrument control software suite*, J. Colomé, J. Guàrdia, H.-J. Hagen et al. (including **J. A. Caballero**) 2016, SPIE, 9913, E34 (poster)

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13. *CARMENES ultra-stable cooling system: very promising results*, E. Mirabet, P. Carvas, J.-L. Lizon, S. Becerril, M. Abril, R. Morales, M. A. Sánchez-Carrasco, P J. Amado, W. Seifert, A. Quirrenbach, **J. A. Caballero**, I. Ribas, A. Reiners, S. Dreizler 2014, SPIE, 9151, E3Y (poster)

14. *CARMENES instrument control system and operational scheduler*, á. García-Piquer, J. Guàrdia, J. Colomé, I. Ribas, L. Gesa, J. C. Morales, A. Pérez-Calpena, W. Seifert, A. Quirrenbach, P. J. Amado, **J. A. Caballero**, A. Reiners 2014, SPIE, 9152, E51 (poster)

15. *Building a fiber link for CARMENES*, J. Stürmer, O. Stahl, C. Schwab, W. Seifert, A. Quirrenbach, P. J. Amado, I. Ribas, A. Reiners, **J. A. Caballero** 2014, SPIE, 9151, E52 (poster)

16. *Characterizing U-Ne hollow cathode lamps at near-infrared wavelengths for the CARMENES survey*, L. F. Sarmiento, A. Reiners, U. Seemann, U. Lemke, J. Winkler, M. Pluto, E. W. Guenther, A. Quirrenbach, P. J. Amado, I. Ribas, **J. A. Caballero**, R. Mundt, W. Seifert 2014, SPIE, 9147, E54 (poster)

17. *CARMENES. I: instrument and survey overview*, A. Quirrenbach, P. J. Amado, W. Seifert, M. A. Sánchez Carrasco, H. Mandel, **J. A. Caballero**, R. Mundt, I. Ribas, A. Reiners et al. 2012, SPIE, 8446, E0R (oral)

18. *CARMENES. II: optical and opto-mechanical design*, W. Seifert, M. A. Sánchez Carrasco, W. Xu, M. C. Cárdenas, E. Sánchez-Blanco, S. Becerril, C. Feiz, S. Dreizler, P. Rhode, A. Quirrenbach, P. J. Amado, I. Ribas, A. Reiners, H. Mandel, **J. A. Caballero** 2012, SPIE, 8446, E33 (poster)

19. *CARMENES. III: an innovative and challenging cooling system for an ultra-stable NIR spectrograph*, S. Becerril, J.-L. Lizon, M. A. Sánchez Carrasco, E. Mirabet, P. J. Amado, W. Seifert, A. Quirrenbach, H. Mandel, **J. A. Caballero**, I. Ribas, A. Reiners, M. Abril, R. Antona, M. C. Cárdenas, R. Morales, D. Pérez, A. Ramón, E. Rodríguez, J. Herranz 2012, SPIE, 8450, E4L (poster)

20. *CARMENES. IV: instrument control software*, J. Guàrdia, J. Colomé, I. Ribas, H.-J. Hagen, R. Morales, M. Abril, D. Galadí, W. Seifert, M. A. Sánchez Carrasco, A. Quirrenbach, P. J. Amado, **J. A. Caballero**, H. Mandel 2012, SPIE, 8450, E2S (poster)

21. *CARMENES. V: non-cryogenic solutions for YJH-band NIR instruments*, P. J. Amado, R. Lenzen, M. C. Cárdenas, E. Sánchez-Blanco, S. Becerril, M. A. Sánchez Carrasco, W. Seifert, A. Quirrenbach, I. Ribas, A. Reiners H. Mandel, **J. A. Caballero** 2012, SPIE, 8450, E1U (oral)

22. *CARMENES: Calar Alto high-resolution search for M dwarfs with exo-earths with a near-infrared Echelle spectrograph*, A. Quirrenbach, P. J. Amado, H. Mandel, **J. A. Caballero**, R. Mundt, I. Ribas, A. Reiners et al. 2010, SPIE, 7735, E37 (oral)

A.3 Refereed contributions to international meetings

1. *Ultra low-mass star and substellar formation in σ Orionis*, **J. A. Caballero** 2005, AN, 326, 1007

2. *Brown dwarfs and very low-mass stars: variability in the Pleiades*, M. Morales-Calderón, D. Barrado y Navascués, **J. A. Caballero** & E. L. Martín 2005, AN, 326, 1057

