Abstract Submitted
for the APR20 Meeting of
The American Physical Society

Highest-energy gamma-ray emission from HAWC in the environments of powerful pulsars KELLY MALONE, Los Alamos Natl Lab, HAWC COLLABORATION — We present observations of several gamma-ray objects emitting above 100 TeV. These are the highest-energy Galactic sources ever detected with any astrophysical messenger. The data were collected using the High Altitude Water Cherenkov (HAWC) Gamma-Ray Observatory, a TeV instrument located in Puebla, Mexico. HAWCs wide field-of-view ($\sim$2 sr) makes it an excellent instrument to perform unbiased all-sky surveys. All of the sources are extended in apparent size and located within half a degree of a high spin-down power pulsar, raising questions about whether ultra-high-energy emission (above 50 TeV) is a generic feature of gamma-ray emission associated with such pulsars. This also raises questions about diffusion near pulsars, as the electrons associated with the highest-energy gamma rays are expected to cool quickly.

Kelly Malone
Los Alamos Natl Lab

Date submitted: 09 Jan 2020 Electronic form version 1.4