PWNCAT2

Lots of people...

ABSTRACT

Abstract goes here

Subject headings: Catalogs; Fermi Gamma-ray Space Telescope; Gamma rays: observations; pulsar wind nebula

1. Introduction

The introduction goes here...

Primary motivations for improved analysis

- More data (3 years vs 18 months)
- Many new GeV pulsars
- Going to higher energies thanks to improved IRFs.
- Better spatial/morphological analysis due to new `pointlike` code.

2. LAT Description and Observations

Description goes here...

3. Timing Analysis

Timing analysis goes here...

4. Off-peak Phase Selection

Off-peak goes here...

5. Analysis of the *Fermi*-LAT data

Analysis goes here...

6. Results

Results goes here...

Table 1. All Energy spectral fit for the 52 LAT-detected Pulsars

PSR	TS	$F_{0.1-316}$ (10^{-9}ph cm^{-2} s^{-1})	Γ
J0007+7303	55.8	49.25 ± 49.24	2.75 ± 1.45
J0030+0451	13.8	< 7.95	···
J0034-0534	32.6	15.30 ± 5.18	2.38 ± 0.21
J0205+6449	19.2	< 13.15	···
J0218+4232	7.4	< 13.34	···
J0248+6021	3.5	< 10.97	···
J0357+3205	0.0	< 2.85	···
J0534+2200	5814.5	456.08 ± 17.22	2.12 ± 0.02
J0613-0200	0.0	< 3.49	···
J0631+1036	12.4	< 20.33	···
J0633+0632	4.4	< 11.27	···
J0633+1746	4816.5	925.99 ± 24.42	2.29 ± 0.02
J0659+1414	0.0	< 1.77	···
J0742-2822	6.9	< 8.40	···
J0751+1807	7.4	< 6.88	···
J0835-4510	305.9	285.76 ± 22.79	2.55 ± 0.06
J1023-5746	16.4	< 30.44	···
J1028-5819	0.0	< 12.79	···
J1044-5737	0.0	< 7.90	···
J1048-5832	0.0	< 8.81	···
J1057-5226	0.0	None	···
J1413-6205	0.7	< 2.08	···
J1418-6058	4.7	< 7.50	···
J1420-6048	0.0	< 15.33	···
J1429-5911	0.0	< 2.50	···
J1459-6053	0.0	< 1.31	···
J1509-5850	0.0	< 2.20	···
J1614-2230	0.0	< 3.15	···
J1709-4429	0.0	< 5.96	···
J1718-3825	0.0	< 4.61	···
J1732-3131	0.0	< 1.89	···
J1741-2054	0.0	< 5.74	···
J1744-1134	0.0	< 7.37	···
J1747-2958	0.0	< 12.97	···
J1809-2332	0.0	< 12.43	···
J1813-1246	0.0	< 22.65	···
J1826-1256	0.2	< 21.07	···
J1836+5925	0.0	< 14.63	···
J1846+0919	0.0	< 1.85	···
J1907+0602	0.0	< 1.71	···
J1952+3252	0.0	< 1.05	···
J1954+2836	0.0	< 1.86	···
J1957+5033	0.0	None	···
J1958+2846	0.0	< 2.17	···
J2021+3651	0.0	< 5.90	···

Table 1—Continued

PSR	TS	$F_{0.1-316}$ (10^{-9} ph cm^{-2} s^{-1})	Γ
J2021+4026	8.2	< 118.88	···
J2032+4127	0.5	< 14.55	···
J2043+2740	0.1	< 2.22	···
J2055+2539	0.0	< 2.93	···
J2124-3358	4.7	< 5.65	···
J2229+6114	0.0	< 3.78	···
J2238+5903	0.0	< 3.79	···

