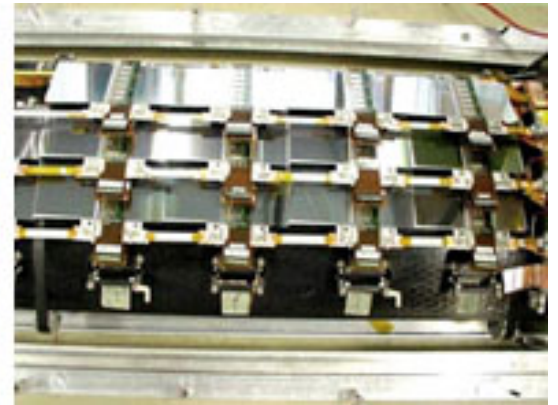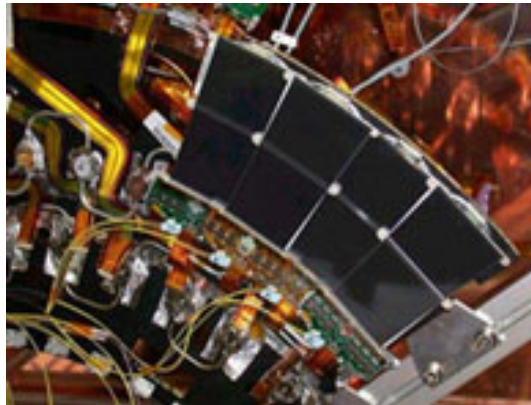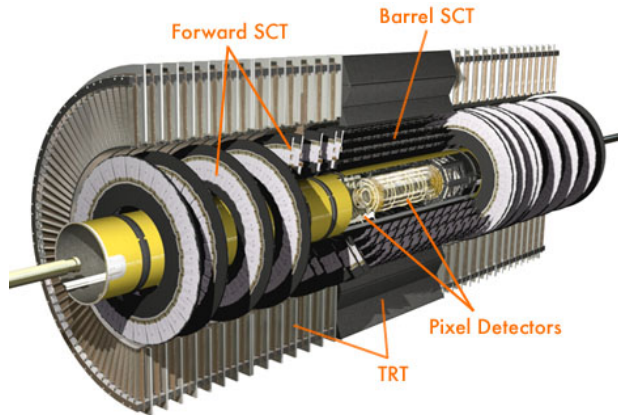# Adventures with Toronto Group

Part 1

Noah Lupu-Gladstein

ATLAS Inner Tracker Upgrade

- The LHC is awesome
- The HL-LHC will be even awesomer!
- We need awesomer detectors to keep up

Motivation and Requirements

- "A highly performant tracker underpins the entire ATLAS physics program"

