

Abstract Submitted
for the APR20 Meeting of
The American Physical Society

Quiescent Solar Gamma-Ray Observations with CALET on the ISS NICHOLAS CANNADY, Univ of Maryland-Baltimore County, CALET COLLABORATION — The Calorimetric Electron Telescope (CALET) was launched to the International Space Station in August 2015 and has continuously taken data since shortly thereafter. Recent results include measurement of the spectra of cosmic-ray electrons+positrons to 4.8 TeV and protons to 10 TeV, with ongoing analyses of nuclear spectra, ratios, and ultra-heavy abundances. The calorimeter is sensitive to gamma rays from 1 GeV to beyond 1 TeV, and the corresponding instrument response functions have been determined through simulations and comparison with flight data. We present CALET observations of gamma-ray emission from the quiescent Sun over the period November 2015 – October 2019. Previous observations with the Fermi Large Area Telescope (LAT) indicate a hard spectrum in excess of predictions. Recent results with LAT extend this measurement to higher energies, revealing emission beyond 100 GeV, and indicate an increase in the flux at solar minimum and the presence of a “dip” feature in the spectrum at energies of 30 – 50 GeV. In this work, we demonstrate general consistency with the hard, intense spectrum detected by the LAT at energies up to tens of GeV. Furthermore, we investigate the presence of the time dependence of the flux and the unexpected spectral feature.

Nicholas Cannady
Univ of Maryland-Baltimore County

Date submitted: 10 Jan 2020

Electronic form version 1.4