

Department of Physics and Astronomy
University of Pittsburgh
3941 O'Hara Street, Pittsburgh, PA 15260

E-mail: badenes@pitt.edu
Cell: 412 944 5591
Web: <http://www.carles.phyast.pitt.edu/>

Employment and Education

Since 2023	Full Professor (tenured) , University of Pittsburgh, Pittsburgh, PA
2017 - 2023	Associate Professor (tenured)
2011 - 2017	Assistant Professor
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: <i>Thermal X-ray Emission from Young Type Ia Supernova Remnants</i> . 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.
Multi-Wavelength	Radio, infrared, optical, ultraviolet, X-rays, and γ -rays.
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 Gaia.

Publication Record (ORCID: 0000-0003-3494-343X)

130 refereed publications, 17 as first author, 41 as second/third author. Total citations: in NASA ADS, 14,610 citations and Hirsch index 52 [link]; in Google Scholar, 17,266 citations and Hirsch index 55 [link].

I have played a key role in **24 high-impact papers** (with more than 50 citations in ADS): 11 as first author, 13 as second/third author. For details, see attached publication list.

Honors and Awards

2023	Senior Participant, Kavli Summer Program in Astrophysics at MPA-Garching, Germany.
2022	<i>XRISM</i> Guest Scientist.
2019	Scialog Fellow for Time Domain Astrophysics, Research Corporation, USA (2015-2019).
2016	Distinguished Visitor, Carnegie Observatories, USA.
2010	Marie Curie IRG Fellowship, European Commission.
2006	<i>Chandra</i> Fellowship, NASA.
2000	<i>FI</i> Fellowship, Generalitat de Catalunya.

External Funding

2023	637k	U Pitt	NSF AST Award (2307865). Duration: 3 years. <i>Collaborative Research: White Dwarfs in Binaries Across the H-R Diagram with the APOGEE-GALEX-Gaia Catalog</i> . Co-PI with Borja Anguiano (Notre Dame), Steve Majewski (university of Virginia), and Bob Mathieu (UW-Madison), U Pitt award is \$100k
2022	120k	U Pitt	NASA <i>XRISM</i> Guest Scientist Program.
	104k	U Pitt	Space Telescope Science Institute, <i>HST</i> . Guest Observer Grant (HST-GO-17179). Duration: 2 years. <i>A public HST-UV snapshot survey of type Ia supernova host galaxies with pre-existing optical integral-field spectroscopy</i> . Administrative PI.
2021	\$97k	U Pitt	Space Telescope Science Institute, <i>HST</i> Guest Observer Grant (HST-GO-16741.002-A). Duration: 2 years. <i>A public UV snapshot survey of type Ia supernova hosts in IFS data</i> . Administrative PI.
2020	\$90k	U Pitt	Space Telescope Science Institute, <i>HST</i> Guest Observer Grant (HST-GO-16287.002-A). Duration: 2 years. <i>A public UV snapshot survey of core-collapse supernova hosts in IFS data</i> . Administrative PI.
	\$91k	U Pitt	NASA Chandra Theory Grant (TM1-22004X). Duration: 1 year. <i>Mapping type IA Supernova Progenitors onto Supernova Remnants</i> . PI.
2019	\$57k	U Pitt	NASA Chandra Theory Grant (TM0-21004X). Duration: 1 year. <i>Do Type Ia Supernovae Explode Inside Planetary Nebulae?</i> . PI.
	\$863k	U Pitt	NSF AST Award (1909022). Duration: 3 years. <i>Collaborative Research: Finding the Double Sunsets - Stellar Multiplicity Across the Milky Way Halo</i> . Co-PI with Matthew Walker and Sergey Koposov at Carnegie Mellon University, U Pitt award is \$314k
2018	\$110k	U Pitt	Heising-Simons Foundation Scialog Grant 2018-1040. Duration: 2 years. <i>Mapping Stellar Enrichment in the Milky Way</i> . 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. <i>Stellar Multiplicity Meets Stellar Evolution: The APOGEE View</i> . 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. <i>Burning Chrome: Secondary Fe-Peak Elements in Type Ia Supernova Remnants with Suzaku</i> . PI.
2014	\$537k	U Pitt	NSF AST award (1410319). Duration: 3 years. <i>Collaborative Research: The Supernova Rate and Delay Time Distribution in the Local Group</i> . 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: \$3.4M In competitive research grants as PI or Co-PI since 2011.

Professional Service

Management and Science Definition:

Since 2016	<i>SDSS-V</i> Task force on time-resolved spectroscopy and stellar multiplicity.
2014-2023	<i>Athena</i> Mission, US Representative in Science Working Group 3.4: Supernova remnants and the Interstellar Medium.
2013-2022	<i>SDSS-IV/MaNGA</i> Data Products Committee.
2012-2018	<i>BigBOSS/MS-DESI/DESI</i> Bright Time Science Committee.
2013-2016	<i>SDSS-IV</i> Collaboration Council: Representative for Associate Member Institutions.
2009-2010	Science Associate for the <i>International X-ray Observatory (IXO)</i> .
2008	NASA <i>Constellation-X</i> Panel on Production and Distribution of the Elements.
2004	NASA <i>Constellation-X</i> Panel to Define Scientific Objectives for Supernova Remnants.

Peer reviewing:

Since 2006	Scientific referee for <i>A&A</i> , <i>ApJ</i> , <i>MNRAS</i> , <i>Science</i> and <i>Nature</i> .
Since 2006	Time allocation committees: <i>HST</i> , <i>Chandra</i> (twice), <i>Swift</i> , <i>Suzaku</i> , National Optical Astronomy Observatory (five semesters)

Since 2015 | National and private grant programs and fellowships, including the National Science Foundation (Astronomy & Astrophysics Panel), the NASA Astrophysics Theory Program (Panel Chair), the EVALUA programme of the Ministerio de Ciencia e Innovación in Spain, the Israel Science Foundation, the Natural Sciences and Engineering Research Council of Canada, the COST program of the Swiss National Science Foundation, the *Vici* program of Netherlands Organisation for Scientific Research (NWO), and the L'Oréal Fellowship for Women.

Conference and Workshop Organization:

2022 | Scientific Organizing Committee, "Using Chandra to Explore the Connection Between Supernovae, Their Remnants, and Their Progenitors". Summer Chandra Science Workshop, Cambridge, MA.

2019 | Scientific Organizing Committee, Supernova Conference, Lijiang, Yunnan Province, China.
Scientific Organizing Committee, FOE19 (Fifty-One Ergs Conference), Raleigh, NC.

2018 | Workshop Organizer, Observational Signatures of Type Ia Supernova Progenitors III, Lorentz Center, Leiden, the Netherlands.

2009 | Scientific Organizing Committee, SN Ia Progenitor Workshop, Princeton, NJ.

2007 | Scientific Organizing Committee, Endpoints And Interactions: A Supernova Remnant Workshop, AAS Summer Meeting, Hawaii.

Professional Society Memberships:

Sociedad Española de Astronomía (since 2003), American Astronomical Society (since 2007), High Energy Astrophysics Division of the American Astronomical Society (since 2007).

