THE PRELIMINARY SECOND AGILE-GRID CATALOG OF HIGH-ENERGY GAMMA-RAY SOURCES

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ABSTRACT

The second catalog of high-energy gamma-ray sources detected by the AGILE-GRID telescope includes data from the pointing period (July 2007-October 2009) using more data than the first AGILE-GRID catalog. This catalog uses completely reprocessed data using the new FM3.119 filter. AGILE detects hundreds of high-significance sources both a high and low Galactic latitudes. In this poster we focus on low Galactic latitudes and in particular on the correspondence between the sources detected by AGILE vs. those detected by Fermi-LAT. A class of AGILE-only sources is identified.

Status of 2AGL catalog

The preliminary version of 2AGL Catalog, that covers the first 2.5 years of AGILE (the "pointing mode", consists of 150 AGILE sources for E>100 MeV in the Galactic plane (|b| < 10°) and ~150 sources outside the Galactic plane. In this poster we report only a preliminary list of sources detected by AGILE and not by Fermi.

AGILE and Fermi

List of high confidence Galactic sources detected by AGILE and not by Fermi, for E>100 MeV. The Table provides: (1) AGILE name of the sources; (2) (3) the Galactic coordinates l and b; (4) counts and related error; (5) the statistical significance source detection according to the maximum likelihood ratio test for E>100 MeV; (6) the period-averaged flux F (E > 100 MeV) in 10−6 ph. cm^{-2} s^{-1}; (7) the radius of the 95% confidence level

Name	l	b	Counts	$\sqrt{(TS)}$	Flux 10^{-6}	r
2AGLJ1802-2249	7.14	-0.06	737.37 ± 132.11	5.87	31.50 ± 5.64	0.37
2AGLJ1823-1501	16.31	-0.57	786.50 ± 133.82	6.20	32.30 ± 5.50	0.20
2AGLJ1857+0023 (*)	33.91	-1.07	524.55 ± 125.31	4.37	16.81 ± 4.02	0.37
2AGLJ1950+2907	65.20	1.44	367.16 ± 89.93	4.30	9.52 ± 2.33	0.64
2AGLJ2019+3815	76.12	1.26	630.10 ± 131.24	5.04	14.25 ± 2.97	0.31
2AGLJ2038+4325	82.45	1.34	609.67 ± 134.23	4.76	13.22 ± 2.91	0.60
2AGLJ2211+5711	102.49	0.83	365.15 ± 90.56	4.24	7.37 ± 1.83	0.84
2AGLJ2223+6117	106.00	3.40	528.55 ± 99.13	5.66	10.93 ± 2.05	0.33
2AGLJ2225+6429	108.00	5.93	436.19 ± 92.88	5.00	8.91 ± 1.90	0.56
2AGLJ2244+6530	110.25	5.81	408.23 ± 90.53	4.80	8.28 ± 1.84	0.34
2AGLJ0309+6909	134.70	9.49	286.16 ± 65.57	4.71	8.86 ± 2.03	0.60
2AGLJ0539+2820	179.69	-1.63	246.40 ± 50.66	5.51	20.09 ± 4.13	0.92
2AGLJ0537+2407	183.11	-4.12	330.90 ± 60.14	6.17	28.49 ± 5.18	0.46
2AGLJ1118-6339	292.84	-2.62	412.72 ± 83.93	5.30	15.64 ± 3.18	0.55
2AGLJ1627-4450	337.98	2.85	385.50 ± 99.17	4.09	12.29 ± 3.16	0.66
2AGLJ1636-4717	337.24	0.06	1179.19 ± 155.75	8.01	36.60 ± 4.83	0.23
2AGLJ1654-4656 (*)	339.49	-2.04	489.59 ± 116.14	4.42	15.66 ± 3.72	0.62
2AGLJ1720-3841 (*)	348.98	-0.94	557.25 ± 117.88	4.97	21.53 ± 4.55	0.21
2AGLJ1726-3424 (*)	353.13	0.59	996.25 ± 131.48	8.12	40.31 ± 5.32	0.29

(*) marginal spatial coincidence

Table 1: a preliminary list of gamma-ray source detected by AGILE and not present in the 2FGL catalog

