Michael Zingale / Publications and Talks

Refereed Publications

40. *Double White Dwarf Mergers on Adaptive Meshes I. Methodology and Code Verification,*

    M. P. Katz, M. Zingale, A. C. Calder, F. D. Swesty, A. S. Almgren, W. Zhang

    2015, to be submitted

39. *Low Mach Number Modeling of Convection in Helium Shells on Sub-Chandrasekhar White Dwarfs II: Bulk Properties of Simple Models,*

    A. M. Jacobs, M. Zingale, A. Nonaka, A. S. Almgren, & J. B. Bell

    2015, submitted to ApJ

38. *Comparisons of Two- and Three-Dimensional Convection in Type I X-ray Bursts*

    M. Zingale, C. M. Malone, A. Nonaka, A. S. Almgren, & J. B. Bell

    2015, ApJ, 807, 60.

37. *On the Piecewise Parabolic Method for Compressible Flow with Stellar Equations of State,*

    M. Zingale & M. P. Katz

    2015, ApJS, 216, 31.

36. *pyro: A teaching code for computational astrophysical hydrodynamics,*

    M. Zingale

    2014, Astronomy & Computing, 6, 52.

35. *Multidimensional Modeling of Type I X-ray Bursts. II. Two-Dimensional Convection in a Mixed H/He Accretor,*

    C. M. Malone, M. Zingale, A. Nonaka, A. S. Almgren, & J. B. Bell

    2014, ApJ, 788, 115.

34. *The Deflagration Stage of Chandrasekhar Mass Models For Type Ia Supernovae: I. Early Evolution,*

    C. M. Malone, A. Nonaka, S. E. Woosley, A. S. Almgren, J. B. Bell, S. Dong, & M. Zingale

    2014, ApJ, 782, 11.

33. *Low-Mach Number Modeling of Core Convection in Massive Stars,*

    C. Gilet, A. S. Almgren, J. B. Bell, A. Nonaka, S. E. Woosley, & M. Zingale

    2013, ApJ, 773, 137.

32. *Low Mach Number Modeling of Convection in Helium Shells on Sub-Chandrasekhar White Dwarfs. I. Methodology,*

    M. Zingale, A. Nonaka, A. S. Almgren, J. B. Bell, C. M. Malone, & R. J. Orvedahl

    2013, ApJ, 764, 97.

31. *High-Resolution Simulations of Convection Preceding Ignition in Type Ia Supernovae Using Adaptive Mesh Refinement,*

    A. Nonaka, A. J. Aspden, M. Zingale, A. S. Almgren, J. B. Bell, & S. E. Woosley

    2012, ApJ, 745, 73.

30. *The Convective Phase Preceding Type Ia Supernovae,*

    M. Zingale, A. Nonaka, A. S. Almgren, J. B. Bell, C. M. Malone, & S. E. Woosley

    2011, ApJ, 740, 8.

29. *Multidimensional Modeling of Type I X-ray Bursts. I. Two-Dimensional Convection Prior to the Outburst of a Pure He Accretor,*

    C. M. Malone, A. Nonaka, A. S. Almgren, J. B. Bell, & M. Zingale

    2011, ApJ, 728, 118.

28. *CASTRO: A New Compressible Astrophysical Solver. I. Hydrodynamics and Self-Gravity,*

    A. S. Almgren, V. E. Beckner, J. B. Bell, M. S. Day, L. H. Howell, C. C. Joggerst, M. J. Lijewski, A. Nonaka, M. Singer, & M. Zingale

    2010, ApJ, 715, 1221.

27. *MAESTRO: An Adaptive Low Mach Number Hydrodynamics Algorithm for Stellar Flows,*

    A. Nonaka, A. S. Almgren, J. B. Bell, M. J. Lijewski, C. Malone, & M. Zingale

    2010, ApJS, 188, 358.

26. *Low Mach Number Modeling of Type Ia Supernovae. IV. White Dwarf Convection,*

    M. Zingale, A. S. Almgren, J. B. Bell, A. Nonaka, & S. E. Woosley

    2009, ApJ, 704, 196.

25. *A New Low Mach Number Approach in Astrophysics,*

    A. S. Almgren, J. B. Bell, A. Nonaka, & M. Zingale

    2009, CiSE, 11, 24.

