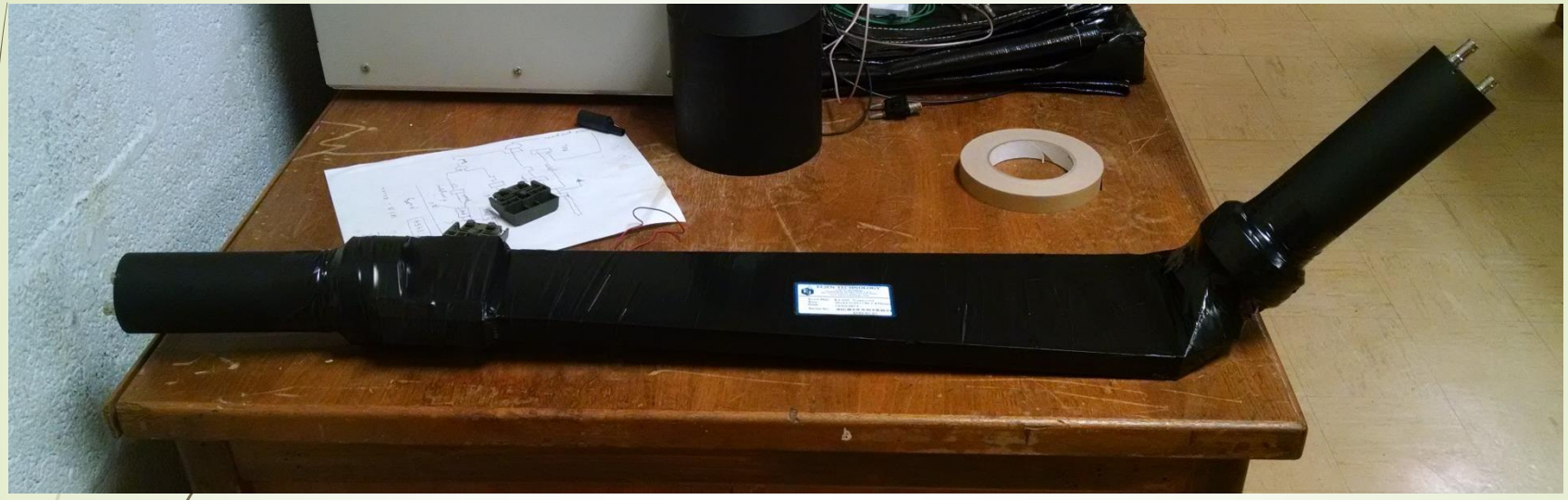
Detector Update from UVA



Vincent Sulkosky
University of Virginia

March 3rd, 2016

SoLID EC/DAQ Meeting

Detector Update

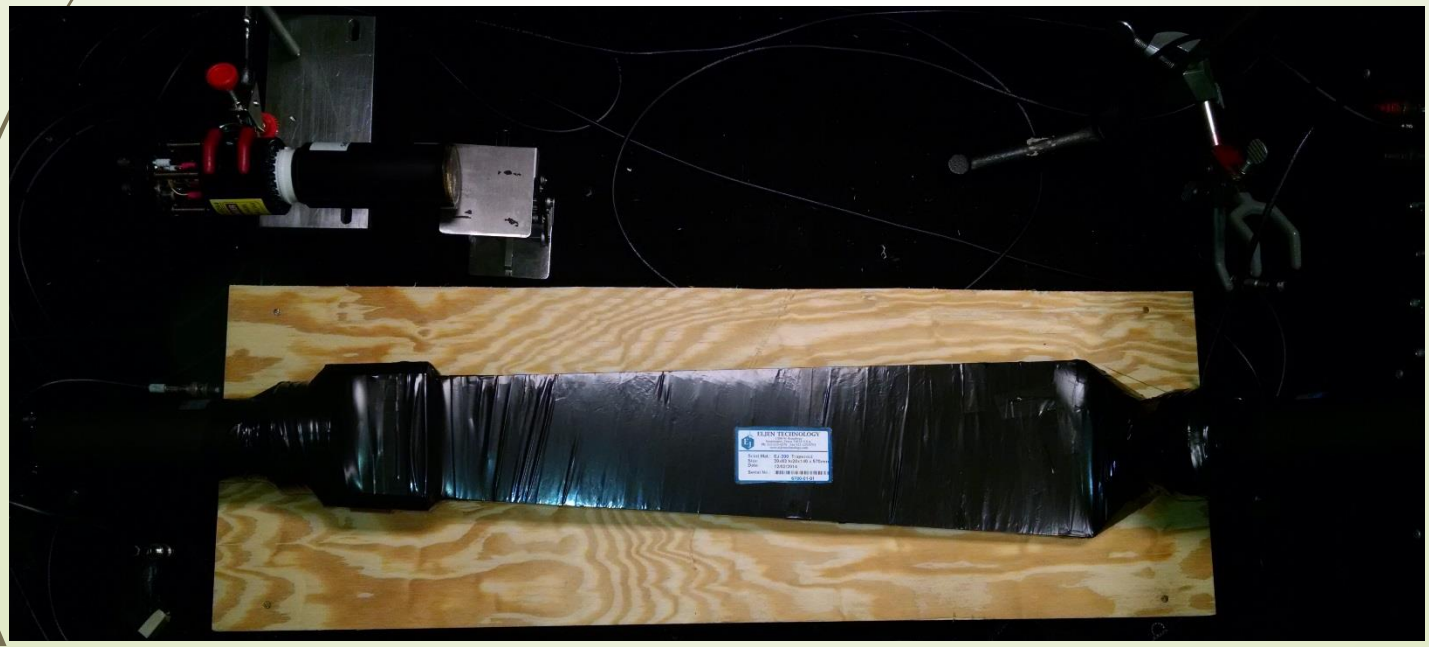
- Large Angle SPD (LASPD) assembly
- Preshower tile radiation hardness
- Shashlyk scintillator hedgehog test