3. *Proper motion Pleiades candidate L-type brown dwarfs*, G. Bihain, R. Rebolo, V. J. S. Béjar, **J. A. Caballero**, C. A. L. Bailer-Jones & R. Mundt 2005, AN, 326, 1065

4. *The substellar population in the young σ Orionis cluster. Spatial distribution*, V. J. S. Béjar, **J. A. Caballero**, R. Rebolo, M. R. Zapatero Osorio & D. Barrado y Navascués 2004, Ap&SS, 292, 339

5. *Clues to substellar formation: Rotation and the low-mass end of the Initial Mass Function*, M. R. Zapatero Osorio, **J. A. Caballero**, E. L. Martín, V. J. S. Béjar & R. Rebolo 2004, Ap&SS, 292, 673

A.4 White papers

1. *Final Report for SAG 22: A Target Star Archive for Exoplanet Science*, Hinkel, N. R., Pepper, J., Stark, C. C. et al. (incl. **J. A. Caballero**) 2021, NASA ExoPAG Study Analysis Group 22 white paper, eprint `arXiv:2112.04517`

2. *All-sky visible and near infrared space astrometry*, D. Hobbs, A. Brown, E. Høg et al. (incl. **J. A. Caballero**) 2021, Experimental Astronomy, 51, 783 [see also: *Voyage 2050 White Paper: All-Sky Visible and Near Infrared Space Astrometry*, D. Hobbs, A. Brown, E. Høg et al. (incl. **J. A. Caballero**) 2019, European Space Agency Voyage 2050 White Papers, eprint `arXiv:1907.12535`]

3. *Ultraviolet Spectropolarimetry as a Tool for Understanding the Diversity of Exoplanetary Atmospheress*, L. Fossati, L. Rossi, D. Stam, A. García Muñoz, J. Berzosa-Molina, P. M. Arenal, **J. A. Caballero** et al. 2019, National Academy of Sciences Astro2020: Decadal Survey on Astronomy and Astrophysics, science white paper no. 33, Bulletin of the AAS, 51c, 33

A.5 Research Notes of the American Astronomical Society

1. *One Is the Loneliest Number: Multiplicity in Cool Dwarfs*, C. Cifuentes, **J. A. Caballero**, S. Agustí 2021, RNAAS, 5, 129

2. *Parallactic distances and proper motions of virtually all stars in the σ Orionis cluster or: How I learned to get the most out of* `TOPCAT` *and love* Gaia *DR2*, **J. A. Caballero** 2018, RNAAS, 2b, 25

A.6 Technical documentation

A.6.1 *Gaia* validation

Operations (Dec. 2013+)

- *A sample to quality assurance Gaia's ultracool dwarf characterisation routines*, R. L. Smart, L. M. Sarro, **J. A. Caballero**, 2015 (*Gaia* DPAC)

A.6.2 CARMENES

Operations (Jan. 2016+)

- MIX008 *Instrument observing manual*, **J. A. Caballero**

Final Design Review (Feb. 2013)

- FDR-01D *Science – Sample*, I. Ribas, J. C. Morales, **J. A. Caballero**
- FDR-02A *Management – Consortium*, **J. A. Caballero**
- FDR-02E *Management – Website and outreach*, **J. A. Caballero**
- FDR-11A *Data – Image headers*, M. López del Fresno & **J. A. Caballero**
- FDR-11C *Data – Server*, M. López del Fresno & **J. A. Caballero**

Preliminary Design Review (Jun. 2011)

- PDR-04A *Management – Consortium*, **J. A. Caballero** & H. Mandel
- PDR-04B *Management – Work breakdown structure*, **J. A. Caballero**
- PDR-04E *Management – Website*, **J. A. Caballero**
- PDR-14A *Data – Exposure time calculator, pipeline and archive*, **J. A. Caballero**, J. Colomé, A. Reiners, O. Stahl
- PDR-15A *System engineering – Interfaces table*, **J. A. Caballero**

Post-conceptual Design Review (Jul. 2010)

- *CARMENES feasibility study: post-conceptual design*, H. Mandel, **J. A. Caballero** et al.

Conceptual Design Review (Sep. 2009)

- *CARMENES feasibility study: conceptual design*, H. Mandel, **J. A. Caballero**, O. Stahl et al.

(Only key documents shown)

A.6.3 GO-IRS

Conceptual Design Review (Jun 2010)

- *GO-IRS. Volume I: Introduction and science cases*, J. Ge, **J. A. Caballero**, S. Powell, B. Zhao, A. González et al.

