

# Santiago G. Patiri

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## Contact Information

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## Personal Data

Date of Birth: Feb 4, 1980  
Place of Birth: Mendoza, Argentina  
Citizenship: Dual (Argentine and Italian)  
Languages: Spanish, English

## Research Interests

Large Scale Structure of the Universe, galaxy formation and clustering, galaxy redshift surveys, N-body simulations

## Current Position

Postdoctoral Fellow (September 2007 - present)  
CASE WESTERN RESERVE UNIVERSITY, USA

## Education

INSTITUTO DE ASTROFISICA DE CANARIAS, *Spain*

### July 2007

Ph.D., Physics (Summa Cum Laude)

- Dissertation Topic: "Large-Scale structure of the Universe: Observations, Theory and Simulations"
- Advisors: Dr. Juan Betancort-Rijo and Dr. Francisco Prada

### October 2004

M.Sc., Astrophysics

UNIVERSIDAD NACIONAL DE SAN JUAN, *Argentina*

### September 2002

Licenciatura (B.Sc.), Astronomy

*Top University score of year 2002: 9/10*

## Honors and Awards

Marie Curie EARA EST Fellowship, 2006

IAC Doctoral Fellowship, *Instituto de Astrofisica de Canarias*, 2002-2006

Honor Diploma for the highest University score, *Universidad Nacional de San Juan*, 2002

Fellowship of the Argentine Astronomical Society for outstanding undergraduate students, 2002

## Refereed Publications

*Void Statistics in Large Galaxy Redshift Surveys: Does Halo Occupation of Field Galaxies Depend on Environment?*

J. Tinker, C. Conroy, P. Norberg, **S. G. Patiri**, D. Weinberg and M. Warren, 2007, ApJ in press.

*Spin alignment of dark matter haloes in the shells of the largest voids*

A. J. Cuesta, J. Betancort-Rijo, S. Gottlöber, **S. G. Patiri**, G. Yepes and F. Prada, 2007, MNRAS in press.

*Angular distribution of satellite galaxies from the Sloan Digital Sky Survey DR4*

M. Azzaro, **S. G. Patiri**, F. Prada and A. R. Zentner, 2007, MNRAS, 376L, 46

*The Alignment of Dark Matter Halos with the Cosmic Web*

**S. G. Patiri**, A. J. Cuesta, F. Prada, J. Betancort-Rijo and A. Klypin, 2006, ApJ, 652, L75-L79

*The Properties of Galaxies in Voids*

**S. G. Patiri**, F. Prada, J. Holtzman, A. Klypin and J. Betancort-Rijo, 2006, MNRAS, 372, 1710

*Detection of the effect of cosmological large-scale structure on the orientation of galaxies*

I. Trujillo, C. Carretero and **S. G. Patiri**, 2006, ApJ, 640, L111-L114

*Detailed theoretical predictions of the outskirts of dark matter halos*

J. E. Betancort-Rijo, M. A. Sanchez-Conde, F. Prada and **S. G. Patiri**, 2006, ApJ, 649, 579

*Statistics of Voids in the 2dF Galaxy Redshift Survey*

**S. G. Patiri**, J. Betancort-Rijo, F. Prada, A. Klypin and S. Gottlöber, 2006, MNRAS, 369, 335

*How far do they go? The outer structure of dark matter halos*

F. Prada, A.A. Klypin, E. Simonneau, J. Betancort-Rijo, **S. G. Patiri**, S. Gottlöber and M.A. Sanchez-Conde, 2006, ApJ, 645, 1001

*On an Analytical Framework for Voids: Their abundances, density profiles and local mass functions*

**S. G. Patiri**, J. E. Betancort-Rijo and F. Prada, 2006, MNRAS, 368, 1132

## Conference and Workshop Presentations

*The Properties of Galaxies in Voids -Long Talk*

**S. G. Patiri**

Galaxies in the Cosmic Web, NMSU, Las Cruces NM, USA, May 2006

*How normal are galaxies in rare voids ? – Poster*

**S. G. Patiri**, F. Prada., A. Klypin and J. Betancort-Rijo

Nearly Normal Galaxies in a LCDM Universe, UCSC, Santa Cruz CA, USA, August 2005

*The outer structure of dark matter halos –Poster*

F. Prada, **S. G. Patiri** and A. Klypin

Nearly Normal Galaxies in a LCDM Universe, UCSC, Santa Cruz CA, USA, August 2005

*How far do they go ? The outer structure of dark matter halos –Poster*

F. Prada, **S. G. Patiri** and A. Klypin

Mass Profiles and Shapes of Cosmological Structures, IAP Paris, France, July 2005

*Voids in the 2dF Galaxy Redshift Survey –Oral Contribution*

**S. G. Patiri**

Workshop on Galaxy Formation, UAM Madrid, Spain, May 2005

*Probability of Voids – Poster*

**S. G. Patiri**, J. Betancort-Rijo and F. Prada.

Stars and Structure Formation: From the first light to the Milky Way, ETH Zurich, Switzerland, August 2003

*CASLEO Image Data Base – Oral Contribution*

**S. G. Patiri**

Workshop U. La Serena - UNSJ, La Serena, Chile, April 2002.

