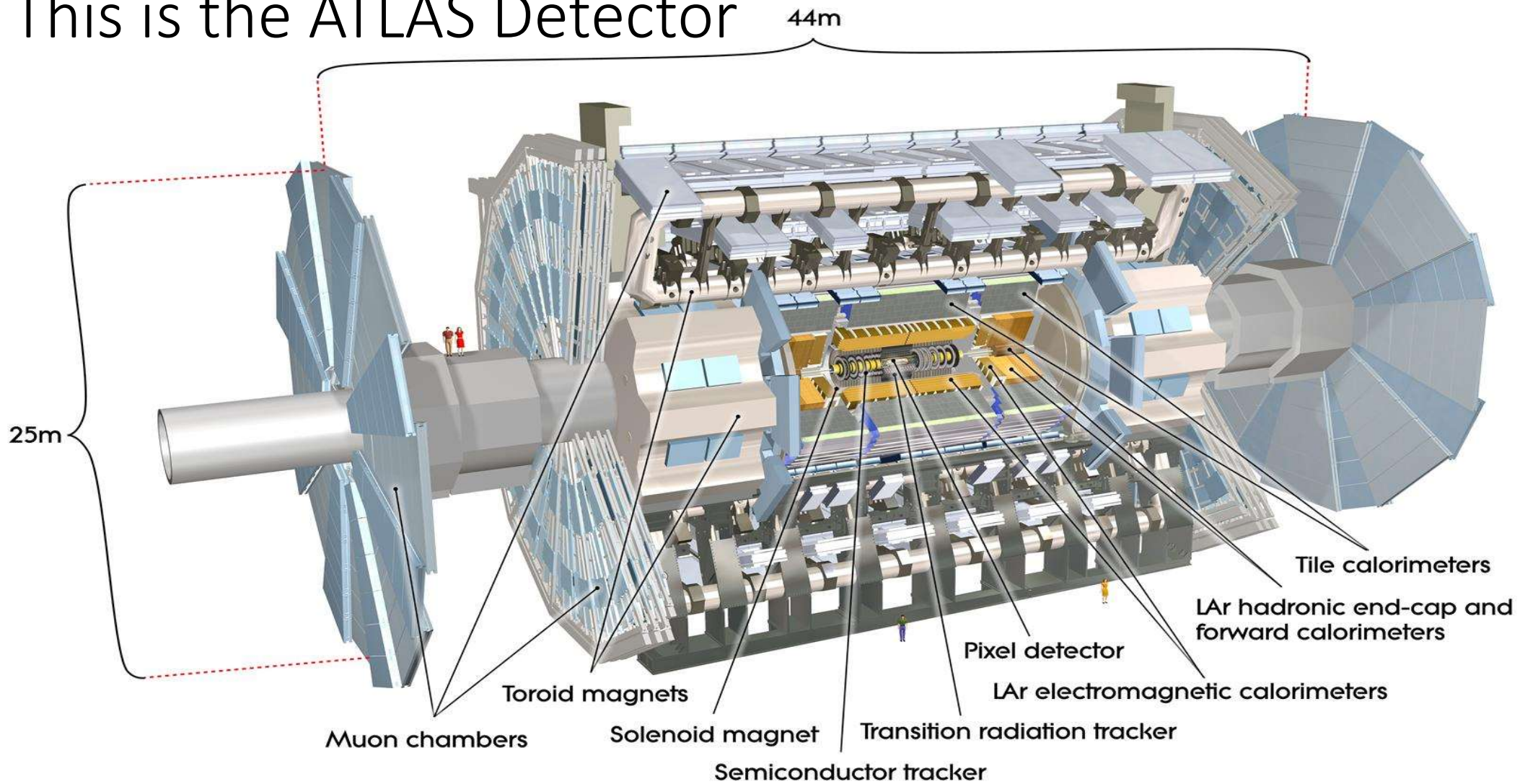


# ITK Pixel Modules

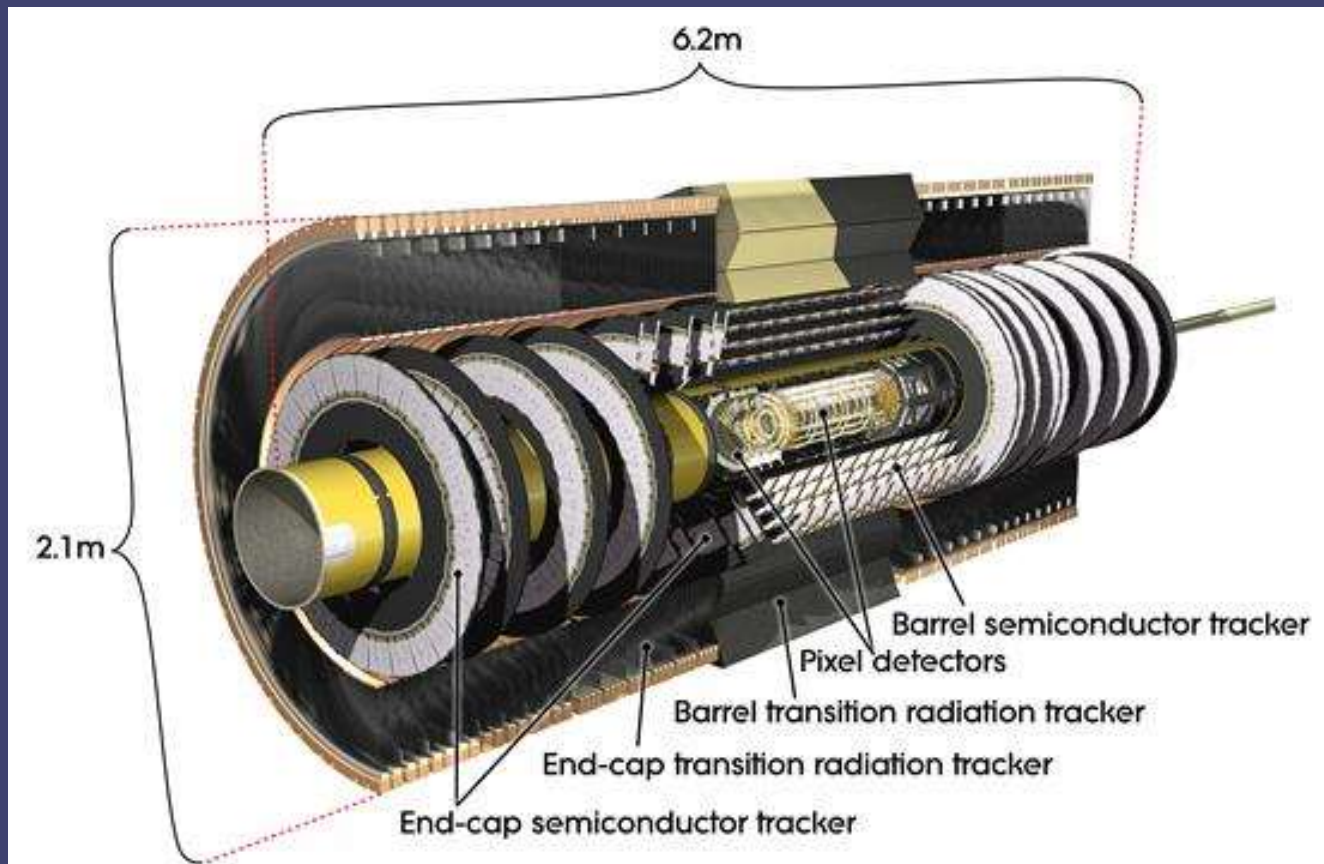
Thad Tucker

# This is the ATLAS Detector



# What are ITK pixel modules

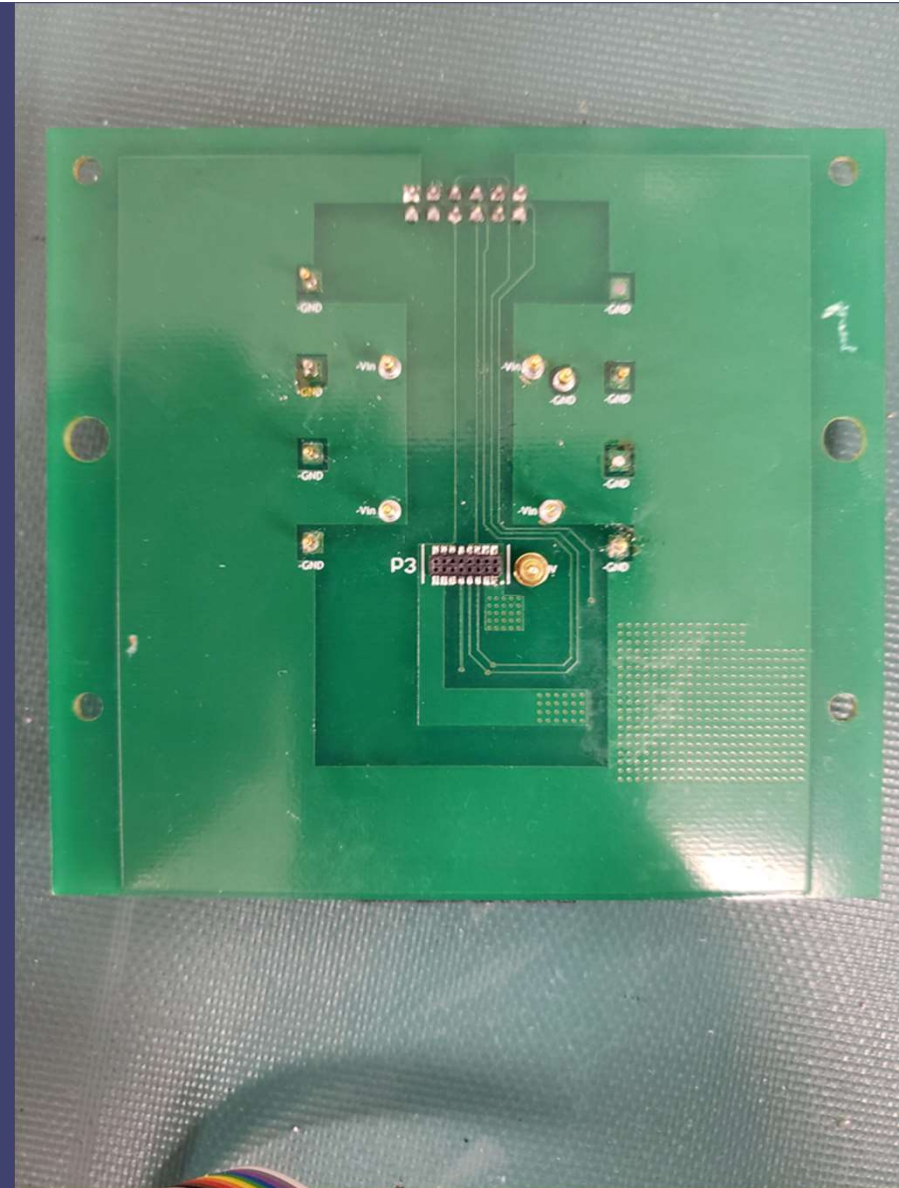
- Inner Tracker
- Pixel detectors
  - 3.3 cm from the beam
  - Detects charge
- Higher resolution allows for greater precision





# Hybrid QC testing

- Low voltage
  - Measures voltage drop in LV rail
- High Voltage
  - Checks for capacitor failure. Takes 20 minutes
- NTC
  - Checks the accuracy of the temperature sensors



# Hybrid QC testing

- Pico logger reads the data to the computer
  - Easier than using a multimeter
- Limited to two hybrids at a time
- Limited documentation for the circuit board.



# Goals

- Understand how the current circuit board works.
- Make a new circuit capable of testing several hybrids at the same time.

## Sources:

- <https://cds.cern.ch/record/1095926>
- <https://atlas.cern/Discover/Detector/Inner-Detector>
- <http://opendata.atlas.cern/release/2020/documentation/atlas/experiment.html>