



**Eulalia Gallego Cano**

Generated from: Editor CVN de FECYT

Date of document: 30/08/2021

**v 1.4.3**

ef64ce7713b3c23a8378962d76b92aec

This electronic file (PDF) has embedded CVN technology (CVN-XML). The CVN technology of this file allows you to export and import curricular data from and to any compatible data base. List of adapted databases available at: <http://cvn.fecyt.es/>



## Summary of CV

This section describes briefly a summary of your career in science, academic and research; the main scientific and technological achievements and goals in your line of research in the medium -and long- term. It also includes other important aspects or peculiarities.

My main research interest is studying the Galactic Centre. Currently, I am investigating the structure and star formation history of the nuclear stellar cluster (NSC) of the Milky Way and its relation to the surrounding nuclear disk. The Galactic Centre is a unique high-resolution template for galactic nuclei in similar galaxies and I am keen on expanding my work to include the NSCs in nearby galaxies. I would like to apply dynamical modelling and spectroscopy for an in-depth study of the stellar population and the mass distribution in the MWNSC. I actively collaborate with the UCLA Galactic Center group, led by Prof. A. Ghez, since 2016 on the reduction and analysis of NIRC/Keck speckle data for measuring stellar orbits around Sagittarius A\* and related science cases. I am co-author of several papers from this collaboration (e.g. a paper on the detection of GR effects in the orbit of the star S2/S0-2 around Sgr A\*).

The most important scientific result of my work is, so far, the study of the density of the faintest stars detectable with reasonable completeness at the Galactic centre, that is consistent with the existence of a stellar cusp around the Milky Way's central black hole, Sagittarius A\*, a long-standing prediction of stellar dynamics in dynamically relaxed dense clusters around massive black holes (Gallego-Cano et al. 2018; Schödel et al. 2018). My last work was the study of the overall size and structure of the NSC by using deep star counts from our GALACTICNUCLEUS survey and with the aim to re-derive the 3D structure of the cusp, by using improved constraints on the large-scale structure of the nuclear cluster (Gallego-Cano et al. 2020). Currently, I am developing a new method of stellar classification based on the intermediate-band photometry and H-band, to be able to identify faint early-type and late-type candidate stars in the extended vicinity of the central massive black hole in order to study the structure and formation history of the MWNSC.

In addition to this work, since 2019 I collaborate with researchers at the Dark Center in the University of Copenhagen, Denmark, in an observational project based on the collection and analysis of integral-field spectra of galaxies hosting type-Ic broad-lined supernovae, obtained by IFU (integral field unit) detectors in Calar Alto observatory (PMAS) and other telescopes (MaNGA y MUSE a ESO/VLT). I am the principal investigator of different observational proposals associated to this project that have been accepted and observed with PMAS.

From the attached CV and list of publications, it can be seen that I possess ample expertise in observations, data reduction and data analysis. I am first author of 2 refereed publications with a total of 20 refereed publications (Q1 JCR category). My h-index is 12 and the total number of citations is 505 (NASA/ADS). In my work I use, on the one hand, high angular resolution imaging data from WFC3/HST, NACO/VLT and HAWK-I/VLT. I have great experience in speckle holography for high-quality post processing of speckle and AO imaging data and



have developed and tested optimal methods for high-precision PSF fitting photometry and for accurate uncertainty estimation via bootstrapping. On the other hand, I have extensive experience for the night-time operation of the telescopes and instruments, and the collection and processing of data for scientific purposes, with more than 150 nights of experience.

## Eulalia Gallego Cano

Surname(s): **Gallego Cano**  
Name: **Eulalia**  
ORCID: **0000-0002-7452-1496**  
Contact aut. region/reg.: **Andalusia**  
Email: **lalygallego@gmail.com**  
Personal web page: **<https://ssg.iaa.csic.es/eulalia-gallego>**

### Previous positions and activities

	Employing entity	Professional category	Start date
1	Instituto de Astrofísica de Andalucía	1	16/01/2021
2	Observatorio Astronómico Hispano-Alemán de Calar Alto	2	01/04/2019
3	Instituto de Astrofísica de Andalucía	1	16/07/2014
4	Manpower Team E.T.T.	7	17/02/2014
5	Asociación cívica ambientalista SUSTENTA	1	01/02/2013
6	ASSYCE FOTOVOLTAICA, S.L.	2	14/09/2007
7	Andaluza de sistemas y control energético S.L.	2	08/02/2007
8	Academia Universitaria Platón	1	01/10/2004
9	ONG AMUS	1	01/06/2000

**1** **Employing entity:** Instituto de Astrofísica de Andalucía **Type of entity:** State agency

**City employing entity:** Granada, Andalusia, Spain

**Professional category:** 1

**Start-End date:** 16/01/2021 - 15/07/2021

**Duration:** 6 months

**Type of contract:** Temporary employment contract

**Dedication regime:** Full time

**Performed tasks:** 1) Organization of the GALACTICNUCLEUS catalog data for easy and efficient access and to be able to include new similar data or other observations of the region (radio, X-rays, NICMOS Paschen-alpha survey). 2) Developing a new method of stellar classification based on the intermediate-band (IB) photometry and H-band, to be able to identify faint early-type and late-type candidate stars in the extended vicinity of the central massive black hole. Then I will use the new information of the stellar population to study the structure and formation history of the MWNSC. 3) Creation of a new website for the group with the aim of a homogeneous representation of the Stellar Systems group and the project PGC2018-095049-B-C21 that facilitates the scientific and public dissemination of our work. 4) Outreach activities.

