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Astroparticle and Nuclear Physics with a Customized Low-Background Broad Energy Germanium Detector[1] PADRAIC FINNERTY, University of North Carolina and Triangle Universities Nuclear Laboratory, MAJORANA COLLABORATION — As a part of the R&D process for the MAJORANA and CoGeNT experiments, we have found that customized commercial Broad Energy Ge detectors (BEGe) produced by Canberra have several promising features, including large mass, low electronic noise, and excellent pulse-shape analysis capabilities. BEGe detectors obtain these capabilities due to their low-capacitance "point-contact" style configuration. BEGes are also the only point-contact design fabricated on a commercial basis. We have deployed a customized BEGe, named "MALBEK" in a low background cryostat in the Kimballton Underground Research Facility in Virginia. This talk will focus on the shield design, detector characteristics, and measurements that can be performed with such a detector in a low-background environment.

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