24. *Turbulence-Flame Interactions in Type Ia Supernovae,*

    A. J. Aspden, J. B. Bell, M. S. Day, S. E. Woosley, & M. Zingale

    2008, ApJ, 689, 1173.

23. *Low Mach Number Modeling of Type Ia Supernovae. III. Reactions,*

    A. S. Almgren, J. B. Bell, A. Nonaka, & M. Zingale

    2008, ApJ 684, 449.

22. *Propagation of the First Flames in Type Ia Supernovae,*

    M. Zingale and L. J. Dursi

    2007, ApJ, 656, 333.

21. *Low Mach Number Modeling of Type Ia Supernovae. II. Energy Evolution,*

    A. S. Almgren, J. B. Bell, C. A. Rendleman, & M. Zingale

    2006, ApJ, 649, 927.

20. *Low Mach Number Modeling of Type Ia Supernovae. I. Hydrodynamics,*

    A. S. Almgren, J. B. Bell, C. A. Rendleman, & M. Zingale

    2006, ApJ, 637, 922.

19. *Three-Dimensional Numerical Simulations of Rayleigh-Taylor Unstable Flames in Type Ia Supernovae,*

    M. Zingale, S. E. Woosley, C. A. Rendleman, M. S. Day, & J. B. Bell

    2005, ApJ, 632, 1021.

18. *Validating an Astrophysical Simulation Codes,*

    A. C. Calder, L. J. Dursi, B. Fryxell, T. Plewa, V. G. Weirs, T. Dupont, H. F. Robey, R. P. Drake, B. A. Remington, G. Dimonte, J. Hayes, J. M. Stone, P. M. Ricker, F. X. Timmes, M. Zingale, & K. Olson

    2004, CiSE, 6, 10.

17. *Direct Numerical Simulations of Type Ia Supernovae Flames II: The Rayleigh-Taylor Instability,*

    J. B. Bell, M. S. Day, C. A. Rendleman, S. E. Woosley, & M. Zingale

    2004, ApJ, 608, 883.

16. *Direct Numerical Simulations of Type Ia Supernovae Flames I: The Landau-Darrieus Instability,*

    J. B. Bell, M. S. Day, C. A. Rendleman, S. E. Woosley, & M. Zingale

    2004, ApJ, 606, 1029.

15. *On the Nonlinear Evolution of Wind-driven Gravity Waves,*

    A. Alexakis, A. C. Calder, L. J. Dursi, R. Rosner, J. W. Truran, B. Fryxell, M. Zingale, F. X. Timmes, K. Olson, & P. Ricker

    2004, Phys. of Fluids, 16, 9, 3256.

14. *Adaptive Low Mach Number Simulations of Nuclear Flames,*

    J. B. Bell, M. S. Day, C. A. Rendleman, S. E. Woosley, & M. Zingale

    2004, JCP, 195, 2, 677.

13. *A Comparative Study of the Turbulent Rayleigh-Taylor Instability Using High-Resolution Three-Dimensional Numerical Simulations: The Alpha-Group Collaboration,*

    G. Dimonte, D. L. Youngs, A. Dimits, S. Weber, M. Marinak, S. Wunsch, C. Garasi, A. Robinson, M. J. Andrews, P. Ramaprabhu, A. C. Calder, B. Fryxell, J. Biello, L. Dursi, P. MacNeice, K. Olson, P. Ricker, R. Rosner, F. Timmes, H. Tufo, Y.-N. Young, & M. Zingale

    2004, Phys. of Fluids, 16, 5, 1668.

12. *On Heavy Element Enrichment in Classical Novae,*

    A. Alexakis, A. C. Calder, A. Heger, E. F. Brown, L. J. Dursi, J. W. Truran, R. Rosner, D. Q. Lamb, F. X. Timmes, B. Fryxell, M. Zingale, P. M. Ricker, & K. Olson

    2004, ApJ, 602, 931.

11. *Morphology of Rising Hydrodynamic and Magneto-hydrodynamic Bubbles from Numerical Simulations,*

    K. Robinson, L. J. Dursi, P. M. Ricker, R. Rosner, A. C. Calder, M. Zingale, T. Linde, A. Caceres, B. Fryxell, K. Olson, K. Riley, A. Siegel, J. W. Truran, & N. Vladimirova

    2004, ApJ, 601, 621.

