

Data Quality Check for 2.2 GeV, 2.5T, Transverse

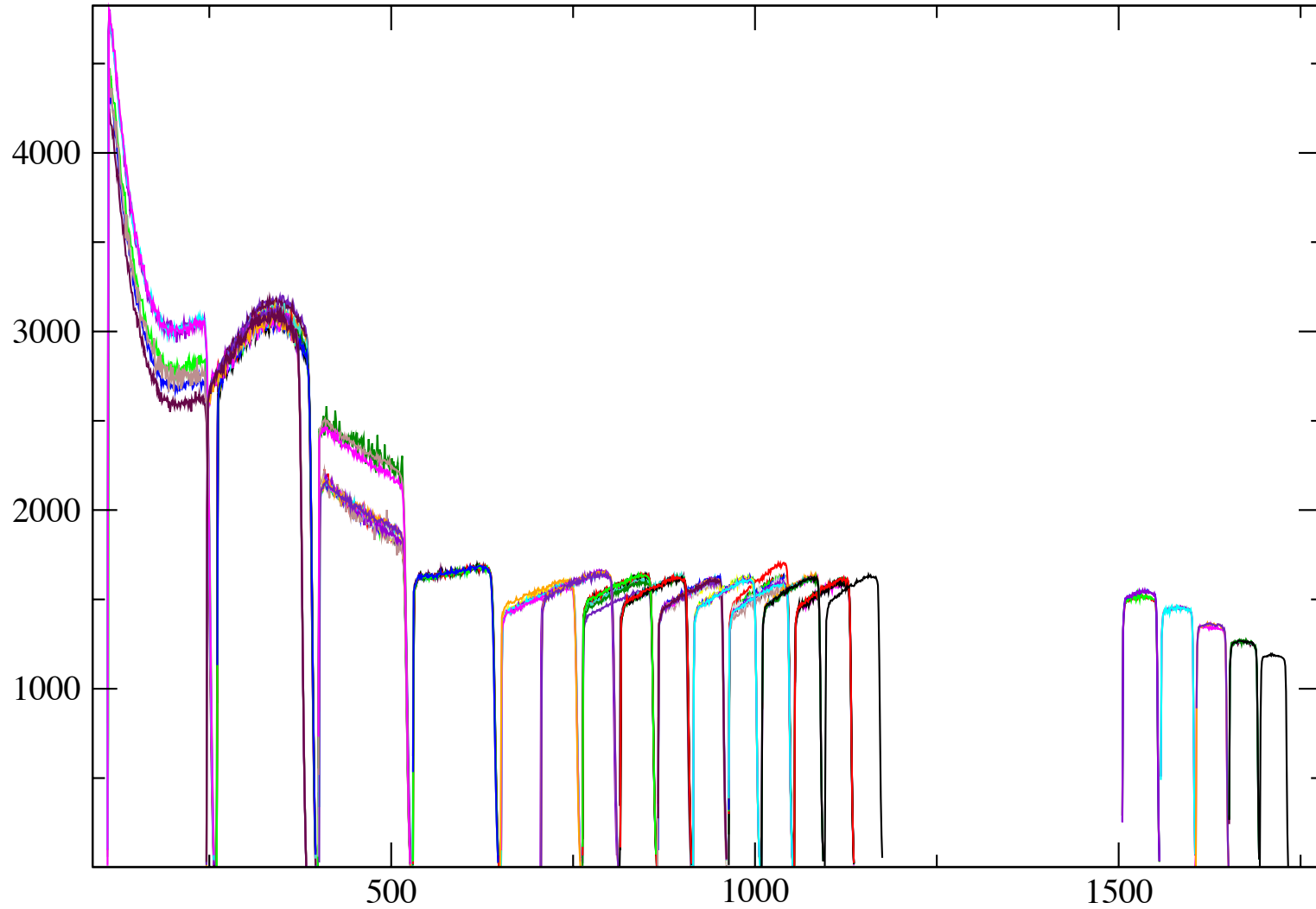
M. Cummings

1/21/15

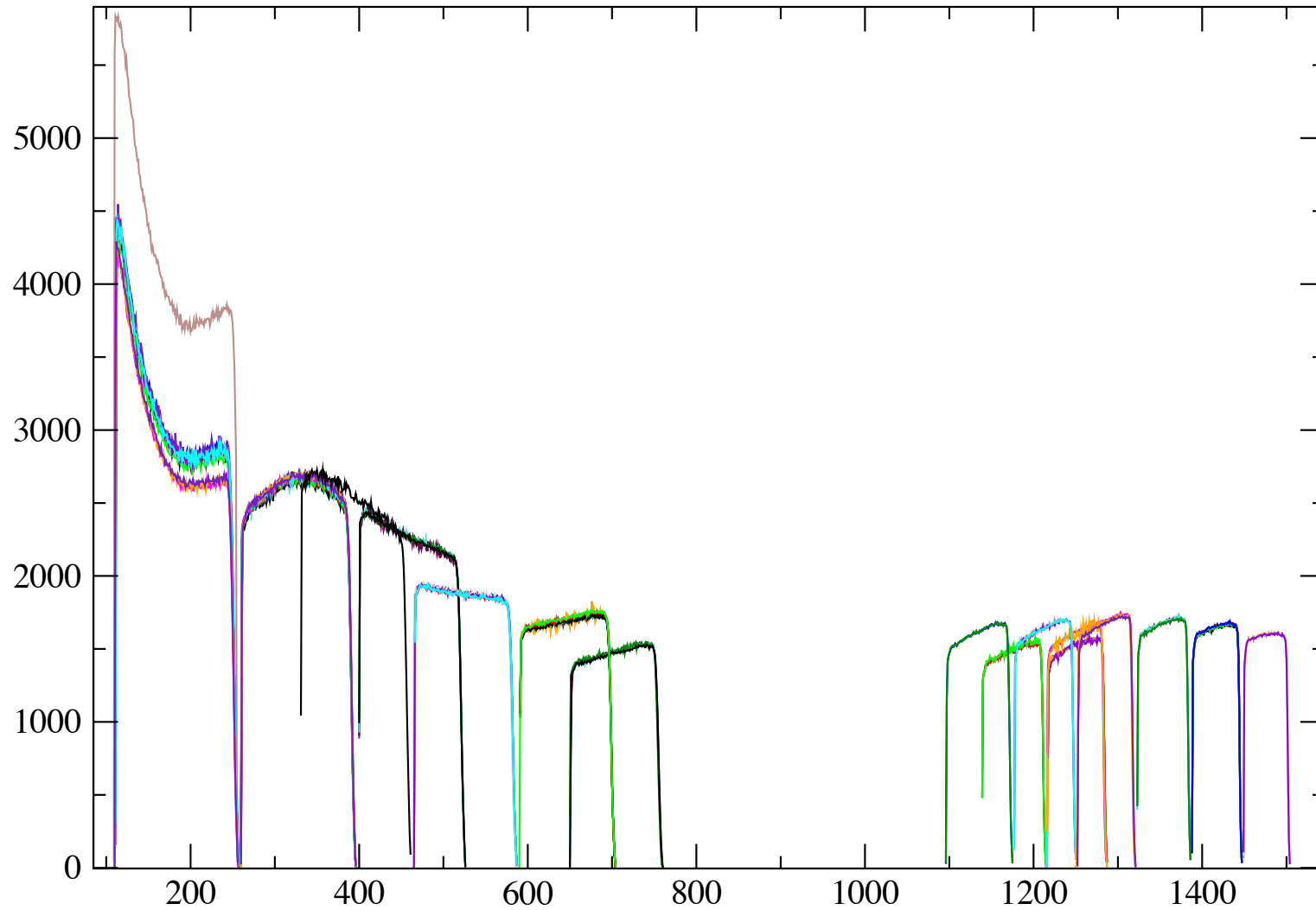
2.2 GeV, 2.5T, Transverse Setting

- 37 unique settings (different p0 or material)
 - 259 production runs