**2** **Employing entity:** Observatorio Astronómico Hispano-Alemán de Calar Alto **Type of entity:** publica

**Professional category:** 2

**Start-End date:** 01/04/2019 - 15/01/2021

**Duration:** 1 year - 9 months - 15 days



**Type of contract:** Temporary employment contract

**Dedication regime:** Full time

**Performed tasks:** Technical astronomer responsible for telescope night operations, data collection and processing for scientific purposes: Telescope operation and management. This also includes solving common issues as well as calibrating the instruments, fine-tuning the data acquisition and managing the acquired data. Interaction with astrophysical SQL databases for data validation, cross-correlation and general analysis. Extensive use of different Unix environments, including developing shell scripts for general purpose data management and organisation.

**3** **Employing entity:** Instituto de Astrofísica de Andalucía **Type of entity:** State agency

**Department:** Radioastronomy and galactic structure department

**Professional category:** 1

**Educational Management (Yes/No):** No

**Start-End date:** 16/07/2014 - 31/01/2019

**Type of contract:** Temporary employment contract

**Performed tasks:** Completion of the doctoral thesis in the Galactic Center Group of Dr. Rainer Schödel at the IAA-CSIC in Granada (Spain). Experience in observations, data reduction and data analysis. In my work I use high angular resolution imaging data from WFC3/HST, NACO/VLT and HAWK-I/VLT. I have great experience in speckle holography for high-quality post processing of speckle and AO imaging data and have developed and tested optimal methods for high-precision PSF fitting photometry and for accurate uncertainty estimation via bootstrapping.

**4** **Employing entity:** Manpower Team E.T.T.

**Department:** CONSORCIO PARQUE DE LAS CIENCIAS

**Professional category:** 7

**Start-End date:** 17/02/2014 - 12/06/2014

**Performed tasks:** Monitor of astronomy. Duties: Monitor of Planetarium, workshops teach physics and astronomy in Parque de las Ciencias (Granada).

**5** **Employing entity:** Asociación cívica ambientalista SUSTENTA **Type of entity:** Associations and Groups

**Professional category:** 1

**Start-End date:** 01/02/2013 - 01/09/2013

**Type of contract:** Collaboration

**Performed tasks:** Project Manager. Duties: Manager of "Renewable by the Sahara" Project: design and installation of wind turbines for irrigation of gardens adapted to the conditions of the refugee camps in the Sahara.

**6** **Employing entity:** ASSYCE FOTOVOLTAICA, S.L. **Type of entity:** Business

**Professional category:** 2

**Educational Management (Yes/No):** Yes

**Start-End date:** 14/09/2007 - 12/06/2012

**Type of contract:** Permanent employment contract

**Performed tasks:** Researcher / Department of research, development and innovation. Duties: PV systems modelling: management and development of modelling PV arrays project. Field assembly test. Collaboration with the University of Jaen. Analysis of photovoltaic projects to study their viability: 3D simulations trackers and fixed installations. Control of PV systems: production analysis. Analysis of large amount of data. Audit installations. Integration and analysis of data from different sources. Search defects. Reduce costs, optimise resources. Maintenance department: field measurements with PVPM, pyrometers, temperature sensors. Reports PV plant performance, programme design for engineers using department. Teaching courses for company formation: PVsyst course, "Estimation Energy" course, "Photovoltaic grid connection projects" course.



- 7** **Employing entity:** Andaluza de sistemas y control energético S.L.  
**Professional category:** 2  
**Start-End date:** 08/02/2007 - 13/09/2007  
**Type of contract:** Temporary employment contract  
**Performed tasks:** Project Engineer / Technical office. Duties: Processing of Photovoltaic Projects in roof and floor: REPE, Points of Connection, Building Permits. Offers of isolated Photovoltaic Plants and connected to grid nationally and internationally. Studies profitability. Design of Photovoltaic Projects in roof and floor: design, wiring, production, shadow studies. Visitor guide to photovoltaic installations of the company.
- 8** **Employing entity:** Academia Universitaria Platón **Type of entity:** Business  
**Professional category:** 1 **Educational Management (Yes/No):** Yes  
**Start-End date:** 01/10/2004 - 01/02/2005  
**Type of contract:** Collaboration  
**Performed tasks:** Teacher. Duties: Teaching University courses: Electromagnetic Fields, Fundamentals of Physics for Engineering, Physical Foundations of Computing.
- 9** **Employing entity:** ONG AMUS **Type of entity:** Associations and Groups  
**Professional category:** 1 **Educational Management (Yes/No):** Yes  
**Start-End date:** 01/06/2000 - 01/09/2004  
**Type of contract:** Collaboration  
**Performed tasks:** Monitor of astronomy. Duties: Management and development of the course "Night Out": contemplation and interpretation of the sky, watching the moon and planets, mythological history, origin of names of stars and constellations.



## Education

### University education

#### 1st and 2nd cycle studies and pre-Bologna degrees

**University degree:** Higher degree

**Name of qualification:** Degree in Physics

**Degree awarding entity:** Universidad de Granada **Type of entity:** University

**Date of qualification:** 05/09/2005

#### Doctorates

**Doctorate programme:** Doctor in Physics and Space Science

**Degree awarding entity:** Universidad de Granada **Type of entity:** University

**City degree awarding entity:** Granada, Andalusia, Spain

**Date of degree:** 10/05/2019

**European doctorate:** Yes

**Date of certificate:** 10/05/2019

**Thesis title:** The structure, stellar population, and formation history of the Milky Way's nuclear star cluster

**Thesis director:** Rainer Schoedel

**Obtained qualification:** Cum Laude

### Specialised, lifelong, technical, professional and refresher training (other than formal academic and healthcare studies)

