

# Curriculum Vitae

## Personal Details

**Full name:** Carlos A. Álvarez Iglesias  
**Date of birth:** February 8, 1969  
**Place of birth:** Zamora, Spain  
**Nationality:** Spanish  
**Marital status:** Single

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## Academic Formation

**Licenciado (Undergraduate degree) – Solid State Physics.** Universidad del País Vasco (Bilbao), Spain (1988 – 1994).

**Licenciado (Undergraduate degree) – Astrophysics.** Universidad de La Laguna (Tenerife), Spain (1996 – 1998). Final year as ERASMUS student at Imperial College (London), United Kingdom (1997 – 1998).

**Doctor in Astrophysics.** University of Leeds (Leeds), United Kingdom (1998 – 2002). PhD thesis on Outflows from massive young stellar objects. Supervised by Dr. Melvin G. Hoare.

**Commercial Pilot Licence (Airplane), Multi-Engine and Instrument Rating (JAR).** Flight Training Organization AEROTEC (Tenerife), Spain (2004 – 2007).

**Flight Instructor (Airplane).** Flight Training Organization AEROTEC (Tenerife), Spain (2009 – 2010).

## Job Experience

**Post-doc,** Max-Planck-Institut für Astronomie (Heidelberg), Germany (2002 – 2004). High resolution observations of massive young stellar objects. Member of the Planet and Star Formation Group led by Prof. Thomas Henning.

**Support Astronomer,** Grantecan, S.A. (Breña Baja), Spain (2006 – Today). Staff astronomer at the optical and infrared 10.4-meter Gran Telescopio CANARIAS (GTC) located at the Roque de los Muchachos Observatory (La Palma).

**Ground Instructor,** AEROTEC (Tenerife), Spain (2011 – Today). Teaching the subject *Principles of Flight* to ATPL students.

**Ground Instructor,** Real Aeroclub de Tenerife (Tenerife), Spain (September 2013 – Today). Teaching the subject *Principles of Flight* to PPL students.

## **Astronomy Observing Experience**

Since 1997, I have participated in several observing runs at different observatories around the world, including El Teide Observatory, Roque de los Muchachos Observatory and Calar Alto Observatory in Spain, Paranal Observatory in Chile and Anglo-Australian Observatory in Australia. The observations involved the use of different optical and infrared instruments and observing techniques, such as Imaging, Spectroscopy, Adaptive Optics Imaging, Tunable Filter Imaging and Polarimetry.

Since the GTC started its science operations in 2009, I have been performing regular observations both in queue and visitor mode. My duties during the observations are to operate the scientific instruments, to ensure the quality of the data, to make real-time decisions regarding the schedule depending on atmospheric and other conditions and to coordinate the observations with the principal investigators of the proposals.

## **Instrumentation**

During my post-doc in Heidelberg, I was involved in a project to refurbish the near-IR camera Omega-Cass for the 3.5m telescope on Calar Alto Observatory (Spain). My tasks were to assemble and disassemble the instrument, perform flexure tests in the lab and analyse the data from these tests.

As part of my current duties as Support Astronomer at GTC, I have been involved in the factory acceptance testing and on-going commissioning of the thermal infrared camera CanariCam built at the University of Florida, which is one of the facility instruments offered to the GTC astronomical community. I have also been involved in the commissioning of several telescope sub-systems and functionalities, such as acquisition and guiding, chopping and nodding, active optics system and fast tip-tilt correction.

## **List of Publications**

### **1. Science Papers in Refereed Journals**

C. Álvarez, M. Hoare & P. Lucas, *Constraints in the circumstellar density distribution of massive young stellar objects*, A&A, 2004, 419, 203.

C. Álvarez, M. Hoare, A. Glindemann & A. Richichi, *Near-IR speckle imaging of massive young stellar objects*, A&A, 2004, 427, 505.

C. Álvarez & M. Hoare, *A search for shock-excited optical emission from the outflows of massive young stellar objects*, A&A, 2004, 440, 569.

C. Álvarez, M. Feldt, Th. Henning, E. Puga, W. Brandner & B. Stecklum, *Near-IR sub-arcsecond observations of ultra-compact HII regions*, ApJS, 2004, 155, 123.

