Abstract Submitted
for the 4CS21 Meeting of
The American Physical Society

**A blinded search for orbital periodicity in VHE gamma-ray emission in High Mass X-ray Binary LS I +61 303.**[1] JOSHUA BARTKOSKE, University of Utah — LS I +61 303, made up of a Be star and a compact object, is one of only 11 VHE gamma-ray binaries observed in our universe thus far. The nature of the compact object in LS I +61 303 is still debated. As a part of an ongoing study of LS I +61 303, I used ten years of data from the Very Energetic Radiation Imaging Telescope Array System (VERITAS) and existing data from the Major Atmospheric Gamma Imaging Cherenkov (MAGIC) telescope to search for the orbital period of the binary system. I performed a Pearson Correlation Coefficient (PCC) analysis of 200 phase-folded light-curves for orbital periods ranging from 15.0 days to 35.0 days. A maximum value of PCC=0.70 is at an orbital period of 26.5 days, which is consistent with the original observed period of 26.496 days found in the radio lightcurve data.

[1]Funded in part by the Swigart Scholarship

Joshua Bartkoske
University of Utah

Date submitted: 11 Sep 2021 Electronic form version 1.4