Carles Badenes CV and Publication List

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Employment and Education

Since **2017**	**Associate Professor (tenured)**, University of Pittsburgh, Pittsburgh, PA
2011 - 2017	**Assistant Professor**, University of Pittsburgh, Pittsburgh, PA
2009 - 2011	**Senior Research Associate**, Weizmann Institute of Science, and Tel-Aviv University, 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
Completed in **2004**	**Ph.D., Astrophysics**, Universitat Politècnica de Catalunya, Departament de Física i Enginyeria Nuclear, Barcelona, Spain Thesis Title: *Thermal X-ray Emission from Young Type Ia Supernova Remnants*. Advisor: Dr. Eduardo Bravo
Completed in **1999**	**M.S. and B.S., Electrical Engineering**, Universitat Politècnica de Catalunya, Escola Tècnica Superior d'Enginyeria de Telecomunicació de Barcelona, Spain

Research Interests

Type Ia Supernovae	Explosion physics, progenitor systems, delay time distribution.
Supernova Remnants	X-ray emission, shock physics, Galactic and extragalactic populations.
Survey Science	Time-domain astrophysics, data mining, short-period binaries, white dwarfs, gravitational wave foreground, spectral variability, astrometry, statistical tests of stellar evolution. Focus on SDSS and DESI.

Publication Record

82 refereed papers, **16** as first author, **32** as second/third author. Total citations: in *NASA* ADS, **4465** citations and Hirsch index **34** [link]; in Google Scholar, **4727** citations and Hirsch index **38** [link]. I have played a key role in **16 high-impact papers** (with more than 50 citations in ADS): 9 as first author, 7 as second/third author. For details, see attached publication list.

Honors and Awards

2016	Distinguished Visitor, Carnegie Observatories, USA.
2015	Scialog Fellow for Time Domain Astrophysics, Research Corporation, USA.
2011	Ramón y Cajal Fellowship, Ministerio de Ciencia e Innovación, Spain (declined to accept tenure-track offer from U Pitt).
2010	Marie Curie IRG Fellowship, European Comission.
2006	*Chandra* Fellowship, NASA.
2000	*FI* Fellowship, Generalitat de Catalunya.

External Funding

2018	$110k	U Pitt	Heising-Simons Foundation Scialog Grant . Duration: 2 years. Title: *Mapping Stellar Enrichment in the Milky Way*. Co-PI with Gail Zasowski at University of Utah, U Pitt award is $55k
2016	$100k	U Pitt	Research Corporation Scialog Grant 24215. Duration: 2 years. Title: *Stellar Multiplicity Meets Stellar Evolution: The APOGEE View*. Co-PI with Todd Thompson at OSU and Kevin Covey at UWV, U Pitt award is $33k
2015	$318k	U Pitt	NASA ADAP grant (NNX15AM03G S01). Duration: 3 years. Title: *Burning Chrome: Secondary Fe-Peak Elements in Type Ia Supernova Remnants with Suzaku*. PI.
2014	$537k	U Pitt	NSF AST award (1410319). Duration: 3 years. Title: *Collaborative Research: The Supernova Rate and Delay Time Distribution in the Local Group*. Co-PI with Laura Chomiuk at MSU, U Pitt award is $268k.
	$250k	U Pitt	ARC Internal SDSS grant (SSP428). Duration: 3 years. Purpose: Support a postdoc at U Pitt (Dr. Brett Andrews) to develop data retrieval and visualization software for the SDSS-IV MaNGA survey. PI.
2011	€100k	TAU	ERC ITG grant FP7-PEOPLE-2010-RG. Duration: two years. Grant terminated in July 2011 when PI Badenes moved to U Pitt.

Total: $1.4M In competitive research grants as PI or Co-PI since 2011. Note that recent funding rates for NSF and NASA are comparable to the success rate for ERC grants in the EU, see this document.

Supervision and Mentoring

POSTDOCS (direct supervision):

Brett Andrews	Projects: *Data visualization software and science highlights for the SDSS-IV MaNGA survey; Galactic archeology and stellar multiplicity for the SDSS APOGEE survey.* Advising period: Fall 2014 to Fall 2017

GRADUATE STUDENTS (main advisor, unless noted):

Thomas Hettinger	*Stellar Multiplicity Analysis with Time-Resolved Spectroscopy and Markov Chain Monte Carlo Simulations* **Ph D Thesis defended August 13, 2015**
	Institution: Michigan State University (co-advised with Jay Strader)
Sumit Sarbadhicary	*Supernova Remnant Populations in the Local Group*
	Institution: University of Pittsburgh. **Ph D Thesis defended June 11, 2018**
Héctor Martínez-Rodríguez	*Neutronization in Type Ia SNe: Models and observations*
	Institution: University of Pittsburgh. Expected completion: 2019
Christine Mazzola	*Stellar Multiplicity Meets Stellar Evolution: The SDSS/APOGEE View*
	Institution: University of Pittsburgh. Expected completion: 2021

Selected Talks, Reviews, and Colloquia

2019	February: Colloquium, Institute for Astronomy, University of Hawaii at Manoa, HI.
	January: Colloquium, Department of Astronomy, Pennsylvania State University, University Park, PA.
2018	June: Invited Talk, SNR Workshop, Department of Astronomy, University of Kyoto, Japan.
	May: Seminar, Instituto de Astrofísica de Canarias, La Laguna, Spain.
	March: Institut de Ciències del Cosmos (ICCUB), Universitat de Barcelona, Barcelona, Spain.
2017	November: Seminar, Institut de Ciències de l'Espai, Barcelona, Spain.
	October: Colloquium, Anton Pannekoek Astronomical Institute, University of Amsterdam, Amsterdam, the Netherlands.
	May: Invited talk, Supernova Remnants Workshop, UC Santa Cruz, Santa Cruz, CA
	April: Astrophysics Seminar, Dept. of Physics and Astronomy, Ohio University, Athens, OH
	January: Astrophysics Seminar, Dept. of Physics and Astronomy, Rutgers University, Piscataway, NJ
2016	September: Invited talk, Supernova Physics Workshop, Garching, Germany.
	June: Invited review, Supernova Remnant Conference, Chania, Crete, Greece.
	March: Seminar, Observatories of the Carnegie Institution of Washington, Pasadena, CA.
2015	December: Colloquium, Dept. of Physics, University of Alabama, Tuscaloosa, AL.
	September: Colloquium, Dept. of Astronomy, Ohio State University, Columbus, OH.
	August: Invited talk, SN Ia Progenitor Workshop, Carnegie Observatories, Pasadena, CA.
	June: Invited talk, Fifty-One Ergs Supernova Conference, Raleigh, NC.
	February: Colloquium, Harvard-CfA, Cambridge, MA.
2014	October: Invited talk, Transients' Unsolved Mysteries Workshop, Eilat, Israel.
	August: Invited talk, Supernovae in the Local Universe Conference, Coffs Harbour, Australia.
	June: Invited talk, The Unquiet Universe Conference, Cefalù, Sicily, Italy.
	February: Invited talk, SN Ia Progenitor Workshop, IAS, Princeton, NJ.

