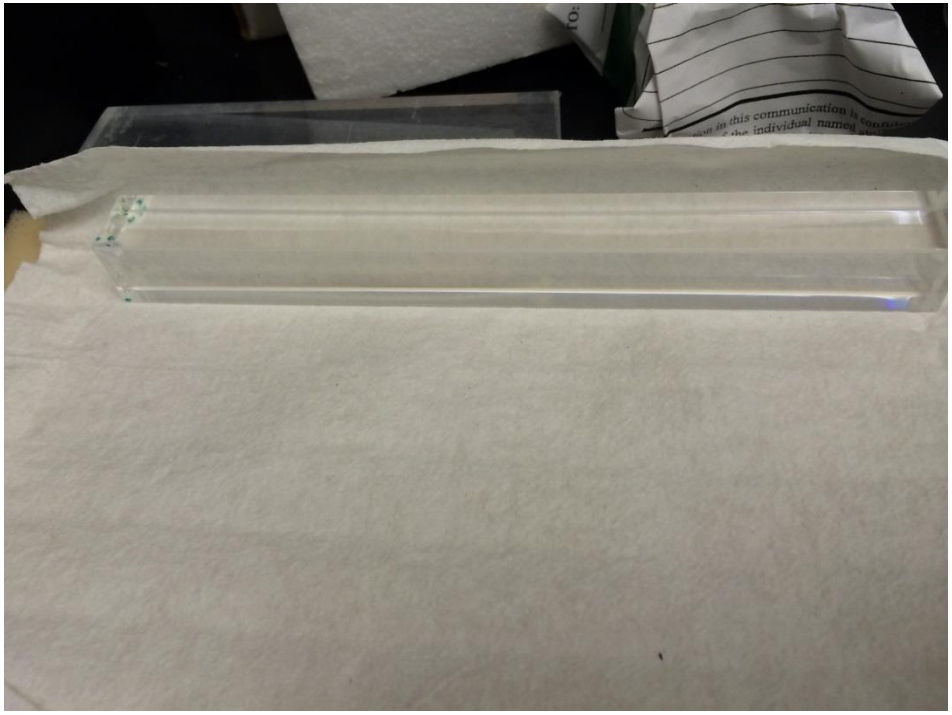
Update 3

Characterization of $PbWO_4$

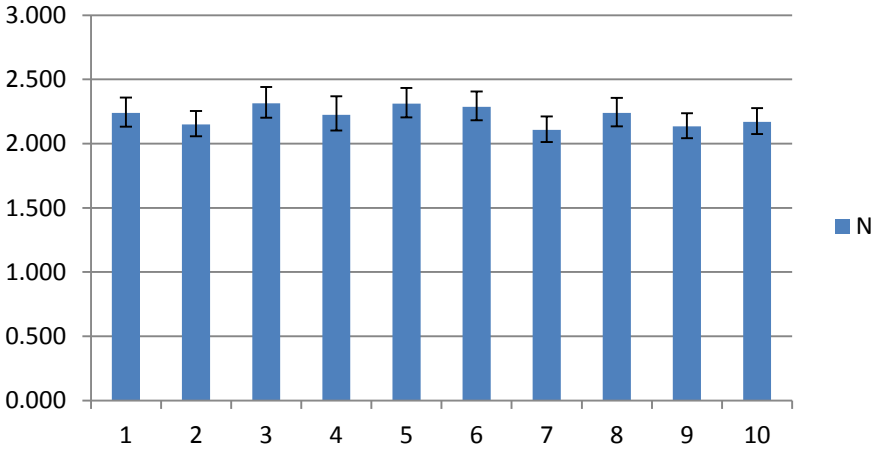
Working with large crystal!



