doi:10.1088/0067-0049/193/1/22

ERRATUM: "THE FIRST *FERMI* LARGE AREA TELESCOPE CATALOG OF GAMMA-RAY PULSARS" (2010, ApJS, 187, 460)

A. A. Abdo[1,2], M. Ackermann[3], M. Ajello[3], W. B. Atwood[4], M. Axelsson[5,6], L. Baldini[7], J. Ballet[8], G. Barbiellini[9,10], M. G. Baring[11], D. Bastieri[12,13], B. M. Baughman[14], K. Bechtol[3], R. Bellazzini[7], B. Berenji[3], R. D. Blandford[3], E. D. Bloom[3], E. Bonamente[15,16], A. W. Borgland[3], J. Bregeon[7], A. Brez[7], M. Brigida[17,18], P. Bruel[19], T. H. Burnett[20], S. Buson[13], G. A. Caliandro[17,18], R. A. Cameron[3], F. Camilo[21], P. A. Caraveo[22], J. M. Casandjian[8], C. Cecchi[15,16], Ö. Çelik[23,24,25], E. Charles[3], A. Chekhtman[1,26], C. C. Cheung[23], J. Chiang[3], S. Ciprini[15,16], R. Claus[3], I. Cognard[27], J. Cohen-Tanugi[28], L. R. Cominsky[29], J. Conrad[6,30,69], R. Corbet[23,25], S. Cutini[31], P. R. den Hartog[3], C. D. Dermer[1], A. de Angelis[32], A. de Luca[22,33], F. de Palma[17,18], S. W. Digel[3], M. Dormody[4], E. do Couto e Silva[3], P. S. Drell[3], R. Dubois[3], D. Dumora[34,35], C. Espinoza[36], C. Farnier[28], C. Favuzzi[17,18], S. J. Fegan[19], E. C. Ferrara[23], W. B. Focke[3], P. Fortin[19], M. Frailis[32], P. C. C. Freire[37], Y. Fukazawa[38], S. Funk[3], P. Fusco[17,18], F. Gargano[18], D. Gasparrini[31], N. Gehrels[23,39], S. Germani[15,16], G. Giavitto[40], B. Giebels[19], N. Giglietto[17,18], P. Giommi[31], F. Giordano[17,18], T. Glanzman[3], G. Godfrey[3], E. V. Gotthelf[21], I. A. Grenier[8], M.-H. Grondin[34,35], J. E. Grove[1], L. Guillemot[34,35], S. Guiriec[41], C. Gwon[1], Y. Hanabata[38], A. K. Harding[23], M. Hayashida[3], E. Hays[23], R. E. Hughes[14], M. S. Jackson[30,6,42], G. Jóhannesson[3], A. S. Johnson[3], R. P. Johnson[4], T. J. Johnson[23,39], W. N. Johnson[1], S. Johnston[43], T. Kamae[3], G. Kanbach[44], V. M. Kaspi[45], H. Katagiri[38], J. Kataoka[46,47], N. Kawai[46,48], M. Kerr[20], J. Knödlseder[49], M. L. Kocian[3], M. Kramer[36,50], M. Kuss[7], J. Lande[3], L. Latronico[7], M. Lemoine-Goumard[34,35], M. Livingstone[45], F. Longo[9,10], F. Loparco[17,18], B. Lott[34,35], M. N. Lovellette[1], P. Lubrano[15,16], A. G. Lyne[36], G. M. Madejski[3], A. Makeev[1,26], R. N. Manchester[43], M. Marelli[22], M. N. Mazziotta[18], W. McConville[23,39], J. E. McEnery[23], S. McGlynn[42,6], C. Meurer[30,6], P. F. Michelson[3], T. Mineo[51], W. Mitthumsiri[3], T. Mizuno[38], A. A. Moiseev[24,39], C. Monte[17,18], M. E. Monzani[3], A. Morselli[52], I. V. Moskalenko[3], S. Murgia[3], T. Nakamori[46], P. L. Nolan[3], J. P. Norris[53], A. Noutsos[36], E. Nuss[28], T. Ohsugi[38], N. Omodei[7], E. Orlando[44], J. F. Ormes[53], M. Ozaki[54], D. Paneque[3], J. H. Panetta[3], D. Parent[34,35], V. Pelassa[28], M. Pepe[15,16], M. Pesce-Rollins[7], F. Piron[28], T. A. Porter[4], S. Rainò[17,18], R. Rando[12,13], S. M. Ransom[55], P. S. Ray[1], M. Razzano[7], N. Rea[56,57], A. Reimer[3,58], O. Reimer[3,58], T. Reposeur[34,35], S. Ritz[4], A. Y. Rodriguez[56], R. W. Romani[3], M. Roth[20], F. Ryde[42,6], H. F.-W. Sadrozinski[4], D. Sanchez[19], A. Sander[14], P. M. Saz Parkinson[4], J. D. Scargle[59], T. L. Schalk[4], A. Sellerholm[6,30], C. Sgrò[7], E. J. Siskind[60], D. A. Smith[34,35], P. D. Smith[14], G. Spandre[7], P. Spinelli[17,18], B. W. Stappers[36], J.-L. Starck[8], E. Striani[52,61], M. S. Strickman[1], A. W. Strong[44], D. J. Suson[62], H. Tajima[3], H. Takahashi[38], T. Takahashi[54], T. Tanaka[3], J. B. Thayer[3], J. G. Thayer[3], G. Theureau[27], D. J. Thompson[23], S. E. Thorsett[4], L. Tibaldo[8,12,13], O. Tibolla[63], D. F. Torres[56,64], G. Tosti[15,16], A. Tramacere[3,65], Y. Uchiyama[3,54], T. L. Usher[3], A. Van Etten[3], V. Vasileiou[23,24,25], C. Venter[23,66], N. Vilchez[49], V. Vitale[52,61], A. P. Waite[3], P. Wang[3], N. Wang[67], K. Watters[3], P. Weltevrede[43], B. L. Winer[14], K. S. Wood[1], T. Ylinen[6,42,68], and M. Ziegler[4]

