Biographical Sketch: John H. Wise

School of Physics and Center for Relativistic Astrophysics
Georgia Institute of Technology, Atlanta, GA 30332
Phone: 404-894-5208, Email: jwise@physics.gatech.edu

Professional Preparation

Georgia Institute of Technology	Atlanta, GA	Physics	B.S.	2001
Stanford University	Stanford, CA	Physics	Ph.D.	2007
NASA Goddard Space Flight Center	Greenbelt, MD	Astrophysics	Postdoc	2007 – 2009
Princeton University	Princeton, NJ	Astrophysics	Postdoc	2009 – 2011

Professional History

Georgia Institute of Technology	Associate Professor	2016 – present
Georgia Institute of Technology	Assistant Professor	2011 – 2016

Related Products

1. **Wise, J. H.**, Regan, J. A., O'Shea, B. W., Norman, M. L., Downes, T. P, Xu, H. 2019, "Formation of massive black holes in rapidly growing pre-galactic gas clouds," Nature, 566, 85

2. Chiaki, G., **Wise, J. H.** 2019, "Seeding the second star: enrichment from population III, dust evolution, and cloud collapse," MNRAS, 482, 3933

3. Barrow, K. S. S., **Wise, J. H.**, Aykutalp, A., O'Shea, B. W., Norman, M. L., Xu, H. 2018, "First light – II: Emission line extinction, population III stars, and X-ray binaries," MNRAS, 474, 2617

4. Regan, J. A., Visbal, E., **Wise, J. H.**, Haiman, Z., Johansson, P. H., Bryan, G. L. 2017, "Rapid formation of massive black holes in close proximity to embryonic protogalaxies," Nature Astronomy, 1, 75

5. Xu, H., **Wise, J. H.**, Norman, M. L., Ahn, K. O'Shea, B. W. 2016, "Galaxy Properties and UV Escape Fraction during the Epoch of Reionization: Results from the Renaissance Simulations," ApJ, 833, 84

Other Significant Products

1. Bryan, G. B. for the **Enzo Collaboration**, 2014, "Enzo: An Adaptive Mesh Refinement Code for Astrophysics," Astrophysical Journal Supplemental, 211, 19

2. **Wise, J. H.** & Abel, T. 2011, "Enzo+Moray: radiation hydrodynamics adaptive mesh refinement simulations with adaptive ray tracing," Monthly Notices of the Royal Astronomical Society, 414, 3458-3491

3. **Wise, J. H.**, Turk, M. J., Norman, M. L., & Abel, T. 2012, "The Birth of a Galaxy: Primordial Metal Enrichment and Stellar Populations," Astrophysical Journal, 745, 50-59

4. **Wise, J. H.**, Abel, T., Turk, M. J., Norman, M. L., & Smith, B. D. 2012, "The Birth of a Galaxy – II. The Role of Radiation Pressure," Monthly Notices of the Royal Astronomical Society, 427, 311-329

5. Xu, H., **Wise, J. H.**, Norman, M. L. 2013, "Population III Stars and Remnants in High Redshift Galaxies," Astrophysical Journal, 773, 83

Synergistic Activities

Courses developed: "Physics of the Interstellar Medium" for undergraduate students – astrophysical applications of quantum mechanics, statistical mechanics, electromagnetism, and classical mechanics. "Cosmology and Galaxy Formation" for graduate students – a theoretical approach to understanding the large-scale structure of the universe and the dynamics of galaxies. In addition to these classes, nine undergraduate students, who have performed analysis of numerical simulations of galaxy formation, have been supervised.

Public visualizations: Featured in the space shows "Journey to the Stars" at the American Museum of Natural History, "Life: A Cosmic Story" at the California Academy of Sciences, and "Solar Superstorms" produced by the National Center for Supercomputing Applications. Produced an award-winning visualization "The First Stars" that was featured in an exhibit at the Alder Planetarium.

Outreach talks: Lead Outreach Demonstrator for the CRA Visualization Laboratory (2012 – present); "Baby Galaxies: The First Steps to the Milky Way," Hokudai University, Sapporo, Japan (24 Oct 2013) and Georgia Institute of Technology, Atlanta, GA (18 Nov 2013); "Computing the Origins of our Milky Way," TEDxDouglasville, Douglasville, GA (04 Apr 2015); "Computing the Origins of Galaxies," Augusta Astronomy Club (08 Feb 2019) and Dahlonega Science Festival (02 Mar 2019).

Community code development: One of the lead contributors to the publicly-available cosmology code, ENZO. Contributor to the publicly-available analysis and visualization toolkit, YT.

Service: Wise has served on several review panels for national and international agencies and as a referee for the Astrophysical Journal, Science, Astronomy & Astrophysics, and the Monthly Notices of the Royal Astronomical Society. Wise has assisted with presenting research at the Supercomputing conferences from 2007 to 2009 with Stanford University and NASA.