11/08/2018

PMT height optimization checks by Mich (alone)

* Background info
  + First recall previous measurements made on 10/28
  + Max PMT rate while letting light into collimator through top of monochromator was ~26,000 Hz. This was at heights of 1.078”, 0.943”, 1.018”, 1.035” (all similar rates)(heights are assumed to be the length of the visible portion of adjustable post)
  + There was also a low rate ~22,000 Hz at 1.132”
* Now let’s do checks for today (heights are measuring only visible part of adjustable portion of PMT post, not including the thickness of the grounding braid smashed between the post and PMT holding enclosure.) Rates are the maximum rate seen at the peak of the angular distribution of the PMT while it is rotated about incident photon beam.
  + 1.001” => 23.8 kHz
  + 0.932” => 25.2 kHz
  + 0.931” => 25.3 kHz
  + 0.916” => 25.2 kHz
  + 0.907” => 25.9 kHz
  + 0.902” => 25.6 kHz
  + 0.891” => 25.0 kHz
  + 0.882” => 24.7 kHz
  + 0.874” => 25.2 kHz
  + 0.779” => 18.4 kHz
* Decided to set final height at ~0.902” (approximate because re-set by looking at marker line on post that was created when post height was measured at 0.902”) with rate now reading at peak 26.0 kHz.