[1] Space Science Division, Naval Research Laboratory, Washington, DC 20375, USA
[2] National Research Council Research Associate, National Academy of Sciences, Washington, DC 20001, USA
[3] W. W. Hansen Experimental Physics Laboratory, Kavli Institute for Particle Astrophysics and Cosmology, Department of Physics and SLAC National Accelerator Laboratory, Stanford University, Stanford, CA 94305, USA; rwr@astro.stanford.edu
[4] Santa Cruz Institute for Particle Physics, Department of Physics and Department of Astronomy and Astrophysics, University of California at Santa Cruz, Santa Cruz, CA 95064, USA
[5] Department of Astronomy, Stockholm University, SE-106 91 Stockholm, Sweden
[6] The Oskar Klein Centre for Cosmoparticle Physics, AlbaNova, SE-106 91 Stockholm, Sweden
[7] Istituto Nazionale di Fisica Nucleare, Sezione di Pisa, I-56127 Pisa, Italy
[8] Laboratoire AIM, CEA-IRFU/CNRS/Université Paris Diderot, Service d'Astrophysique, CEA Saclay, 91191 Gif sur Yvette, France
[9] Istituto Nazionale di Fisica Nucleare, Sezione di Trieste, I-34127 Trieste, Italy
[10] Dipartimento di Fisica, Università di Trieste, I-34127 Trieste, Italy
[11] Department of Physics and Astronomy, Rice University, MS-108, P.O. Box 1892, Houston, TX 77251, USA
[12] Istituto Nazionale di Fisica Nucleare, Sezione di Padova, I-35131 Padova, Italy
[13] Dipartimento di Fisica "G. Galilei," Università di Padova, I-35131 Padova, Italy
[14] Department of Physics, Center for Cosmology and Astro-Particle Physics, The Ohio State University, Columbus, OH 43210, USA
[15] Istituto Nazionale di Fisica Nucleare, Sezione di Perugia, I-06123 Perugia, Italy
[16] Dipartimento di Fisica, Università degli Studi di Perugia, I-06123 Perugia, Italy
[17] Dipartimento di Fisica "M. Merlin" dell'Università e del Politecnico di Bari, I-70126 Bari, Italy; andrea.caliandro@ba.infn.it
[18] Istituto Nazionale di Fisica Nucleare, Sezione di Bari, 70126 Bari, Italy
[19] Laboratoire Leprince-Ringuet, École polytechnique, CNRS/IN2P3, Palaiseau, France
[20] Department of Physics, University of Washington, Seattle, WA 98195-1560, USA
[21] Columbia Astrophysics Laboratory, Columbia University, New York, NY 10027, USA
[22] INAF-Istituto di Astrofisica Spaziale e Fisica Cosmica, I-20133 Milano, Italy
[23] NASA Goddard Space Flight Center, Greenbelt, MD 20771, USA; elizabeth.c.ferrara@nasa.gov
[24] Center for Research and Exploration in Space Science and Technology (CRESST), NASA Goddard Space Flight Center, Greenbelt, MD 20771, USA
[25] Center for Space Science and Technology, University of Maryland, Baltimore County, Baltimore, MD 21250, USA
[26] College of Science, George Mason University, Fairfax, VA 22030, USA
[27] Laboratoire de Physique et Chemie de l'Environnement, LPCE UMR 6115 CNRS, F-45071 Orléans Cedex 02, and Station de radioastronomie de Nançay, Observatoire de Paris, CNRS/INSU, F-18330 Nançay, France
[28] Laboratoire de Physique Théorique et Astroparticules, Université Montpellier 2, CNRS/IN2P3, Montpellier, France
[29] Department of Physics and Astronomy, Sonoma State University, Rohnert Park, CA 94928-3609, USA
[30] Department of Physics, Stockholm University, AlbaNova, SE-106 91 Stockholm, Sweden
[31] Agenzia Spaziale Italiana (ASI) Science Data Center, I-00044 Frascati (Roma), Italy

