

Abstract Submitted  
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**All-Sky Imaging of the Gamma-Ray Sky with BATSE**<sup>1</sup> Y. ZHANG, G.L. CASE, M.L. CHERRY, Dept. of Physics & Astronomy, Louisiana State Univ., Baton Rouge, LA 70803 — Earth occultation provides a means of monitoring gamma-ray sources over the entire sky. The technique has been demonstrated with the Burst And Transient Source Experiment (BATSE) on the Compton Gamma Ray Observatory (CGRO), and is now being used with the Gamma-ray Burst Monitor (GBM) instrument on the Fermi mission. Although the approach provides a powerful wide-field monitoring capability, the BATSE and GBM implementations of the technique have so far limited the analysis to a catalog of previously identified sources. We present an indirect imaging method that permits searching for unknown sources by applying the Differential Filter Technique (DFT) to archival BATSE data. Occultation steps are transformed into gaussian-like features corresponding to the intensities measured from each pixel in the sky. Coupling this to the  $\sim 51$ -day precession cycle of the CGRO orbit (with  $28.5^\circ$  inclination) makes it possible to perform an all-sky survey. By applying standard imaging deconvolution techniques, it becomes possible to locate known and unknown sources with spatial resolution to  $\sim 0.5^\circ$  accuracy. Initial results from the application of the approach to BATSE will be presented.

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