

## Publications

### *Refereed Journal Articles*

#### First Author Publications

“A Complete Catalog of Swift GRB Spectra and Durations: Demise of a Physical Origin for Pre-Swift High-Energy Correlations,” N. Butler, D. Kocevski, J. S. Bloom, & J. L. Curtis 2007, *The Astrophysical Journal* in Press (arXiv0706.1275)

“X-ray Hardness Variations as an Internal/External Shock Diagnostic,” N. Butler, and D. Kocevski 2007, *The Astrophysical Journal*, **668**, 400

“X-ray Hardness Evolution in GRB Afterglows and Flares: Late Time GRB Activity Without  $N_H$  Variations,” N. Butler 2007, *The Astrophysical Journal*, **663**, 407

“Refined Astrometry and Positions for 179 Swift X-Ray Afterglows,” N. Butler 2007, *The Astronomy Journal*, **133**, 1027

“On the Early Time X-ray Spectra of Swift Afterglows I: Evidence for Anomalous Soft X-ray Emission,” N. Butler 2007, *The Astrophysical Journal*, **656**, 1001

“When Do Internal Shocks End and External Shocks Begin? Early-Time Broadband Modelling of GRB 051111,” N. Butler, W. Li, D. Perley, K. Huang, Y. Urata, J. Prochaska, J. Bloom, A. Filippenko, and 13 coauthors, 2006, *The Astrophysical Journal*, **652**, 1390

“High-Resolution Grating Spectroscopy of Gamma-Ray Bursts 030328 and 041006 with Chandra LETGS,” N. Butler, G. Ricker, P. Ford, R. Vanderspek, H. Marshall, J. Jernigan, G. Garmire, and D. Lamb. 2005, *The Astrophysical Journal*, **629**, 908

“The GRB 011211 X-Ray Lines: Toward Resolving the Significance Debate,” N. Butler, G. Ricker, R. Vanderspek, P. Ford, G. Crew, D. Lamb, and J. Jernigan 2005, *The Astrophysical Journal Letters*, **627**, 9

“High Energy Observations of XRF 030723: Evidence for an Off-axis Gamma-Ray Burst?” N. R. Butler, T. Sakamoto, M. Suzuki, N. Kawai, D. Q. Lamb, C. Graziani, T. Q. Donaghy, A. Dullighan, R. Vanderspek, G. B. Crew, P. Ford, G. Ricker, J-L. Atteia, A. Yoshida, Y. Shirasaki, T. Tamagawa, K. Torii, M. Matsuoka, E. E. Fenimore, M. Galassi, J. Doty, J. Villasenor, G. Prigozhin, J. G. Jernigan, C. Barraud, M. Boer, J-P. Dezalay, J-F. Olive, K. Hurley, A. Levine, F. Martel, E. Morgan, S. E. Woosley, T. Cline, J. Braga, R. Manchanda, and G. Pizzichini 2005, *The Astrophysical Journal*, **621**, 884

“The X-ray Afterglows of GRB 020813 and GRB 021004 with Chandra HETGS: Possible Evidence for a Supernova Prior to GRB 020813,” Butler, N., Marshall, H., Ricker, G., Vanderspek, R., Ford, P., Crew, G., Lamb, D., Jernigan, J. 2003, *The Astrophysical Journal*, **597**, 1010

Other Refereed Publications

“Pulse Width Evolution of Late Time X-rays Flares in GRBs: Evidence For Internal Shocks,” D. Kocevski, N. Butler, and J. S. Bloom 2007, *The Astrophysical Journal*, **667**, 1024

“A Putative Early-Type Host Galaxy for GRB 060502B: Implications for the Progenitors of Short-Duration Hard-Spectrum Bursts,” J. Bloom, D. Perley, H.-W. Chen, N. Butler, and 6 coauthors 2007, *The Astrophysical Journal*, **654**, 878

“X-ray flashes or soft gamma-ray bursts?. The case of the likely distant XRF 040912,” G. Stratta, S. Basa, S., N. Butler, and 49 coauthors 2007, *Astronomy and Astrophysics*, **461**, 485

“The Troublesome Broadband Evolution of GRB 061126: Does a Grey Burst Imply Grey Dust?” D. A. Perley, J. S. Bloom, N. R. Butler, and 18 coauthors 2007, *The Astrophysical Journal in Press* (astro-ph/0703538)

“Discovery of the short Gamma-ray burst GRB 050709,” J. Villasenor, D. Lamb, G. Ricker, J.-L. Atteia, N. Kawai, N. Butler, and 27 coauthors 2005, *Nature*, **437**, 855

“HETE-2 Observation of Two Gamma-Ray Bursts at  $z > 3$ ” J.-L. Atteia, N. Kawai, R. Vanderspek, G. Pizzichini, G. Ricker, C. Barraud, M. Boer, J. Braga, N. Butler; and 30 coauthors 2005, *The Astrophysical Journal*, **626**, 292