Supervision and Mentoring

POSTDOCS (direct supervision):

Rachel Patton | *Samuel P. Langley Fellow at the University of Pittsburgh*
Advising period: Fall 2024 to present

Brett Andrews | *SDSS-IV postdoc working on data visualization for MaNGA and Galactic archaeology for APOGEE*
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* [[link](#)]
Institution: Michigan State University (co-advised with Jay Strader)

Sumit Sarbadhicary	Ph D Thesis defended August 13, 2015 . Now in the private sector. <i>Supernova Remnant Populations in the Local Group</i> [link]
Héctor Martínez-Rodríguez	Ph D Thesis defended June 11, 2018 . Now an Assistant Research Scientist at Johns Hopkins University. <i>Models and observations of Type Ia supernova remnants</i> [link]
Christine Mazzola	Ph D Thesis defended March 27, 2019 . Now in the private sector. <i>Stellar Multiplicity Statistics in APOGEE</i> [link]
Juntong Su	PhD Thesis defended May 6, 2022 . Now in the defense sector. <i>Mapping Stellar Enrichment in the Milky Way</i> Expected completion: 2025
Travis Court	<i>Circumstellar Interaction in Supernova Remnants</i> Expected completion: 2025
Victoria Bonidie	<i>Circumbinary Planets in TESS and APOGEE</i> Expected completion: 2026
Cullen Abelson	<i>The Delay Time Distribution of Supernovae in the AMUSING Survey</i> Expected completion: 2028

Departmental Service

- Served on **sixteen** PhD Thesis Committees at the University of Pittsburgh (* = chair): Gendith Sardane, Travis Hurst, Tim Licquia, Sumit Sarbadhicary*, Héctor Martínez-Rodríguez*, Kevin Wilk, Christine Mazzola Daher*, Quing Guo, Aditi Nethwewala, Troy Raen, Christian Farina, Robert Caddy, Emily Bierman, Shu Liu, Erfei Wang.
- Served on **seven** PhD Thesis Committees at other Universities: Thomas Kerzendorf (Australian National University), Thomas Hettinger (Michigan State University), Melih Ozbek (Carnegie Mellon University), Gabriela Aznar-Siguán (Universitat Politècnica de Catalunya), Jeffrey Patrick (Carnegie Mellon University), Zhaozhou An (Carnegie Mellon University), Bethany Ludwig (University of Toronto).
- Academic Advisor for incoming graduate students, 2013-2017 and 2018-2021.
- Graduate Committee 2013-2017 and 2018-2021.
- Faculty Hiring Committees 2016, 2017, 2018.
- Colloquium Committee 2012-2017 and 2018-2023.
- Graduate Admissions Committee 2019-2023.
- Faculty Mentoring Committee for Rachel Bezanson.

Selected Invited Talks, Reviews, and Colloquia (past 10 years)

2024 | November: Astrophysics Seminar, DARK, Neils Bohr Institute, Copenhagen, Denmark.

- September: Astrophysics Seminar, Department of Physics and Astronomy, Purdue University, West Lafayette, IN.
- August: Invited Talk, The Progenitors of Supernovae and their Explosions, Dali, Yunnan, China.
- 2023** December: Astronomy and Astrophysics Colloquium, Rochester Institute of Technology, Rochester, NY.
- October: Colloquium, Department of Astronomy, the Ohio State University, Columbus OH.
- March: Invited Talk, 50th Anniversary Wise Observatory Conference, Mitzpeh Ramon, Israel.
- 2022** December: Program Talk, Kavli Institute for Theoretical Physics, Santa Barbara, CA.
- March: Astrophysics Seminar, School of Physics and Astronomy, Tel-Aviv University, Israel (remote).
- March: Panel on High Resolution Spectroscopy, High Energy Astrophysics Division Meeting, Pittsburgh, PA.
- 2021** September: Seminar, INAF - Osservatorio Astronomico d'Abruzzo, Teramo, Italy (remote).
- January: Seminar, Institut de Ciències del Cosmos (ICCUB), Universitat de Barcelona, Barcelona, Spain (remote).
- 2020** June: Astrophysics Seminar, Department of Physics, Lancaster University, Lancaster, UK (remote).
- 2019** October: Invited review, IAU Symposium 357: White Dwarfs as probes of fundamental physics. Hilo, HI.
- August: Invited review, Type Ia Supernova Progenitors Conference, Lijiang, China
- February: Astronomy Seminar, Department of Physics, New York University, New York, NY.
- 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: Seminar, 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: Seminar, Dept. of Physics and Astronomy, Ohio University, Athens, OH
- January: 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.

Outreach

Selected Public Talks and events:

- 2025 February: *How Big is the Universe?*, Allegheny Observatory, Pittsburgh, PA.
- 2024 May: *Chandra: A Historical Journey*, Astronomy on Tap, Pittsburgh, PA.
- 2022 April: *UFOs and the Stories We Tell About Them*, part of the 'Science Revealed' public lecture series, Dietrich School of Arts and Sciences, University of Pittsburgh.
- 2020 February: *Finding Black Holes in SDSS*, Allegheny Observatory, Pittsburgh, PA.
- 2019 June: *Buscando Agujeros Negros en SDSS*, Astronomy On Tap, Ensenada, México.
- 2018 March: *Supernovas*, Inaugural talk, XXVI Jornadas de Astronomía, Planetari de Castelló.
- 2017 November: *Supernovas - La persistencia de la Memoria*, 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: *X-ray Astronomy: To See Beyond*, Amateur Astronomers Association of Pittsburgh, Pittsburgh PA.
- 2015 April: *Supernovae from Ancient History to Today* Carnegie Science Center, Pittsburgh PA.
- Since 2001 Several participations in blogs, TV, 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.

Selected Press Releases:

- 2019 [\[link\]](#) Pitt News: *Pitt researcher helps discover smallest known black hole*. See also articles in the popular press: [\[Pittsburgh Post-Gazette\]](#) and the [\[City Paper\]](#).
- 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*. See also feature in the [\[National Science Foundation website\]](#).
- 2008 [\[link\]](#) *Chandra* press center. *SNR 0509-67.5: Action Replay of Powerful Stellar Explosion*.

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). **JWST** 30.8 hours in 2025 (PI Milisavljevic) **HST** 232 orbits in 2022 (PI Galbany); 218 orbits in 2021 (PI Galbany), 210 orbits in 2020 (PI Lyman), 4 orbits in 2007 (PI Hughes). **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).

Refereed Publications

Noteworthy publications: ★ First Author; ♦ Graduate Student (direct supervision); ● Major Contribution.