- 1 Training title:** Scientific writing and presentation in astronomy  
**Awarding entity:** Instituto de Astrofísica de Andalucía **Type of entity:** State agency  
**End date:** 25/06/2021 **Duration in hours:** 12 hours
- 2 Training title:** An Introduction to IFU Spectroscopy  
**Awarding entity:** Instituto de Astrofísica de Andalucía **Type of entity:** State agency  
**End date:** 14/06/2021 **Duration in hours:** 5 hours
- 3 Training title:** Scientific Writing and Presentation in Astronomy  
**Awarding entity:** Instituto de Astrofísica de Andalucía **Type of entity:** State agency  
**End date:** 10/06/2021 **Duration in hours:** 6 hours
- 4 Training title:** Linux Administration Bootcamp: Go from Beginner to Advanced  
**Awarding entity:** Udemy & Jason Cannon, Instructor  
**End date:** 06/05/2021 **Duration in hours:** 9 hours
- 5 Training title:** IAA-CSIC Severo Ochoa School on Machine Learning, Big Data, and Deep Learning in Astronomy (SOMACHINE 2021)  
**Awarding entity:** Instituto de Astrofísica de Andalucía **Type of entity:** State agency  
**End date:** 23/04/2021 **Duration in hours:** 24 hours



- 6 Training title:** Matplotlib for beginners: a brief Severo Ochoa workshop  
**Awarding entity:** Instituto de Astrofísica de Andalucía **Type of entity:** State agency  
**End date:** 07/04/2021 **Duration in hours:** 5 hours
- 7 Training title:** English presentations (intermediate and advanced)  
**Awarding entity:** Consejo Superior de Investigaciones Científicas **Type of entity:** State agency  
**End date:** 02/11/2018 **Duration in hours:** 30 hours
- 8 Training title:** Introduction to the statistics applied with R software on line  
**Awarding entity:** Consejo Superior de Investigaciones Científicas **Type of entity:** State agency  
**End date:** 25/05/2018 **Duration in hours:** 20 hours
- 9 Training title:** Initiation to PYTHON 3  
**Awarding entity:** Consejo Superior de Investigaciones Científicas **Type of entity:** State agency  
**End date:** 16/03/2018 **Duration in hours:** 25 hours
- 10 Training title:** English for Meetings (intermediate and advanced)  
**Awarding entity:** Consejo Superior de Investigaciones Científicas **Type of entity:** State agency  
**End date:** 03/11/2017 **Duration in hours:** 30 hours
- 11 Training title:** Python applied to engineering and scientific research on line  
**Awarding entity:** Asociación Darwin Eventur **Type of entity:** Asociación  
**End date:** 11/09/2017 **Duration in hours:** 100 hours
- 12 Training title:** Specific English: Attention to the public in English on line (Level B1)  
**Awarding entity:** Consejo Superior de Investigaciones Científicas **Type of entity:** State agency  
**End date:** 26/05/2017 **Duration in hours:** 30 hours
- 13 Training title:** English for Presentations (advanced)  
**Awarding entity:** Consejo Superior de Investigaciones Científicas **Type of entity:** State agency  
**End date:** 04/11/2016 **Duration in hours:** 30 hours
- 14 Type of training:** Course  
**Training title:** Data Analysis and Statistics Workshop  
**Awarding entity:** AGENCE SPATIALE EUROPEENE ESA - ESAC  
**End date:** 28/10/2016 **Duration in hours:** 30 hours
- 15 Training title:** ICCUB School Machine Learning and Data Mining in Physics  
**Awarding entity:** Universitat de Barcelona **Type of entity:** University  
**End date:** 21/10/2016 **Duration in hours:** 40 hours
- 16 Training title:** Scientific writing (intermediate and advanced)  
**Awarding entity:** Consejo Superior de Investigaciones Científicas **Type of entity:** State agency



**End date:** 27/05/2016**Duration in hours:** 30 hours**17 Training title:** Creation of websites with Drupal 7. Initial level.**Awarding entity:** Consejo Superior de Investigaciones Científicas**Type of entity:** State agency**End date:** 15/04/2016**Duration in hours:** 27 hours**18 Training title:** Asterics VO School**Awarding entity:** Centro de Astrobiología**Type of entity:** State agency**End date:** 17/12/2015**Duration in hours:** 20 hours**19 Training title:** Scientific workshop competence in English-Advanced**Awarding entity:** Consejo Superior de Investigaciones Científicas**Type of entity:** State agency**End date:** 19/06/2015**Duration in hours:** 60 hours**20 Training title:** Associated Infrastructure Power Photovoltaic Installations**Awarding entity:** Technological Institute of Energy (ITE)**Type of entity:** Associations and Groups**End date:** 01/10/2010**Duration in hours:** 30 hours**21 Training title:** Lightning and excess voltage protection for photovoltaic systems**Awarding entity:** Dehn iberica**Type of entity:** Business**End date:** 04/05/2010**Duration in hours:** 8 hours**22 Type of training:** Residencies**Training title:** Central Inverters Photovoltaic Projects**City awarding entity:** Koltzheim, Germany**Awarding entity:** Belectric**Type of entity:** Business**End date:** 15/11/2009**23 Training title:** Overhead and underground lines for the transmission and distribution of electricity in high voltage**Awarding entity:** Foundation for the Promotion of Industrial Innovation**Type of entity:** Foundation**End date:** 14/05/2009**Duration in hours:** 15 hours**24 Training title:** Master in Renewable Energy**Awarding entity:** Institute for Ecological Research of Malaga**Type of entity:** Business**End date:** 26/07/2007**Duration in hours:** 600 hours**25 Training title:** Galactic Astrophysics**Awarding entity:** Universidad Internacional de Andalucía**Type of entity:** University**End date:** 20/09/2002**Duration in hours:** 30 hours**26 Training title:** English University**Awarding entity:** Universidad de Sevilla**Type of entity:** University**End date:** 30/06/2000



- 27** **Type of training:** Residencies  
**Training title:** Summer Educational Courses  
**City awarding entity:** Cork, Ireland  
**Awarding entity:** Summer educational courses in Ireland  
**End date:** 01/09/1996

