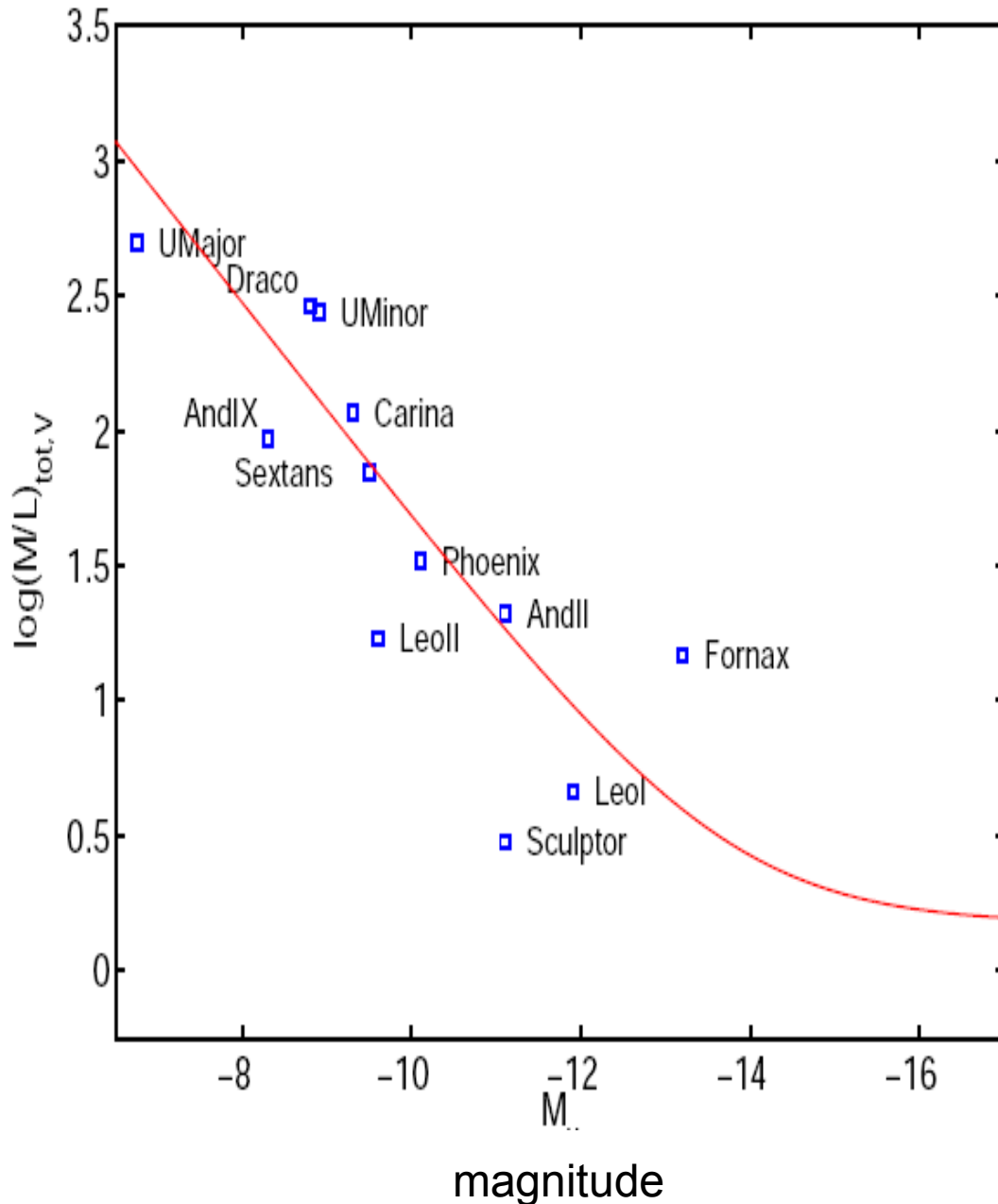


# Recent papers and dwarf spheroids

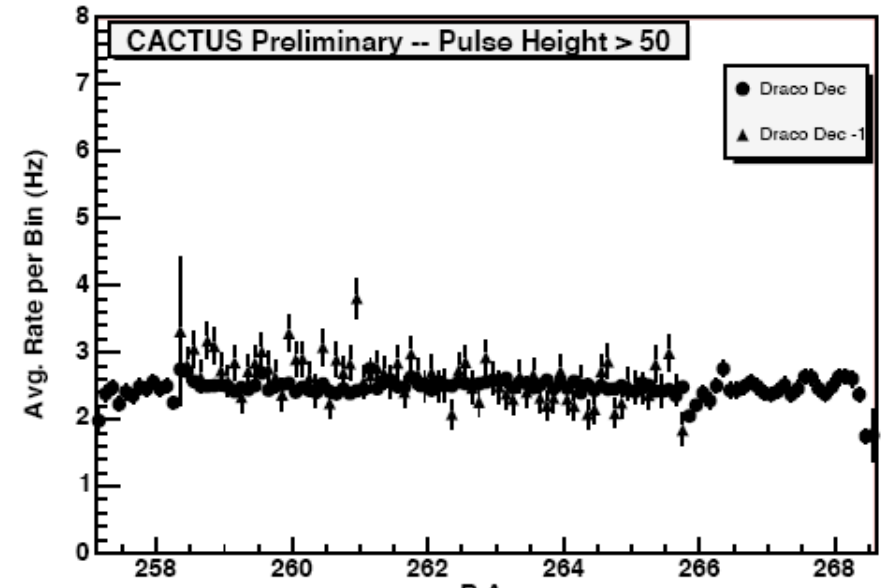
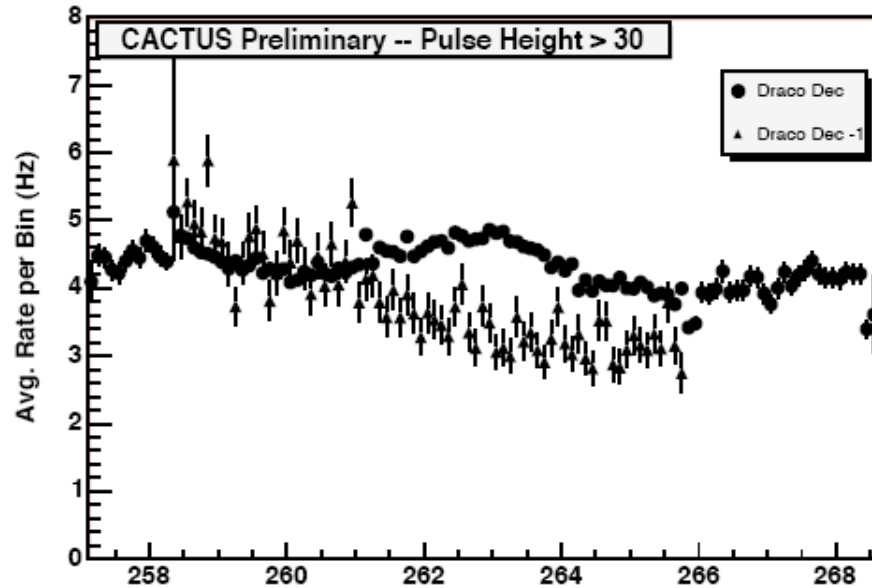
- Recent reports on Cambridge group
- Draco and Cactus:
  - TeV workshop, Batavia : <http://www-astro-theory.fnal.gov/Conferences/TeV/Tripathi.pdf>
  - PANIC 05 : <http://ucdcmis.ucdavis.edu/solar2/results/Chertok.PANIC05.pdf>
  - Retracted....
- Our (with Eric) stab at it....

# Cambridge results....

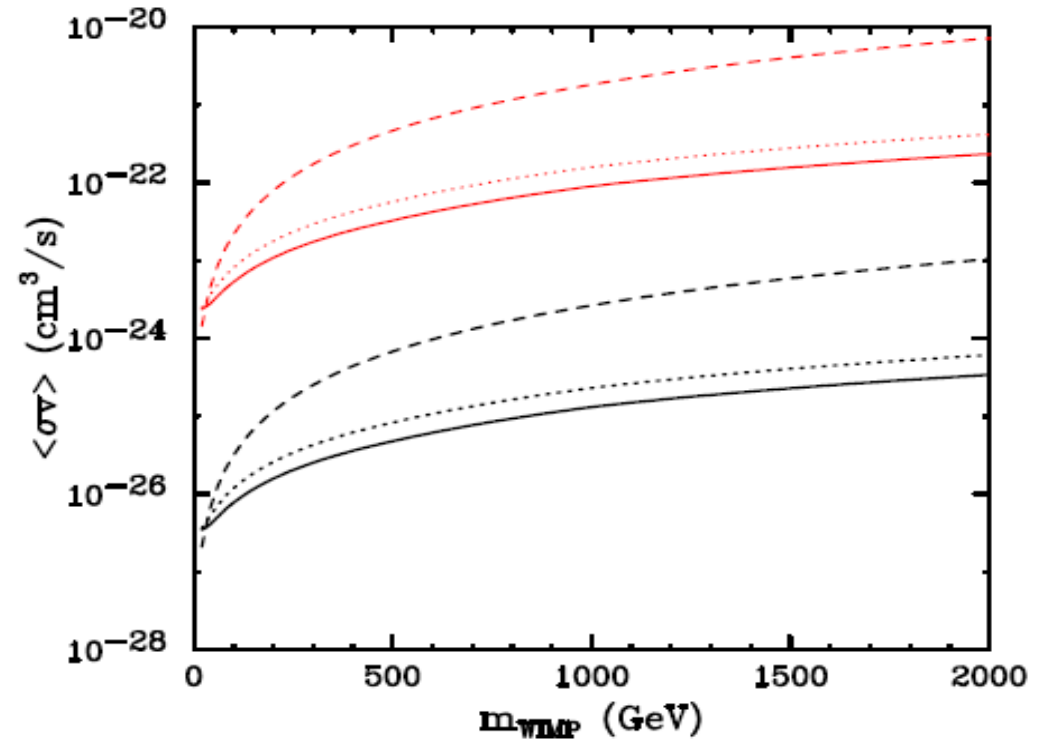


- Nothing published or in arXiv yet....
- [astro-ph/0602186](https://arxiv.org/abs/astro-ph/0602186)
- mass in x-axis?

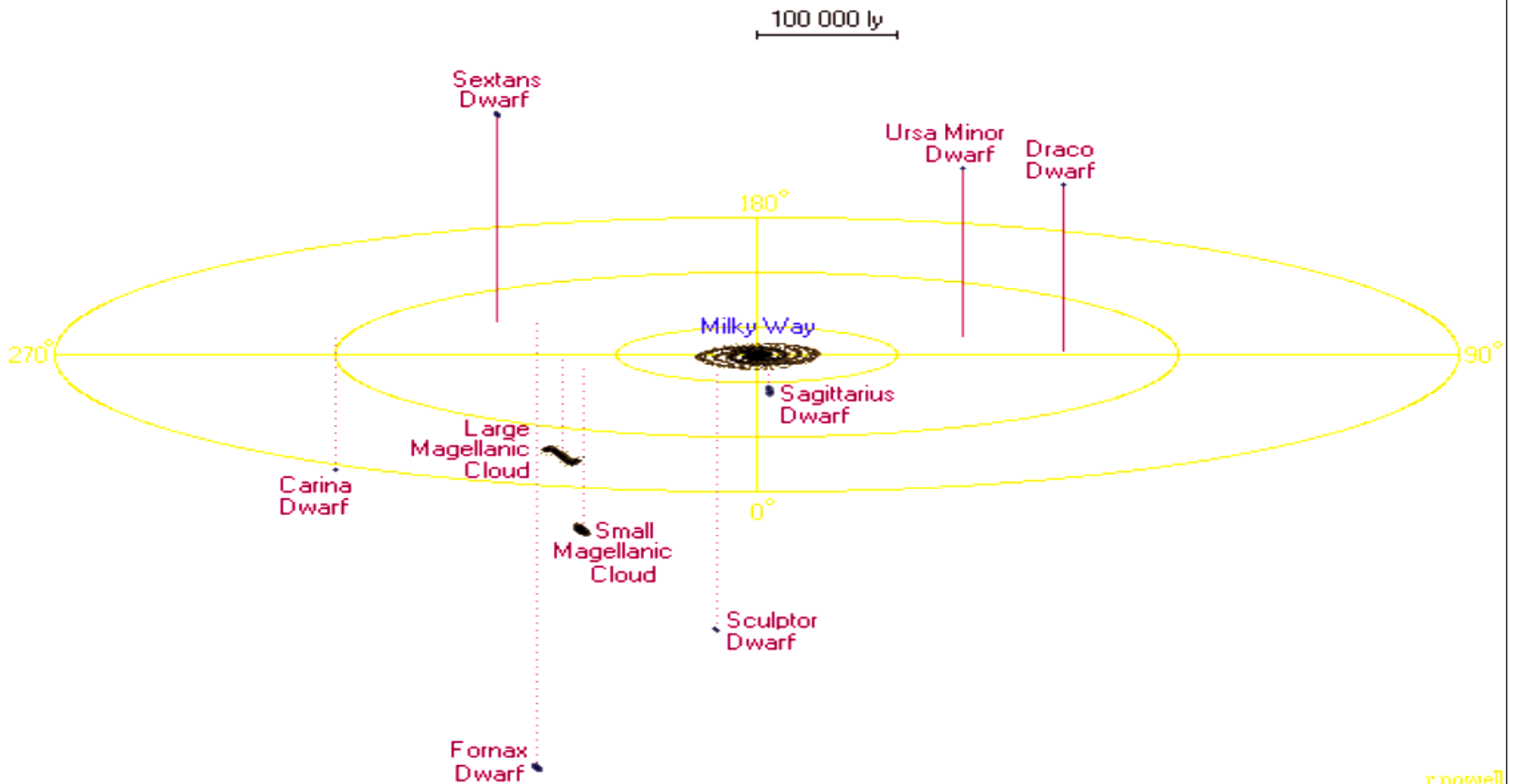
# Cactus (non) Results



- Cactus retracted (new data)
- Still a campaign in Spring?
- Bergstrom & Hooper (2005):
  - $A_{\text{eff}} = 1 \text{ m}^2$
  - $\Delta\Omega = 9 \cdot 10^5 \text{ sr}$
  - 1 year of observation

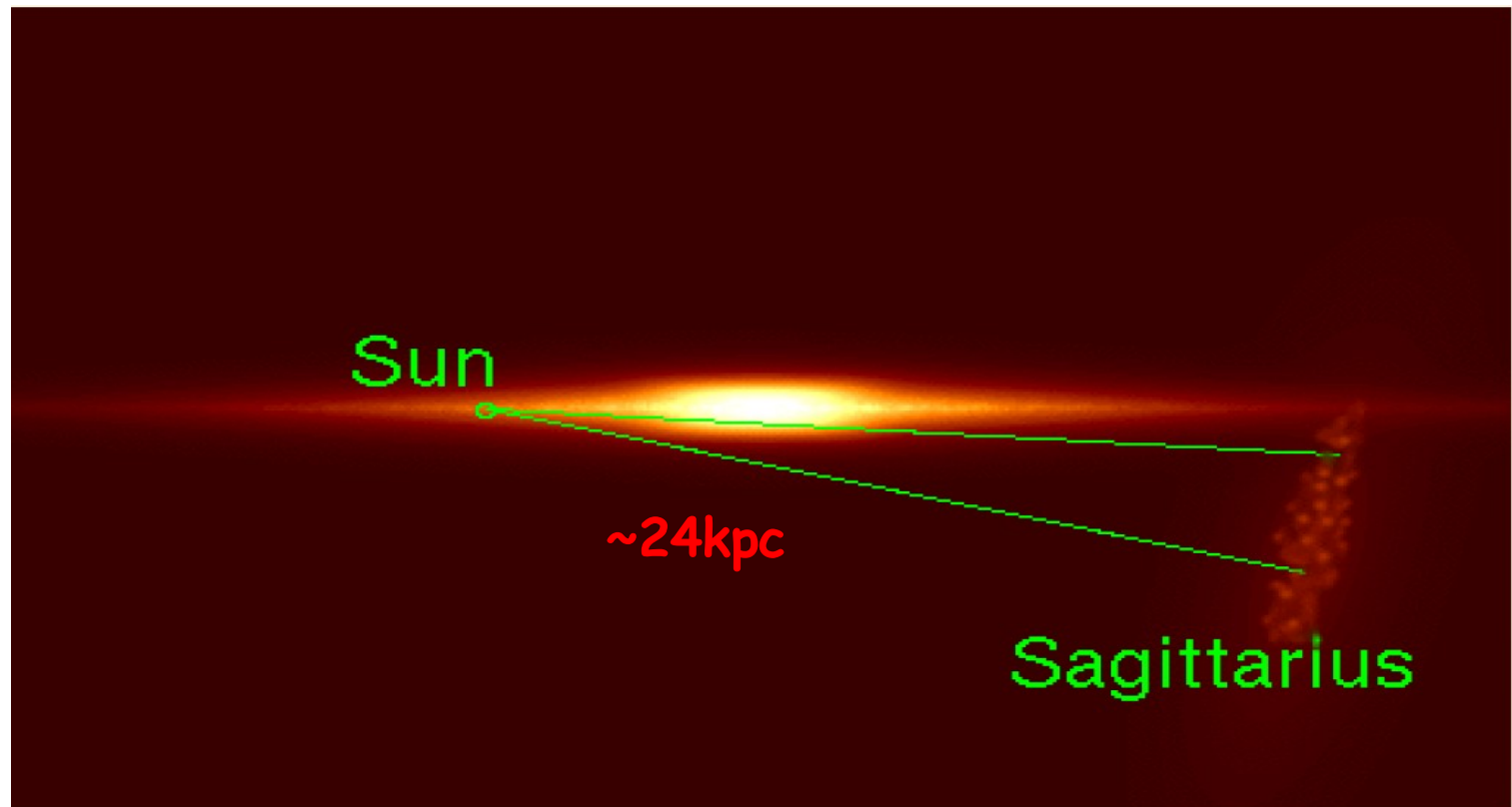


# Some dwarf Spheroidals



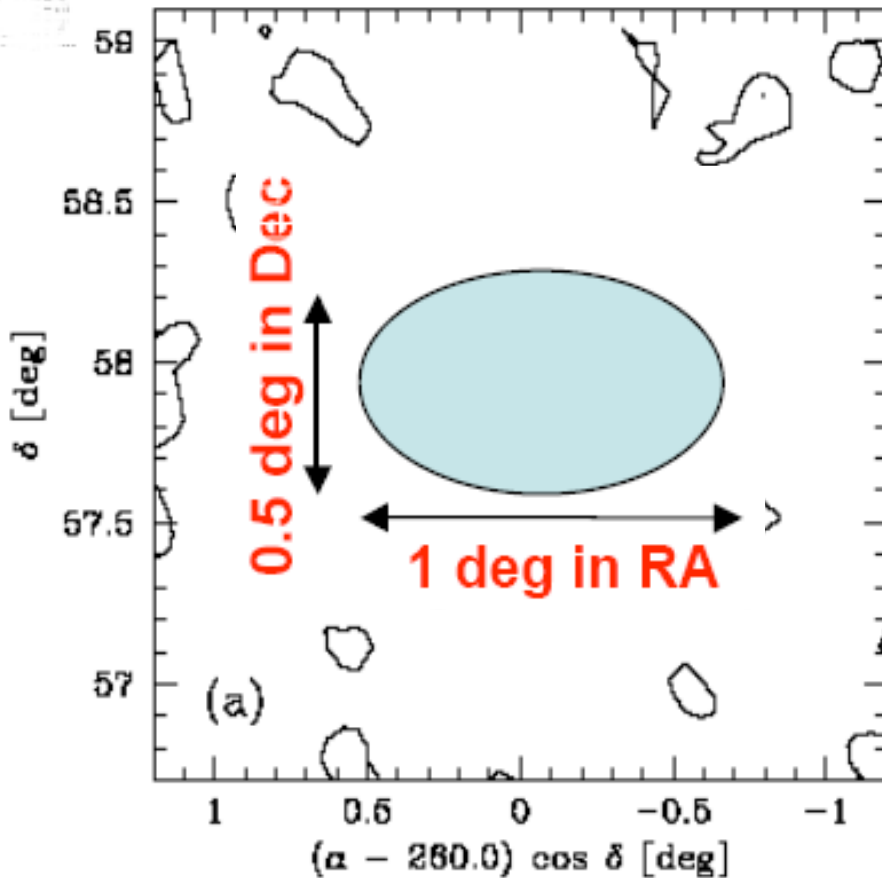
# Sagittarius

- South hemisphere
- tidal effects ongoing
- the closest of all



# Draco

## SDSS map



- $(l, b) = (86.4^\circ, +34.7^\circ)$
- $d \sim 75$  kpc
- $M/L = 250$  solar unit
- $M \sim 6 \cdot 10^{11}$  solar unit

# from astro-ph/0311145

## Cored Power-Law Models

$\alpha$	Sagittarius		Draco		Canis	
	$\Delta\Omega = 10^{-3}$ sr	$\Delta\Omega = 10^{-5}$ sr	$\Delta\Omega = 10^{-3}$ sr	$\Delta\Omega = 10^{-5}$ sr	$\Delta\Omega = 10^{-3}$ sr	$\Delta\Omega = 10^{-5}$ sr
0.2	0.6	3.4	0.07	2.2	2.4	3.4
0	0.6	3.3	0.06	2.2	2.4	3.5
-0.2	0.6	3.2	0.07	2.2	2.4	3.4

## Cusped Models

$\gamma$	Sagittarius		Draco		Canis	
	$\Delta\Omega = 10^{-3}$ sr	$\Delta\Omega = 10^{-5}$ sr	$\Delta\Omega = 10^{-3}$ sr	$\Delta\Omega = 10^{-5}$ sr	$\Delta\Omega = 10^{-3}$ sr	$\Delta\Omega = 10^{-5}$ sr
0.5	1.1	17.8	0.1	5.7	6.2	32.3
1 (NFW)	1.3	36.9	0.1	7.2	8.3	139.9
1.5 (Moore)	7.3	615.1	0.6	55.4	49.1	5469

## Galactic Center

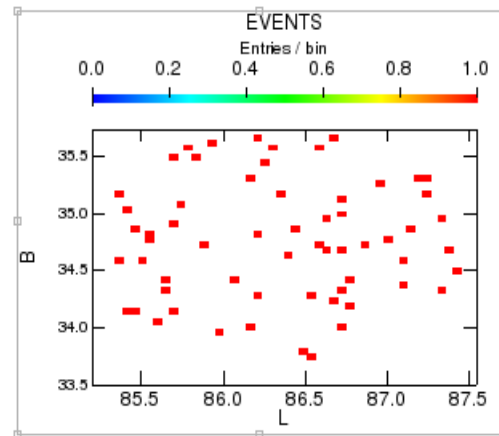
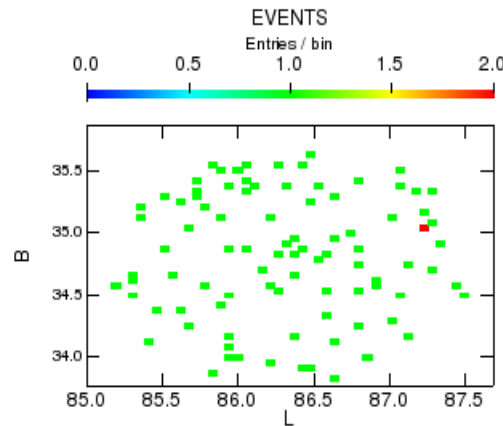
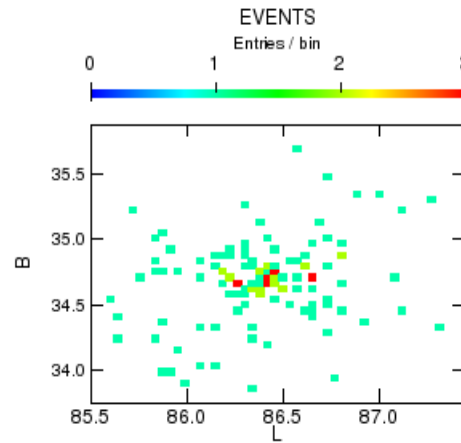
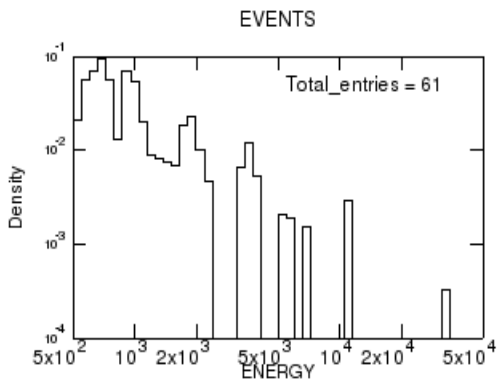
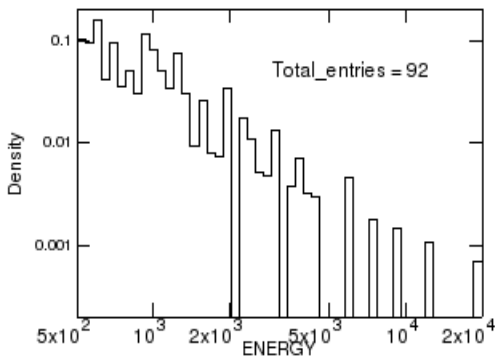
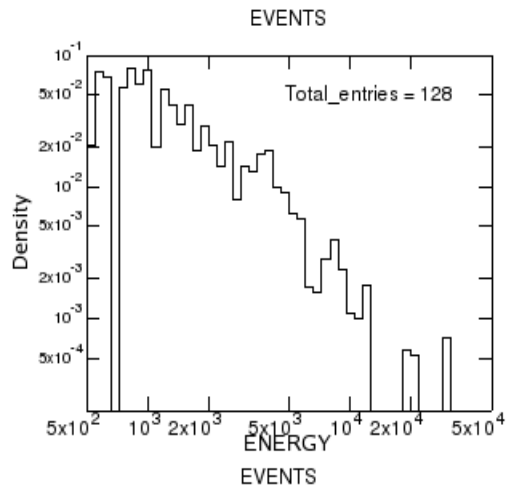
Profile	$\Delta\Omega = 10^{-3}$ sr	$\Delta\Omega = 10^{-5}$ sr
NFW, $\gamma = 1$	26	280
Cored, $\alpha = 0$	0.3	0.3

1° radius,  
Sigma<sub>19</sub> = 1

# Draco Quick and Dirty Simulation

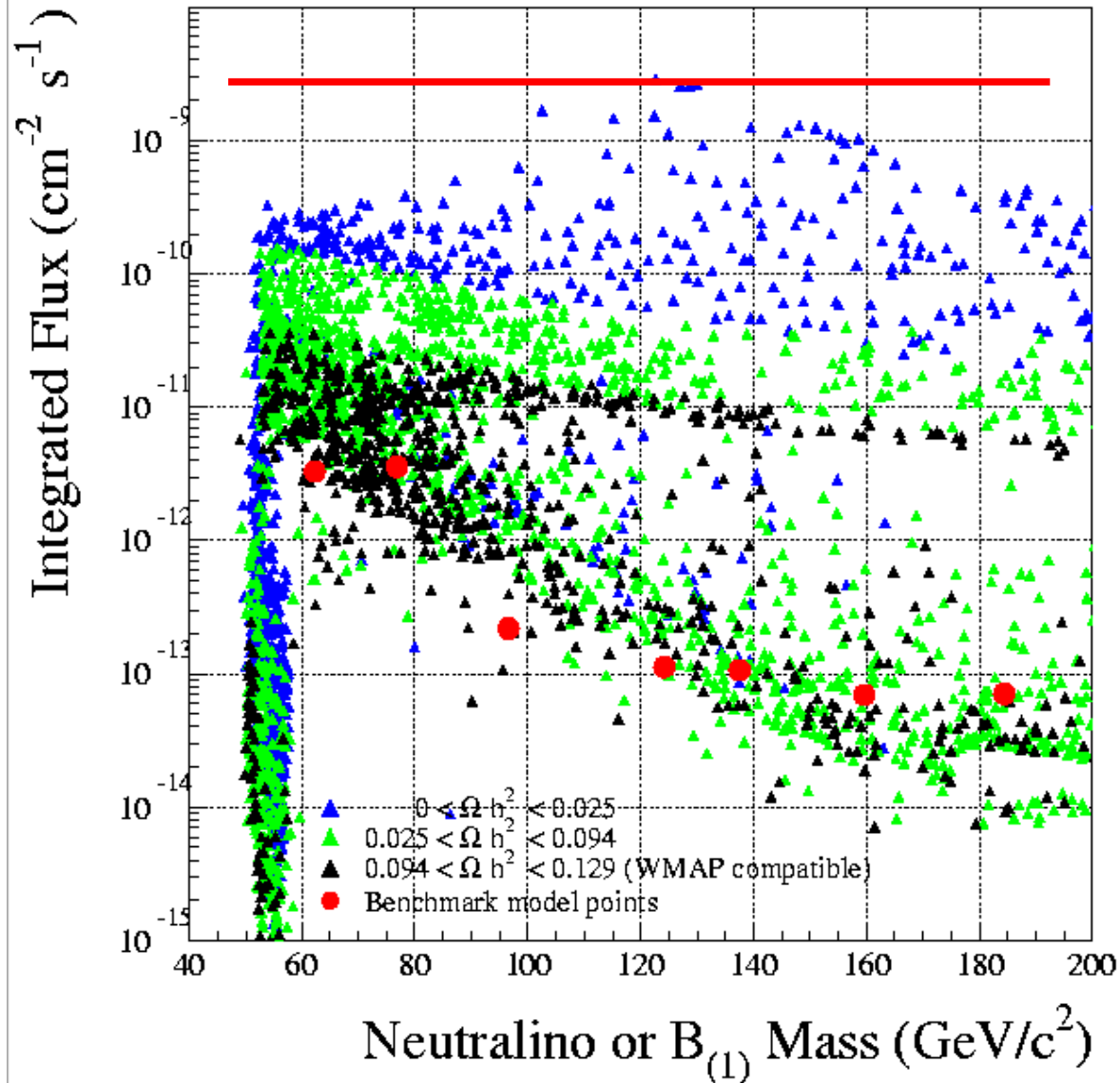
- Take a 120GeV neutralino and simulate  $>500$  MeV in a  $1^\circ$  radius circle around Draco
  - flux in continuum :  $4.e-5 \text{ m}^{-2} \text{ s}^{-1}$  (from LAT perfs)
  - lines :  $2.26e-7$  and  $4.91e-8 \text{ m}^{-2} \text{ s}^{-1}$
- Background :
  - galactic : DC2 file
  - extragalactic :  $0.257 \text{ m}^{-2} \text{ s}^{-1}$  above 500MeV, index=2.1

# Results



- $\sigma =$   
 $128/\sqrt{61+92}$   
 $\sim 10\dots$
- So a 5 sigma  
significance is  
 $\sim 2.e-5 \text{ m}^{-2} \text{ s}^{-1}$

# Results



- Not too good ( $b \sim 100$ ) but :
  - some margin in number of photons and integration area
- More/cleaner work soon to confirm
- Canis major might be a better bet

# Conclusion

- lots of spheroids to look for
- Work started : next is *Canis Major!*  
( $l=240^\circ, b=-8^\circ$ )
- Most obvious are *Draco* and *Sagittarius*  
(already in *ACTs* campaign plans)
- Need to do some reading first