10. *Parallel netCDF: A High-Performance Scientific I/O Interface,*

    J. Li, W,-k. Laio, A. Choudhary, R. Ross, R. Thakur, R., W. Gropp, R. Latham, A. Siegel, B. Gallagher, & M. Zingale

    2003, technical paper, SC2003.

9. *The Response of Astrophysical Thermonuclear Flames to Curvature and Stretch,*

    L. J. Dursi, M. Zingale, A. Calder, B. Fryxell, F. X. Timmes, N. Vladimirova, R. Rosner, A. Caceres, D. Q. Lamb, K. Olson, P. M. Ricker, K. Riley, A. Siegel, & J. W. Truran

    2003, ApJ, 595, 955.

8. *Mapping Initial Hydrostatic Models in Godunov Codes,*

    M. Zingale, L. J. Dursi, J. ZuHone, A. C. Calder, B. Fryxell, T. Plewa, J. W. Truran, A. Caceres, K. Olson, P. M. Ricker, K. Riley, R. Rosner, A. Siegel, F. X. Timmes, & N. Vladimirova

    2002, ApJS, 143, 539.

7. *On Validating an Astrophysical Simulation Code,*

    A. C. Calder, B. Fryxell, T. Plewa, R. Rosner, L. J. Dursi, V. G. Weirs, T. Dupont, H. F. Robey, J. O. Kane, B. A. Remington, R. P. Drake, G. Dimonte, M. Zingale, F. X. Timmes, K. Olson, P. Ricker, P. MacNeice, & H. M. Tufo

    2002, ApJS, 142, 201.

6. *A Case Study in Application I/O on Linux Clusters,*

    R. Ross, D. Nurmi, A. Cheng, & M. Zingale

    2001, technical paper, SC2001.

5. *Helium Detonations on Neutron Stars,*

    M. Zingale, F. X. Timmes, B. Fryxell, D. Q. Lamb, K. Olson, A. C. Calder, L. J. Dursi, P. Ricker, R. Rosner, P. MacNeice, & H. Tufo

    2001, ApJS, 133, 195.

4. *High-Performance Reactive Fluid Flow Simulations Using Adaptive Mesh Refinement on Thousands of Processors*,

   A. C. Calder, B. C. Curtis, L. J. Dursi, B. Fryxell, G. Henry, P. MacNeice, K. Olson, P. Ricker, R. Rosner, F. X. Timmes, H. M. Tufo, J. W. Truran, & M. Zingale

   2000, Gordon Bell Prize winner/Special category, technical paper, SC2000.

3. *On the Cellular Structure of Carbon Detonations*,

   F. X. Timmes, M. Zingale, K. Olson, B. Fryxell, P. Ricker, A. C. Calder, L. J. Dursi, J. W. Truran, & R. Rosner

   2000, ApJ, 543, 938.

2. *FLASH: An Adaptive Mesh Hydrodynamics Code for Modeling Astrophysical Thermonuclear Flashes*,

   B. Fryxell, K. Olson, P. Ricker, F. X. Timmes, M. Zingale, D. Q. Lamb, P. MacNeice, R. Rosner, & H. Tufo

   2000, ApJS, 131, 273.

1. *Flash Code: Studying Astrophysical Thermonuclear Flashes*,

   R. Rosner, A. Calder, J. Dursi, B. Fryxell, D. Q. Lamb, J. C. Niemeyer, K. Olson, P. Ricker, F. X. Timmes, J. Truran, H. Tufo, Y. Young, M. Zingale, E. Lusk, & R. Stevens

   2000, CiSE, 2, 33.

Conference Proceedings

23. *Understanding Ignition in Type Ia Supernovae*,

    M. Zingale, A. Jacobs, A. S. Almgren, J. B. Bell, A. Nonaka, C. Malone, & S. Woosley

    2015, extended abstract for the 25^{th} International Colloquium on the Dynamics of Explosions and Reactive Systems, Leeds, UK, Aug. 2–7, 2015.