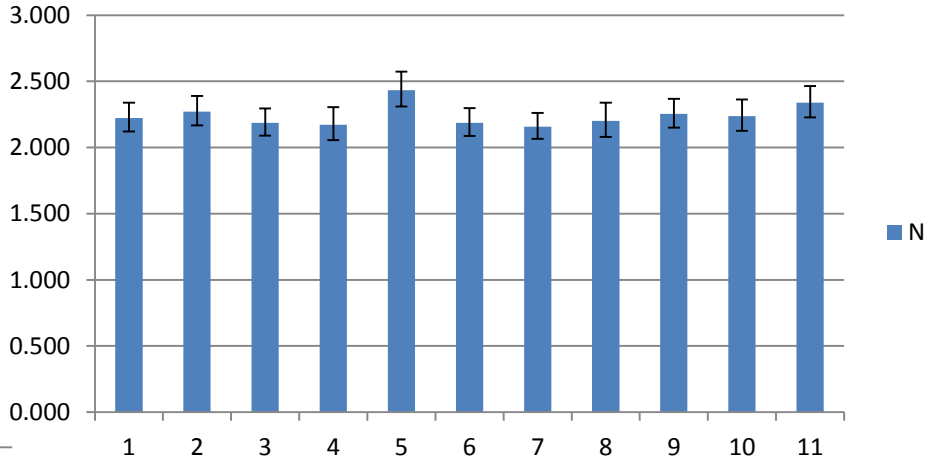
Orientation 1 Positon 0 and 3 Index of Refraction (broken crystal)