- 2025 | 130♦ Abelson, C. S.; **Badenes, Carles**; Chomiuk, Laura; Williams, Benjamin F.; Breivik, Katelyn; Galbany, Lluís ; Jimenez Palau, Cristina. (2025), *The Progenitor Systems of Classical Novae in M31*, ApJ, in press, [arxiv], 1 citation
- 2024 | 129 Palmore, D.; Maccarone, T. J.; Beaton, R.; Eracleous, M.; Bahramian, A.; **Badenes, C.**; Jayasinghe, T. (2024), *Searching for Hidden Black Holes in APOGEE-2*, Journal of the American Association of Variable Star Observers (JAAVSO), 52, 134
- 128 Crumpler, Nicole R.; Chandra, Vedant; Zakamska, Nadia L.; Adamane Pallathadka, Gautham; Arseneau, Stefan; Gentile Fusillo, Nicola; Hermes, J. J.; **Badenes, Carles**; Chakraborty, Priyanka; Gänsicke, Boris T. et al. (2024), *Detection of the Temperature Dependence of the White Dwarf Mass–Radius Relation with Gravitational Redshifts*, ApJ, 977, 237, [arxiv], 1 citation
- 127 Foster, Steve; Schiavon, Ricardo P.; de Castro, Denise B.; Lucatello, Sara; Daher, Christine; Penoyre, Zephyr; Price-Whelan, Adrian; **Badenes, Carles**; Fernández-Trincado, José G.; García-Hernández, Domingo Aníbal et al. (2024), *Carbon enrichment in APOGEE disk stars as evidence of mass transfer in binaries*, A&A, 689, A230, [arxiv], 3 citations
- 126 Partoush, Roe; Rest, Armin; Jencson, Jacob E.; Poznanski, Dovi; Foley, Ryan J.; Kilpatrick, Charles D.; Andrews, Jennifer E.; Angulo, Rodrigo; **Badenes, Carles**; Bianco, Federica B. et al. (2024), *SpectAcLE: An Improved Method for Modeling Light Echo Spectra*, ApJ, 970, 119, [arxiv]
- 125 Kwok, Lindsey A.; Siebert, Matthew R.; Johansson, Joel; Jha, Saurabh W.; Blondin, Stéphane; Dessart, Luc; Foley, Ryan J.; Hillier, D. John; Larison, Conor; Pakmor, Rüdiger; ... ; **Badenes, Carles** et al. (2024), *Ground-based and JWST Observations of SN 2022pul. II. Evidence from Nebular Spectroscopy for a Violent Merger in a Peculiar Type Ia Supernova*, ApJ, 966, 135, [arxiv], 16 citations
- 124● Martínez-Rodríguez, Héctor; Galbany, Lluís; **Badenes, Carles**; Anderson, Joseph P.; Domínguez, Inmaculada; Kuncarayakti, Hanindy; Lyman, Joseph D.; Sánchez, Sebastián F.; Vilchez, José M.; Smith, Nathan et al. (2024), *Recovering Lost Light: Discovery of Supernova Remnants with Integral Field Spectroscopy*, ApJ, 963, 125, [arxiv], 1 citation
- 123♦ Court, Travis; **Badenes, Carles**; Lee, Shiu-Hang; Patnaude, Daniel; García-Segura, Guillermo; Bravo, Eduardo (2024), *Do Type Ia Supernovae Explode inside Planetary Nebulae?*, ApJ, 962, 63, [arxiv], 6 citations
- 122 Siebert, Matthew R.; Kwok, Lindsey A.; Johansson, Joel; Jha, Saurabh W.; Blondin, Stéphane; Dessart, Luc; Foley, Ryan J.; Hillier, D. John; Larison, Conor; Pakmor, Rüdiger; ... ; **Badenes, Carles** et al. (2024), *Ground-based and JWST Observations of SN 2022pul. I. Unusual Signatures of Carbon, Oxygen, and Circumstellar Interaction in a Peculiar Type Ia Supernova*, ApJ, 960, 88, [arxiv], 20 citations

- 2023
- 121 Hallakoun, Na'ama; Maoz, Dan; Istrate, Alina G.; **Badenes, Carles**; Breedt, Elmé; Gänsicke, Boris T.; Jha, Saurabh W.; Leibundgut, Bruno; Mannucci, Filippo; Marsh, Thomas R. et al. (2023), *An irradiated-Jupiter analogue hotter than the Sun*, *Nature Astronomy*, 7, 1329, [arxiv], 3 citations
- 120 Inight, K.; Gänsicke, Boris T.; Schwöpe, A.; Anderson, S. F.; **Badenes, C.**; Breedt, E.; Chandra, V.; Davies, B. D. R.; Gentile Fusillo, N. P.; Green, M. J. et al. (2023), *Cataclysmic Variables from Sloan Digital Sky Survey - V. The search for period bouncers continues*, *MNRAS*, 525, 3597, [arxiv], 17 citations
- 119 Almeida, Andrés; Anderson, Scott F.; Argudo-Fernández, Maria; **Badenes, Carles**; Barger, Kat; Barrera-Ballesteros, Jorge K.; Bender, Chad F.; Benitez, Erika; Besser, Felipe; Bird, Jonathan C. et al. (2023), *The Eighteenth Data Release of the Sloan Digital Sky Surveys: Targeting and First Spectra from SDSS-V*, *ApJS*, 267, 44, [arxiv], 174 citations
- 118 Jacovich, Taylor; Patnaude, Daniel; Slane, Patrick; **Badenes, Carles**; Lee, Shiu-Hang; Nagataki, Shigehiro; Milisavljevic, Dan (2023), *Doppler Broadening and Line-of-sight Effects in Core-collapse Supernovae and Young Remnants*, *ApJ*, 951, 57
- 117 Kwok, Lindsey A.; Jha, Saurabh W.; Temim, Tea; Fox, Ori D.; Larison, Conor; Camacho-Neves, Yssavo; Brenner Newman, Max J.; Pierel, Justin D. R.; Foley, Ryan J.; Andrews, Jennifer E.; **Badenes, Carles** et al. (2023), *A JWST Near- and Mid-infrared Nebular Spectrum of the Type Ia Supernova 2021aefx*, *ApJ*, 944, L3, [arxiv], 28 citations
- 2022
- 116 Jayasinghe, T.; Thompson, Todd A.; Kochanek, C. S.; Stanek, K. Z.; Rowan, D. M.; Martin, D. V.; El-Badry, Kareem; Valley, P. J.; Hinkle, J. T.; Huber, D.; ... ; **Badenes, C.** (2022), *The 'Giraffe': discovery of a stripped red giant in an interacting binary with an 2 $M_{\text{SUB}} \odot$ lower giant*, *MNRAS*, 516, 5945, [arxiv], 23 citations
- 115 Millard, Matthew J.; Park, Sangwook; Sato, Toshiki; Hughes, John P.; Slane, Patrick; Patnaude, Daniel; Burrows, David; **Badenes, Carles** (2022), *The 3D X-Ray Ejecta Structure of Tycho's Supernova Remnant*, *ApJ*, 937, 121, [arxiv], 11 citations
- 114● Anguiano, Borja; Majewski, Steven R.; Stassun, Keivan G.; **Badenes, Carles**; Daher, Christine Mazzola; Dixon, Don; Allende Prieto, Carlos; Schneider, Donald P.; Price-Whelan, Adrian M.; Beaton, Rachael L. (2022), *White Dwarf Binaries across the H-R Diagram*, *AJ*, 164, 126, [arxiv], 9 citations
- 113 Buttry, Rachel; Pace, Andrew B.; Koposov, Sergey E.; Walker, Matthew G.; Caldwell, Nelson; Kirby, Evan N.; Martin, Nicolas F.; Mateo, Mario; Olszewski, Edward W.; Starkenburg, Else; **Badenes, Carles** et al. (2022), *Stellar kinematics of dwarf galaxies from multi-epoch spectroscopy: application to Triangulum II*, *MNRAS*, 514, 1706, [arxiv], 11 citations
- 112◆ Bonidie, Victoria; Court, Travis; Daher, Christine Mazzola; Fielder, Catherine E.; **Badenes, Carles**; Newman, Jeffrey; Moe, Maxwell; Kratter, Kaitlin M.; Walker, Matthew G.; Majewski, Steven R. et al. (2022), *Multiplicity Statistics of Stars in the Sagittarius Dwarf Spheroidal Galaxy: Comparison to the Milky Way*, *ApJ*, 933, L18, [arxiv], 2 citations