*Mean Motion Resonances of three bodies – Poster*

S. Fernandez, S. Flores and **S. G. Patiri**

X Latin-American Regional Meeting of Astronomy, Cordoba, Argentina, September 2002, Rev. Mex. Astronomia y Astrofisica Conference Series, 2002, 14, 107.

*Near Earth Asteroids – Poster*

S. Fernandez, **S. G. Patiri**, S. Flores and M. Recabarren

XLIV Argentine Astronomical Society National Meeting, Tucuman, Argentina, September 2000,

BAAA, 44, 23.

## Colloquia and Seminars

*Astronomy Colloquium*, Case Western Reserve University, October 2007

*Cosmology Seminar*, Max-Planck Institute for Astrophysics, Garching, Germany, April 2007

*Observatory Seminar*, Complejo Astronomico El Leoncito, Argentina, September 2006

*Institute Seminar*, Instituto de Astrofisica de Canarias, May 2006

*Institute Seminar*, Instituto de Astrofisica de Andalucia, April 2006

## Conferences and Workshops Attendance

*Aspen Summer Workshop: "Modelling Galaxy Clustering"*, Aspen Center for Physics, USA, June 2007

*Galaxy Redshift Surveys of the Future*, ICG, University of Portsmouth, UK, July 2006

*Galaxies in the Cosmic Web*, NMSU, Las Cruces NM, USA, May 2006

*Nearly Normal Galaxies in a LCDM Universe*, UCSC, Santa Cruz CA, USA, August 2005

*Workshop on Galaxy Formation*, UAM Madrid, Spain, May 2005

*Data Analysis in Cosmology*, Valencia, Spain, August 2004

*IAA Cosmology Meeting*, Granada, Spain, May 2004

*Stars and Structure Formation: From the first light to the Milky Way*, ETH Zurich, Switzerland, August 2003

*Satellites and Tidal Streams*, IAC-ING, La Palma, Spain, May 2003

*Winter School of Astrophysics: Dark Matter and Dark Energy*, IAC, Tenerife, Spain, November 2002

*First Workshop U.La Serena - UNSJ*, La Serena, Chile, April 2002

*X Latin American Regional Meeting*, Cordoba, Argentina, September 2001

*XLII Argentine Astronomical Society Annual Meeting*, Tucuman, September 2000

## Visiting Positions

*Max Planck Institut für Astrophysik*, Garching, Germany, January-April 2007,  
Host: **Prof. Simon White**

*Astrophysical Institute Potsdam*, Germany, July-August 06,  
Host: **Dr. Stefan Gottlöber**

*Astrophysical Institute Potsdam, Germany, July 05,*  
Host: **Dr. Stefan Gottlöber and Dr. Volker Müller**

*Department of Astronomy, NMSU, Nov 03-Feb 04,*  
Host: **Prof. Anatoly Klypin**

*Instituto de Astrofísica de Andalucía, Granada, Spain, several times,*  
Host: **Dr. Francisco Prada**

## Teaching Experience

*Teaching Assistant, Programming (FORTRAN), 2000-2002, Dept. of Astronomy, UNSJ, Argentina*

*Teaching Assistant, Physics II and III (Electricity, Magnetism and Optics), 2000-2002, Dept. of Astronomy, UNSJ, Argentina*

## Academic Service

Student Representative to the Government of the School of Physical and Natural Sciences, UNSJ, 2001-2002

Student Representative to the Department of Astronomy and Geophysics, UNSJ, 2002

## Selected Media Coverage

*Why Galaxies Tilt Just So, Sky and Telescope magazine, July 2006*

*Galaxies like necklace beads, Astronomy magazine, May 2006*

## Observational Experience

10 nights in the 2.15m “Jorge Sahade” Telescope (Echelle spectroscopy, Direct Imaging), CASLEO, Argentina, 2000-2002

20 nights in the 1.50m Telescope of the Bosque Alegre Observatory (Direct Imaging), Argentina, 2001

2 nights in the 2.5m Nordic Optical Telescope (ALFOSC), La Palma, Canary Islands, Spain, 2004

## Computer Skills

Languages: FORTRAN 77 and 90, C, Unix shell scripts, parallel processing libraries (OPENMP + MPI).

Software: *Mathematica*,  $\text{\LaTeX}$  and Presentation software (PP, Flash, HTML)

Algorithms and codes: ART N-Body code, CMBfast, PM codes, Numerical Recipes, NAGs

Operating Systems: Unix/Linux, Windows

## Referees

Prof. Francisco Prada  
Instituto de Astrofisica de Andalucia, CSIC, Spain  
fprada@iaa.es

Prof. Anatoly Klypin  
Department of Astronomy, New Mexico State University, NM, USA  
aklypin@nmsu.edu

Prof. Andrey Kravtsov  
Department of Astronomy & Astrophysics, The University of Chicago, IL, USA  
andrey@oddjob.uchicago.edu

Prof. Juan Betancort-Rijo  
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