Mean 3.5in: 2.22 ± 0.11
Systematic error: ± 0.11
Statistical error: ± 0.08

Refractive index: P 3.5in

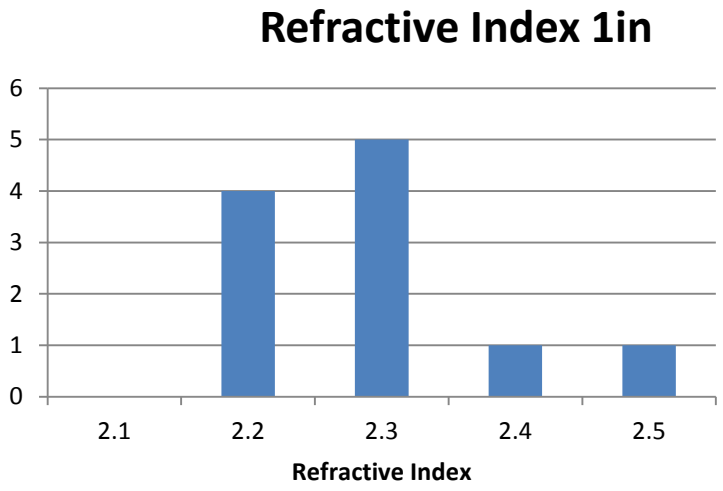


Refractive index: P .5in

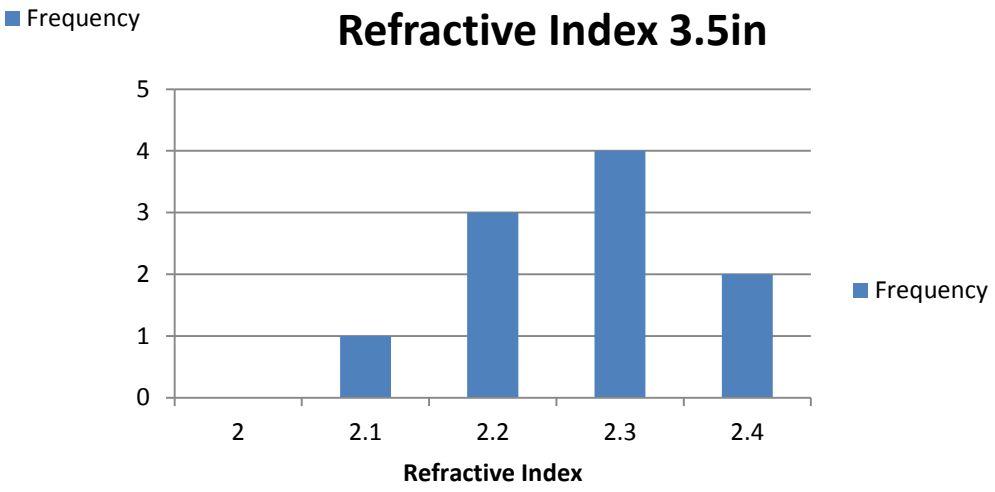