Note. — ala

Table 2. Energy bin spectral fit for the 52 LAT-detected Pulsars

PSR	$TS_{0.1-1}$	$F_{0.1-1}$ (10^{-9}ph cm^{-2} s^{-1})	TS_{1-10}	F_{1-10} (10^{-9}ph cm^{-2} s^{-1})	TS_{10-316}	F_{10-316} (10^{-9}ph cm^{-2} s^{-1})
J0007+7303	41.0	27.80 ± 4.69	13.8	< 1.30	1.1	< 0.18
J0030+0451	14.4	< 16.69	4.0	< 0.57	0.0	< 0.12
J0034-0534	16.0	< 16.72	19.9	< 1.07	0.0	< 0.10
J0205+6449	0.7	< 16.87	5.3	< 1.24	11.8	< 0.29
J0218+4232	17.6	< 39.04	0.0	< 0.74	0.0	< 0.20
J0248+6021	6.2	< 35.29	0.2	< 0.86	0.9	< 0.19
J0357+3205	0.0	< 5.95	0.0	< 0.39	0.0	< 0.09
J0534+2200	2234.6	388.54 ± 10.67	2647.3	28.41 ± 1.14	1581.1	5.42 ± 0.43
J0613-0200	0.2	< 10.61	0.0	< 0.42	0.0	< 0.10
J0631+1036	7.6	< 37.83	3.2	< 1.72	3.7	< 0.29
J0633+0632	0.1	< 17.85	1.3	< 1.30	1.0	< 0.23
J0633+1746	4203.6	808.77 ± 18.44	1408.6	41.25 ± 2.12	0.0	< 0.31
J0659+1414	0.0	< 5.15	0.0	< 0.23	0.0	< 0.07
J0742-2822	8.0	< 21.93	0.6	< 0.63	2.6	< 0.13
J0751+1807	0.1	< 6.64	11.7	< 1.04	0.0	< 0.09
J0835-4510	322.5	213.83 ± 13.41	62.9	6.62 ± 1.09	0.0	< 0.34
J1023-5746	0.0	< 26.83	3.2	< 2.62	18.9	< 0.73
J1028-5819	0.2	< 31.93	0.0	< 1.32	0.1	< 0.34
J1044-5737	0.0	< 18.90	0.0	< 1.00	0.0	< 0.17
J1048-5832	0.0	< 21.14	0.1	< 1.20	0.0	< 0.17
J1057-5226	0.0	< 0.76	0.0	< 0.09	0.0	< 0.11
J1413-6205	0.0	< 6.97	0.0	< 0.23	0.8	< 0.22
J1418-6058	0.0	< 15.50	0.0	< 0.76	2.6	< 0.45
J1420-6048	0.0	< 30.53	0.0	< 1.03	6.3	< 0.44
J1429-5911	0.0	< 6.41	0.0	< 0.35	0.0	< 0.18
J1459-6053	0.0	< 3.04	0.0	< 0.19	0.0	< 0.21
J1509-5850	0.0	< 7.16	0.0	< 0.33	0.0	< 0.13
J1614-2230	0.0	< 6.98	0.0	< 0.56	0.0	< 0.18
J1709-4429	0.0	< 13.18	0.1	< 1.06	0.0	< 0.12
J1718-3825	0.0	< 17.07	0.0	< 0.52	0.1	< 0.18
J1732-3131	0.0	< 6.02	0.0	< 0.25	0.0	< 0.20
J1741-2054	0.0	< 14.48	0.0	< 0.71	0.1	< 0.13
J1744-1134	0.0	< 16.20	0.2	< 1.23	0.0	< 0.17
J1747-2958	0.1	< 41.60	0.0	< 2.20	0.0	< 0.18
J1809-2332	0.0	< 23.09	1.6	< 1.70	0.2	< 0.18
J1813-1246	0.0	< 53.08	0.1	< 3.45	0.0	< 0.41
J1826-1256	0.0	< 32.74	1.1	< 3.29	0.0	< 0.35
J1836+5925	0.0	< 26.61	0.0	< 3.52	0.0	< 0.22
J1846+0919	0.0	< 6.73	0.0	< 0.25	0.0	< 0.14
J1907+0602	0.0	< 4.90	0.0	< 0.26	0.0	< 0.17
J1952+3252	0.0	< 2.26	0.0	< 0.18	0.0	< 0.13
J1954+2836	0.0	< 6.57	0.0	< 0.25	0.0	< 0.13
J1957+5033	0.0	< 1.57	0.0	< 0.15	0.2	< 0.10
J1958+2846	0.0	< 6.63	0.0	< 0.32	0.0	< 0.12
J2021+3651	0.0	< 25.10	0.0	< 0.95	0.0	< 0.13

7. Discussion

The discussion goes here...