A.7 Non-refereed contributions to meetings

A.7.1 Invited oral contributions to plenary sessions

In Astrophysics Data System

1. *(Sub-)stellar variability: from 20 $M_{\odot}$ to 13 $M_{\rm Jup}$*, **J. A. Caballero**, 2016, OEJV, 176, 50
2. *Formation, evolution and multiplicity of brown dwarfs and giant exoplanets*, **J. A. Caballero** 2010, hsa5.conf, 79
3. *From 1000 AU to 1000 pc: high proper-motion stars in the solar neighbourhood, radio sources in the sigma Orionis cluster, and new X-ray stars surrounding Alnilam*, **J. A. Caballero** 2009, mavo.proc, 3

Published on-line

4. *Characterising PLATO M dwarfs: what observations are necessary and how to get them?*, **J. A. Caballero**, *"M dwarfs PLATO (informal) meeting: From observations to constraints on stellar properties"*, on-line, 03 Mar. 2023 (https://plato-wp120.ias.u-psud.fr)
5. *Exoplanets around cool stars*, **J. A. Caballero**, *"Life in the Universe"*, Sofia, Bulgaria, 23–28 Oct. 2022 (http://physicsoflivingsystems.org)
6. *La misión CHEOPS y la búsqueda de exoplanetas. Resultados científicos*, **J. A. Caballero**, *"II Semana Interdisciplinar del Espacio y IV Congreso de Ingeniería Espacial"*, Madrid, Spain, 20–24 Jun. 2022 (www.eiecongress.com)
7. *Binary stars: from 0.2 arcsec to 2 deg (five years later)*, **J. A. Caballero**, *"IV International Meeting of Double Stars Observers"*, Vilanova i la Geltrú, Barcelona, Spain, 18–20 Sep. 2015 (www.oagarraf.net)
8. *Red and brown dwarfs in the ultraviolet*, **J. A. Caballero**, *"Workshop for the WSO Working Group and Spanish UV Astronomy"*, Granada, 30 Jun.–01 Jul. 2014 (spanishuvastronomy.iaa.es)
9. *Brown dwarfs from telescopes at ORM and CAHA*, **J. A. Caballero**, *"Science with the optical and near-infrared telescopes at CAHA and ORM in the coming decade"*, Madrid, 22–23 Mar. 2012 (www.riastronomia.es)
10. *The bottom of the Hertzsprung-Russell diagram with* Gaia, **J. A. Caballero**, *"Spanish ICTS contributions to ESA's Gaia mission"*, Madrid, 21 Mar. 2012 (www.riastronomia.es)
11. *Binary stars: from 0.2 arcsec to 2 deg*, **J. A. Caballero**, *"II International Meeting of Double Stars Observers"*, Sabadell, Barcelona, Spain, 23–24 Oct. 2010 (www.oagarraf.net)

Unpublished

12. *CARMENES, exoearths and music!*, **J. A. Caballero**, *"32ste JVS/VVS-Weekend"*, Vayamundo, Oostende, Belgium, 06–07 Oct. 2018
13. *CARMENES, current status, surveys plans, and Carmencita*, **J. A. Caballero**, *"Opportunity M"* (agent), Harvard University, Boston, MA, USA, 28–31 Aug. 2016

A.7.2 Other oral contributions to plenary sessions

In Astrophysics Data System

1. *CARMENES and the Frontiers of High-Resolution Spectroscopy for M dwarfs*, Y. Shan, A. Reiners, P. J. Amado, V. J. S. Béjar, **J. A. Caballero** et al. 2021, plat.conf, E93 (on-line)
2. The CARMENES survey for M dwarf planets, A. Quirrenbach, P. J. Amado, I. Ribas, A. Reiners, **J. A. Caballero** et al. 2019, MmSAI, 90, 554

3. *M, L and T dwarfs in the J-PLUS Survey*, **J. A. Caballero**, 2017, `edrs.conf`, E18

4. *Carmencita, the CARMENES input catalogue of bright, nearby M dwarfs*, **J. A. Caballero**, M. Cortés-Contreras, F. J. Alonso-Floriano et al., 2016, `csss.conf`, E148

5. *SatMeet4 – Habitable planets, M dwarfs and near-infrared spectrographs*, **J. A. Caballero**, R. K. Kopparapu, S. Mahadevan et al. 2015, `pthp.conf`, E103