[32] Dipartimento di Fisica, Università di Udine and Istituto Nazionale di Fisica Nucleare, Sezione di Trieste, Gruppo Collegato di Udine, I-33100 Udine, Italy

[33] Istituto Universitario di Studi Superiori (IUSS), I-27100 Pavia, Italy
[34] Centre d'Études Nucléaires Bordeaux Gradignan, Université de Bordeaux, UMR 5797, Gradignan, 33175, France; parent@cenbg.in2p3.fr
[35] CNRS/IN2P3, Centre d'Études Nucléaires Bordeaux Gradignan, UMR 5797, Gradignan, 33175, France
[36] Jodrell Bank Centre for Astrophysics, School of Physics and Astronomy, The University of Manchester, M13 9PL, UK
[37] Arecibo Observatory, Arecibo, Puerto Rico 00612, USA
[38] Department of Physical Sciences, Hiroshima University, Higashi-Hiroshima, Hiroshima 739-8526, Japan
[39] Department of Physics and Astronomy, University of Maryland, College Park, MD 20742, USA
[40] Istituto Nazionale di Fisica Nucleare, Sezione di Trieste, and Università di Trieste, I-34127 Trieste, Italy
[41] Center for Space Plasma and Aeronomic Research (CSPAR), University of Alabama in Huntsville, Huntsville, AL 35899, USA
[42] Department of Physics, Royal Institute of Technology (KTH), AlbaNova, SE-106 91 Stockholm, Sweden
[43] Australia Telescope National Facility, CSIRO, Epping NSW 1710, Australia
[44] Max-Planck Institut für extraterrestrische Physik, 85748 Garching, Germany
[45] Department of Physics, McGill University, Montreal, PQ H3A 2T8, Canada
[46] Department of Physics, Tokyo Institute of Technology, Meguro City, Tokyo 152-8551, Japan
[47] Research Institute for Science and Engineering, Waseda University, 1-104 Totsukamachi, Shinjuku-ku, Tokyo 169-8050, Japan
[48] Cosmic Radiation Laboratory, Institute of Physical and Chemical Research (RIKEN), Wako, Saitama 351-0198, Japan
[49] Centre d'Étude Spatiale des Rayonnements, CNRS/UPS, BP 44346, F-30128 Toulouse Cedex 4, France
[50] Max-Planck-Institut für Radioastronomie, Auf dem Hügel 69, 53121 Bonn, Germany
[51] IASF Palermo, 90146 Palermo, Italy
[52] Istituto Nazionale di Fisica Nucleare, Sezione di Roma "Tor Vergata," I-00133 Roma, Italy
[53] Department of Physics and Astronomy, University of Denver, Denver, CO 80208, USA
[54] Institute of Space and Astronautical Science, JAXA, 3-1-1 Yoshinodai, Sagamihara, Kanagawa 229-8510, Japan
[55] National Radio Astronomy Observatory (NRAO), Charlottesville, VA 22903, USA
[56] Institut de Ciencies de l'Espai (IEEC-CSIC), Campus UAB, 08193 Barcelona, Spain
[57] Sterrenkundig Institut "Anton Pannekoek," 1098 SJ Amsterdam, The Netherlands
[58] Institut für Astro- und Teilchenphysik and Institut für Theoretische Physik, Leopold-Franzens-Universität Innsbruck, A-6020 Innsbruck, Austria
[59] Space Sciences Division, NASA Ames Research Center, Moffett Field, CA 94035-1000, USA
[60] NYCB Real-Time Computing Inc., Lattingtown, NY 11560-1025, USA
[61] Dipartimento di Fisica, Università di Roma "Tor Vergata," I-00133 Roma, Italy
[62] Department of Chemistry and Physics, Purdue University Calumet, Hammond, IN 46323-2094, USA
[63] Max-Planck-Institut für Kernphysik, D-69029 Heidelberg, Germany
[64] Institució Catalana de Recerca i Estudis Avançats, Barcelona, Spain
[65] Consorzio Interuniversitario per la Fisica Spaziale (CIFS), I-10133 Torino, Italy
[66] North-West University, Potchefstroom Campus, Potchefstroom 2520, South Africa
[67] National Astronomical Observatories-CAS, Ürümqi 830011, China
[68] School of Pure and Applied Natural Sciences, University of Kalmar, SE-391 82 Kalmar, Sweden
Received 2010 December 17; published 2011 March 4