- 111◆ Daher, Christine Mazzola; **Badenes, Carles**; Tayar, Jamie; Pinsonneault, Marc; Kopusov, Sergey E.; Kratter, Kaitlin; Moe, Maxwell; Anguiano, Borja; Godoy-Rivera, Diego; Majewski, Steven et al. (2022), *Stellar multiplicity and stellar rotation: insights from APOGEE*, MNRAS, 512, 2051, [arxiv], 13 citations
- 110 Abdurro'uf; Accetta, Katherine; Aerts, Conny; Silva Aguirre, Víctor; Ahumada, Romina; Ajgaonkar, Nikhil; Filiz Ak, N.; Alam, Shadab; Allende Prieto, Carlos; Almeida, Andrés; ... ; **Badenes, Carles** et al. (2022), *The Seventeenth Data Release of the Sloan Digital Sky Surveys: Complete Release of MaNGA, MaStar, and APOGEE-2 Data*, ApJS, 259, 35, [arxiv], 903 citations
- 109 Sarbadhicary, Sumit K.; Martizzi, Davide; Ramirez-Ruiz, Enrico; Koch, Eric; Auchettl, Katie; **Badenes, Carles**; Chomiuk, Laura (2022), *Testing the Momentum-driven Supernova Feedback Paradigm in M31*, ApJ, 928, 54, [arxiv], 4 citations
- 108 Lewis, Hannah M.; Anguiano, Borja; Majewski, Steven R.; Nidever, David L.; **Badenes, Carles**; De Lee, Nathan; Hasselquist, Sten; Mazzola Daher, Christine; Stassun, Keivan G.; Bizyaev, Dmitry et al. (2022), *Close substellar-mass companions in stellar wide binaries: discovery and characterization with APOGEE and Gaia DR2*, MNRAS, 509, 3355, 3 citations
- 2021
- 107 Chandra, Vedant; Hwang, Hsiang-Chih; Zakamska, Nadia L.; Gänsicke, Boris T.; Hermes, J. J.; Schwöpe, Axel; **Badenes, Carles**; Tovmassian, Gagik; Bauer, Evan B.; Maoz, Dan et al. (2021), *A 99 minute Double-lined White Dwarf Binary from SDSS-V*, ApJ, 921, 160, [arxiv], 12 citations
- 106 Kounkel, Marina; Covey, Kevin R.; Stassun, Keivan G.; Price-Whelan, Adrian M.; Holtzman, Jon; Chojnowski, Drew; Longa-Peña, Penélope; Román-Zúñiga, Carlos G.; Hernandez, Jesus; Serna, Javier; **Badenes, Carles** et al. (2021), *Double-lined Spectroscopic Binaries in the APOGEE DR16 and DR17 Data*, AJ, 162, 184, [arxiv], 64 citations
- 105 Jacovich, Taylor; Patnaude, Daniel; Slane, Patrick; **Badenes, Carles**; Lee, Shiu-Hang; Nagataki, Shigehiro; Milisavljevic, Dan (2021), *A Grid of Core-collapse Supernova Remnant Models. I. The Effect of Wind-driven Mass Loss*, ApJ, 914, 41, [arxiv], 12 citations
- 104 Jayasinghe, T.; Stanek, K. Z.; Thompson, Todd A.; Kochanek, C. S.; Rowan, D. M.; Valley, P. J.; Strassmeier, K. G.; Weber, M.; Hinkle, J. T.; Hamsch, F. -J.; ... ; **Badenes, C.** et al. (2021), *A unicorn in monoceros: the 3 M_{\odot} dark companion to the bright, nearby red giant V723 Mon is a non-interacting, mass-gap black hole candidate*, MNRAS, 504, 2577, [arxiv], 108 citations
- 103 Raen, Troy J.; Martínez-Rodríguez, Héctor; Hurst, Travis J.; Zentner, Andrew R.; **Badenes, Carles**; Tao, Rachel (2021), *The effects of asymmetric dark matter on stellar evolution - I. Spin-dependent scattering*, MNRAS, 503, 5611, [arxiv], 15 citations
- 102● Sarbadhicary, Sumit K.; Heiger, Mairead; **Badenes, Carles**; Mateu, Cecilia; Newman, Jeffrey A.; Ciardullo, Robin; Hallakoun, Na'ama; Maoz, Dan; Chomiuk, Laura (2021), *The RR Lyrae Delay-time Distribution: A Novel Perspective on Models of Old Stellar Populations*, ApJ, 912, 140, [arxiv], 9 citations

- 101 Corcoran, Kyle A.; Lewis, Hannah M.; Anguiano, Borja; Majewski, Steven R.; Kounkel, Marina; McDonald, Devin J.; Stassun, Keivan G.; Cunha, Katia; Smith, Verne; Allende Prieto, Carlos; **Badenes, Carles** et al. (2021), *Analysis of Previously Classified White Dwarf-Main-sequence Binaries Using Data from the APOGEE Survey*, AJ, 161, 143, [arxiv], 2 citations
- 100 Castrillo, Asier; Ascasibar, Yago; Galbany, Lluís; Sánchez, Sebastián F.; **Badenes, Carles**; Anderson, Joseph P.; Kuncarayakti, Hanindy; Lyman, Joseph D.; Díaz, Angeles I. (2021), *The delay time distribution of supernovae from integral-field spectroscopy of nearby galaxies*, MNRAS, 501, 3122, [arxiv], 16 citations
- 2020 99♦ Mazzola, Christine N.; **Badenes, Carles**; Moe, Maxwell; Koposov, Sergey E.; Kounkel, Marina; Kratter, Kaitlin; Covey, Kevin; Walker, Matthew G.; Thompson, Todd A.; Andrews, Brett et al. (2020), *The close binary fraction as a function of stellar parameters in APOGEE: a strong anticorrelation with α abundances*, MNRAS, 499, 1607, [arxiv], 49 citations
- 98 Lewis, Hannah M.; Anguiano, Borja; Stassun, Keivan G.; Majewski, Steven R.; Arras, Phil; Sarazin, Craig L.; Li, Zhi-Yun; De Lee, Nathan; Troup, Nicholas W.; Allende Prieto, Carlos; **Badenes, Carles** et al. (2020), *Geometry of the Draco C1 Symbiotic Binary*, ApJ, 900, L43, [arxiv], 9 citations
- 97 Ahumada, Romina; Allende Prieto, Carlos; Almeida, Andrés; Anders, Friedrich; Anderson, Scott F.; Andrews, Brett H.; Anguiano, Borja; Arcodia, Riccardo; Armengaud, Eric; Aubert, Marie; ... ; **Badenes, Carles** et al. (2020), *The 16th Data Release of the Sloan Digital Sky Surveys: First Release from the APOGEE-2 Southern Survey and Full Release of eBOSS Spectra*, ApJS, 249, 3, [arxiv], 1205 citations
- 96 Thompson, Todd A.; Kochanek, Christopher S.; Stanek, Krzysztof Z.; **Badenes, Carles**; Jayasinghe, Tharindu; Tayar, Jamie; Johnson, Jennifer A.; Holoien, Thomas W. -S.; Auchettl, Katie; Covey, Kevin (2020), *Response to Comment on "A noninteracting low-mass black hole-giant star binary system"*, Science, 368, eaba4356, [arxiv], 20 citations
- 95 Price-Whelan, Adrian M.; Hogg, David W.; Rix, Hans-Walter; Beaton, Rachael L.; Lewis, Hannah M.; Nidever, David L.; Almeida, Andrés; **Badenes, Carles**; Barba, Rodolfo; Beers, Timothy C. et al. (2020), *Close Binary Companions to APOGEE DR16 Stars: 20,000 Binary-star Systems Across the Color-Magnitude Diagram*, ApJ, 895, 2, [arxiv], 107 citations
- 94 Millard, Matthew J.; Bhalerao, Jayant; Park, Sangwook; Sato, Toshiki; Hughes, John P.; Slane, Patrick; Patnaude, Daniel; Burrows, David; **Badenes, Carles** (2020), *An Ejecta Kinematics Study of Kepler's Supernova Remnant with High-resolution Chandra HETG Spectroscopy*, ApJ, 893, 98, [arxiv], 13 citations
- 93 Merle, T.; Van der Swaelmen, M.; Van Eck, S.; Jorissen, A.; Jackson, R. J.; Traven, G.; Zwitter, T.; Pourbaix, D.; Klutsch, A.; Sacco, G.; ... ; **Badenes, C.** et al. (2020), *The Gaia-ESO Survey: detection and characterisation of single-line spectroscopic binaries*, A&A, 635, A155, [arxiv], 29 citations

