Annual Report 2012

Departamento de Astronomía y Astrofísica
Facultad de Física
Pontificia Universidad Católica de Chile

Av. Vicuña Mackenna 4860, 782-0436 Macul, Santiago, Chile
www.astro.puc.cl

Abstract

The Department of Astronomy and Astrophysics (DAA) at PUC currently has 16 faculty members. Through 2012, the DAA hosted 27 postdoctoral researchers and 37 graduate students. The DAA members published 100 refereed articles during 2012, and benefited from around 50 grants. In the academic year 2012, 11 students received their *Licenciatura* degree, 3 an M.Sc., and 4 a Ph.D.

1 Introduction

The *Departamento de Astronomía y Astrofísica* (Department of Astronomy and Astrophysics, DAA) is one of the two academic divisions of the Faculty of Physics of *Pontificia Universidad Católica de Chile* (PUC). This faculty offers undergraduate (*Licenciatura*) degrees in Astronomy and in Physics, and Ph.D. and Master's programs in Astrophysics and in Physics. The mission of the DAA is to be an international centre of excellence for studies in Astronomy and Astrophysics, covering a broad range of topics in observational and theoretical astrophysics, and to prepare the next generations of students that will profit from the superb observational facilities available to Chilean astronomers and their collaborators. In this report, we review the main activities at DAA from January until December 2012.

2 Personnel

2.1 Changes in 2012

2.1.1 New Postdocs

- Dr. M. Bovill arrived from the University of Texas at Austin, USA, to take on a postdoctoral position.
- Dr. P. Eigenthaler arrived from the University of Vienna, Austria, to take on a postdoctoral position.
- Dr. E. Ibar arrived from the UK Astronomy Technology Centre, UK, to take on a postdoctoral position.
- Dr. S. Kim arrived from the University of California at Irvine, USA, to take on a postdoctoral position.
- Dr. J. Mitchell arrived from Florida State University, USA, to take on a postdoctoral position.
- Dr. M. Mora arrived from Universidad Andrés Bello, Chile, to take on a postdoctoral position.
- Dr. S. Perina arrived from the Bologna Astronomical Observatory (INAF), Italy, to take on a postdoctoral position.
- Dr. D. Salter arrived from the University of Maryland, USA, as part of an ongoing joint UMD–PUC postdoctoral position.
- Dr. S. Schulze arrived from the University of Iceland, to take on a postdoctoral position.
- Dr. T. Tecce arrived from Instituto de Astronomía y Física del Espacio, CONICET-UBA, Argentina, to take on a postdoctoral position.
- Dr. J. Yu arrived from the Shanghai Astronomical Observatory, China, to take on a postdoctoral position.

No postdocs left the DAA during 2012

2.2 DAA Faculty

- Dr. Felipe Barrientos, Associate Professor (Ph.D. University of Toronto, Canada, 1999) – *Galaxy evolution and morphology. Elliptical galaxies. Clusters of galaxies. Observational cosmology.*
- Dr. Franz E. Bauer, Assistant Professor (Ph.D. University of Virginia, USA, 2001) – *AGN Demographics, Feeding, and Evolution. Coeval Growth of Galaxies and Super-Massive Black Holes. Deep Blank-field Surveys (Radio through X-ray). Nearby Supernovae and X-ray Binaries. Structure Formation and Galaxy Cluster Evolution.*
- Dr. Márcio Catelan, Full Professor (Ph.D. Universidade de São Paulo, Brazil, 1996) – *Stellar structure and evolution. Globular clusters. Variable stars. Stellar Populations. Galaxy formation and evolution.*
- Dr. Julio Chanamé, Assistant Professor (Ph.D. The Ohio State University, USA, 2005) – *Stellar dynamics. The Milky Way and the Local Group. Stellar structure and evolution.*

- Dr. Alejandro Clocchiatti, Full Professor (Ph.D. University of Texas at Austin, USA, 1995) – *Supernovae, near and far. Radiative Transfer. Galaxy Clusters. Cosmology.*

- Dr. Jorge Cuadra, Assistant Professor (Ph.D. Ludwig-Maximilians-Universität München, Germany, 2006) – *Numerical astrophysics. Galactic nuclei. Super-massive black holes. Planet–disc interactions.*

- Dr. Rolando Dünner, Adjunct Assistant Professor, (Ph.D. PUC, 2009) – *Large scale structure and cosmology. Astronomical instrumentation.*

- Dr. Gaspar Galaz, Associate Professor (Ph.D. Université de Paris, France, 1998) – *Stellar population in galaxies. Galaxy evolution. Statistical properties of the galaxy distribution.*

- Dr. Leopoldo Infante, Full Professor (Ph.D. University of Victoria, Canada, 1990) – *Galaxy and structure evolution. Pairs, groups and clusters of galaxies. LSB, dwarf and star forming galaxies in relation to environment. High-z QSOs. Correlation functions.*

- Dr. Andrés Jordán, Assistant Professor (Ph.D. Rutgers University, USA, 2004) – *Search and characterization of transiting exoplanets. Galaxies in nearby clusters. Star clusters.*

- Dr. Dante Minniti, Full Professor (Ph.D. University of Arizona, USA, 1993) – *Globular clusters. Stellar populations and evolution. Extrasolar planets. Galaxy formation. Galactic structure. Gravitational microlensing. Astrobiology.*

- Dr. Nelson Padilla, Associate Professor (Ph.D. Universidad Nacional de Córdoba, Argentina, 2001) – *Numerical astrophysics. Galaxy and Structure Formation. Cosmology.*

- Dr. Thomas H. Puzia, Assistant Professor (Ph.D. Ludwig-Maximilians-Universität München, Germany, 2003) – *Star clusters and star cluster systems. Chemical evolution and enrichment histories of galaxies. Galaxy formation and evolution. Stellar dynamics. Stellar populations. Population synthesis models. Stellar abundances. Hierarchical structure formation. Mass assembly of galaxies.*

- Dr. Hernán Quintana, Full Professor (Ph.D. Cambridge University, UK, 1973) – *Observational astrophysics. Clusters of galaxies. Interacting galaxies. Large scale structure.*

- Dr. Andreas Reisenegger, Full Professor and DAA Chairman (Ph.D. Caltech, USA, 1993) – *Theoretical Astrophysics and Cosmology. Neutron Stars. Stellar Magnetic Fields. Structure Formation. Clusters and Superclusters of Galaxies.*

- Dr. Manuela Zoccali, Associate Professor, (Ph.D. Università degli Studi di Padova, Italy, 2000) – *Stellar Populations in the Milky Way. The Galactic Bulge. Star Clusters. Chemical Abundances.*

2.3 Postdoctoral Fellows 2012

The following scientists held postdoctoral positions at the DAA during the reported period.

- Dr. Javier Alonso-García (Ph.D. University of Michigan, USA, 2010) – *Stellar populations. Galactic astronomy. Stellar evolution. Stellar variability. Photometry.*

- Dr. Rodolfo Angeloni (Ph.D. University of Padova, Italy, 2009) – *Symbiotic Stars. Interstellar Dust. Stellar variability. Photometry. Nebular Spectroscopy.*

- Dr. Timo Anguita (Ph.D. Ruprecht Karls Universität Heidelberg, Germany, 2009) – *Gravitational lensing. Galaxy evolution. Galaxy clusters.*

- Dr. Mia Bovill (Ph.D. University of Maryland, USA, 2011) – *Galaxy formation.*

- Dr. István Dékány (Ph.D. Eötvös Loránd University, Hungary, 2010) – *Photometry. Time-series analysis. Stellar pulsation. Stellar evolution.*

- Dr. Paul Eigenthaler (Ph.D. University of Vienna, Austria, 2011) – *Fossil Galaxy Groups, Compact Galaxy Groups, Stellar populations, Tidal Dwarf Galaxies, Spectroscopy.*

- Dr. Harold Francke (Ph.D. Universidad de Chile, 2009) – *Galaxy formation and evolution. Cosmology and large scale structure of the universe.*

- Dr. Krzysztof Hełminiak (Ph.D. Nicolaus Copernicus Astronomical Center, Poland, 2010) – *Derivation of fundamental parameters of late-type stars in binaries using precise photometry. High-resolution spectroscopy. Imaging with adaptive optics and optical interferometry.*

- Dr. Maren Hempel (Ph.D. Ludwig-Maximilians-Universität München, Germany, 2004) – *Globular cluster systems. Stellar Populations. Galaxy formation and evolution.*

- Dr. Eduardo Ibar (Ph.D. University of Edinburgh, UK, 2009) – *Observational cosmology, including: galaxy formation and evolution, star-forming galaxies and active galactic nuclei, submm galaxies, deep radio, X-ray surveys and cosmic star-formation rate.*
- Dr. Sam Kim (Ph.D. University of California at Irvine, USA, 2012) – *Compact overdensity and protocluster study. High redshift galaxy evolution. Strong lensing phenomena of submm bright galaxies. Cosmological mass assembly.*
- Dr. Régis Lachaume (Ph.D. Université de Grenoble, France, 2003) – *The vertical structure of accretion discs around young stars.*
- Dr. Adal Mesa-Delgado (Ph.D. Instituto de Astrofísica de Canarias, Spain, 2010) – *Interstellar Medium. HII regions. Chemical abundances.*
- Dr. Joe Mitchell (Ph.D. Florida State University, USA, 2012) – *Simulations of the singly degenerate progenitors of SNe Ia. Nuclear Astrophysics. Nuclear structure. Magnetic field evolution and in neutron stars.*
- Dr. Matías Montesinos Armijo (Ph.D. Observatoire de la Côte d'Azur, France, 2011) – *Accretion disks. Active Galactic Nuclei. Supermassive black holes. Numerical Simulations.*
- Dr. Marcelo Mora (Ph.D. Ludwig-Maximilians-Universität München, Germany, 2008) – *Stellar populations. Extragalactic star clusters systems*
- Dr. Roberto Muñoz (Ph.D. PUC, 2009) – *Galaxy evolution. Galaxy dynamics. Galaxy clusters. Dark matter mass profiles. Gravitational lensing.*
- Dr. David Murphy (Ph.D. Durham University, UK, 2011) – *Large-scale structure & extragalactic physics. Filaments and clusters of galaxies. Galaxy evolution*
- Dr. Álvaro Orsi (Ph.D. Durham University, UK, 2010) – *Galaxy formation. Large Scale structure. Semi-analytical modelling. High redshift galaxies. Lyα radiative transfer.*
- Dr. Sibilla Perina (Ph.D. University of Bologna, Italy, 2010) – *Stellar populations. Star clusters. Stellar evolution. Population synthesis models. Photometry.*
- Dr. Markus Rabus (Ph.D. Universidad de la Laguna, Spain, 2009) – *Search and characterization of exoplanets.*
- Dr. Cristián Sáez (Ph.D. Penn State University, USA, 2010) – *Active Galactic Nuclei. AGN X-ray evolution. AGN winds in broad absorption line (BAL) quasars.*
- Dr. Roberto K. Saito (Ph.D. Universidade Federal de Santa Catarina, Brasil, 2008) – *Cataclysmic Variable Stars. Stellar Astrophysics. Astronomical Data Processing.*
- Dr. Demerese Salter (Ph.D. Leiden University, Netherlands, 2010) – *Low-mass star formation. Millimeter interferometry.*
- Dr. Steve Schulze (Ph.D. University of Iceland, 2012) – *Gamma-ray bursts. Core-collapse Supernovae. High-redshift galaxies. Photometry. Spectroscopy.*
- Dr. Tomás E. Tecce (Ph.D. Universidad de Buenos Aires, Argentina, 2011) – *Galaxy formation. Extragalactic astronomy. Galaxy clusters. Cosmology. Numerical methods.*
- Dr. Jingcheng Yu (Ph.D. Shanghai Astronomical Observatory, China, 2012) – *Star Clusters. N-body Simulations.*

Support for the postdoctoral fellows comes from a combination of DAA funds, the FONDECYT programme, grants from the Joint ESO–Chile Committee for the Development of Astronomy in Chile, the ALMA–FONDECYT and Gemini–FONDECYT funds, the Millennium Scientific Initiative, and the FONDAP and Basal programmes (see § 6).

2.4 Technical Staff and Assistants

- Luis Mauricio Barz *Caretaker.*
- Carmen Gloria Cordovez *Administrative Assistant.*
- Lorena Guzmán (Journalist) *Outreach activities.*
- Lilena Montenegro *Administrative Assistant.*
- Gladys Reineking *Secretary*
- Vincent Suc (Electrical Engineer, INSA, Lyon, France) *Local engineer for HAT-South and Megacam / MMIRS. Engineer at Teaching Observatory at Santa Martina.*
- Dr. José Miguel Fernández (Ph.D. PUC, 2009) *Astronomer at Teaching Observatory at Santa Martina.*
- Giselle Ulloa *Administrative Coordinator of the Department.*
- Juan Véliz *System Manager. Software Specialist.*
- Mariela Villanueva *IT Assistant.*

2.5 Recognitions, Awards and Sabbaticals

A. Clocchiatti started a sabbatical period in August 2012. He spent extended periods as a Visiting Scholar at the Instituto Argentino de Física del Espacio (National University of Buenos Aires, Argentina), and the Specola Vaticana (Vatican State). Additionally, he was named Distinguished Person of La Plata, Argentina.

