

Carlos Badenes - CV and Publication List

Carlos Badenes, Ph.D.

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Employment

- 2009 - Present** **Senior Research Associate**
Weizmann Institute of Science, Rehovot, Israel
and Tel-Aviv University, Tel-Aviv, Israel
- 2006 - 2009** **Chandra Postdoctoral Fellow**
Princeton University, Princeton, NJ (2007-2009)
Rutgers University, Piscataway, NJ (2006-2007)
- 2004 - 2006** **Postdoctoral Research Associate**
Rutgers University, Piscataway, NJ
Supervisor: John P. Hughes

Education

- 2004** **Ph.D., Astrophysics**
Universitat Politècnica de Catalunya, Barcelona, Spain
Departament de Física i Enginyeria Nuclear
Ph.D. Thesis : "Thermal X-ray Emission from Young Type Ia Supernova Remnants"
Advisor: Dr. Eduardo Bravo
- 1999** **M.S. and B.S., Electrical Engineering**
Universitat Politècnica de Catalunya, Barcelona, Spain
Escola Tècnica Superior d'Enginyeria de Telecomunicació de Barcelona

Research Interests

- Type Ia Supernovae:** explosion physics, progenitor systems, stellar populations, chemical evolution.
- Supernova Remnants:** X-ray emission, shock physics, multi-dimensional hydrodynamics, X-ray spectral codes.
- Large Astronomical Data Bases:** Data mining, short-period binaries, spectral variability.

Honors and Awards

- 2006 *Chandra* Fellowship
- 2002 Award for best student-designed mission concept. European Space Agency, International Advanced School Leonardo da Vinci, 'Mission Concept and Payload Design in X- and Gamma-ray Astronomy'. Bologna, Italy
- 2000 Generalitat de Catalunya, FI Research Fellowship

Publication Record

23 refereed papers (**12** as first author), **551** citations (source: *NASA ADS*). *H* parameter: **12**. For more details, see attached publication list.

Professional Service

- 2009-present Science Associate for the *International X-ray Observatory (IXO)*.
 2009 *Chandra* Cycle 11 Time Allocation Committee.
 2009 Scientific Organizing Committee, Type Ia Supernova Progenitors Workshop, Princeton, NJ.
 2008 NASA *Constellation-X* Panel on Production and Distribution of the Elements.
 2008 *Swift* Cycle 4 Guest Investigator Program Review.
 2007 Scientific Organizing Committee, Endpoints And Interactions: A Supernova Remnant Workshop, American Astronomical Society Meeting, Hawaii.
 2007-present Member of the American Astronomical Society (AAS).
 2006-present Scientific referee for *Astronomy & Astrophysics*, *The Astrophysical Journal*, and *Science*.
 2006 *Suzaku (Astro-E2)* AO-1 Time Allocation Committee.
 2004 NASA *Constellation-X* Panel to Define Scientific Objectives for Supernova Remnants.
 2003-present Member of the Sociedad Española de Astronomía (SEA).

Competitively Obtained Observing Time

As PI:

- 2010 Mayall 4m Telescope, Kitt Peak National Observatory: Spectroscopic follow-up of the SWARMS survey. 4 nights.
 2010 *Hubble Space Telescope*: WD 1257+5428. 5 orbits.
 2009 *Swift* : WD 1257+5428 (ToO). 5 ks.
 2009 Green Bank Telescope: WD 1257+5428. 10 hours.
 2009 ARC 3.5m Telescope, Apache Point Observatory: Time Resolved Spectroscopy of Double Degenerate White Dwarfs. 8 half-nights.
 2008 ARC 3.5m Telescope, Apache Point Observatory: Late-time Spectroscopy of nearby Type Ib/c and Type IIIn SNe. 4 half-nights.

