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Predicting the Blazar Anisotropy Energy Spectrum of the Gamma-Ray Background CASSANDRA LOCHHAAS, JENNIFER SIEGAL-GASKINS, California Institute of Technology — The gamma-ray background is created by many objects and processes that emit light at high energies, including blazars, star-forming galaxies, and possibly dark matter annihilation or decay. We predict the contribution of unresolved blazars to the anisotropy of the gamma-ray background using updated models of the blazar population. We create simulated catalogs of blazars for each model, which include an energy spectrum for each blazar varied to match the observed differences in blazar spectra, a luminosity and redshift for each blazar drawn from the luminosity function, and the observed flux accounting for the attenuation of high-energy photons due to interactions with the extragalactic background light. Sky maps of the blazar population at different energies are generated from the catalog. We calculate the angular power spectrum of each sky map and compare our simulated measure to recent gamma-ray background anisotropy measurements by the Fermi Large Area Telescope to determine the consistency of each model with the data. Identifying the blazar contribution to the gamma-ray background places constraints on the contributions of other known and proposed gamma-ray sources, including dark matter.

Cassandra Lochhaas
California Institute of Technology

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