## Language skills

Language	Listening skills	Reading skills	Spoken interaction	Speaking skills	Writing skills
English	C1	C1	C1	C1	C1

## Scientific and technological experience

### Scientific or technological activities

#### R&D projects funded through competitive calls of public or private entities

**Name of the project:** The Fingerprint of a Galactic Nucleus: A Multi-Wavelength, High- Angular Resolution, Near-Infrared Study of the Centre of the Milky Way

**Entity where project took place:** Instituto de Astrofísica de Andalucía **Type of entity:** State agency

**City of entity:** Granada, Granada

**Name principal investigator (PI, Co-PI....):** Rainer Schoedel

**Nº of researchers:** 7

**Funding entity or bodies:**

European Research Council under the European Union's Seventh Framework Programme (FP7/2007-2013)

#### R&D non-competitive contracts, agreements or projects with public or private entities

- 1** **Name of the project:** With or without jet - the environment of GRB-less Ic-BL SNe as revealed with IFU detectors

**Degree of contribution:** Researcher

**Name principal investigator (PI, Co-PI....):** Luca Izzo; Eulalia Gallego Cano

**Nº of researchers:** 6

**Participating entity/entities:** DARK Center; Instituto de Astrofísica de Andalucía ; Niels Bohr Institute; Observatorio Astronómico Hispano-Alemán de Calar Alto

**Funding entity or bodies:**

The Velux foundations- Villum Fonden

**Type of entity:** Foundation

**City funding entity:** Søborg, Denmark

**Start date:** 01/02/2019

- 2** **Name of the project:** Galactic Center Orbit Science  
**Degree of contribution:** Researcher  
**Name principal investigator (PI, Co-PI....):** Andrea Ghez  
**Nº of researchers:** 29

**Funding entity or bodies:**

Heising-Simons Foundation

**Type of entity:** Foundation**City funding entity:** Los Altos, California, United States of America

W. M. Keck Foundation

**Type of entity:** Foundation**City funding entity:** Los Angeles, California, United States of America

Gordon and Betty Moore Foundation

**Type of entity:** Foundation**City funding entity:** Palo Alto, California, United States of AmericaNational Science Foundation Astronomy and  
Astrophysics Research Grant**Type of entity:** State agency**City funding entity:** Virginia, United States of America**Start date:** 15/02/2017**3 Name of the project:** Modelling of photovoltaic arrays project based on neural networks**Degree of contribution:** Coordinator of total project, network or consortium**Name principal investigator (PI, Co-PI....):** Eulalia Gallego Cano**Nº of researchers:** 4**Participating entity/entities:** ASSYCE FOTOVOLTAICA, S.L.; Universidad de Jaén**Start date:** 01/01/2010**Duration:** 2 years**4 Name of the project:** Modelling PV arrays project for detection of defective modules by monitoring system**Name principal investigator (PI, Co-PI....):** Eulalia Gallego Cano**Nº of researchers:** 3

## Scientific and technological activities

### Scientific production

#### Publications, scientific and technical documents

**1** Gallego-Calvente, A. T.; Schoedel, R.; Alberdi, A.; Herrero-Illana, R.; Najarro, F.; Yusef-Zadeh, F.; Dong, H.; Sanchez-Bermudez, J.; Shahzamanian, B.; Nogueras-Lara, F.; Gallego-Cano, E.. Radio observations of massive stars in the Galactic centre: The Arches Cluster. *Astronomy & Astrophysics (A&A)*. 647 - A110, 17/03/2021.**Type of production:** Scientific paper**Format:** Journal**2** Nogueras-Lara, F.; Schoedel, R.; Neumayer, N.; Gallego-Cano, E.; Shahzamanian, B.; Gallego-Calvente, A.T.; Najarro, F.. GALACTICNUCLEUS: A high angular-resolution JHKs imaging survey of the Galactic centre III. Evidence for wavelength-dependence of the extinction curve in the near-infrared. *Astronomy & Astrophysics (A&A)*. 641 - A141, 24/09/2020.**Type of production:** Scientific paper**Format:** Journal**3** Schoedel, R.; Nogueras-Lara, F.; Gallego-Cano, E.; Shahzamanian, B.; Gallego-Calvente, A.T.; Gardini, A.. The Milky Way's nuclear star cluster: Old, metal-rich, and cuspy Structure and star formation history from deep imaging. *Astronomy & Astrophysics (A&A)*. 641 - A102, 15/09/2020.**Type of production:** Scientific paper**Format:** Journal