As Co-I:

- 2010 Mayall 4m Telescope at Kitt Peak National Observatory: Light Echoes from Ancient Supernovae. 8 nights. PI: A. Rest.
 2010 *EVLA*: Type Ia SNe (ToO). 10 hrs. PI: A. Soderberg.
 2010 ARC 3.5m Telescope at Apache Point Observatory: Time Resolved Spectroscopy of Double Degenerate White Dwarfs. 4 half-nights. PI: F. Mullaly.
 2009 ARC 3.5m Telescope at Apache Point Observatory: Time Resolved Spectroscopy of Double Degenerate White Dwarfs. 4 half-nights. PI: F. Mullaly.
 2009 *Chandra*: SNR G299.2-2.9. 640 ks (Large Project). PI: S. Park.
 2009 *Chandra*: SNR E0519-69.0. 52 ks. PI: J.P. Hughes.
 2009 *Chandra*: MACS1354+77. 33 ks. PI: D. Maoz.
 2008 *Chandra*: Tycho SNR. 750 ks (Large Project). PI: J.P. Hughes.
 2008 *Chandra*: SN1996cr. 500 ks (Large Project). PI: F. Bauer.
 2008 *Suzaku*: Tycho SNR. 400 ks (Large Project). PI: J.P. Hughes.
 2007 *Chandra/Hubble Space Telescope*: SNR 0509-67.5. 63 ks/4 Orbits. PI: J.P. Hughes.
 2007 *Chandra*: Tycho SNR. 150 ks. PI: J.P. Hughes.
 2006 *Chandra*: Kepler SNR. 750 ks (Large Project). PI: S. Reynolds.
 2005 *Suzaku*: SNR 0509-67.5. 100 ks. Co-PIs: H. Nakajima & J.P. Hughes. (Cancelled due to the loss of XRS)
 2003-2010 *INTEGRAL*: Bright Type Ia Supernova (ToO). 2000 ks. PI: J. Isern

Teaching, Student Supervision, and Outreach

Teaching Assistant at the Universitat Politècnica de Catalunya, Barcelona, Spain (2001-2002). Departament de Física i Enginyeria Nuclear, Escola Tècnica Superior d'Enginyeria Industrial de Barcelona (school of Mechanical Engineering). Subject: Electromagnetism.

PhD Student Advising: Victor García. Degree. Thesis title: 'Modeling the Population of Supernova remnants in Star-Forming Galaxies'. Expected completion in 2014. Institution: Universitat Politècnica de Catalunya. Jointly advised with Eduardo Bravo.

PhD Student Co-Advising: Laura Lopez. Co-advising on several aspects of her research (e.g., Lopez et al. 2009, Lopez et al. 2010). Institution: University of California Santa Cruz. Advisor: Enrico Ramirez-Ruiz.

Press Releases: Jun 3, 2008: *Space Forensics of a Twice-Dead Corpse*. *Suzaku* Learning Center. • Mar 20, 2008: *SNR 0509-67.5: Action Replay Of Powerful Stellar Explosion*. *Chandra* X-ray Center.

Selected Public Talks: Aug 26, 2009: Atzeneta del Maestrat, Spain. Part of the 2009 International Year of Astronomy activities in Spain • May 12, 2009: Amateur Astronomers Society of Princeton, Princeton, NJ • Jun 4, 2005: Keynote Speaker at the Jersey StarQuest 2005, Amateur Astronomers Society of Princeton.

Public Awareness of Science: Several participations in blogs, TV shows, and radio shows, including the *Chandra* blog (2009, 2008) in the USA, and TV2 (2008), Radio Nacional (2004), and Catalunya Radio (2003) in Spain.

Participation in Funded Research Projects

In the USA:

2007 *NSF* Astronomy & Astrophysics Program. Title: 'Circumstellar Interaction in Type Ia Supernovae and Their Remnants: Clues to the Type Ia Phenomenon'. Code: 708224. Years: 2007-2009. Amount: \$ 586000. PI: S.P. Reynolds.

