

SMD strips were missing at sector boundaries because they extruded the volume which created them. Increasing the size of the volume which created them appears to have done the trick.

Block EXSG Is another logical volume... this one actually creates the planes

C--

C-- Creates:

C-- + EHMS -- shower max strips

C-- + EFLS -- front cover for SMD planes

C-- + EBLS -- back cover for SMD planes

C--

Attribute EXSG seen=1 colo=7 serial=cut lsty=3

Material Air

Shape TUBS dz=emcs_gapsmd/3/2,
rmin=section*tan_low-1.526,
rmax=(section-secwid/2)*tan_upp+dup,
phi1=emcs_phimin/emcs_nsupsec,
phi2=emcs_phimax/emcs_nsupsec

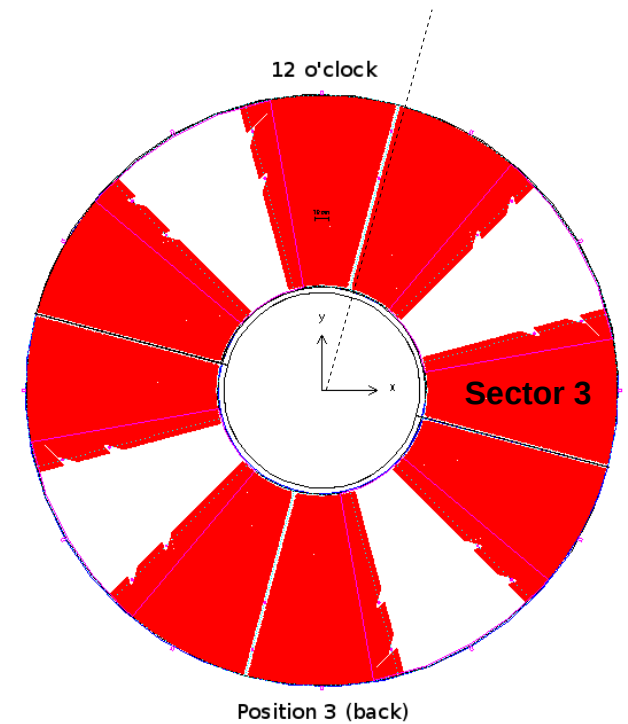
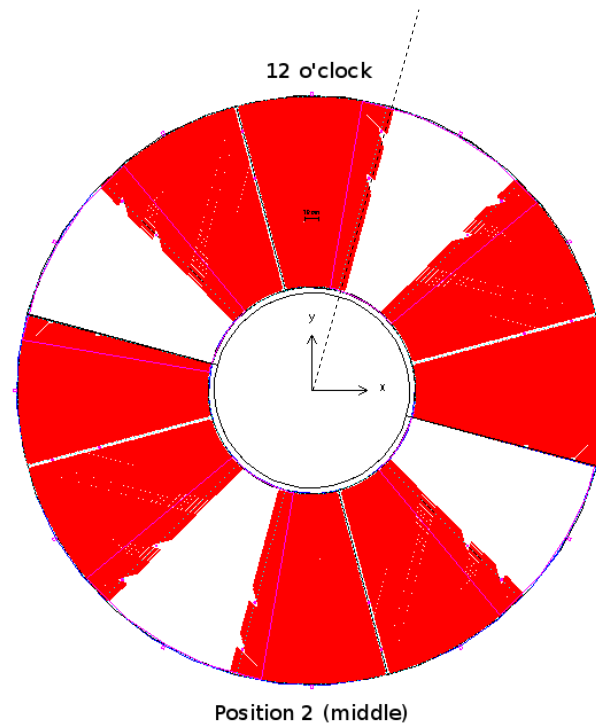
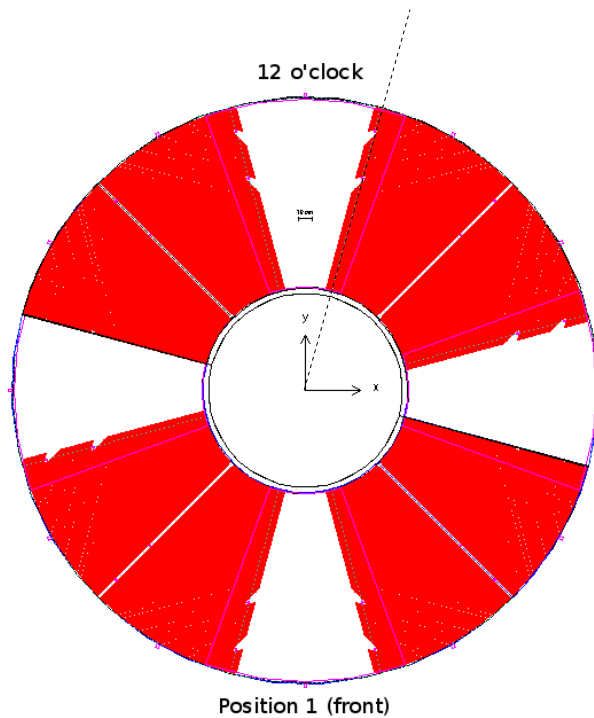
....

EndBLOCK

Constrains daughter volumes within sector boundaries

Solution: increase size of volume to +/- 20 degrees, and set EXSG as a MANY volume

Expected Pattern



At 75° expect:

- position 1 filled
- position 2 filled
- position 3 empty

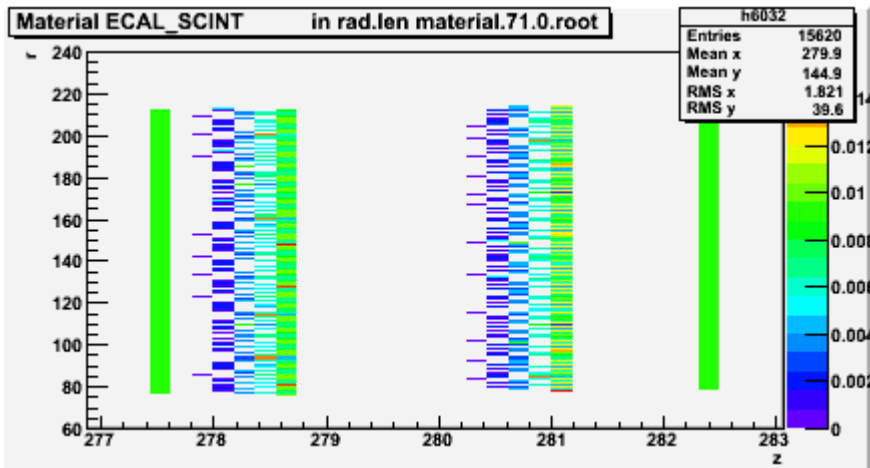
At $< 75^\circ$ expect:

- position 1 filled
- position 2 empty or partial
- position 3 filled

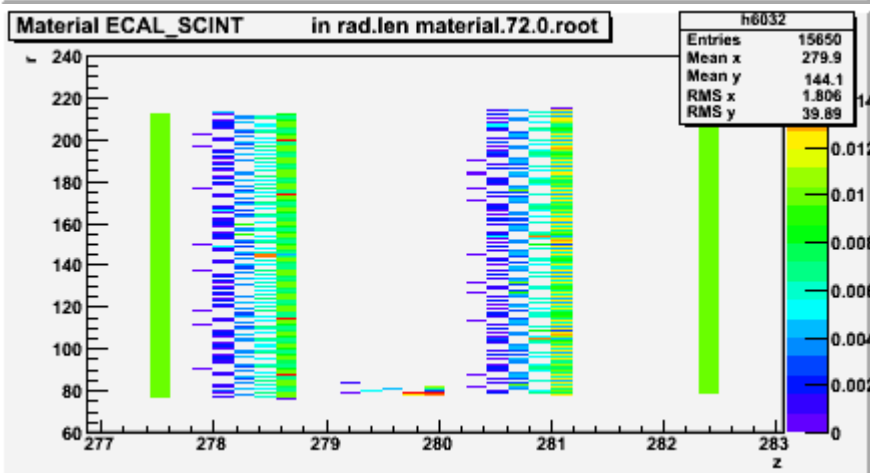
At $> 75^\circ$ expect:

- position 1 empty
- position 2 filled
- position 3 empty or partial

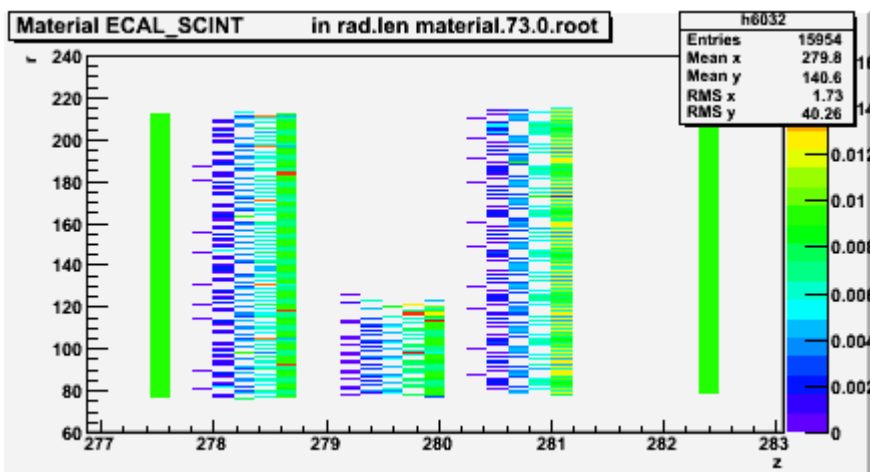
$\phi = 71^\circ$



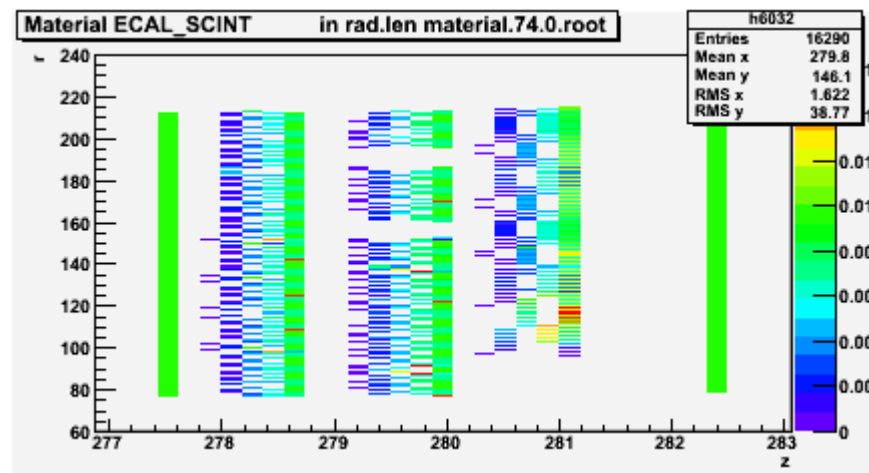
$\phi = 72^\circ$



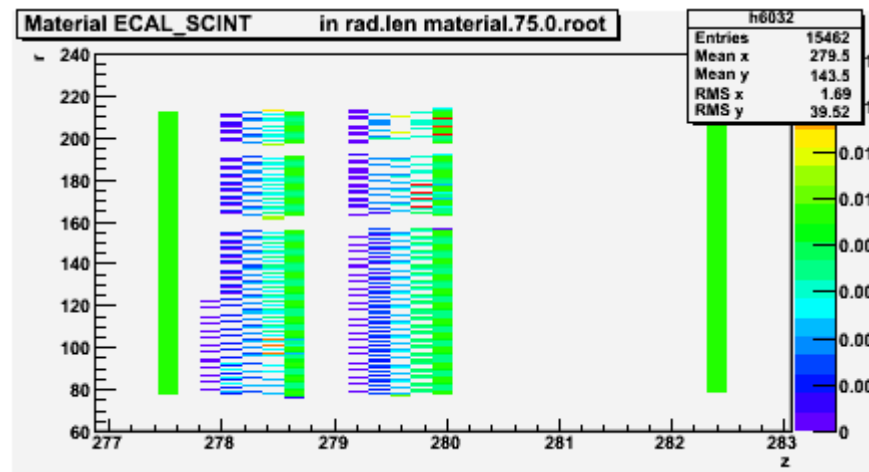
$\phi = 73^\circ$



$\phi = 74^\circ$



$\phi = 75^\circ$



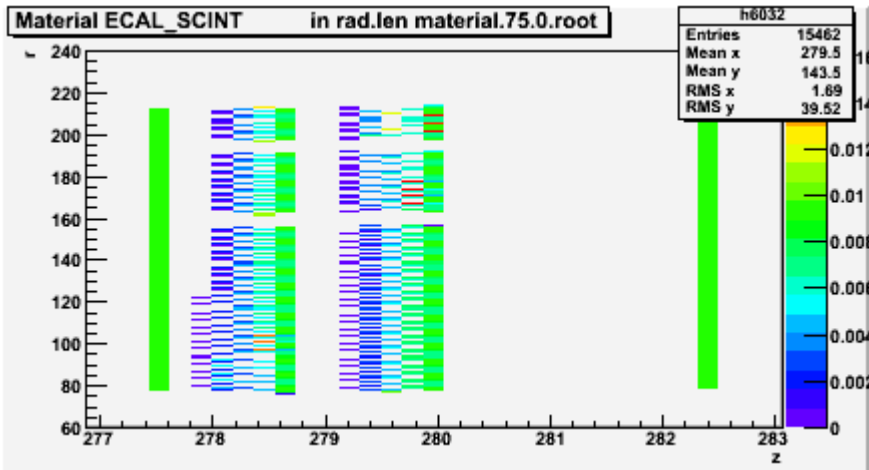
Sector 01-12 boundary
 ϕ slices in 1° steps from 71° to 75°

Expected pattern is seen

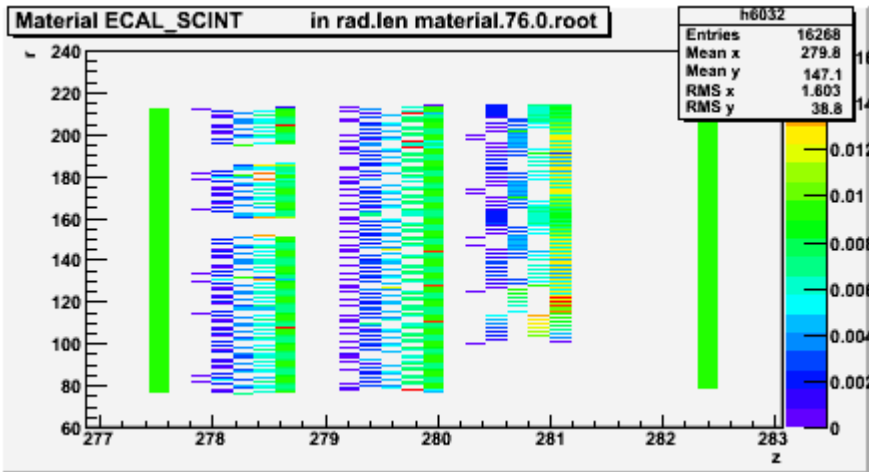
Sector 01-12 boundary
 ϕ slices in 1° steps from 75° to 79°

