

Dear Committee Member,

My field of research is Astroparticle Physics. The Kimballton site offers a preferred location for this research to be pursued, and I will work as a member of the Kimballton team to help make this a reality.

The features of Kimballton which appeal to me are:

The unique possibility to create an underground laboratory with sufficient space and shielding against cosmic background radiation which would allow to perform a next generation project in the field of low energy neutrino astronomy (LENA), a project we are now developing with an underground site in Europe in mind. Kimballton offers another site of interest to us. Our goal is to set up a new observatory based on a ~50-100kt large liquid scintillator detector. The scientific topics that can be studied in such a detector are:

- search for proton decay modes,
- study of a galactic Supernova type II by detecting the thereby emitted Supernova neutrinos,
- measurement of relic Supernovae neutrinos,
- precise study of solar thermo-nuclear fusion reactions,
- search for small solar neutrino flux variations,
- test of geophysical models by measuring terrestrial neutrinos from the crust, mantle and core.
- Long baseline experiments to study oscillation phenomena of high energy neutrinos from accelerators

Sincerely,
Prof. Lothar Oberauer