In Spain:

2010 *MICINN*, Plan Nacional de Astronomía. Title: 'Últimos estadios de la evolución estelar en sistemas binarios: novae clásicas y recurrentes, supernovas, erupciones de rayos-X y coalescencias' (Last stages of stellar evolution in binary systems: classical and recurrent novae, supernovae, X-ray bursts and mergers). Code: AYA2010-15685. Years: 2010-2013. Amount: pending (project approved, amount not confirmed). PI: Jordi José.

2007 *MICINN*, Plan Nacional de Astronomía. Title: 'Modelización multidimensional de explosiones estelares: novae, erupciones de rayos X y supernovas termonucleares' (Multidimensional modeling of stellar explosions: novae, X-ray bursts and thermonuclear supernovae). Code: AYA2007-66256. Years: 2007-2010. Amount: 66429 euro. PI: Jordi José.

2002 *MCYT*, Plan Nacional de Astronomía. Title: 'La Población de Enanas Blancas en el Halo Galáctico' (The White Dwarf Population in the Galactic Halo). Code: AYA2002-04094-C03-01. Years: 2003-2006. Amount: 64300 euro. PI: Enrique García-Berro.

2000 *MCYT*, 2000, Plan Nacional de Astronomía. Title: 'Estadios avanzados de la Evolución Estelar: Teoría y Aplicaciones a Escala Galáctica' (Advanced Stages of Stellar Evolution: Theory and Applications at Galactic Scales). Code: AYA2000-1785. Years: 2000-2003. Amount: 36000 euro. PI: Enrique García-Berro.

1999 *DGES*, 1999, Promoción General del Conocimiento. Title: 'Objetos compactos, explosiones estelares y sus implicaciones cosmológicas' (Compact Objects, Stellar Explosions, and their Cosmological Implications). Code: PB98-1183-C03-02. Years: 1999-2003. Amount: 12000 euro. PI: Enrique García-Berro.

Talks, Seminars and Colloquia

2010: October 28: KIPAC Astrophysics Colloquium, Stanford University, Stanford, CA • September 29: Amsterdam University, Anton Pannekoek Institute of Astronomy, Amsterdam, the Netherlands • September 28: Department of Astronomy, Radboud Universiteit Nijmegen, Nijmegen, the Netherlands • September 8: Department of Astrophysical Sciences, Princeton University • June 9: Department of Physics, Technion, Haifa, Israel • May 7: Universitat Politècnica de Catalunya, Departament de Física i Enginyeria Nuclear, Barcelona, Spain • May 6: Universitat de Barcelona, Departament d'Astronomia i Meteorologia, Barcelona, Spain • Mar 19: Groningen University, Kapteyn Institute of Astronomy, Groningen, the Netherlands • Feb 17: Princeton University, Department of Astrophysical Sciences, Princeton, NJ • Jan 20: Weizmann Institute of Science, Benozio Center for Astrophysics, Rehovot, Israel.

2009: Nov 11: Tel-Aviv University, School of Physics and Astronomy, Tel-Aviv, Israel • Jun 3: Princeton University, Department of Astrophysical Sciences, Princeton, NJ • May 8: University of California at Santa Cruz, Department of Astronomy and Astrophysics, Santa Cruz, CA • Apr 13: Department Colloquium, University of Colorado, Department of Physics and Planetary Sciences, Boulder, CO • Mar 15: The Hebrew University of Jerusalem, Racah Institute of Physics, Jerusalem, Israel • Mar 11: Tel-Aviv University, School of Physics and Astronomy, Tel-Aviv, Israel • Mar 8: Weizmann Institute of Science, Rehovot, Israel • Jan 30: National Optical Astronomy Observatory, Tucson AZ • Jan 20: Arizona State University, School of Earth and Space Exploration, Tempe, AZ • Jan 14: Los Alamos National Laboratory, Theoretical Division, Los Alamos, NM.