Expected pattern is seen

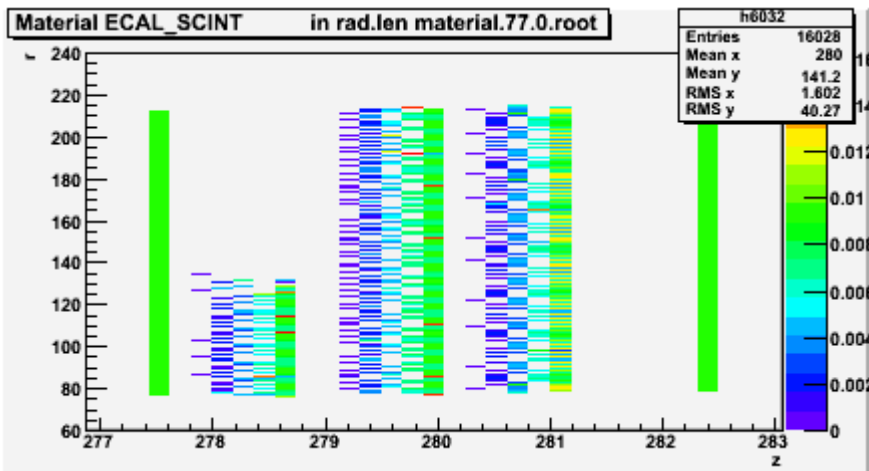
$\phi = 75^\circ$



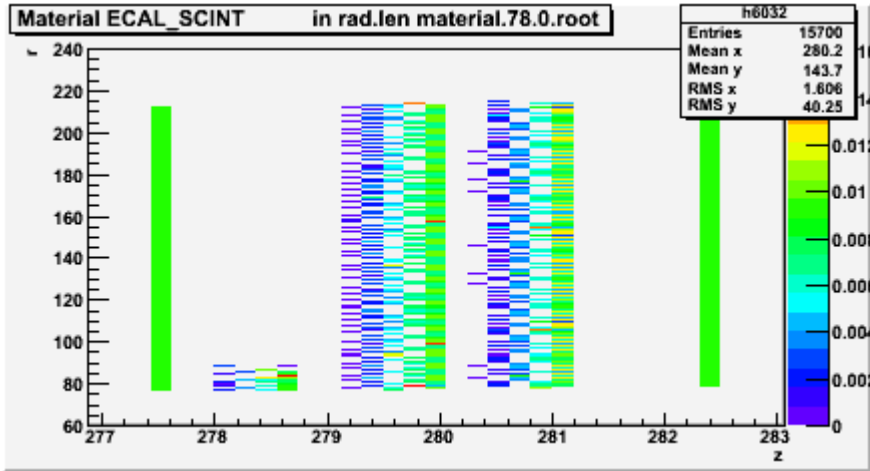
$\phi = 76^\circ$



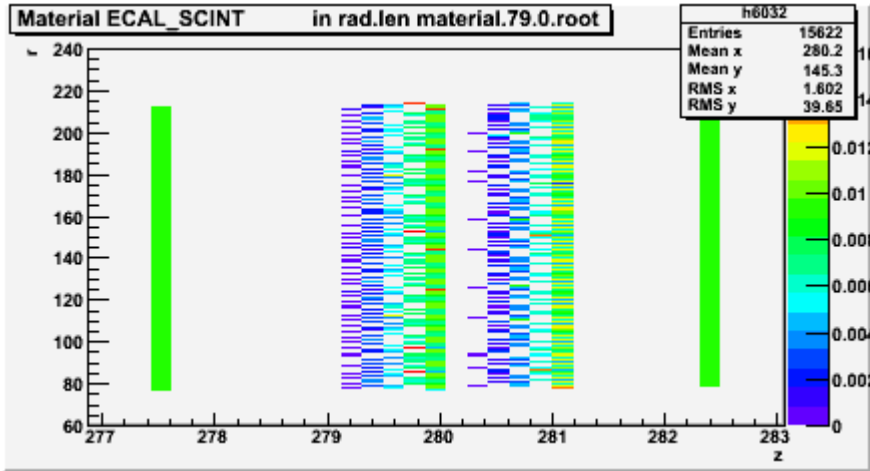
$\phi = 77^\circ$



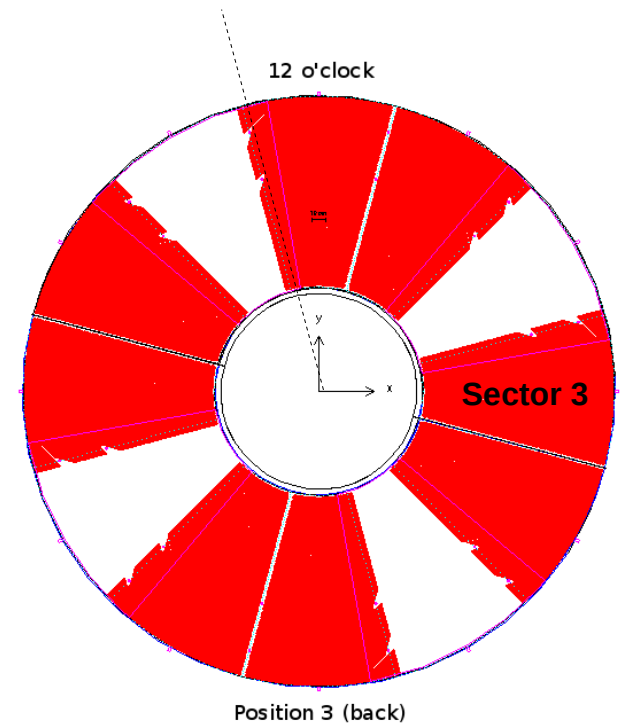
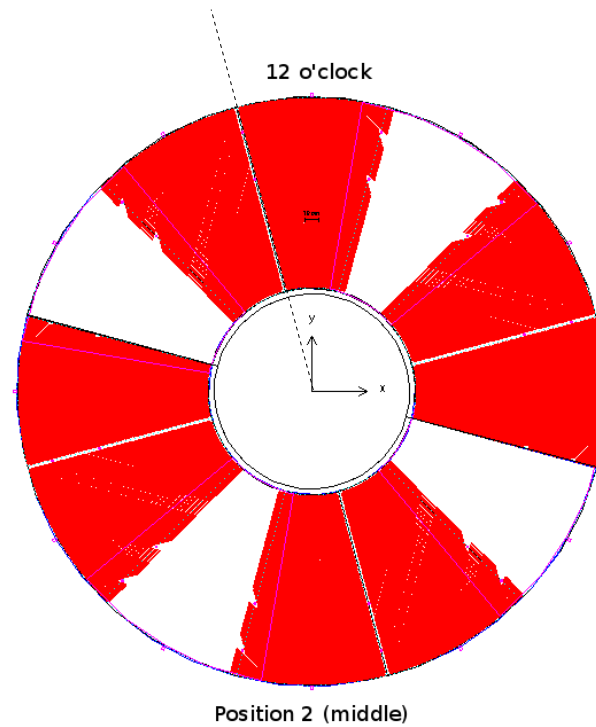
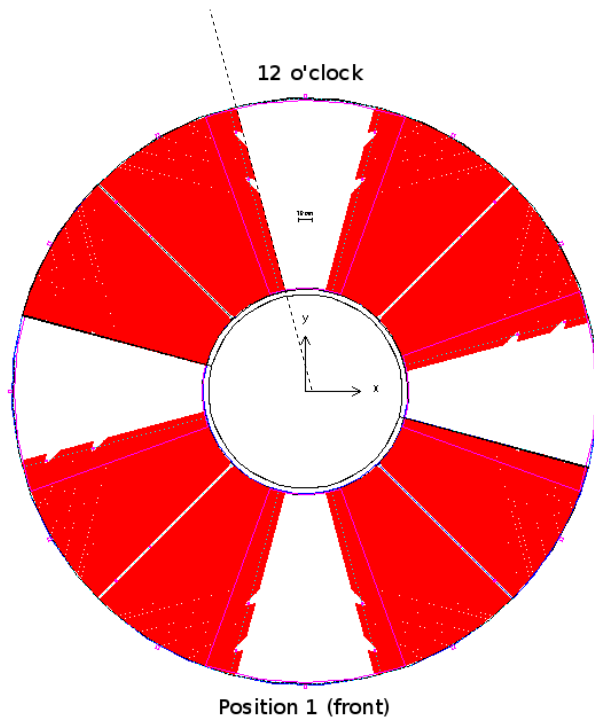
$\phi = 78^\circ$



