

Blazar多波段有效谱指数关系研究*

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摘要 从相关文献中获得Fermi耀变体(blazar)的射电(R) 1.4 GHz、光学(O) 4.68×10^{14} Hz、X-ray (X) 1 keV和 γ -ray (γ) 1 GeV辐射流量密度, 计算了上述波段两两之间的6个有效谱指数 α_{RO} 、 α_{RX} 、 $\alpha_{R\gamma}$ 、 α_{OX} 、 $\alpha_{O\gamma}$ 、 $\alpha_{X\gamma}$. 研究了blazar总样本及其子类FSRQ (Flat Spectral Radio Quasar), 蝎虎天体(BL Lac)含高同步峰频BL Lac (HBL)和低同步峰频BL Lac (LBL)样本的任意两个有效谱指数之间的关系. 结果表明: (1)除HBL样本及 α_{OX} 与 $\alpha_{R\gamma}$ 之间关系外, 两两有效谱指数之间均存在较强的相关, 这种相关可用4个波段能谱分布的结构关系得到解释; (2)在有效谱指数相关的散点图中, FSRQ与LBL分布在相同的区域, 但HBL与FSRQ (LBL)分布在不同的区域; (3)在不同的有效谱指数相关散点图中, HBL与FSRQ (LBL)分布的分离程度(区分度)不相同, 这种区分度与决定2个有效谱指数的频率有关.

关键词 星系: 活动, 辐射机制: 非热, 有效谱指数: 多波段, 方法: 统计
中图分类号: P157; 文献标识码: A

1 引言

耀变体(blazar)是活动星系核(Active galactic nucleus, AGN)中活动最剧烈的一类天体. 根据发射线的不同, blazar可分为蝎虎天体(BL Lac object)和平谱射电类星体(Flat Spectral Radio Quasar, FSRQ). FSRQ有强发射线, 而BL Lac没有或仅有非常弱的发射线. 根据blazar能谱分布(Spectral Energy Distribution, SED)同步峰频高低, blazar分为低同步峰频、中同步峰频和高同步峰频blazar, 分别记为LSP、ISP和HSP, 对于BL Lac天体分别记为LBL、IBL和HBL. 在不同的文献中, 用于分类的同步峰频值存在差别^[1-5].

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多波段有效谱指数的关系可以帮助我们了解不同波段之间辐射机制的差异, 这可能会对AGN的辐射模型给出约束条件. 不少作者研究了宽波段谱指数, 并给出一些宽波段谱指数之间的相关关系^[1-3, 6-11].

为了进一步研究有效谱指数的性质及多波段有效谱指数之间的关联, 本文收集了一个含有885个Fermi blazar大样本的射电、光学、X-ray及 γ -ray辐射数据, 计算了它们的辐射流量密度和两两波段之间的6个有效谱指数; 分类研究了6个有效谱指数两两之间的相关性. 本文中, 我们采用 $f_\nu \propto \nu^{-\alpha}$ 定义谱指数, 式中 f_ν 为频率 ν 处的流量密度, α 为谱指数; 我们采用文献[2]的方法对blazar进行分类.

2 样本及数据处理方法

由于Fermi-LAT (Large Area Telescope) 4期源表(4FGL)最近才发布, 其中新增的blazar还没有明确的分类, 因此, 本文以Fermi-LAT 3期源表(3FGL)^[12-13]给出的blazar为样本, 在NED (NASA/ IPAC Extragalactic Database¹)及相关文献中查找射电、光学和X-ray辐射数据, γ -ray数据由Fermi-LAT给出. 若一个源在某波段有多个观测数据, 数据选择原则是: 误差较小, 且靠近平均值.

首先, 从文献收集或者基于文献计算射电1.4 GHz、光学R波段(4.68×10^{14} Hz)、X-ray 1 keV和 γ -ray 1 GeV处的辐射流量密度; 然后用有效谱指数计算公式计算4个波段两两之间的6个有效谱指数, 即, 射电(R)到光学(O) (α_{RO})、射电(R)到X-ray (X) (α_{RX})、射电(R)到 γ -ray (γ) ($\alpha_{R\gamma}$)、光学(O)到X-ray (α_{OX})、光学(O)到 γ -ray ($\alpha_{O\gamma}$)、X-ray到 γ -ray ($\alpha_{X\gamma}$).

通过转换3FGL中给出的blazar在1-100 GeV内的积分光子流量得到 γ -ray 1 GeV处的流量密度, 计算方法详见文献[14-16]. 计算光学流量时, 先用NED中给出的消光数据对其进行银河系消光校正. 对于所有的观测流量密度, 均由公式 $f_\nu = f_\nu^{\text{ob}}(1+z)^{(\alpha_\nu-1)}$ 进行K改正, 式中: α_ν 为频率 ν 处的谱指数, z 为红移, f_ν^{ob} 为流量密度的观测值. 在本文的计算中, 若红移和谱指数未知, 则用同类型样本的平均值代替.

有效谱指数计算公式^[17]为 $\alpha_{ij} = -\lg(f_i/f_j)/\lg(\nu_i/\nu_j)$, 式中, i, j 分别对应不同波段, f_i 和 f_j 分别为相应频率 ν_i 和 ν_j 处的流量密度. 利用射电、光学、X-ray和 γ -ray流量密度及有效谱指数计算公式, 可得到 α_{RO} , α_{RX} , $\alpha_{R\gamma}$, α_{OX} , $\alpha_{O\gamma}$ 和 $\alpha_{X\gamma}$ 6个有效谱指数.