22. *Low Mach Number Modeling of Stratified Flows*,

    A. S. Almgren, J. B. Bell, A. Nonaka, & M. Zingale

    2014, in Finite Volumes for Complex Applications VII: Methods, Theoretical Aspects—FVCA 7, Berlin, June 2014, ed. Fuhrmann, J., Ohlberger, M., & Rohde, C., 3-âĂŞ15

    Proceedings of the FVCA7 - The International Symposium of Finite Volumes for Complex Applications VII Berlin, June 15–20, 2014

21. *From Convection to Explosion: End-to-End Simulation of Type Ia Supernovae*,

    A. Nonaka, A. S. Almgren, J. B. Bell, H. Ma, S. E. Woosley, & M. Zingale

    2011, Proceedings of SciDAC 2011, Denver, CO, July 10–14, 2011, `http://press.mcs.anl.gov/scidac2011/`

20. *MAESTRO, CASTRO, and SEDONA — Petascale Codes for Astrophysical Applications,*

    A. Almgren, J. Bell, D. Kasen, M. Lijewski, A. Nonaka, P. Nugent, C. Rendlement, R. Thomas, & M. Zingale

    2010, Proceedings of the 2010 Scientific Discovery through Advanced Computing (SciDAC) Conference. Chattanooga, Tennessee, July 11–15, 2010. Oak Ridge National Laboratory. `http://computing.ornl.gov/workshops/scidac2010/`

19. *Type Ia Supernovae: Advances in Large Scale Simulation,*

    H. Ma, M. Zingale, S. E. Woosley, A. J. Aspden, J. B. Bell, A. S. Almgren, A. Nonaka, & S. Dong

    2010, Proceedings of the 2010 Scientific Discovery through Advanced Computing (SciDAC) Conference. Chattanooga, Tennessee, July 11–15, 2010. Oak Ridge National Laboratory. `http://computing.ornl.gov/workshops/scidac2010/`

18. *Type Ia Supernovae: Advances in Large Scale Simulation,*

    S. E. Woosley, A. S. Almgren, A. J. Aspden, J. B. Bell, D. Kasen, A. R. Kerstein, H. Ma, A. Nonaka, & M. Zingale

    2009, Proceedings of SciDAC 2009, Journal of Physics: Conference Series, 180, 012023.

17. *Astrophysical Applications of the Maestro Code,*

    M. Zingale, A. S. Almgren, J. B. Bell, C. M. Malone, & A. Nonaka

    2008, Proceedings of SciDAC 2008, Journal of Physics: Conference Series, 125, 012013.

16. *Type Ia supernovae,*

    S. E. Woosley, A. Almgren, J. B. Bell, G. Glatzmaier, D. Kasen, A. R. Kerstein, H. Ma, P. Nugent, F. Röpke, V. Sankaran, & M. Zingale

    2007, Proceedings of SciDAC 2007, Journal of Physics: Conference Series, 78, 012081.

15. *MAESTRO: A Low Mach Number Stellar Hydrodynamics Code,*

    A. S. Almgren, J. B. Bell, & M. Zingale

    2007, Proceedings of SciDAC 2007, Journal of Physics: Conference Series, 78, 012085.

14. *New Approaches for Modeling Type Ia Supernovae,*

    M. Zingale, A. S. Almgren, J. B. Bell, M. S. Day, C. A. Rendleman, & S. E. Woosley

    2006, Proceedings of SciDAC 2006, Journal of Physics: Conference Series, 46, 385.

13. *Efficiency Gains from Time Refinement on AMR Meshes and Explicit Timestepping,*

    L. J. Dursi & M. Zingale

    2005, Adaptive Mesh Refinement—Theory and Applications, Proceedings of the Chicago Workshop on Adaptive Mesh Refinement Methods, Sept. 3–5, 2003 Series: Lecture Notes in Computational Science and Engineering, Vol. 41 Plewa, Tomasz; Linde, Timur; Weirs, V. Gregory (Eds.) 2005, XIV, 554

12. *The Physics of Flames in Type Ia Supernovae,*

    M. Zingale, S. E. Woosley, J. B. Bell, M. S. Day, & C. A. Rendleman

    2005, Proceedings of SciDAC 2005, Journal of Physics: Conference Series, 16, 405.