Mean .5in: 2.24
Systematic error: ± 0.11
Statistical error: 0.08

Histograms: Orientation 1

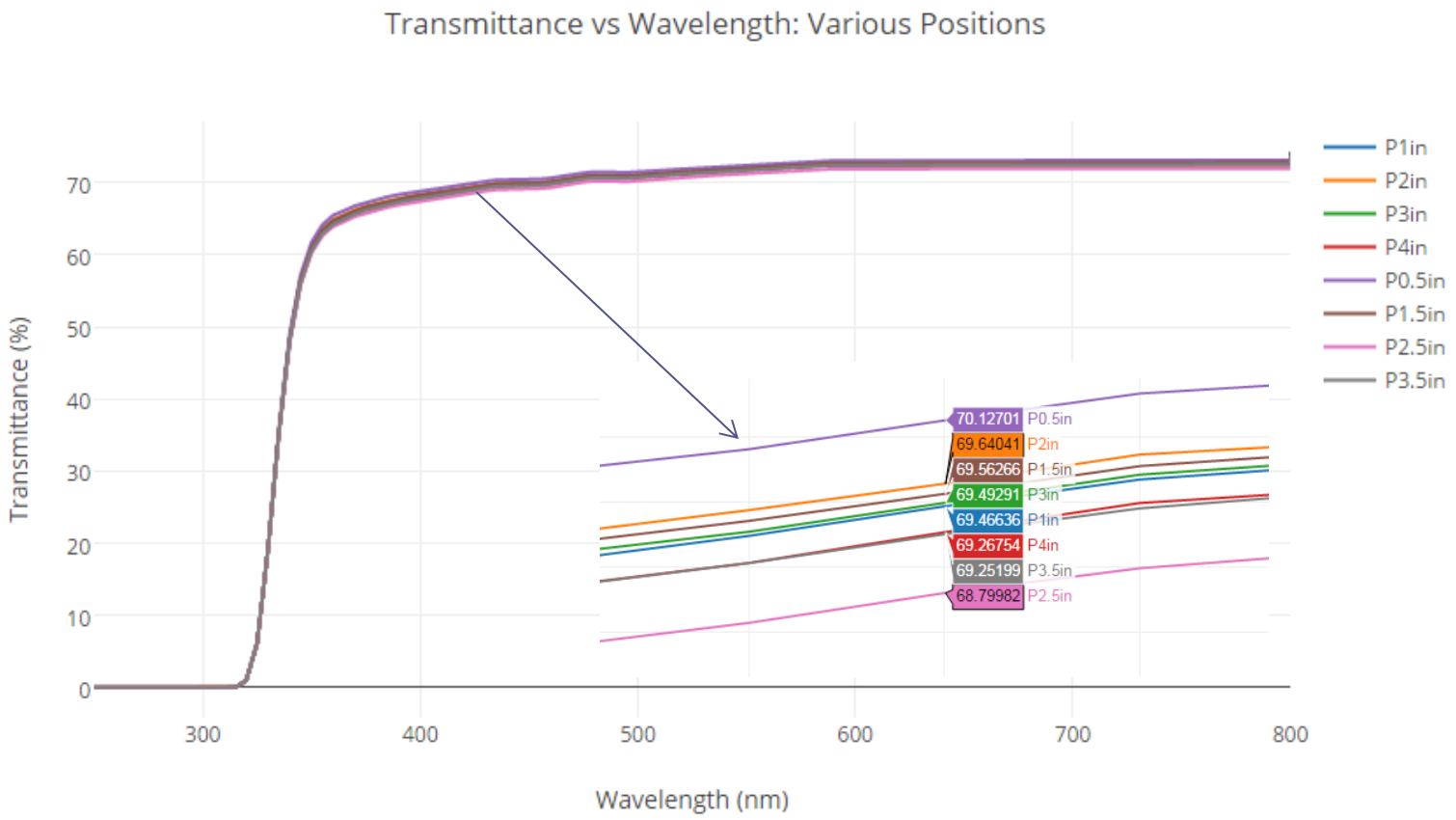


Both positions indicate a refractive index of around 2.3