LASPD

- The large angle SPD was designed to provide good timing resolution < 150 ps.
- In January 2015, achieved < 100 ps with reading out both ends of the scintillator bar.
- Trigger bars are considerably smaller than the LASPD bar, and the position dependence is hard to measure with cosmics.

LASPD Measurement

- Plan is to use tracking detectors either GEMs or VDCs in one of the Hall A spectrometers.
- Holders were printed at UVA to hold the PMTs to the LASPD, though the interface of PMT to bar is not as close as preferred.
- In January 2016, achieved < 120 ps with reading out both ends of the scintillator bar.



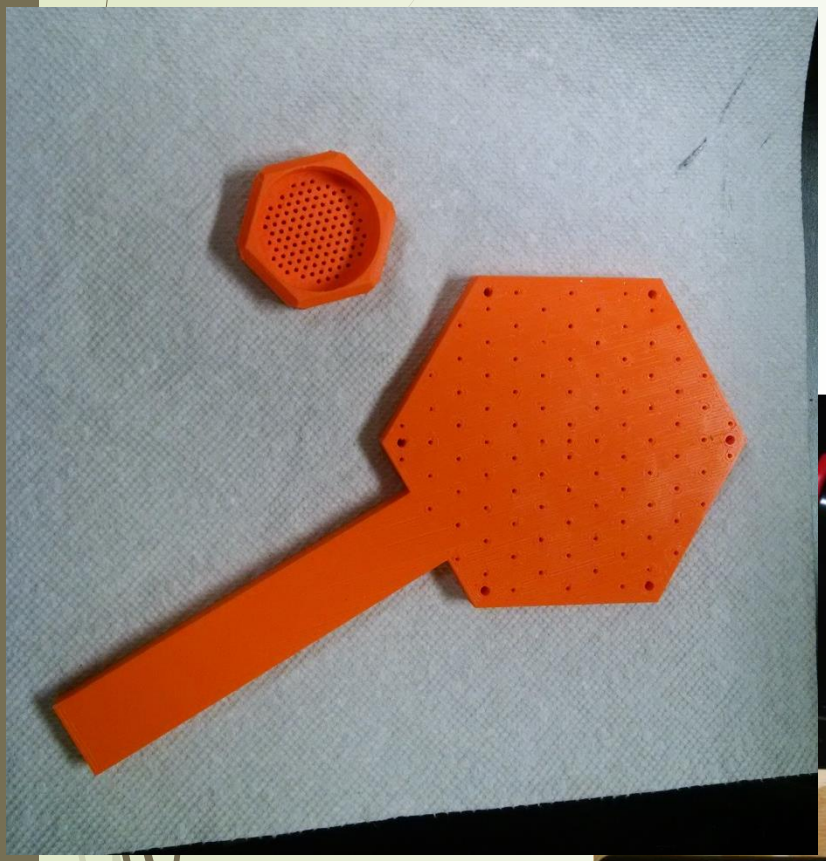
Preshower Tile Radiation Hardness

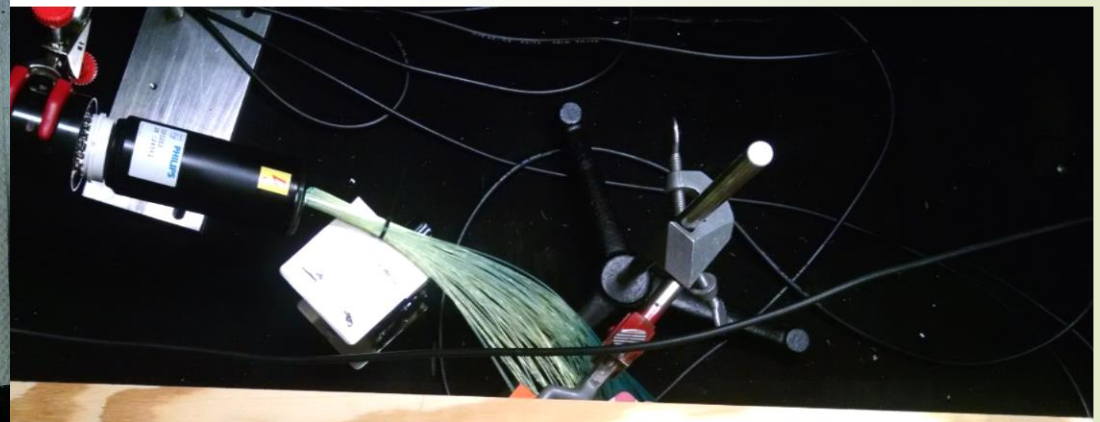
- 8 preshower tiles have been placed around Hall A, generally near ion chambers (yellow tube).
- Preshower tiles are from CNCS and Kedi, and previously tested in 2015.
- Each tile is wrapped in tyvek and black tedlar, contain two fibers with 2.5 turns each.
- Radiation hardness website