D. Minniti became a Member of the Argentinian National Academy of Sciences.

M. Zoccali took sabbatical leave from mid-2011 till mid-2012, partly at ESO, Germany, and partly at the Observatory of Bologna, Italy. She received a Fellowship from the John Simon Guggenheim Memorial Foundation.

3 Academic Programmes and Teaching

The DAA offers graduate and undergraduate programmes in Astrophysics, as detailed below. Our faculty members are in charge of all Astrophysics courses, both for our programmes and for students from other majors, plus some courses on Physics.

During 2012, we taught 30 semester-long courses, which can be categorised as follows:

- Astrophysics undergrad core courses (7)
- Astrophysics graduate core courses (5)
- Astrophysics elective courses (6)
- sections of the Astronomy course for non-majors (6)
- Physics core course for Astro-/Physics students (1)
- Physics elective courses (2)
- Physics service courses (3)

From these courses we could highlight the creation of two new elective courses, *Statistics for Astronomers* and *Super-massive Black Holes*, and that each semester we offer a section of the basic Astronomy course in English.

3.1 Graduate Programme and Students 2012

The DAA offers Ph.D. and Master programmes in Astrophysics. They include core courses on Physical Processes in Astrophysics, Advanced Stellar Astrophysics, and Advanced Extragalactic Astrophysics. The programs are completed with elective courses, supervised research, and a thesis. Students typically start research projects during their first year.

3.1.1 Graduate Students

Students enrolled during this period were[1]: Claudia Aguilera, Paula Aguirre, Pía Amigo, Cristóbal Armaza, Juan Carlos Beamín, Ignacio Becker, Rafael Brahm, Daniela Carrasco, Mauricio Carrasco, Esteban Castillo, Andrea Corvillón, Néstor Espinoza, Sofía Gallego, Cristina García, Felipe Garrido, Jorge González, Nicolás González, Rodrigo Leiva, Pablo Marchant, Gustavo Morales, Alejandra Muñoz, Camila Navarrete, Mauricio Ortiz, Ósmar Rodríguez, Alejandra Rojas, Álvaro Rojas, Carol Rojas, Felipe Rojas, Pedro Salas, Mirko Šimunović, Martha Talavera, Matthew Taylor, Gabriel Torrealba, Martin Tourneboeuf, Sergio Vásquez, Nicolás Viaux, & Paula Zelaya.

3.1.2 New Admissions

Claudia Aguilera (PUC) and Néstor Espinoza (PUC) were admitted to the Ph.D. program starting August 2012. Sofía Gallego (PUC), Carol Rojas (PUC) and Pedro Salas (PUC) were admitted to the M.Sc. program starting August 2012.

Gergely Hajdu (Konkoly Obs., Hungary) and Sergio Contreras (PUC) were admitted to the Ph.D. program to start in March 2013. Diego Calderón (Concepción), Deysi Cornejo (CONIDA, Peru), Paola Flores (U San Marcos, Peru) and Marcelo Tala (PUC) were admitted to the M.Sc. program to start in March 2013.

3.1.3 Degrees obtained

- Dr. Paula Aguirre obtained her Ph.D. Degree, defending her thesis entitled "*Submillimeter galaxies: insights into their formation mechanisms and their link with local massive ellipticals*", supervised by L. Infante. She then moved to Universidad Andrés Bello, to take on a faculty position.
- Dr. Pía Amigo obtained her Ph.D. Degree, defending her thesis entitled "*The Milky Way in the Making: Clues into the formation history of our Galaxy from time-resolved photometry of globular clusters and dwarf satellite galaxies*", supervised by M. Catelan. She then moved to Universidad de Valparaíso, to take on a postdoctoral position.
- Dr. Pamela Arriagada obtained her Ph.D. Degree, defending her thesis entitled "*Towards rocky planets using the Planet Finder Spectrograph*", supervised by D. Minniti. She then moved to the Carnegie Institution of Washington, USA, to take on a postdoctoral position.

[1] Throughout § 3, we consider the academic activities from March 2012 till Jan. 2013.

- Nicolás González obtained his Master's Degree, defending his thesis entitled "*Rotochemical heating of neutron stars with anisotropic and density-dependent Cooper pairing gaps*", supervised by A. Reisenegger. He then moved to the University of Bonn, Germany, to start a Ph.D. program.

- Pablo Marchant obtained his Master's Degree, defending his thesis entitled "*Evolution of axially symmetric magnetic fields in neutron star crusts due to the Hall drift*", supervised by A. Reisenegger. He then moved to the University of Bonn, Germany, to start a Ph.D. program.

- Dr. Iván Lacerna obtained his Ph.D. Degree, defending his thesis entitled "*The nature of assembly bias in hierarchical cosmologies*", supervised by N. Padilla. He moved to UNAM, Mexico, to take on a postdoctoral position.

- Mauricio Ortiz obtained his Master's Degree, defending his thesis entitled "*Wide field study of the globular cluster systems in the elliptical galaxies NGC 4365 and NGC 4697*", supervised by A. Jordán. He then moved to the University of Heidelberg, Germany, to start a Ph.D. program.

3.1.4 Exchange

Carlos Eduardo Ferreira Lopes, from UFRN, Natal, Brazil, was at PUC from Oct. 2011 until Oct. 2012 as an exchange PhD student. He now finished his thesis under the joint supervision of J.R. de Medeiros (UFRN) and M. Catelan (PUC).

M. Carrasco stayed at ITA-Heidelberg in Germany during the whole of 2012, as part of his double degree programme (see § 7.1). N. González-Jiménez visited the Max-Planck-Institut für Astrophysik in Germany between March–May 2012, as part of the Lacegal programme (see § 7.2). N. Viaux visited the Max-Planck-Institut für Physik in Germany between January–July 2012.

3.2 Undergraduate Program and Theses

The PUC undergraduate programme in Astronomy currently has ∼100 students, who are consistently drawn from the top 2% of the ∼300,000 high school seniors who take the nationally administered entrance examination (PSU) each year.

A group of 32 new students registered in the programme through the regular admission process to start in March 2013. The last admitted student scored 699.6 points at the PSU. Additionally, four students registered through the *Beca de Excelencia Académica* intiative.

Undergraduate students work full time the last semester of the program on a research project under the supervision of a faculty member, sometimes a member of a related Department. The 11 students who obtained their degree during this period, the subject of their theses, and their supervisors are:

- Claudia Aguilera: *Failure conditions of the elastic crust of neutron stars* – (A. Reisenegger)

- Sergio Contreras: *Halo occupation distributions in models of galaxy formation* – (N. Padilla)

- Johanna Coronado: *Modelling detached eclipsing binaries using radial velocities from the PUCHEROS* – (L. Vanzi, AIUC)

- Matías Díaz: *Implementation of Algorithms for the Detection of Transiting Exoplanets and an application to HAT-South data* – (A. Jordán)

- Sofía Gallego: *Satellite infall and mass deposition on the galactic center* – (J. Cuadra)

- Francisco Lagos: *Optimización de los parámetros de un Cone Beam CT para la verificación de posicionamiento del paciente en radioterapia* – (P. Caprile, Physics Dept.)

- Paul Leyton: *Reddening-free indices for the VISTA filter system* – (M. Catelan)

- Isabella Liedtke: *Studying the environment around binary QSOs* – (F. Barrientos)

- Carol Rojas: *Determinación de edades estelares en sistemas binarios anchos* – (J. Chanamé)

- Salvador Salazar: *Clustering tomography: measuring distances through angular correlation functions of thin redshift shells* – (N. Padilla)

- Marcelo Tala: *Construction and characterization of an image slicer to enhance resolution in astronomical spectroscopy* – (L. Vanzi, AIUC)

4 Interdisciplinary Center

The UC Center for AstroEngineering, AIUC

AIUC was created in 2009 as a joint venture between the DAA and the PUC Faculty of Engineering. The Centers mission is to serve as channel to carry out research and to generate new technological and computational opportunities in the areas of astronomy and engineering in Chile. Currently the AIUC includes three main parts: a Laboratory of Astronomical Instrumentation, a Center of data mining and numerical computation and a Astronomical Service area. The purpose of the first is to generate alliances with international observatories present in Chile, participate in the construction of optical and infrared instruments and trigger technological

transfer to the country. The Computer Lab offers to the astronomical community a powerful tool for numerical computation and data analysis and provides the computing capability needed to handle large amounts of data collected by telescopes in Chile. Finally, the mission of the Service Area is to provide astronomical and engineering support to the international observatories located in Chile and facilitate specialized human resources.

The Center operates under a Board of Directors. The Director of the Center, currently professor L. Infante, and the Sub-Director, professor A. Guesalaga, have the responsibility to manage and execute the Centers tasks and respond to the board. Currently the AIUC has 2 optical labs, 1 instrumentation lab, 1 detector lab, a 512-core cluster and an astro-service area. Our instrumentation and computation laboratories are lead by professors L. Vanzi, from the PUC Engineering Faculty, and A. Jordán, from the PUC Physics Faculty, respectively. Our simulation area is lead by professor N. Padilla from the PUC Physics Faculty. Currently there are 18 faculty members (F. Barrientos, M. Catelan, D. Celentano, A. Clocchiatti, R. Dünner, G. Galaz, M. Guarini, D. Guzmán, L. Infante, A. Jordán, D. Minniti, N. Padilla, M. Torres, L. Vanzi, A. Guesalaga, K. Pichara, T. Puzia and M. Zoccali), 7 postdocs (T. Anguita, R. Lachaume, Á. Orsi, T. Tecce, S. Koshida, A. Berdja and M. Rabus) and 7 engineers and technicians (J. González, V. Suc, J. Véliz, L. Valdés, I. Toledo, L. Montenegro and C. Caire) associated to he Center.

AIUC research interests include instrumentation, data handling and surveys in the fields of High Resolution Optical/NIR Spectroscopy (MOONS, HIRES), Wide-field Adaptive Optics (AO), Multi-conjugated AO, Multi-object AO, AO Control algorithms, Planet finding (G-Clef, Hat-South), Cosmic Microwave Background (ACT, CLASS) and Cosmological Simulations.

5 Colloquia, seminars and science activities

Starting in 2012, the DAA organises a new series of astronomy colloquia that, modelled after similar programs with long traditions at major astronomical institutions in the world, targets notorious speakers selected not only for their scientific achievements but also for their ability to communicate them well to a diverse audience. Among the obvious advantages of a Colloquium series of such characteristics, this plan is part of an integral effort by our Department to improve the quality of our Graduate program, adding even more stimulating experiences to our daily scientific atmosphere.

Below is the programme of our Colloquia during 2012:

- 06/03: Alessandro Morbidelli (Obs. Cóte D'Azur, France) "Earth: The Dangerous Life Of A Habitable Planet"
- 13/03: Matthew Walker (Harvard–Smithsonian, USA) "Dark Matter In The Smallest Galaxies"
- 20/03: José Luis Prieto (Princeton, USA) "Finding The 'Missing' Supernova Explosions In Nearby Galaxies"
- 27/03: Anna Katherina Vivas (CIDA, Venezuela) "What Do RR Lyrae Stars Tell Us About The Formation Of The Milky Way?"
- 03/04: Alan Boss (Carnegie DTM) "Kepler, Microlensing, And Direct Imaging: New Constraints On Exoplanet Formation Theories"
- 10/04: Gautier Mathys (ALMA) "Rotation, Magnetism, Binarity, And Chemical Peculiarities In A-Type Stars"
- 17/04: Wolfgang Gieren (U de Concepción) "The Araucaria Project – Improving The Cosmic Distance Scale"
- 24/04: Verónica Motta (U de Valparaíso) "Gravitational Lensing: A Tool For The Study Of Galaxy Halos"
- 08/05: Henk Spruit (MPA Garching, Germany) "Double-diffusive convection in stellar interior"
- 15/05: Alycia Weinberger (Carnegie DTM, USA) "Circumstellar Disk Composition And Evolution"
- 22/05: Andrés Meza (U Andrés Bello) "The hierarchical formation of galaxies and large scale structures"
- 29/05: Eric Mamajek (CTIO) "Discovery Of A Transiting Extrasolar Ring System"
- 05/06: Jeff McClintock (Harvard–Smithsonian, USA) "Black Hole Spin"
- 12/06: Paulina Lira (U de Chile) "Black Hole Masses And Growth In The Early Universe"
- 19/06: Paul Butler (Carnegie DTM, USA) "Extrasolar Planets Around Nearby Stars"
- 26/06: Dani Guzmán (Astro-Ingeniería, PUC) "Utilización de redes neuronales en óptica adaptativa astrónomica"
- 14/08: Marco Aurelio Díaz (Physics Dept., PUC) "The Standard Model, The Higgs Boson, And Dark Matter Particles"

- 21/08: Jacob Bean (U Chicago, USA) "Revealing The Diversity Of Super-Earth Atmospheres"
- 28/08: Charles Bonatto (UFRGS, Brazil) "Young Clusters And Star Formation In The Milky Way"
- 04/09: Anna Frebel (MIT, USA) "Stellar Archaeology: New Science With Old Stars"
- 25/09: Marina Rejkuba (ESO Garching) "Stellar Halos, Streams And Near Field Cosmology"
- 02/10: Patricia Tissera (IAFE, Argentina) "What Can Stellar Haloes Tell Us About Galaxy Formation?"
- 09/10: Scott Sheppard (Carnegie DTM, USA) "Completing The Inventory Of The Outer Solar System"
- 16/10: Yuval Birnboim (Racah, Israel) "Gas Accretion Onto Galaxies And Galaxy Clusters"
- 23/10: Rik Williams (Carnegie Observatories, USA) "Galaxy Assembly In The Thermal Era"
- 30/10: François Ménard (UMI – Laboratoire Franco-Chilien d'Astronomie) "Transition Disks Around Young Stars: When Forming Planets Make A Mess Of Their Birthplaces"
- 06/11: Felipe Menanteau (Rutgers, USA) "Counting Giants: Cosmology From Massive Sunyaev-Zel'dovich Galaxy Clusters"
- 13/11: Hagai Perets (Technion, Israel) "Triple Evolution And Dynamics: From Planets To Stellar Systems"
- 20/11: David James (CTIO) "Darwinism In The Heavens: Using Open Clusters To Trace Stellar Evolution"
- 27/11: Patricia Arévalo (U Andrés Bello) "Active Galactic Nuclei: Clues On Their Structure From Time And Energy"
- 04/12: Neil Nagar (U de Concepción) "The Event Horizon Telescope: Imaging The Shadow Of The Black Hole In Sgr A*"
- 11/12: Michael Sterzik (ESO Chile) "Bioastronomy with Planet Earth"

On top of the colloquium series above, we always have talks from collaborators visiting the DAA, and from astronomers stopping by in or out of observing runs. During 2012 more than 40 such seminars were held, for a complete list check `http://www.astro.puc.cl:8080/astropuc/seminars`.

