

DC1: The Creation

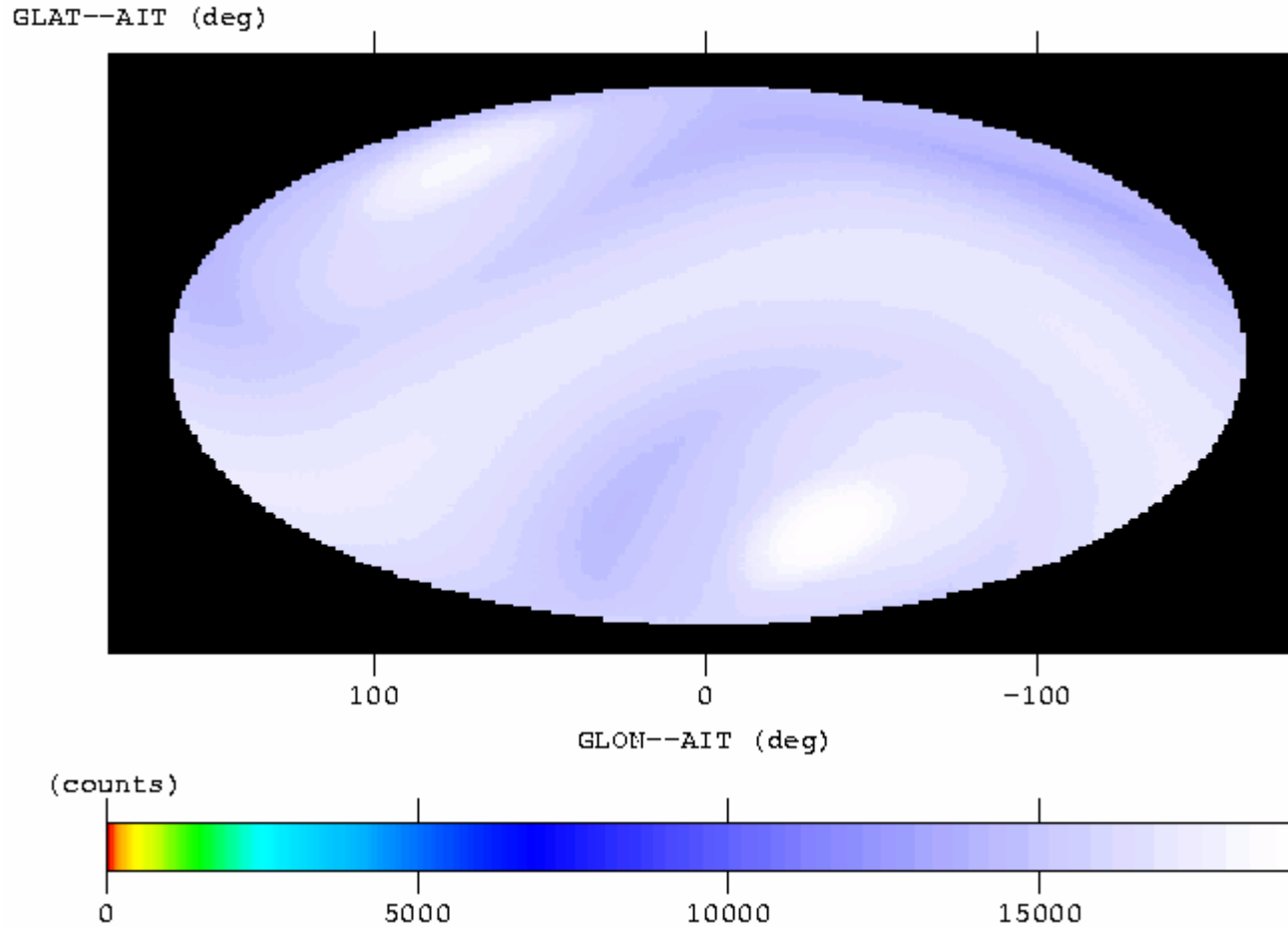


First day: Planets, Sun and Moon

Preliminaries

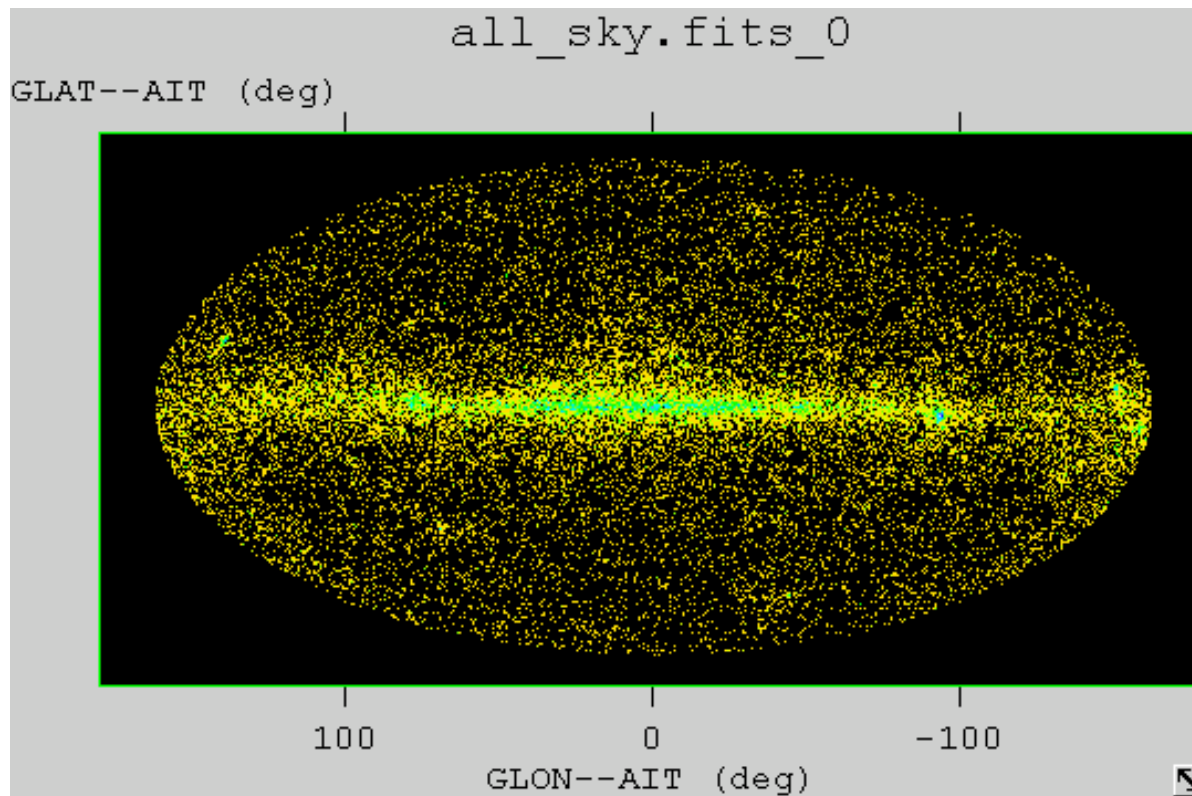
- I'll only present plots for day 1.
 - days 2-7 sources differ only in GRB's: the list of photons is available as an ascii table
- All photon plots are for the standard cuts on good energy measurement, good tracks, and good gamma (background rejection) [so burst 47274 is lost]
- Sky maps will be in galactic coordinates
- Notes:
 - No non-gamma background
 - No deadtime
 - Slew rate for rocking unreasonably fast
 - No SAA, sun, moon