2013	November: Seminar, CCCP, New York University, New York, NY.
	September: Invited talk, Observational Signatures of SN Ia Progenitors II. Lorentz Center, Leiden, Netherlands.
	May: Invited review/debate, Fifty-One Ergs Supernova Conference, Raleigh, NC.
	April: Colloquium, Dept. of Physics & Astronomy, Johns Hopkins University, Baltimore, MD.
2012	December: Colloquium, Dept. of Astronomy, University of Illinois at Urbana-Champaign, IL.
	November: Seminar, Dept. de Physique, Université de Montréal, Montréal, Canada.
	September: Invited talk, Supernovae Illuminating the Universe: from Individuals to Populations Conference, Garching, Germany.
	August: Invited talk, Atomic Data for Astrophysics Workshop, Harvard-CfA, Cambridge MA.
	March: Colloquium, ICC-UB, Universitat de Barcelona, Barcelona, Spain.
2011	June: Invited talk, Supernovae and their Host Galaxies Conference, Sydney, Australia.
	May: Invited talk, Advanced Topics in Astrophysics Conference, Llafranc, Spain.

Outreach

Selected Public Talks and events:

2018	March: Inaugural talk, XXVI Jornadas de Astronomía, Planetari de Castelló.
2017	November: Special talk for the XXV Anniversary of the Sociedad Española de Astronomía, Aula Magna, Universitat de Barcelona.
	March: Organized SDSS Plates Workshop for Science Educators in the Pittsburgh area. Attended by educators from public and private schools serving more than 2,500 students.
2016	March: Amateur Astronomers Association of Pittsburgh, Pittsburgh PA.
2015	April: Carnegie Science Center, Pittsburgh PA.
Since **2001**	Several participations in blogs, TV shows, and radio shows, including CBS Pittsburgh, The Academic Minute at WAMC and the *Chandra* blog in the USA, and TV2, Radio Nacional, and Catalunya Radio in Spain, as well as informal talks in community centers in the Pittsburgh area.

Press Releases on First- and Second-author papers:

2015	[link] NASA/GSFC Press center. *Suzaku Studies Supernova 'Crime Scene,' Shows a Single White Dwarf to Blame*.
2014	[link] NASA/GSFC Press center. *Iron 'Fingerprints' Point Astronomers to Supernova Suspects*.
2013	[link] NASA/GSFC Press center. *Suzaku 'Post-mortem' Yields Insight into Kepler's Supernova*.
2012	[link] SDSS Press center. *Fireworks: The Merger Rate of Binary White Dwarfs*.
2008	[link] *Chandra* press center. *SNR 0509-67.5: Action Replay of Powerful Stellar Explosion*.

Professional Service

Management and Science Definition:

Since **2016**	*SDSS-V* Task force on time-resolved spectroscopy and stellar multiplicity.
Since **2014**	*Athena* Mission, US Representative in Science Working Group 3.4: Supernova remnants and the Interstellar Medium.
Since **2013**	*SDSS-IV/MaNGA* Data Products Committee.
Since **2012**	*BigBOSS*/*MS-DESI*/*DESI* Bright Time Science Committee.
2013-2016	*SDSS-IV* Collaboration Council: Representative for Associate Member Institutions.
2009-2010	Science Associate for the *International X-ray Observatory (IXO)*.
2008	NASA *Constellation-X* Panel on Production and Distribution of the Elements.
2004	NASA *Constellation-X* Panel to Define Scientific Objectives for Supernova Remnants.

Panels, societies, and other committees:

2019	Scientific Organizing Committee, Supernova Conference, Lijiang, Yunnan Province, China.
	Scientific Organizing Committee, FOE19 (Fifty-One Ergs Conference), Raleigh, NC.
2018	Science reviewer, Israel Science Foundation.
	Workshop Organizer, Observational Signatures of Type Ia Supernova Progenitors III, Lorentz Center, Leiden, the Netherlands.
2017	Science reviewer, Natural Sciences and Engineering Research Council of Canada.
	Science reviewer, Swiss National Science Foundation, COST program.
2016	National Science Foundation, Astronomy & Astrophysics Panel.
2015	Science reviewer, *Vici* program, Netherlands Organisation for Scientific Research (NWO).
	Chandra Cycle 17 Time Allocation Committee.
Since **2014**	Academic advisor to incoming graduate students, U Pitt Dept of Physics & Astronomy.
2011-2013	National Optical Astronomy Observatory Time Allocation Committee.
2009	*Chandra* Cycle 11 Time Allocation Committee.
	Scientific Organizing Committe, SN Ia Progenitor Workshop, Princeton, NJ.
2008	*Swift* Cycle 4 Guest Investigator Program Review.
2007	Scientific Organizing Committee, Endpoints And Interactions: A Supernova Remnant Workshop, AAS Summer Meeting, Hawaii.
Since **2007**	Member of the American Astronomical Society (AAS).
Since **2006**	Scientific referee (*A&A*, *ApJ*, *MNRAS*, *Science* and *Nature*).
2006	*Suzaku (Astro-E2)* AO-1 Time Allocation Committee.
Since **2003**	Member of the Sociedad Española de Astronomía (SEA).