- Biggest issue seems to be changes in beam position
 - Often corresponds to beam down time

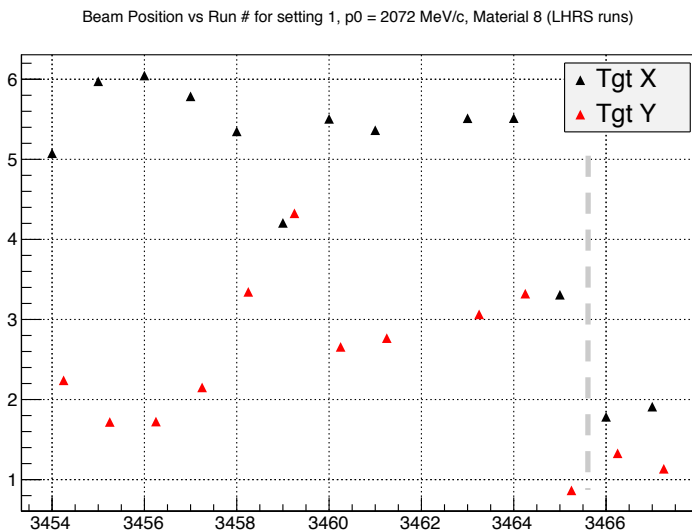
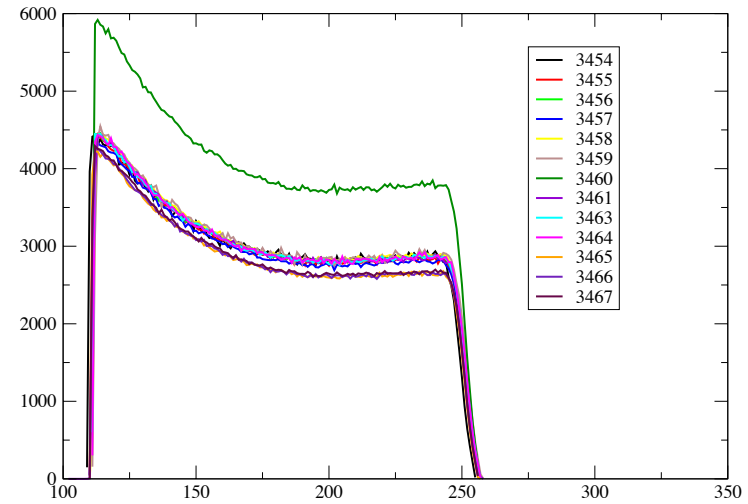
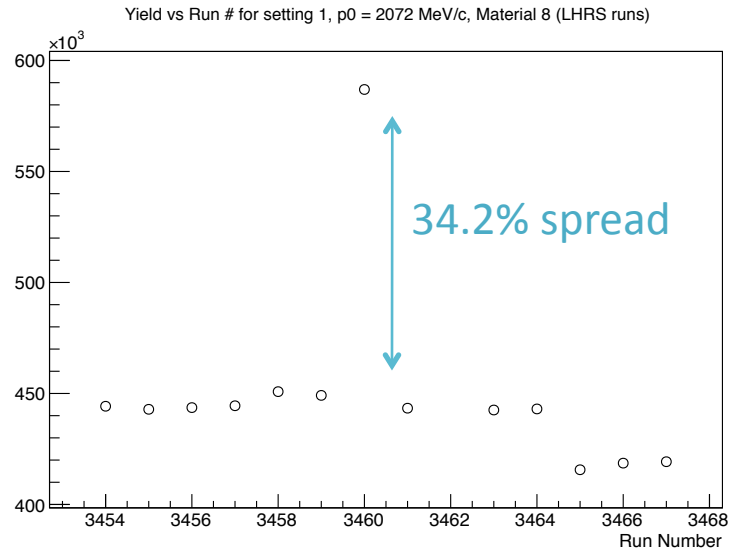
Material 7 – Global Picture