Exposure: the 1-day map

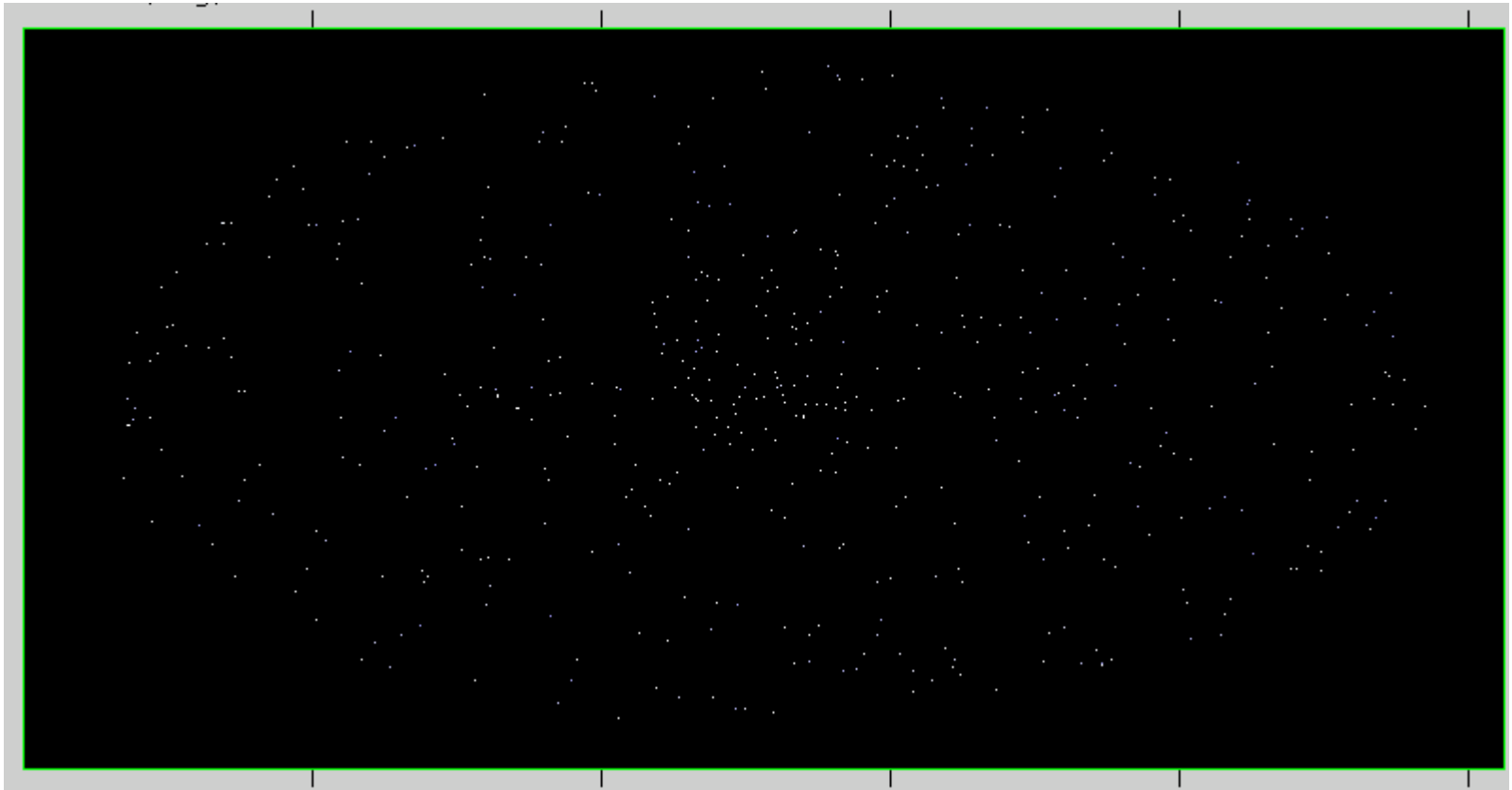


Quick review of the data

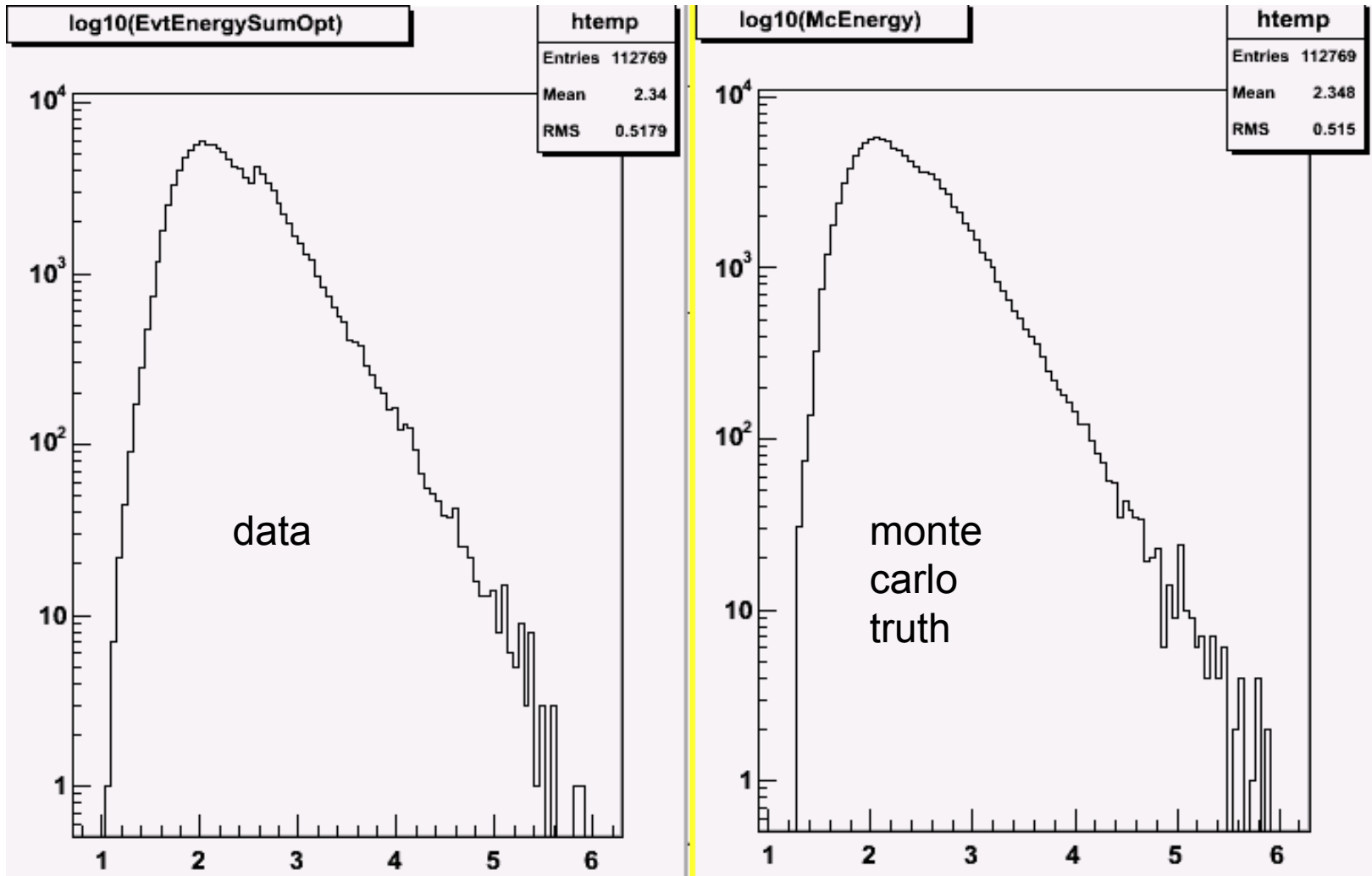
- Spatial data, including diffuse:



Actual sources

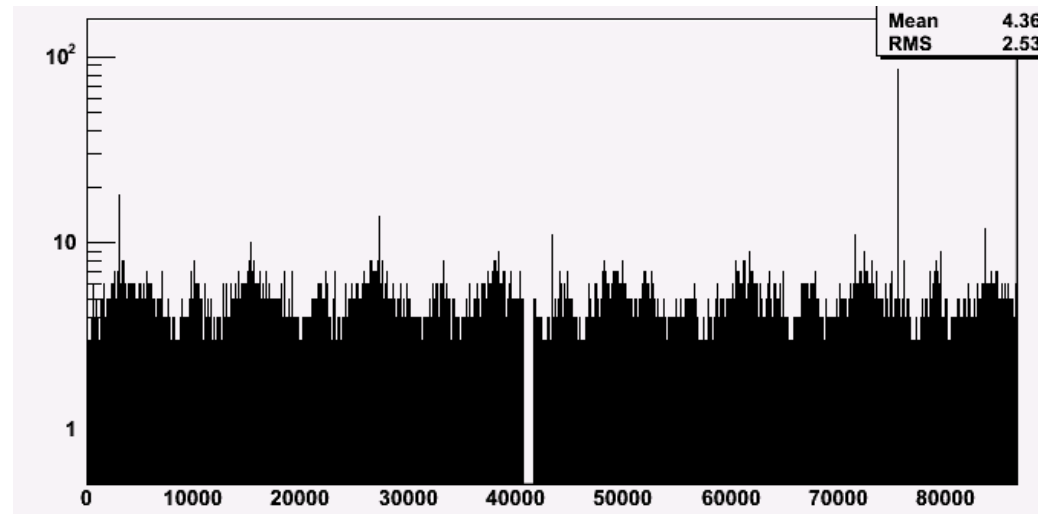
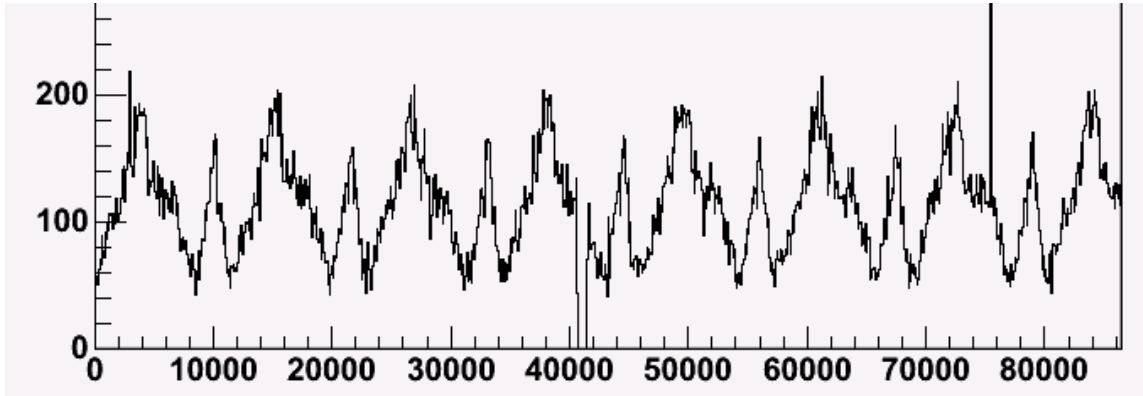


Energy domain

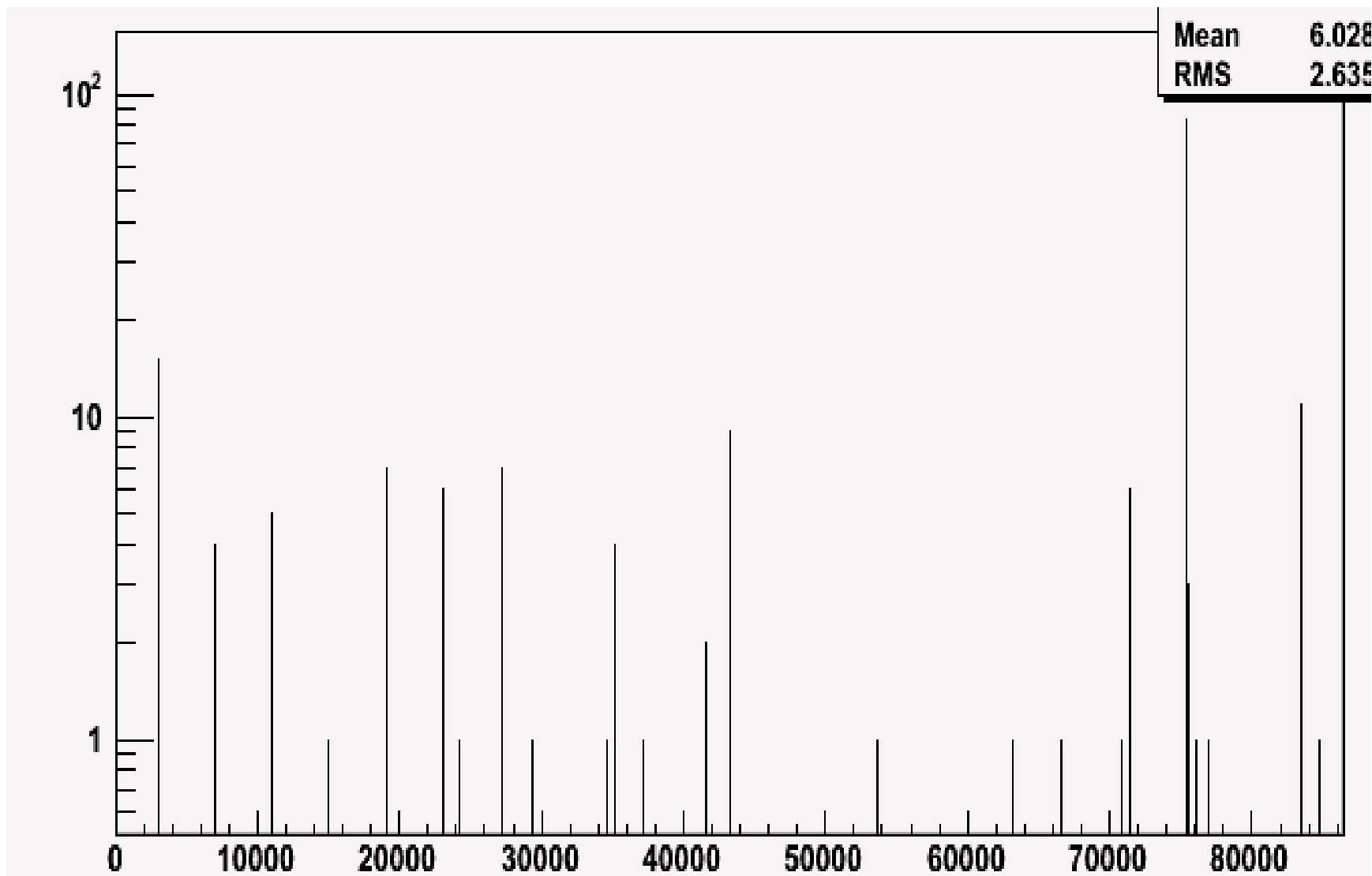


$\log_{10}(\text{Energy}/1 \text{ MeV})$

Time domain



Peek at the GRB photons!