Competitively Obtained Observing Time

AS PI: Optical Ground: Mayall 4m Telescope, Kitt Peak: 17 nights (4 in 2010B, 4 in 2011A, 5 in 2011B, 4 in 2012A); ARC 3.5m Telescope, Apache Point Observatory: 12 half-nights (8 in 2009, 4 in 2008). **Radio** Green Bank Telescope: 10 hours in 2009. ***HST*** 5 orbits in 2010. ***Swift*** 5 ks in 2010.

AS Co-I: Optical Ground VLT, 42 hours (2019, PI Hallakoun); W.M. Keck Observatory, 6 nights (2011-2013, PI Kasen); Gemini South Telescope, 24 hours (2012, PI Kerzendorf); Mayall 4m Telescope at Kitt Peak, 16 nights (2010-2011, PI Rest); ARC 3.5m Telescope, 8 half-nights (2009-2010, PI Mullally). **Radio** *EVLA*: SNRs in M31, 22.5 hrs (2019, PI Chomiuk); Type Ia SNe (ToO), 10 hrs (2015, PIs Soderberg, Chomiuk). ***HST*** 4 orbits in 2007. ***Suzaku*** 1150 ks: 650 ks in 2014 (PI Yamaguchi), 400 ks in 2008 (PI Hughes), 100 ks in 2005 (PI Hughes). ***Chandra*** 3518 ks: 180 ks in 2016 (PI Park), 725 ks in 2009 (PIs Park, Hughes, Maoz), 1650 ks in 2008 (PIs Hughes, Bauer), 213 ks in 2007 (PIs Hughes, Reynolds), 750 ks in 2006 (PI Reynolds). ***INTEGRAL*** ToO for nearby SN Ia (2000-present, PI Isern), triggered for SN2011fe and SN2014J.

Languages

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

References

Prof. Lars Bildsten	Kavli Institute for Theoretical Physics and University of California, Santa Barbara Kohn Hall, University of California Santa Barbara, CA 93106 bildsten@kitp.ucsb.edu
Prof. Dan Maoz	School of Physics and Astronomy, Tel-Aviv University Tel-Aviv 69978, Israel maoz@astro.tau.ac.il
Prof. John P. Hughes	Department of Physics and Astronomy, Rutgers University 136 Frelinghuysen Rd, Piscataway, NJ 08854 jph@physics.rutgers.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

Refereed Publications

2019

82 Thompson, T. A., Kochanek, C. S., Stanek, K. Z., **Badenes, C.**, Post, R. S., Jayasinghe, T., Latham, D. W., Bieryla, A., Esquerdo, G. A., Berlind, P., Calkins, M. L., Tayar, L. Lindegren, J., Johnson, J. A., Holoien, T. W.-S., Auchettl, K., and Covey, K. (2019). Discovery of a Likely Black Hole-Giant Star Binary System in the Galactic Field. *Science*, in press [arXiv:1806:02751]

81 Moe, M., Kratter, K. M., and **Badenes, C.** (2018). The Close Binary Fraction of Solar-type Stars is Strongly Anti-correlated with Metallicity. *ApJ* in press, [arXiv:1808:02116]

80 Bravo, E., **Badenes, C.**, and Martínez-Rodríguez, H. (2019). SNR-calibrated Type Ia supernova models. *MNRAS*, 482:4346–4363

79 Aguado, D. S., Ahumada, R., Almeida, A., Anderson, S. F., Andrews, B. H., Anguiano, B., Aquino Ortíz, E., Aragón-Salamanca, A., Argudo-Fernández, M., Aubert, M., et al. (2019). The Fifteenth Data Release of the Sloan Digital Sky Surveys: First Release of MaNGA-derived Quantities, Data Visualization Tools, and Stellar Library. *ApJS*, 240:23

78 Auchettl, K., Lopez, L. A., **Badenes, C.**, Ramirez-Ruiz, E., Beacom, J. F., and Holland-Ashford, T. (2019). Measurement of the Core-collapse Progenitor Mass Distribution of the Small Magellanic Cloud. *ApJ*, 871:64

2018

77 Martínez-Rodríguez, H., **Badenes, C.**, Lee, S.-H., Patnaude, D. J., Foster, A. R., Yamaguchi, H., Auchettl, K., Bravo, E., Slane, P. O., Piro, A. L., Park, S., and Nagataki, S. (2018). Chandrasekhar and Sub-Chandrasekhar Models for the X-Ray Emission of Type Ia Supernova Remnants. I. Bulk Properties. *ApJ*, 865:151

76 Shen, K. J., Boubert, D., Gänsicke, B. T., Jha, S. W., Andrews, J. E., Chomiuk, L., Foley, R. J., Fraser, M., Gromadzki, M., Guillochon, J., Kotze, M. M., Maguire, K., Siebert, M. R., Smith, N., Strader, J., **Badenes, C.**, Kerzendorf, W. E., Koester, D., Kromer, M., Miles, B., Pakmor, R., Schwab, J., Toloza, O., Toonen, S., Townsley, D. M., and Williams, B. J. (2018). Three Hypervelocity White Dwarfs in Gaia DR2: Evidence for Dynamically Driven Double-degenerate Double-detonation Type Ia Supernovae. *ApJ*, 865:15

75 Woods, T. E., Ghavamian, P., **Badenes, C.**, and Gilfanov, M. (2018). Balmer-dominated Shocks Exclude Hot Progenitors for Many Type Ia Supernovae. *ApJ*, 863:120

74 Skinner, J., Covey, K. R., Bender, C. F., Rivera, N., De Lee, N., Souto, D., Chojnowski, D., Troup, N., **Badenes, C.**, Bizyaev, D., Blake, C. H., Burgasser, A., Cañas, C., Carlberg, J., Gómez Maqueo Chew, Y., Deshpande, R., Fleming, S. W., Fernández-Trincado, J. G., García-Hernández, D. A., Hearty, F., Kounkel, M., Longa-Peñe, P., Mahadevan, S., Majewski, S. R., Minniti, D., Nidever, D., Oravetz, A., Pan, K., Stassun, K., Terrien, R., and Zamora, O. (2018). Forty-four New and Known M-dwarf Multiples in the SDSS-III/APOGEE M-dwarf Ancillary Science Sample. *AJ*, 156:45