E. Puga, C. Álvarez, M. Feldt, Th. Henning & S. Wolf, *AO-assisted observations of G61.48+0.09: Massive star formation at high resolution*, A&A, 2004, 425, 543.

E. Masciadri, R. Mundt, Th. Henning, C. Álvarez & D. Barrado y Navascúes, *A search for hot massive extrasolar planets around nearby young stars with adaptive optics system NACO*, A&A, 2005, 625, 1004.

O. Chesneau, T. Herbst, R. Waters, C. Leinert, I. Pascucci, J. Hillier, W. Jaffe, R. Köhler, C. Álvarez, W. Brandner, U. Graser, A.-M. Lagrange, R. Lenzen & M. Schöller, *The sub-arcsecond dusty environment of Eta Car*, A&A, 2005, 435, 1043.

E. Puga, M. Feldt, C. Álvarez, Th. Henning, D. Apai, E. Le Coarer, A. Chalabaev & B. Stecklum, *Outflows, Disks, and Stellar Content in a Region of High-Mass Star Formation: G5.89-0.39 with Adaptive Optics*, ApJ, 2006, 641, 373.

V. J. S. Béjar, M. R. Zapatero Osorio, A. Pérez-Garrido, **C. Álvarez**, E. L. Martín, R. Rebolo, I. Villó-Pérez, A. Díaz-Sánchez, *Discovery of a Wide Companion near the Deuterium-burning Mass Limit in the Upper Scorpius Association*, *ApJL*, 2008, 673, 185.

M. R. Zapatero Osorio, R. Rebolo, G. Bihain, V. J. S. Béjar, J. A. Caballero and **C. Álvarez**, *Infrared and Kinematic Properties of the Substellar Object G 196-3 B*, *ApJ*, 2010, 715, 1408-1418.

F. Rodler, C. Del Burgo, S. Witte, Ch. Helling, P. H. Hauschildt, E. L. Martín, **C. Álvarez**, R. Deshpande, *Detecting planets around very cool dwarfs at near infrared wavelengths with the radial velocity technique*, *A&A*, 2011, 532, 31.

A. Alonso-Herrero, P. F. Roche, P. Esquej, O. Gonzalez-Martín, M. Pereira-Santaella, C. Ramos Almeida, N. A. Levenson, C. Packham, A. Asensio Ramos, R. E. Mason, J. M. Rodríguez Espinosa, **C. Álvarez**, L. Colina, I. Aretxaga, T. Díaz-Santos, E. Perlman, C. M. Telesco, *Uncovering the deeply embedded AGN activity in the nuclear regions of the interacting galaxy Arp299*, *ApJ*, 2013, 779, 14.

## **2. GTC Technical Documents**

**C. Álvarez** & V. J. S. Béjar, *CanariCam Cool Down 6th Acceptance Testing (January 29th – February 9th, 2007)*, RPT/CCIA/0300-R, 2007.

**C. Álvarez**, *Cutting masks for multi-object spectroscopy at GTC*, NTE/CCIA/0462-R, 2007.

**C. Álvarez** & J. Molgó, *Report on chopping, nodding and guiding tests performed on May 1st and 2nd, 2010*, RPT/CCIA/0328-R, 2011.

**C. Álvarez** & J. Molgó, *Report on chopping, nodding and guiding tests performed on May 28th, 2010*, RPT/CCIA/0329-R, 2011.

**C. Álvarez** & J. Molgó, *Report on chopping, nodding and guiding tests performed from June 30th to July 2nd, 2010*, RPT/CCIA/0330-R, 2011.

**C. Álvarez** & J. M. González, *CanariCam Cookbook*, 2012. **(In Spanish)**

**C. Álvarez** & M. Huertas, *M1 Fine Alignment Procedure*, 2012. **(In Spanish)**

**C. Álvarez**, J. Molgó, *Stakeholder Needs for Fast Guiding*, 2012.

**C. Álvarez**, *CanariCam+GTC User Tests (2011/01/16 - 2011/01/21)*, 2012.

**C. Álvarez**, Author of the content published in the CanariCam page at the GTC web site, which can be found at: <http://www.gtc.iac.es/en/pages/instrumentation/canaricam.php>.