- 92 Smith, Nathan; E Andrews, Jennifer; Moe, Maxwell; Milne, Peter; Bilinski, Christopher; Kilpatrick, Charles D.; Fong, Wen-Fai; **Badenes, Carles**; Filippenko, Alexei V.; Kasliwal, Mansi et al. (2020), *A new and unusual LBV-like outburst from a Wolf-Rayet star in the outskirts of M33*, MNRAS, 492, 5897, [arxiv], 17 citations
- 91 Sato, Toshiki; Bravo, Eduardo; **Badenes, Carles**; Hughes, John P.; Williams, Brian J.; Yamaguchi, Hiroya (2020), *A Nucleosynthetic Origin for the Southwestern Fe-rich Structure in Kepler's Supernova Remnant*, ApJ, 890, 104, [arxiv], 15 citations
- 2019
- 90 Antoniou, Vallia; Zezas, Andreas; Drake, Jeremy J.; **Badenes, Carles**; Haberl, Frank; Wright, Nicholas J.; Hong, Jaesub; Di Stefano, Rosanne; Gaetz, Terrance J.; Long, Knox S. et al. (2019), *Deep Chandra Survey of the Small Magellanic Cloud. III. Formation Efficiency of High-mass X-Ray Binaries*, ApJ, 887, 20, [arxiv], 33 citations
- 89 Quirola-Vásquez, J.; Bauer, F. E.; Dwarkadas, V. V.; **Badenes, C.**; Brandt, W. N.; Nymark, T.; Walton, D. (2019), *The exceptional X-ray evolution of SN 1996cr in high resolution*, MNRAS, 490, 4536, [arxiv], 9 citations
- 88● Thompson, Todd A.; Kochanek, Christopher S.; Stanek, Krzysztof Z.; **Badenes, Carles**; Post, Richard S.; Jayasinghe, Tharindu; Latham, David W.; Bieryla, Allyson; Esquerdo, Gilbert A.; Berlind, Perry et al. (2019), *A noninteracting low-mass black hole-giant star binary system*, Science, 366, 637, [arxiv], 266 citations
- 87 Roulston, Benjamin R.; Green, Paul J.; Ruan, John J.; MacLeod, Chelsea L.; Anderson, Scott F.; **Badenes, Carles**; Brownstein, Joel R.; Schneider, Donald P.; Stassun, Keivan G. (2019), *The Time-domain Spectroscopic Survey: Radial Velocity Variability in Dwarf Carbon Stars*, ApJ, 877, 44, [arxiv], 10 citations
- 86 Kounkel, Marina; Covey, Kevin; Moe, Maxwell; Kratter, Kaitlin M.; Suárez, Genaro; Stassun, Keivan G.; Román-Zúñiga, Carlos; Hernandez, Jesus; Kim, Jinyoung Serena; Peña Ramírez, Karla; ... ; **Badenes, Carles** et al. (2019), *Close Companions around Young Stars*, AJ, 157, 196, [arxiv], 111 citations
- 85● Moe, Maxwell; Kratter, Kaitlin M.; **Badenes, Carles** (2019), *The Close Binary Fraction of Solar-type Stars Is Strongly Anticorrelated with Metallicity*, ApJ, 875, 61, [arxiv], 210 citations
- 84◆ Sarbadhicary, Sumit K.; Chomiuk, Laura; **Badenes, Carles**; Tremou, Evangelia; Soderberg, Alicia M.; Sjouwerman, Loránt O. (2019), *The Two Most Recent Thermonuclear Supernovae in the Local Group: Radio Constraints on their Progenitors and Evolution*, ApJ, 872, 191, [arxiv], 11 citations
- 83 Aguado, D. S.; Ahumada, Romina; Almeida, Andrés; Anderson, Scott F.; Andrews, Brett H.; Anguiano, Borja; Aquino Ortíz, Erik; Aragón-Salamanca, Alfonso; Argudo-Fernández, Maria; Aubert, Marie; ... ; **Badenes, Carles** 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, [arxiv], 352 citations
- 82● Bravo, Eduardo; **Badenes, Carles**; Martínez-Rodríguez, Héctor (2019), *SNR-calibrated Type Ia supernova models*, MNRAS, 482, 4346, [arxiv], 41 citations

- 81 Auchettl, Katie; Lopez, Laura A.; **Badenes, Carles**; Ramirez-Ruiz, Enrico; Beacom, John F.; Holland-Ashford, Tyler (2019), *Measurement of the Core-collapse Progenitor Mass Distribution of the Small Magellanic Cloud*, ApJ, 871, 64, [arxiv], 31 citations
- 2018 80♦ Martínez-Rodríguez, Héctor; **Badenes, Carles**; Lee, Shiu-Hang; Patnaude, Daniel J.; Foster, Adam R.; Yamaguchi, Hiroya; Auchettl, Katie; Bravo, Eduardo; Slane, Patrick O.; Piro, Anthony L. et al. (2018), *Chandrasekhar and Sub-Chandrasekhar Models for the X-Ray Emission of Type Ia Supernova Remnants. I. Bulk Properties*, ApJ, 865, 151, [arxiv], 18 citations
- 79 Shen, Ken J.; Boubert, Douglas; Gänsicke, Boris T.; Jha, Saurabh W.; Andrews, Jennifer E.; Chomiuk, Laura; Foley, Ryan J.; Fraser, Morgan; Gromadzki, Mariusz; Guillochon, James; ... ; **Badenes, Carles** et al. (2018), *Three Hypervelocity White Dwarfs in Gaia DR2: Evidence for Dynamically Driven Double-degenerate Double-detonation Type Ia Supernovae*, ApJ, 865, 15, [arxiv], 200 citations
- 78 Woods, T. E.; Ghavamian, P.; **Badenes, C.**; Gilfanov, M. (2018), *Balmer-dominated Shocks Exclude Hot Progenitors for Many Type Ia Supernovae*, ApJ, 863, 120, [arxiv], 22 citations
- 77 Skinner, Jacob; Covey, Kevin R.; Bender, Chad F.; Rivera, Noah; De Lee, Nathan; Souto, Diogo; Chojnowski, Drew; Troup, Nicholas; **Badenes, Carles**; Bizyaev, Dmitry et al. (2018), *Forty-four New and Known M-dwarf Multiples in the SDSS-III/APOGEE M-dwarf Ancillary Science Sample*, AJ, 156, 45, [arxiv], 11 citations
- 76● Maoz, Dan; Hallakoun, Na'ama; **Badenes, Carles** (2018), *The separation distribution and merger rate of double white dwarfs: improved constraints*, MNRAS, 476, 2584, [arxiv], 87 citations
- 75 McWilliam, Andrew; Piro, Anthony L.; **Badenes, Carles**; Bravo, Eduardo (2018), *Evidence for a Sub-Chandrasekhar-mass Type Ia Supernova in the Ursa Minor Dwarf Galaxy*, ApJ, 857, 97, [arxiv], 42 citations
- 74 Abolfathi, Bela; Aguado, D. S.; Aguilar, Gabriela; Allende Prieto, Carlos; Almeida, Andres; Ananna, Tonima Tasnim; Anders, Friedrich; Anderson, Scott F.; Andrews, Brett H.; Anguiano, Borja; ... ; **Badenes, Carles** 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, [arxiv], 958 citations
- 73 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.; ... ; **Badenes, C.** et al. (2018), *PISCO: The PMAS/PPak Integral-field Supernova Hosts Compilation*, ApJ, 855, 107, [arxiv], 108 citations
- 72★ **Badenes, Carles**; Mazzola, Christine; Thompson, Todd A.; Covey, Kevin; Freeman, Peter E.; Walker, Matthew G.; Moe, Maxwell; Troup, Nicholas; Nidever, David; Allende Prieto, Carlos et al. (2018), *Stellar Multiplicity Meets Stellar Evolution and Metallicity: The APOGEE View*, ApJ, 854, 147, [arxiv], 135 citations

