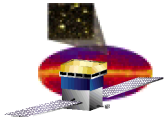


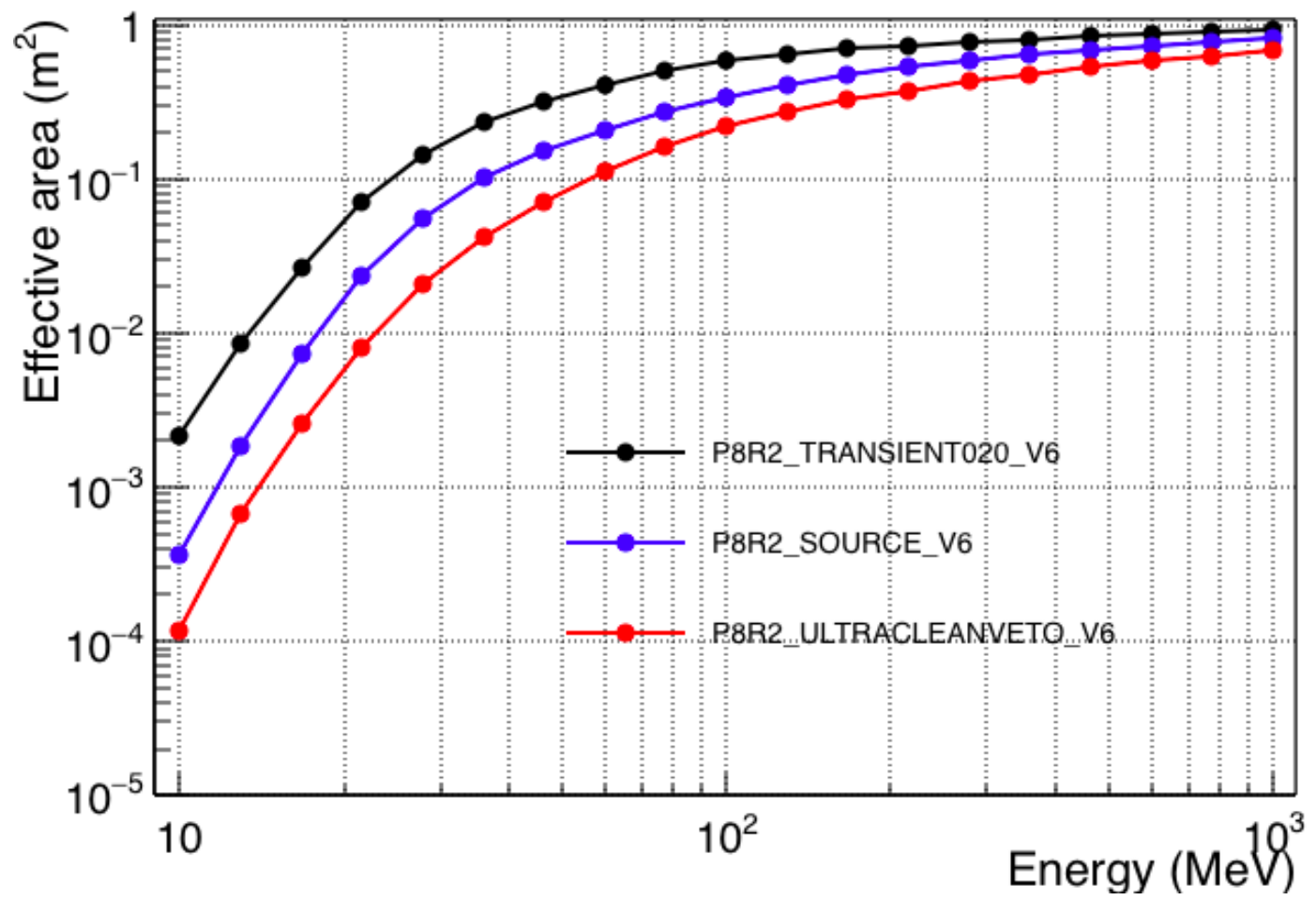
Fermi-LAT below 100 MeV

Julie McEnery
NASA/GSFC

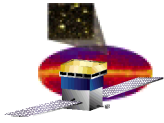


Effective Area

on-axis effective area

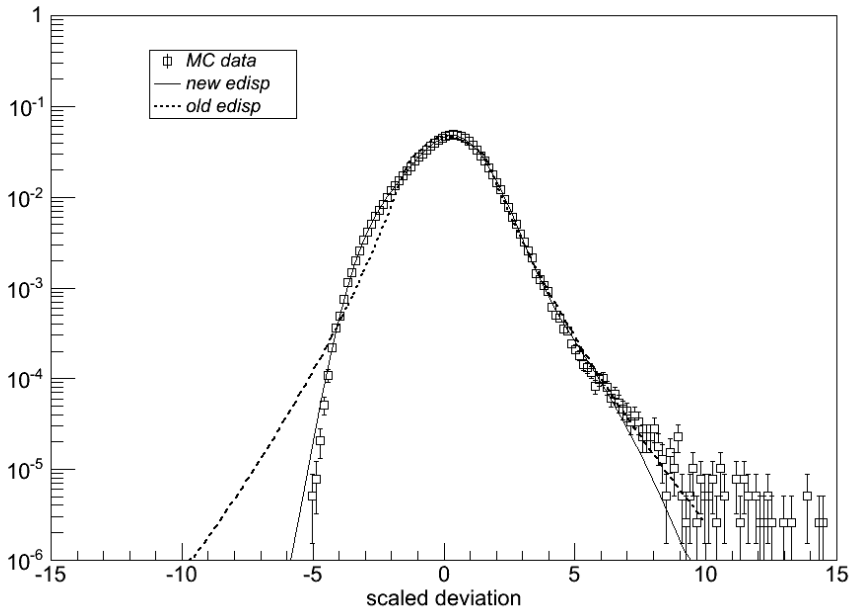