$\phi = 79^\circ$



Expected Pattern



At 105° expect:

- position 1 filled
- position 2 empty
- position 3 filled

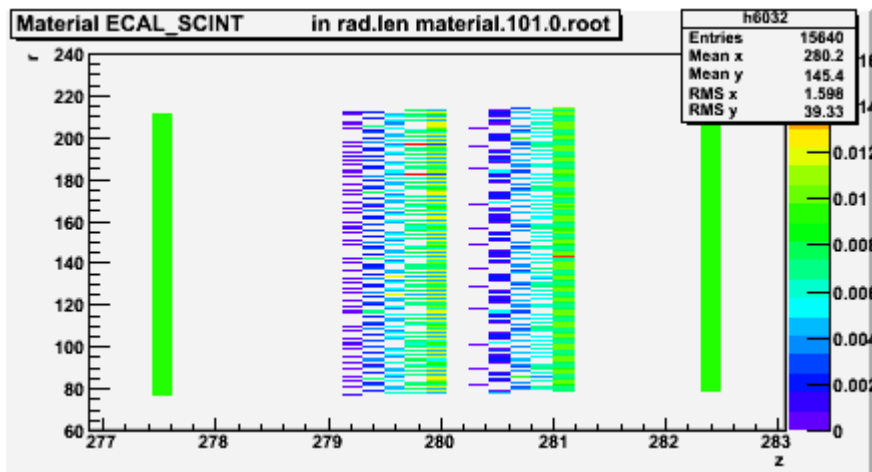
At $< 105^\circ$ expect:

- position 1 empty or partial
- position 2 filled
- position 3 filled

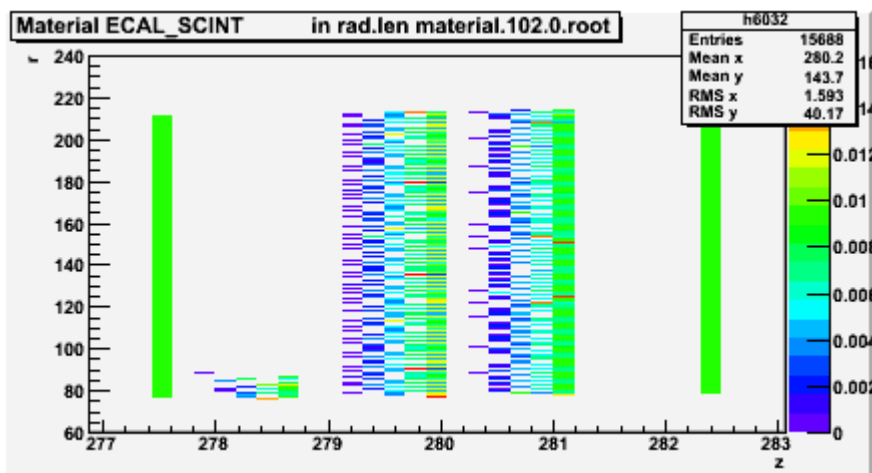
At $> 105^\circ$ expect:

- position 1 filled
- position 2 filled
- position 3 empty or partial

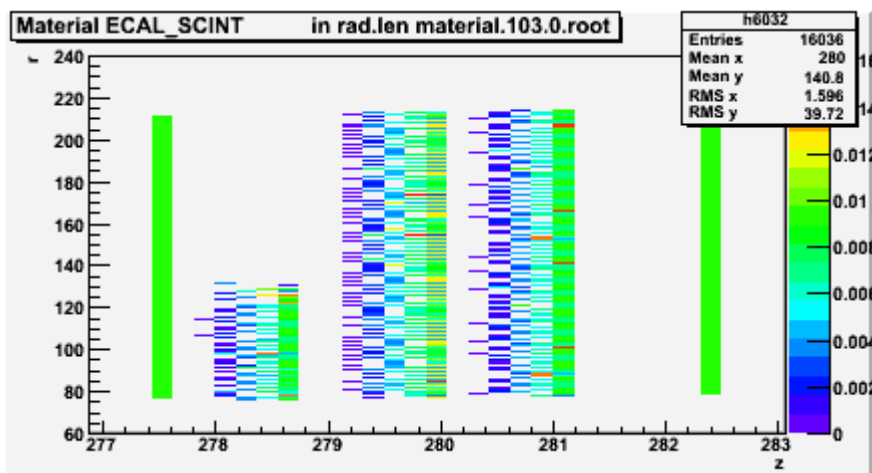
$\phi = 101^\circ$



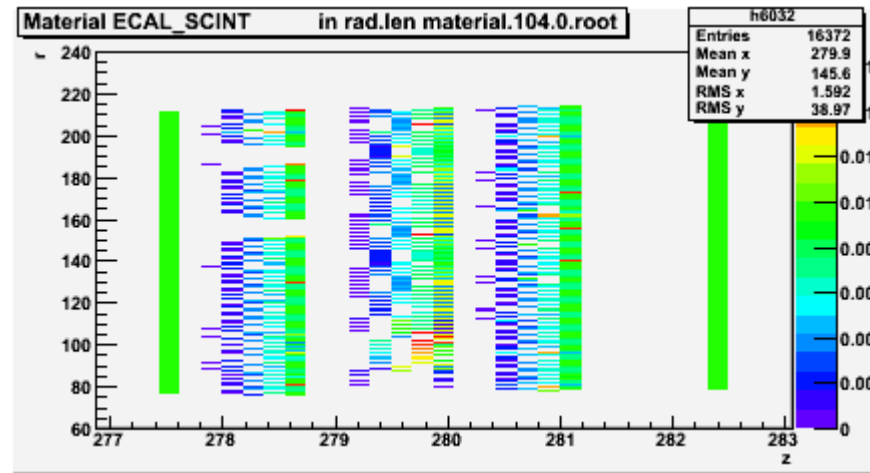
$\phi = 102^\circ$



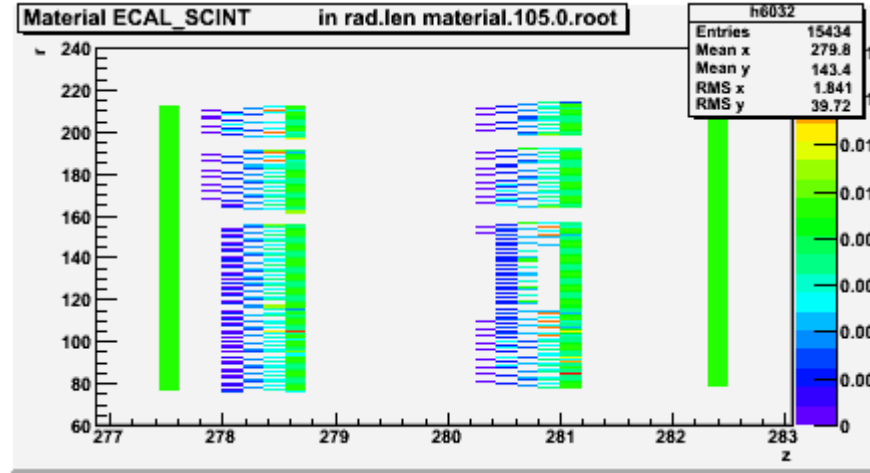
$\phi = 103^\circ$



$\phi = 104^\circ$



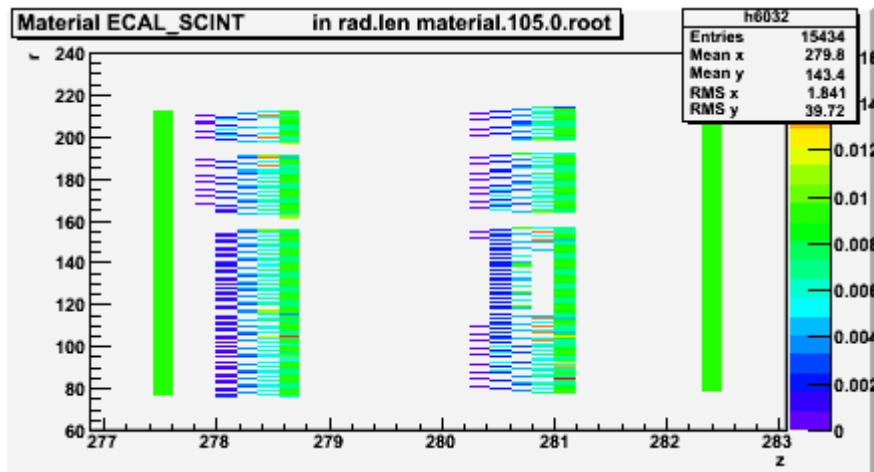
$\phi = 105^\circ$



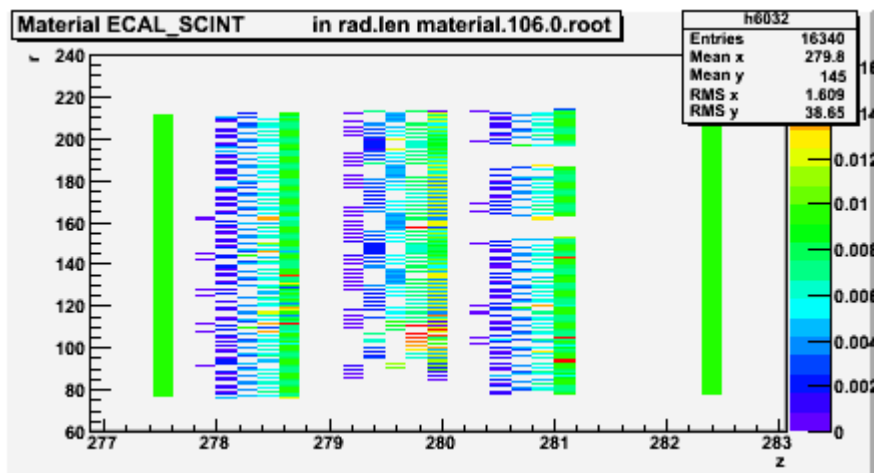
Sector 12-11 boundary
 ϕ slices in 1° steps from 101° to 105°