2008: Dec 9: American Museum of Natural History, Division of Physical Sciences, New York City, NY • Dec 5: New York University, Department of Physics, New York City, NY • Nov 20: Joint Space Science and Remote Sensing Divisions Colloquium, Naval Research Laboratory, Washington DC • Oct 22: SUNY, the State University of New York, Department of Physics and Astronomy, Stony Brook, NY • Jul 10: Observatories of the Carnegie Institution of Washington, Pasadena CA. • Jun 11: University of California Berkeley, Department of Astronomy, Berkeley CA • Apr 16: Michigan State University, Department of Physics and Astronomy, East Lansing MI • Apr 7: Harvard-Smithsonian Center for Astrophysics, Cambridge MA • Feb 6: Institute for Advanced Study, School of Natural Sciences, Princeton NJ • Jan 30: Princeton University, Department of Astrophysical Sciences, Princeton, NJ.

2007: Dec 7: University of Toronto, Department of Astronomy & Astrophysics, Toronto, Canada • Oct 24: University of Pennsylvania, Department of Physics and Astronomy, Philadelphia, PA • April 26: Institute for Advanced Study, School of Natural Sciences, Princeton, NJ • Feb 8: Kavli Institute for Theoretical Physics, Santa Barbara, CA.

2006: Dec 7: University of Texas at Austin, Department of Astronomy, Austin, TX • Nov 27: Princeton University, Department of Astrophysical Sciences, Princeton, NJ • Jun 28: Utrecht University, Astronomical Institute, the Netherlands • April 19: Columbia University, Department of Astronomy & Astrophysics, New York City, NY.

2005: Apr 22: Institut d'Estudis Espacials de Catalunya, Barcelona, Spain.

2004: Dec 13: Johns Hopkins University, Department of Physics and Astronomy, Baltimore, MD • Nov 18: Harvard-Smithsonian Center For Astrophysics, Cambridge, MA • Jul 11: Universitat de Barcelona, Departament d'Astronomia i Meteorologia, Barcelona, Spain • Jul 30: Rutgers University, Department of Physics and Astronomy, Piscataway, NJ.

2002: Nov 22: NASA Goddard Space Flight Center, Greenbelt, MD • Nov 21: Naval Research Laboratory, Space Sciences Division, Washington DC • Oct 9: North Carolina State University, Department of Physics, Raleigh, NC.

Participation in Scientific Meetings

2010: Invited talk, PTF Meeting, KITP, Santa Barbara, CA, October 22-23. • Invited review and contributed talk, Type Ia Supernova Progenitor Workshop. Lorenz Center, Leiden, The Netherlands, September 20-24. • Invited review, High-resolution X-ray spectroscopy: past, present, and future, Utrecht, the Netherlands, March 13-17. • Invited review, April Meeting of the American Physical Society, Washington DC, February 13-17.

2009: Invited review, *Chandra's* First Decade of Discovery, Boston MA, September 22-25. • Invited talk, A Festival of Cosmic Explosions, Caltech, Pasadena, CA, August 21-23. • Contributed talk and 2 posters, Stellar Death and Supernovae. KITP, Santa Barbara, CA, August 17-21. • Invited review, 12th Marcel Grossmann Meeting, Session APT3. Paris, France, July 12-18. • Invited review, Supernova Remnants and Pulsar Wind Nebulae in the Chandra Era. Boston MA, July 8-10. • Invited talk, Type Ia Supernova Progenitors Workshop, Princeton NJ, April 17-19.

2008: Contributed talk and poster, Probing Stellar Populations out to the Distant Universe. September 15-19, Cefalù, Sicily, Italy. • Contributed talk, 10th Symposium on Nuclei in the Cosmos. July 27 - August 1. Mackinac Island, MI. • Invited talk, Supernovae & Gamma-Ray Bursts at low z & in the Era of Reionization. May 26-29, Darjeeling, India.