~200-1000 cm² @ 30 MeV

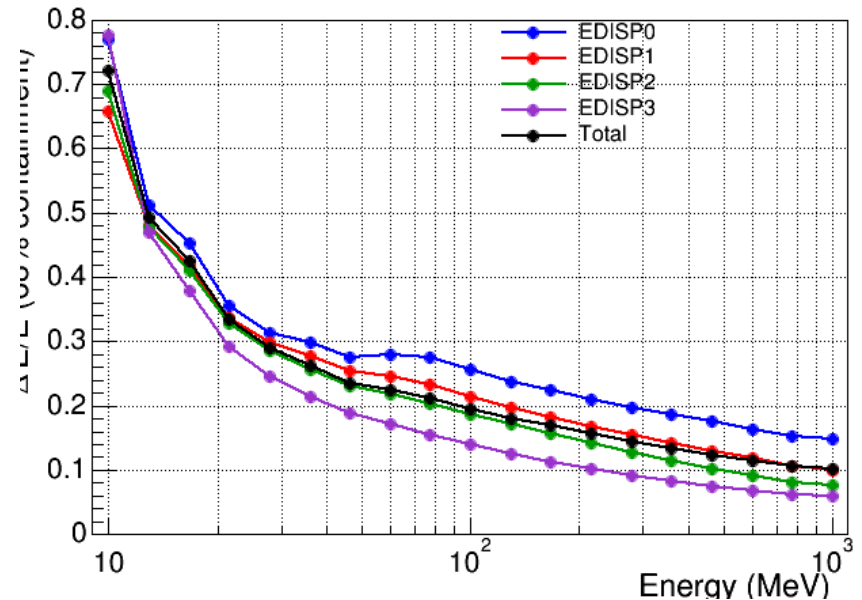


Energy Resolution

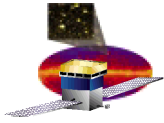
75 MeV, 0-26 scaled



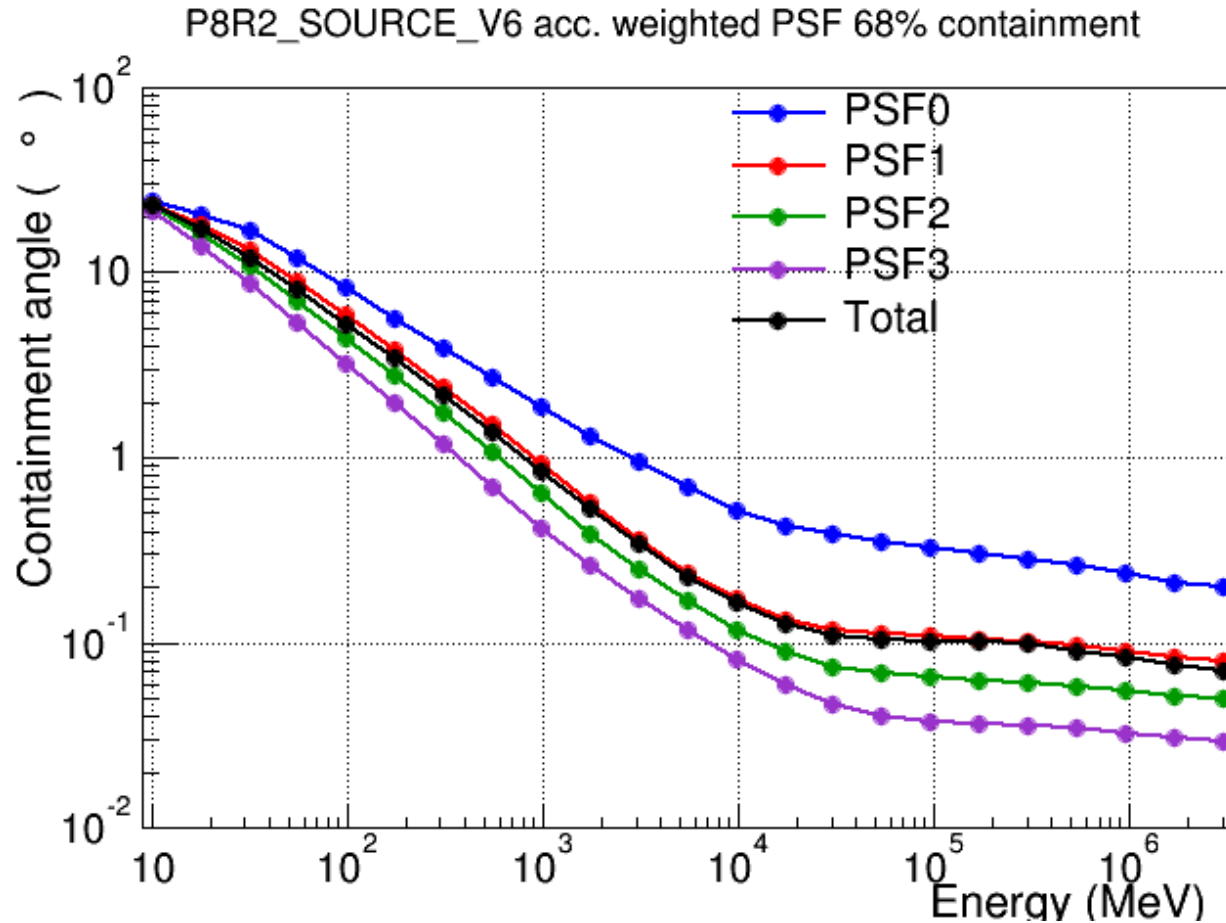
P8R2_SOURCE_V6 acc. weighted energy resolution 68% containment



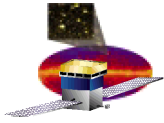
- Energy dispersion rises rapidly at low energies
- Need to carefully consider energy dispersion in analysis
- Accuracy of parameterization of energy dispersion is important



Angular Resolution

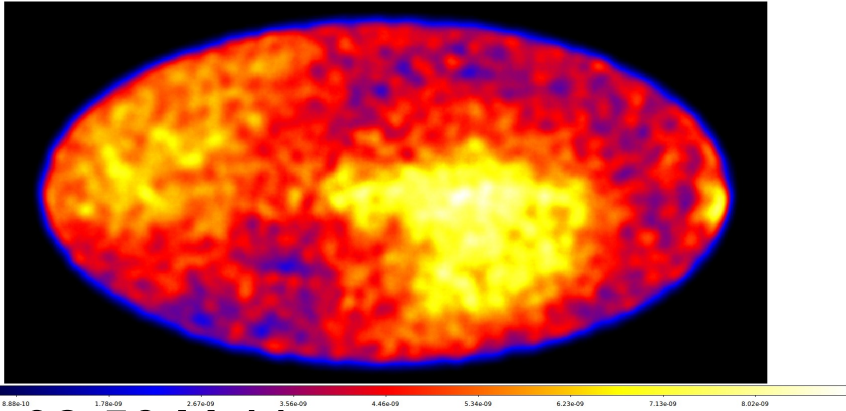


~10-15 deg 68% containment @ 30 MeV

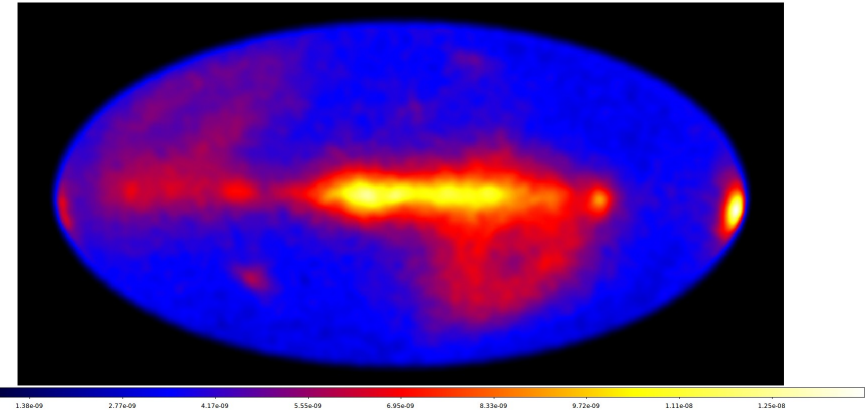


Issues with Backgrounds

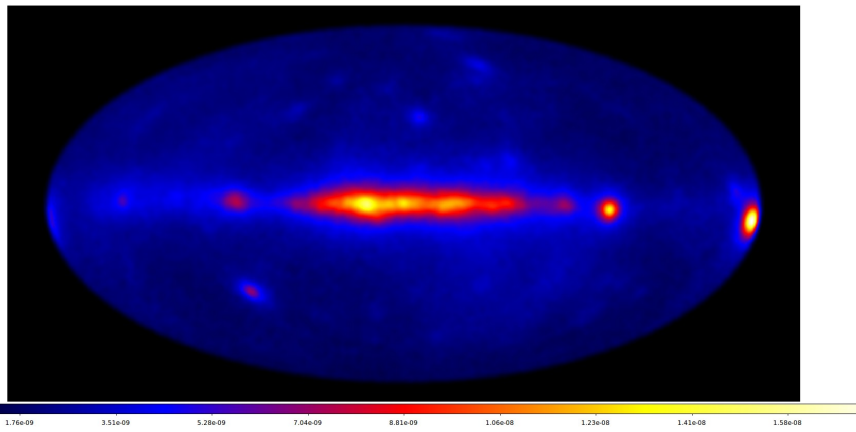
10-18 MeV



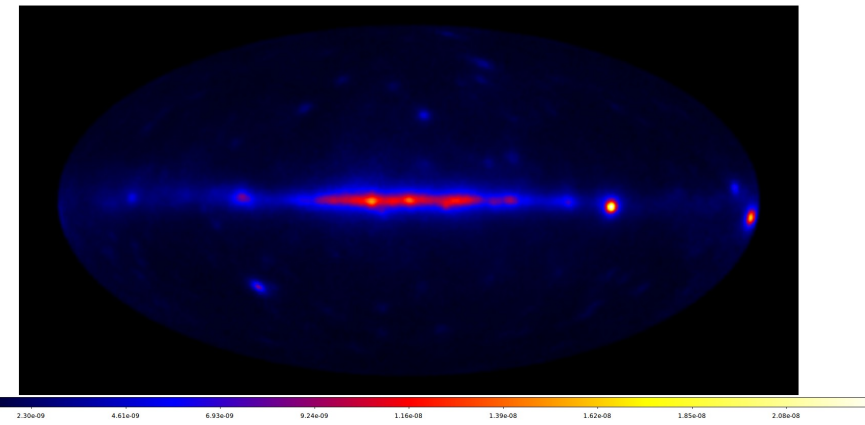
18-32 MeV



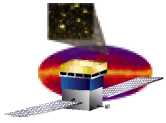
32-56 MeV



56-100 MeV



- Diffuse background from Earth limb, a significant issue at low energies



Summary

- **Fermi-LAT has significant capability below 100 MeV**
- **BUT**
 - **Subject to significant systematic challenges, reliably using data below 50 MeV is difficult**
 - **Large background from the Earth limb**
 - **Can make analysis selections to reduce this, but (obviously) this reduces exposure/sensitivity**
 - **Strong motivation to keep instrument axis close to zenith**
- **We are not yet fully exploiting LAT data below 100 MeV**