Material 8 – Global Picture

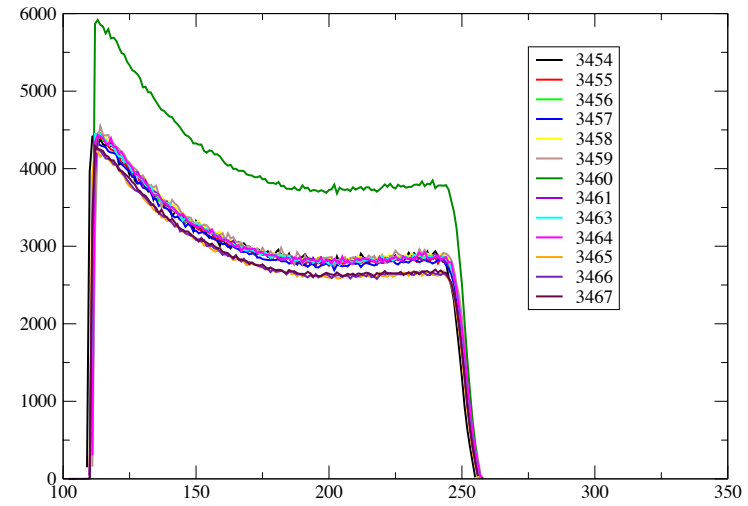
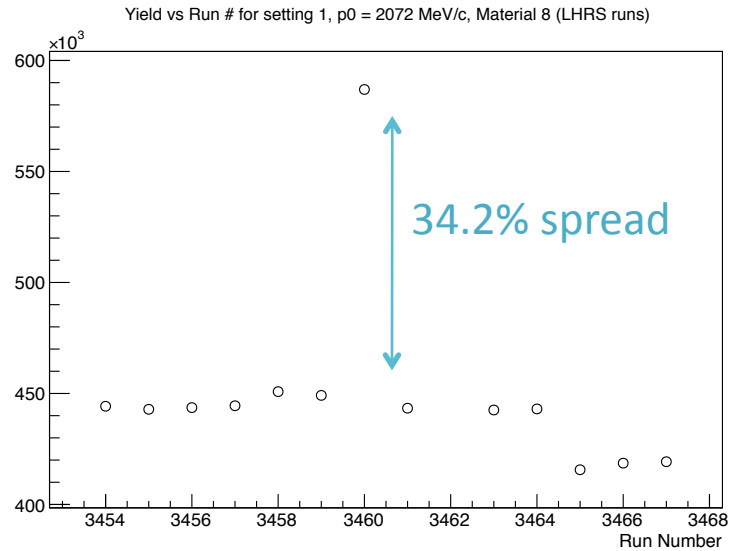


$p_0 = 2.072 \text{ GeV}/c$, material 8

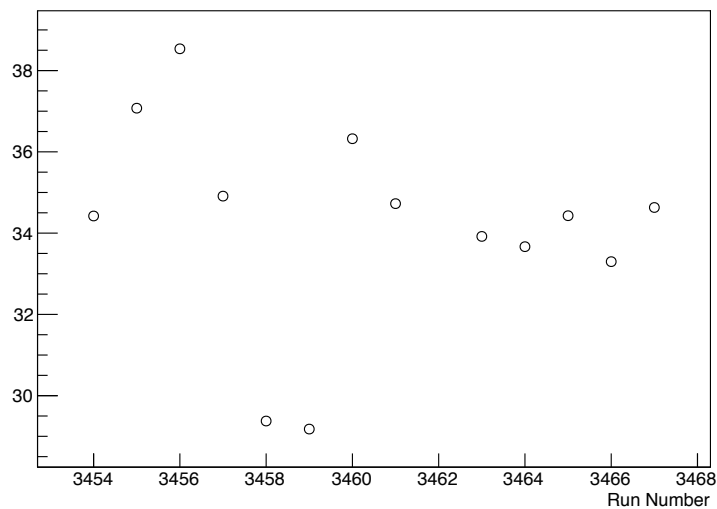


- Nothing in HALOG about run 3460
- Without run 3460, spread is still $\sim 8\%$
- Beam was down for ~ 2.5 hrs between 3464/3465

