

Abstract Submitted  
for the APR21 Meeting of  
The American Physical Society

**Modeling TXS 0506+056 Multiwavelength Neutrino Spectra<sup>1</sup>**

TIFFANY LEWIS, USRA - Univ Space Rsch Assoc, TONIA VENTERS, CAROLYN KIERANS, REGINA CAPUTO, NASA Goddard, CHRIS KARWIN, Clemson University — On 22 Sept 2017, neutrinos likely from the blazar TXS 0506+056 were detected in concert with flaring activity in the gamma-rays. Since then, multiwavelength spectra have been analyzed alongside the neutrino signature to constrain and narrow down models applicable to the plausible physical scenarios giving rise to this observed event, but no consensus has been found. We analyze the multiwavelength spectrum and neutrino detection during the 2014-2015 and 2017 neutrino activity periods, using a self-consistent particle transport model in order to track the effects of acceleration and emission on the protons, electrons, and subsequent neutrinos. From this careful consideration of the particle spectra, we then produce a model of the observable spectrum, including the MeV, which is underpinned with the historical TXS 0506+056 data, and make projections for AMEGO/AMEGO-X in detecting similar events.

<sup>1</sup>Research supported by the NASA Postdoctoral Program at Goddard Space Flight Center, administered by Universities Space Research Association.

Tiffany Lewis  
USRA - Univ Space Rsch Assoc

Date submitted: 08 Jan 2021

Electronic form version 1.4