73 Maoz, D., Hallakoun, N., and **Badenes, C.** (2018). The separation distribution and merger rate of double white dwarfs: improved constraints. *MNRAS*, 476:2584–2590

72 Abolfathi, B., Aguado, D. S., Aguilar, G., Allende Prieto, C., Almeida, A., Ananna, T. T., Anders, F., Anderson, S. F., Andrews, B. H., Anguiano, B., et al. (2018). The Fourteenth Data Release of the Sloan Digital Sky Survey: First Spectroscopic Data from the Extended Baryon Oscillation Spectroscopic Survey and from the Second Phase of the Apache Point Observatory Galactic Evolution Experiment. *ApJS*, 235:42

71 McWilliam, A., Piro, A. L., **Badenes, C.**, and Bravo, E. (2018). Evidence for a Sub-Chandrasekhar-mass Type Ia Supernova in the Ursa Minor Dwarf Galaxy. *ApJ*, 857:97

70 Galbany, L., Anderson, J. P., Sánchez, S. F., Kuncarayakti, H., Pedraz, S., González-Gaitán, S., Stanishev, V., Domínguez, I., Moreno-Raya, M. E., Wood-Vasey, W. M., Mourão, A. M., Ponder, K. A., **Badenes, C.**, Mollá, M., López-Sánchez, A. R., Rosales-Ortega, F. F., Vílchez, J. M., García-Benito, R., and Marino, R. A. (2018). PISCO: The PMAS/PPak Integral-field Supernova Hosts Compilation. *ApJ*, 855:107

69 **Badenes, C.**, Mazzola, C., Thompson, T. A., Covey, K., Freeman, P. E., Walker, M. G., Moe, M., Troup, N., Nidever, D., Allende Prieto, C., Andrews, B., Barbá, R. H., Beers, T. C., Bovy, J., Carlberg, J. K., De Lee, N., Johnson, J., Lewis, H., Majewski, S. R., Pinsonneault, M., Sobeck, J., Stassun, K. G., Stringfellow, G. S., and Zasowski, G. (2018). Stellar Multiplicity Meets Stellar Evolution and Metallicity: The APOGEE View. *ApJ*, 854:147

68 MacLeod, C. L., Green, P. J., Anderson, S. F., Eracleous, M., Ruan, J. J., Runnoe, J., Brandt, W. N., **Badenes, C.**, Greene, J., Morganson, E., Schmidt, S. J., Schwope, A., Shen, Y., Amaro, R., Lebleu, A., Filiz Ak, N., Grier, C. J., Hoover, D., McGraw, S. M., Dawson, K., Hall, P. B., Hawley, S. L., Mariappan, V., Myers, A. D., Pâris, I., Schneider, D. P., Stassun, K. G., Bershady, M. A., Blanton, M. R., Seo, H.-J., Tinker, J., Fernández-Trincado, J. G., Chambers, K., Kaiser, N., Kudritzki, R.-P., Magnier, E., Metcalfe, N., and Waters, C. Z. (2018). The Time-domain Spectroscopic Survey: Target Selection for Repeat Spectroscopy. *AJ*, 155:6

2017

67 Albareti, F. D., Allende Prieto, C., Almeida, A., Anders, F., Anderson, S., Andrews, B. H., Aragón-Salamanca, A., Argudo-Fernández, M., Armengaud, E., Aubourg, E., et al. (2017). The 13th Data Release of the Sloan Digital Sky Survey: First Spectroscopic Data from the SDSS-IV Survey Mapping Nearby Galaxies at Apache Point Observatory. *ApJS*, 233:25

66 Schwab, J., Martínez-Rodríguez, H., Piro, A. L., and **Badenes, C.** (2017). Exploring the Carbon Simmering Phase: Reaction Rates, Mixing, and the Convective Urca Process. *ApJ*, 851:105

65 Patnaude, D. J., Lee, S.-H., Slane, P. O., **Badenes, C.**, Nagataki, S., Ellison, D. C., and Milisavljevic, D. (2017). The Impact of Progenitor Mass Loss on the Dynamical and Spectral Evolution of Supernova Remnants. *ApJ*, 849:109

64 Woods, T. E., Ghavamian, P., **Badenes, C.**, and Gilfanov, M. (2017). No hot and luminous progenitor for Tycho's supernova. *Nature Astronomy*, 1:800–804

63 García-Berro, E., **Badenes, C.**, Aznar-Siguán, G., and Lorén-Aguilar, P. (2017). White dwarf dynamical interactions and fast optical transients. *MNRAS*, 468:4815–4821

62 Blanton, M. R., Bershady, M. A., Abolfathi, B., Albareti, F. D., Allende Prieto, C., Almeida, A., Alonso-García, J., Anders, F., Anderson, S. F., Andrews, B., et al. (2017). Sloan Digital Sky Survey IV: Mapping the Milky Way, Nearby Galaxies, and the Distant Universe. *AJ*, 154:28

61 Galbany, L., Mora, L., González-Gaitán, S., Bolatto, A., Dannerbauer, H., López-Sánchez, Á. R., Maeda, K., Pérez, S., Pérez-Torres, M. A., Sánchez, S. F., Wong, T., **Badenes, C.**, Blitz, L., Marino, R. A., Utomo, D., and Van de Ven, G. (2017). Molecular gas in supernova local environments unveiled by EDGE. *MNRAS*, 468:628–644

60 Martínez-Rodríguez, H., **Badenes, C.**, Yamaguchi, H., Bravo, E., Timmes, F. X., Miles, B. J., Townsley, D. M., Piro, A. L., Mori, H., Andrews, B., and Park, S. (2017). Observational Evidence for High Neutronization in Supernova Remnants: Implications for Type Ia Supernova Progenitors. *ApJ*, 843:35

59 Zapartas, E., de Mink, S. E., Izzard, R. G., Yoon, S.-C., Badenes, C., Götberg, Y., de Koter, A., Neijssel, C. J., Renzo, M., Schootemeijer, A., and Shrotriya, T. S. (2017). Delay-time distribution of core-collapse supernovae with late events resulting from binary interaction. *A&A*, 601:A29

