The Pokestop Experiment

Muon Detection in the Wild

Background

Muons are created by cosmic rays interacting with atoms in the atmosphere. They are "heavy electrons" that can be detected by relatively simple equipment. In this experiment, detectors were placed at Pokestops, to compare capture rate.

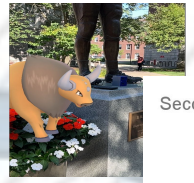
Claim

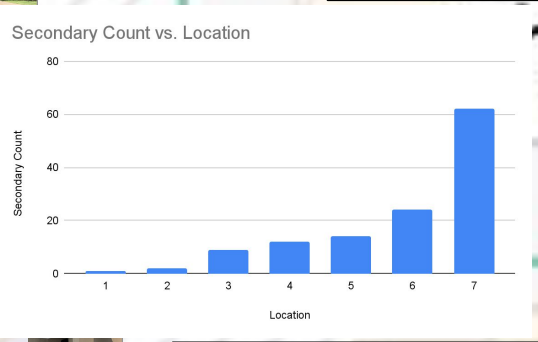
Brass is the most effective shielding material.

Methods

-used mobile muon collector (Cosmic Watches) to travel between various Pokestops around SU Campus
-data was collected for 2-minute intervals

Ernie Davis **1**
Primary
683 Rate 6.866
Secondary
1 Rate 0.010



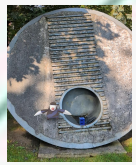


Barnes Arch **3**
Primary
225 Rate 2.45
Secondary
9 Rate 0.092

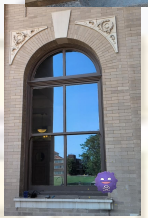
Reasoning

While under the Ernie Davis statue, the Secondary Count was the lowest collected. Brass is known to shield muons at Earth's surface level. It is a high density alloy. The Main Count at this location was also higher than other locations due to the thermionic effect of the brass in direct sunlight at 88℉.

Wheel **6**
Primary
133 Rate
1.39
Secondary
62 Rate 2.4



Salt Warrior **2**
Primary
255 Rate 12.66
Secondary
2 Rate 0.03



Carnegie Library **5**
Primary
469 Rate 4.87
Secondary
14Rate 0.14

Gate H **4**
Primary
201 Rate 2.013
Secondary
12 Rate 0.121

Errors/Further Investigations:

1. Consistently compare materials within structures
2. Take data over a longer period/different days/different weather
3. We were not able to locate consistent Pokemon for comparison of their muon producing capabilities