

Binbin Zhang

Contact

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School of Astronomy and Space Science, Nanjing University, Nanjing 210093, China

Professional Experience

- 2017–present **Associate Professor**, *Nanjing University, China*, .
General research on GRB and gravitational waves.
- 2016–2017 **Juan de la Cierva Fellow**, *Instituto de Astrofísica de Andalucía - CSIC, Spain*, .
General research on GRB and gravitational waves.
- 2013–2016 **Postdoctoral Research Assistant II, S3**, *The University of Alabama in Huntsville, The Center for Space Plasma and Aeronomic Research(CSPAR)*, .
Analysis and theoretical interpretation of GRB prompt emission and afterglow data, perform Fermi/GBM team work. Supervisor: Dr. Valerie Connaughton
- 2011–2013 **Postdoctoral Research Fellow**, *Penn State University, Department of Astronomy and Astrophysics*, .
Analysis and theoretical interpretation of GRB prompt emission and afterglow data, perform Swift/XRT team work. PI of proposed to study jet-break problems with numerical simulations. Co-I of proposed to observe GRB jet-breaks using Chandra satellite. Supervisor: Prof. David N. Burrows

Education

- 2007–2011 **Ph.D in Astrophysics**, *University of Nevada Las Vegas*.
Supervisor: Dr. Bing Zhang

First Author Publications

- 2018 Zhang, B.-B., Zhang, B., & Sun, H et al., *A peculiar low-luminosity short gamma-ray burst from a double neutron star merger progenitor*, *Nature Communications*, 9, 447 (2018)
- 2018 Zhang, B.-B., Zhang, B., & Castro-Tirado, A. J. et al., *Transition from Fireball to Poynting-flux-dominated Outflow in Three-Episode GRB 160625B*, *Nature Astronomy*, doi:10.1038/s41550-017-0309-8 (2018)
- 2016 Zhang, B.-B., Zhang, B., & Castro-Tirado, A. J., *Central Engine Memory of Gamma-Ray Bursts and Soft Gamma-Ray Repeaters*, *The Astrophysical Journal*, 820, 32 (2016)
- 2016 Zhang, B.-B., Uhm, Z. L., Connaughton, V., Briggs, M. S., & Zhang, B., *Synchrotron Origin of the Typical GRB Band Function: A Case Study of GRB 130606B*, *The Astrophysical Journal*, 816, 72 (2016)

- 2015 Zhang, B.-B., van Eerten, H., Burrows, D. N., Ryan, G. S., Evans, P. A., Racusin, J. L., Troja, E., & MacFadyen, A., *An Analysis of Chandra Deep Follow-up Gamma-Ray Bursts: Implications for Off-axis Jets*, The Astrophysical Journal, 806, 15-(2015)
- 2014 Zhang, B.-B., Zhang, B., Murase, K., Connaughton, V., & Briggs, M. S., *How Long does a Burst Burst?*, The Astrophysical Journal, 787, 66-(2014)
- 2012 Zhang, B.-B., et al., *GRB 120422A: A Low-luminosity Gamma-Ray Burst Driven by a Central Engine*, The Astrophysical Journal, 756, 190-(2012)
- 2012 Zhang, B.-B., et al., *Unusual Central Engine Activity in the Double Burst GRB 110709B*, The Astrophysical Journal, 748, 132-(2012)
- 2011 Zhang, B.-B., et al., *A Comprehensive Analysis of Fermi Gamma-ray Burst Data. I. Spectral Components and the Possible Physical Origins of LAT/GBM GRBs*, The Astrophysical Journal, 730, 141-(2011)
- 2009 Zhang, B.-B., Zhang, B., Liang, E.-W., & Wang, X.-Y., *Curvature Effect of a Non-Power-Law Spectrum and Spectral Evolution of GRB X-Ray Tails*, The Astrophysical Journal, 690, L10-L13 (2009)
- 2007 Zhang, B.-B., Liang, E.-W., & Zhang, B., *A Comprehensive Analysis of Swift XRT Data. I. Apparent Spectral Evolution of Gamma-Ray Burst X-Ray Tails*, The Astrophysical Journal, 666, 1002-1011 (2007)

Awards and Honors

- 2008 UNLV President's Fellowship

Professional Services

- 2008-Present Referee of ApJ and ApJL.
- 2013-Present Member of NASA Fermi/GBM team
- 2011-2013 Member of NASA Swift/XRT team
- 2008 Member of Local Organizing committee of 2008 Nanjing GRB Conference

Recent Participation in Research Grants

- 2014-2017 Co-I of NASA ADAP: Understanding GRB physics with multi-wavelength data. PI: Bing Zhang
- 2013-2014 PI of NASA Chandra Archival Research Project (Cycle 14): Using Numerical Simulation-based Models and Late Time Chandra Data to Understand the Jet Breaks of Long Gamma-ray Bursts.
- 2013-2014 Co-I of NASA Chandra Theory Research Project (Cycle 14): Developing a Hydrodynamical Simulation Based Gamma-Ray Burst Afterglow Fit Code. PI: Hendrik van Eerten
- 2012-2013 Co-I of NASA Chandra Observation Research Project (Cycle 14): Search For Jet Breaks in Long GRB X-Ray Afterglows. PI: David N. Burrows.