Online-only material: color figures

In the published paper, an error was made in accounting for the delay due to interstellar dispersion in the radio phasing of PSR J1124−5916. This changes the measured gamma-ray to radio lag (δ) to 0.11 ± 0.01. An error was also made in the off-pulse phase range in Table 3 for that pulsar. This error did not affect the spectral results. Corrected versions of Table 3 (with the revised numbers in bold face), Figure 4, and Figure A20 are included here.

In addition, there was an error in the caption to Figure 9. The figure with corrected caption is included here, with the changed word in bold face.

[69] Royal Swedish Academy of Sciences Research Fellow, funded by a grant from the K. A. Wallenberg Foundation.

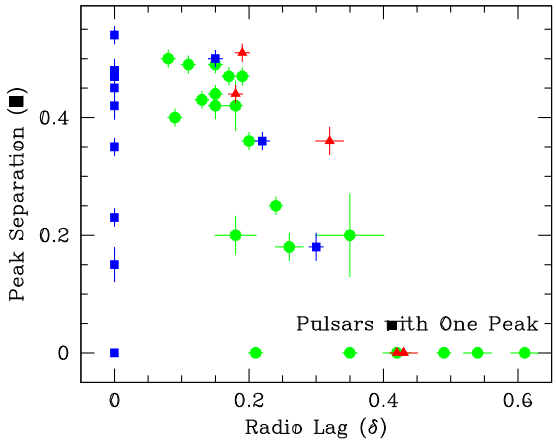

Figure 4. Phase difference Δ between the gamma-ray peaks vs. the phase lag δ between the main radio peak and the nearest gamma-ray peak. Pulsars without a radio detection are plotted with $\delta = 0$. With present light curves we cannot generally measure $\Delta < 0.15$; objects classified as single-peaked are plotted with $\Delta = 0$. Two such objects, both MSPs, are off the plot at $\delta > 0.8$. Blue squares: gamma-ray-selected pulsars. Red triangles: millisecond gamma-ray pulsars. Green circles: all other radio loud gamma-ray pulsars.

(A color version of this figure is available in the online journal.)