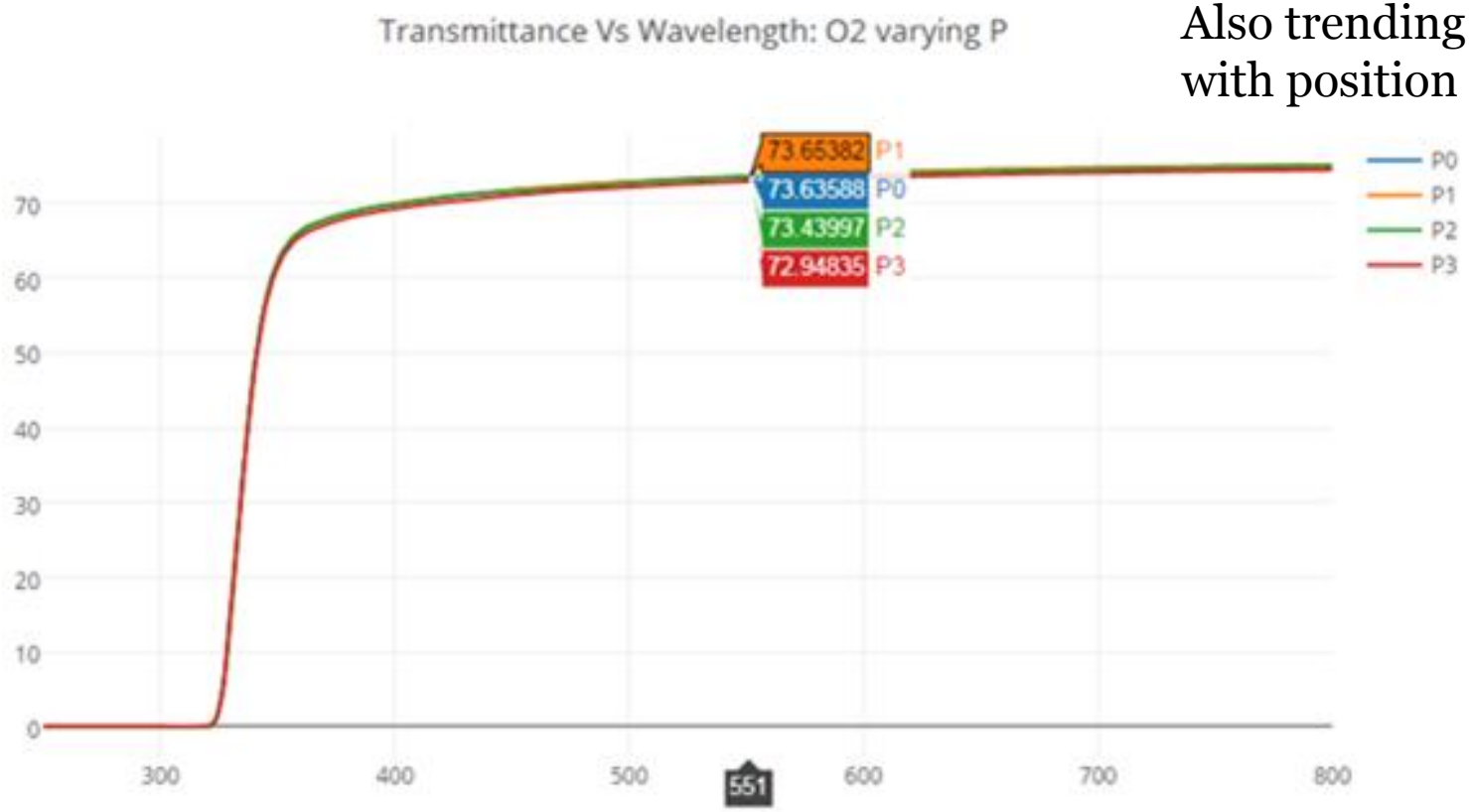


Transmittance: Orientation 1

There does seem to be a correlation between position and transmittance, although within error it is inconclusive

