Precursors in gamma-ray bursts detected by the Fermi-LAT and GBM
SYLVIA ZHU, Univ of Maryland-College Park, FERMI LARGE AREA
TELESCOPE COLLABORATION — Many aspects of gamma-ray bursts (GRBs)
remain mysterious more than 40 years after their initial discovery. However, obser-
vations of GRBs by the Fermi Large Area Telescope (LAT) and Gamma-ray Burst
Monitor (GBM) have uncovered new information about the observed properties and
the underlying physics. In a small minority (roughly 5-20%), a dim, temporally dis-
tinct precursor peak occurs before the brightest part of the prompt emission in the
keV-MeV range. The origin of precursors is still unknown, and studies of precursors
can probe the formation of the GRB central engine and/or the nature of the jets
that produce the emission. We present a systematic search for precursor emission
in LAT and GBM data, and the temporal and spectral properties and energetics of
the population of GRBs with precursors.

Sylvia Zhu
Univ of Maryland-College Park

Date submitted: 09 Jan 2015
Electronic form version 1.4