- 4** J.F. Agui Fernandez; M. Blazek; D.A. Kann; A. de Ugarte Postigo; C.C. Thoene; E. Gallego-Cano; A. Guijarro. GRB 200224A: Calar Alto 2.2m optical afterglow detection. GRB Coordinates Network. 27222, pp. 1 - 1. 02/2020.  
**Type of production:** Scientific paper **Format:** Journal
- 5** Gallego-Cano, E.; Schoedel, R.; Nogueras-Lara, F.; Dong, H.; Shahzamanian, B.; Fritz, T. K.; Gallego-Calvente, A. T.; Neumayer, N.. New constraints on the structure of the nuclear stellar cluster of the Milky Way from star counts and MIR imaging. *Astronomy & Astrophysics (A&A)*. 634, pp. A71 - A71. 02/2020.  
**Type of production:** Scientific paper **Format:** Journal
- 6** Nogueras-Lara, Francisco; Schoedel, Rainer; Gallego-Calvente, Aurelia Teresa; Gallego-Cano, Eulalia; Shahzamanian, Banafsheh; Dong, Hui; Neumayer, Nadine; Hilker, Michael; Najarro, Francisco; Nishiyama, Shogo; Feldmeier-Krause, Anja; Girard, Julien H. V.; Cassisi, Santi. Early formation and recent starburst activity in the nuclear disk of the Milky Way. *Nature Astronomy*. 12/2019.  
**Type of production:** Scientific paper **Format:** Journal
- 7** Shahzamanian, B.; Schoedel, R.; Nogueras-Lara, F.; Dong, H.; Gallego-Cano, E.; Gallego-Calvente, A. T.; Gardini, A.. First results from a large-scale proper motion study of the Galactic centre. *Astronomy & Astrophysics (A&A)*. 632, pp. A116 - A116. 12/2019.  
**Type of production:** Scientific paper **Format:** Journal
- 8** Nogueras-Lara, F.; Schoedel, R.; Gallego-Calvente, A. T.; Dong, H.; Gallego-Cano, E.; Shahzamanian, B.; Girard, J. H. V.; Nishiyama, S.; Najarro, F.; Neumayer, N.. GALACTICNUCLEUS: A high-angular-resolution JHKs imaging survey of the Galactic centre. II. First data release of the catalogue and the most detailed CMDs of the GC. *Astronomy & Astrophysics (A&A)*. 631, pp. A20 - A20. 11/2019.  
**Type of production:** Scientific paper **Format:** Journal
- 9** Nogueras-Lara, F.; Schoedel, R.; Najarro, F.; Gallego-Calvente, A. T.; Gallego-Cano, E.; Shahzamanian, B.; Neumayer, N.. Variability of the near-infrared extinction curve towards the Galactic centre. *Astronomy & Astrophysics (A&A)*. 630, pp. L3 - L3. 10/2019.  
**Type of production:** Scientific paper **Format:** Journal
- 10** Chen, Zhuo; Gallego-Cano, E.; Do, T.; Witzel, G.; Ghez, A. M.; Schoedel, R.; Sitarski, B. N.; Becklin, E. E.; Lu, J.; Morris, M. R.; Dehghanfar, A.; Gautam, A. K.; Hees, A.; Hosek, M. W., Jr.; Jia, S.; Mangian, A. C.; Matthews, K.. Consistency of the Infrared Variability of SGR A\* over 22 yr. *The Astrophysical Journal Letters*. 882 - 2, pp. L28 - L28. 09/2019.  
**Type of production:** Scientific paper **Format:** Journal
- 11** Do, Tuan; Hees, Aurelien; Ghez, Andrea; Martinez, Gregory D.; Chu, Devin S.; Jia, Siyao; Sakai, Shoko; Lu, Jessica R.; Gautam, Abhimat K.; O'Neil, Kelly Kosmo; Becklin, Eric E.; Morris, Mark R.; Matthews, Keith; Nishiyama, Shogo; Campbell, Randy; Chappell, Samantha; Chen, Zhuo; Ciurlo, Anna; Dehghanfar, Arezu; Gallego-Cano, Eulalia; Kerzendorf, Wolfgang E.; Lyke, James E.; Naoz, Smadar; Saida, Hiromi; Schoedel, Rainer; Takahashi, Masaaki; Takamori, Yohsuke; Witzel, Gunther; Wizinowich, Peter. Relativistic redshift of the star S0-2 orbiting the Galactic Center supermassive black hole. *Science*. 365 - 6454, pp. 664 - 668. 08/2019.  
**Type of production:** Scientific paper **Format:** Journal
- 12** Jia, Siyao; Lu, Jessica R.; Sakai, S.; Gautam, A. K.; Do, T.; Hosek, M. W., Jr.; Service, M.; Ghez, A. M.; Gallego-Cano, E.; Schoedel, R.; Hees, Aurelien; Morris, M. R.; Becklin, E.; Matthews, K.. The Galactic Center: Improved Relative Astrometry for Velocities, Accelerations, and Orbits near the Supermassive Black Hole. *The Astrophysical Journal*. 873 - 1, pp. 9 - 9. 03/2019.  
**Type of production:** Scientific paper **Format:** Journal