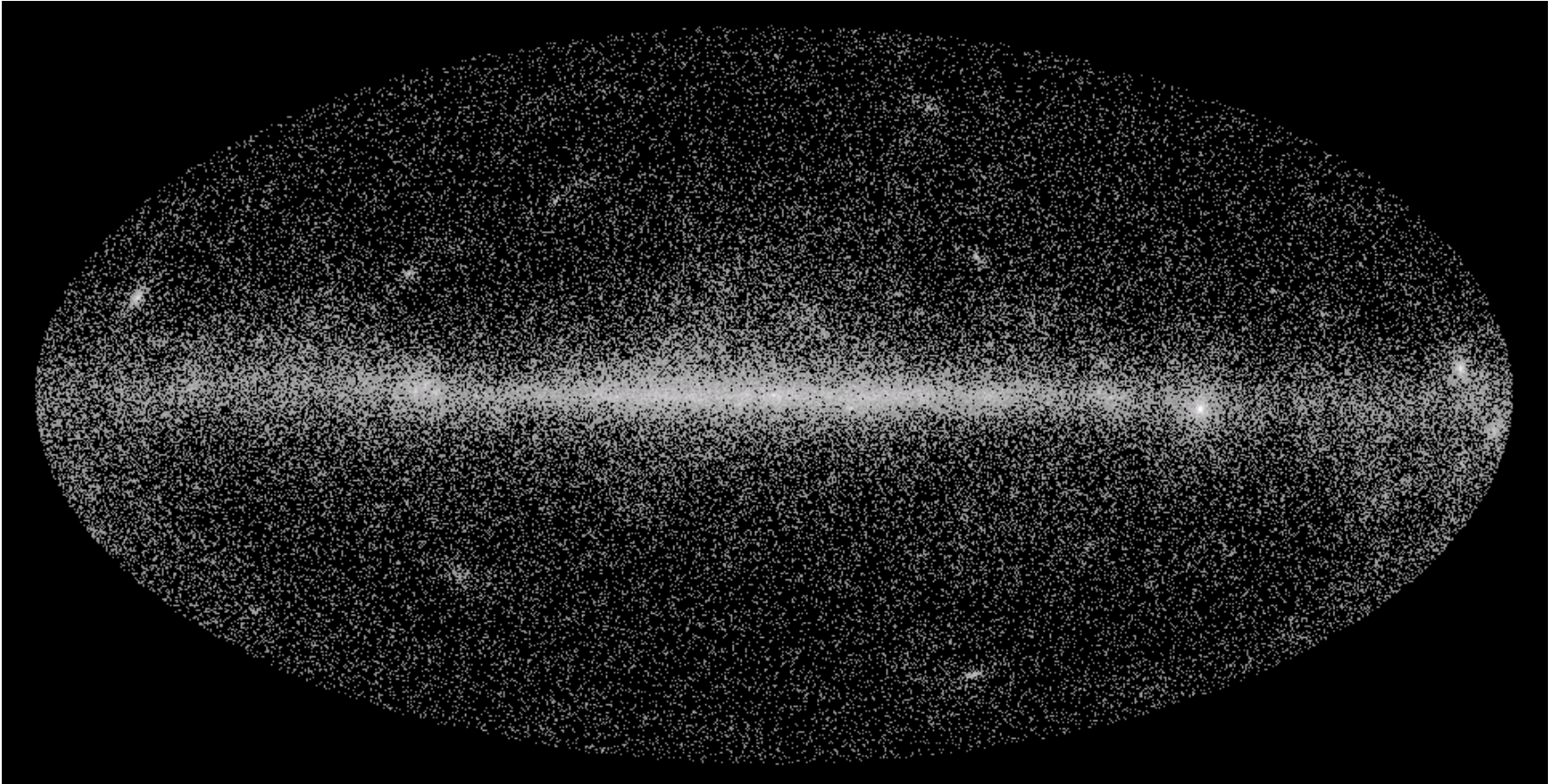
The sources!

secret
code!

Source Name	discrete sources	Photons Detected	MC_src_id codes
extra galactic diffuse	0	24104	0
galactic diffuse	0	69593	1000
3EG catalog	263	13295	2000-2262
blazars	514	3360	3000-3513
halo	68	1750	4000-4067
low lat	18		4068-4085
susy from Gal Center	1	11	5000
GRB's		656	6000
Total		112769	

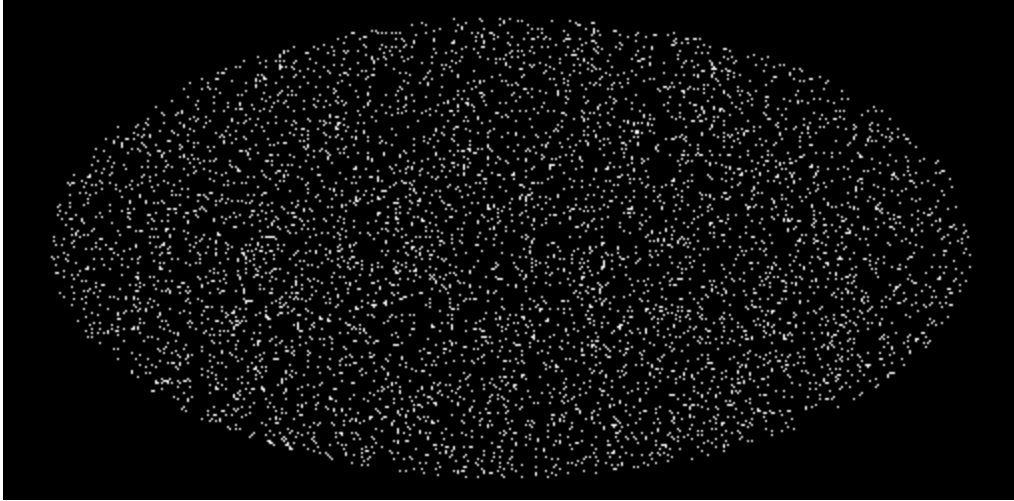
Note: no flares

The data

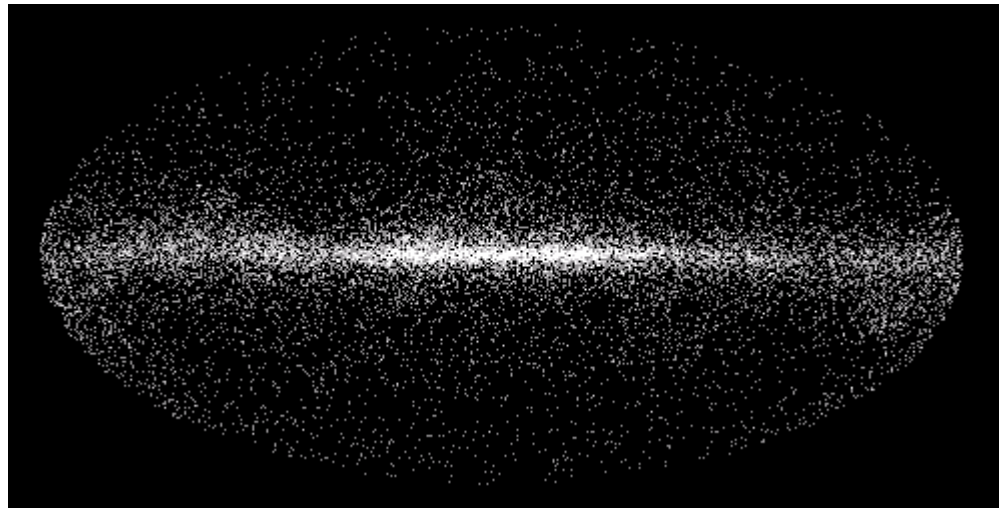


on to
individual
components!

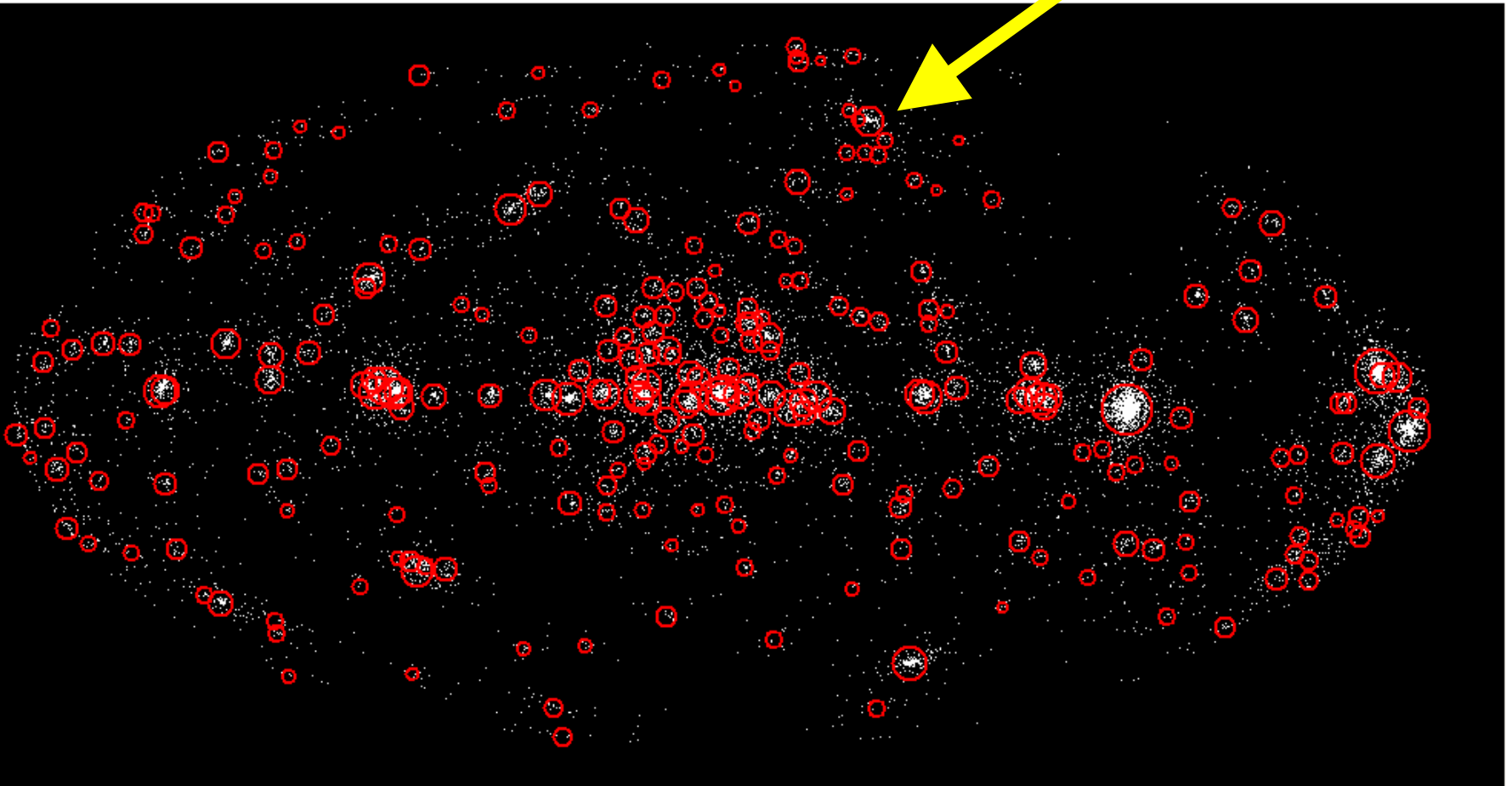
The Diffuse Truth



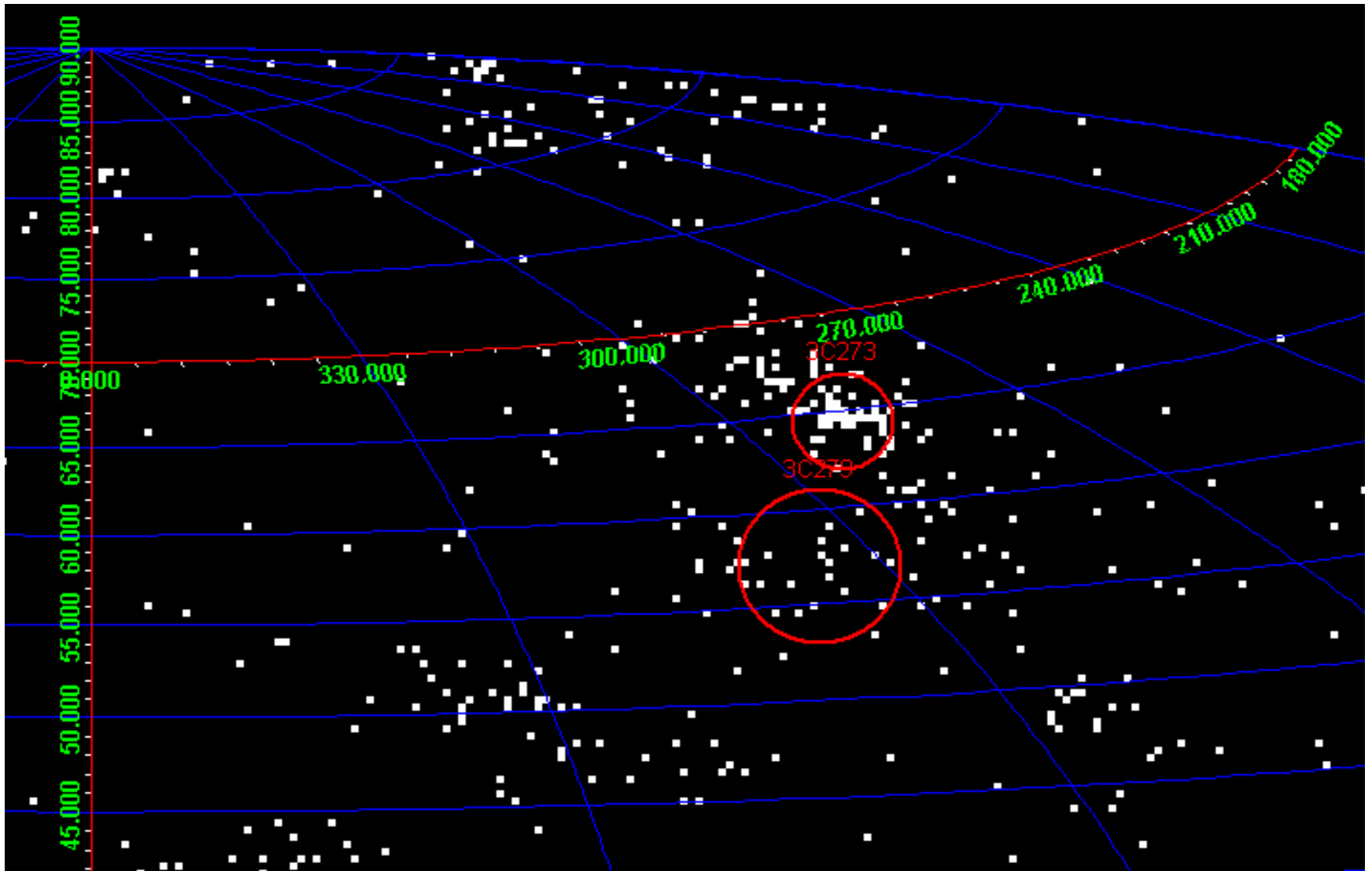
No surprises,
excitement