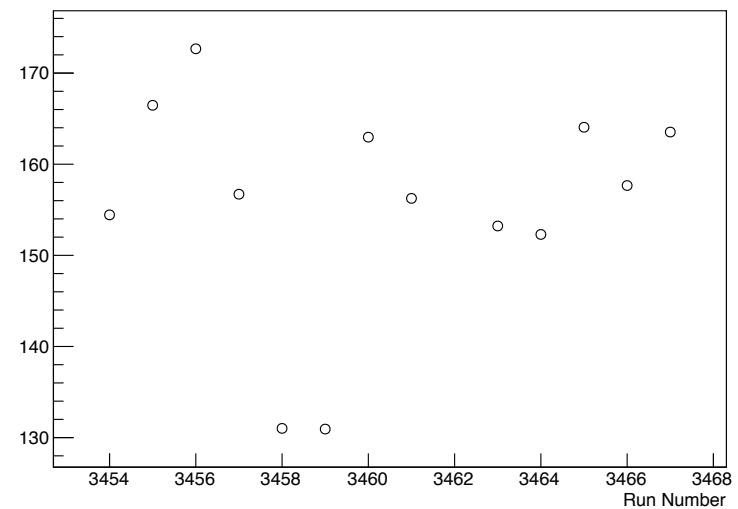
$p_0 = 2.072 \text{ GeV}/C$, material 8



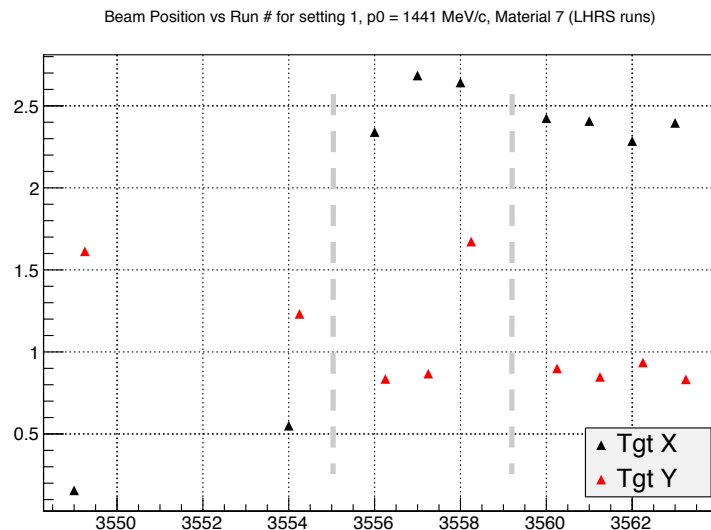
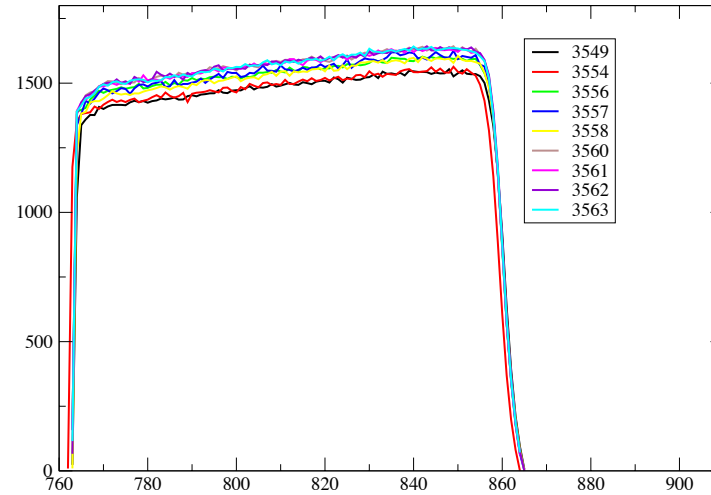
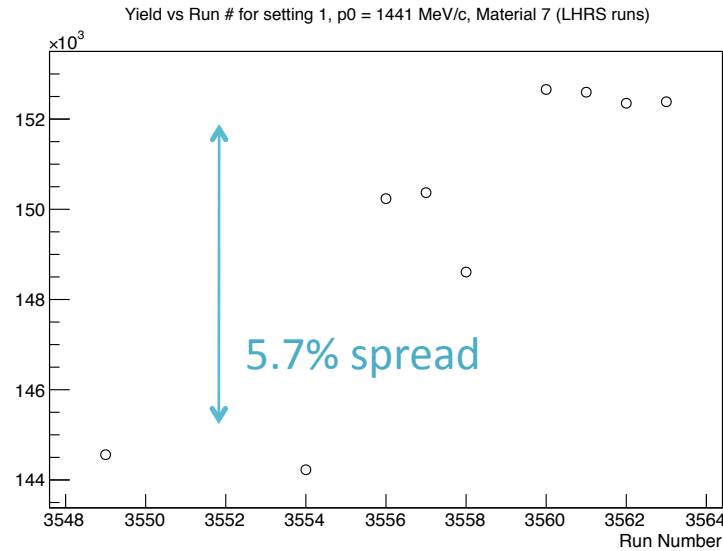
Scaler T3 Counts Normalized by 1kHz Clock