Expected pattern is seen

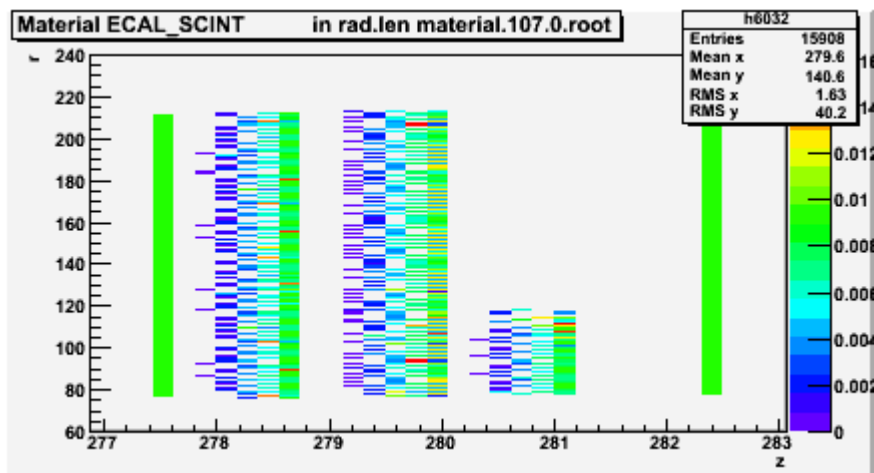
$\phi = 105^\circ$



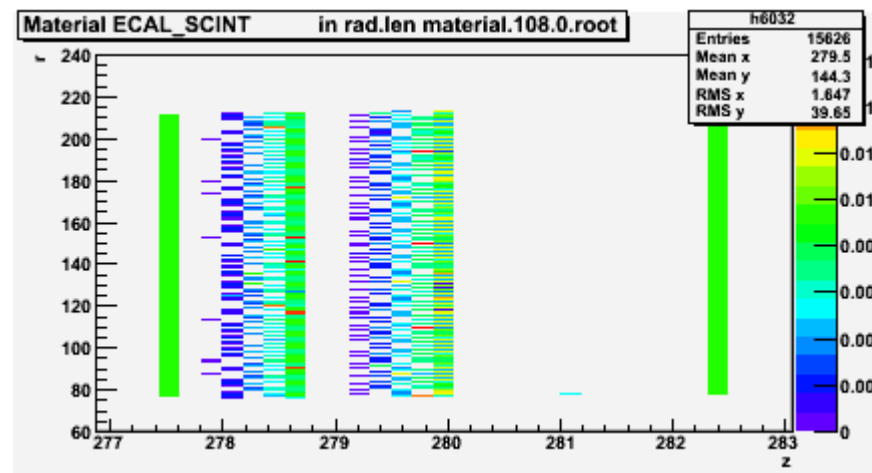
$\phi = 106^\circ$



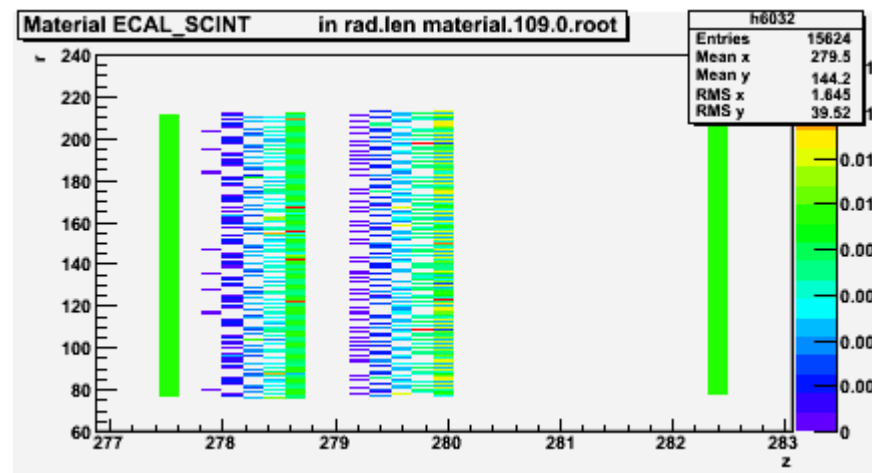
$\phi = 107^\circ$



$\phi = 108^\circ$



$\phi = 109^\circ$

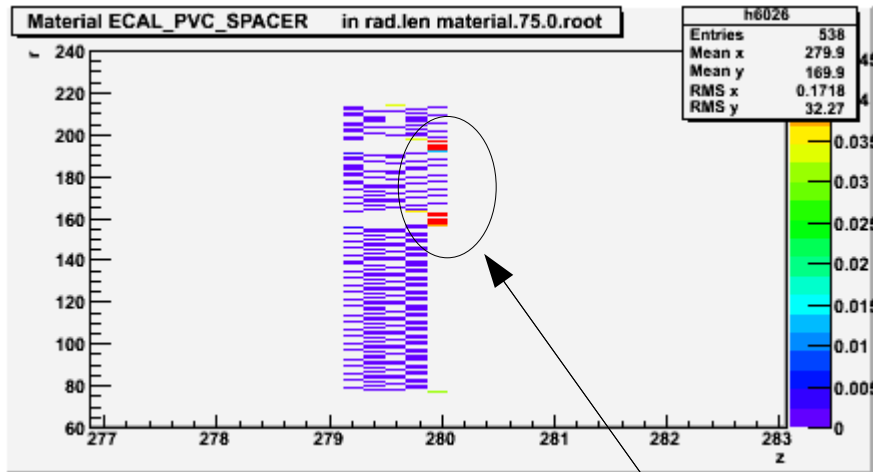


Sector 12-11 boundary
 ϕ slices in 1° steps from 105° to 109°

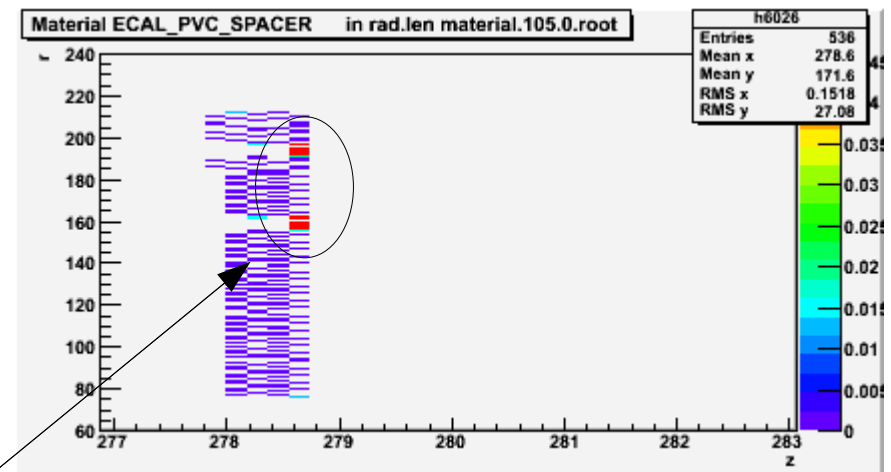
Expected pattern is seen

The spacer layers (PVC) should show up in the cutout areas of the SMD planes

$\phi = 75^\circ$



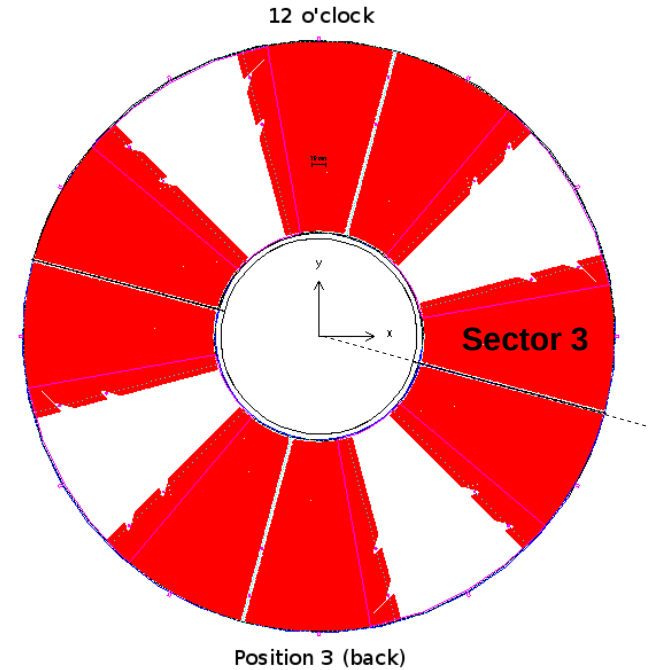
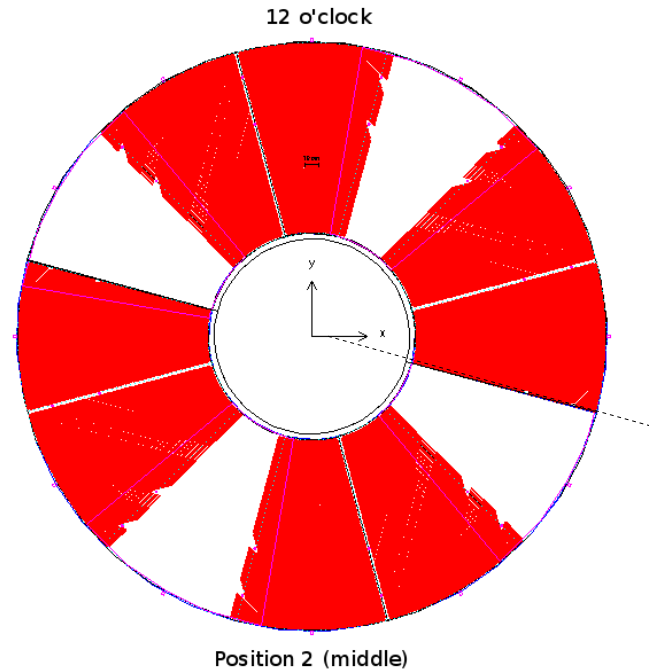
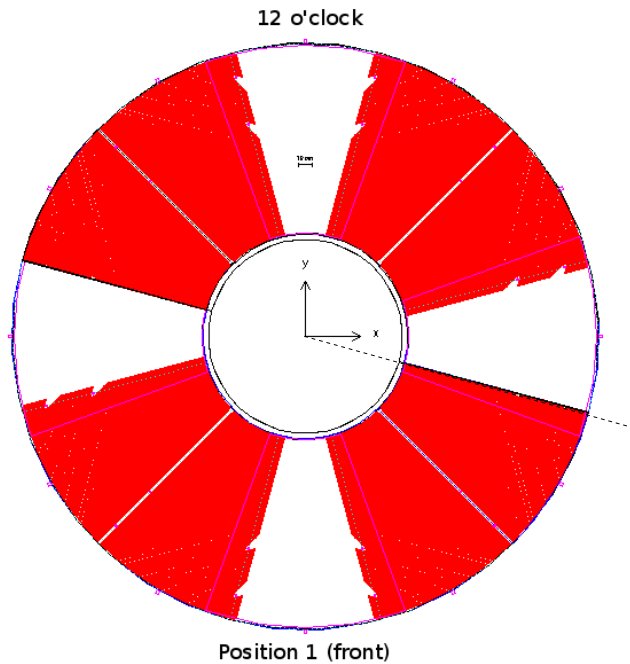
$\phi = 105^\circ$



Spacer shows up in notches as expected

Spacer material also showing up in tiny, $< \sim 0.1$ mm spaces in between each SMD strip in the overlap region. Adds $< 0.1E-3$ radiation lengths.