Table 3
Pulse Shape Parameters of LAT-detected Pulsars

PSR	Type[a]	Peak Multiplicity	Radio Lag δ	γ-Ray Peak Separation Δ	Off-pulse Definition φ
J0007+7303	g	2	···	0.23 ± 0.01	0.29–0.87
J0030+0451	m	2	0.18 ± 0.01	0.44 ± 0.01	0.68–0.12
J0205+6449	r	2	0.08 ± 0.01	0.50 ± 0.01	0.64–0.02
J0218+4232	m	2	0.32 ± 0.02	0.36 ± 0.02	0.84–0.16
J0248+6021	r	1	0.35 ± 0.01	···	0.71–0.19
J0357+32	g	1	···	···	0.34–0.86
J0437−4715	m	1	0.43 ± 0.02	···	0.60–0.20
J0534+2200	r	2	0.09 ± 0.01	0.40 ± 0.01	0.62–0.98
J0613−0200	m	1	0.42 ± 0.01	···	0.56–0.16
J0631+1036	r	1	0.54 ± 0.02	···	0.80–0.20
J0633+0632	g	2	···	0.48 ± 0.01	0.09–0.45
J0633+1746	g	2	···	0.50 ± 0.01	0.24–0.54
J0659+1414	r	1	0.21 ± 0.01	···	0.40–1.00
J0742−2822	r	1	0.61 ± 0.02	···	0.84–0.44
J0751+1807	m	1	0.43 ± 0.02	···	0.63–0.99
J0835−4510	r	2	0.13 ± 0.01	0.43 ± 0.01	0.66–0.06
J1028−5819	r	2	0.19 ± 0.01	0.47 ± 0.01	0.76–0.12
J1048−5832	r	2	0.15 ± 0.01	0.42 ± 0.02	0.64–0.04
J1057−5226	r	2	0.35 ± 0.05	0.20 ± 0.07	0.72–0.20
J1124−5916	r	2	**0.11 ± 0.01**	0.49 ± 0.01	**0.70–0.06**
J1418−6058	g	2	···	0.47 ± 0.01	0.54–0.90
J1420−6048	r	2[b]	0.26 ± 0.02	0.18 ± 0.02	0.60–0.10
J1459−60	g	2	···	0.15 ± 0.03	0.34–0.78
J1509−5850	r	2[b]	0.18 ± 0.03	0.20 ± 0.03	0.52–1.00
J1614−2230	m	2	0.19 ± 0.01	0.51 ± 0.01	0.92–0.14
J1709−4429	r	2	0.24 ± 0.01	0.25 ± 0.01	0.66–0.14
J1718−3825	r	1	0.42 ± 0.02	···	0.68–0.20
J1732−31	g	2	···	0.42 ± 0.02	0.49–0.93
J1741−2054	g	2	0.30 ± 0.01	0.18 ± 0.02	0.67–0.19
J1744−1134	m	1	0.83 ± 0.02	···	0.08–0.44
J1747−2958	r	2	0.18 ± 0.01	0.42 ± 0.04	0.64–0.10
J1809−2332	g	2	···	0.35 ± 0.01	0.41–0.89
J1813−1246	g	2	···	0.47 ± 0.02	0.56–0.90
J1826−1256	g	2	···	0.47 ± 0.01	0.54–0.94
J1833−1034	r	2	0.15 ± 0.01	0.44 ± 0.01	0.68–0.10
J1836+5925	g	2	···	0.48 ± 0.01	···
J1907+06	g	2	···	0.40 ± 0.01	0.46–0.94
J1952+3252	r	2	0.15 ± 0.01	0.49 ± 0.01	0.68–0.08
J1958+2846	g	2	···	0.45 ± 0.01	0.55–0.95
J2021+3651	r	2	0.17 ± 0.01	0.47 ± 0.01	0.70–0.04
J2021+4026	g	2	···	0.48 ± 0.01	···
J2032+4127	g	2	0.15 ± 0.01	0.50 ± 0.01	0.60–0.92
J2043+2740	r	2	0.20 ± 0.01	0.36 ± 0.01	0.64–0.08
J2124−3358	m	1	0.86 ± 0.02	···	0.92–0.58
J2229+6114	r	1	0.49 ± 0.01	···	0.64–0.14
J2238+59	g	2	···	0.50 ± 0.01	0.60–0.92

Notes. Light curve shape parameters evaluated from the full energy range light curve (see Section 2.1.3). These include the peak multiplicity (third column), the lag δ of the first gamma peak from the main radio peak for the radio-detected pulsars (fourth column), and the phase difference Δ between the main gamma-ray peaks (fifth column). Column 6 lists the off-pulse phase range used in the spectral analysis.