Scaler BCM_down Counts Normalized by 1 kHz Clock

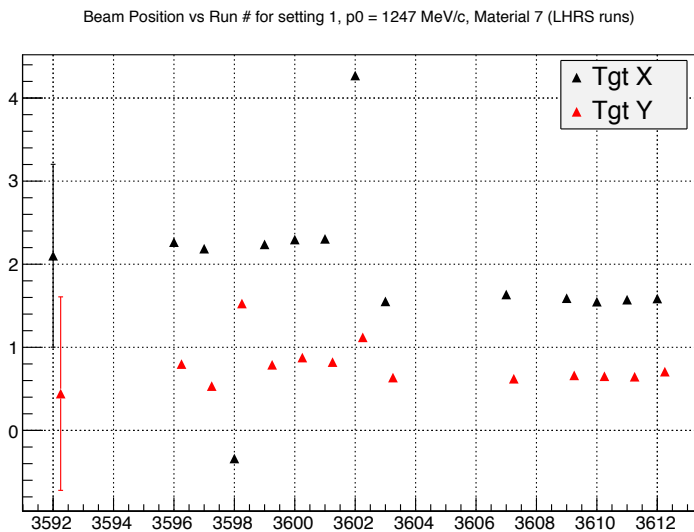
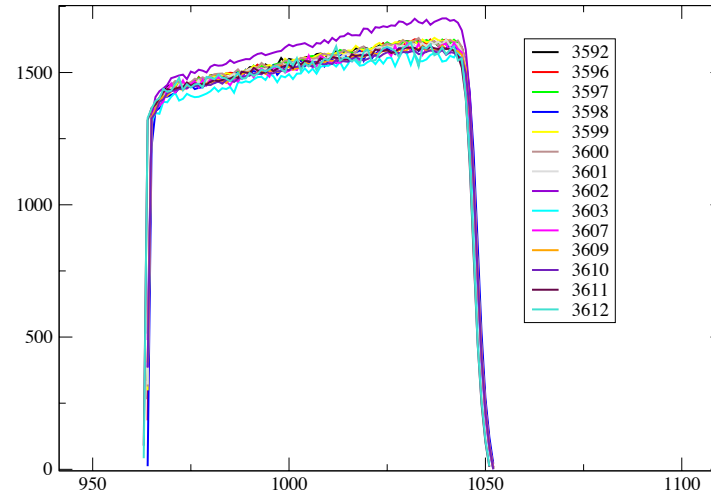
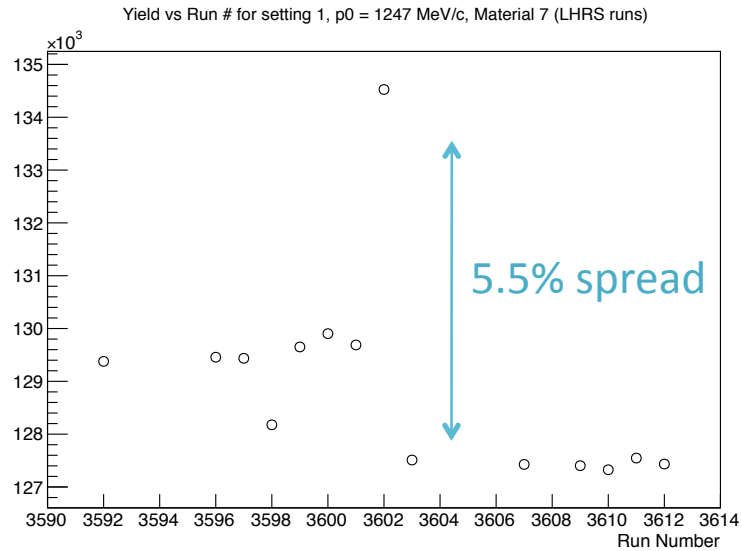


