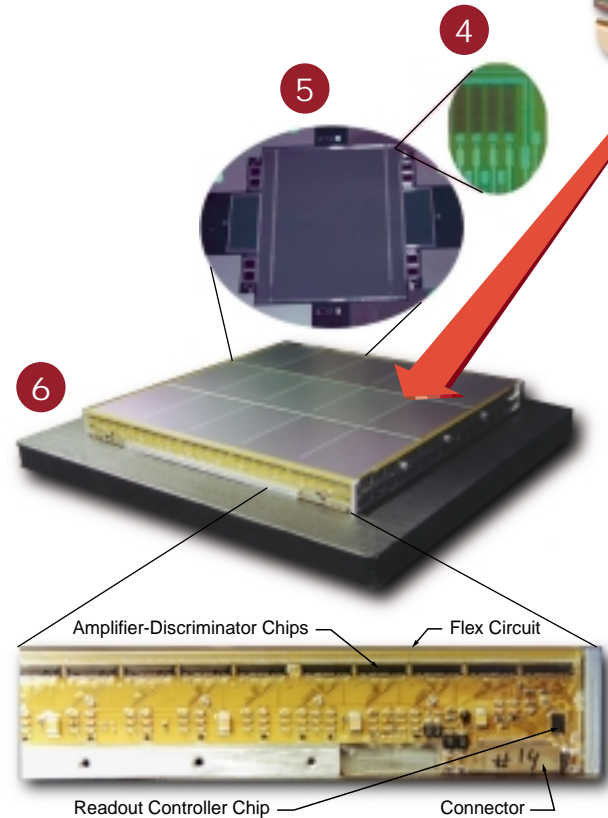
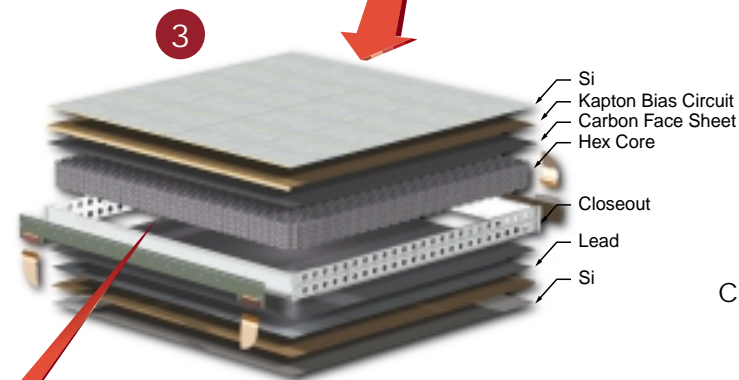
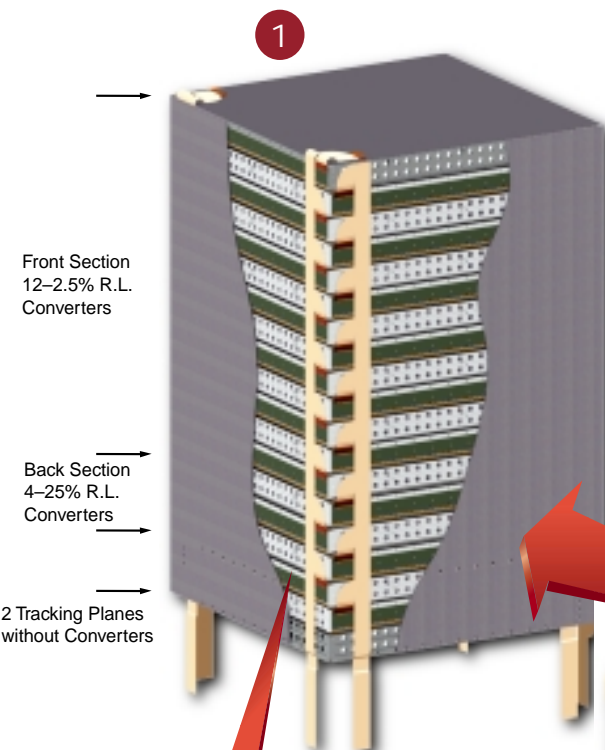
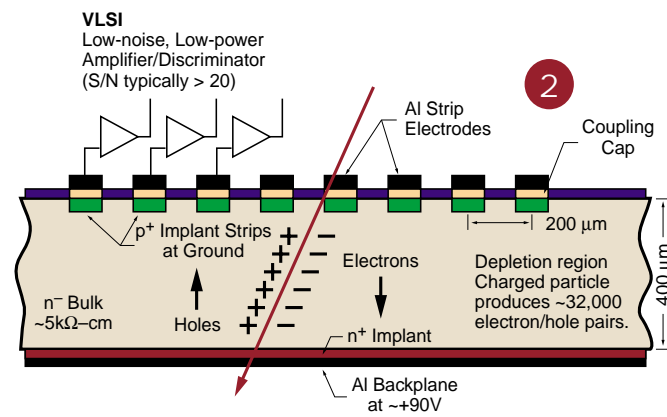