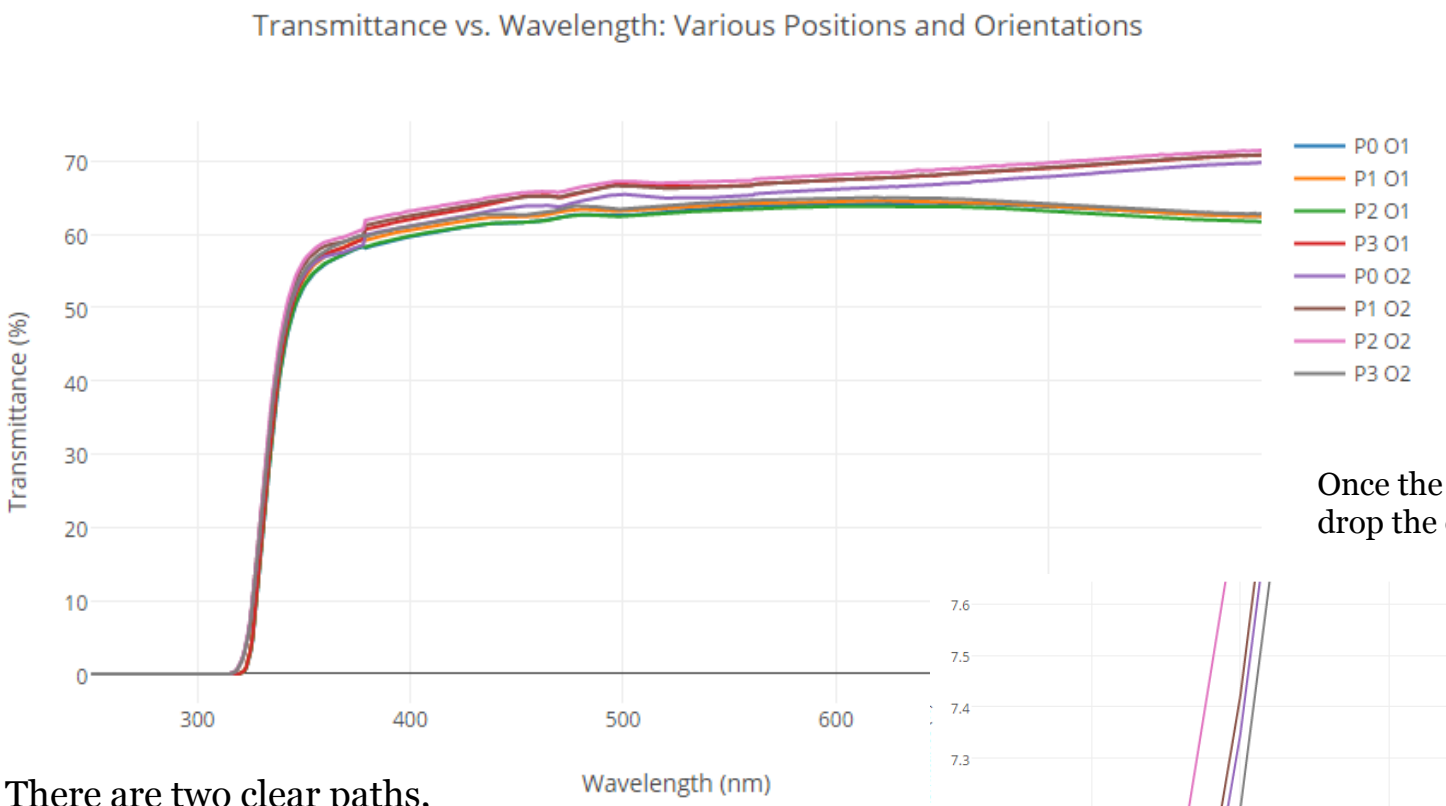


Transmittance: Orientation 2



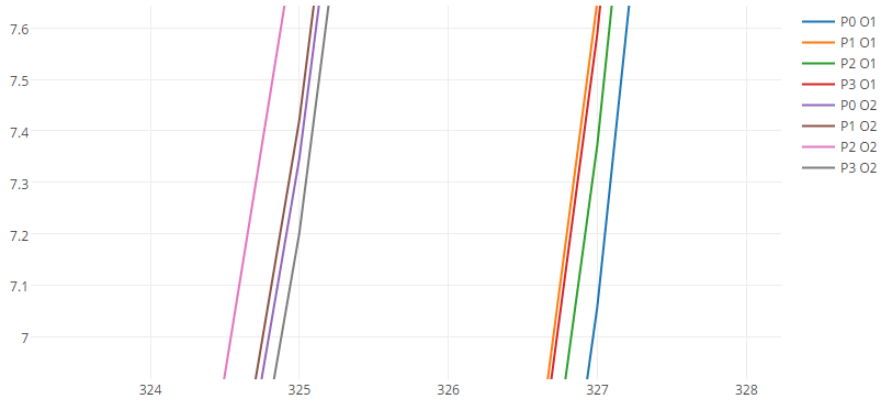
Also trending downward with position