11. *Simulations of Rising Hydrodynamic and Magnetohydrodynamic Bubbles,*

    P. M. Ricker, K. Robinson, L. J. Dursi, R. Rosner, A. C. Calder, M. Zingale, J. W. Truran, T. Linde, A. Caceres, B. Fryxell, K. Olson, K. Riley, K, A. Siegel, & N. Vladimirova

    2004, Proceedings of The Riddle of Cooling Flows in Galaxies and Clusters of Galaxies, held in Charlottesville, VA, May 31–June 4, 2003, Eds. T. Reiprich, J. Kempner, and N. Soker.

10. *Investigations of Pointwise Ignition of Helium Deflagrations on Neutron Stars,*

    M. Zingale, S. E. Woosley, A. Cumming, A. Calder, L. J. Dursi, B. Fryxell, K. Olson, P. Ricker, R. Rosner, & F. X. Timmes

    2002, 3D Stellar Evolution, ASP Conference Proceedings, Vol. 293, 22–26 July 2002 at UC Davis, Livermore, CA, Ed. by S. Turcotte, S. C. Keller, & R. M. Cavallo.

9. *Onset of Convection on a Pre-Runaway White Dwarf,*

    L. J. Dursi, A. C. Calder, A. Alexakis, J. W. Truran, M. Zingale, B. Fryxell, P. Ricker, F. X. Timmes, & K. Olson

    2002, Classical Nova Explosions: International Conference on Classical Nova Explosions. AIP Conference Proceedings, Vol. 637. Sitges, Spain, 20–24 May, 2002. Edited by M. Hernanz & J. Jose

8. *Mixing by Non-linear Gravity Wave Breaking on a White Dwarf Surface,*

    A. C. Calder, A. Alexakis, L. J. Dursi, R. Rosner, J. W. Truran, B. Fryxell, P. Ricker, M. Zingale, K. Olson, F. X. Timmes, & P. MacNeice

    2002, Classical Nova Explosions: International Conference on Classical Nova Explosions. AIP Conference Proceedings, Vol. 637. Sitges, Spain, 20–24 May, 2002. Edited by M. Hernanz & J. Jose

7. *Mixing by Wave Breaking at the Surface of a White Dwarf,*

    J. W. Truran, A. Alexakis, A. C. Calder, L. J. Dursi, M. Zingale, B. Fryxell, P. Ricker, F. X. Timmes, K. Olson, & R. Rosner

    2002, Proceedings of the 11th Workshop on "Nuclear Astrophysics", Ringberg Castle, Tegernsee, Germany, February 11–16, 2002 / Wolfgang Hillebrandt and Ewald MÃijller (Eds.). MPA/P13, Garching b. München, Germany: Max-Planck-Institut für Astrophysik, 186.

6. *Numerical Simulations of Thermonuclear Flashes on Neutron Stars,*

    B. Fryxell, M. Zingale, F. X. Timmes, D. Q. Lamb, K. Olson, A. C. Calder, L. J. Dursi, P. Ricker, R. Rosner, J. W. Truran, P. MacNeice, & H. Tufo

    2001, Nuclear Physics A, 688, 172.

5. *Quenching Processes in Flame-Vortex Interactions,*

   M. Zingale, J. C. Niemeyer, F. X. Timmes, L. J.Dursi, A. C. Calder, B. Fryxell, D. Q. Lamb, K. Olson, P. Ricker, R. Rosner, J. W. Truran, & P. MacNeice

   2001, 20th Texas Symposium on Relativistic Astrophysics, Austin, Texas, 10–15 Dec. 2000, Melville, NY: AIP Conference Proceedings, Vol. 586. Edited by J. C. Wheeler & H. Martel.

4. *Simulations of Astrophysical Fluid Instabilities,*

   A. C. Calder, B. Fryxell, R. Rosner, L. J. Dursi, K. Olson, P. M. Ricker, F. X. Timmes, M. Zingale, P. MacNeice, & H. M. Tufo

   2001, 20th Texas Symposium on Relativistic Astrophysics, Austin, Texas, 10–15 Dec. 2000, Melville, NY: AIP Conference Proceedings, Vol. 586. Edited by J. C. Wheeler & H. Martel.

