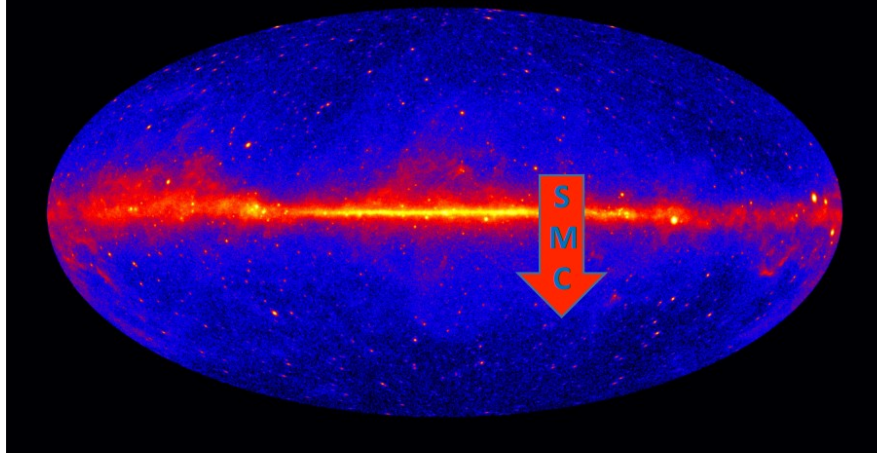


Search for Dark Matter in the Small Magellanic Cloud



Galactic Center Excess

- Excess of .1-10GeV Gamma-rays
- One explanation is 10-50GeV dark matter
- Search for excess in other objects
- Best targets are the LMC, dwarfs, and SMC
- No excess has been detected in dwarfs or LMC

GC, LMC, Dwarfs, and SMC

- GC : J-factor $\approx 10^{21.5}$
 - Large astrophysical background
- Dwarfs: J-factor $\approx 10^{19.5}$
 - Large DM concentration, low backgrounds
- LMC: J-factor $\approx 10^{20}$
 - Large, dense DM concentration, low backgrounds
- SMC: J-factor $\approx 10^{20}$
 - Large, dense DM concentration, lower backgrounds

J-factor in units of:
 Gev^2/cm^5

3

The plot below is preliminary and does not represent actual results.

You have gone full screen. [Exit full screen \(F11\)](#)

Small Magellanic Cloud

- 60kpc from Earth, $b = -44^\circ$ and $l = 303^\circ$
- Lower backgrounds and cosmic ray flux than the LMC
- More massive and denser than dwarfs
- SMC will be able to probe parameter space of GC excess