[a] Types are r: radio-selected, g: gamma-ray-selected, and m: millisecond.

[b] For some pulse profiles the current data set does not allow clear discrimination between a single, broad pulse and two unresolved pulses. See the discussion in Weltevrede et al. (2010) regarding PSRs J1420−6048 and J1509−5850.

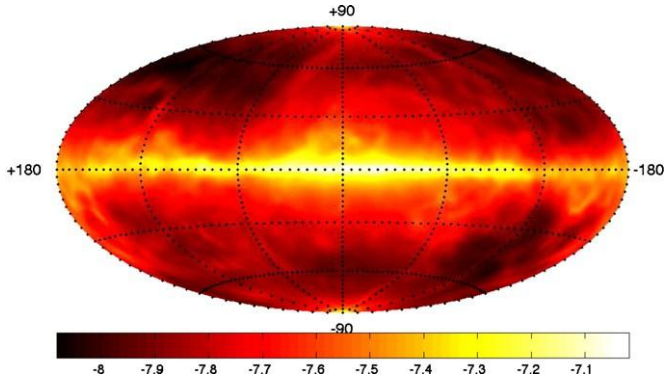

Figure 9. Aitoff projection sky map of the 5σ sensitivity in units of logarithmic **photon** flux ($\log(L_\gamma)$ photons cm^{-2} s^{-1}) for 6 months of *Fermi*-LAT sky-survey data. The sensitivity analysis uses the model of the diffuse gamma-ray background described in the text (Section 4) and pulsar spectra with differential photon indices of $\Gamma = 1.4$ with an exponential cutoff energy of $E_{\mathrm{cutoff}} = 2.2$ GeV.

(A color version of this figure is available in the online journal.)

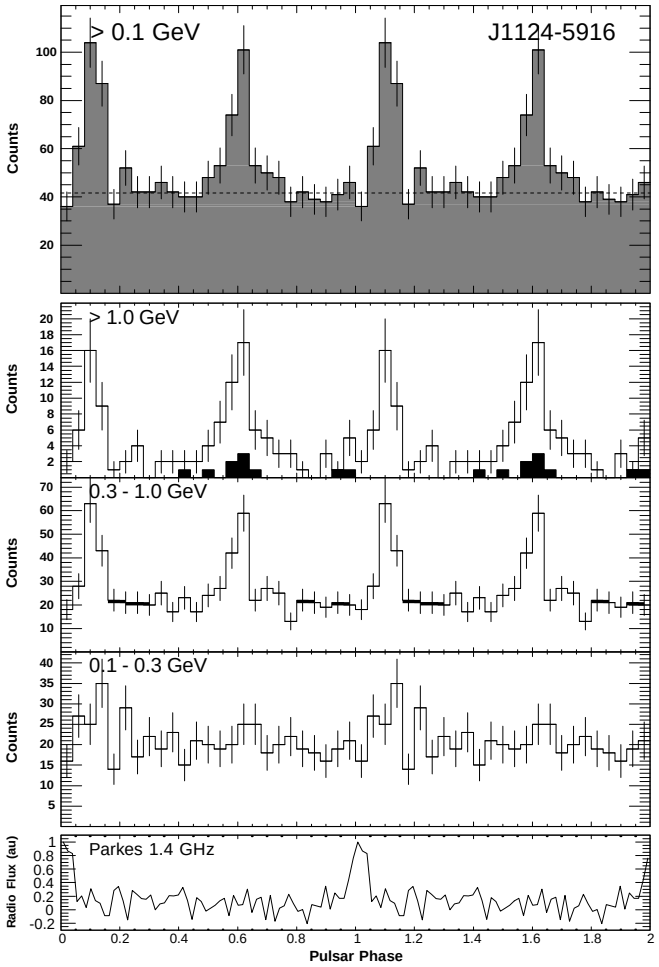

Figure A20. Light curves for PSR J1124−5916 ($P = 135$ ms).

REFERENCE

Weltevrede, P., et al. 2010, ApJ, 708, 1426