- 13** F. Nogueras-Lara; R. Schoedel; H. Dong; F. Najarro; A. T. Gallego-Calvente; M. Hilker; E. Gallego-Cano; S. Nishiyama; N. Neumayer; A. Feldmeier-Krause; J. H. V. Girard; S. Cassisi; A. Pietrinferni. Star formation history and metallicity in the Galactic inner bulge revealed by the red giant branch bump. *Astronomy & Astrophysics (A&A)*. 620, pp. A83 - A83. 12/2018.  
**Type of production:** Scientific paper **Format:** Journal
- 14** Nogueras-Lara, F.; Gallego-Calvente, A. T.; Dong, H.; Gallego-Cano, E.; Girard, J. H. V.; Hilker, M.; de Zeeuw, P. T.; Feldmeier-Krause, A.; Nishiyama, S.; Najarro, F.; Neumayer, N.; Schoedel, R.. GALACTICNUCLEUS: A high angular resolution JHKs imaging survey of the Galactic centre. I. Methodology, performance, and near-infrared extinction towards the Galactic centre. *Astronomy & Astrophysics (A&A)*. 610, pp. A83 - A83. 03/2018.  
**Type of production:** Scientific paper **Format:** Journal
- 15** Gallego-Cano, E.; Schoedel, R.; Dong, H.; Nogueras-Lara, F.; Gallego-Calvente, A. T.; Amaro-Seoane, P.; Baumgardt, H.. The distribution of stars around the Milky Way's central black hole. I. Deep star counts. *Astronomy & Astrophysics (A&A)*. 609, pp. A26 - A26. 01/2018.  
**Type of production:** Scientific paper **Format:** Journal
- 16** Schoedel, R.; Gallego-Cano, E.; Dong, H.; Nogueras-Lara, F.; Gallego-Calvente, A. T.; Amaro-Seoane, P.; Baumgardt, H.. The distribution of stars around the Milky Way's central black hole. II. Diffuse light from sub-giants and dwarfs. *Astronomy & Astrophysics (A&A)*. 609, pp. A27 - A27. 01/2018.  
**Type of production:** Scientific paper **Format:** Journal
- 17** Dong, Hui; Schoedel, Rainer; Williams, Benjamin F.; Nogueras-Lara, Francisco; Gallego-Cano, Eulalia; Gallego-Calvente, Teresa; Wang, Q. Daniel; Rich, R. Michael; Morris, Mark R.; Do, Tuan; Ghez, Andrea. Near-infrared variability study of the central 2.3 x 2.3 arcmin<sup>2</sup> of the Galactic Centre - II. Identification of RR Lyrae stars in the Milky Way nuclear star cluster. *Monthly Notices of the Royal Astronomical Society*. 471 - 3, pp. 3617 - 3631. 11/2017.  
**Type of production:** Scientific paper **Format:** Journal
- 18** Yusef-Zadeh, F.; Schoedel, R.; Wardle, M.; Bushouse, H.; Cotton, W.; Royster, M. J.; Kunneriath, D.; Roberts, D. A.; Gallego-Cano, E.. ALMA and VLA observations of emission from the environment of Sgr A\*. *Monthly Notices of the Royal Astronomical Society*. 470 - 4, pp. 4209 - 4221. 10/2017.  
**Type of production:** Scientific paper **Format:** Journal
- 19** Dong, Hui; Lacy, John H.; Schoedel, Rainer; Nogueras-Lara, Francisco; Gallego-Calvente, Teresa; Mauerhan, Jon; Wang, Q. Daniel; Cotera, Angela; Gallego-Cano, Eulalia. IRTF/TEXES observations of the H II regions H1 and H2 in the Galactic Centre. *Monthly Notices of the Royal Astronomical Society*. 470 - 1, pp. 561 - 575. 09/2017.  
**Type of production:** Scientific paper **Format:** Journal
- 20** Dong, Hui; Schoedel, Rainer; Williams, Benjamin F.; Nogueras-Lara, Francisco; Gallego-Cano, Eulalia; Gallego-Calvente, Teresa; Wang, Q. Daniel; Morris, Mark R.; Do, Tuan; Ghez, Andrea. Near-infrared variability study of the central 2.3 arcmin x 2.3 arcmin of the Galactic Centre - I. Catalogue of variable sources. *Monthly Notices of the Royal Astronomical Society*. 470 - 3, pp. 3427 - 3452. 09/2017.  
**Type of production:** Scientific paper **Format:** Journal
- 21** Hees, A.; Ghez, A. M.; Do, T.; Lu, J. R.; Morris, M. R.; Becklin, E. E.; Witzel, G.; Boehle, A.; Chappell, S.; Chen, Z.; Chu, D.; Ciurlo, A.; Dehghanfar, A.; Gallego-Cano, E.; Gautam, A.; Jia, S.; Kosmo, K.; Martinez, G. D.; Matthews, K.; Naoz, S.; Sakai, S.; Schoedel, R.. Testing the gravitational theory with short-period stars around our Galactic Center. *arXiv e-prints*. pp. arXiv:1705.10792 - arXiv:1705.10792. 05/2017.  
**Type of production:** Scientific paper **Format:** Journal
- 22** Yusef-Zadeh, F.; Bushouse, H.; Schoedel, R.; Wardle, M.; Cotton, W.; Roberts, D. A.; Nogueras-Lara, F.; Gallego-Cano, E.. Compact Radio Sources within 30' of Sgr A\*: Proper Motions, Stellar Winds, and the Accretion Rate onto Sgr A\*. *The Astrophysical Journal*. 809 - 1, pp. 10 - 10. 08/2015.



**Type of production:** Scientific paper

**Format:** Journal

## Works submitted to national or international conferences

- 1** **Title of the work:** The stellar cusp around the Milky Way's central black hole  
**Name of the conference:** Highlights on Spanish Astrophysics X, XIII Scientific Meeting of the Spanish Astronomical Society  
**Type of event:** Conference  
**Type of participation:** Participatory - oral communication  
**City of event:** Salamanca, Spain  
**Date of event:** 16/07/2018  
**End date:** 20/07/2018  
**Organising entity:** Spanish Astronomical Society  
Gallego-Cano, E.; Schoedel, R.; Shahzamanian, B.; Dong, H.; Nogueras-Lara, F.; Gallego-Calvente, A. T. "Highlights on Spanish Astrophysics X". En: Conference proceeding. pp. 314 - 321. 03/2019.
- 2** **Title of the work:** Identification of RR Lyrae Stars in the Milky Way Nuclear Star Cluster  
**Name of the conference:** The RR Lyrae 2017 Conference. Revival of the Classical Pulsators: from Galactic Structure to Stellar Interior Diagnostics  
**Type of event:** Conference  
**City of event:** Niepołomice, Poland  
**Date of event:** 17/09/2017  
**End date:** 21/09/2017  
**Organising entity:** Polish Astronomical Society  
Dong, Hui; Schoedel, Rainer; Williams, Benjamin; Do, Tuan; Ghez, Andrea; Morris, Mark; Rich, Michael; Nogueras-Lara, Francisco; Gallego-Cano, Eulalia; Gallego-Calvente, Teresa; Wang, Daniel; Li, Zhiyuan. "The RR Lyrae 2017 Conference. Revival of the Classical Pulsators: from Galactic Structure to Stellar Interior Diagnostics". En: Conference proceeding. 6, pp. 63 - 67. 06/2018.
- 3** **Title of the work:** The stellar cusp around the Milky Way's central black hole  
**Name of the conference:** 11th International LISA Symposium  
**Type of event:** Conference  
**City of event:** Zurich, Switzerland  
**Date of event:** 05/09/2016  
**End date:** 09/09/2016  
Schoedel, R.; Gallego-Cano, E.; Amaro-Seoane, P. "Journal of Physics Conference Series". En: Conference proceeding. 840, pp. 012020 - 012020. 05/2017.
- 4** **Title of the work:** The stellar cusp around the Milky Way's central black hole  
**Name of the conference:** Highlights on Spanish Astrophysics IX, XII Scientific Meeting of the Spanish Astronomical Society  
**Type of event:** Conference **Geographical area:** National  
**City of event:** Bilbao, Basque Country, Spain  
**Date of event:** 18/07/2016  
**End date:** 22/07/2016  
**Organising entity:** Spanish Astronomical Society  
Schoedel, R.; Gallego Cano, E.; Nogueras Lara, F.; Dong, H.; Gallego Calvente, T. "Highlights on Spanish Astrophysics IX". En: Proceedings of the XII Scientific Meeting of the Spanish Astronomical Society. pp. 308 - 315. (Spain): 03/2017.



