FERMI AND SWIFT GAMMA-RAY BURST AFTERGLOW POPULATION STUDIES

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The new and extreme population of GRBs detected by Fermi-LAT shows several new features in

high energy gamma-rays that are providing interesting and unexpected clues into GRB prompt and

afterglow emission mechanisms. Over the last 6 years, it has been Swift that has provided the robust

data set of UV/optical and X-ray afterglow observations that opened many windows into components

of GRB emission structure. The relationship between the LAT GRBs and the well studied, fainter,

less energetic GRBs detected by Swift-BAT is only beginning to be explored by multiwavelength

studies. We explore the large sample of GRBs detected by BAT only, BAT and Fermi-GBM, and

GBM and LAT, focusing on these samples separately in order to search for statistically significant

differences between the populations, using only those GRBs with measured redshifts in order to

physically characterize these objects. We disentangle which differences are instrumental selection

effects versus intrinsic properties, in order to better understand the nature of the special characteristics

of the LAT bursts.