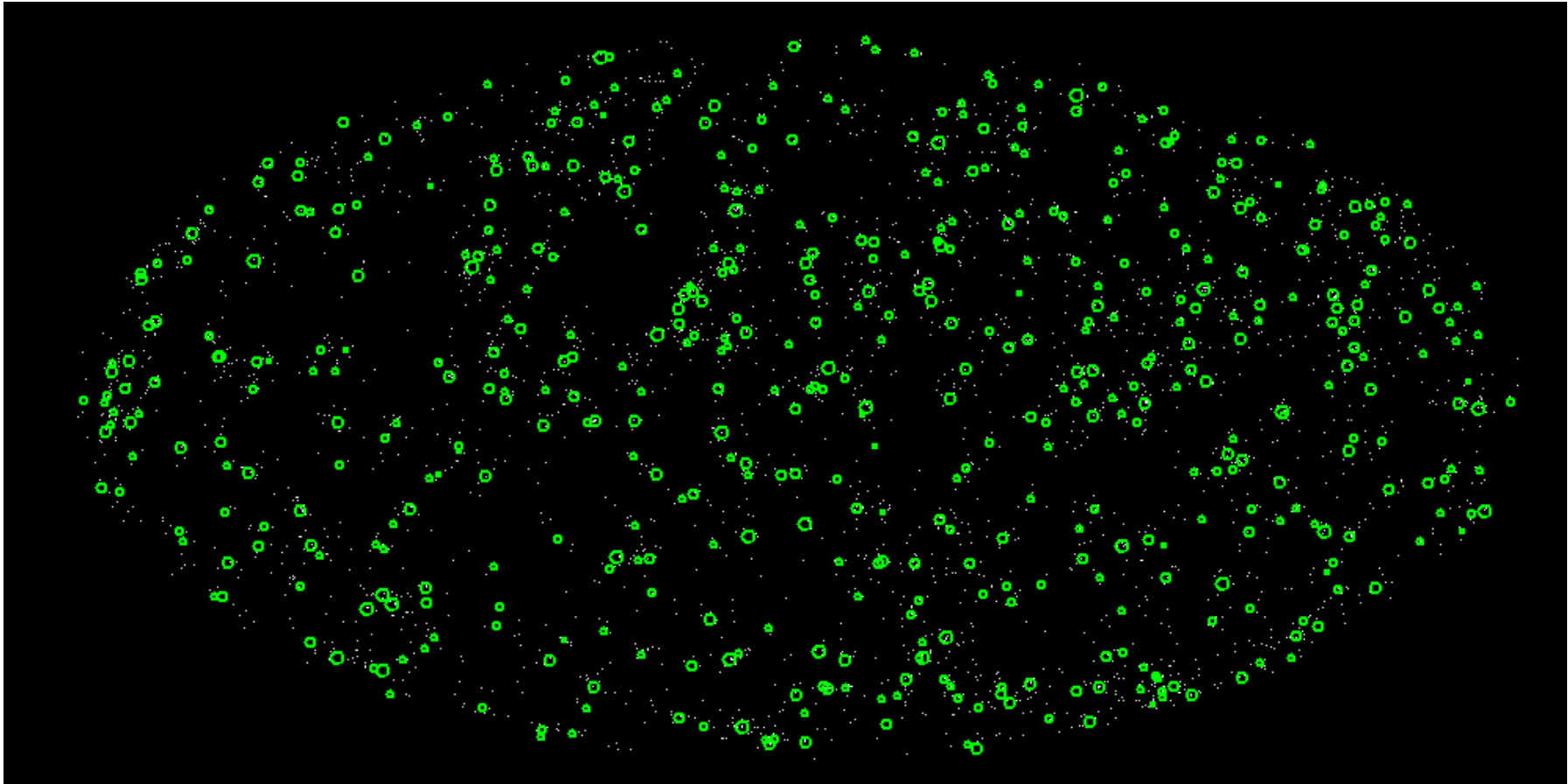
3EG – and a twist



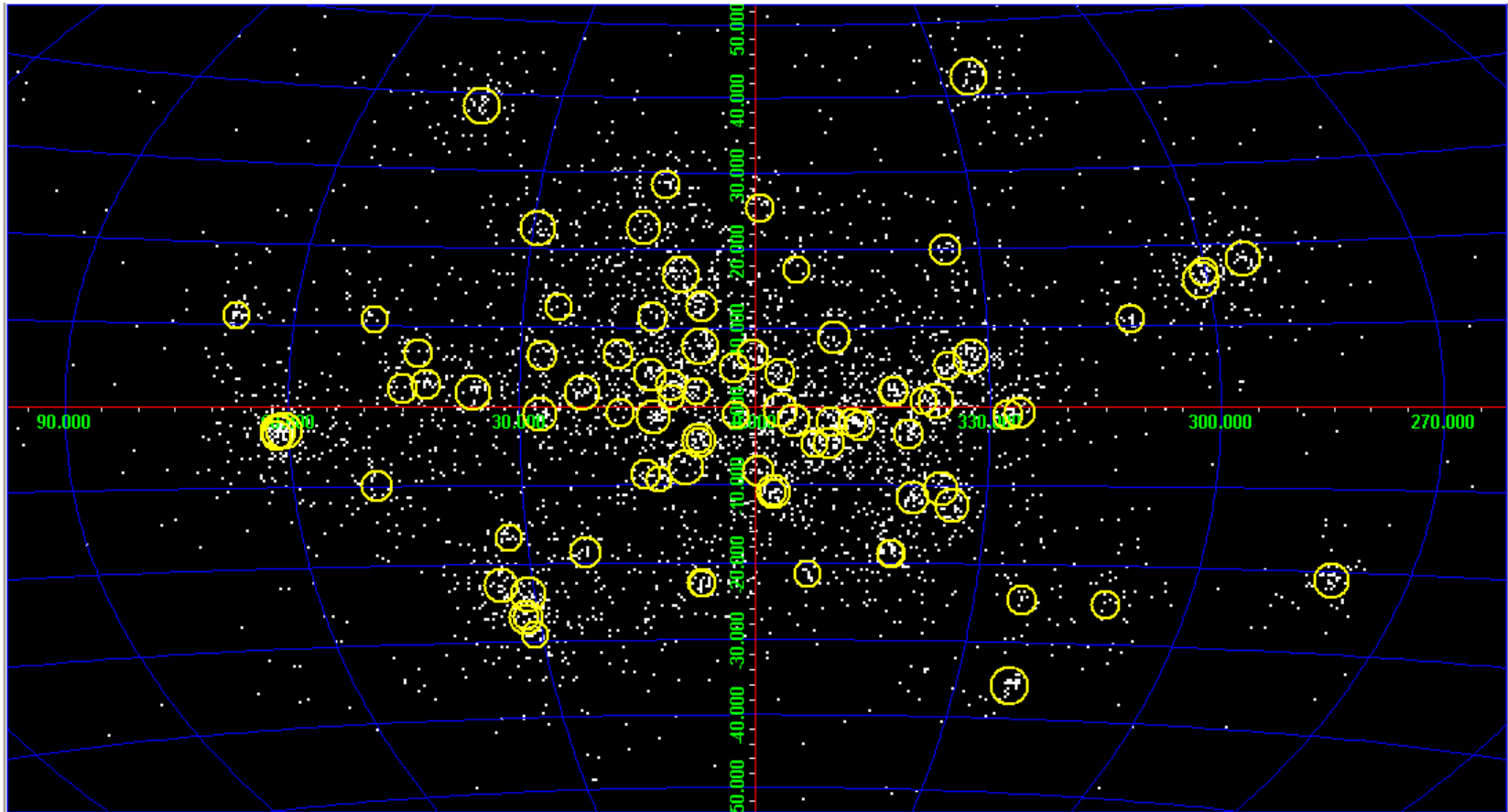
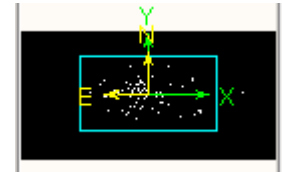
The blow-up



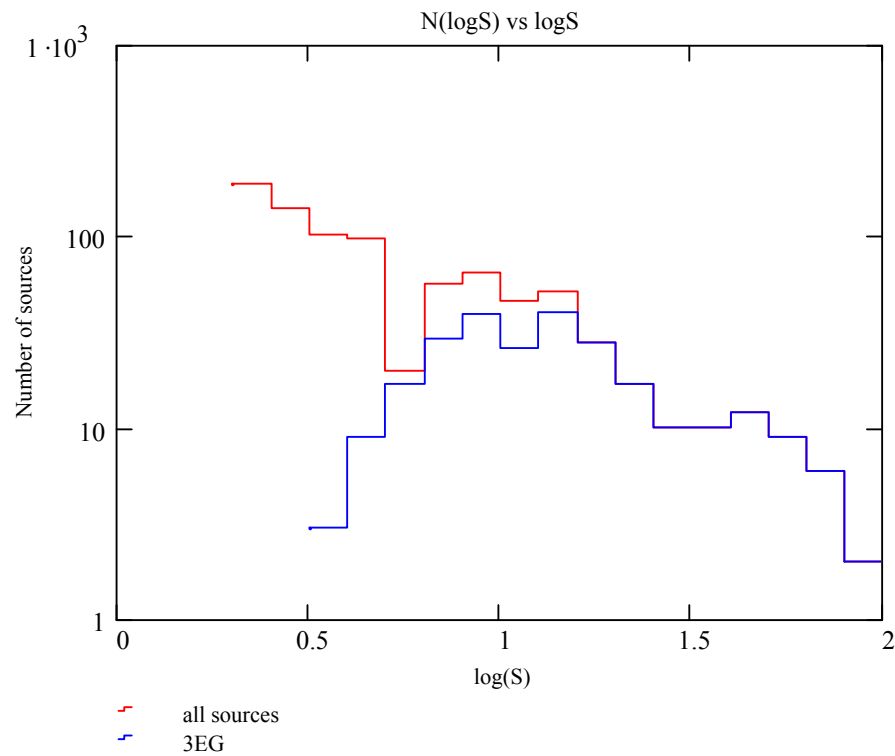
Seth's mystery sources I: 514 blazars



Seth's mystery sources II: 86 halo, low lat

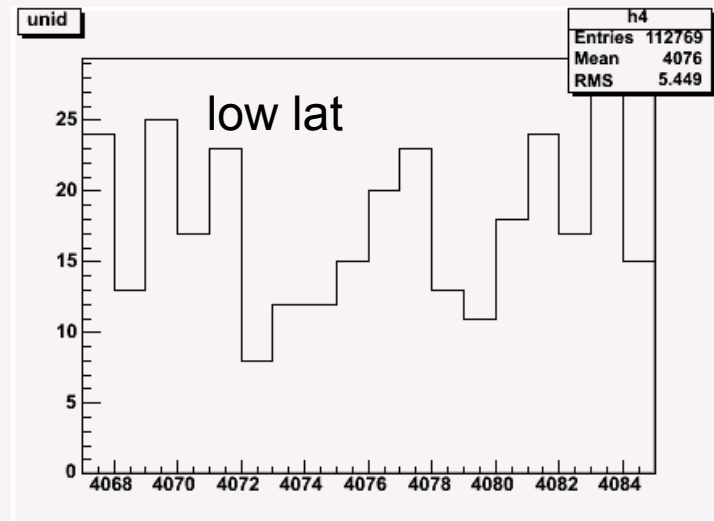
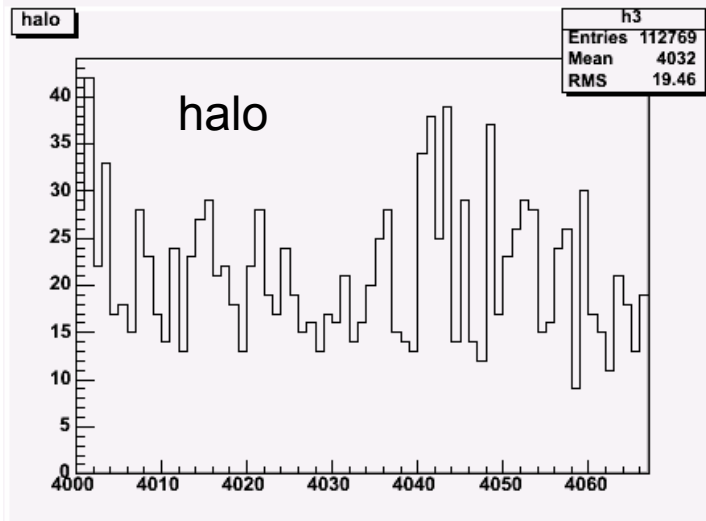
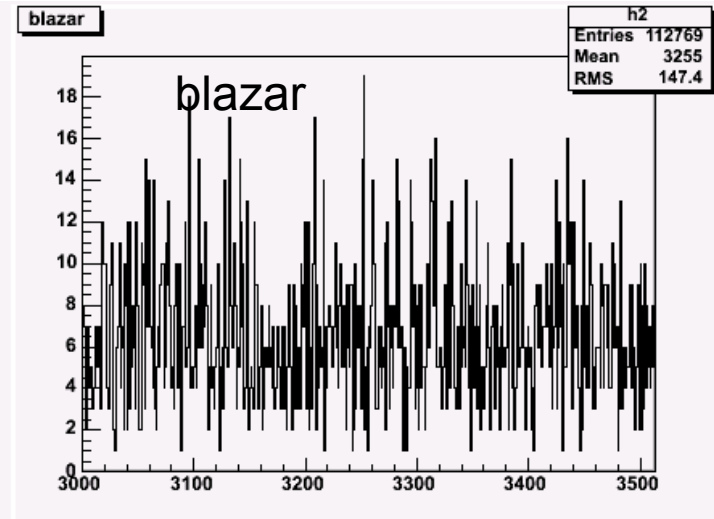
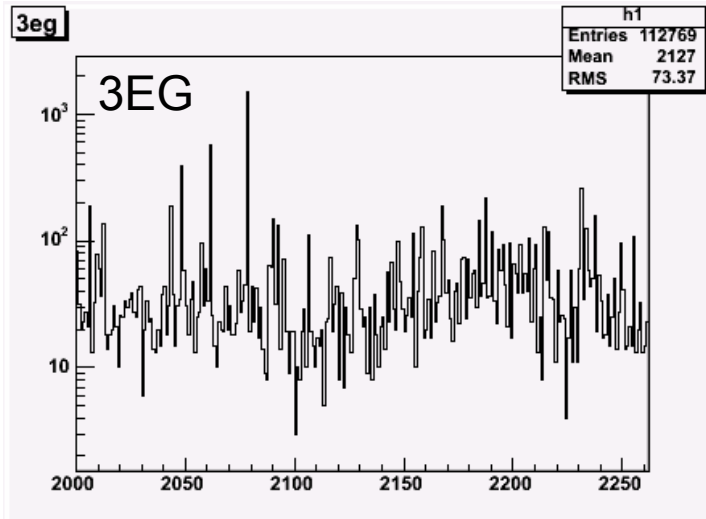


Distributions of the sources



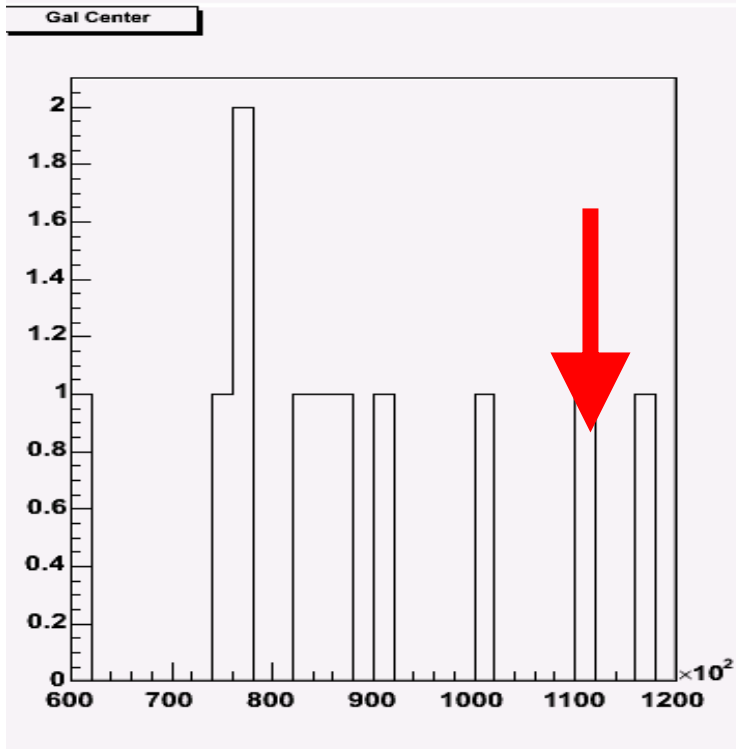
Which should be detected?

counts



MC_src_Id

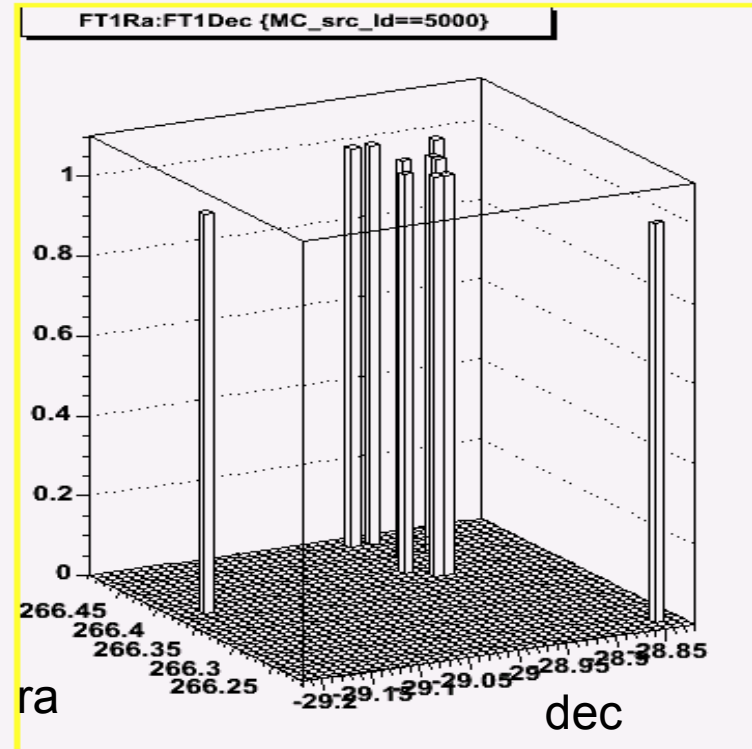
The Galactic center surprise



E (MeV)

truth: E=110 GeV, l=b=0

5E-4 photons/m²/s



```
<source name="galcenter" flux="5e-4">
  <spectrum escale="GeV">
    <particle name="gamma" <energy e="110."/>
    </particle>
    <galactic_dir l="0" b="0"/>
  </spectrum>
</source>
```

Where to get the details: I

- An Excel file with the complete catalog:
http://glast.phys.washington.edu/DC1/sources/source_catalog.xls

- columns are:

name	3EG name, or Seths
ra	(deg)
dec	(deg)
flux20	E>20 MeV photons/m ² /s
flux100	E>100 MeV 1E4*(photons/m ² /s)
gamma	power law exponent
ebreak	max energy for gamma
gamma2	power law above break
l	galactic longitude (deg)
b	galactic latitude (deg)
MC_src_Id	identifying index

Details, II

- A few interesting entries

GLAST DC1 point sources											
name	ra	dec	flux20	flux100	gamma	ebreak	gamma2	l	b	MC src Id	comments
3EG_J0534p2200	83.57	22.01	0.154	226.85	2.19	1500	4.89	-175.47	-5.84	2048	crab
3EG_J0633p1751	98.49	17.86	0.102	352.60	1.66	2000	3.1	-164.94	4.32	2061	geminga
3EG_J0834m4511	128.73	-45.20	0.253	833.36	1.69	1900	3.69	-96.47	-2.86	2078	vela
3EG_J1229p0210	187.25	2.17	0.060084	47.25	2.58	1.00E+06	0	-70.17	64.47	2106	too big
3EG_J1255m0549	193.98	-5.82	0.003479	7.42	1.96	1.00E+06	0	-55.02	57.03	2113	too small

- All the files used to generate the sources are at <http://glast.phys.washington.edu/DC1/sources>
- includes "region" files to overlay symbols on DS9 images.