- 5** **Title of the work:** Accurate uncertainty estimation in crowded fields: adaptive optics and speckle data  
**Name of the conference:** Fifth edition of the Adaptive Optics for Extremely Large Telescopes (AO4ELT5) meeting  
**Type of event:** Conference  
**Type of participation:** 'Participatory - poster  
**Corresponding author:** Yes  
**City of event:** Canaria Islands, Canary Islands, Spain  
**Organising entity:** Instituto de Astrofísica de Canarias (IAC).  
Gallego-Cano, E.; Schödel, R.; Gallego-Calvente, T.; Ghez, A. M.En: Conference proceeding.

### Works submitted to national or international seminars, workshops and/or courses

- 1** **Title of the work:** New constraints on the structure of the nuclear stellar cluster of the Milky Way from star counts  
**Name of the event:** Galactic Center Workshop  
**Type of event:** Workshop  
**Geographical area:** Non EU International  
**City of event:** Los Angeles, United States of America  
**Date of event:** 03/12/2018  
**End date:** 07/12/2018  
**Organising entity:** University California, Los Angeles **Type of entity:** University  
**City organizing entity:** Los Angeles, United States of America
- 2** **Title of the work:** The Stellar Cusp Around the Milky Way's Central Black Hole  
**Name of the event:** Workshop MODEST-18: Dense Stellar Systems in the Era of Gaia, LIGO & LISA  
**Type of event:** Workshop  
**Corresponding author:** Yes  
**City of event:** Santorini, Greece  
**Date of event:** 25/06/2018  
**End date:** 29/06/2018  
**Organising entity:** Northwestern University **Type of entity:** University  
**City organizing entity:** Evanston, Illinois, United States of America
- 3** **Title of the work:** The stellar cusp around the Milky Way's central black hole  
**Name of the event:** Galactic Center Workshop  
**Type of event:** Workshop  
**Corresponding author:** Yes  
**Geographical area:** Non EU International  
**City of event:** Los Angeles, United States of America  
**Date of event:** 09/12/2017  
**End date:** 18/12/2017  
**Organising entity:** University California, Los Angeles **Type of entity:** University  
**City organizing entity:** Los Angeles, United States of America
- 4** **Title of the work:** The stellar cusp around the Milky Way's central black hole  
**Name of the event:** Galactic Center Workshop  
**Type of event:** Workshop  
**Corresponding author:** Yes  
**Geographical area:** Non EU International  
**City of event:** Los Angeles, United States of America



**Date of event:** 28/11/2016

**End date:** 02/12/2016

**Organising entity:** University California, Los Angeles **Type of entity:** University

**City organizing entity:** Los Angeles, United States of America

**5 Title of the work:** The stellar cusp around the Milky Way's central black hole

**Name of the event:** 4rd IAA-PhD workshop

**Type of event:** Workshop

**Corresponding author:** Yes

**City of event:** Granada, Andalusia, Spain

**Date of event:** 29/01/2016

**Organising entity:** Instituto de Astrofísica de Andalucía

**Type of entity:** State agency

**City organizing entity:** Granada, Spain

### Other dissemination activities

**1 Title of the work:** Talk with an astrophysicist

**Name of the event:** International Day of Women and Girls in Science

**Type of event:** Conferences given

**City of event:** Elche, Valencian Community, Spain

**Date of event:** 28/04/2021

**Organising entity:** IES Pedro Ibarra

**City organizing entity:** Elche, Valencian Community, Spain

**2 Title of the work:** An astrophysicist in the heart of our galaxy

**Name of the event:** International Day of Women and Girls in Science

**Type of event:** Conferences given

**City of event:** Sevilla, Andalusia, Spain

**Date of event:** 22/03/2021

**Organising entity:** IES Murillo

**City organizing entity:** Sevilla, Andalusia, Spain

**3 Title of the work:** Virtual meeting with astrophysicist Eulalia Gallego Cano

**Name of the event:** International day of Women and Girls in Science

**Type of event:** Conferences given

**City of event:** Azuaga, Extremadura, Spain

**Date of event:** 19/02/2021

**Organising entity:** IES Bembézar

**4 Title of the work:** Revealing the secrets of the centre of our galaxy

**Name of the event:** Scenio TV

**Type of event:** Media interviews

**City of event:** Granada, Andalusia, Spain

**Date of event:** 29/10/2020

**Organising entity:** El Bosón de Twitch

**5 Title of the work:** Unraveling the mysteries of the heart of our galaxy

**Name of the event:** Conference

**Type of event:** Conferences given

**Geographical area:** National





**Reasons for participation:** Upon invitation

**City of event:** Sabadell, Catalonia, Spain

**Date of event:** 19/02/2020

**Organising entity:** Astronomical Group of Sabadell **Type of entity:** Associations and Groups

**City organizing entity:** Sabadell, Catalonia, Spain

**6 Title of the work:** The secrets hidden in the center of our galaxy

**Name of the event:** European Researchers' Night 2019

**Type of event:** Conferences given

**City of event:** Granada, Andalusia, Spain

**Date of event:** 27/09/2019

**Organising entity:** Instituto de Astrofísica de Andalucía

**Type of entity:** State agency

**7 Title of the work:** Unraveling the mysteries of the heart of our galaxy

**Name of the event:** European Researchers' Night 2018

**Type of event:** Conferences given

**City of event:** Granada, Andalusia, Spain

**Date of event:** 28/09/2018

**Organising entity:** Instituto de Astrofísica de Andalucía

**Type of entity:** State agency

Gallego-Cano, E..

