

# Benjamin Ransom Ryan

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## EDUCATION

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- ◆ **Ph.D. Astronomy** Advisor: Charles Gammie 2012-2018 expected  
University of Illinois at Urbana-Champaign
- ◆ **B.S. Physics** 2008-2012  
University of North Carolina at Chapel Hill

## RESEARCH EXPERIENCE

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- ◆ **Graduate Research Assistant** 2016-  
University of Illinois at Urbana-Champaign
- ◆ **Graduate Research Assistant** 2015-2016  
Los Alamos National Laboratory
- ◆ **Illinois Distinguished Fellow** 2012-2015  
University of Illinois at Urbana-Champaign
- ◆ **Undergraduate Research Assistant** 2010-2012  
University of North Carolina at Chapel Hill

## AWARDS

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- ◆ Illinois Distinguished Fellowship 2012-2015
- ◆ North Carolina Space Grant 2011

## GRANTS

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### Co-Investigator

- ◆ Blue Waters allocation 440,000 node-hours 2014-2015
- ◆ LANL Institutional Computing w15\_mccrm 3 million core-hours 2015-2017
- ◆ XSEDE allocation PHY160040 2.2 million core-hours 2016-2017
- ◆ XSEDE allocation AST170024 230,000 node-hours 2017-2018

## PUBLICATIONS

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- 1) *Two-temperature GRRMHD Simulations of M87: Thermodynamics, Spectra, Imaging, and Polarization* **Ryan, B. R.**, Ressler, S. M., Dolence, J. C., Moscibrodzka, M., Gammie, C. F., & Quataert, E.. 2017, in prep.
- 2) *The Radiative Efficiency and Spectra of Slowly Accreting Black Holes from Two-temperature GRRMHD Simulations* **Ryan, B. R.**, Ressler, S. M., Dolence, J. C., Tchekhovskoy, A., Gammie, C. F., & Quataert, E.. 2017, *ApJL*, 844, L24
- 3) *Resolution Dependence of Magnetorotational Turbulence in the Isothermal Stratified Shearing Box* **Ryan, B. R.**, Gammie, C. F., Fromang, S., & Kestener, P. 2017, *ApJ*, 840, 6
- 4) *bhlight: General Relativistic Radiation Magnetohydrodynamics with Monte Carlo Transport* **Ryan, B. R.**, Dolence, J. C., & Gammie, C. F. 2015, *ApJ*, 807, 31

## SERVICE

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- ◆ Referee for the *Astrophysical Journal*
- ◆ UIUC Astronomy Graduate Admissions Committee 2016

## MENTORING

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### Undergraduate

- ◆ Ricardo Castro Yarza 2017-

## CONTRIBUTED PRESENTATIONS

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- ◆ *Relativistic Radiation MHD Models of M87* 2016  
Event Horizon Telescope Collaboration Meeting, Boston MA
- ◆ Poster: *General Relativistic Monte Carlo Radiation Magnetohydrodynamics* 2016  
Simulations and Modelling of Relativistic MHD Accretion Discs, Oxford, UK
- ◆ *Modeling M87 with Relativistic Radiation MHD* 2016  
M87 Workshop, ASIAA, Taiwan
- ◆ *A Modern Astrophysical MHD Solver on CUDA-Capable GPUs* 2012  
AAS 219<sup>th</sup> Meeting