Expected Pattern



At -15° expect:

- position 1 empty
- position 2 empty
- position 3 empty

Should be in the gap
between top and bottom
halves of the EEMC

At $< -15^\circ$ expect:

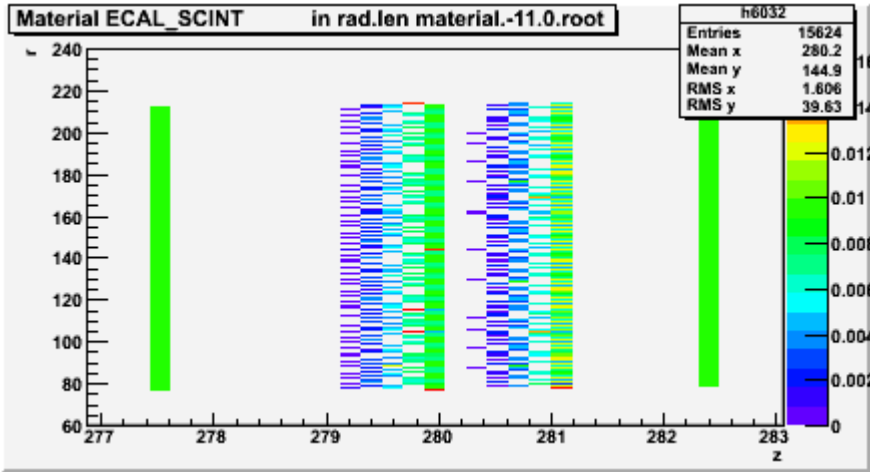
- position 1 filled
- position 2 empty
- position 3 filled

At $> -15^\circ$ expect:

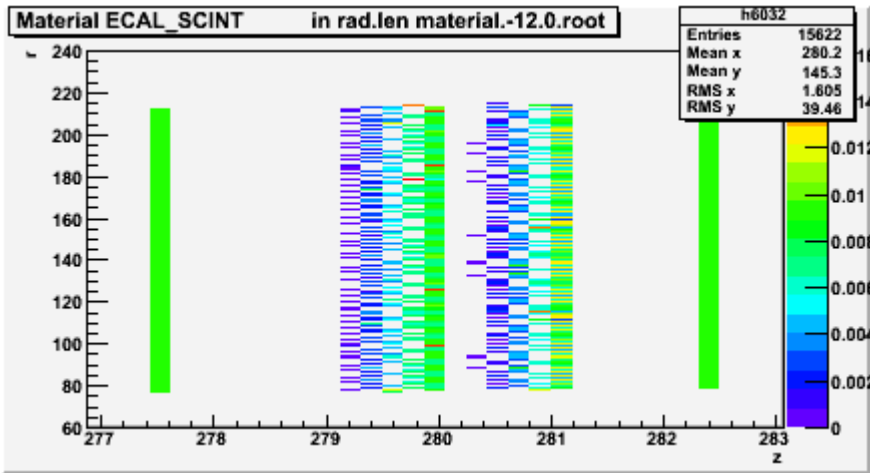
- position 1 empty
- position 2 filled
- position 3 filled