58 Sarbadhicary, S. K., **Badenes, C.**, Chomiuk, L., Caprioli, D., and Huizenga, D. (2017). Supernova remnants in the Local Group - I. A model for the radio luminosity function and visibility times of supernova remnants. *MNRAS*, 464:2326–2340

57 Yamaguchi, H., Hughes, J. P., **Badenes, C.**, Bravo, E., Seitenzahl, I. R., Martínez-Rodríguez, H., Park, S., and Petre, R. (2017). The Origin of the Iron-rich Knot in Tycho's Supernova Remnant. *ApJ*, 834:124

2016

56 Ruan, J. J., Anderson, S. F., Green, P. J., Morganson, E., Eracleous, M., Myers, A. D., **Badenes, C.**, Bershady, M. A., Brandt, W. N., Chambers, K. C., Davenport, J. R. A., Dawson, K. S., Flewelling, H., Heckman, T. M., Isler, J. C., Kaiser, N., Kneib, J.-P., MacLeod, C. L., Paris, I., Ross, N. P., Runnoe, J. C., Schlafly, E. F., Schmidt, S. J., Schneider, D. P., Schwope, A. D., Shen, Y., Stassun, K. G., Szkody, P., Waters, C. Z., and York, D. G. (2016). The Time-Domain Spectroscopic Survey: Understanding the Optically Variable Sky with SEQUELS in SDSS-III. *ApJ*, 825:137

55 Martínez-Rodríguez, H., Piro, A. L., Schwab, J., and **Badenes, C.** (2016). Neutronization During Carbon Simmering In Type Ia Supernova Progenitors. *ApJ*, 825:57

54 Galbany, L., Stanishev, V., Mourão, A. M., Rodrigues, M., Flores, H., Walcher, C. J., Sánchez, S. F., García-Benito, R., Mast, D., **Badenes, C.**, González Delgado, R. M., Kehrig, C., Lyubenova, M., Marino, R. A., Mollá, M., Meidt, S., Pérez, E., van de Ven, G., and Vílchez, J. M. (2016). Nearby supernova host galaxies from the CALIFA survey. II. Supernova environmental metallicity. *A&A*, 591:A48

53 Chomiuk, L., Soderberg, A. M., Chevalier, R. A., Bruzewski, S., Foley, R. J., Parrent, J., Strader, J., **Badenes, C.**, Fransson, C., Kamble, A., Margutti, R., Rupen, M. P., and Simon, J. D. (2016). A Deep Search for Prompt Radio Emission from Thermonuclear Supernovae with the Very Large Array. *ApJ*, 821:119

52 Isern, J., Jean, P., Bravo, E., Knödlseder, J., Lebrun, F., Churazov, E., Sunyaev, R., Domingo, A., **Badenes, C.**, Hartmann, D. H., Hoeflich, P., Renaud, M., Soldi, S., Elias-Rosa, N., Hernanz, M., Domínguez, I., García-Senz, D., Lichti, G. G., Vedrenne, G., and Von Ballmoos, P. (2016). Gamma-ray emission from SN2014J near maximum optical light. *A&A*, 588:A67

51 Rubin, A., Gal-Yam, A., De Cia, A., Horesh, A., Khazov, D., Ofek, E. O., Kulkarni, S. R., Arcavi, I., Manulis, I., Yaron, O., Vreeswijk, P., Kasliwal, M. M., Ben-Ami, S., Perley, D. A., Cao, Y., Cenko, S. B., Rebbapragada, U. D., Woźniak, P. R., Filippenko, A. V., Clubb, K. I., Nugent, P. E., Pan, Y.-C., **Badenes, C.**, Howell, D. A., Valenti, S., Sand, D., Sollerman, J., Johansson, J., Leonard, D. C., Horst, J. C., Armen, S. F., Fedrow, J. M., Quimby, R. M., Mazzali, P., Pian, E., Sternberg, A., Matheson, T., Sullivan, M., Maguire, K., and Lazarevic, S. (2016). Type II Supernova Energetics and Comparison of Light Curves to Shock-cooling Models. *ApJ*, 820:33

2015

50 Bours, M. C. P., Marsh, T. R., Gänsicke, B. T., Tauris, T. M., Istrate, A. G., **Badenes, C.**, Dhillon, V. S., Gal-Yam, A., Hermes, J. J., Kengkriangkrai, S., Kilic, M., Koester, D., Mullally, F., Prasert, N., Steeghs, D., Thompson, S. E., and Thorstensen, J. R. (2015). A double white dwarf with a paradoxical origin? *MNRAS*, 450:3966–3974

49 Morganson, E., Green, P. J., Anderson, S. F., Ruan, J. J., Myers, A. D., Eracleous, M., Kelly, B., **Badenes, C.**, Bañados, E., Blanton, M. R., Bershady, M. A., Borissova, J., Brandt, W. N., Burgett, W. S., Chambers, K., Draper, P. W., Davenport, J. R. A., Flewelling, H., Garnavich, P., Hawley, S. L., Hodapp, K. W., Isler, J. C., Kaiser, N., Kinemuchi, K., Kudritzki, R. P., Metcalfe, N., Morgan, J. S., Pâris, I., Parvizi, M., Poleski, R., Price, P. A., Salvato, M., Shanks, T., Schlafly, E. F., Schneider, D. P., Shen, Y., Stassun, K., Tonry, J. T., Walter, F., and Waters, C. Z. (2015). The Time Domain Spectroscopic Survey: Variable Selection and Anticipated Results. *ApJ*, 806:244

48 Hettinger, T., **Badenes, C.**, Strader, J., Bickerton, S. J., and Beers, T. C. (2015). Statistical Time-resolved Spectroscopy: A Higher Fraction of Short-period Binaries for Metal-rich F-type Dwarfs in SDSS. *ApJ*, 806:L2

47 Hurst, T. J., Zentner, A. R., Natarajan, A., and **Badenes, C.** (2015). Indirect probes of dark matter and globular cluster properties from dark matter annihilation within the coolest white dwarfs. *Phys. Rev. D*, 91(10):103514

46 **Badenes, C.**, Maoz, D., and Ciardullo, R. (2015). The Progenitors and Lifetimes of Planetary Nebulae. *ApJ*, 804:L25