- 71 MacLeod, Chelsea L.; Green, Paul J.; Anderson, Scott F.; Eracleous, Michael; Ruan, John J.; Runnoe, Jessie; Brandt, William Nielsen; **Badenes, Carles**; Greene, Jenny; Morganson, Eric et al. (2018), *The Time-domain Spectroscopic Survey: Target Selection for Repeat Spectroscopy*, AJ, 155, 6, [arxiv], 25 citations
- 2017 70 Schwab, Josiah; Martínez-Rodríguez, Héctor; Piro, Anthony L.; **Badenes, Carles** (2017), *Exploring the Carbon Simmering Phase: Reaction Rates, Mixing, and the Convective Urca Process*, ApJ, 851, 105, [arxiv], 14 citations
- 69 Albareti, Franco D.; Allende Prieto, Carlos; Almeida, Andres; Anders, Friedrich; Anderson, Scott; Andrews, Brett H.; Aragón-Salamanca, Alfonso; Argudo-Fernández, Maria; Armengaud, Eric; Aubourg, Eric; ... ; **Badenes, Carles** 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, [arxiv], 615 citations
- 68 Patnaude, Daniel J.; Lee, Shiu-Hang; Slane, Patrick O.; **Badenes, Carles**; Nagataki, Shigehiro; Ellison, Donald C.; Milisavljevic, Dan (2017), *The Impact of Progenitor Mass Loss on the Dynamical and Spectral Evolution of Supernova Remnants*, ApJ, 849, 109, [arxiv], 23 citations
- 67 Woods, T. E.; Ghavamian, P.; **Badenes, C.**; Gilfanov, M. (2017), *No hot and luminous progenitor for Tycho's supernova*, Nature Astronomy, 1, 800, [arxiv], 32 citations
- 66 Blanton, Michael R.; Bershady, Matthew A.; Abolfathi, Bela; Albareti, Franco D.; Allende Prieto, Carlos; Almeida, Andres; Alonso-García, Javier; Anders, Friedrich; Anderson, Scott F.; Andrews, Brett; ... ; **Badenes, Carles** et al. (2017), *Sloan Digital Sky Survey IV: Mapping the Milky Way, Nearby Galaxies, and the Distant Universe*, AJ, 154, 28, [arxiv], 1403 citations
- 65● García-Berro, Enrique; **Badenes, Carles**; Aznar-Siguán, Gabriela; Lorén-Aguilar, Pablo (2017), *White dwarf dynamical interactions and fast optical transients*, MNRAS, 468, 4815, [arxiv], 10 citations
- 64◆ Martínez-Rodríguez, Héctor; **Badenes, Carles**; Yamaguchi, Hiroya; Bravo, Eduardo; Timmes, F. X.; Miles, Broxton J.; Townsley, Dean M.; Piro, Anthony L.; Mori, Hideyuki; Andrews, Brett et al. (2017), *Observational Evidence for High Neutronization in Supernova Remnants: Implications for Type Ia Supernova Progenitors*, ApJ, 843, 35, [arxiv], 39 citations
- 63 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.; ... ; **Badenes, C.** et al. (2017), *Molecular gas in supernova local environments unveiled by EDGE*, MNRAS, 468, 628, [arxiv], 32 citations
- 62 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. et al. (2017), *Delay-time distribution of core-collapse supernovae with late events resulting from binary interaction*, A&A, 601, A29, [arxiv], 160 citations

- 61♦ Sarbadhicary, Sumit K.; **Badenes, Carles**; Chomiuk, Laura; Caprioli, Damiano; Huizenga, Daniel (2017), *Supernova remnants in the Local Group - I. A model for the radio luminosity function and visibility times of supernova remnants*, MNRAS, 464, 2326, [arxiv], 61 citations
- 60● Patnaude, Daniel; **Badenes, Carles** (2017), *Supernova Remnants as Clues to Their Progenitors*, Handbook of Supernovae, 2233, [arxiv], 12 citations
- 59 Yamaguchi, Hiroya; Hughes, John P.; **Badenes, Carles**; Bravo, Eduardo; Seitzzahl, Ivo R.; Martínez-Rodríguez, Héctor; Park, Sangwook; Petre, Robert (2017), *The Origin of the Iron-rich Knot in Tycho's Supernova Remnant*, ApJ, 834, 124, [arxiv], 33 citations
- 2016
- 58 Ruan, John J.; Anderson, Scott F.; Green, Paul J.; Morganson, Eric; Eracleous, Michael; Myers, Adam D.; **Badenes, Carles**; Bershad, Matthew A.; Brandt, William N.; Chambers, Kenneth C. et al. (2016), *The Time-Domain Spectroscopic Survey: Understanding the Optically Variable Sky with SEQUELS in SDSS-III*, ApJ, 825, 137, [arxiv], 23 citations
- 57♦ Martínez-Rodríguez, Héctor; Piro, Anthony L.; Schwab, Josiah; **Badenes, Carles** (2016), *Neutronization During Carbon Simmering In Type Ia Supernova Progenitors*, ApJ, 825, 57, [arxiv], 34 citations
- 56 Galbany, L.; Stanishev, V.; Mourão, A. M.; Rodrigues, M.; Flores, H.; Walcher, C. J.; Sánchez, S. F.; García-Benito, R.; Mast, D.; **Badenes, C.** et al. (2016), *Nearby supernova host galaxies from the CALIFA survey. II. Supernova environmental metallicity*, A&A, 591, A48, [arxiv], 78 citations
- 55 Chomiuk, Laura; Soderberg, Alicia M.; Chevalier, Roger A.; Bruzewski, Seth; Foley, Ryan J.; Parrent, Jerod; Strader, Jay; **Badenes, Carles**; Fransson, Claes; Kamble, Atish et al. (2016), *A Deep Search for Prompt Radio Emission from Thermonuclear Supernovae with the Very Large Array*, ApJ, 821, 119, [arxiv], 112 citations
- 54 Isern, J.; Jean, P.; Bravo, E.; Knödseder, J.; Lebrun, F.; Churazov, E.; Sunyaev, R.; Domingo, A.; **Badenes, C.**; Hartmann, D. H. et al. (2016), *Gamma-ray emission from SN2014J near maximum optical light*, A&A, 588, A67, [arxiv], 40 citations
- 53 Rubin, Adam; Gal-Yam, Avishay; De Cia, Annalisa; Horesh, Assaf; Khazov, Danny; Ofek, Eran O.; Kulkarni, S. R.; Arcavi, Iair; Manulis, Ilan; Yaron, Ofer; ... ; **Badenes, C.** et al. (2016), *Type II Supernova Energetics and Comparison of Light Curves to Shock-cooling Models*, ApJ, 820, 33, [arxiv], 93 citations
- 2015
- 52 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. et al. (2015), *A double white dwarf with a paradoxical origin?*, MNRAS, 450, 3966, [arxiv], 23 citations
- 51 Morganson, Eric; Green, Paul J.; Anderson, Scott F.; Ruan, John J.; Myers, Adam D.; Eracleous, Michael; Kelly, Brandon; Badenes, Carlos; Bañados, Eduardo; Blanton, Michael R.; ... (2015), *The Time Domain Spectroscopic Survey: Variable Selection and Anticipated Results*, ApJ, 806, 244, [arxiv], 54 citations