Víctor J. S. Béjar, J. M. Rodríguez, P. Hammersley, **C. Álvarez**, A. Cabrera, L. Corral, M. R. Villamariz, *On-sky tests with the refractor*, NTE/CCIA/0427-R, 2007.

A. Cabrera, **C. Álvarez**, G. Gómez; R. Scarpa, *AG Arms and Instruments. Informe de Pruebas en Suelo de AG-Nasmyth*, RPT/CCIA/0313-R, 2008.

**C. Álvarez**, G. Gómez, A. Cabrera, *Manual de Operación de A&G en el Commissioning del Telescopio*, RPT/CCIA/0314-R, 2008. **(In Spanish)**

A. Cabrera, **C. Álvarez**, D. García, G. Gómez, J. M. González, R. Scarpa, *Informe de resultados de las pruebas en cielo de la cámara de A&G-Nasmyth B. Fase I del Commissioning (Marzo-Julio 2008)*, RPT/CCIA/0317-R, 2008. **(In Spanish)**

A. García, D. García, C. Álvarez, *Operación en condiciones meteorológicas adversas*, PRO/OPER/0053-R, 2012. (In Spanish)

### **3. Conference Proceedings**

C. Álvarez & M. Hoare, *Near-IR speckle imaging of massive YSOs*. In P. A. Crowther (ed.). Hot Star Workshop III: The Earliest Phases of Massive Star Birth. 2002, ASP Conf. Ser., 267, 335.

E. Puga, M. Feldt, C. Álvarez, Th. Henning & B. Stecklum, *AO-assisted observations of ultra-compact HII regions*, Conf. Proc. Science with the AO, Garching, September 2003.

E. Puga, M. Feldt, C. Álvarez, W. Brandner & Th. Henning, *High-Res polarization maps and NIR counterparts of UCHIIs*, IAU Symposium, Sydney, July 2003.

E. Masciadri, R. Mundt, C. Álvarez, Th. Henning, W. Brandner, D. Barrado y Navascués & R. Neuhäuser, *Hot massive planets around nearby young stars – a search with NACO at the VLT*, Conf. Proc. Science with the AO, Garching, September 2003.

E. Masciadri, R. Mundt, C. Álvarez, Th. Henning, C. Bailer-Jones, M. Lamm, D. Barrado-Navascués & Y. Harayama, *A search for hot massive planets around nearby young stars with NACO*, IAP Congress, Exoplanets: today and tomorrow, Paris. 2004, ASP Conf. Ser., 321, 123.

E. Puga, M. Feldt, C. Álvarez, Th. Henning, T. & B. Stecklum, *AO-Assisted Observations of Ultra-Compact H II Regions*. In W. Brandner, & M. E. Kasper (ed.). Science with Adaptive Optics. 2005, 236.

E. Masciadri, R. Mundt, C. Álvarez, Th. Henning, W. Brandner, D. Barrado y Navascués & R. Neuhäuser, *Hot Massive Planets Around Nearby Young Stars – A Search with NACO at the VLT*, In W. Brandner & M. E. Kasper, Science with Adaptive Optics. 2005, 146.

S. Wolf, E. Puga, R. Launhardt, C. Álvarez, M. Feldt, Th. Henning, T. & B. Stecklum, *Polarization Studies of Star-Forming Regions*. In A. Adamson, C. Aspin, & C. Davis (ed.). Astronomical Polarimetry: Current Status and Future Directions. 2005, ASP Conf. Ser., 343, 116.

V. Béjar, M. R. Z. Osorio, A Pérez-Garrido, C. Álvarez, E. L. Martín, R Rebolo, I. Villó-Pérez and A. Díaz-Sánchez, *Discovery of a wide planetary-mass companion of a brown dwarf in the Upper Scorpius association*, In E. Stempels (ed.) 2009, American Institute of Physics Conference Series, 1094, 462.