3. *Adaptive Mesh Simulations Of Astrophysical Detonations Using the ASCI Flash Code,*

   B. Fryxell, A. C. Calder, L. J. Dursi, D. Q. Lamb, P. MacNeice, K. Olson, P. M. Ricker, R. Rosner, F. X. Timmes, J. W. Truran, H. M. Tufo, & M. Zingale

   Proceedings of the VII International Workshop on Advanced Computing and Analysis Techniques in Physics Research (ACAT 2000), Fermilab, October 16–20, 2000.

2. *Large-Scale Simulations of Clusters of Galaxies,*

   P. M. Ricker, A. C. Calder, L. J. Dursi, B. Fryxell, D. Q. Lamb, P. MacNeice, K. Olson, R. Rosner, F. X. Timmes, J. W. Truran, H. M. Tufo, & M. Zingale

   Proceedings of the VII International Workshop on Advanced Computing and Analysis Techniques in Physics Research (ACAT 2000), Fermilab, October 16–20, 2000.

1. *Helium Detonations on Neutron Stars,*

   B. Fryxell, M. Zingale, F. X. Timmes, D. Q. Lamb, K. Olson, A. C. Calder, L. J. Dursi, P. Ricker, R. Rosner, J. W. Truran, P. MacNeice, & H. Tufo

   Proceedings of the 10th Workshop on "Nuclear Astrophysics", Ringberg Castle, Tegernsee, Germany, March 20–25 2000.

White Papers

2. *Modeling Astrophysical Explosions with Sustained Exascale Computing,*

   M. Zingale, A. C. Calder, C. M. Malone, & F. X. Timmes

   2015, Response to RFI NOT-GM-15-122: *Science Drivers Requiring Capable Exascale High Performance Computing*

1. *The LOFT perspective on neutron star thermonuclear bursts,*

   J. J. M. in 't Zand, D. Altamirano, D. R. Ballantyne, S. Bhattacharyya, E. F. Brown, Y. Cavecchi, D. Chakrabarty, J. Chenevez, A. Cumming, N. Degenaar, M. Falanga, D. K. Galloway, A. Heger, J. José, L. Keek, M. Méndez, S. Mahmoodifar, M. Linares, C. M. Malone, M. C. Miller, F. B. S. Paerels, J. Poutanen, A. Różańska, H. Schatz, M. Serino, V. F. Suleimanov, T. E. Strohmayer, F.-K. Thielemann, A. L. Watts, N. N. Weinberg, S. E. Woosley, W. Yu, S. Zhang, & M. Zingale

2015, White Paper in Support of the Mission Concept of the Large Observatory For x-ray Timing

Invited Lectures / Seminars / Colloquia

08/02/2015	Invited talk at the *International Colloquium on the Dynamics of Explosions and Reactive Systems (ICDERS)*, Leeds, UK, *Understanding Ignition in Type Ia Supernovae*
06/22/2015	Invited talk at the *OLCF User's Meeting*, ORNL, Oak Ridge, TN, *Computation Challenges of Modeling Astrophysical Explosions*
06/03/2015	Invited talk at the *Fifty One Ergs* meeting, NCSU, *Modeling the Early Phases of Type Ia Supernovae*
05/24/2015	"Setting the Stage" talk on *Stellar Hydrodynamics* at the JINA *GNASH: The anomalous metal-poor stars and convective-reactive nuclear astrophysics* workshop, Victoria, BC, Canada, `http://jina-cee.phys.uvic.ca/gnash-workshop/talks-and-contributions/monday/setting-the-stage`
04/08/2015	Seminar at U Mass Darthmouth, *Algorithmic Developments for Modeling Stellar Explosions*
01/15/2015	CCS-2 Seminar at Los Alamos National Laboratory, *The Challenges of Modeling Type Ia Supernovae and X-ray Bursts*
09/15/2014	Invited talk at the *Type Ia Supernovae: progenitors, explosions, and cosmology* conference, Chicago, IL, *Modeling the Early Phases of SNe Ia*, `https://kicp-workshops.uchicago.edu/sn2014/presentations.php`
04/30/2014	Invited presentation at *Large Scale Computing and Storage Requirements for Nuclear Physics (NP): Target 2017* meeting, *Convection in X-ray Bursts*
02/28/2014	Astronomy Seminar at the Center for Cosmology and Particle Physics, New York University, *Modeling Convective Burning in Type Ia Supernovae and X-ray Bursts*
09/27/2013	Nuclear Theory Seminar at Brookhaven National Lab, *Modeling Convective Burning in Type Ia Supernovae and X-ray Bursts*
07/09/2013	Seminar at the Flash Center, University of Chicago, *Modeling Convective Burning in Type Ia Supernovae and X-ray Bursts*
10/10/2012	Astro Computation working group at *2012 Nuclear Astrophysics Town Meeting*, *Thermonuclear Driven Events*
04/04/2012	Nuclear Astrophysics Seminar at Ohio University entitled *The Challenges of Modeling Explosive Phenomena*
07/28/2010	Invited talk at the Lorentz Center Workshop on *X-ray Bursts and Burst Oscillations* entitled *The Algorithmic Challenges of Multidimensional Models of X-ray Bursts*, `http://www.lorentzcenter.nl/lc/web/2010/408/info.php3?wsid=408`
05/13/2010	Joint NRAO / UVa Dept. of Astronomy Colloquium (Charlottesville, VA) entitled *Modeling Convection and Ignition in Type Ia Supernovae*