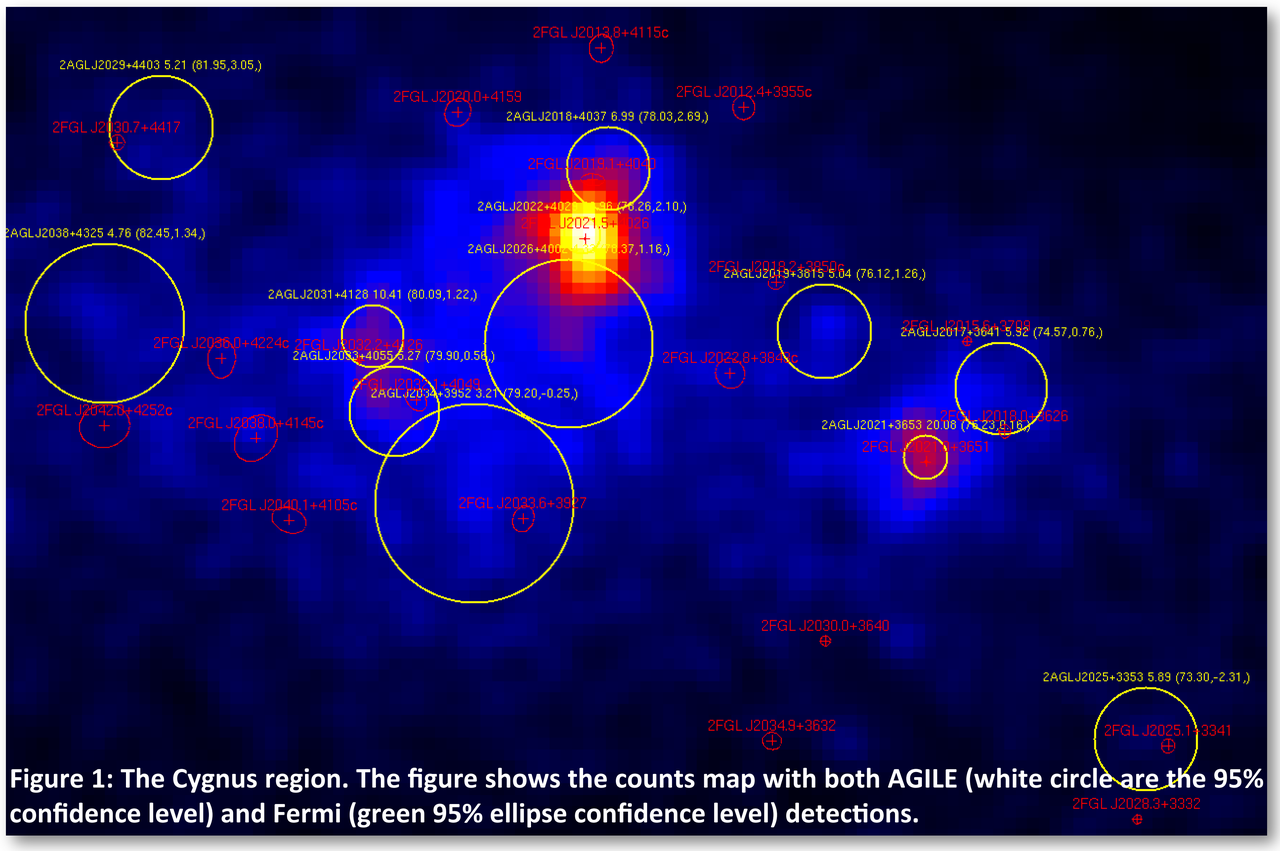

Figure 1: The Cygnus region. The figure shows the counts map with both AGILE (white circle are the 95% confidence level) and Fermi (green 95% ellipse confidence level) detections.

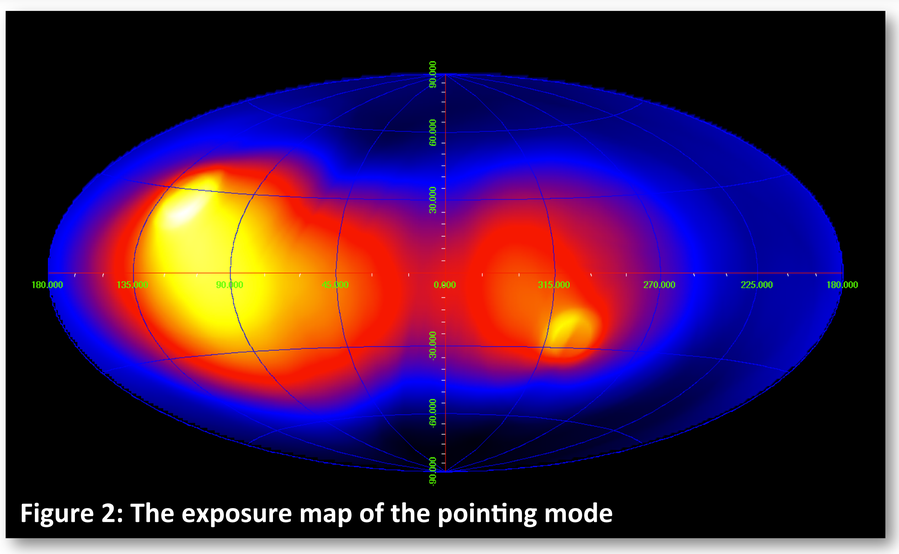

Figure 2: The exposure map of the pointing mode

Conclusions

AGILE detected, on deep long timescale integrations, about 19 AGILE only high confidence gamma-ray source (E>100 MeV) which are not present in the 2FGL catalog. The nature of these sources is under investigation.

References

[1] Pittori C., et al., A&A 506, 1563–1574 (2009)
[2] Nolan P. L., et al., ApJS, 199:31 (46pp), 2012
[3] Verrecchia F. et al. A&A 558, A137 (2013)

Figure 3: The counts map of the pointing mode with the 2AGL sources