45 Patnaude, D. J., Lee, S.-H., Slane, P. O., **Badenes, C.**, Heger, A., Ellison, D. C., and Nagataki, S. (2015). Are Models for Core-collapse Supernova Progenitors Consistent with the Properties of Supernova Remnants? *ApJ*, 803:101

44 Yamaguchi, H., **Badenes, C.**, Foster, A. R., Bravo, E., Williams, B. J., Maeda, K., Nobukawa, M., Eriksen, K. A., Brickhouse, N. S., Petre, R., and Koyama, K. (2015). A Chandrasekhar Mass Progenitor for the Type Ia Supernova Remnant 3C 397 from the Enhanced Abundances of Nickel and Manganese. *ApJ*, 801:L31

43 Bundy, K., Bershady, M. A., Law, D. R., Yan, R., Drory, N., MacDonald, N., Wake, D. A., Cherinka, B., Sánchez-Gallego, J. R., Weijmans, A.-M., Thomas, D., Tremonti, C., Masters, K., Coccato, L., Diamond-Stanic, A. M., Aragón-Salamanca, A., Avila-Reese, V., **Badenes, C.**, Falcón-Barroso, J., Belfiore, F., Bizyaev, D., Blanc, G. A., Bland-Hawthorn, J., Blanton, M. R., Brownstein, J. R., Byler, N., Cappellari, M., Conroy, C., Dutton, A. A., Emsellem, E., Etherington, J., Frinchaboy, P. M., Fu, H., Gunn, J. E., Harding, P., Johnston, E. J., Kauffmann, G., Kinemuchi, K., Klaene, M. A., Knapen, J. H., Leauthaud, A., Li, C., Lin, L., Maiolino, R., Malanushenko, V., Malanushenko, E., Mao, S., Maraston, C., McDermid, R. M., Merrifield, M. R., Nichol, R. C., Oravetz, D., Pan, K., Parejko, J. K., Sanchez, S. F., Schlegel, D., Simmons, A., Steele, O., Steinmetz, M., Thanjavur, K., Thompson, B. A., Tinker, J. L., van den Bosch, R. C. E., Westfall, K. B., Wilkinson, D., Wright, S., Xiao, T., and Zhang, K. (2015). Overview of the SDSS-IV MaNGA Survey: Mapping nearby Galaxies at Apache Point Observatory. *ApJ*, 798:7

2014

42 Galbany, L., Stanishev, V., Mourão, A. M., Rodrigues, M., Flores, H., García-Benito, R., Mast, D., Mendoza, M. A., Sánchez, S. F., **Badenes, C.**, Barrera-Ballesteros, J., Bland-Hawthorn, J., Falcón-Barroso, J., García-Lorenzo, B., Gomes, J. M., González Delgado, R. M., Kehrig, C., Lyubenova, M., López-Sánchez, A. R., de Lorenzo-Cáceres, A., Marino, R. A., Meidt, S., Mollá, M., Papaderos, P., Pérez-Torres, M. A., Rosales-Ortega, F. F., and van de Ven, G. (2014). Nearby supernova host galaxies from the CALIFA Survey. I. Sample, data analysis, and correlation to star-forming regions. *A&A*, 572:A38

41 Post, S., Park, S., **Badenes, C.**, Burrows, D. N., Hughes, J. P., Lee, J.-J., Mori, K., and Slane, P. O. (2014). Asymmetry in the Observed Metal-rich Ejecta of the Galactic Type Ia Supernova Remnant G299.2-2.9. *ApJ*, 792:L20

40 Lopez, L. A., Castro, D., Slane, P. O., Ramirez-Ruiz, E., and **Badenes, C.** (2014). Identification of a Jet-driven Supernova Remnant in the Small Magellanic Cloud: Possible Evidence for the Enhancement of Bipolar Explosions at Low Metallicity. *ApJ*, 788:5

39 Yamaguchi, H., **Badenes, C.**, Petre, R., Nakano, T., Castro, D., Enoto, T., Hiraga, J. S., Hughes, J. P., Maeda, Y., Nobukawa, M., Safi-Harb, S., Slane, P. O., Smith, R. K., and Uchida, H. (2014a). Discriminating the Progenitor Type of Supernova Remnants with Iron K-shell Emission. *ApJ*, 785:L27

38 Yamaguchi, H., Eriksen, K. A., **Badenes, C.**, Hughes, J. P., Brickhouse, N. S., Foster, A. R., Patnaude, D. J., Petre, R., Slane, P. O., and Smith, R. K. (2014b). New Evidence for Efficient Collisionless Heating of Electrons at the Reverse Shock of a Young Supernova Remnant. *ApJ*, 780:136

2013

37 Ju, W., Greene, J. E., Rafikov, R. R., Bickerton, S. J., and **Badenes, C.** (2013). Search for Supermassive Black Hole Binaries in the Sloan Digital Sky Survey Spectroscopic Sample. *ApJ*, 777:44

36 Woo, S. C., Turnshek, D. A., **Badenes, C.**, and Bickerton, S. (2013). Variability of broad emission lines in high-luminosity, high-redshift quasars. *MNRAS*, 434:1411–1421

35 Park, S., **Badenes, C.**, Mori, K., Kaida, R., Bravo, E., Schenck, A., Eriksen, K. A., Hughes, J. P., Slane, P. O., Burrows, D. N., and Lee, J.-J. (2013). A Super-solar Metallicity for the Progenitor of Kepler's Supernova. *ApJ*, 767:L10

34 Isern, J., Jean, P., Bravo, E., Diehl, R., Knödlseder, J., Domingo, A., Hirschmann, A., Hoeflich, P., Lebrun, F., Renaud, M., Soldi, S., Elias-Rosa, N., Hernanz, M., Kulebi, B., Zhang, X., **Badenes, C.**, Domínguez, I., Garcia-Senz, D., Jordi, C., Lichti, G., Vedrenne, G., and Von Ballmoos, P. (2013). Observation of SN2011fe with INTEGRAL. I. Pre-maximum phase. *A&A*, 552:A97

33 **Badenes, C.**, van Kerkwijk, M. H., Kilic, M., Bickerton, S. J., Mazeh, T., Mullally, F., Tal-Or, L., and Thompson, S. E. (2013). SDSS 1355+0856: a detached white dwarf + M star binary in the period gap discovered by the SWARMS survey. *MNRAS*, 429:3596–3603