03/31/2010	Center for the Study of Cosmic Evolution Seminar, Dept. of Physics and Astronomy, Michigan State University (E. Lansing, MI), entitled: *Modeling Convection and Ignition in Type Ia Supernovae*
05/12/2009	Astronomy Seminar at the American Museum of Natural History (New York, NY), entitled: *Modeling Convection and Ignition in Type Ia Supernovae*
09/30/2008	Astronomy Seminar at the Institute for Advanced Studies (Princeton, NJ), entitled: *New Methods for Modeling Type Ia Supernovae*
07/15/2008	Invited Poster at the *SciDAC 2008* conference (Seattle, WA), entitled: *Astrophysical Applications of the Maestro Code* (with co-authors: A. S. Almgren, J. B. Bell, C. M. Malone, & A. J. Nonaka)
04/06/2007	Astronomy Seminar at Rutgers University (New Brunswick, NJ), entitled: *The Challenges of Modeling Type Ia Supernova*
10/31/2006	Astronomy Colloquia at McGill University (Montreal, CA), entitled: *Understanding Type Ia Supernovae*
06/27/2006	Invited talk at the *SciDAC 2006* conference (Denver, CO), entitled: *The Challenges of Modeling Type Ia Supernovae*
10/03/2005	T-13 Seminar, Los Alamos National Laboratory, entitled: *Simulations of Thermonuclear Flames in Type Ia Supernovae*
06/26/2005	Invited poster at the *SciDAC 2005* conference (San Francisco, CA), *The Physics of Thermonuclear Flames in Type Ia Supernovae*
03/01/2005	Astronomy Seminar at SUNY Stony Brook, *Flame Instabilities in Type Ia Supernovae*
02/23/2005	N Division Seminar, Lawrence Livermore National Laboratory, *Flame Instabilities in Type Ia Supernovae*
12/17/2003	Astrophysics Seminar, Institute for Advanced Study, Princeton, NJ, *Flame Instabilities in Type Ia Supernovae*

Popular Press Features

How Stars Explode, Forbes.com, Oct. 1, 2009
(http://www.forbes.com/2009/09/30/supernovae-universe-science-technology-breakthroughs-stars.html)

Unveiled: The First Full 3-D Model of a Star Going Supernova, Popular Science Online, Sept. 24, 2009
(http://www.popsci.com/military-aviation-amp-space/article/2009-09/first-3-d-models-white-dwarf-supernova)

Flash Upon a Neutron Star, American Scientist, Sept.–Oct. 2000, vol. 88, no. 5, p. 400.

Popular Press Mentions

Stars Go Kaboom, Spilling Cosmic Secrets, Science News, 2009, Vol. 176, #4 (Aug. 15, 2009)
(see also http://www.sciencenews.org/view/feature/id/46029/title/Stars_go_kaboom,_spilling_cosmic_secrets)

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