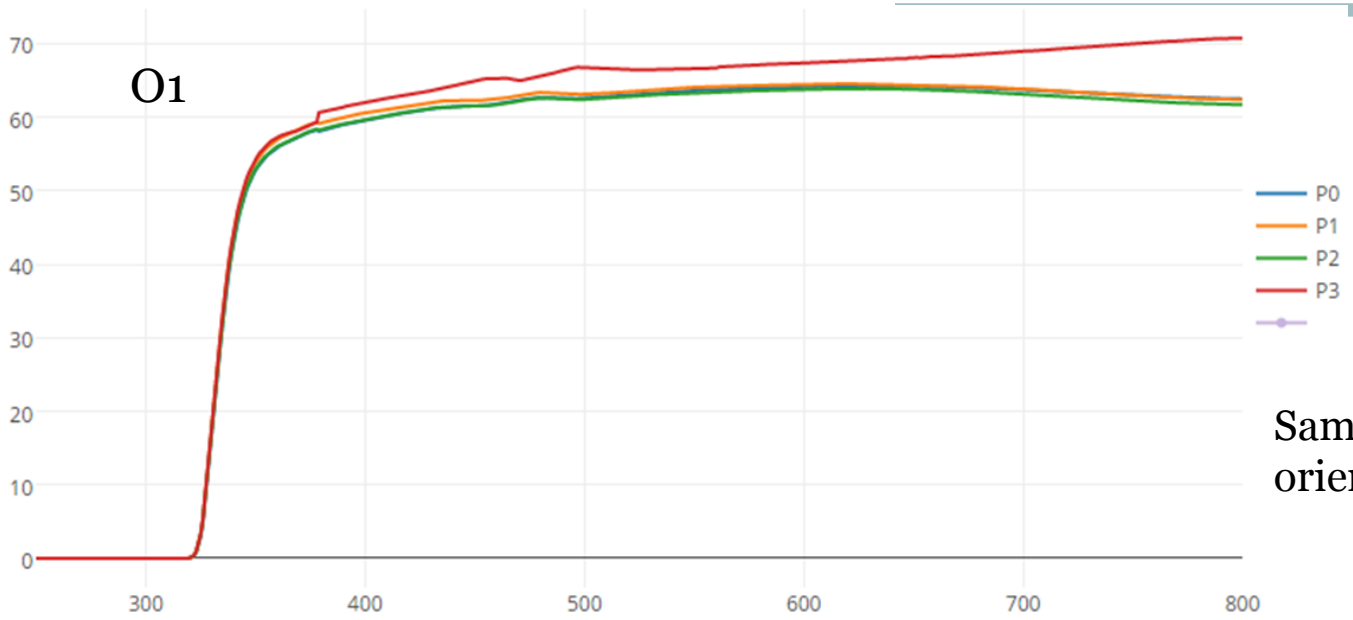
Flair Crystal Transmittance



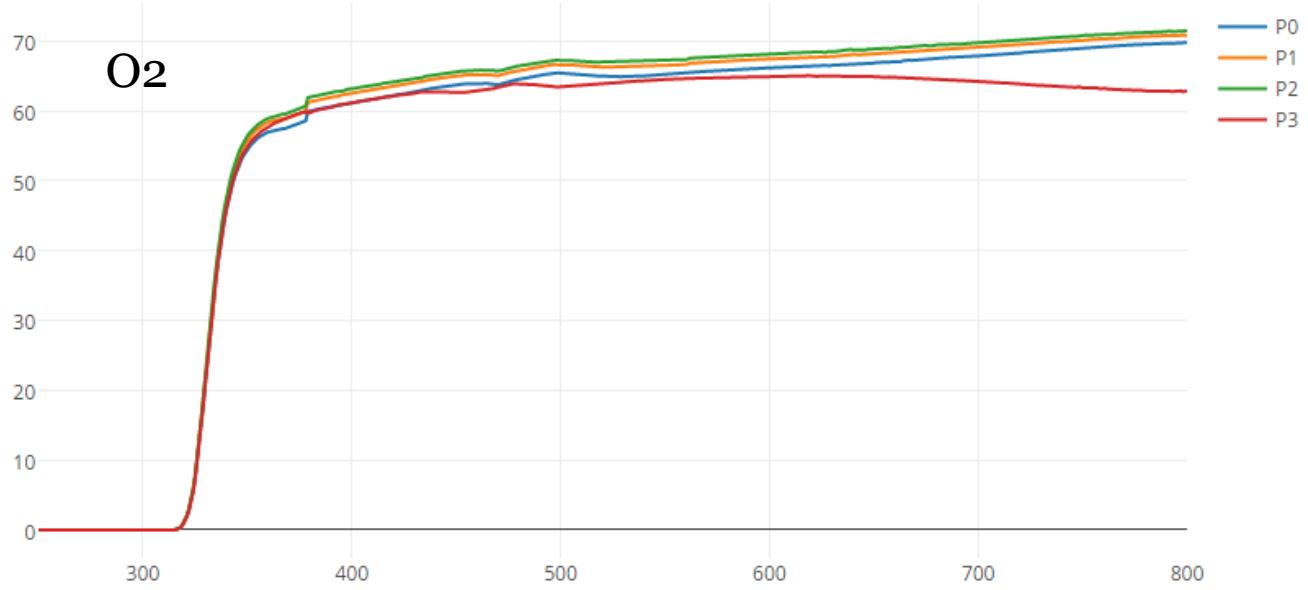
There are two clear paths, strangely, they are not correlated to orientation