2012

32 Patnaude, D. J., **Badenes, C.**, Park, S., and Laming, J. M. (2012). The Origin of Kepler's Supernova Remnant. *ApJ*, 756:6

31 Maoz, D., **Badenes, C.**, and Bickerton, S. J. (2012). Characterizing the Galactic White Dwarf Binary Population with Sparsely Sampled Radial Velocity Data. *ApJ*, 751:143

30 Chomiuk, L., Soderberg, A. M., Moe, M., Chevalier, R. A., Rupen, M. P., **Badenes, C.**, Margutti, R., Fransson, C., Fong, W.-f., and Dittmann, J. A. (2012). EVLA Observations Constrain the Environment and Progenitor System of Type Ia Supernova 2011fe. *ApJ*, 750:164

29 **Badenes, C.** and Maoz, D. (2012). The Merger Rate of Binary White Dwarfs in the Galactic Disk. *ApJ*, 749:L11

28 García-Senz, D., **Badenes, C.**, and Serichol, N. (2012). Is There a Hidden Hole in Type Ia Supernova Remnants? *ApJ*, 745:75

2011

27 Bravo, E. and **Badenes, C.** (2011). Is the metallicity of their host galaxies a good measure of the metallicity of Type Ia supernovae? *MNRAS*, 414:1592–1606

26 Lopez, L. A., Ramirez-Ruiz, E., Huppenkothen, D., **Badenes, C.**, and Pooley, D. A. (2011). Using the X-ray Morphology of Young Supernova Remnants to Constrain Explosion Type, Ejecta Distribution, and Chemical Mixing. *ApJ*, 732:114

25 Rest, A., Foley, R. J., Sinnott, B., Welch, D. L., **Badenes, C.**, Filippenko, A. V., Bergmann, M., Bhatti, W. A., Blondin, S., Challis, P., Damke, G., Finley, H., Huber, M. E., Kasen, D., Kirshner, R. P., Matheson, T., Mazzali, P., Minniti, D., Nakajima, R., Narayan, G., Olsen, K., Sauer, D., Smith, R. C., and Suntzeff, N. B. (2011). Direct Confirmation of the Asymmetry of the Cas A Supernova with Light Echoes. *ApJ*, 732:3

24 Perets, H. B., **Badenes, C.**, Arcavi, I., Simon, J. D., and Gal-yam, A. (2011). An Emerging Class of Bright, Fast-evolving Supernovae with Low-mass Ejecta. *ApJ*, 730:89

23 Eriksen, K. A., Hughes, J. P., **Badenes, C.**, Fesen, R., Ghavamian, P., Moffett, D., Plucinksy, P. P., Rakowski, C. E., Reynoso, E. M., and Slane, P. (2011). Evidence for Particle Acceleration to the Knee of the Cosmic Ray Spectrum in Tycho's Supernova Remnant. *ApJ*, 728:L28

2010

22 Maoz, D. and **Badenes, C.** (2010). The supernova rate and delay time distribution in the Magellanic Clouds. *MNRAS*, 407:1314–1327

21 **Badenes, C.**, Maoz, D., and Draine, B. T. (2010). On the size distribution of supernova remnants in the Magellanic Clouds. *MNRAS*, 407:1301–1313

20 **Badenes, C.** (2010). X-ray studies of supernova remnants: A different view of supernova explosions. *Proceedings of the National Academy of Science*, 107:7141–7146

19 Bravo, E., Domínguez, I., **Badenes, C.**, Piersanti, L., and Straniero, O. (2010). Metallicity as a Source of Dispersion in the SNIa Bolometric Light Curve Luminosity-Width Relationship. *ApJ*, 711:L66–L70

2009

18 Mullally, F., **Badenes, C.**, Thompson, S. E., and Lupton, R. (2009). Twins: The Two Shortest Period Non-Interacting Double Degenerate White Dwarf Stars. *ApJ*, 707:L51–L55

17 **Badenes, C.**, Mullally, F., Thompson, S. E., and Lupton, R. H. (2009b). 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*, 707:971–978

16 Lopez, L. A., Ramirez-Ruiz, E., **Badenes, C.**, Huppenkothen, D., Jeltema, T. E., and Pooley, D. A. (2009). Typing Supernova Remnants Using X-Ray Line Emission Morphologies. *ApJ*, 706:L106–L109

15 **Badenes, C.**, Harris, J., Zaritsky, D., and Prieto, J. L. (2009a). The Stellar Ancestry of Supernovae in the Magellanic Clouds. I. The Most Recent Supernovae in the Large Magellanic Cloud. *ApJ*, 700:727–740

2008

14 **Badenes, C.**, Bravo, E., and Hughes, J. P. (2008a). 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

13 Cassam-Chenaï, G., Hughes, J. P., Reynoso, E. M., **Badenes, C.**, and Moffett, D. (2008). Morphological Evidence for Azimuthal Variations of the Cosmic-Ray Ion Acceleration at the Blast Wave of SN 1006. *ApJ*, 680:1180–1197

12 **Badenes, C.**, Hughes, J. P., Cassam-Chenaï, G., and Bravo, E. (2008b). The Persistence of Memory, or How the X-Ray Spectrum of SNR 0509-67.5 Reveals the Brightness of Its Parent Type Ia Supernova. *ApJ*, 680:1149–1157

2007

11 Reynolds, S. P., Borkowski, K. J., Hwang, U., Hughes, J. P., Badenes, C., Laming, J. M., and Blondin, J. M. (2007). A Deep Chandra Observation of Kepler's Supernova Remnant: A Type Ia Event with Circumstellar Interaction. *ApJ*, 668:L135–L138

10 **Badenes, C.**, Hughes, J. P., Bravo, E., and Langer, N. (2007). Are the Models for Type Ia Supernova Progenitors Consistent with the Properties of Supernova Remnants? *ApJ*, 662:472–486

2006

9 Rakowski, C. E., **Badenes, C.**, Gaensler, B. M., Gelfand, J. D., Hughes, J. P., and Slane, P. O. (2006). Can Ejecta-dominated Supernova Remnants be Typed from Their X-Ray Spectra? The Case of G337.2-0.7. *ApJ*, 646:982–1000