Scintillator Hedgehog Test

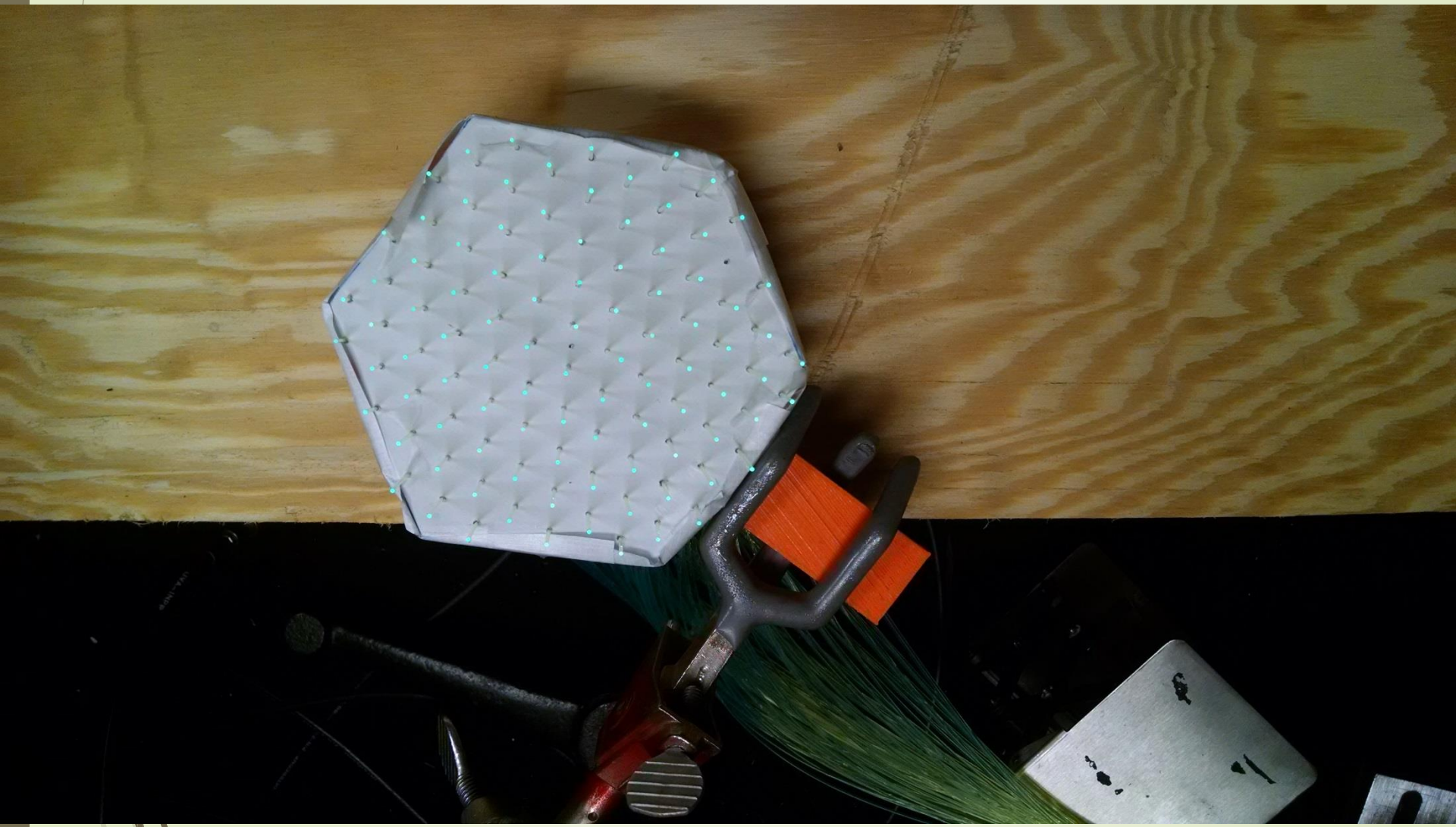
- Test with four 1.5 cm thick scintillator plates.
- Initial test was not ideal for light collection efficiency and achieved only 2-3 photoelectrons.
- Printer paper was used on the top and bottom of the four scintillator stack.
- Tyvek paper was used on the hexagon sides.

Scintillator Hedgehog Test





Scintillator Hedgehog Test



Scintillator Hedgehog Test