Once the transmittance begins to drop the orientations separate

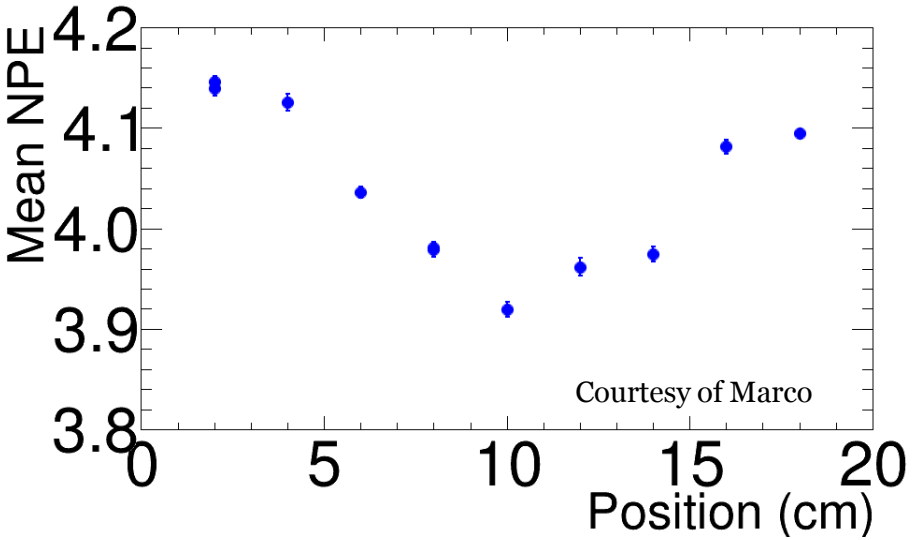




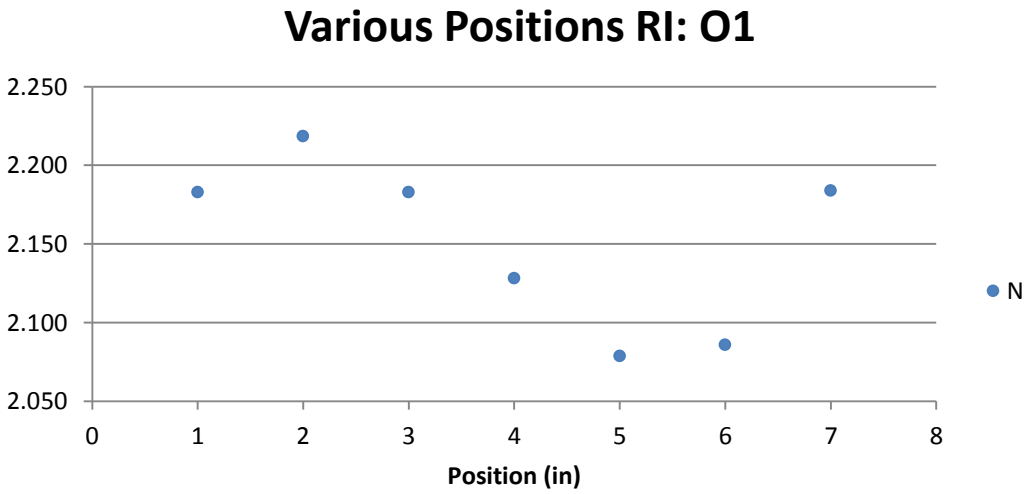
Same data, split by orientation



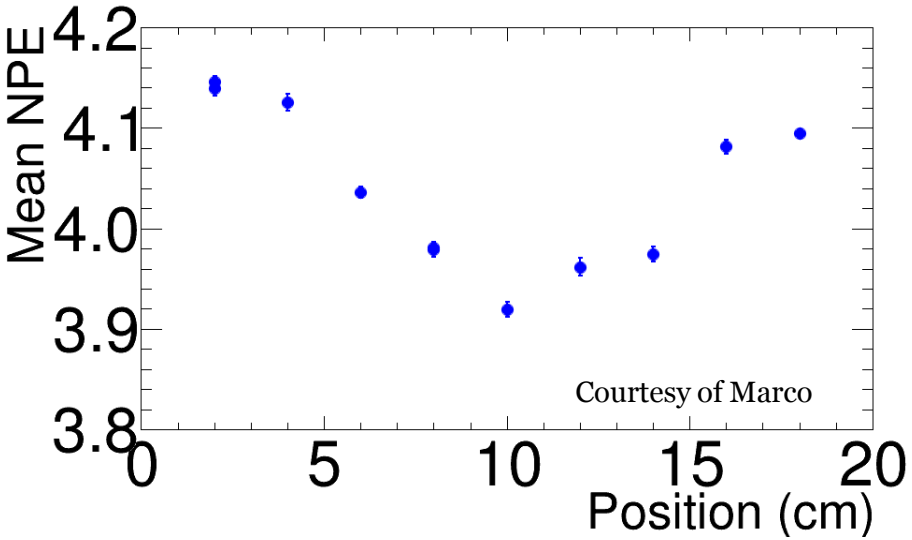
Correlation between position and characteristics?



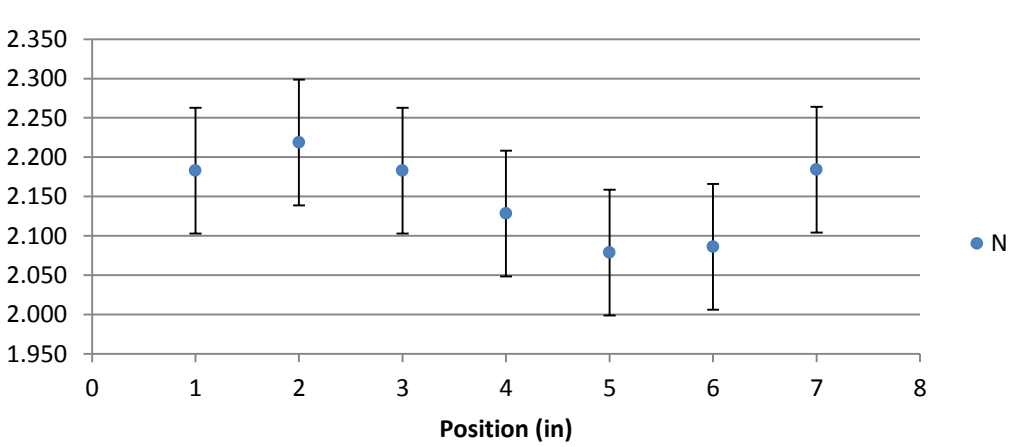
The data looks promising



Correlation between position and characteristics?



But adding error bars shows that the uncentainty is too high



Measuring Light Yield

Temperature control: