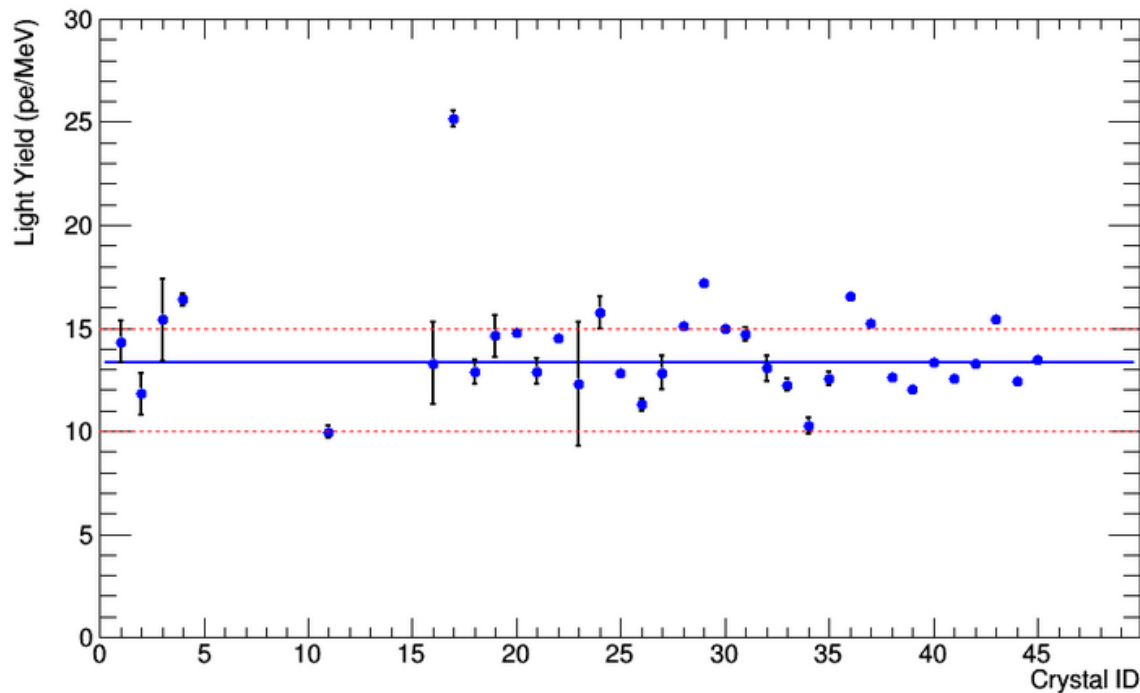


# Analyzing LY Data

# Previously Collected Data

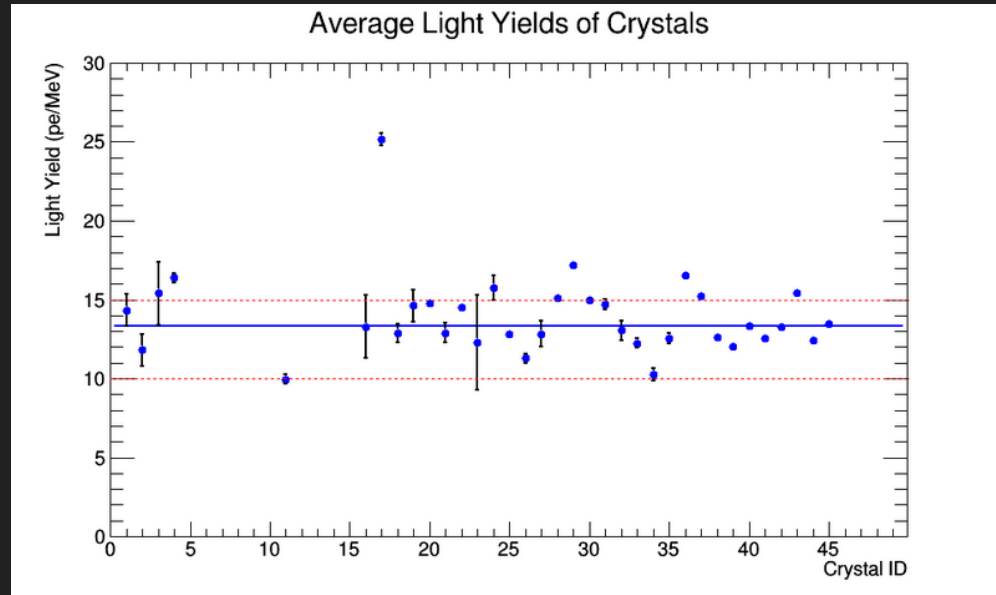
| Number | Crystal  | Average LY | Unc (Least mean squared) |
|--------|----------|------------|--------------------------|
| 3      | BTCP ### | 15.40      | 2                        |
| 1      | CRYTUR01 | 14.33      | 1                        |
| 2      | Cytur II | 11.81      | 1                        |
| 11     | J11      | 9.945      | 0.3                      |
| 16     | J16      | 13.30      | 2                        |
| 17     | J17      | 25.18      | 0.4                      |
| 18     | J18      | 12.86      | 0.6                      |
| 19     | J19      | 14.61      | 1                        |
| 20     | J20      | 14.97      | 0.1                      |
| 21     | J21      | 12.90      | 0.6                      |
| 22     | J22      | 14.10      | 0.1                      |
| 23     | J23      | 12.29      | 3                        |
| 24     | J24      | 15.74      | 0.8                      |
| 25     | J25      | 12.82      | 0.2                      |
| 26     | J26      | 11.28      | 0.3                      |
| 27     | J27      | 12.84      | 0.8                      |
| 28     | J28      | 14.31      | 0.6                      |
| 29     | J29      | 17.18      |                          |
| 30     | J30      | 13.57      | 1                        |
| 31     | J31      | 14.71      | 0.3                      |
| 32     | J32      | 13.05      | 0.6                      |
| 33     | J33      | 12.25      | 0.3                      |
| 34     | J34      | 10.27      | 0.4                      |
| 35     | J35      | 12.55      | 0.3                      |
| 36     | J36      | 16.51      | 0.2                      |
| 37     | J37      | 11.64      | 1                        |
| 38     | J38      | 12.60      | 0.2                      |
| 39     | J39      | 12.02      | 0.1                      |
| 40     | J40      | 13.34      | 0.01                     |
| 41     | J41      | 12.97      | 0.3                      |
| 42     | J42      | 13.67      | 0.3                      |
| 43     | J43      | 13.96      | 0.6                      |
| 44     | J44      | 12.40      |                          |
| 45     | J45      | 13.49      | 0.07                     |
| 4      | SICCA 02 | 16.39      | 0.3                      |

## Average Light Yields of Crystals



# Main Points

- Still need data for J28 and J44
- 20% of the crystals have average LY outside the range (10-15 pe/MeV)
  - BTCP, J11, J17, J24, J29, J36, SICCA 02
- Total Average LY =  $\sim 13$
- Next Step
  - Find the data currently missing from the graph
  - Compare our results to data from other labs



# Impact of Crystal Surface and Reflector on Light Collection

- Conducted one run on the Crystal BGO (run 3673)
  - At this point I don't have the results yet because the different dimensions may have been an issue
- Next Step: Become more familiar with the data, and work on optimizing the Surface and Reflector