

Charged Particle Monitor (CPM)

1. On-orbit definition of SAA boundary as fcn of altitude and solar cycle.
 2. Backup SAA safing for LAT and GBM.
 3. Monitor of SAA dose for CAL occupancy and bkg model for GBM.
- Boundary of SAA *will* change during mission. GRO has redefined ~5 times, and pre-launch guess was clearly wrong. Minimal SAA bdy gives maximal livetime. Proper SAA bdy simplifies GBM ops.
 - Want to discriminate between e and p.
Trapped e⁻ spectrum cuts off ~2 MeV, while trapped p continues to ~200 MeV.
Couple g/cm² of shielding stops e⁻ and passes p.

What's the h/w?

1. Reproduce OSSE CPM: 1" diam X 1/2" tall plastic, PMT, in 1/2" Al housing.
2. Wavelength-shifted plastic with PD readout?
3. Direct deposition in PD box?
4. Alternative readout of, say, 2 ACD tiles. Tiles are large, so rate is *very* high.

Bottom Line: CPM can add a couple percent to the livetime for much much less than a couple percent of the budget.