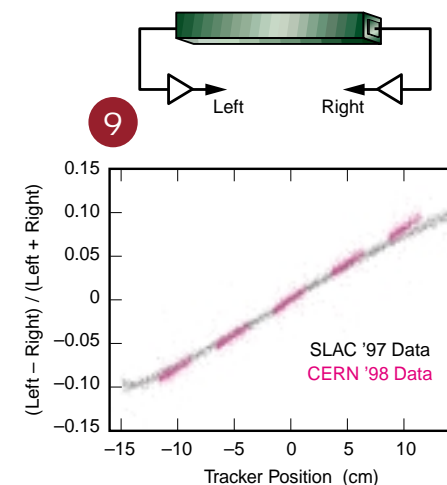
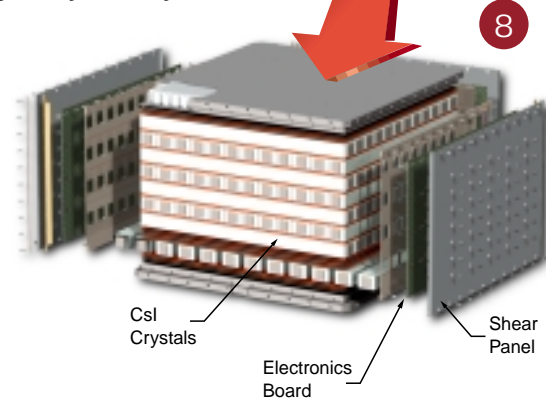
Tracker

1. Tracker tower: stack of 19 trays with 18 x,y detection planes, enclosed in C walls.
2. Si strip detector cross section.
3. Exploded view of a tracker tray.
4. Si strips, bias resistors, and bonding pads.
5. 6" Si wafer, with a BTEM detector surrounded by test structures.
6. Complete tracker tray of the BTEM, with Si detectors on the top and bottom faces and readout electronics on two sides.



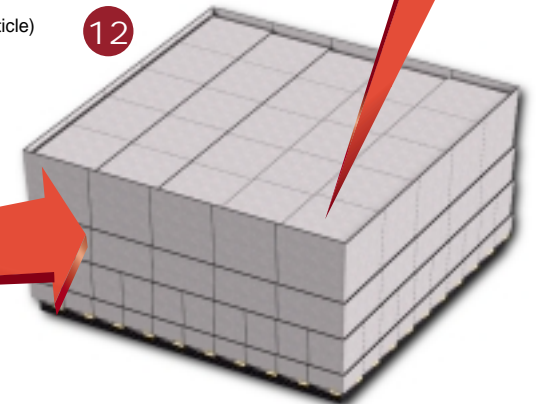
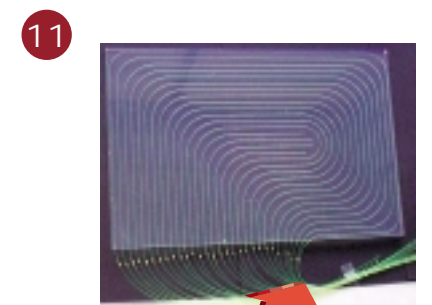
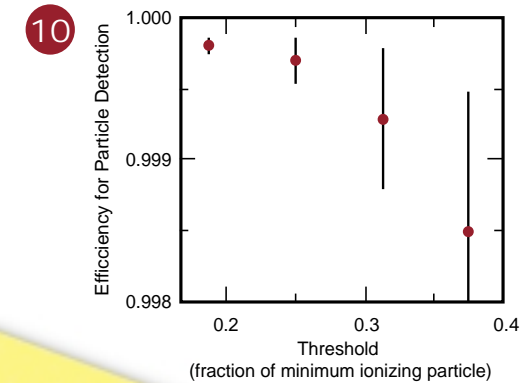
Calorimeter

7. Assembled BTEM CAL module.
8. CAL compression cell design
9. CAL beam-test results: Position measurement from left-right light asymmetry.



The Anticoincidence Shield

10. ACD beam-test results: efficiency to detect a minimum-ionizing particle versus the discriminator threshold. The required efficiency is 0.9997.
11. ACD scintillator tile, with waveshifting fiber readout.
12. The LAT enclosed in the ACD veto shield.



Instrument Detector Technologies

Tracker (TKR):

Silicon Microstrip Detectors

- High efficiency
- High signal/noise
- Robust, Rad-Hard, Low Voltage
- Widespread use in space and HEP

Calorimeter (CAL):

Cesium-iodide crystals; PIN diode readout

- Excellent energy resolution over wide range
- High signal/noise
- Hodoscopic array gives good position resolution and shower leakage correction
- Widespread use in space and HEP

Anticoincidence Detectors (ACD):

plastic scintillator tiles; waveshifting-fiber/PMT readout.

- High efficiency
- High segmentation to avoid self veto
- Widespread use in space and HEP