Additionally, every day after lunch, graduate students, postdocs, and faculty meet for an informal, 30-minute discussion of the latest developments in astronomy. Usually 2–4 topics are debated each day, and these are typically based on papers posted during the last few days on the `arXiv` Preprint Server (astro-ph) and on astronomy news appearing in the public press. These daily meetings are also used to introduce our many visitors and colleagues upon their arrival to the DAA.

6 Grants

6.1 Department Grants

The BASAL Center for Astrophysics and Associated Technologies is a large institutional grant from CONICYT, Chile, awarded to the DAA, the Astronomy Department of Universidad de Chile, and the Astrophysics Department of Universidad de Concepción. This Center supports research in astrophysics, national and international academic exchange, and collaborations with the Observatories in Chile, providing funds for research, graduate student fellowships, organization of workshops and conferences, and travel.

The FONDAP Center for Astrophysics was a large institutional grant from CONICYT, Chile, to support research in astronomy and academic exchange between the DAA, the Astronomy Department of Universidad de Chile, and the Astrophysics Group of Universidad de Concepción. It provided funds for research, postdoctoral positions, graduate student fellowships, conferences, and travel. This grant ended in April 2012.

6.2 Group Grants

6.2.1 Anillos

Development of technologies for astronomical observations. Chile: from host to active partner in the construction of the next generation astronomical telescopes is a grant from CONICYT awarded to a team of scientists from the PUC School of Engineering (L. Vanzi (PI), A. Guesalaga, D. Celentano, et al.) and the DAA (L. Infante, A. Jordán, et al.). The goal of the project is to acquire and develop front line technologies in a number of selected areas of science and engineering to be employed in the next generation astronomical telescopes, to make the institutes involved competitive in the specific fields selected, and to convert them in attractive partners for the international organizations leading the design and construction of the next generation telescopes, in Chile as well as abroad.

Establishing the Role of Mergers in Black Hole Growth and Galaxy Evolution is a grant from CONICYT

awarded to a team of astronomers from U de Concepción (E. Treiester (PI), N. Nagar, et al.), PUC (F. Bauer, J. Cuadra) and U de Chile (A. Escala). The goal of the project is to understand the role of black hole growth in galaxy evolution, by characterizing this growth observationally and interpreting it through comparisons with simulations. Using the new facilities and instruments such as ALMA, NuSTAR, and optical/NIR IFUs, as well as start-of-the-art simulations, the project seeks to refine our knowledge about how and when this growth occur, and what the observable effects on galaxy evolution are.

ATLAS Andino is a CONICYT grant awarded to a team of scientists of the PUC Department of Physics (M.A. Díaz [PI], J. Alfaro, M. Bañados, B. Koch, and U. Volkmann), the DAA (G. Galaz, A. Reisenegger), and external collaborators. Its goals are: a better understanding of the elementary particles, to be studied by means of the ATLAS Detector of the Large Hadron Collider (LHC); the understanding of the nature of Dark Matter and its effects on Astrophysics and Cosmology; the creation of an ATLAS Grid node at PUC, including the expansion of the Grid technology to other areas; and the study of ATLAS muon chambers in view of the LHC upgrade.

6.2.2 Núcleos Milenio

The Milky Way Millennium Nucleus is a grant from MIDEPLAN awarded to a team of scientists from the DAA (M. Catelan (PI), D. Minniti, A. Jordán, M. Zoccali) and the Universidad de Valparaíso (J. Borissova). The main aim is to support research related with the formation and evolution of the Milky Way. Specifically, the research project has its core in the VISTA Variables in the Via Lactea ESO Public Survey, which will obtain a time series map of the whole Bulge and a large fraction of the Disk of our Galaxy. This grant provides funding for research, postdoctoral fellowships, studentships, outreach, organization of conferences and other networking activities. (`www.milenio-vialactea.cl`)

The Millennium Center for Supernova Studies is a triennial grant originally from MIDEPLAN, now administered by MINECON, awarded in 2008 to a team of astronomers from the DAA (A. Clocchiatti) and the Department of Astronomy of Universidad de Chile (M. Hamuy, and J. Maza). The goal of the project is to further the study of SNe from Chile, both in detail to better know the astrophysics of progenitors and the physics of explosions, and to improve their usage as cosmologically relevant distance estimators. The grant was competitively renewed in early 2011 for an additional period of three years. The team has been enlarged to include G. Pignata (U. Andrés Bello) and F. Bauer (DAA).

6.3 Individual Research Grants

6.3.1 FONDECYT Regular Projects

- F. Barrientos: *Probing the Universe With Galaxy Clusters.*
- F. Barrientos: *Massive Objects Through Cosmic Time.*
- F. Bauer: *The Role of AGN Feedback in the Coeval Growth of Supermassive Black Holes and Galaxies.*
- M. Catelan: *Low-Mass Stars in Stellar Systems as Astrophysical Laboratories.*
- G. Galaz: *The Impact of Environment on Stellar Formation in Low Surface Brightness Galaxies.*
- G. Galaz: *Unveiling The Physical Properties Of The Interstellar Medium In Low Surface Brightness Galaxies.*
- A. Jordán: *From Discovery to Understanding: the First 24-Hour Global Network to Find and Characterize Transiting Exoplanets.*
- D. Minniti: *Vista Variables in the Via Lactea.*
- N. Padilla: *Lighting Up the Dark Universe.*
- T. Puzia: *The Next Generation Stellar Population Synthesis Models.*
- A. Reisenegger: *Thermal and Magnetic Evolution of Neutron Stars.*
- M. Zoccali: *A Complete Characterization of the Galactic Bulge Stellar Population.*

6.3.2 FONDECYT Initiation into Research Projects

- J. Cuadra: *Black Hole Mergers and Kicks in Gas-Rich Galaxies.*
- R. Dünner: *Chile ACT Ultradeep Survey.*

6.3.3 FONDECYT Postdoctoral Grants

- J. Alonso: *Disentangling the multiple stellar populations in the inner galactic.*
- R. Angeloni: *Topics in Stellar Variability: From Vista to Alma.*
- M. Bovill: *Galactic Paleontology: Reionization and the Fate of the First Galaxies.*
- P. Eigenthaler: *Probing the assembly of galaxy groups with intragroup light.*
- K. Hełminiak: *Detached eclipsing binaries in large photometric surveys – precise characterization for a new level of stellar astrophysics.*

- E. Ibar: *Using ALMA to reveal the star-formation and AGN activity in samples of Herschel-detected galaxies.*
- S. Kim: *Study of the relation between compact overdensity regions and protoclusters detected in submillimeter survey.*
- M. Montesinos Armijo: *Dynamics of astrophysical accretion disks.*
- R. Muñoz: *Obtaining the deepest-ever Galaxy Mass Function in a High-Density Environment.*
- D. Murphy: *Probing the nature and content of the universe with galaxy clusters.*
- Á. Orsi: *Galaxy formation in the LSST era.*
- C. Sáez: *A multiwavelength study of AGN evolution and quasar outflows.*
- M. Rabus: *Rising exoplanets: a major chilean contribution to the emerging field of exoplanetology.*
- J. Yu: *Dynamical properties of star cluster.*

6.3.4 ALMA–CONICYT Projects

- F. Barrientos: *Support for the Graduate Program in Astrophysics at PUC.*
- F. Bauer: *The PUC–ALMA Initiative.*
- R. Dünner: *Academic Radio Interferometer (ARI).*
- G. Galaz: *Support for the Graduate Program in Astrophysics at PUC.*
- A. Jordán: *Postdoctoral Support for Protoplanetary Disk Science with Alma at PUC.*
- N. Padilla: *Proyectos Audiovisuales de Extensión de Astronomía del DAA-UC*
- T.H. Puzia: *Population Synthesis at High Spectral Resolution.*

6.3.5 Gemini–CONICYT Projects

- G. Galaz: *Support for the Graduate Program in Astrophysics at PUC.*
- N. Padilla: *Postdoc position for the Center of Astro-Engineering UC.*
- T.H. Puzia: *The Next Generation Virgo Cluster Survey - Infrared (NGVS-IR).*

6.3.6 Other External Grants

- K. Hełminiak: (Polish) National Science Center OPUS 3 Grant *Spectroscopy of eclipsing binaries and its various applications for precise determination of stellar parameters.*
- N. Padilla: FONDEQUIP Project *Centro de Cómputo Nacional para Astrofísica.*

6.3.7 PUC-funded Grants

- M. Catelan: VRAID Inter-Disciplinary Project *Towards the Automated Classification of VVV Light Curves.*

7 Exchange Agreements and International Networks

7.1 Bilateral agreements

The DAA has agreements with several institutions with the goal of strengthening its research activity and its graduate program. These agreements allow exchange visits of researchers and students. In some cases, the thesis is recognised by both institutions, resulting in a double PhD degree. Currently, we have agreements with the Universities of Heidelberg, Johns Hopkins, Maryland, Padova, and Princeton.

As a result of these agreements, PUC PhD student Mauricio Carrasco spent one year working with Matthias Bartelmann at ITA-Heidelberg on *Dark Matter Distribution in Massive Strong-Lensing Galaxy Clusters*, and joint Maryland–PUC Postdoctoral Scientist Dr. Demerese Salter is spending 14 months at PUC.

7.2 Marie Curie network LACEGAL

The Latin American–Chinese–European Galaxy Formation (LACEGAL) network was approved in November 2010 to bring together internationally recognised experts in the theory of galaxy formation and the modelling of the growth of cosmic structure. The network allows new research collaborations to be made between the main groups working in the subject in Latin America and China, and the principal centres in computational galaxy formation and astrophysics in Europe. The local coordinator is Nelson Padilla.

Visiting trips during the year 2012 were awarded to S. Contreras (Durham), J. Cuadra (MPA), H. Francke (Durham), N. González-Jiménez (MPA), D. Murphy (Durham), Á. Orsi (Durham), N. Padilla (Durham), S. Salazar and J. Véliz (Durham).

7.3 DFG–Conicyt Joint Project

The research project "Magnetic Fields of Massive Stars and their Compact Remnants" is funded jointly by DFG (Germany) and CONICYT (Chile) over the 3-year period 2012–2014 as part of a program to strengthen

collaboration between scientists of both countries. The German team is composed of Norbert Langer (German PI; University of Bonn), Henk Spruit (Max-Planck-Institut für Astrophysik), and Jon Braithwaite (University of Bonn), while the Chilean researchers are Andreas Reisenegger (Chilean PI; DAA-PUC) and Juan Alejandro Valdivia (Universidad de Chile). The project funds a "Chile-Germany Postdoctoral Fellow in Stellar Magnetiss", Joseph Mitchell (PhD at Florida State University), who will spend half of his time at PUC and the other half in Bonn, as well as graduate students and trips in both directions. It joins expertise in stellar evolution (Langer), magnetohydrodynamics (Spruit), compact objects (Reisenegger), and numerical simulations (Braithwaite and Valdivia), in order to gain a fuller understanding of the co-evolution of massive stars and their magnetic fields from birth to death.

7.4 UMI-FCA

The French–Chilean Joint International Astronomy Unit (UMI-FCA) was established by agreement between the CNRS and PUC, U. de Chile and U. de Concepción. This "Joint International Unit" facilitates collaborations between astronomers of the participating institutions, and allows them to use the facilities of their counterpart.