Sector 03-04 boundary
 ϕ slices in 1° steps from -11° to -15°

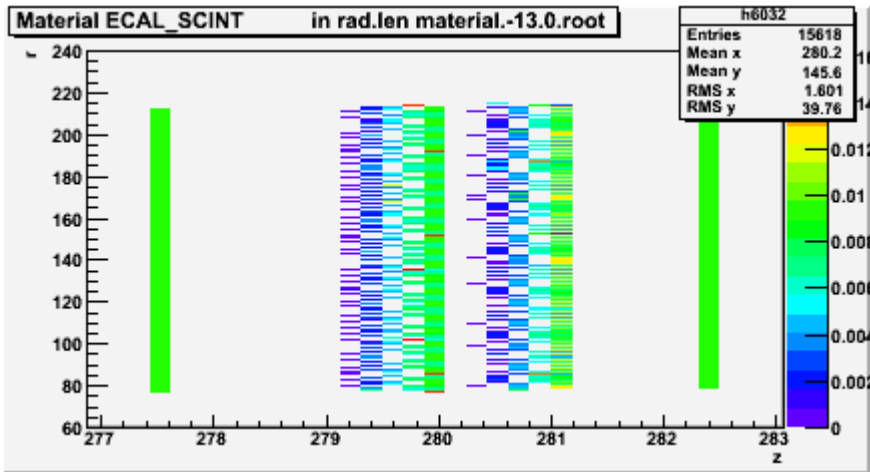
$\phi = -11^\circ$



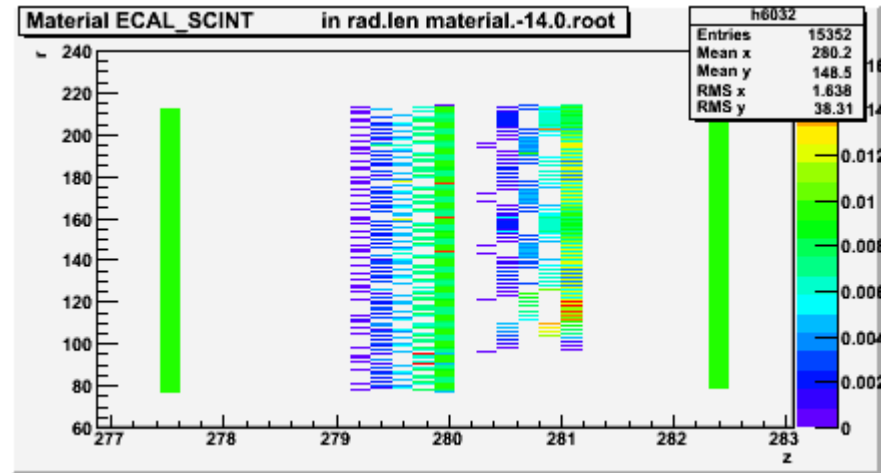
$\phi = -12^\circ$



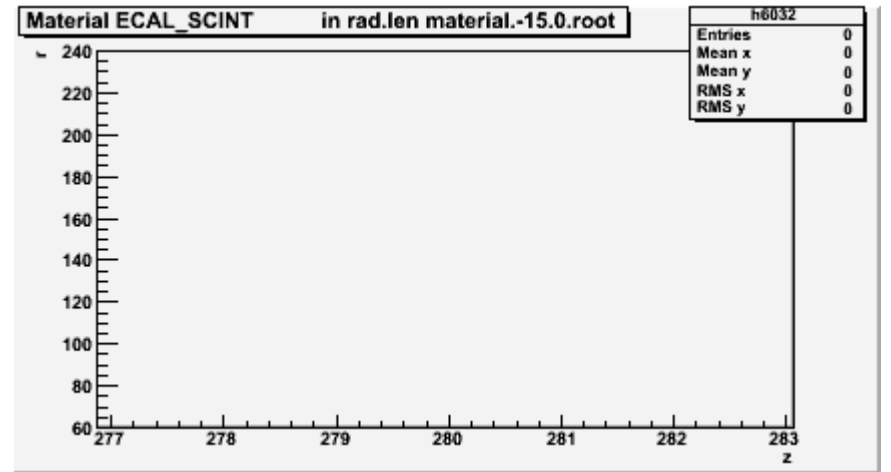
$\phi = -13^\circ$



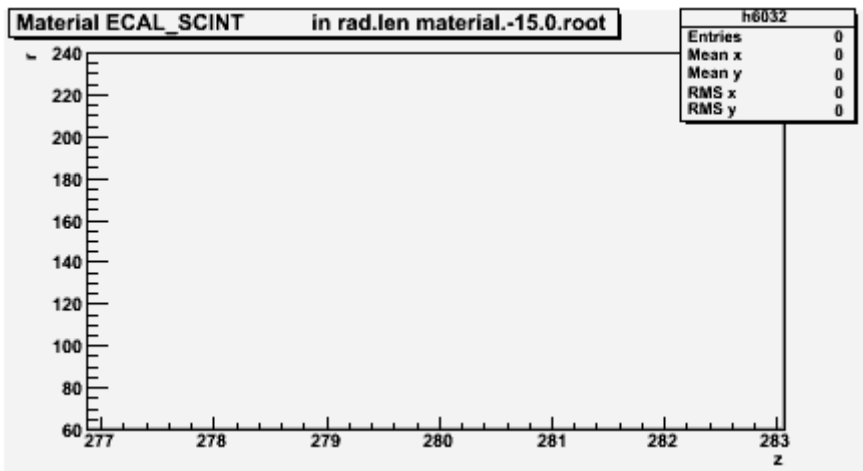
$\phi = -14^\circ$



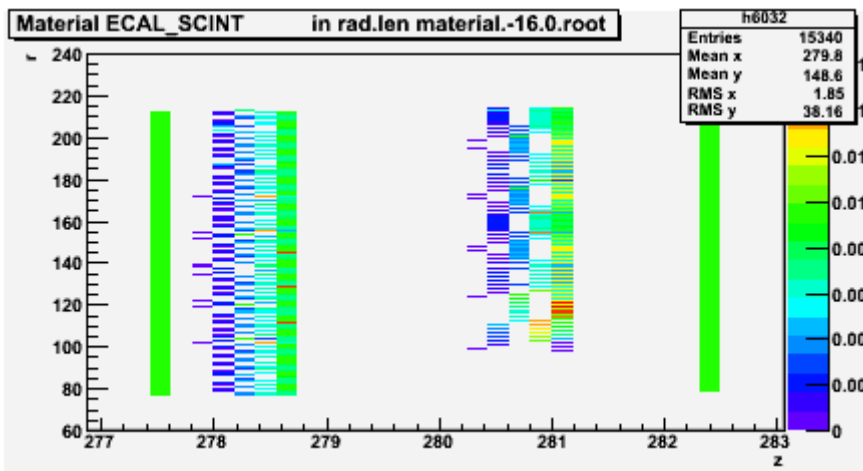
$\phi = -15^\circ$



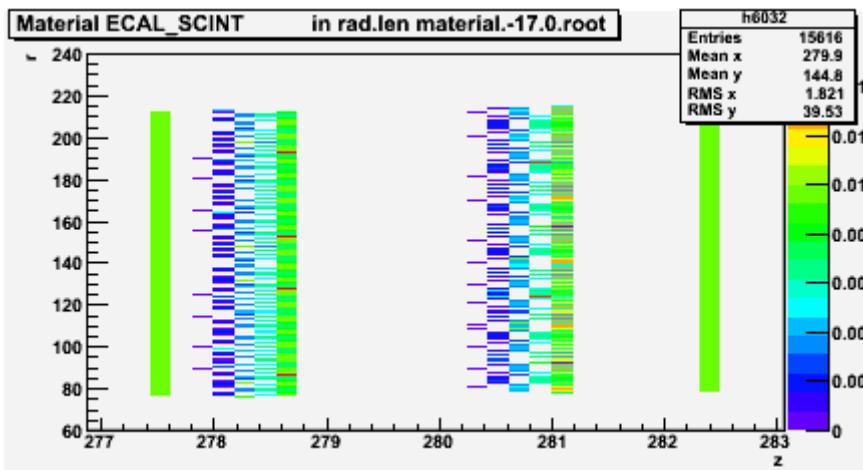
$\phi = -15^\circ$



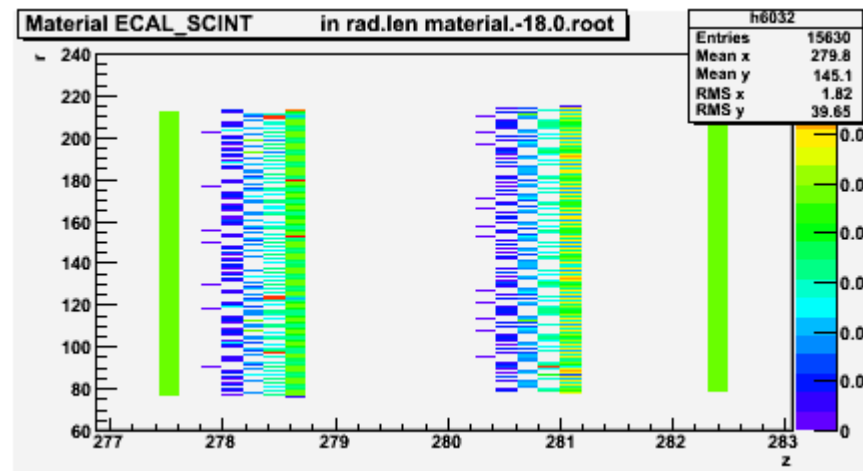
$\phi = -16^\circ$



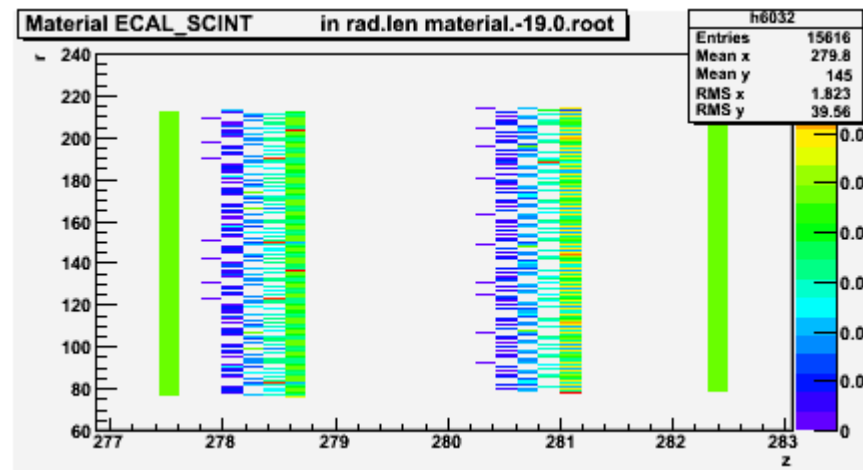
$\phi = -17^\circ$



$\phi = -18^\circ$



$\phi = -19^\circ$



Sector 03-04 boundary
 ϕ slices in 1° steps from -15° to -19°