6. *Gaia limits for brown dwarf studies*, L. M. Sarro, D. Barrado, C. Carrión, **J. A. Caballero** 2014, MmSAI, 85, 637

7. *CARMENES: Blue planets orbiting red dwarfs*, A. Quirrenbach, P. J. Amado, **J. A. Caballero** et al. 2013, `IEPJWC`, 47, 05006

8. *Gaia and σ Orionis from 20 $M_{\rm sol}$ to 3 $M_{\rm Jup}$: the most precise and complete IMF with a parallax determination?*, **J. A. Caballero** 2011, `sca.conf`, 108

Published on-line

9. *Parameters of M-dwarf companions to FGK stars*, **J. A. Caballero**, *"PLATO WP122 Scientific Workshop #3"*, on-line, 30 Nov. 2023 (`https://plato-wp120.ias.u-psud.fr`)

10. *CARMENES in Madrid: Exoplanets*, **J. A. Caballero** *"ESA's Madrid-Area Exoplanet Science Meeting"*, Villanueva de la Cañada, 04 Oct 2022 (`www.cosmos.esa.int`)

11. *LIFE: Large Interferometer For Exoplanets*, **J. A. Caballero** *"Encuentro RIA-Tec2Space: Instrumentación astronómica en España"*, Madrid, 19–22 Apr 2022 (`tec2space.cab.inta-csic.es`)

12. *Stellar atmospheric parameters of FGKM-type stars from high-resolution optical and near-infrared CARMENES spectra*, E. Marfil, H. M. Tabernero, D. Montes, **J. A. Caballero** et al. *"Expanding the Gaia Legacy. The role of Spanish ground-based facilities"*, Barcelona, 17–19 Feb 2020 (`riastronomia.es`)

13. *(Gaia), WSO-UV, WFIRST, LUVOIR, HabEx, etc.*, **J. A. Caballero**, *"1st meeting of the Spanish exoplanet network (Exonet)"*, Granada, 21–22 Feb 2019 (`carmenes.caha.es`)

14. *How to observe with CARMENES?*, **J. A. Caballero**, *"Present and future science with CARMENES (RIA)"*, Granada, 20–21 Feb 2019 (`carmenes.caha.es`)

15. *CARMENES / σ Orionis /* Gaia *DR2*, **J. A. Caballero**, *"V Reunión Científica de la Red de Explotación de* Gaia*. Encuentros en la segunda fase:* Gaia *DR2"*, Barcelona, 28–30 May 2018 (`gaia.am.ub.es`)

16. *Theory and observations of substellar objects in σ Orionis in 2018*, **J. A. Caballero**, *"Formation of substellar objects: Theory and observations"*, European Science Astronomy Centre, Villanueva de la Cañada, Madrid, 21–23 May 2018 (`www.laeff.cab.inta-csic.es`)

17. *Low-mass stars, brown dwarfs and exoplanets with* Gaia, **J. A. Caballero**, *"IV Reunión Científica de la Red de Explotación de* Gaia*"*, Barcelona, 23–25 May 2016 (`gaia.am.ub.es`)

18. *What can YOU do in σ Orionis?*, **J. A. Caballero**, *"Star and planet formation workshop"*, European Science Astronomy Centre, Villanueva de la Cañada, Madrid, 21 Jan 2013 (`www.sciops.esa.int`)

19. *Searching for common proper-motion companions in the Local Association and its young kinematic subgroups*, F. J. Alonso-Floriano, **J. A. Caballero** & D. Montes, *"Star and planet formation workshop"*, European Science Astronomy Centre, Villanueva de la Cañada, Madrid, 21 Jan 2013 (`www.sciops.esa.int`)

20. *σ Orionis: "Oh my God, it's full of brown dwarfs!"*, **J. A. Caballero**, *"50 years of brown dwarfs: from theoretical prediction to astrophysical studies"*, Schloss Ringberg, Bayern, Germany, 21–24 Oct. 2012 (`www.mpia.de`)

21. *Estrellas de baja masa, enanas marrones y exoplanetas*, **J. A. Caballero**, *"I Reunión Científica de la Red de Explotación de* Gaia*"*, San Fernando, Cádiz, 17–18 Jun. 2010 (`gaia.am.ub.es`)

Unpublished

22. *HARMONI science WG5: Exoplanets and discs*, **J. A. Caballero**, *"1st HARMONI Day at CAB"*, Torrejón de Ardoz, 06 Mar 2024