$p_0 = 1.441 \text{ GeV}/C$, material 7



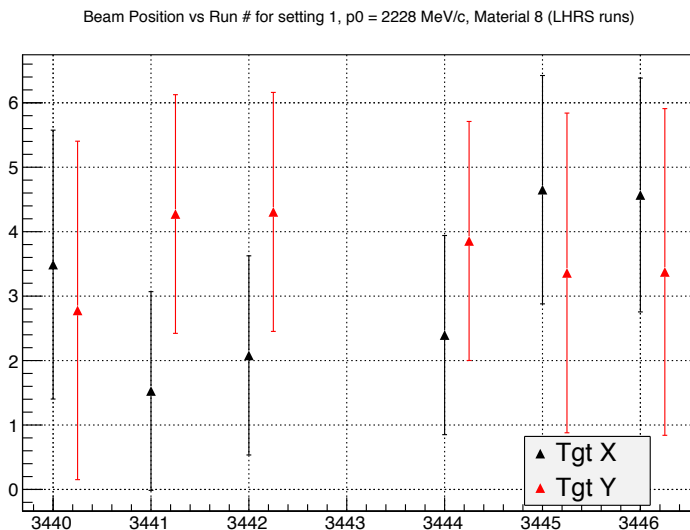
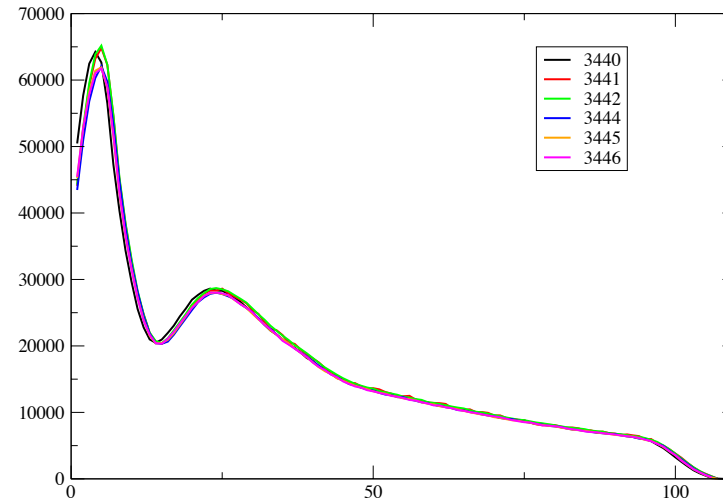
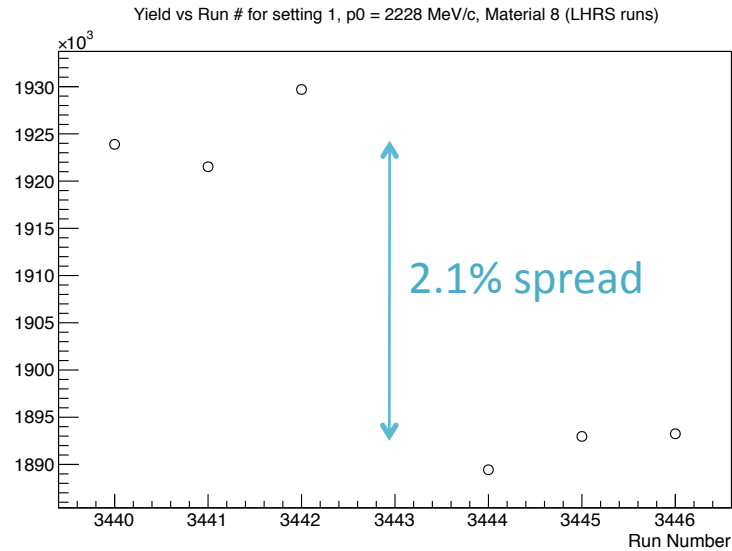
- Slow raster size was adjusted from 2 cm to 1.8 cm between runs 3554 and 3556
- Beam position was adjusted between runs 3558 and 3560

$p_0 = 1.247 \text{ GeV}/C$, material 7



- Beam requested off for ~ 15 minutes for new target baseline
 - after run 3601
- Beam position changed after a HWP flip
 - Beam position was restored before run 3603
 - w/out 3602, spread is $\sim 2\%$

$p_0 = 2.228 \text{ GeV}/c$, material 8



- For runs 3440-3442 the RHRS rate was low, it turned out the sieve slit was still in
- Slit was removed for run 3444-3446
 - in all, only ~ 20 minutes of downtime

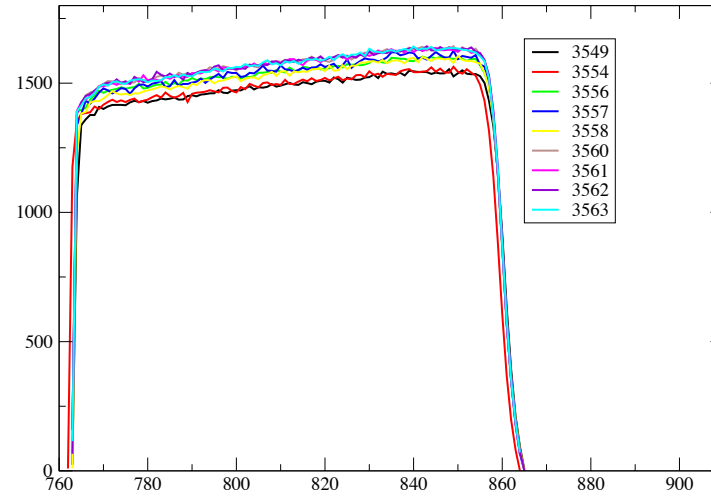
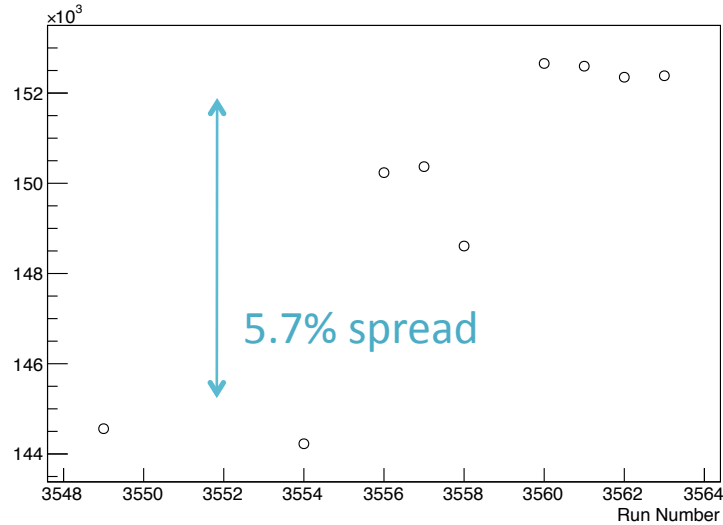
To Do:

- Look at RHRS runs (once they are replayed)
- Packing Fraction:
 - Still need to extract p_f values for all material – will start with settings that don't have yield issues
 - Working on technote