The *Fermi* LAT Collaboration acknowledges generous ongoing support from a number of agencies and institutes that have supported both the development and the operation of the LAT as well as scientific data analysis. These include the National Aeronautics and Space Administration and the Department of Energy in the United States, the Commissariat à l'Energie Atomique and the Centre National de la Recherche Scientifique / Institut National de Physique Nucléaire et de Physique des Particules in France, the Agenzia Spaziale Italiana and the Istituto Nazionale di Fisica Nucleare in Italy, the Ministry of Education, Culture, Sports, Science and Technology (MEXT), High Energy Accelerator Research Organization (KEK) and Japan Aerospace Exploration Agency (JAXA) in Japan, and the K. A. Wallenberg Foundation, the Swedish Research Council and the Swedish National Space Board in Sweden.

Additional support for science analysis during the operations phase is gratefully acknowledged from the Istituto Nazionale di Astrofisica in Italy and the Centre National d'Études Spatiales in France.

The authors acknowledge the use of HEALPix[1] (Górski et al. 2005).

REFERENCES

Górski, K. M., Hivon, E., Banday, A. J., Wandelt, B. D., Hansen, F. K., Reinecke, M., & Bartelmann, M. 2005, ApJ, 622, 759

[1] `http://healpix.jpl.nasa.gov/`

Table 2—Continued

PSR	$TS_{0.1-1}$	$F_{0.1-1}$ (10^{-9}ph cm^{-2} s^{-1})	TS_{1-10}	F_{1-10} (10^{-9}ph cm^{-2} s^{-1})	TS_{10-316}	F_{10-316} (10^{-9}ph cm^{-2} s^{-1})
J2021+4026	21.1	< 148.99	15.4	< 11.58	9.2	< 1.11
J2032+4127	0.5	< 25.13	0.7	< 1.49	2.6	< 0.24
J2043+2740	0.0	< 4.63	0.1	< 0.31	0.0	< 0.10
J2055+2539	0.1	< 9.10	0.0	< 0.41	0.0	< 0.07
J2124-3358	0.0	< 5.75	5.5	< 0.88	2.2	< 0.10
J2229+6114	0.0	< 10.75	0.0	< 0.59	0.0	< 0.08
J2238+5903	0.0	< 10.11	0.0	< 0.54	0.0	< 0.07

This preprint was prepared with the AAS LaTeX macros v5.2.

Table 3. Spectral fitting of pulsar wind nebula candidates with low energy component.

PWN	$G_{0.1-316}$ ($10^{-12}\,\mathrm{erg\,cm^{-2}\,s^{-1}}$)	Γ	E_{cutoff} (GeV)	$\mathrm{TS}_{\mathrm{cutoff}}$
PSRJ0034-0534	5.72 ± 1.75	1.09 ± 0.90	1.00 ± 0.75	5.5
PSRJ0633+1746	434.98 ± 10.35	1.46 ± 0.07	1.05 ± 0.11	284.2
PSRJ1813-1246	0.01 ± 4.25	1.36 ± 0.28	1.00 ± 1310.30	0.0
PSRJ1836+5925	None	None	None	None
PSRJ2021+4026	503.02 ± 6.30	1.48 ± 0.01	1.19 ± 0.01	2.3
PSRJ2055+2539	None	None	None	None
PSRJ2124-3358	3.93 ± 16.68	1.51 ± 1.63	1000.00 ± 25442.21	0.0