2007: Invited talk, XXIII Trobades Científiques de la Mediterrània. Supernovae: Light in the Darkness. October 3-5 2007, Maó, Menorca, Spain. • Contributed talk, From Massive Stars to Supernova Remnants. August 6-17, Lorentz Center, Leiden, the Netherlands. • Invited review Endpoints And Interactions: A Supernova Remnant Workshop. Splinter meeting of the 210th American Astronomical Society Meeting. May 24-25, Honolulu, HI. • Invited talk, Paths to Exploding Stars: Accretion and Eruption. March 19-23 2007, KITP, Santa Barbara, CA.

2006: Contributed talk, VII Reunión Científica de la Sociedad Española de Astronomía. September 12-15, Barcelona, Spain. • Contributed talk and poster, The Multi-coloured Landscape of Compact Objects and their Explosive Origins. June 11-24, Cefalù, Sicily, Italy. • Invited review, Supernova and Gamma-Ray Burst Remnants. February 6-10, KITP, Santa Barbara, CA.

2005: Contributed talk, The X-ray Universe 2005. September 26-30, El Escorial, Madrid, Spain. • Contributed talk, Stellar End Products. April 13-15, Granada, Spain.

2004: Poster, X-ray Diagnostics for Astrophysical Plasmas: Theory, Experiment, and Observation. November 15-17, Cambridge, MA, USA. • Contributed talk, 35 COSPAR Scientific Assembly. Session E1.4: 'Young Neutron Stars and Supernova Remnants'. 18-25 July, Paris, France. • Poster + 5 min. talk, 1604-2004: Supernovae as Cosmological Lighthouses. June 16-19, Padua, Italy.

2003 and earlier: Contributed talk, IAU Colloquium 192: Supernovae (10 Years of SN 1993J). April 22-26 2003, Valencia, Spain. • Poster, Mission Concept and Payload Design in X- and Gamma-Ray Astronomy. July 1-19, 2002, Bologna, Italy. • Poster, New Visions of the X-ray Universe in the XMM-Newton and Chandra era. November 26-30 2001, ESTEC, Noordwijk, The Netherlands. Astrophysics. April 3-8, 2000. Les Diablerets, Switzerland. • Observing With INTEGRAL (+ Gamma-Ray Nucleosynthesis). March 29 - April 1, 2000. Les Diablerets, Switzerland.

Languages

Spanish and Catalan (native); English (fluent); French and German (good)

Computer Skills

Languages: C++, IDL, Fortran, some use of Unix shell scripts.

Experience with hydrodynamic codes, numerical methods, and several astronomical data formats.

References

Prof. John P. Hughes

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Prof. Bruce T. Draine

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Princeton University
Peyton Hall, Ivy Lane, Princeton NJ 08544
draine@astro.princeton.edu

Prof. Brian P. Schmidt

Research School of Astronomy and Astrophysics
Australian National University
via Cotter Rd, Weston Creek, ACT 2611, Australia
brian@mso.anu.edu.au

Prof. Roger A. Chevalier

Department of Astronomy
University of Virginia
P.O. Box 400325, Charlottesville, VA 22904
rac5x@virginia.edu

Prof. Dan Maoz

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Tel-Aviv University
Tel-Aviv 69978, Israel
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Submitted Publications

- 4 K.A. Eriksen, J.P. Hughes, **C. Badenes**, R. Fesen, P. Ghavamian, D. Moffet, P.P. Plucinsky, C.E. Rakowski, E.M. Reynoso, P.O. Slane. Particle Acceleration to the Knee of the Cosmic Ray Spectrum in Tycho's Supernova Remnant. *ApJ*, submitted, 2010.
- 3 E. Bravo & **C. Badenes**. Is the metallicity of their hosts a good measure of the metallicity of Type Ia supernovae? *MNRAS*, submitted, 2010.
- 2 L.A. Lopez, E. Ramirez-Ruiz, D. Huppenkothen, **C. Badenes**, & D.A. Pooley. Using the X-ray Morphology of Young Supernova Remnants to Constrain Explosion Type, Ejecta Distribution, and Chemical Mixing. *ApJ*, submitted, 2010 [arXiv:1011.0073].
- 1 H.B. Perets, **C. Badenes**, I. Arcavi, J.D. Simon, & A. Gal-yam. An Emerging Class of Bright, Fast-evolving Supernovae with Low-mass Ejecta. *ApJ*, submitted, 2010 [arXiv: 1008.2754].