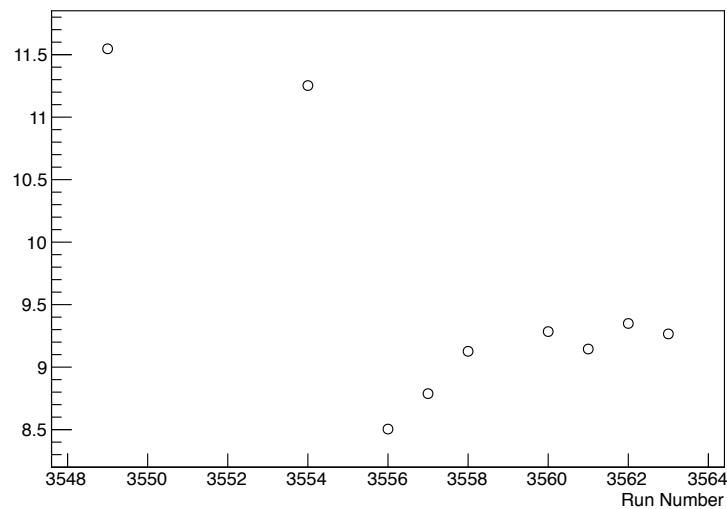
Backup

$p_0 = 1.441 \text{ GeV}/C$, material 7

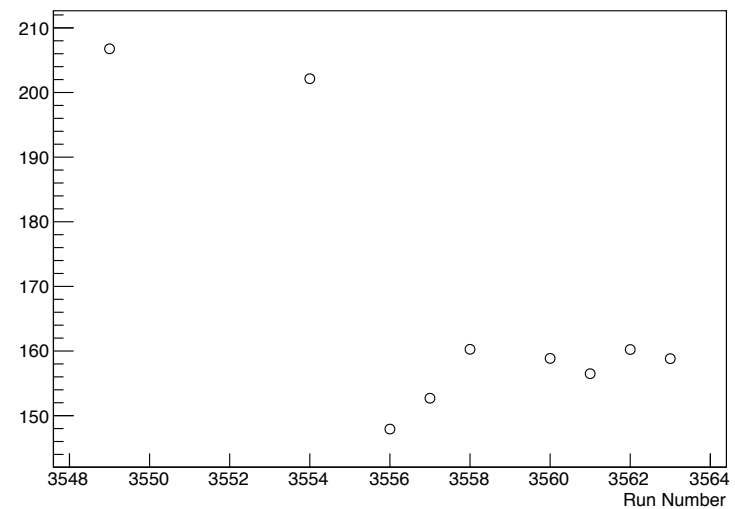
Yield vs Run # for setting 1, $p_0 = 1441 \text{ MeV}/c$, Material 7 (LHRS runs)



Scaler T3 Counts Normalized by 1kHz Clock

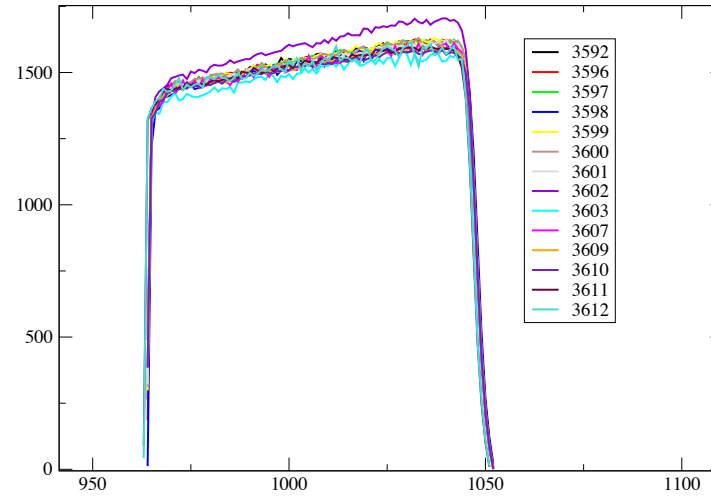
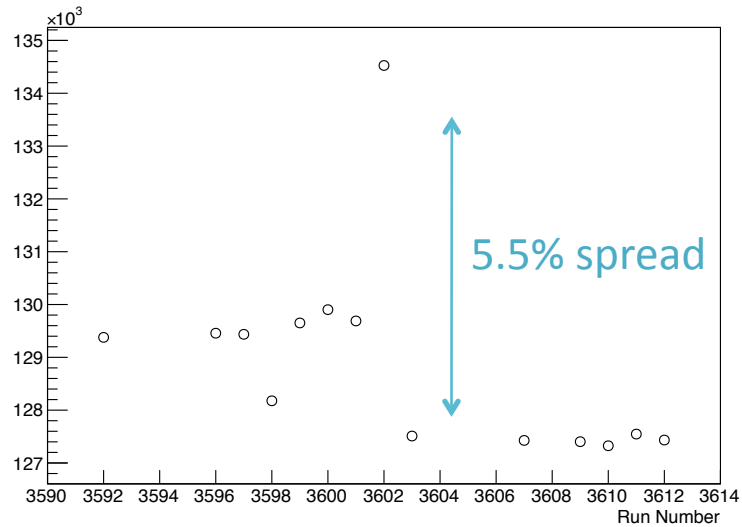