“Global Characteristics of X-Ray Flashes and X-Ray-Rich GRBs Observed by HETE-2,” T. Sakamoto, D. Q. Lamb, C. Graziani, T. Q. Donaghy, M. Suzuki, G. Ricker, J.-L. Atteia, N. Kawai, A. Yoshida, Y. Shirasaki, T. Tamagawa, K. Torii, M. Matsuoka, E. E. Fenimore, M. Galassi, J. Doty, R. Vanderspek, G. B. Crew, J. Villasenor, N. Butler, and 18 coauthors 2005, *The Astrophysical Journal*, **629**, 311

“HETE Observations of the Gamma-Ray Burst GRB030329: Evidence for an Underlying Soft X-ray Component,” R. Vanderspek, T. Sakamoto, C. Barraud, T. Tamagawa, C. Graziani, M. Suzuki, Y. Shirasaki, G. Prigozhin, J. Villasenor, J. G. Jernigan, G. B. Crew, J.-L. Atteia, K. Hurley, N. Kawai, D. Q. Lamb, G. R. Ricker, S. E. Woosley, N. Butler, and 15 coauthors 2004, *The Astrophysical Journal*, **617**, 1251

“High Energy Transient Explorer 2 Observations of the Extremely Soft X-Ray Flash XRF 020903,” T. Sakamoto, D. Lamb, C. Graziani, T. Donaghy, M. Suzuki, G. Ricker, J.-L. Atteia, N. Kawai, A. Yoshida, Y. Shirasaki, T. Tamagawa, K. Torii, M. Matsuoka, E. Fenimore, M. Galassi, T. Tavenner, J. Doty, R. Vanderspek, G. Crew, J. Villasenor, N. Butler, and 18 co-authors 2004, *The Astrophysical Journal*, **602**, 875

”HETE-2 Localization, Observation of the Bright, X-Ray-Rich Gamma-Ray Burst GRB021211,” G. B. Crew, D. Q. Lamb, G. R. Ricker, J.-L. Atteia, N. Kawai, R. Vanderspek, J. Villasenor, J. Doty, G. Prigozhin, J. G. Jernigan, C. Graziani, Y. Shirasaki, T. Sakamoto, M. Suzuki, N. Butler, and 23 coauthors 2003, *The Astrophysical Journal*, **599**, 387

“An experimental study of charge diffusion in the undepleted silicon of X-ray CCDs,” Prigozhin, G., Butler, N. B., Kissel, S. E.; Ricker, G. R. 2003, IEEE Transactions on Electron Devices, **50**, 246

“GRB 010921: Localization, Observations by the High Energy Transient Explorer Satellite,” Ricker, G., Hurley, K., Lamb, D., Woosley, S., Atteia, J.-L., Kawai, N., Vanderspek, R., Crew, G., Doty, J., Villasenor, J., Prigozhin, G., Monnelly, G., Butler, N., and 26 coauthors 2003, The Astrophysical Journal, **571**, L127

“Spectral analysis of 35 GRBs/XRFs observed with HETE-2/FREGATE,” Barraud, C., Olive, J.-F., Lestrade, J. P., Atteia, J.-L., Hurley, K., Ricker, G., Lamb, D. Q., Kawai, N., Boer, M., Dezalay, J.-P., Pizzichini, G., Vanderspek, R., Crew, G., Doty, J., Monnelly, G., Villasenor, J., Butler, N., and 13 coauthors 2003, Astronomy and Astrophysics, **400**, 1021

“HETE-2 Localization and Observations of the Short, Hard Gamma-Ray Burst GRB020531,” D. Q. Lamb, G. R. Ricker, J.-L. Atteia, K. Hurley, N. Kawai, Y. Shirasaki, T. Sakamoto, T. Tamagawa, C. Graziani, J.-F. Olive, A. Yoshida, M. Matsuoka, K. Torii, E. E. Fenimore, M. Galassi, T. Tavenner, T. Q. Donaghy, M. Boer, J.-P. Dezalay, R. Vanderspek, G. Crew, J. Doty, G. Monnelly, J. Villasenor, N. Butler, and 22 coauthors, The Astrophysical Journal Submitted (astro-ph/0206151)

### *Thesis*

“The First 2.5 Years of HETE: Toward an Understanding of the Nature of Short and Long Duration Gamma-Ray Bursts,” Ph.D. Thesis, MIT, 2003

### *Conference Proceedings*

“Swift Late GRB Emission and GLAST,” Butler, N. 2007, in AIP Conf. Proc., The First GLAST Symposium, ed. S. Ritz, P. Michelson, & C. Meegan, **921**, 103