8 Office, Computing and Teaching facilities

The DAA occupies 1,887 m^2 of a building in the San Joaquín Campus of PUC, to the south of downtown Santiago. Of that surface, 1482 m^2 correspond to the DAA proper, while the remaining 405 m^2 are occupied by the Centre for Astro-Engineering. This includes offices for faculty, postdocs, graduate students and administrative and technical staff, optics and electronics workshops, a special room for our super-computer, and conference rooms. The same building also hosts the "Ninoslav Bralić" auditorium, shared with Physics and Mathematics, which seats 100 people.

In the adjacent building, the "Gauss" Physics and Math library has a collection of ∼30,000 books and journal volumes. Staff members, students and visitors also have access to the University library system with more than 300,000 books and hundreds of periodical publications, including around 60 titles in different branches of physics. The University supports, in addition, on-line access to all major astrophysics journals. Finally, the DAA hosts since 1998 the first Latin-American mirror of NASA's Astrophysical Data System (ADS).

The DAA has a computer network maintained by a full-time software engineer and an assistant. It includes a cluster, managed by the AIUC, consisting of 64 nodes with a total of 128 Intel Xeon Quad-Core CPUs (512 cores), 1024 GB of RAM, 40 TB of disk space (iSCSI), and a Linux system for 64-bit architecture running over a 1 Gbps ethernet network. Development and execution tools include Intel Fortran and Intel C compilers (ifort, icc), mpich2, Distributed Resource Management (DRM) software SGE (Sun Grid Engine), and other standard tools (gcc, g++, gfortran, etc). As of early 2013, this cluster is being replaced by a brand-new 520-core CPU cluster, with 18 Tflops, 3 TB of memory and 30 TB of disk space, and the addition of a GPU cluster with 1792 NVidia Tesla Cores, with 96 GB of memory. Users at DAA have access to the cluster via personal accounts and get access to the cluster resources by the DRM system that defines use and priority of each user to the total resources. Postdoctoral fellows Á. Orsi and T. Tecce dedicate a fraction of their time to help manage the use of the computing cluster.

8.1 Santa Martina Observatory

The DAA maintains a small Observatory in the eastern outskirts of Santiago at an altitude of 1450 m, some 60-minute drive from Campus, mostly dedicated to teaching and astronomy laboratories for our undergraduate students. Permanently installed in a joint dome are a 50 cm telescope (the old ESO 50 cm), and a 40 cm telescope (one of the two old CTIO 16-inch telescopes) and, in a separate dome, a commercial Meade 40 cm used with a CCD camera for basic teaching. The two professional telescopes have locally-upgraded control systems and new instrumentation, including CCD cameras, spectrographs and a new, built in-house fibre spectrograph at the 50 cm. All three are controlled from a common control room when needed. The two professional telescopes are partly used for testing and developing instrumentation and for some advanced student research programs. A Meade 30 cm is available for visual observations by students and visitors. Besides, the site hosts the dome of one of the SLOOH world network telescopes, remotely controlled via the Web. A small planetarium is also available to teach students the celestial coordinate systems. Current activities take place three to four times weekly (weather permitting) and include teaching, scientific and outreach experiences.

8.2 Manuel Foster Historical Observatory

The DAA also maintains this historical observatory in the Metropolitan Park on San Cristóbal hill near downtown Santiago. It was established in 1903 by an expedition from the Lick Observatory of the University of California, and purchased and donated to PUC in 1929 by the lawyer, politician, and PUC professor Manuel Foster, in this way starting astronomical activities at the University. It was used on and off until the early 1990s, but is now no longer useful for research because of the strong light pollution. In 2010, it was declared a National Historic Monument. It is being opened to the

public on selected days.

9 Meetings supported

One of the activities of the DAA is to support meetings and graduate schools in Chile to foster the development of local professional astronomy. In the period reported, activities organized, sponsored, and/or supported were (name of meeting/school, organizing institution, place and date)

- *The 3rd VVV Science Meeting* (DAA; Viña del Mar, March 2012).
- *2nd Science Jamboree* (DAA; Campus San Joaquín, Santiago, May 2012).
- *Exploring the Nature of the Evolving Universe II* (INCAI; Washington DC, USA, July 2012).
- *Advanced Chilean Astro-engineering School-Workshop* (AIUC; Santiago, Nov. 2012).

10 Outreach

The outreach activity at the DAA was centered on appearances in mass media and in activities for schools and the general public. During 2012, several students and staff appeared in newspapers a total of 87 times, in television 26 times, 25 in radio stations, 54 in web sites and 16 times in UC media.

At the Outreach Center, we held the new edition of the course "Astronomía", which consisted in 9 astronomy talks by members of the Department. We held a new cycle "Astronomía de Película" at Centro Cultural Palacio la Moneda, which featured 4 talks with explanations of the physics and astronomy behind science fiction movies. We participated in the national cultural heritage day opening the doors of the Foster observatory to the general public twice, on May 27th and September 2nd, offering free guided tours of this historical observatory. We had three programs for elders consisting in 10 classes each, given at our outreach center of PUC. We organized a workshop for teachers in January given by professors from Heidelberg and DAA, held at the Heidelberg Center in Santiago. We organized a public talk by the Nobel Laureate Brian Schmidt, held at the Hall of Honor at PUC. We held activities with school students using a mobile planetarium that belongs to the DAA, reaching almost 600 students from different schools. We produced a video documenting classes given by members of the department for use of the general public. We helped to edit and adjust the content of a video animation done by LOOPS to be shown in schools by NOVASUR-CNTV. By the end of the year, we published the book "Vistas de la Galaxia", and donated copies to more than 200 schools.

11 Refereed Publications

Astronomers from the DAA, including students, participated in 100 refereed papers published in 2012, including five *Nature* papers. The full list is given below.

1. Alamo-Martínez K. A., West M. J., Blakeslee J. P., González-López lira R. A., **Jordán A.**, Gregg M., Côté P., Drinkwater M. J., van den Bergh S.: *Globular cluster systems in fossil groups: NGC 6482, NGC 1132, and ESO 306-017.* A&A 546, A15
   http://adsabs.harvard.edu/abs/2012A%26A...546A..15A
2. Albrecht S., Winn J. N., Johnson J. A., Howard A. W., Marcy G. W., Butler R. P., **Arriagada P.**, Crane J. D., Shectman S. A., Thompson I. B., Hirano T., Bakos G., Hartman J. D.: *Obliquities of Hot Jupiter Host Stars: Evidence for Tidal Interactions and Primordial Misalignments.* ApJ 757, 18
   http://adsabs.harvard.edu/abs/2012ApJ...757...18A
3. Almenara J. M., Alonso R., **Rabus M.**, Lázaro C., Arévalo M. J., Belmonte J. A., Deeg H. J., Brown T. M., Vázquez Ramió H.: *An eclipsing post-common-envelope binary in the field of the Kepler mission.* MNRAS 420, 3017
   http://adsabs.harvard.edu/abs/2012MNRAS.420.3017A
4. **Alonso-García J.**, Mateo M., Sen B., Banerjee M., **Catelan M.**, **Minniti D.**, von Braun K.: *Uncloaking Globular Clusters in the Inner Galaxy.* AJ 143, 70
   http://adsabs.harvard.edu/abs/2012AJ....143...70A
5. **Alves-Brito A.**, Yong D., Meléndez J., Vásquez S., Karakas A. I.: *CNO and F abundances in the globular cluster M 22 (NGC 6656).* A&A 540, A3
   http://adsabs.harvard.edu/abs/2012A%26A...540A...3A
6. Amôres E. B., Sodré L., **Minniti D.**, Alonso M. V., **Padilla N.**, Gurovich S., Arsenijevic V., Tollerud E. J., Rodríguez-Ardila A., Díaz Tello J., Lucas P. W.: *Galaxies behind the Galactic Plane: First Results and Perspectives from the VVV Survey.* AJ 144, 127
   http://adsabs.harvard.edu/abs/2012AJ....144..127A
7. Amaro-Seoane P., Brem P., **Cuadra J.**, Armitage P. J.: *The Butterfly Effect in the Extreme-mass Ratio Inspiral Problem.* ApJ 744, L20
   http://adsabs.harvard.edu/abs/2012ApJ...744L..20A
8. **Angeloni R.**, Di Mille F., **Ferreira Lopes C. E.**, Masetti N.: *Discovery of Fast, Large-amplitude Optical Variability of V648 Car (=SS73-17).* ApJ 756, L21
   http://adsabs.harvard.edu/abs/2012ApJ...756L..21A

9. Anglada-Escudé G., **Arriagada P.**, Vogt S. S., Rivera E. J., Butler R. P., Crane J. D., Shectman S. A., Thompson I. B., **Minniti D.**, Haghighipour N., Carter B. D., Tinney C. G., Wittenmyer R. A., Bailey J. A., O'Toole S. J., Jones H. R. A., Jenkins J. S.: *A Planetary System around the nearby M Dwarf GJ 667C with At Least One Super-Earth in Its Habitable Zone.* ApJ 751, L16
http://adsabs.harvard.edu/abs/2012ApJ...751L..16A

10. **Anguita T.**, **Barrientos L. F.**, Gladders M. D., Faure C., Yee H. K. C., Gilbank D. G.: *Galaxy Scale Lenses in the RCS2. I. First Catalog of Candidate Strong Lenses.* ApJ 748, 129
http://adsabs.harvard.edu/abs/2012ApJ...748..129A

11. Arrigoni Battaia F., Gavazzi G., Fumagalli M., Boselli A., Boissier S., Cortese L., Heinis S., Ferrarese L., Côté P., Mihos J. C., Cuillandre J. C., Duc P.-A., Durrell P., Gwyn S., **Jordán A.**, Liu C., Peng E., Mei S.: *Stripped gas as fuel for newly formed H II regions in the encounter between VCC 1249 and M 49: a unified picture from NGVS and GUViCS.* A&A 543, A112
http://adsabs.harvard.edu/abs/2012A%26A...543A.112A

12. Barnes J. R., Jenkins J. S., Jones H. R. A., Rojo P., **Arriagada P.**, **Jordán A.**, **Minniti D.**, Tuomi M., Jeffers S. V., Pinfield D.: *Red Optical Planet Survey: a new search for habitable earths in the southern sky.* MNRAS 424, 591
http://adsabs.harvard.edu/abs/2012MNRAS.424..591B

13. Berry M., Gawiser E., Guaita L., **Padilla N.**, Treister E., Blanc G. A., Ciardullo R., **Francke H.**, Gronwall C.: *Stacked Rest-frame Ultraviolet Spectra of Lyα-emitting and Continuum-selected Galaxies at* $2<z<3.5$. ApJ 749, 4
http://adsabs.harvard.edu/abs/2012ApJ...749....4B

14. Blakeslee J. P., Cho H., Peng E. W., Ferrarese L., **Jordán A.**, Martel A. R.: *Optical and Infrared Photometry of Globular Clusters in NGC 1399: Evidence for Color-Metallicity Nonlinearity.* ApJ 746, 88
http://adsabs.harvard.edu/abs/2012ApJ...746...88B

15. Bond N. A., Gawiser E., Guaita L., **Padilla N.**, Gronwall C., Ciardullo R., Lai K.: *Evolution in the Continuum Morphological Properties of Lyα-emitting Galaxies from $z = 3.1$ to $z = 2.1$.* ApJ 753, 95
http://adsabs.harvard.edu/abs/2012ApJ...753...95B

16. Bozza V., Dominik M., Rattenbury N. J., Jørgensen U. G., Tsapras Y., Bramich D. M., Udalski A., Bond I. A., Liebig C., Cassan A., Fouqué P., Fukui A., Hundertmark M., Shin I.-G., Lee S. H., Choi J.-Y., Park S.-Y., Gould A., Allan A., Mao S., Wyrzykowski Ł., Street R. A., Buckley D., Nagayama T., Mathiasen M., Hinse T. C., Novati S. C., Harpsøe K., Mancini L., Scarpetta G., **Anguita T.**, Burgdorf M. J., Horne K., Hornstrup A., Kains N., Kerins E., Kjærgaard P., Masi G., Rahvar S., Ricci D., Snodgrass C., Southworth J., Steele I. A., Surdej J., Thöne C. C., Wambsganss J., Zub M., Albrow M. D., Batista V., Beaulieu J.-P., Bennett D. P., Caldwell J. A. R., Cole A. A., Cook K. H., Coutures C., Dieters S., Prester D. D., Donatowicz J., Greenhill J., Kane S. R., Kubas D., Marquette J.-B., Martin R., Menzies J., Pollard K. R., Sahu K. C., Williams A., Szymański M. K., Kubiak M., Pietrzyński G., Soszyński I., Poleski R., Ulaczyk K., DePoy D. L., Dong S., Han C., Janczak J., Lee C.-U., Pogge R. W., Abe F., Furusawa K., Hearnshaw J. B., Itow Y., Kilmartin P. M., Korpela A. V., Lin W., Ling C. H., Masuda K., Matsubara Y., Miyake N., Muraki Y., Ohnishi K., Perrott Y. C., Saito T., Skuljan L., Sullivan D. J., Sumi T., Suzuki D., Sweatman W. L., Tristram P. J., Wada K., Yock P. C. M., Gulbis A., Hashimoto Y., Kniazev A., Vaisanen P.: *OGLE-2008-BLG-510: first automated real-time detection of a weak microlensing anomaly - brown dwarf or stellar binary?.* MNRAS 424, 902
http://adsabs.harvard.edu/abs/2012MNRAS.424..902B

17. Brescia M., Cavuoti S., Paolillo M., Longo G., **Puzia T.**: *The detection of globular clusters in galaxies as a data mining problem.* MNRAS 421, 1155
http://adsabs.harvard.edu/abs/2012MNRAS.421.1155B

18. Burke M. J., Raychaudhury S., Kraft R. P., Brassington N. J., Hardcastle M. J., Goodger J. L., Sivakoff G. R., Forman W. R., Jones C., Woodley K. A., Murray S. S., Kainulainen J., Birkinshaw M., Croston J. H., Evans D. A., Gilfanov M., **Jordán A.**, Sarazin C. L., Voss R., Worrall D. M., Zhang Z.: *A Transient Sub-Eddington Black Hole X-Ray Binary Candidate in the Dust Lanes of Centaurus A.* ApJ 749, 112
http://adsabs.harvard.edu/abs/2012ApJ...749..112B

19. Carone L., Gandolfi D., Cabrera J., Hatzes A. P., Deeg H. J., Csizmadia S., Pätzold M., Weingrill J., Aigrain S., Alonso R., Alapini A., Almenara J.-M., Auvergne M., Baglin A., Barge P., Bonomo A. S., Bordé P., Bouchy F., Bruntt H., Carpano S., Cochran W. D., Deleuil M., Díaz R. F., Dreizler S., Dvorak R., Eislöffel J., Eigmüller P., Endl M., Erikson A., Ferraz-Mello S., Fridlund M., Gazzano J.-C., Gibson N., Gillon M., Gondoin P., Grziwa S., Günther E. W., Guillot T., Hartmann M., Havel M., Hébrard G., Jorda L., Kabath P., Léger A., Llebaria

A., Lammer H., Lovis C., MacQueen P. J., Mayor M., Mazeh T., Moutou C., Nortmann L., Ofir A., Ollivier M., Parviainen H., Pepe F., Pont F., Queloz D., **Rabus M.**, Rauer H., Régulo C., Renner S., de La Reza R., Rouan D., Santerne A., Samuel B., Schneider J., Shporer A., Stecklum B., Tal-Or L., Tingley B., Udry S., Wuchterl G.: *Planetary transit candidates in the CoRoT LRa01 field.* A&A 538, A112
http://adsabs.harvard.edu/abs/2012A%26A...538A.112C

20. Casassus S., Perez M. S., **Jordán A.**, Ménard F., **Cuadra J.**, Schreiber M. R., Hales A. S., Ercolano B.: *The Dynamically Disrupted Gap in HD 142527.* ApJ 754, L31
http://adsabs.harvard.edu/abs/2012ApJ...754L..31C

21. Ceccarelli L., Herrera-Camus R., Lambas D. G., **Galaz G.**, **Padilla N. D.**: *Low and high surface brightness galaxies at void walls.* MNRAS 426, L6
http://adsabs.harvard.edu/abs/2012MNRAS.426L...6C

22. **Chanamé J.**, Ramírez I.: *Toward Precise Ages for Single Stars in the Field. Gyrochronology Constraints at Several Gyr Using Wide Binaries. I. Ages for Initial Sample.* ApJ 746, 102
http://adsabs.harvard.edu/abs/2012ApJ...746..102C

23. Ciardullo R., Gronwall C., Wolf C., McCathran E., Bond N. A., Gawiser E., **Guaita L.**, Feldmeier J. J., Treister E., **Padilla N.**, **Francke H.**, Matković A., Altmann M., Herrera D.: *The Evolution of Lyα-emitting Galaxies between z = 2.1 and z = 3.1.* ApJ 744, 110
http://adsabs.harvard.edu/abs/2012ApJ...744..110C

24. Coe D., Umetsu K., Zitrin A., Donahue M., Medezinski E., Postman M., **Carrasco M.**, **Anguita T.**, Geller M. J., Rines K. J., Diaferio A., Kurtz M. J., Bradley L., Koekemoer A., Zheng W., Nonino M., Molino A., Mahdavi A., Lemze D., **Infante L.**, Ogaz S., Melchior P., Host O., Ford H., Grillo C., Rosati P., Jiménez-Teja Y., Moustakas J., Broadhurst T., Ascaso B., Lahav O., Bartelmann M., Benítez N., Bouwens R., Graur O., Graves G., Jha S., Jouvel S., Kelson D., Moustakas L., Maoz D., Meneghetti M., Merten J., Riess A., Rodney S., Seitz S.: *CLASH: Precise New Constraints on the Mass Profile of the Galaxy Cluster A2261.* ApJ 757, 22
http://adsabs.harvard.edu/abs/2012ApJ...757...22C

25. Coppin K. E. K., Geach J. E., Webb T. M. A., Faloon A., Yan R., O'Donnell D., Ouellette N., Egami E., Ellingson E., Gilbank D., Hicks A., **Barrientos L. F.**, Yee H. K. C., Gladders M.: *The Herschel Filament: A Signature of the Environmental Drivers of Galaxy Evolution during the Assembly of Massive Clusters at z = 0.9.* ApJ 749, L43
http://adsabs.harvard.edu/abs/2012ApJ...749L..43C

26. Corwin T. M., **Catelan M.**, Borissova J., Smith H. A.: *Discovery of a variable star population in NGC 2808 (Corrigendum).* A&A 539, 1
http://adsabs.harvard.edu/abs/2012A%26A...539C...1C

27. Dall'Ora M., Kinemuchi K., Ripepi V., Rodgers C. T., Clementini G., Di Fabrizio L., Smith H. A., Marconi M., Musella I., Greco C., Kuehn C. A., **Catelan M.**, Pritzl B. J., Beers T. C.: *Stellar Archaeology in the Galactic Halo with the Ultra-faint Dwarfs. VI. Ursa Major II.* ApJ 752, 42
http://adsabs.harvard.edu/abs/2012ApJ...752...42D

28. Erikson A., Santerne A., Renner S., Barge P., Aigrain S., Alapini A., Almenara J.-M., Alonso R., Auvergne M., Baglin A., Benz W., Bonomo A. S., Bordé P., Bouchy F., Bruntt H., Cabrera J., Carone L., Carpano S., Csizmadia S., Deleuil M., Deeg H. J., Díaz R. F., Dvorak R., Ferraz-Mello S., Fridlund M., Gandolfi D., Gazzano J.-C., Gillon M., Guenther E. W., Guillot T., Hatzes A., Hébrard G., Jorda L., Lammer H., Léger A., Llebaria A., Mayor M., Mazeh T., Moutou C., Ollivier M., Ofir A., Pätzold M., Pepe F., Pont F., Queloz D., **Rabus M.**, Rauer H., Régulo C., Rouan D., Samuel B., Schneider J., Shporer A., Tingley B., Udry S., Wuchterl G.: *Planetary transit candidates in the CoRoT-SRc01 field.* A&A 539, A14
http://adsabs.harvard.edu/abs/2012A%26A...539A..14E

29. Ferrarese L., Côté P., Cuillandre J.-C., Gwyn S. D. J., Peng E. W., MacArthur L. A., Duc P.-A., Boselli A., Mei S., Erben T., McConnachie A. W., Durrell P. R., Mihos J. C., **Jordán A.**, Lançon A., **Puzia T. H.**, Emsellem E., Balogh M. L., Blakeslee J. P., van Waerbeke L., Gavazzi R., Vollmer B., Kavelaars J. J., Woods D., Ball N. M., Boissier S., Courteau S., Ferriere E., Gavazzi G., Hildebrandt H., Hudelot P., Huertas-Company M., Liu C., McLaughlin D., Mellier Y., Milkeraitis M., Schade D., Balkowski C., Bournaud F., Carlberg R. G., Chapman S. C., Hoekstra H., Peng C., Sawicki M., Simard L., Taylor J. E., Tully R. B., van Driel W., Wilson C. D., Burdullis T., Mahoney B., Manset N.: *The Next Generation Virgo Cluster Survey (NGVS). I. Introduction to the Survey.* ApJS 200, 4
http://adsabs.harvard.edu/abs/2012ApJS..200....4F

30. Gillessen S., Genzel R., Fritz T. K., Quataert E., Alig C., Burkert A., **Cuadra J.**, Eisenhauer F., Pfuhl O., Dodds-Eden K., Gammie C. F., Ott T.: *A gas cloud*

on its way towards the supermassive black hole at the Galactic Centre. Nature 481, 51
http://adsabs.harvard.edu/abs/2012Natur.481...51G

31. González-Fernández C., López-Corredoira M., Amôres E. B., **Minniti D.**, Lucas P., **Toledo I.**: *The long bar as seen by the VVV survey. I. Colour-magnitude diagrams*. A&A 546, A107
http://adsabs.harvard.edu/abs/2012A%26A...546A.107G

32. Gonzalez O. A., Rejkuba M., **Zoccali M.**, Valenti E., **Minniti D.**, Schultheis M., Tobar R., Chen B.: *Reddening and metallicity maps of the Milky Way bulge from VVV and 2MASS. II. The complete high resolution extinction map and implications for Galactic bulge studies*. A&A 543, A13
http://adsabs.harvard.edu/abs/2012A%26A...543A..13G

33. Goulding A. D., Alexander D. M., **Bauer F. E.**, Forman W. R., Hickox R. C., Jones C., Mullaney J. R., Trichas M.: *Deep Silicate Absorption Features in Compton-thick Active Galactic Nuclei Predominantly Arise due to Dust in the Host Galaxy*. ApJ 755, 5
http://adsabs.harvard.edu/abs/2012ApJ...755....5G

34. Graczyk D., Pietrzyński G., Thompson I. B., Gieren W., Pilecki B., Udalski A., Soszyński I., Kołaczkowski Z., Kudritzki R.-P., Bresolin F., Konorski P., Mennickent R., **Minniti D.**, Storm J., Nardetto N., Karczmarek P.: *The Araucaria Project: An Accurate Distance to the Late-type Double-lined Eclipsing Binary OGLE SMC113.3 4007 in the Small Magellanic Cloud*. ApJ 750, 144
http://adsabs.harvard.edu/abs/2012ApJ...750..144G

35. Guggenberger E., Kolenberg K., Nemec J. M., Smolec R., Benkő J. M., Ngeow C.-C., Cohen J. G., Sesar B., Szabó R., **Catelan M.**, Moskalik P., Kinemuchi K., Seader S. E., Smith J. C., Tenenbaum P., Kjeldsen H.: *The complex case of V445 Lyr observed with Kepler: two Blazhko modulations, a non-radial mode, possible triple mode RR Lyrae pulsation, and more*. MNRAS 424, 649
http://adsabs.harvard.edu/abs/2012MNRAS.424..649G

36. Hajian A., Viero M. P., Addison G., **Aguirre P.**, Appel J. W., Battaglia N., Bock J. J., Bond J. R., Das S., Devlin M. J., Dicker S. R., Dunkley J., Dünner R., Essinger-Hileman T., Hughes J. P., Fowler J. W., Halpern M., Hasselfield M., Hilton M., Hincks A. D., Hlozek R., Irwin K. D., Klein J., Kosowsky A., Lin Y.-T., Marriage T. A., Marsden D., Marsden G., Menanteau F., Moncelsi L., Moodley K., Netterfield C. B., Niemack M. D., Nolta M. R., Page L. A., Parker L., Patanchon G., Scott D., Sehgal N., Sievers J., Spergel D. N., Staggs S. T., Swetz D. S., Switzer E. R., Thornton R., Wollack E.: *Correlations in the (Sub)millimeter Background from ACT × BLAST*. ApJ 744, 40
http://adsabs.harvard.edu/abs/2012ApJ...744...40H

37. Hand N., Addison G. E., Aubourg E., Battaglia N., Battistelli E. S., Bizyaev D., Bond J. R., Brewington H., Brinkmann J., Brown B. R., Das S., Dawson K. S., Devlin M. J., Dunkley J., **Dunner R.**, Eisenstein D. J., Fowler J. W., Gralla M. B., Hajian A., Halpern M., Hilton M., Hincks A. D., Hlozek R., Hughes J. P., **Infante L.**, Irwin K. D., Kosowsky A., Lin Y.-T., Malanushenko E., Malanushenko V., Marriage T. A., Marsden D., Menanteau F., Moodley K., Niemack M. D., Nolta M. R., Oravetz D., Page L. A., Palanque-Delabrouille N., Pan K., Reese E. D., Schlegel D. J., Schneider D. P., Sehgal N., Shelden A., Sievers J., **Sifón C.**, Simmons A., Snedden S., Spergel D. N., Staggs S. T., Swetz D. S., Switzer E. R., Trac H., Weaver B. A., Wollack E. J., Yeche C., Zunckel C.: *Evidence of Galaxy Cluster Motions with the Kinematic Sunyaev-Zel'dovich Effect*. Physical Review Letters 109, 041101
http://adsabs.harvard.edu/abs/2012PhRvL.109d1101H

38. Harrison C. M., Alexander D. M., Swinbank A. M., Smail I., Alaghband-Zadeh S., **Bauer F. E.**, Chapman S. C., Del Moro A., Hickox R. C., Ivison R. J., Menéndez-Delmestre K., Mullaney J. R., Nesvadba N. P. H.: *Energetic galaxy-wide outflows in high-redshift ultraluminous infrared galaxies hosting AGN activity*. MNRAS 426, 1073
http://adsabs.harvard.edu/abs/2012MNRAS.426.1073H

39. **Hełminiak K. G.**, Konacki M., Muterspaugh M. W., Browne S. E., Howard A. W., Kulkarni S. R.: *New high-precision orbital and physical parameters of the double-lined low-mass spectroscopic binary BY Draconis*. MNRAS 419, 1285
http://adsabs.harvard.edu/abs/2012MNRAS.419.1285H

40. **Hełminiak K. G.**, Konacki M., Różyczka M., Kałużny J., Ratajczak M., Borkowski J., Sybilski P., Muterspaugh M. W., Reichart D. E., Ivarsen K. M., Haislip J. B., Crain J. A., Foster A. C., Nysewander M. C., LaCluyze A. P.: *Orbital and physical parameters of eclipsing binaries from the All-Sky Automated Survey catalogue - IV. A 0.61 + 0.45 $M_\odot$ binary in a multiple system*. MNRAS 425, 1245
http://adsabs.harvard.edu/abs/2012MNRAS.425.1245H

41. High F. W., Hoekstra H., Leethochawalit N., de Haan T., Abramson L., Aird K. A., Armstrong R., Ashby M. L. N., Bautz M., Bayliss M., Bazin G.,

Benson B. A., Bleem L. E., Brodwin M., Carlstrom J. E., Chang C. L., Cho H. M., **Clocchiatti A.**, Conroy M., Crawford T. M., Crites A. T., Desai S., Dobbs M. A., Dudley J. P., Foley R. J., Forman W. R., George E. M., Gladders M. D., Gonzalez A. H., Halverson N. W., Harrington N. L., Holder G. P., Holzapfel W. L., Hoover S., Hrubes J. D., Jones C., Joy M., Keisler R., Knox L., Lee A. T., Leitch E. M., Liu J., Lueker M., Luong-Van D., Mantz A., Marrone D. P., McDonald M., McMahon J. J., Mehl J., Meyer S. S., Mocanu L., Mohr J. J., Montroy T. E., Murray S. S., Natoli T., Nurgaliev D., Padin S., Plagge T., Pryke C., Reichardt C. L., Rest A., Ruel J., Ruhl J. E., Saliwanchik B. R., Saro A., Sayre J. T., Schaffer K. K., Shaw L., Schrabback T., Shirokoff E., Song J., Spieler H. G., Stalder B., Staniszewski Z., Stark A. A., Story K., Stubbs C. W., Šuhada R., Tokarz S., van Engelen A., Vanderlinde K., Vieira J. D., Vikhlinin A., Williamson R., Zahn O., Zenteno A.: *Weak-lensing Mass Measurements of Five Galaxy Clusters in the South Pole Telescope Survey Using Magellan/Megacam.* ApJ 758, 68
http://adsabs.harvard.edu/abs/2012ApJ...758...68H

42. Hlozek R., Dunkley J., Addison G., Appel J. W., Bond J. R., Sofia Carvalho C., Das S., Devlin M. J., **Dünner R.**, Essinger-Hileman T., Fowler J. W., **Gallardo P.**, Hajian A., Halpern M., Hasselfield M., Hilton M., Hincks A. D., Hughes J. P., Irwin K. D., Klein J., Kosowsky A., Marriage T. A., Marsden D., Menanteau F., Moodley K., Niemack M. D., Nolta M. R., Page L. A., Parker L., Partridge B., **Rojas F.**, Sehgal N., Sherwin B., Sievers J., Spergel D. N., Staggs S. T., Swetz D. S., Switzer E. R., Thornton R., Wollack E.: *The Atacama Cosmology Telescope: A Measurement of the Primordial Power Spectrum.* ApJ 749, 90
http://adsabs.harvard.edu/abs/2012ApJ...749...90H

43. Ivanova N., Fragos T., Kim D.-W., Fabbiano G., Avendano Nandez J. L., Lombardi J. C., Sivakoff G. R., Voss R., **Jordán A.**: *On the Origin of the Metallicity Dependence in Dynamically formed Extragalactic Low-mass X-Ray Binaries.* ApJ 760, L24
http://adsabs.harvard.edu/abs/2012ApJ...760L..24I

44. Kuehn C. A., Smith H. A., **Catelan M.**, Pritzl B. J., De Lee N., Borissova J.: *Variable Stars in Large Magellanic Cloud Globular Clusters. II. NGC 1786.* AJ 144, 186
http://adsabs.harvard.edu/abs/2012AJ....144..186K

45. **Lacerna I.**, **Padilla N.**: *The nature of assembly bias - II. Halo spin.* MNRAS 426, L26
http://adsabs.harvard.edu/abs/2012MNRAS.426L..26L

46. Lardo C., Milone A. P., Marino A. F., Mucciarelli A., Pancino E., **Zoccali M.**, Rejkuba M., Carrera R., Gonzalez O.: *C and N abundances of main sequence and subgiant branch stars in NGC 1851.* A&A 541, A141
http://adsabs.harvard.edu/abs/2012A%26A...541A.141L

47. Lehmer B. D., Xue Y. Q., Brandt W. N., Alexander D. M., **Bauer F. E.**, Brusa M., Comastri A., Gilli R., Hornschemeier A. E., Luo B., Paolillo M., Ptak A., Shemmer O., Schneider D. P., Tozzi P., Vignali C.: *The 4 Ms Chandra Deep Field-South Number Counts Apportioned by Source Class: Pervasive Active Galactic Nuclei and the Ascent of Normal Galaxies.* ApJ 752, 46
http://adsabs.harvard.edu/abs/2012ApJ...752...46L

48. Majaess D., Turner D., Moni Bidin C., Geisler D., Borissova J., **Minniti D.**, Bonatto C., Gieren W., Carraro G., Kurtev R., Mauro F., Chené A.-N., Forbes D., Lucas P., **Dékány I.**, **Saito R. K.**, Soto M.: *Strengthening the open cluster distance scale via VVV photometry.* A&A 537, L4
http://adsabs.harvard.edu/abs/2012A%26A...537L...4M

49. Marino A. F., Milone A. P., Sneden C., Bergemann M., Kraft R. P., Wallerstein G., Cassisi S., Aparicio A., Asplund M., Bedin R. L., Hilker M., Lind K., Momany Y., Piotto G., Roederer I. U., Stetson P. B., **Zoccali M.**: *The double sub-giant branch of NGC 6656 (M 22): a chemical characterization.* A&A 541, A15
http://adsabs.harvard.edu/abs/2012A%26A...541A..15M

50. Masetti N., Parisi P., Jiménez-Bailón E., Palazzi E., Chavushyan V., Bassani L., Bazzano A., Bird A. J., Dean A. J., **Galaz G.**, Landi R., Malizia A., **Minniti D.**, Morelli L., Schiavone F., Stephen J. B., Ubertini P.: *Unveiling the nature of INTEGRAL objects through optical spectroscopy. IX. Twenty two more identifications, and a glance into the far hard X-ray Universe.* A&A 538, A123
http://adsabs.harvard.edu/abs/2012A%26A...538A.123M

51. Matute I., Márquez I., Masegosa J., Husillos C., del Olmo A., Perea J., Alfaro E. J., Fernández-Soto A., Moles M., Aguerri J. A. L., Aparicio-Villegas T., Benítez N., Broadhurst T., Cabrera-Cano J., Castander F. J., Cepa J., Cerviño M., Cristóbal-Hornillos D., **Infante L.**, González Delgado R. M., Martínez V. J., Molino A., Prada F., Quintana J. M.: *Quasi-stellar objects in the ALHAMBRA survey. I. Photometric redshift accuracy based on 23 optical-NIR filter photometry.* A&A 542, A20
http://adsabs.harvard.edu/abs/2012A%26A...542A..20M

52. Mauro F., Moni Bidin C., Cohen R., Geisler D., **Minniti D.**, **Catelan M.**, Chené A.-N., Villanova S.: *Double Horizontal Branches in NGC 6440 and NGC 6569 Unveiled by the VVV Survey.* ApJ 761, L29
http://adsabs.harvard.edu/abs/2012ApJ...761L..29M

53. McDonald M., Bayliss M., Benson B. A., Foley R. J., Ruel J., Sullivan P., Veilleux S., Aird K. A., Ashby M. L. N., Bautz M., Bazin G., Bleem L. E., Brodwin M., Carlstrom J. E., Chang C. L., Cho H. M., **Clocchiatti A.**, Crawford T. M., Crites A. T., de Haan T., Desai S., Dobbs M. A., Dudley J. P., Egami E., Forman W. R., Garmire G. P., George E. M., Gladders M. D., Gonzalez A. H., Halverson N. W., Harrington N. L., High F. W., Holder G. P., Holzapfel W. L., Hoover S., Hrubes J. D., Jones C., Joy M., Keisler R., Knox L., Lee A. T., Leitch E. M., Liu J., Lueker M., Luong-van D., Mantz A., Marrone D. P., McMahon J. J., Mehl J., Meyer S. S., Miller E. D., Mocanu L., Mohr J. J., Montroy T. E., Murray S. S., Natoli T., Padin S., Plagge T., Pryke C., Rawle T. D., Reichardt C. L., Rest A., Rex M., Ruhl J. E., Saliwanchik B. R., Saro A., Sayre J. T., Schaffer K. K., Shaw L., Shirokoff E., Simcoe R., Song J., Spieler H. G., Stalder B., Staniszewski Z., Stark A. A., Story K., Stubbs C. W., Šuhada R., van Engelen A., Vanderlinde K., Vieira J. D., Vikhlinin A., Williamson R., Zahn O., Zenteno A.: *A massive, cooling-flow-induced starburst in the core of a luminous cluster of galaxies.* Nature 488, 349
http://adsabs.harvard.edu/abs/2012Natur.488..349M

54. Melnick J., Giraud E., **Toledo I.**, Selman F., **Quintana H.**: *Intergalactic stellar populations in intermediate redshift clusters.* MNRAS 427, 850
http://adsabs.harvard.edu/abs/2012MNRAS.427..850M

55. Menanteau F., Hughes J. P., **Sifón C.**, Hilton M., **González J.**, **Infante L.**, **Barrientos L. F.**, Baker A. J., Bond J. R., Das S., Devlin M. J., Dunkley J., Hajian A., Hincks A. D., Kosowsky A., Marsden D., Marriage T. A., Moodley K., Niemack M. D., Nolta M. R., Page L. A., Reese E. D., Sehgal N., Sievers J., Spergel D. N., Staggs S. T., Wollack E.: *The Atacama Cosmology Telescope: ACT-CL J0102-4915 "El Gordo," a Massive Merging Cluster at Redshift 0.87.* ApJ 748, 7
http://adsabs.harvard.edu/abs/2012ApJ...748....7M

56. **Mesa-Delgado A.**, Núñez-Díaz M., Esteban C., García-Rojas J., Flores-Fajardo N., López-Martín L., Tsamis Y. G., Henney W. J.: *Ionized gas diagnostics from protoplanetary discs in the Orion nebula and the abundance discrepancy problem.* MNRAS 426, 614
http://adsabs.harvard.edu/abs/2012MNRAS.426..614M

57. Meyers J., Aldering G., Barbary K., **Barrientos L. F.**, Brodwin M., Dawson K. S., Deustua S., Doi M., Eisenhardt P., Faccioli L., Fakhouri H. K., Fruchter A. S., Gilbank D. G., Gladders M. D., Goldhaber G., Gonzalez A. H., Hattori T., Hsiao E., Ihara Y., Kashikawa N., Koester B., Konishi K., Lidman C., Lubin L., Morokuma T., Oda T., Perlmutter S., Postman M., Ripoche P., Rosati P., Rubin D., Rykoff E., Spadafora A., Stanford S. A., Suzuki N., Takanashi N., Tokita K., Yasuda N., The Supernova Cosmology Project: *The Hubble Space Telescope Cluster Supernova Survey. III. Correlated Properties of Type Ia Supernovae and Their Hosts at* $0.9<z<1.46$. ApJ 750, 1
http://adsabs.harvard.edu/abs/2012ApJ...750....1M

58. Milone A. P., Piotto G., Bedin L. R., Aparicio A., Anderson J., Sarajedini A., Marino A. F., Moretti A., Davies M. B., Chaboyer B., Dotter A., **Hempel M.**, Marín-Franch A., Majewski S., Paust N. E. Q., Reid I. N., Rosenberg A., Siegel M.: *The ACS survey of Galactic globular clusters. XII. Photometric binaries along the main sequence.* A&A 540, A16
http://adsabs.harvard.edu/abs/2012A%26A...540A..16M

59. Mullaney J. R., Pannella M., Daddi E., Alexander D. M., Elbaz D., Hickox R. C., Bournaud F., Altieri B., Aussel H., Coia D., Dannerbauer H., Dasyra K., Dickinson M., Hwang H. S., Kartaltepe J., Leiton R., Magdis G., Magnelli B., Popesso P., Valtchanov I., **Bauer F. E.**, Brandt W. N., Del Moro A., Hanish D. J., Ivison R. J., Juneau S., Luo B., Lutz D., Sargent M. T., Scott D., Xue Y. Q.: *GOODS-Herschel: the far-infrared view of star formation in active galactic nucleus host galaxies since* $z\sim3$. MNRAS 419, 95
http://adsabs.harvard.edu/abs/2012MNRAS.419...95M