Scaler BCM_down Counts Normalized by 1 kHz Clock

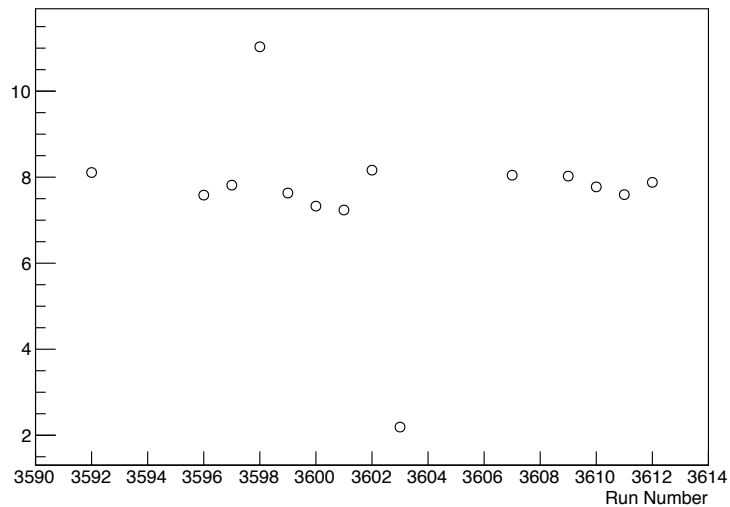


$p_0 = 1.247 \text{ GeV}/c$, material 7

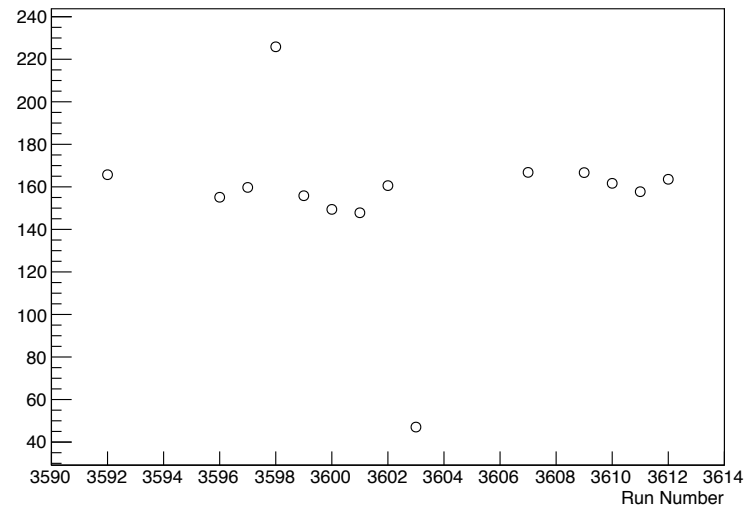
Yield vs Run # for setting 1, $p_0 = 1247 \text{ MeV}/c$, Material 7 (LHRS runs)



Scaler T3 Counts Normalized by 1kHz Clock

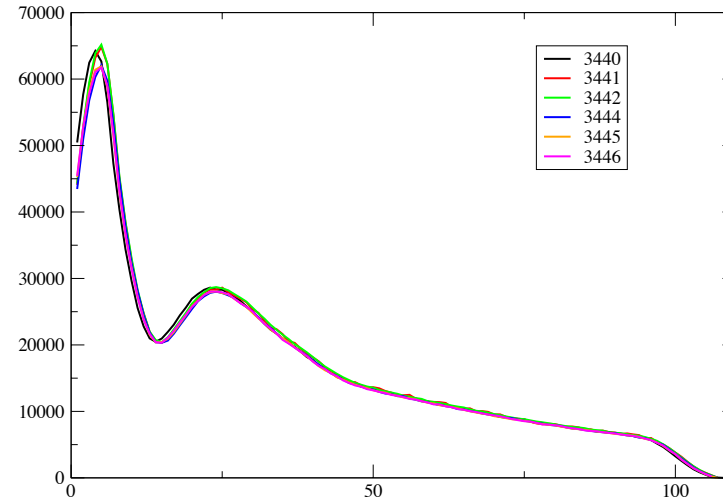
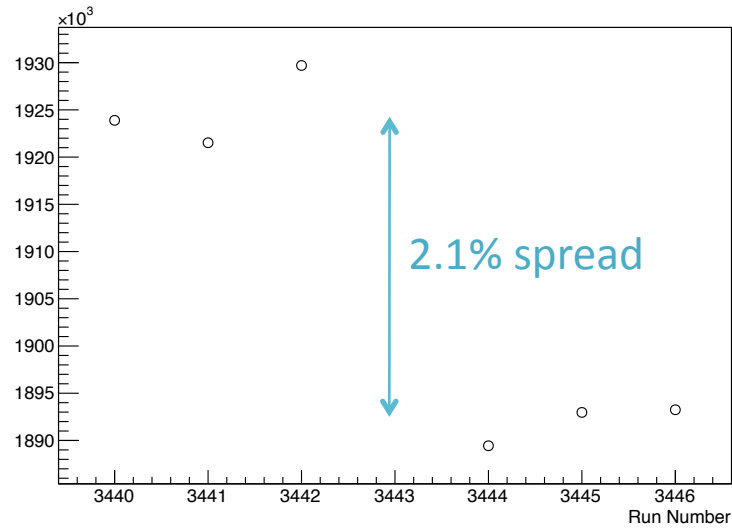


Scaler BCM_down Counts Normalized by 1 kHz Clock



$p_0 = 2.228 \text{ GeV}/c$, material 8

Yield vs Run # for setting 1, $p_0 = 2228 \text{ MeV}/c$, Material 8 (LHRS runs)



Scaler T3 Counts Normalized by 1kHz Clock