Presentations at Professional Meetings

- 2017 October 16-20, Mazagon, Spain, Fifth Workshop on Robotic Autonomous Observations, Contributed Talk: "Prospects for searching for Gravitational Waves electromagnetic counterparts at other wavelengths "
- 2017 October 5-6, Napoli, Italy, The Transient High Energy Sky and Early Universe Surveyor (THESEUS) Workshop, Invited Talk: "A Tale from GRB 160625B and Beyond "
- 2017 June 12-17, Palermo, Italy, Multifrequency Behaviour of High Energy Cosmic Sources - XII, Invited Talk: "Gamma-Ray Bursts and Soft Gamma-Ray Repeaters"
- 2016 December 16-19, Xiamen, China. The Annual Conference of Chinese 973 Program "Gamma-Ray Burst and Other High-Energy Astronomical Phenomena", Solicited Talk: "Transition from Fireball to Poynting-flux-dominated Outflow in Three-Episode GRB 160625B"
- 2016 October 24-28, Huntsville, AL. The Eighth Huntsville Gamma-Ray Burst Symposium, Talk: "Central Engine Memory of Gamma-Ray Bursts and Soft Gamma-Ray Repeaters"
- 2016 July 4-8, Athens, Greece. European Week of Astronomy and Space Science, Talk: "Central Engine Memory of Gamma-Ray Bursts and Soft Gamma-Ray Repeaters"
- 2015 Nov 9-13, Arlington, VA. Sixth International Fermi Symposium. Poster: "How to make a Band function?"
- 2015 July 12-18, Rome, Italy. Fourteenth Marcel Grossmann Meeting, Invited talk: "Typical Band Function is Made from Synchrotron" (20 min)
- 2015 March 14-15, Pasadena, CA. LIGO-Fermi Workshop,
- 2014 Dec 4, Shijiazhuang, China. Hebei Normal University, Seminar talk: "A Journey of Burst Adventures" (1 hour)
- 2014 Dec 1, Beijing, China. Peking University Seminar talk: "How Long Does a Burst Burst?" (30 min)
- 2014 Sep 15-19, Annapolis, MD. A Synergistic View of the High Energy Sky Contributed talk: "More Short GRBs from Fermi GBM Continuous Observations" (20 min)
- 2014 June 15-19, Paris, France. Gamma-Ray Bursts in the Multi-messenger Era Contributed talk: "How Long Does a Burst Burst?" (20 min)
- 2013 Oct 27-30, State College, PA. Swift Science Planning Meeting Contributed talk: "How Long Does a Burst Burst?" (15 min)
- 2013 April 14-18, Nashville, TN. Huntsville Gamma Ray Burst Symposium Contributed talk: "Numerical Simulation-based Jet Model Fits to GRB Light Curves." (20 min)
- 2013 April 7-11, Monterey, CA. AAS The HEAD 2013 Meeting Contributed talk: "Numerical Simulation-based Jet Model Fits to GRB Light Curves." (15 min)
- 2012 June 18-22, Liverpool, UK. Gamma Ray Bursts in the Era of Rapid Follow-up. Solicited talk: "Unusual Central Engine Activity in the Double Burst GRB 110709B" (25 min)

- 2012 June 12-14, Nanjing, China. High Energy Data Analysis Workshop . Lectures: "Using Fermi GBM and LAT data to Study GRBs" (8 hours)
- 2011 March 5-7, Raleigh, NC. The Prompt Activity of Gamma-Ray Bursts: their Progenitors, Engines, and Radiation Mechanisms. Invited talk: "Origin Of LAT high energy emission of Fermi GRBs" (40 min).
- 2010 November 1-4, Annapolis, MD. Gamma Ray Bursts 2010 Conference. Contributed talk: "The Three Spectral Components of of Fermi/LAT GRBs" (15 min).
- 2010 June 12-14, Nanjing, China. Workshop on Gamma-ray Bursts and Other High Energy Astrophysical Phenomena. Invited talk: "Spectral Components of Fermi/LAT GRBs" (40 min).
- 2009 November 2-5, Washington, DC. 2009 Fermi Symposium. Poster: "Spectral evolution of Fermi GBM/LAT GRBs".
- 2009 July 13-24, Princeton, NJ. Prospects in Theoretical Physics 2009 (PiTP 2009) Summer School at Advanced Study Institute (IAS). Participation in a series of lectures on Computational Astrophysics.
- 2008 October 20-24, Huntsville, AL. The Sixth Huntsville Gamma-Ray Burst Symposium 2008. Contributed talk: "Can the Curvature Effect of a Non-powerlaw Spectrum Explain the Spectral Evolution of GRB X-Ray Tails?".
- 2008 June 23-27, Nanjing, China. 2008 Nanjing GRB Conference. Contributed talk: "Revisiting the Spectral Evolution of GRB X-Ray Tail Emission: Curvature Effect of a Non-power-law Spectrum ?"
- 2008 February 4-7, Las Vegas, NV. Swift Meeting at UNLV. Contributed talk; given at the XRT meeting section: "Searching 080109-like Transient from XRT Catalog".
- 2007 November 5-9, Santa Fe. Gamma Ray Bursts 2007. Poster: "A comprehensive analysis of Swift/XRT Data".