Refereed Publications

- 23 A. Rest, R.J. Foley, B. Sinnott, D.L. Welch, **C. Badenes**, A.V. Filippenko, M. Bergmann, W.A. Bhatti, S. Blondin, P. Challis, G. Damke, H. Finley, M.E. Huber, D. Kasen, R.P. Kirshner, T. Matheson, P. Mazzali, D. Minniti, R. Nakajima, G. Narayan, K. Olsen, D. Sauer, R.C. Smith, & N.B. Suntzeff. Direct Confirmation of the Asymmetry of the Cas A SN Explosion with Light Echoes. *ApJ*, in press, 2010. [arXiv1003.5660].
- 22 D. Maoz & **C. Badenes**. The supernova rate and delay time distribution in the Magellanic Clouds. *MNRAS* 407, 1314, 2010.
- 21 **C. Badenes**, D. Maoz, & B.T. Draine. On the size distribution of supernova remnants in the Magellanic Clouds. *MNRAS* 407, 1301, 2010.
- 20 **C. Badenes**. X-Ray Studies of Supernova Remnants: Opening A New Window Onto Supernova Explosions. *PNAS* 107, 7141, 2010.
- 19 E. Bravo, I. Domínguez, **C. Badenes**, L. Piersanti & O. Straniero. Metallicity as a source of dispersion in the SNIa bolometric light curve luminosity-width relationship. *ApJ*, 711, L66, 2010.
- 18 F. Mullally, **C. Badenes**, S.E. Thompson & R.H. Lupton. Twins: The Two Shortest Period Non-Interacting Double Degenerate White Dwarf Stars. *ApJ*, 707, L51, 2009.
- 17 **C. Badenes**, F. Mullally, S.E. Thompson & R.H. Lupton. First Results from the SWARMS Survey. SDSS 1257+5428: A Nearby, Massive White Dwarf Binary with a Likely Neutron Star or Black Hole Companion. *ApJ*, 707, 971, 2009.
- 16 L.A. Lopez, E. Ramirez-Ruiz, **C. Badenes**, D. Huppenkothen, T.E. Jeltema & D.A. Pooley. Typing Supernova Remnants Using X-Ray Line Emission Morphologies. *ApJ* 706, L106, 2009.
- 15 **C. Badenes**, J. Harris, D. Zaritsky & J.L. Prieto. The Stellar Ancestry of Supernovae in the Magellanic Clouds. I. The Most Recent Supernovae in the Large Magellanic Cloud. *ApJ* 700, 727, 2009.
- 14 **C. Badenes**, E. Bravo & J.P. Hughes. The End of Amnesia: A New Method for Measuring the Metallicity of Type Ia Supernova Progenitors Using Manganese Lines in Supernova Remnants. *ApJ* 680, L33, 2008.
- 13 G. Cassam-Chenai, J.P. Hughes, E. Reynoso, **C. Badenes** & D. Moffett. Morphological evidence for azimuthal variations of the cosmic ray ion acceleration at the blast wave of SN 1006. *ApJ* 680, 1180, 2008.
- 12 **C. Badenes**, J.P. Hughes, G. Cassam-Chenai & E. Bravo. The Persistence of Memory, or How the X-ray Spectrum of SNR 0509-67.5 Reveals the Brightness of its Parent Supernova. *ApJ* 680, 1149, 2008.
- 11 S.P. Reynolds, K.J. Borkowski, U. Hwang, J.P. Hughes, **C. Badenes**, J.M. Laming & J.M. Blondin. A Deep Chandra Observation of Kepler's Supernova Remnant: A Type Ia Event with Circumstellar Interaction. *ApJ* 668, L135, 2007.
- 10 **C. Badenes**, J.P. Hughes, E. Bravo & N. Langer. Are the Models for Type Ia Supernova Progenitors Consistent with the Properties of Supernova Remnants? *ApJ* 662, 472, 2007.
- 9 C.E. Rakowski, **C. Badenes**, B.M. Gaensler, J.D. Gelfand, J.P. Hughes & P.O. Slane. Can Ejecta-Dominated Supernova Remnants be Typed from their X-ray Spectra? The Case of G337.2-0.7. *ApJ* 646, 982, 2006.
- 8 **C. Badenes**, K.J. Borkowski, J.P. Hughes, U. Hwang & E. Bravo. Constraints on the Physics of Type Ia Supernovae from the X-ray Spectrum of the Tycho Supernova Remnant. *ApJ* 645, 1373, 2006.