- 50♦ Hetteringer, T.; **Badenes, C.**; Strader, J.; Bickerton, S. J.; 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, [arxiv], 20 citations
- 49 Hurst, Travis J.; Zentner, Andrew R.; Natarajan, Aravind; **Badenes, Carles** (2015), *Indirect probes of dark matter and globular cluster properties from dark matter annihilation within the coolest white dwarfs*, Physical Review D, 91, 103514, [arxiv], 21 citations
- 48★ **Badenes, Carles**; Maoz, Dan; Ciardullo, Robin (2015), *The Progenitors and Lifetimes of Planetary Nebulae*, ApJ, 804, L25, [arxiv], 31 citations
- 47 Patnaude, Daniel J.; Lee, Shiu-Hang; Slane, Patrick O.; **Badenes, Carles**; Heger, Alexander; Ellison, Donald C.; Nagataki, Shigehiro (2015), *Are Models for Core-collapse Supernova Progenitors Consistent with the Properties of Supernova Remnants?*, ApJ, 803, 101, [arxiv], 44 citations
- 46● Yamaguchi, Hiroya; **Badenes, Carles**; Foster, Adam R.; Bravo, Eduardo; Williams, Brian J.; Maeda, Keiichi; Nobukawa, Masayoshi; Eriksen, Kristoffer A.; Brickhouse, Nancy S.; Petre, Robert et al. (2015), *A Chandrasekhar Mass Progenitor for the Type Ia Supernova Remnant 3C 397 from the Enhanced Abundances of Nickel and Manganese*, ApJ, 801, L31, [arxiv], 109 citations
- 45 Bundy, Kevin; Bershad, Matthew A.; Law, David R.; Yan, Renbin; Drory, Niv; MacDonald, Nicholas; Wake, David A.; Cherinka, Brian; Sánchez-Gallego, José R.; Weijmans, Anne-Marie; ... ; **Badenes, Carles** et al. (2015), *Overview of the SDSS-IV MaNGA Survey: Mapping nearby Galaxies at Apache Point Observatory*, ApJ, 798, 7, [arxiv], 1492 citations
- 2014
- 44 Galbany, L.; Stanishev, V.; Mourão, A. M.; Rodrigues, M.; Flores, H.; García-Benito, R.; Mast, D.; Mendoza, M. A.; Sánchez, S. F.; **Badenes, C.** et al. (2014), *Nearby supernova host galaxies from the CALIFA Survey. I. Sample, data analysis, and correlation to star-forming regions*, A&A, 572, A38, [arxiv], 110 citations
- 43 Post, Seth; Park, Sangwook; **Badenes, Carles**; Burrows, David N.; Hughes, John P.; Lee, Jae-Joon; Mori, Koji; Slane, Patrick O. (2014), *Asymmetry in the Observed Metal-rich Ejecta of the Galactic Type Ia Supernova Remnant G299.2-2.9*, ApJ, 792, L20, [arxiv], 11 citations
- 42 Lopez, Laura A.; Castro, Daniel; Slane, Patrick O.; Ramirez-Ruiz, Enrico; **Badenes, Carles** (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, [arxiv], 19 citations
- 41● Yamaguchi, Hiroya; **Badenes, Carles**; Petre, Robert; Nakano, Toshio; Castro, Daniel; Enoto, Teruaki; Hiraga, Junko S.; Hughes, John P.; Maeda, Yoshitomo; Nobukawa, Masayoshi et al. (2014), *Discriminating the Progenitor Type of Supernova Remnants with Iron K-shell Emission*, ApJ, 785, L27, [arxiv], 148 citations
- 40 Yamaguchi, Hiroya; Eriksen, Kristoffer A.; **Badenes, Carles**; Hughes, John P.; Brickhouse, Nancy S.; Foster, Adam R.; Patnaude, Daniel J.; Petre, Robert; Slane, Patrick O.; Smith, Randall K. (2014), *New Evidence for Efficient Collisionless Heating of Electrons at the Reverse Shock of a Young Supernova Remnant*, ApJ, 780, 136, [arxiv], 67 citations

- 2013
- 39 Ju, Wenhua; Greene, Jenny E.; Rafikov, Roman R.; Bickerton, Steven J.; **Badenes, Carles** (2013), *Search for Supermassive Black Hole Binaries in the Sloan Digital Sky Survey Spectroscopic Sample*, ApJ, 777, 44, [arxiv], 91 citations
 - 38 Woo, Sui Chi; Turnshek, David A.; **Badenes, Carles**; Bickerton, Steven (2013), *Variability of broad emission lines in high-luminosity, high-redshift quasars*, MNRAS, 434, 1411, [arxiv], 6 citations
 - 37 Isern, J.; Jean, P.; Bravo, E.; Diehl, R.; Knödseder, J.; Domingo, A.; Hirschmann, A.; Hoeflich, P.; Lebrun, F.; Renaud, M.; ... ; **Badenes, C.** et al. (2013), *Observation of SN2011fe with INTEGRAL. I. Pre-maximum phase*, A&A, 552, A97, [arxiv], 23 citations
 - 36● Park, Sangwook; **Badenes, Carles**; Mori, Koji; Kaida, Ryohei; Bravo, Eduardo; Schenck, Andrew; Eriksen, Kristoffer A.; Hughes, John P.; Slane, Patrick O.; Burrows, David N. et al. (2013), *A Super-solar Metallicity for the Progenitor of Kepler's Supernova*, ApJ, 767, L10, [arxiv], 44 citations
 - 35★ **Badenes, Carles**; van Kerkwijk, Marten H.; Kilic, Mukremin; Bickerton, Steven J.; Mazeh, Tsevi; Mullally, Fergal; Tal-Or, Lev; Thompson, Susan E. (2013), *SDSS 1355+0856: a detached white dwarf + M star binary in the period gap discovered by the SWARMS survey*, MNRAS, 429, 3596, [arxiv], 9 citations
- 2012
- 34● Patnaude, Daniel J.; **Badenes, Carles**; Park, Sangwook; Laming, J. Martin (2012), *The Origin of Kepler's Supernova Remnant*, ApJ, 756, 6, [arxiv], 60 citations
 - 33● Maoz, Dan; **Badenes, Carles**; Bickerton, Steven J. (2012), *Characterizing the Galactic White Dwarf Binary Population with Sparsely Sampled Radial Velocity Data*, ApJ, 751, 143, [arxiv], 44 citations
 - 32 Chomiuk, Laura; Soderberg, Alicia M.; Moe, Maxwell; Chevalier, Roger A.; Rupen, Michael P.; **Badenes, Carles**; Margutti, Raffaella; Fransson, Claes; Fong, Wen-fai; Dittmann, Jason A. (2012), *EVLA Observations Constrain the Environment and Progenitor System of Type Ia Supernova 2011fe*, ApJ, 750, 164, [arxiv], 176 citations
 - 31★ **Badenes, Carles**; Maoz, Dan (2012), *The Merger Rate of Binary White Dwarfs in the Galactic Disk*, ApJ, 749, L11, [arxiv], 134 citations
 - 30● García-Senz, D.; **Badenes, C.**; Serichol, N. (2012), *Is There a Hidden Hole in Type Ia Supernova Remnants?*, ApJ, 745, 75, [arxiv], 24 citations
- 2011
- 29● Bravo, E.; **Badenes, C.** (2011), *Is the metallicity of their host galaxies a good measure of the metallicity of Type Ia supernovae?*, MNRAS, 414, 1592, [arxiv], 12 citations
 - 28 Rest, A.; Foley, R. J.; Sinnott, B.; Welch, D. L.; **Badenes, C.**; Filippenko, A. V.; Bergmann, M.; Bhatti, W. A.; Blondin, S.; Challis, P. et al. (2011), *Direct Confirmation of the Asymmetry of the Cas A Supernova with Light Echoes*, ApJ, 732, 3, [arxiv], 114 citations
 - 27 Lopez, Laura A.; Ramirez-Ruiz, Enrico; Huppenkothen, Daniela; **Badenes, Carles**; Pooley, David A. (2011), *Using the X-ray Morphology of Young Supernova Remnants to Constrain Explosion Type, Ejecta Distribution, and Chemical Mixing*, ApJ, 732, 114, [arxiv], 150 citations

- 26● Perets, Hagai B.; **Badenes, Carles**; Arcavi, Iair; Simon, Joshua D.; Gal-yam, Avishay (2011), *An Emerging Class of Bright, Fast-evolving Supernovae with Low-mass Ejecta*, ApJ, 730, 89, [arxiv], 44 citations
- 25 Eriksen, Kristoffer A.; Hughes, John P.; **Badenes, Carles**; Fesen, Robert; Ghavamian, Parviz; Moffett, David; Plucinsky, Paul P.; Rakowski, Cara E.; Reynoso, Estela M.; Slane, Patrick (2011), *Evidence for Particle Acceleration to the Knee of the Cosmic Ray Spectrum in Tycho's Supernova Remnant*, ApJ, 728, L28, [arxiv], 99 citations
- 2010
- 24★ **Badenes, Carles**; Maoz, Dan; Draine, Bruce T. (2010), *On the size distribution of supernova remnants in the Magellanic Clouds*, MNRAS, 407, 1301, [arxiv], 94 citations
- 23● Maoz, Dan; **Badenes, Carles** (2010), *The supernova rate and delay time distribution in the Magellanic Clouds*, MNRAS, 407, 1314, [arxiv], 115 citations
- 22★ **Badenes, Carles** (2010), *X-ray studies of supernova remnants: A different view of supernova explosions*, Proceedings of the National Academy of Science, 107, 7141, [arxiv], 21 citations
- 21 Bravo, E.; Domínguez, I.; **Badenes, C.**; Piersanti, L.; Straniero, O. (2010), *Metallicity as a Source of Dispersion in the SNIa Bolometric Light Curve Luminosity-Width Relationship*, ApJ, 711, L66, [arxiv], 59 citations
- 2009
- 20● Mullally, F.; **Badenes, Carles**; Thompson, Susan E.; Lupton, Robert (2009), *Twins: The Two Shortest Period Non-Interacting Double Degenerate White Dwarf Stars*, ApJ, 707, L51, [arxiv], 44 citations
- 19★ **Badenes, Carles**; Mullally, Fergal; Thompson, Susan E.; Lupton, Robert H. (2009), *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, [arxiv], 60 citations
- 18 Lopez, L. A.; Ramirez-Ruiz, E.; **Badenes, C.**; Huppenkothen, D.; Jeltama, T. E.; Pooley, D. A. (2009), *Typing Supernova Remnants Using X-Ray Line Emission Morphologies*, ApJ, 706, L106, [arxiv], 82 citations
- 17★ **Badenes, Carles**; Harris, Jason; Zaritsky, Dennis; Prieto, José L. (2009), *The Stellar Ancestry of Supernovae in the Magellanic Clouds. I. The Most Recent Supernovae in the Large Magellanic Cloud*, ApJ, 700, 727, [arxiv], 88 citations
- 2008
- 16 Cassam-Chenaï, Gamil; Hughes, John P.; Reynoso, Estela M.; **Badenes, Carles**; Moffett, David (2008), *Morphological Evidence for Azimuthal Variations of the Cosmic-Ray Ion Acceleration at the Blast Wave of SN 1006*, ApJ, 680, 1180, [arxiv], 102 citations
- 15★ **Badenes, Carles**; Hughes, John P.; Cassam-Chenaï, Gamil; Bravo, Eduardo (2008), *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, [arxiv], 87 citations

- 14★ **Badenes, Carles**; Bravo, Eduardo; Hughes, John P. (2008), *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, [arxiv], 79 citations
- 2007 | 13 Reynolds, Stephen P.; Borkowski, Kazimierz J.; Hwang, Una; Hughes, John P.; **Badenes, Carles**; Laming, J. M.; Blondin, J. M. (2007), *A Deep Chandra Observation of Kepler's Supernova Remnant: A Type Ia Event with Circumstellar Interaction*, ApJ, 668, L135, [arxiv], 130 citations
- 12★ **Badenes, Carles**; Hughes, John P.; Bravo, Eduardo; Langer, Norbert (2007), *Are the Models for Type Ia Supernova Progenitors Consistent with the Properties of Supernova Remnants?*, ApJ, 662, 472, [arxiv], 151 citations
- 2006 | 11● Rakowski, Cara E.; **Badenes, Carles**; Gaensler, B. M.; Gelfand, Joseph D.; Hughes, John P.; Slane, Patrick O. (2006), *Can Ejecta-dominated Supernova Remnants be Typed from Their X-Ray Spectra? The Case of G337.2-0.7*, ApJ, 646, 982, [arxiv], 38 citations
- 10★ **Badenes, Carles**; Borkowski, Kazimierz J.; Hughes, John P.; Hwang, Una; Bravo, Eduardo (2006), *Constraints on the Physics of Type Ia Supernovae from the X-Ray Spectrum of the Tycho Supernova Remnant*, ApJ, 645, 1373, [arxiv], 211 citations
- 2005 | 9 Warren, Jessica S.; Hughes, John P.; **Badenes, Carles**; Ghavamian, Parviz; McKee, Christopher F.; Moffett, David; Plucinsky, Paul P.; Rakowski, Cara; Reynoso, Estela; Slane, Patrick (2005), *Cosmic-Ray Acceleration at the Forward Shock in Tycho's Supernova Remnant: Evidence from Chandra X-Ray Observations*, ApJ, 634, 376, [arxiv], 289 citations
- 8★ **Badenes, Carles** (2005), *Thermal X-Ray Emission from Young Type Ia Supernova Remnants*, Publications of the Astronomical Society of the Pacific, 117, 654
- 7★ **Badenes, Carles**; Borkowski, Kazimierz J.; Bravo, Eduardo (2005), *Thermal X-Ray Emission from Shocked Ejecta in Type Ia Supernova Remnants. II. Parameters Affecting the Spectrum*, ApJ, 624, 198, [arxiv], 60 citations
- 6★ **Badenes, Carles**; Bravo, Eduardo; Borkowski, Kazimierz J. (2005), *A model grid for the spectral analysis of X-ray emission in young Type Ia supernova remnants*, Advances in Space Research, 35, 987, [arxiv], 6 citations
- 2004 | 5 Hwang, Una; Laming, J. Martin; **Badenes, Carles**; Berendse, Fred; Blondin, John; Cioffi, Denis; DeLaney, Tracey; Dewey, Daniel; Fesen, Robert; Flanagan, Kathryn A. et al. (2004), *A Million Second Chandra View of Cassiopeia A*, ApJ, 615, L117, [arxiv], 245 citations
- 4★ **Badenes, Carles** (2004), *Thermal X-Ray Emission From Young Type Ia Supernova Remnants*, Ph.D. Thesis, 6 citations

- 2003 | 3★ **Badenes, Carles**; Bravo, Eduardo; Borkowski, Kazimierz J.; Domínguez, Inmaculada (2003), *Thermal X-Ray Emission from Shocked Ejecta in Type Ia Supernova Remnants: Prospects for Explosion Mechanism Identification*, ApJ, 593, 358, [arxiv], 110 citations
- 2 | Halloin, H.; von Ballmoos, P.; Evrard, J.; Skinner, G. K.; Abrosimov, N.; Bastie, P.; Di Cocco, G.; George, M.; Hamelin, B.; Jean, P.; ... ; **Badenes, C.** et al. (2003), *Performance of CLAIRe, the first balloon-borne γ -ray lens telescope*, Nuclear Instruments and Methods in Physics Research A, 504, 120, 9 citations
- 2001 | 1★ **Badenes, Carles**; Bravo, Eduardo (2001), *The Imprint of Presupernova Evolution on Supernova Remnants*, ApJ, 556, L41, [arxiv], 7 citations

Unlisted: More than 100 unrefereed publications, including white papers, research notes, communications, conference proceedings, catalogs and astronomer's telegrams. A complete list of unrefereed publications can be found [\[here\]](#)