

Chris Fryer – CV

DEGREES:

- University of Arizona, Tucson, AZ – Ph.D. in Astronomy, 1996;
- University of California at Berkeley, Berkeley, CA, Double Major, Mathematics and Astrophysics, Minor – Russian Language – B.A. 1992

Experience:

- Adjunct Professor, GWU, 2017 - present
- Adjunct Professor, UNM, 2009 - present
- Adjunct Professor, Physics Dept., Univ. of Arizona, 2003-present
- Staff Scientist, T-6 and then CCS-2, 2001- present
- Feynman Fellow, LANL, 2000-2001
- Research Associate, UCSC, 1997-2000
- Research and Teaching Assistant, University of Arizona, 1992-1996

Memberships and Awards:

- Los Alamos National Laboratory Fellow (2015)
- E.O. Lawrence Award (2014)
- Fellow of the American Physical Society (2008)
- Member of the American Astronomical Society,
- Gordon Bell Finalist (2003)
- Distinguished performance Award (2002)
- Graduate Research Prize (1995)

Other Current Activities

- Project Lead, High energy-density physics impact
- Director, Center for Theoretical Astrophysics
- Advisory Board: Institutional Computing
- Executive Board: Center for Non Linear Studies
- Executive Board: Information Science and Technology Institute
- Advisory Board: Center for Space and Earth Sciences

- Instructor, Los Alamos Community College Astronomy program

Research Interests

- Astrophysical Transients: Supernovae, Kilonovae, Gamma-ray bursts: engines, nucleosynthetic yields, emission
- Compact Remnant formation: Neutron Stars, Black Holes
- Gamma-Ray Burst Progenitors
- Gravitational Wave Science
- High Energy-Density Physics

Publication statistics and talks:

- over 210 papers published in peer-reviewed journals with over 12000 citations (many studying explosions from stellar collapse), over 400 papers total
- h-index 57 including 36 high-impact (>100 citations), 15 are first-author papers
- ~70 invited talks including several plenary talks and department colloquia.

Select References:

1. Fryer, C.L, Benz, W., Herant, M., 1996, "The Dynamics and Outcomes of Rapid Infall onto Neutron Stars", ApJ, 460, 801
2. Fryer, C.L, Benz, W., Herant, M., Colgate, S.A., 1999, "Hydrodynamical Simulations of Accretion Induced Collapse", ApJ, 516, 892
3. Fryer, C.L., Woosley, S.E., & Heger, A. 2001, ApJ, 550, 372
4. Hungerford, A.L., Fryer, C.L., Timmes, F.X., and McGhee K. 2005, "Nucleosynthetic Signatures of Asymmetric Supernovae - Lessons from 1-dimensional Explosions", Nuc. Phys. A, 758, 15
5. Young, P.A., et al. 2006, "Constraints on the Progenitor of Cassiopeia A", ApJ, 640, 891
6. Fryer, C.L., & Kusenko, A. 2006, "Effects of Neutrino-driven Kicks on the Supernova Explosion Mechanism", ApJ, 640, 891
7. Fryer, C.L., Herwig, F., Hungerford, A. & Timmes, F.X. 2006, "Supernova Fallback: A Possible Site for the r-Process", ApJ, 646, L131
8. Fryer, C.L., Young, P.A., Hungerford, A. L. "Explosive Nucleosynthesis from Gamma-Ray Burst and Hypernova Progenitors: Direct Collapse versus Fallback", 2006, ApJ, 650, 1028
9. Young, P.A., & Fryer, C.L., "Uncertainties in Supernova Yields. I. One-dimensional Explosions", ApJ, 664, 1033, 2007
10. Rockefeller, G., Fryer, C.L., Young, P., Bennet, M.E., Diehl, S., Herwig, F., Hirschi, R., Hungerford, A., Pignatari, M., Magkotsios, G., & Timmes, F.X. 2009, "Nucleosynthetic

Yields from Collapsars”, 10th Symposium on Nuclei in the Cosmos, Mackinac Island, MI, USA; PoS

11. Fryer, C.L., New, K.C.B., “Gravitational Waves from Gravitational Collapse”, LRR, 14, 1
12. Ruiter, A.J., Belczynski, K., Fryer, C., 2009, “Rates and Delay Times of Type Ia Supernovae”, ApJ, 688, 2026
13. Belczynski, K., Dominik, M., Bulik, T., O’Shaughnessy, R., Fryer, C.L., 2010, “The Effect of Metallicity on the Detection Prospects for Gravitational Waves”, ApJ, 715, L138
14. Belczynski, K., Bulik, T., Fryer, C.L., Ruiter, A., A., Valsecchi, F., Vink, J., Hurley, J.R., 2010, “On the Maximum Mass of Stellar Black Holes”, ApJ, 714, 1217
15. Fryer, C.L., Belczynski, K., Wiktorowicz, G., Dominik, M., Kalogera, V., Holz, D.E., 2012, “Compact Remnant Mass Function: Dependence on the Explosion Mechanism and Metallicity”, ApJ, 749, 91
16. Dominik, M., Belczynski, K., Fryer, C.L., Holz, D.E., Berti, E., Bulik, T., Mandel, I., O’Shaughnessy, R., 2012, “Double Compact Objects. I. The Significance of the Common Envelope on Merger Rates”, ApJ, 759, 52
17. Dominik, M., Belczynski, K., Fryer, C.L., Holz, D.E., Berti, E., Bulik, T., Mandel, I., O’Shaughnessy, R., 2013, ApJ, 779, 72
18. Dominik, M., Berti, E., O’Shaughnessy, R., Mandel, I., Belczynski, K., Fryer, C.L., Holz, D.E., Bulik, T., Pannarale, F. 2015, “Double Compact Objects III: Gravitational-wave Detection Rates”, ApJ, 806, 263
19. Fryer, C.L., Ruiter, A., Belczynski, K., et al. 2010, “Spectra of Type Ia Supernovae from Double Degenerate Mergers”, ApJ, 725, 296
20. Fryer, C.L., Belczynski, K., Ramirez-Ruiz, E., Rosswog, S., Shen, G., Steiner, A., 2015, “The Fate of the Compact Remnant in Neutron Star Mergers”, ApJ, 812, 24