- 7 J.S. Warren, J.P. Hughes, **C. Badenes**, P. Ghavamian, C.F. McKee, D. Moffett, P.P. Plucinsky, C. Rakowski, E. Reynoso & P. Slane. Cosmic Ray Acceleration at the Forward Shock in Tycho's Supernova Remnant from *Chandra* X-ray Observations. *ApJ* 634, 376, 2005.
- 6 **C. Badenes**, E. Bravo & K.J. Borkowski. A Model Grid for the Spectral Analysis of X-ray Emission in Young Type Ia Supernova Remnants. *Adv. Space Res.* 35, 987, 2005.
- 5 **C. Badenes**, K.J. Borkowski & E. Bravo. Thermal X-ray Emission from Shocked Ejecta in Type Ia Supernova Remnants II: Parameters Affecting the Spectrum. *ApJ* 624, 198, 2005.
- 4 U. Hwang, J. M. Laming, **C. Badenes**, F. Berendse, J. Blondin, D. Cioffi, T. DeLaney, D. Dewey, R. Fesen, K.A. Flanagan, C.L. Fryer, P. Ghavamian, J.P. Hughes, J.A. Morse, P.P. Plucinsky, R. Petre, M. Pohl, L. Rudnick, R. Sankrit, P.O. Slane, R.K. Smith, J. Vink & J.S. Warren. A Million-Second *Chandra* View of Cassiopeia A. *ApJ* 615, L117, 2004.
- 3 H. Halloin, P. von Ballmoos, J. Evrard, G.K. Skinner, N. Abrosimov, P. Bastie, G. Di Cocco, M. George, B. Hamelin, P. Jean, J. Knödseder, P. Laporte, **C. Badenes**, P. Laurent, A. Laurens & R.K. Smither. Performance of CLAIRE, the first ballon-borne gamma-ray lens telescope. *Nuclear Instr. And Meth. In Phys. Res. Sect. A* 504, 120, 2003.
- 2 **C. Badenes**, E. Bravo, K.J. Borkowski & I. Domínguez. Thermal X-ray Emission from Shocked Ejecta in Type Ia Supernova Remnants: Prospects for Explosion Mechanism Identification. *ApJ* 593, 358, 2003.
- 1 **C. Badenes** & E. Bravo. The Imprint of Presupernova Evolution on Supernova Remnants. *ApJ* 556, L41, 2001.