23. *Are planets with large Earth-Similarity Index really habitable?*, G. Murante, E. Bisesi, J. von Hardenberg, **J. A. Caballero**, P. Simonetti, "XIX Congresso Nazionale di Scienze Planetarie", Bormio, Italy, 05–09 Feb. 2024

24. *"Terra Nova": CARMENES and prospects for discovering Earth analogues*, **J. A. Caballero**, *"VI Reunión de Ciencias Planetarias y Exploración de Sistema Solar"*, Torrejón de Ardoz, 27–29 May 2019

25. *Young low-mass stars (and brown dwarfs) in open clusters*, **J. A. Caballero**, *"Meeting of the Spanish WEAVE Science Team", XI SEA*, Teruel, 08 Sep. 2014

26. *Red and brown dwarfs in the ultraviolet*, **J. A. Caballero**, *"Workshop for the WSO Working Group and Spanish UV Astronomy"*, Granada, 30 Jun.–01 Jul. 2014

27. *VSOP – Filler program for GTC: getting good data in bad weather conditions*, A. Cabrera-Lavers, D. García-álvarez, **J. A. Caballero** et al. *"Quinto Encuentro Consolider-Ingenio GTC"*, La Laguna, 08-10 Oct. 2012

28. *σ Orionis in the ultraviolet*, **J. A. Caballero**, *"Reunión del* WSO-UV *Science Working Group"*, Madrid, 24 Nov. 2010

29. *Peculiar high proper motion objects in Tycho-2 and 2MASS catalogues*, F. Jiménez-Esteban, **J. A. Caballero**, E. Solano, *"Cuarto Encuentro Consolider-Ingenio GTC"*, Sos del Rey Católico, Zaragoza, 10–12 Nov. 2010

30. *Science with GO-IRS: an optical multi-object spectrograph proposed for the 10.4 m Gran Telescopio Canarias*, D. Montes, **J. A. Caballero**, J. Ge and the GO-IRS Team, *"Gaia Chemo-Dynamical Survey – Survey Science"*, Nice, France, 2–4 Nov. 2010

31. *Blue high proper motion objects in Tycho-2 and 2MASS catalogues*, F. Jiménez-Esteban, **J. A. Caballero**, E. Solano, *"Tercer Encuentro Consolider-Ingenio GTC"*, Cádiz, 21–23 Oct. 2009

32. *Earth-like planets in habitable zones around L- (and T-)type dwarfs*, D. Montes & **J. A. Caballero**, I GTC/Exoplanet and V NAHUAL workshop, Fuerteventura, 2–6 Sep. 2008

33. *Observatorio Virtual Orión. II*, **J. A. Caballero**, *"Primera Escuela de la Red Temática Spanish Virtual Observatory"*, Madrid, 27–28 Nov. 2006

34. *Observatorio Virtual Orión. I*, **J. A. Caballero**, *"Primera Reunión de la Red Temática Spanish Virtual Observatory"*, Madrid, 6–7 Apr. 2006

35. *Planetas en visión directa*, **J. A. Caballero**, *"Cuarta Reunión de la Red Española de Planetas"*, Madrid, 30–31 Jan. 2006

36. *Planetary-mass objects in Orion*, **J. A. Caballero** on behalf of the JOVIAN Collaboration, *"Calar Alto Colloquium 2005"*, Heidelberg, 27–28 Apr. 2005

37. *Near infrared spectroscopy of isolated planetary-mass objects and low-mass brown dwarfs in σ Orionis*, **J. A. Caballero**, *"Second EMIR Associated Scientific Team Meeting"*, Tenerife, Nov. 2004

38. *Búsqueda y caracterización de planetas jovianos aislados*, **J. A. Caballero**, *"First EMIR Associated Scientific Team Meeting"*, Tenerife, 2 Jul. 2004

39. *Habitable zones around L (and T?) dwarfs: detecting Earth-like planets with Nahual?*, **J. A. Caballero**, *First NAHUAL meeting: A high-resolution near-infrared spectrograph for the GTC*, La Gomera, 10–12 Jun. 2004

40. *Imagen de objetos de masa planetaria*, **J. A. Caballero** et al., *"Primer Encuentro de la Red Española de planetas"*, Madrid, 2 Mar. 2004