“X-ray Line Emission in Swift XRT Spectra?,” Butler, N. 2006, in AIP Conf. Proc., Gamma-ray Bursts in the Swift Era, ed. S. S. Holt, N. Gehrels, & J. A. Nousek (AIP Press: New York), **836**, 259

“X-ray Afterglow Emission Lines: How Significant Are They?” Butler, N. 2004 GRB Conference, Rome, Italy, October 18-22 (Submitted)

“Chandra Observations of the Optically Dark GRB 030528,” Butler, N., Dullighan A., Ricker, G., Vanderspek, R., Ford, P., Lamb, D., Hurley, K. 2004, in AIP Conf. Proc., Gamma-ray Bursts: 30 Years of Discovery, ed. E. E. Fenimore & M. Galassi (AIP Press: New York), **727**, 435

“Optical and X-ray Observations of the Afterglow to XRF 030723,” Butler, N., Dullighan A., Ricker, G., Vanderspek, R., Ford, P., Lamb, D., Hurley, K. 2004, in AIP Conf. Proc., Gamma-ray Bursts: 30 Years of Discovery, ed. E. E. Fenimore & M. Galassi (AIP Press: New York), **727**, 111

“Searching for Additional Unclaimed X-ray Emission Lines in High Resolution Afterglow Spectra,” Butler, N., Marshall, H., Ricker, G., Vanderspek, R., Ford, P., Crew, G., Lamb, D., Jernigan, J. 2004, in AIP Conf. Proc., Gamma-ray Bursts: 30 Years of Discovery, ed. E. E. Fenimore & M. Galassi (AIP Press: New York), **727**, 399

“IR and Optical Observations of GRB 030115,” A. Dullighan, G. Ricker, N. Butler, R. Vanderspek 2004, in AIP Conf. Proc., Gamma-ray Bursts: 30 Years of Discovery, ed. E. E. Fenimore & M. Galassi (AIP Press: New York), **727**, 467

“Results of X-ray and Optical Followup Observations of the Short/Hard GRB 020531,” Butler, N., Dullighan A., Ricker, G., Vanderspek, R., Ford, P., Lamb, D., Hurley, K. 2004, in ASP Conf. Proc., Gamma-ray Bursts in the Afterglow Era: 3rd Workshop, ed. M. Feroci, F. Frontera, N. Masetti, & L. Piro (ASP Press:San Francisco), **312**, 201

“Using Wavelets to Detect HETE Untriggered Bursts,” Butler, N., Doty, J. 2003, in AIP Conf. Proc., Gamma-Ray Burst and Afterglow Astronomy 2001, ed. G. Ricker & R. Vanderspek (AIP Press: New York), **662**, 45

“A Study of the Background in the HETE Equatorial Orbit,” Butler, N., Dullighan, A., Atteia, J.-L., Kawai, N., Yoshida, A., Tamagawa, T. 2003, in AIP Conf. Proc., Gamma-Ray Burst and Afterglow Astronomy 2001, ed. G. Ricker & R. Vanderspek (AIP Press: New York), **662**, 63

“Progress towards a general grating patterning technology using phase-locked scanning beams,” Schattenburg, M.L., Chen, C.G., Heilmann, R.K., Konkola P.T., Pati, G.S. 2002, Proc. SPIE, Optical Spectroscopic Techniques, Instrumentation for Atmospheric, Space Research IV, eds. A.M. Larar, M.G. Mlynczak, **4485**, 378

“Novel methods for shaping thin-foil optics for x-ray astronomy,” R.K. Heilmann, G.P. Monnelly, O. Mongrard, N. Butler, C.G. Chen, L.M. Cohen, C.C. Cook, L.M. Goldman, P.T. Konkola, M. McGuirk, G.R. Ricker, M.L. Schattenburg. 2002, Proc. SPIE, X-ray Optics for Astronomy: Telescopes, Multilayers, Spectrometers, Missions, eds. P. Gorenstein, R.B. Hoover, **4496**, 62

“High Precision Assembly, Metrology of X-ray Foil Optics”, Mongrard, O., Butler, N., Chen, C.G., Heilmann, R.K., Konkola, P.T., McGuirk, M., Monnelly, G., Pati, G.S., Ricker, G.R., Schattenburg, M.L., Cohen, I. 2001, Proc. ASPE, 16th Annual Meeting, (ASPE: Raleigh), 40.

“High-accuracy x-ray foil optic assembly,” Monnelly, G.P., Mongrard, O., Breslau, D., Butler, N., Chen, C.G., Cohen, L., Gu, W., Heilmann, R.K., Konkola, P.T., Ricker, G.R., Schattenburg, M.L. 2000, Proc. SPIE, X-Ray Optics, Instruments, Missions IV, eds. R. B. Hoover, A. B. C. Walker II, **4138**, 164