Conference Proceedings

- 10 **C. Badenes**, E. Bravo & J.P. Hughes. The End of Amnesia: Measuring the Metallicities of Type Ia SN Progenitors with Manganese Lines in Supernova Remnants. In *Probing Stellar Populations out to the Distant Universe (Cefalú, Italy, September 2008)*, ed. by T. DiSalvo et al., AIP Conference Proceedings, Vol 1111, 615-617, 2009.
- 9 **C. Badenes**, J. Harris, D. Zaritsky & J.L. Prieto. Star Formation Around the Youngest Supernova Remnants in the Large Magellanic Cloud: Implications for Type Ia Supernova Progenitors. In *Probing Stellar Populations out to the Distant Universe (Cefalú, Italy, September 2008)*, ed. by T. DiSalvo et al., AIP Conference Proceedings, Vol 1111, 307-310, 2009.
- 8 **C. Badenes**, E. Bravo & J.P. Hughes. Secondary Fe-peak nuclei in the Tycho Supernova Remnant: A Promising Tracer of Type Ia Progenitor Metallicity. In *10th Symposium on Nuclei in the Cosmos (Mackinac Island, MI, July 2008)*, ed. by H. Schatz, in press [arXiv:0809.3151].
- 7 **C. Badenes**, K.J. Borkowski, E. Bravo, J.P. Hughes & U. Hwang. Exploring the Physics of Type Ia Supernovae Through the X-Ray Spectra of their Remnants. In *Stellar Endpoints (Granada, Spain, April 2005)*, ed. by M.A. Pérez-Torres, *Mem. Soc. Ast. It.* vol. 76, 555, 2005 [astro-ph/0506576].
- 6 E. Bravo, **C. Badenes** & D. García-Senz. Thermonuclear supernova models and observations of Type Ia supernovae. In *Interacting Binaries: Accretion, Evolution and Outcomes (Cefalú, Italy, July 2004)*, ed. by L.A. Antonelli, L. Burderi, F. D'Antona, T. DiSalvo, G.L. Israel, L. Piersanti, O. Straniero & A. Tornambé, AIP Conference Series, Volume 797, 453-462, 2005 [astro-ph/0412155].
- 5 **C. Badenes**, K.J. Borkowski, U. Hwang & E. Bravo. Post-mortem Examination of SN 1572 from its SNR. In *1604-2004: Supernovae as Cosmological Lighthouses (Padova, Italy, June 2004)*, ed. by M. Turatto, L. Zampieri, S. Benetti and W. Shea. ASP Conference Series, vol. 342, 428, 2005.
- 4 **C. Badenes**, E. Bravo & K.J. Borkowski. Thermonuclear Supernova Explosions and Their Remnants: The Case of Tycho. In *IAU Colloquium 192: Supernovae (10 years of SN 1993J) (Valencia, Spain, April 2003)*, ed. by J.M. Marcaide and K.W. Weiler. (Berlin: Springer), p. 233, 2005 [astro-ph/0309013].
- 3 H. Halloin, P. von Ballmoos, J. Evrard, G.K. Skinner, N.V. Abrosimov, P. Bastie, G. Di Cocco, M. George, B. Hamelin, P. Jean, J. Knödseder, P. Laporte, **C. Badenes**, P. Laurent & R.K. Smither. Design and Flight Performance of a Crystal Diffraction Telescope. In *Proceedings of the SPIE: X-Ray and Gamma-Ray Telescopes and Instruments for Astronomy*, ed. by J.E. Trümper and H. D. Tananbaum (SPIE), vol. 4851, p. 895, 2003.

- 2 **C. Badenes** & E. Bravo. Prospects for SN Ia Explosion Mechanism Identification Through SNRs. In *ESO/MPA/MPE Workshop: From Twilight to Highlight: The Physics of Supernovae (Garching, Germany, July 2002)*, ed. by W. Hillebrandt and B. Leibundgut (Berlin: Springer), p. 264, 2002 [astro-ph/0209237].
- 1 **C. Badenes** & E. Bravo. The Imprint of Presupernova Winds on Supernova Remnant Evolution: Towards More Realistic Models for Type Ia Supernova Remnants and Their Spectra. In *ESA-SP 488, New Visions of the X-ray Universe in the XMM-Newton and Chandra Era (Noordwijk, Netherlands, November 2001)*, ed. F. Jansen (Noordwijk: ESA), in press [astro-ph/0202070].

Other Publications

- 8 J.P. Hughes, et al. incl. **C. Badenes**. Formation of the Elements. White paper submitted to the Astro2010 Decadal Survey Committee.
- 7 K. Mukai, et al. incl. **C. Badenes**. Observational Studies of Potential Progenitors of Type Ia Supernovae. White paper submitted to the Astro2010 Decadal Survey Committee.
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