

Nathaniel R. Butler

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Experience

UC BERKELEY SPACE SCIENCES LAB & AST DPT, 2005–2008 Berkeley, CA
Townes Fellow; conducted robotic and ground-based optical/IR observations of GRBs; built a repository and reduction suite for Swift satellite data; developed a novel optical camera for simultaneous 3-color imaging; helped build a classification engine for astrophysical transients detected by synoptic optical surveys.

MIT CENTER FOR SPACE RESEARCH, 2003–2005 Cambridge, MA
Postdoctoral Associate; operated the HETE satellite to detect GRBs; conducted GRB followup observations in the optical and X-ray bands; designed X-ray optics for prototype space missions.

MIT CENTER FOR SPACE RESEARCH, 1998–2003 Cambridge, MA
Research Assistant MIT CSR, MIT CCD Lab; tested and characterized X-ray CCDs and X-ray mirrors, calibrated HETE satellite instruments.

PRINCETON UNIVERSITY, 1997–1998 Princeton, NJ
Research Assistant; tested and calibrated mirrors for the WMAP satellite.

Education

MASSACHUSETTS INSTITUTE OF TECHNOLOGY Cambridge, MA
Ph.D. in Physics September 2003.

PRINCETON UNIVERSITY Princeton, NJ
B.A. in Physics June 1998. Graduated Magna Cum Lauda, Thesis Prize.

Professional Societies American Astronomical Society, Sigma Xi

Selected Refereed First Author Publications as a Townes Fellow

1. “A Complete Catalog of Swift GRB Spectra and Durations: Demise of a Physical Origin for Pre-Swift High-Energy Correlations,” *ApJ*, 671, p. 656
2. “X-ray Hardness Variations as an Internal/External Shock Diagnostic,” *ApJ*, 668, p. 400
3. “Pulse Width Evolution of Late Time X-rays Flares in GRBs: Evidence For Internal Shocks,” with Daniel Kocevski and Joshua Bloom, *ApJ*, 667, p. 1024
4. “X-ray Hardness Evolution in GRB Afterglows and Flares: Late Time GRB Activity Without N_H Variations,” *ApJ*, 663, p. 407
5. “Refined Astrometry and Positions for 179 Swift X-Ray Afterglows,” *AJ*, 133, p. 1027
6. “On the Early Time X-ray Spectra of Swift Afterglows I: Evidence for Anomalous Soft X-ray Emission,” *ApJ*, 656, p. 1001
7. “When Do Internal Shocks End and External Shocks Begin? Early-Time Broadband Modelling of GRB 051111,” *ApJ*, 652, p. 1390