8 **Badenes, C.**, Borkowski, K. J., Hughes, J. P., Hwang, U., and Bravo, E. (2006). Constraints on the Physics of Type Ia Supernovae from the X-Ray Spectrum of the Tycho Supernova Remnant. *ApJ*, 645:1373–1391

2005

7 Warren, J. S., Hughes, J. P., **Badenes, C.**, Ghavamian, P., McKee, C. F., Moffett, D., Plucinsky, P. P., Rakowski, C., Reynoso, E., and Slane, P. (2005). Cosmic-Ray Acceleration at the Forward Shock in Tycho's Supernova Remnant: Evidence from Chandra X-Ray Observations. *ApJ*, 634:376–389

6 **Badenes, C.**, Borkowski, K. J., and Bravo, E. (2005a). Thermal X-Ray Emission from Shocked Ejecta in Type Ia Supernova Remnants. II. Parameters Affecting the Spectrum. *ApJ*, 624:198–212

5 **Badenes, C.**, Bravo, E., and Borkowski, K. J. (2005b). A model grid for the spectral analysis of X-ray emission in young Type Ia supernova remnants. *Advances in Space Research*, 35:987–990

2004

4 Hwang, U., Laming, J. M., **Badenes, C.**, Berendse, F., Blondin, J., Cioffi, D., DeLaney, T., Dewey, D., Fesen, R., Flanagan, K. A., Fryer, C. L., Ghavamian, P., Hughes, J. P., Morse, J. A., Plucinsky, P. P., Petre, R., Pohl, M., Rudnick, L., Sankrit, R., Slane, P. O., Smith, R. K., Vink, J., and Warren, J. S. (2004). A Million Second Chandra View of Cassiopeia A. *ApJ*, 615:L117–L120

2003

3 **Badenes, C.**, Bravo, E., Borkowski, K. J., and Domínguez, I. (2003). Thermal X-Ray Emission from Shocked Ejecta in Type Ia Supernova Remnants: Prospects for Explosion Mechanism Identification. *ApJ*, 593:358–369

2 Halloin, H., von Ballmoos, P., Evrard, J., Skinner, G. K., Abrosimov, N., Bastie, P., Di Cocco, G., George, M., Hamelin, B., Jean, P., Knödleseder, J., Laporte, P., **Badenes, C.**, Laurent, P., and Smither, R. K. (2003). Performance of CLAIRE, the first balloon-borne γ-ray lens telescope. *Nuclear Instruments and Methods in Physics Research A*, 504:120–125

2001

1 **Badenes, C.** and Bravo, E. (2001). The Imprint of Presupernova Evolution on Supernova Remnants. *ApJ*, 556:L41–L45

Other Noteworthy Publications (White Papers and Book Chapters)

2017

5 Kollmeier, J. et al. (2017). SDSS-V: Pioneering Panoptic Spectroscopy. White paper on the design of SDSS-V. [arXiv:1711.03234]

4 Patnaude, D., and **Badenes, C.** (2017). Supernova Remnants as Clues to Their Progenitors Handbook of Supernovae, ISBN 978-3-319-21845-8. Springer International Publishing AG, 2017, p. 2233

2013

3 Decourchelle, A., Costantini, E., **Badenes, C.**, Ballet, J., Bamba, A., Bocchino, F., Kaastra, J., Kosenko, D., Lallement, R., Lee, J., Lemoine-Goumard, M., Miceli, M., Paerels, F., Petre, R., Pinto, C., Plucinsky, P., Renaud, M., Sasaki, M., Smith, R., Tatischeff, V., Tiengo, A., Valencic, L., Vink, J., Wang, D., and Wilms, J. (2013). The Hot and Energetic Universe: The astrophysics of supernova remnants and the interstellar medium. Companion to the Athena+ white paper, [arXiv:1306.2335]

2 Nandra, K., Barret, D., Barcons, X., Fabian, A., den Herder, J.-W., Piro, L., Watson, M., Adami, C., Aird, J., Afonso, J. M., and et al. (2013). The Hot and Energetic Universe: A White Paper presenting the science theme motivating the Athena+ mission. [arXiv:1306:2307]

2012

1 Pilachowski, C., **Badenes, C.**, Bailey, S., Barth, A., Beaton, R., Bell, E., Bernstein, R., Bian, F., Blanton, M., Blum, R., Bolton, A., Bond, H., Brodwin, M., Bullock, J., Carlin, J., Chary, R.-R., Cinabro, D., Cooper, M., Cota, J. L. C., Davis, M., Dawson, K., Dey, A., Donahue, M., Drake, J., Ellingson, E., Faccioli, L., Fan, X., Ferguson, H., Gawiser, E., Geha, M., Giavalisco, M., Gonzalez, A., Griest, K., Grossan, B., Guhathakurta, R., Harding, P., Heap, S. R., Ho, S., Howell, S., Jannuzi, B., Kalirai, J., Keeney, B., Kewley, L., Kong, X., Lampton, M., Lin, W.-P., de la Macorra, A., Macri, L., Majewski, S., Martini, P., Massey, P., McSwain, V., Miller, A. A., Minniti, D., Modjaz, M., Morrison, H., Moustakas, J., Myers, A., Najita, J., Newman, J., Norman, D., Olsen, K., Pierce, M., Pope, A., Prescott, M., Reddy, N., Reil, K., Rest, A., Rhode, K., Rockosi, C., Rudnick, G., Saha, A., Salzer, J., Sanders, D., Schlegel, D., Sesar, B., Shields, J., Silverman, J., Simon, J., Stanford, A., Stern, D., Storrie-Lombardi, L., Suntzeff, N., Surace, J., Szalay, A., Ulmer, M., Weiner, B., Willman, B., Windhorst, R., and Wood-Vasey, M. (2012). Addressing Decadal Survey Science through Community Access to Highly Multiplexed Spectroscopy with BigBOSS on the KPNO Mayall Telescope. White Paper, [arXiv:1211:0285]

Unlisted: More than 60 unrefereed publications, including communications, conference proceedings, and astronomer's telegrams. A complete list of unrefereed publications can be found [here]