60. Musella I., Ripepi V., Marconi M., Clementini G., Dall'Ora M., Scowcroft V., Moretti M. I., Di Fabrizio L., Greco C., Coppola G., Bersier D., **Catelan M.**, Grado A., Limatola L., Smith H. A., Kinemuchi K.: *Stellar Archeology in the Galactic Halo with Ultra-faint Dwarfs. VII. Hercules.* ApJ 756, 121
http://adsabs.harvard.edu/abs/2012ApJ...756..121M

61. Núñez-Díaz M., **Mesa-Delgado A.**, Esteban C., López-Martín L., García-Rojas J., Luridiana V.: *Exploring the effects of high-velocity flows in abundance determinations in H II regions: bidimensional spectroscopy of HH 204 in the Orion nebula.* MNRAS 421, 3399
http://adsabs.harvard.edu/abs/2012MNRAS.421.3399N

62. Ortiz J. L., Sicardy B., Braga-Ribas F., Alvarez-Candal A., Lellouch E., Duffard R., Pinilla-Alonso N., Ivanov V. D., Littlefair S. P., Camargo J. I. B., Assafin M., Unda-Sanzana E., Jehin E., Morales N., Tancredi G., Gil-Hutton R., de La Cueva I., Colque J. P., da Silva Neto D. N., Manfroid J., Thirouin A., Gutiérrez P. J., Lecacheux J., Gillon M., Maury A., Colas F., Licandro J., Mueller T., Jacques C., Weaver D., Milone A., Salvo R., Bruzzone S., Organero F., Behrend R., Roland S., Vieira-Martins R., Widemann T., Roques F., Santos-Sanz P., Hestroffer D., Dhillon V. S., Marsh T. R., Harlingten C., Bagatin A. C., Alonso M. L., **Ortiz M.**, Colazo C., Lima H. J. F., Oliveira A. S., Kerber L. O., Smiljanic R., Pimentel E., Giacchini B., Cacella P., Emilio M.: *Albedo and atmospheric constraints of dwarf planet Makemake from a stellar occultation.* Nature 491, 566
http://adsabs.harvard.edu/abs/2012Natur.491..566O

63. Ortolani S., Bonatto C., Bica E., Barbuy B., **Saito R. K.**: *Kronberger 49: A New Low-mass Globular Cluster or an Unprecedented Bulge Window?.* AJ 144, 147
http://adsabs.harvard.edu/abs/2012AJ....144..147O

64. Parisi P., Masetti N., Jiménez-Bailón E., Chavushyan V., Palazzi E., Landi R., Malizia A., Bassani L., Bazzano A., Bird A. J., Charles P. A., **Galaz G.**, Mason E., McBride V. A., **Minniti D.**, Morelli L., Schiavone F., Ubertini P.: *Accurate classification of 29 objects detected in the 39 month Palermo Swift/BAT hard X-ray catalogue.* A&A 545, A101
http://adsabs.harvard.edu/abs/2012A%26A...545A.101P

65. **Perina S.**, Bellazzini M., Buzzoni A., Cacciari C., Federici L., Fusi Pecci F., Galleti S.: *The horizontal branch morphology of M 31 globular clusters. Extreme second parameter effect in outer halo clusters.* A&A 546, A31
http://adsabs.harvard.edu/abs/2012A%26A...546A..31P

66. Pierini D., Šuhada R., Fassbender R., Nastasi A., Böhringer H., Salvato M., Pratt G. W., Lerchster M., Rosati P., Santos J. S., de Hoon A., Kohnert J., Lamer G., Mohr J. J., Mühlegger M., **Quintana H.**, Schwope A., Biffi V., Chon G., Giodini S., Koppenhoefer J., Verdugo M., Ziparo F., Afonso P. M. J., Clemens C., Greiner J., Krühler T., Küpcü Yoldaş A., Olivares E. F., Rossi A., Yoldaş A.: *First simultaneous optical/near-infrared imaging of an X-ray selected, high-redshift cluster of galaxies with GROND. The galaxy population of XMMU J0338.7 + 0030 at z = 1.1.* A&A 540, A45
http://adsabs.harvard.edu/abs/2012A%26A...540A..45P

67. Pietrukowicz P., **Minniti D.**, **Alonso-García J.**, **Hempel M.**: *Variability and stellar populations with deep optical-IR images of the Milky Way disc: matching VVV with VLT/VIMOS data.* A&A 537, A116
http://adsabs.harvard.edu/abs/2012A%26A...537A.116P

68. Pietrukowicz P., **Minniti D.**, Jetzer P., **Alonso-García J.**, Udalski A.: *The First Confirmed Microlens in a Globular Cluster.* ApJ 744, L18
http://adsabs.harvard.edu/abs/2012ApJ...744L..18P

69. Postman M., Coe D., Benítez N., Bradley L., Broadhurst T., Donahue M., Ford H., Graur O., Graves G., Jouvel S., Koekemoer A., Lemze D., Medezinski E., Molino A., Moustakas L., Ogaz S., Riess A., Rodney S., Rosati P., Umetsu K., Zheng W., Zitrin A., Bartelmann M., Bouwens R., Czakon N., Golwala S., Host O., **Infante L.**, Jha S., Jimenez-Teja Y., Kelson D., Lahav O., Lazkoz R., Maoz D., McCully C., Melchior P., Meneghetti M., Merten J., Moustakas J., Nonino M., Patel B., Regös E., Sayers J., Seitz S., Van der Wel A.: *The Cluster Lensing and Supernova Survey with Hubble: An Overview.* ApJS 199, 25
http://adsabs.harvard.edu/abs/2012ApJS..199...25P

70. **Prieto G.**, **Catelan M.**, **Contreras Ramos R.**, Pritzl B. J., Smith H. A., **Alonso-García J.**: *Variable stars in the globular cluster M 28 (NGC 6626).* A&A 543, A148
http://adsabs.harvard.edu/abs/2012A%26A...543A.148P

71. Prieto J. L., Lee J. C., Drake A. J., McNaught R., Garradd G., Beacom J. F., Beshore E., **Catelan M.**, Djorgovski S. G., Pojmanski G., Stanek K. Z., Szczygieł D. M.: *SN 2008jb: A "Lost" Core-collapse Supernova in a Star-forming Dwarf Galaxy at ∼10 Mpc.* ApJ 745, 70
http://adsabs.harvard.edu/abs/2012ApJ...745...70P

72. **Quinn J. L.**: *Bayesian analysis of polarization measurements.* A&A 538, A65
http://adsabs.harvard.edu/abs/2012A%26A...538A..65Q

73. Ramírez I., Meléndez J., **Chanamé J.**: *Oxygen Abundances in Low- and High-α Field Halo Stars and the Discovery of Two Field Stars Born in Globular Clusters.* ApJ 757, 164
http://adsabs.harvard.edu/abs/2012ApJ...757..164R

74. Reese E. D., Mroczkowski T., Menanteau F., Hilton M., Sievers J., **Aguirre P.**, Appel J. W., Baker A. J., Bond J. R., Das S., Devlin M. J., Dicker S. R., **Dünner R.**, Essinger-Hileman T., Fowler J. W., Hajian A., Halpern M., Hasselfield M., Hill J. C., Hincks A. D., Huffenberger K. M., Hughes J. P., Irwin K. D.,

Klein J., Kosowsky A., Lin Y.-T., Marriage T. A., Marsden D., Moodley K., Niemack M. D., Nolta M. R., Page L. A., Parker L., Partridge B., **Rojas F.**, Sehgal N., **Sifón C.**, Spergel D. N., Staggs S. T., Swetz D. S., Switzer E. R., Thornton R., Trac H., Wollack E. J.: *The Atacama Cosmology Telescope: High-resolution Sunyaev-Zel'dovich Array Observations of ACT SZE-selected Clusters from the Equatorial Strip*. ApJ 751, 12
http://adsabs.harvard.edu/abs/2012ApJ...751...12R

75. Rest A., Prieto J. L., Walborn N. R., Smith N., Bianco F. B., Chornock R., Welch D. L., Howell D. A., Huber M. E., Foley R. J., Fong W., Sinnott B., Bond H. E., Smith R. C., Toledo I., **Minniti D.**, Mandel K.: *Light echoes reveal an unexpectedly cool ηCarinae during its nineteenth-century Great Eruption*. Nature 482, 375
http://adsabs.harvard.edu/abs/2012Natur.482..375R

76. Roedig C., Sesana A., Dotti M., **Cuadra J.**, Amaro-Seoane P., Haardt F.: *Evolution of binary black holes in self gravitating discs. Dissecting the torques*. A&A 545, A127
http://adsabs.harvard.edu/abs/2012A%26A...545A.127R

77. Rosario D. J., Santini P., Lutz D., Shao L., Maiolino R., Alexander D. M., Altieri B., Andreani P., Aussel H., **Bauer F. E.**, Berta S., Bongiovanni A., Brandt W. N., Brusa M., Cepa J., Cimatti A., Cox T. J., Daddi E., Elbaz D., Fontana A., Förster Schreiber N. M., Genzel R., Grazian A., Le Floch E., Magnelli B., Mainieri V., Netzer H., Nordon R., Pérez Garcia I., Poglitsch A., Popesso P., Pozzi F., Riguccini L., Rodighiero G., Salvato M., Sanchez-Portal M., Sturm E., Tacconi L. J., Valtchanov I., Wuyts S.: *The mean star formation rate of X-ray selected active galaxies and its evolution from $z \sim 2.5$: results from PEP-Herschel*. A&A 545, A45
http://adsabs.harvard.edu/abs/2012A%26A...545A..45R

78. Rozyczka M., Kaluzny J., **Pietrukowicz P.**, Pych W., **Catelan M.**, **Contreras C.**: *A VIMOS spectroscopy study of photometric variables and straggler candidates in ω Centauri*. A&A 537, A89
http://adsabs.harvard.edu/abs/2012A%26A...537A..89R

79. **Saez C.**, Brandt W. N., Gallagher S. C., **Bauer F. E.**, Garmire G. P.: *The Long-term X-Ray Variability of Broad Absorption Line Quasars*. ApJ 759, 42
http://adsabs.harvard.edu/abs/2012ApJ...759...42S

80. **Saito R. K.**, **Hempel M.**, **Minniti D.**, Lucas P. W., Rejkuba M., Toledo I., Gonzalez O. A., **Alonso-García J.**, Irwin M. J., Gonzalez-Solares E., Hodgkin S. T., Lewis J. R., Cross N., Ivanov V. D., Kerins E., Emerson J. P., Soto M., Amôres E. B., Gurovich S., **Dékány I.**, **Angeloni R.**, **Beamin J. C.**, **Catelan M.**, **Padilla N.**, **Zoccali M.**, Pietrukowicz P., Moni Bidin C., Mauro F., Geisler D., Folkes S. L., **Sale S. E.**, Borissova J., Kurtev R., Ahumada A. V., Alonso M. V., Adamson A., Arias J. I., Bandyopadhyay R. M., Barbá R. H., Barbuy B., Baume G. L., Bedin L. R., Bellini A., Benjamin R., Bica E., Bonatto C., Bronfman L., Carraro G., Chenè A. N., Clariá J. J., Clarke J. R. A., **Contreras C.**, **Corvillón A.**, de Grijs R., Dias B., Drew J. E., Fariña C., Feinstein C., Fernández-Lajús E., Gamen R. C., Gieren W., Goldman B., González-Fernández C., Grand R. J. J., Gunthardt G., Hambly N. C., Hanson M. M., **Hełminiak K. G.**, Hoare M. G., Huckvale L., **Jordán A.**, Kinemuchi K., Longmore A., López-Corredoira M., Maccarone T., Majaess D., Martín E. L., Masetti N., Mennickent R. E., Mirabel I. F., Monaco L., Morelli L., Motta V., Palma T., Parisi M. C., Parker Q., Peñaloza F., Pietrzyński G., Pignata G., Popescu B., Read M. A., **Rojas A.**, Roman-Lopes A., Ruiz M. T., Saviane I., Schreiber M. R., Schröder A. C., Sharma S., Smith M. D., Sodré L., Stead J., Stephens A. W., Tamura M., Tappert C., Thompson M. A., Valenti E., Vanzi L., Walton N. A., Weidmann W., Zijlstra A.: *VVV DR1: The first data release of the Milky Way bulge and southern plane from the near-infrared ESO public survey VISTA variables in the Vía Láctea*. A&A 537, A107
http://adsabs.harvard.edu/abs/2012A%26A...537A.107S

81. **Saito R. K.**, **Minniti D.**, Dias B., **Hempel M.**, Rejkuba M., **Alonso-García J.**, Barbuy B., **Catelan M.**, Emerson J. P., Gonzalez O. A., Lucas P. W., **Zoccali M.**: *Milky Way demographics with the VVV survey. I. The 84-million star colour-magnitude diagram of the Galactic bulge*. A&A 544, A147
http://adsabs.harvard.edu/abs/2012A%26A...544A.147S