P. Álvarez, J. Castro, R. Rutten, M. van der Hoeven and C. Álvarez and A. M. Perez-García, *The GTC project: from commissioning to regular science operation. Current performance and first science results*, In L. M. Stepp, R. Gilmozzi and H. J. Hall (ed) 2010, SPIE, 7733, 773305.

E. L. Martín, E. Guenther, C. Del Burgo, F. Rodler, C. Álvarez, C. Baffa, V. J. S. Béjar, J. A. Caballero, R. Deshpande, P. Esparza, M. López Morales, A Moitinho, D. Montes, M. M. Montgomery, E. Pallé, R. Tata, L. Valdivielso and M. R. Zapatero Osorio, *NAHUAL: A Next-Generation Near Infrared Spectrograph for the GTC*, In V. Coudé Du Foresto, D. M. Gelino and I. Ribas (ed.) 2010, Astronomical Society of the Pacific Conference Series, 430, 181.

F. Rodler, C. Del Burgo, E. L. Martín and C. Álvarez, *Detecting Planets around Very Cool Stars at Near Infrared Wavelengths with the Radial Velocity Technique*, In V. Coudé Du Foresto, D. M. Gelino, and I. Ribas (ed.) 2010, Astronomical Society of the Pacific Conference Series, 430, 526.

M. R. Zapatero Osorio, R. Rebolo, G. Bihain, V. J. S. Bejar, J. A. Caballero, C. Álvarez, *The infrared overluminosity of young, ultracool substellar objects*, Highlights of Spanish Astrophysics VI, Proceedings of the IX Scientific Meeting of the Spanish Astronomical Society (SEA), held in Madrid, September 13 - 17,

2010, M. R. Zapatero Osorio, J. Gorgas, J. Maíz Apellániz, J. R. Pardo, and A. Gil de Paz. (ed.) 2011, 865-870.

C. Telesco, C. Packham, F. Varosi, D. Li, J. G. Bennett, E. Pantin, C. Álvarez and S. Fernández Acosta, *The promise of CanariCam*, In C. Muñoz-Tuñón & J. M. Rodríguez-Espinosa (ed.) 2013, Revista Mexicana de Astronomía y Astrofísica (Serie de Conferencias), 42, 81.

C. Álvarez, *The Preparation of the GTC for the Scientific Operation of CanariCam*, In C. Muñoz-Tuñón & J. M. Rodríguez-Espinosa (ed.) 2013, Revista Mexicana de Astronomía y Astrofísica (Serie de Conferencias), 42, 84.

B. Gauza, V. J. S. Béjar, R. Rebolo. A. P. Pérez-Garrido, N. Lodieu and C. Álvarez, A search for faint companions of the nearest stars with CanariCam and VHS, *Memorie della Societa Astronomica Italiana*, 84, 4, 942.

#### **4. Popular Science Publications**

Paper in the Spanish popular science magazine GEO (n.º 282, 2010): *Ojos Gigantes: Espejos gigantes para acercarnos un poco más al origen del Universo*.

Paper in the Spanish popular science magazine Astronomía (n.º 176, 2014): *SELENE: Un videojuego educativo*.

#### **Computing Experience**

I have a good knowledge of the operative systems Unix, Linux and Windows. I can program in IDL and Python. I possess a very good knowledge of a variety of astronomical software tools, including IRAF and several Starlink packages.

#### **Additional Information**

**Outreach:** I am participating in an initiative from the Roque de Los Muchachos Observatory which is called "Nuestros Alumnos y el Roque de los Muchachos" (*Our Students and the Roque de los Muchachos*). This is an outreach activity aimed at disseminating Astrophysics to high school students in La Palma island, which consists of giving talks to the kids at the schools and involving them in practical experiments at the observatory. I am also deeply involved in introducing the videogame *Selene – A Lunar construction game*, developed at the Center for Educational Technologies at the Jesuit University of Wheeling, to primary education students in La Palma.

**Flying:** I have over 500 hours of flying experience in single and multi-engine aircraft, out of which 260 have been flown in California and Florida (USA).

**Languages:** Spanish (native language). Fluent in English, read, written and spoken (Cambridge Certificate of Advanced English). Basic knowledge of German.

**Hobbies:** Mountain ultra-marathons, cycling, hiking and flying.