- "The much harsher radiation and occupancy conditions of the HL-LHC necessitates a complete replacement of the present ID" (Inner Detector)
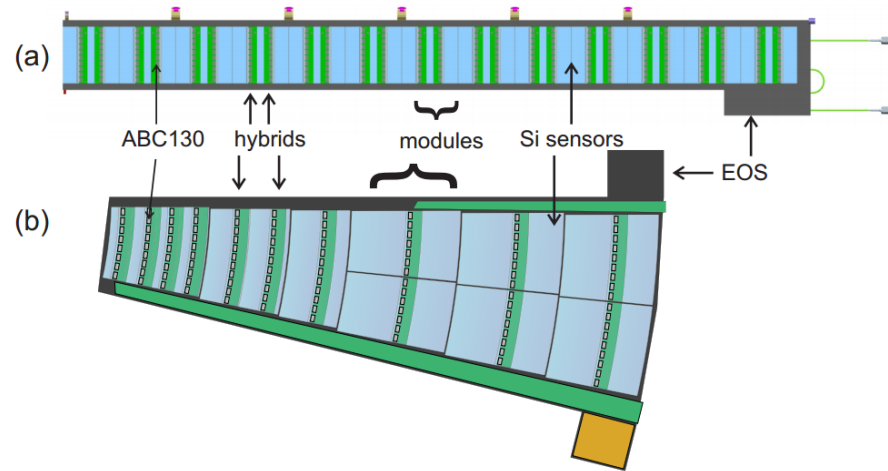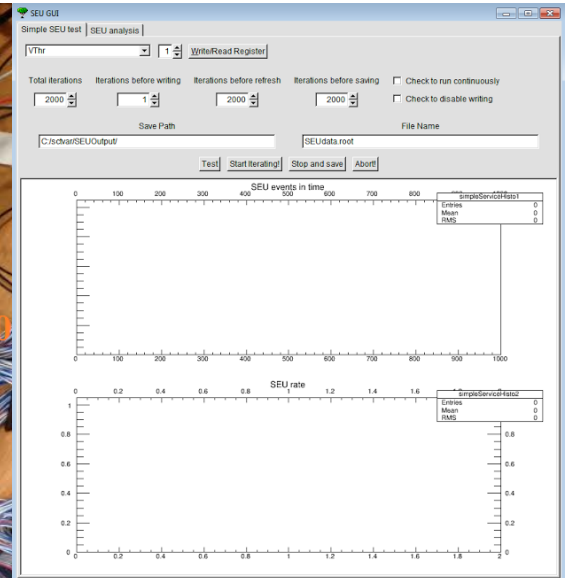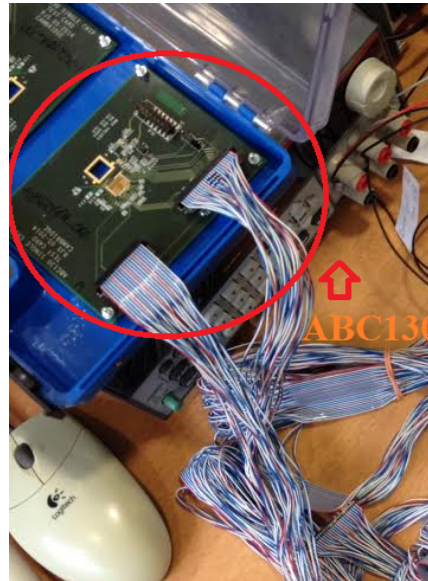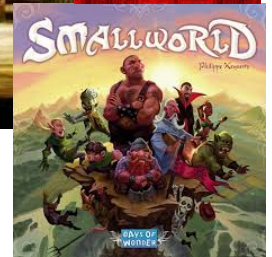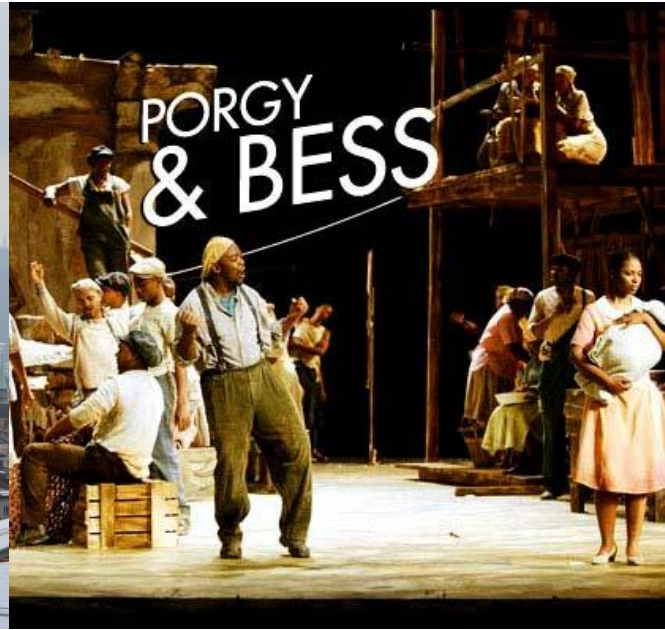

Figure 6.28: a) Barrel stave components. b) Petal stave components

ABC130 and Single Event Upsets

- ABC130: application specific integrated circuit for front end data read out
- SEUs occur when a piece of electronics changes state due to an energetic particle
- Place ABC130 in test beam and measure SEU rate

noahsLife->GetEvents()

References

- ATLAS Letter of Intent Phase-II Upgrade
- http://www.atlas.ch/inner-detector.html
- http://www.atlas.ch/sct.html