**8 Title of the work:** Discovering the heart of our galaxy: Sagittarius A \*, the supermassive black hole, and other mysteries

**Name of the event:** International book week

**Type of event:** Conferences given

**City of event:** Granada, Andalusia, Spain

**Date of event:** 27/04/2018

**Organising entity:** Instituto de Astrofísica de Andalucía

**Type of entity:** State agency

**9 Title of the work:** Sagittarius A\*: The black hole at the heart of our galaxy

**Name of the event:** International Day of Women and Girls in Science

**Type of event:** Conferences given

**City of event:** Granada, Andalusia, Spain

**Date of event:** 08/02/2018

**Organising entity:** Instituto de Astrofísica de Andalucía

**Type of entity:** State agency

**10 Title of the work:** Galactic Trivial

**Name of the event:** European Researchers' Night 2017

**Type of event:** Conferences given

**City of event:** Granada, Andalusia, Spain

**Date of event:** 29/09/2017

**Organising entity:** Instituto de Astrofísica de Andalucía

**Type of entity:** State agency

**11 Title of the work:** Black Holes. Factory Space and Time

**Name of the event:** The Alájar Meeting 2015: Galactic nuclei at high resolution in many dimensions

**Type of event:** Conferences given



**City of event:** Alájar, Andalusia, Spain  
**Date of event:** 09/10/2015  
**Organising entity:** Astro-GR

- 12** **Title of the work:** Sagittarius A\*: the black hole at the heart of our galaxy  
**Name of the event:** European Researchers' Night 2015  
**Type of event:** Conferences given  
**City of event:** Granada, Andalusia, Spain  
**Date of event:** 25/09/2015  
**Organising entity:** Instituto de Astrofísica de Andalucía  
**Type of entity:** State agency

## R&D management and participation in scientific committees

### National and international forums and committees

**Name of the forum:** Public Surveys and new instrumentation for Calar Alto Observatory  
**City of entity:** Spain  
**Organising entity:** Observatorio Astronómico Hispano-Alemán de Calar Alto  
**Type of entity:** Observatorio  
**Represented entity:** Observatorio Astronómico Hispano-Alemán de Calar Alto  
**Type of entity:** Observatorio  
**Start-End date:** 12/03/2020 - 13/03/2020

## Other achievements

### Stays in public or private R&D centres

- 1** **Entity:** Max-Planck-Institut for Astronomie  
**City of entity:** Heidelberg, Germany  
**Start-End date:** 27/11/2017 - 30/11/2017  
**Goals of the stay:** Guest  
**Provable tasks:** Conference
- 2** **Entity:** W. M. Keck Observatory  
**City of entity:** Hawaii, United States of America  
**Start-End date:** 15/07/2017 - 30/07/2017  
**Goals of the stay:** Guest  
**Provable tasks:** Work with the Galactic Center Orbits Initiative (UCLA) at the W. M. Keck Telescopes, including observations
- 3** **Entity:** University California, Los Angeles  
**Type of entity:** University  
**City of entity:** Los Angeles, United States of America  
**Start-End date:** 16/02/2017 - 21/03/2017  
**Goals of the stay:** Guest



- 4** **Entity:** University California, Los Angeles  
**City of entity:** Los Angeles, United States of America  
**Start-End date:** 15/07/2016 - 21/09/2016  
**Goals of the stay:** Contracted
- 5** **Entity:** European Southern Observatory **Type of entity:** Public Research Body  
**Faculty, institute or centre:** Paranal Observatory  
**City of entity:** Paranal, Chile  
**Start-End date:** 23/06/2016 - 28/06/2016  
**Goals of the stay:** Visiting observer  
**Provable tasks:** Carried out the observing program ID 195.B-0283(C), using the instrument HAWKI which is located on Telescope Yepun UT4
- 6** **Entity:** European Southern Observatory **Type of entity:** Public Research Body  
**Faculty, institute or centre:** Paranal Observatory  
**City of entity:** Paranal, Chile  
**Start-End date:** 03/06/2015 - 10/06/2015  
**Goals of the stay:** Visiting observer  
**Provable tasks:** Carried out the observing program ID 195.B-0283(A), using the instrument HAWKI which is located on Telescope Yepun UT4.

### Scientific societies and professional associations

**Name of the society:** Spanish Society of Astronomy  
**City affiliation entity:** Spain  
**Start date:** 01/01/2019

### Summary of other achievements

- 1** **Description of the achievement:** Accepted and observed proposal F20-3.5-003 as PI at CAHA/PMAS  
**Accrediting entity:** Observatorio Astronómico **Type of entity:** Observatorio  
Hispano-Alemán de Calar Alto  
**City accrediting entity:** Almería, Andalusia, Spain  
**Conferral date:** 25/02/2020
- 2** **Description of the achievement:** Accepted proposals as Co-PI at ESO VLT (e.g., ESO program ID 195.B-0283(C))  
**Accrediting entity:** European Southern Observatory **Type of entity:** Associations and Groups  
**City accrediting entity:** Garching, Germany