A.7.3 Oral contributions to splinter sessions

In Astrophysics Data System

1. *Here comes the GJ 486*, **J. A. Caballero** et al. 2023, `sea.conf`, 422

2. *Accurate $T_{\rm eff}$ and [M/H] determinations for the CARMENES M dwarfs from deep transfer learning*, A. Bello-García, J. Ordieres-Meré, V. M. Passegger, **J. A. Caballero**, A. Schweitzer, A. González-Marcos 2022, `csss.conf`, E15

3. *Climate analysis on a newly discovered non-transiting nearby terrestrial exoplanet*, T. Fauchez, J. Crouse, E. Wolf, S. Bastelberger, A. Shields, D. Kossakowski, R. Kopparapu, S. Domagal-Goldman, **J. A. Caballero**, SEEC Team 2023, `AAS`, 241, 204.10

4. *ExoPhot: photosynthetic activity fitness in exoplanetary systems*, F. Gómez, P. Marcos-Arenal, L. Cerdán, M. Burillo-Villalobos, N. Fonseca-Bonilla, J. García de la Concepción, **J. A. Caballero** 2022, `absc.conf`, 20506

5. *Culture with C for Cosmos / Cultura con C de Cosmos*, M. Villar-Martín, C. Briones, D. Barrado, **J. A. Caballero**, S. Cabañero, E. Lázaro, E. Villaver 2022, CAP2021, 96

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A.7.4 Posters

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1. *Broadcasting radio waves on astronomy and art from the north and south of Europe*, M. Sundin & **J. A. Caballero** 2023, CAP2022, forthcoming

2. *Detailed chemical composition of wide FGK+M binary systems*, C. Duque-Arribas, H. M. Tabernero, D. Montes, **J. A. Caballero** 2023, SEA meeting (zenodo)

3. *Photometric calibration of M-dwarf metallicity using Bayesian inference*, C. Duque-Arribas, D. Montes, H. M. Tabernero, **J. A. Caballero**, J. Gorgas, E. Marfil 2023, SEA meeting (zenodo)

4. *Written in the stars: spectral synthesis on CARMENES GTO M-dwarf spectra*, E. Marfil, H. M. Tabernero, D. Montes, **J. A. Caballero**, and the CARMENES consortium 2023, SEA meeting (zenodo)

5. *Music and astronomy. V. Radio Clásica's Longitud de Onda Club Band*, **J. A. Caballero**, F. Blázquez, Y. Criado 2023, `sea.conf`, 512

6. *Music and astronomy. IV. The Astrophysical Brothers*, C. Cifuentes, **J. A. Caballero** 2023, `sea.conf`, 511

7. *A Day in the LIFE*, **J. A. Caballero**, D. Angerhausen, S. P. Quanz, A. García-Muñoz and the LIFE consortium 2023, `sea.conf`, 391

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15. *The 10 parsec sample in the Gaia era: first update*, C. Reylé, K. Jardine, P. Fouqué, **J. A. Caballero**, R. Smart, A. Sozzetti 2022, `csss.conf`, E149 & E218

16. *Rock and astronomy under one sky*, **J. A. Caballero** et al. 2022, CAP2021, page 267 (plus YouTube video)

17. *Understanding the evolution of theoretically-based pigments based on their UV-Vis absorption spectra and its ability of being functional in different stellar systems*, J. García de la Concepción, P. Marcos-Arenal, N. Fonseca-Bonilla, M. Burillo-Villalobos, L. Cerdán, M. á. López-Cayuela, **J. A. Caballero**, F. Gómez 2021, `EPSC`, 15, 787

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2. *"Life Beyond Us: An Original Anthology of SF Stories and Science Essays"*, several authors, 2023. European Astrobiology Institute
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A.15 Contributing edition

AstronomíA, section *Ars universalis*

- *"Intergalactic"* (Mar 2024)
- *"Del caos al Cosmos: Paisajes del Universo"* (Feb 2024)
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- *"Battiato"* (Feb. 2014)
- *"El Bolet Còsmic"* (Jan. 2014)
- *"Orión"* (Dec. 2013)
- *"3"* (Nov. 2013)
- *"Multiverso II"* (Oct. 2013)
- *"X-102"* (Sep. 2013)
- *"Cabesacianos"* (Jul.-Aug. 2013)
- *"Urmas Sisask"* (Jun. 2013)
- *"Jamiroquai"* (May. 2013)
- *"Euromir 95"* (Apr. 2013)
- *"Musas"* (Mar. 2013)
- *"Viajeras"* (Feb. 2013)
- *"Púlsares"* (Jan. 2013)