82. **Sale S. E.**: *3D extinction mapping using hierarchical Bayesian models*. MNRAS 427, 2119
http://adsabs.harvard.edu/abs/2012MNRAS.427.2119S

83. Salinas R., Jílková L., Carraro G., **Catelan M.**, **Amigo P.**: *Structural parameters and blue stragglers in Sagittarius dwarf spheroidal galaxy globular clusters*. MNRAS 421, 960
http://adsabs.harvard.edu/abs/2012MNRAS.421..960S

84. Santini P., Rosario D. J., Shao L., Lutz D., Maiolino R., Alexander D. M., Altieri B., Andreani P., Aussel H., **Bauer F. E.**, Berta S., Bongiovanni A., Brandt

W. N., Brusa M., Cepa J., Cimatti A., Daddi E., Elbaz D., Fontana A., Förster Schreiber N. M., Genzel R., Grazian A., Le Floc'h E., Magnelli B., Mainieri V., Nordon R., Pérez Garcia A. M., Poglitsch A., Popesso P., Pozzi F., Riguccini L., Rodighiero G., Salvato M., Sanchez-Portal M., Sturm E., Tacconi L. J., Valtchanov I., Wuyts S.: *Enhanced star formation rates in AGN hosts with respect to inactive galaxies from PEP-Herschel observations.* A&A 540, A109
http://adsabs.harvard.edu/abs/2012A%26A...540A.109S

85. Semler D. R., Šuhada R., Aird K. A., Ashby M. L. N., Bautz M., Bayliss M., Bazin G., Bocquet S., Benson B. A., Bleem L. E., Brodwin M., Carlstrom J. E., Chang C. L., Cho H. M., **Clocchiatti A.**, Crawford T. M., Crites A. T., de Haan T., Desai S., Dobbs M. A., Dudley J. P., Foley R. J., George E. M., Gladders M. D., Gonzalez A. H., Halverson N. W., Harrington N. L., High F. W., Holder G. P., Holzapfel W. L., Hoover S., Hrubes J. D., Jones C., Joy M., Keisler R., Knox L., Lee A. T., Leitch E. M., Liu J., Lueker M., Luong-Van D., Mantz A., Marrone D. P., McDonald M., McMahon J. J., Mehl J., Meyer S. S., Mocanu L., Mohr J. J., Montroy T. E., Murray S. S., Natoli T., Padin S., Plagge T., Pryke C., Reichardt C. L., Rest A., Ruel J., Ruhl J. E., Saliwanchik B. R., Saro A., Sayre J. T., Schaffer K. K., Shaw L., Shirokoff E., Song J., Spieler H. G., Stalder B., Staniszewski Z., Stark A. A., Story K., Stubbs C. W., van Engelen A., Vanderlinde K., Vieira J. D., Vikhlinin A., Williamson R., Zahn O., Zenteno A.: *High-redshift Cool-core Galaxy Clusters Detected via the Sunyaev-Zel'dovich Effect in the South Pole Telescope Survey.* ApJ 761, 183
http://adsabs.harvard.edu/abs/2012ApJ...761..183S

86. Sharon K., Gladders M. D., Rigby J. R., Wuyts E., Koester B. P., Bayliss M. B., **Barrientos L. F.**: *Source-plane Reconstruction of the Bright Lensed Galaxy RCSGA 032727-132609.* ApJ 746, 161
http://adsabs.harvard.edu/abs/2012ApJ...746..161S

87. Sherwin B. D., Das S., Hajian A., Addison G., Bond J. R., Crichton D., Devlin M. J., Dunkley J., Gralla M. B., Halpern M., Hill J. C., Hincks A. D., Hughes J. P., Huffenberger K., Hlozek R., Kosowsky A., Louis T., Marriage T. A., Marsden D., Menanteau F., Moodley K., Niemack M. D., Page L. A., Reese E. D., Sehgal N., Sievers J., **Sifón C.**, Spergel D. N., Staggs S. T., Switzer E. R., Wollack E.: *The Atacama Cosmology Telescope: Cross-correlation of cosmic microwave background lensing and quasars.* Phys.Rev.D 86, 083006
http://adsabs.harvard.edu/abs/2012PhRvD..86h3006S

88. Song J., Zenteno A., Stalder B., Desai S., Bleem L. E., Aird K. A., Armstrong R., Ashby M. L. N., Bayliss M., Bazin G., Benson B. A., Bertin E., Brodwin M., Carlstrom J. E., Chang C. L., Cho H. M., **Clocchiatti A.**, Crawford T. M., Crites A. T., de Haan T., Dobbs M. A., Dudley J. P., Foley R. J., George E. M., Gettings D., Gladders M. D., Gonzalez A. H., Halverson N. W., Harrington N. L., High F. W., Holder G. P., Holzapfel W. L., Hoover S., Hrubes J. D., Joy M., Keisler R., Knox L., Lee A. T., Leitch E. M., Liu J., Lueker M., Luong-Van D., Marrone D. P., McDonald M., McMahon J. J., Mehl J., Meyer S. S., Mocanu L., Mohr J. J., Montroy T. E., Natoli T., Nurgaliev D., Padin S., Plagge T., Pryke C., Reichardt C. L., Rest A., Ruel J., Ruhl J. E., Saliwanchik B. R., Saro A., Sayre J. T., Schaffer K. K., Shaw L., Shirokoff E., Šuhada R., Spieler H. G., Stanford S. A., Staniszewski Z., Stark A. A., Story K., Stubbs C. W., van Engelen A., Vanderlinde K., Vieira J. D., Williamson R., Zahn O.: *Redshifts, Sample Purity, and BCG Positions for the Galaxy Cluster Catalog from the First 720 Square Degrees of the South Pole Telescope Survey.* ApJ 761, 22
http://adsabs.harvard.edu/abs/2012ApJ...761...22S

89. Suzuki N., Rubin D., Lidman C., Aldering G., Amanullah R., Barbary K., **Barrientos L. F.**, Botyanszki J., Brodwin M., Connolly N., Dawson K. S., Dey A., Doi M., Donahue M., Deustua S., Eisenhardt P., Ellingson E., Faccioli L., Fadeyev V., Fakhouri H. K., Fruchter A. S., Gilbank D. G., Gladders M. D., Goldhaber G., Gonzalez A. H., Goobar A., Gude A., Hattori T., Hoekstra H., Hsiao E., Huang X., Ihara Y., Jee M. J., Johnston D., Kashikawa N., Koester B., Konishi K., Kowalski M., Linder E. V., Lubin L., Melbourne J., Meyers J., Morokuma T., Munshi F., Mullis C., Oda T., Panagia N., Perlmutter S., Postman M., Pritchard T., Rhodes J., Ripoche P., Rosati P., Schlegel D. J., Spadafora A., Stanford S. A., Stanishev V., Stern D., Strovink M., Takanashi N., Tokita K., Wagner M., Wang L., Yasuda N., Yee H. K. C., The Supernova Cosmology Project: *The Hubble Space Telescope Cluster Supernova Survey. V. Improving the Dark-energy Constraints above $z>1$ and Building an Early-type-hosted Supernova Sample.* ApJ 746, 85
http://adsabs.harvard.edu/abs/2012ApJ...746...85S

90. Turner M. L., Côté P., Ferrarese L., **Jordán A.**, Blakeslee J. P., Mei S., Peng E. W., West M. J.: *The ACS Fornax Cluster Survey. VI. The Nuclei of Early-type Galaxies in the Fornax Cluster.* ApJS

203, 5
http://adsabs.harvard.edu/abs/2012ApJS..203....5T

91. Umetsu K., Medezinski E., Nonino M., Merten J., Zitrin A., Molino A., Grillo C., **Carrasco M.**, Donahue M., Mahdavi A., Coe D., Postman M., Koekemoer A., Czakon N., Sayers J., Mroczkowski T., Golwala S., Koch P. M., Lin K.-Y., Molnar S. M., Rosati P., Balestra I., Mercurio A., Scodeggio M., Biviano A., **Anguita T.**, **Infante L.**, Seidel G., Sendra I., Jouvel S., Host O., Lemze D., Broadhurst T., Meneghetti M., Moustakas L., Bartelmann M., Benítez N., Bouwens R., Bradley L., Ford H., Jiménez-Teja Y., Kelson D., Lahav O., Melchior P., Moustakas J., Ogaz S., Seitz S., Zheng W.: *CLASH: Mass Distribution in and around MACS J1206.2-0847 from a Full Cluster Lensing Analysis*. ApJ 755, 56
http://adsabs.harvard.edu/abs/2012ApJ...755...56U

92. **Valcarce A. A. R.**, **Catelan M.**, Sweigart A. V.: *Effects of helium enrichment in globular clusters. I. Theoretical plane with PGPUC stellar evolution code*. A&A 547, A5
http://adsabs.harvard.edu/abs/2012A%26A...547A...5V

93. Vanzi L., Chacon J., **Helminiak K. G.**, **Baffico M.** Rivinius T., Štefl S., Baade D., Avila G., Guirao C.: *PUCHEROS: a cost-effective solution for high-resolution spectroscopy with small telescopes*. MNRAS 424, 2770
http://adsabs.harvard.edu/abs/2012MNRAS.424.2770V

94. Walker-Soler J. P., Gawiser E., Bond N. A., **Padilla N.**, **Francke H.**: *Present-day Descendants of z = 3 Lyα-emitting Galaxies in the Millennium-II Halo Merger Trees*. ApJ 752, 160
http://adsabs.harvard.edu/abs/2012ApJ...752..160W

95. Wilson M. J., Sherwin B. D., Hill J. C., Addison G., Battaglia N., Bond J. R., Das S., Devlin M. J., Dunkley J., **Dünner R.**, Fowler J. W., Gralla M. B., Hajian A., Halpern M., Hilton M., Hincks A. D., Hlozek R., Huffenberger K., Hughes J. P., Kosowsky A., Louis T., Marriage T. A., Marsden D., Menanteau F., Moodley K., Niemack M. D., Nolta M. R., Page L. A., Partridge B., Reese E. D., Sehgal N., Sievers J., Spergel D. N., Staggs S. T., Swetz D. S., Switzer E. R., Trac H., Wollack E.: *Atacama Cosmology Telescope: A measurement of the thermal Sunyaev-Zel'dovich effect using the skewness of the CMB temperature distribution*. Phys.Rev.D 86, 122005
http://adsabs.harvard.edu/abs/2012PhRvD..86l2005W

96. Xue Y. Q., Wang S. X., Brandt W. N., Luo B., Alexander D. M., **Bauer F. E.**, Comastri A., Fabian A. C., Gilli R., Lehmer B. D., Schneider D. P., Vignali C., Young M.: *Tracking down the Source Population Responsible for the Unresolved Cosmic 6-8 keV Background*. ApJ 758, 129
http://adsabs.harvard.edu/abs/2012ApJ...758..129X

97. Yaryura C. Y., Lares M., Luparello H. E., Paz D. J., Lambas D. G., **Padilla N.**, Sgró M. A.: *The influence of superstructures on bright galaxy environments: clustering properties*. MNRAS 426, 708
http://adsabs.harvard.edu/abs/2012MNRAS.426..708Y

98. Young M., Brandt W. N., Xue Y. Q., Paolillo M., Alexander D. M., **Bauer F. E.**, Lehmer B. D., Luo B., Shemmer O., Schneider D. P., Vignali C.: *Variability-selected Low-luminosity Active Galactic Nuclei in the 4 Ms Chandra Deep Field-South*. ApJ 748, 124
http://adsabs.harvard.edu/abs/2012ApJ...748..124Y

99. Zheng W., Postman M., Zitrin A., Moustakas J., Shu X., Jouvel S., Høst O., Molino A., Bradley L., Coe D., Moustakas L. A., **Carrasco M.**, Ford H., Benítez N., Lauer T. R., Seitz S., Bouwens R., Koekemoer A., Medezinski E., Bartelmann M., Broadhurst T., Donahue M., Grillo C., **Infante L.**, Jha S. W., Kelson D. D., Lahav O., Lemze D., Melchior P., Meneghetti M., Merten J., Nonino M., Ogaz S., Rosati P., Umetsu K., van der Wel A.: *A magnified young galaxy from about 500 million years after the Big Bang*. Nature 489, 406
http://adsabs.harvard.edu/abs/2012Natur.489..406Z

100. Zitrin A., Rosati P., Nonino M., Grillo C., Postman M., Coe D., Seitz S., Eichner T., Broadhurst T., Jouvel S., Balestra I., Mercurio A., Scodeggio M., Benítez N., Bradley L., Ford H., Host O., Jimenez-Teja Y., Koekemoer A., Zheng W., Bartelmann M., Bouwens R., Czoske O., Donahue M., Graur O., Graves G., **Infante L.**, Jha S., Kelson D., Lahav O., Lazkoz R., Lemze D., Lombardi M., Maoz D., McCully C., Medezinski E., Melchior P., Meneghetti M., Merten J., Molino A., Moustakas L. A., Ogaz S., Patel B., Regoes E., Riess A., Rodney S., Umetsu K., Van der Wel A.: *CLASH: New Multiple Images Constraining the Inner Mass Profile of MACS J1206.2-0847*. ApJ 749, 97
http://adsabs.harvard.edu/abs/2012ApJ...749...97Z