最后所得样本源及有效谱指数计算结果如表1所示. 表1各列说明如下: 第1列是源的3FGL名称; 第2列为源的分类, 其中, F表示FSRQ, H表示HBL, I表示IBL, L表示LBL, 该分类来自文献[2]; 第3列是源的红移; 第4-9列, 分别为计算得到的有效谱指数及其误差, 误差由谱指数计算公式根据误差传递规律计算得到.

由表1可知: 样本中共有885个blazar (至少有2个不同的有效谱指数), 其中, 386个FSRQ, 499个BL Lac (242 HBL, 130 IBL和127 LBL). 885个blazar中, 719个有 α_{RO} , 594个有 α_{RX} , 843个有 $\alpha_{R\gamma}$, 512个有 α_{OX} , 761个有 $\alpha_{O\gamma}$, 636个有 $\alpha_{X\gamma}$. BL Lac的分类来自文献[2].

¹<http://ned.ipac.caltech.edu/>

3 结果

根据前面计算的有效谱指数(表1), 做 α_{RO} , α_{RX} , $\alpha_{R\gamma}$, α_{OX} , $\alpha_{O\gamma}$ 及 $\alpha_{X\gamma}$ 任意2个有效谱指数之间的相关, 结果如图1所示. 图1中, 红色空心圆圈代表FSRQ, 蓝色实心圆点代表HBL, 绿色三角形为LBL. 对所有关系做线性回归分析, 得到blazar总样本以及其子类FSRQ和BL Lac (HBL和LBL)样本的任意2个有效谱指数的线性相关结果如表2所示. 表2中: 线性回归方程可表示为 $y = (a \pm \Delta a) + (b \pm \Delta b)x$, r 为相关系数, p 为机会概率, n 为样本量; 第8列中“RC”表示两个有效谱指数的真实存在的相关性, 即拟合结果, “P”表示正相关, “A”表示反相关, “N”表示无相关; 第9列中“ST”表示4个波段能谱分布图中各波段连线关系的结构类型. I-VI表示6种结构类型, 其意义详见4.2节; 第10列中“SC”为结构类型所指示的两个有效谱指数之间的相关性. 由于IBL是LBL到HBL的一类中间天体, 性质介于二者之间, 具有与BL Lac总样本类似的统计特征, 在分类统计时, 其特征性质不明显, 因此, 本文未考虑IBL.

表 1 样本及有效谱指数计算结果(完整表格见表3附录)

Table 1 Blazars sample and the calculation results of effective spectral indices (See Appendix for complete samples)

Name	C	z	α_{RO}	α_{RX}	$\alpha_{R\gamma}$	α_{OX}	$\alpha_{O\gamma}$	$\alpha_{X\gamma}$
3FGL J0001.2-0748	I		0.449 ± 0.004		0.797 ± 0.004		1.019 ± 0.007	
3FGL J0004.7-4740	F	0.880				1.532 ± 0.029	1.059 ± 0.008	0.846 ± 0.014
3FGL J0006.4+3825	F	0.229	0.537 ± 0.008	0.822 ± 0.008	0.829 ± 0.005	1.401 ± 0.029	1.014 ± 0.009	0.839 ± 0.015
3FGL J0008.0+4713	H	0.280		0.706 ± 0.008	0.741 ± 0.002			0.789 ± 0.012
3FGL J0008.6-2340	I	0.147		0.585 ± 0.007	0.810 ± 0.009			1.120 ± 0.022
...

4 讨论

4.1 函数拟合获得的相关性

根据表2, 对 α_{RO} , α_{RX} , $\alpha_{R\gamma}$, α_{OX} , $\alpha_{O\gamma}$ 及 $\alpha_{X\gamma}$ 的任意2个有效谱指数之间的相关性概述如下. 在下面的概述中, 字母T、F、B、H和L分别代表总样本、FSRQ、BL Lac、HBL和LBL样本.

- (1)对于T、F、B、H、L样本, $\alpha_{RO} - \alpha_{R\gamma}$ 、 $\alpha_{RX} - \alpha_{R\gamma}$ 、 $\alpha_{OX} - \alpha_{O\gamma}$ 、 $\alpha_{RX} - \alpha_{OX}$ 、 $\alpha_{R\gamma} - \alpha_{O\gamma}$ 及 $\alpha_{O\gamma} - \alpha_{X\gamma}$ 均有正相关;
- (2)对于T、F、B、H、L样本, $\alpha_{RO} - \alpha_{O\gamma}$ 、 $\alpha_{RX} - \alpha_{X\gamma}$ 及 $\alpha_{OX} - \alpha_{X\gamma}$ 均有反相关或反相关趋势;
- (3)对于T、F、B、L样本, $\alpha_{RO} - \alpha_{RX}$ 有正相关; 对于H样本, $\alpha_{RO} - \alpha_{RX}$ 无明显的正相关, 相关系数和机会概率分别为 $r = 0.09$, $p = 29.75\%$;
- (4)对于F、H、L样本, $\alpha_{R\gamma} - \alpha_{X\gamma}$ 有正相关, 对T和B样本, $\alpha_{R\gamma} - \alpha_{X\gamma}$ 无明显的正相关, 相关系数和机会概率分别为 $r = 0.04$ 、 $p = 33.82\%$ 和 $r = 0.01$ 、 $p = 79.40\%$;
- (5)对于T、F、H、L样本, $\alpha_{RO} - \alpha_{OX}$ 有反相关或反相关趋势, 对于B样本, $\alpha_{RO} - \alpha_{OX}$ 无相关;

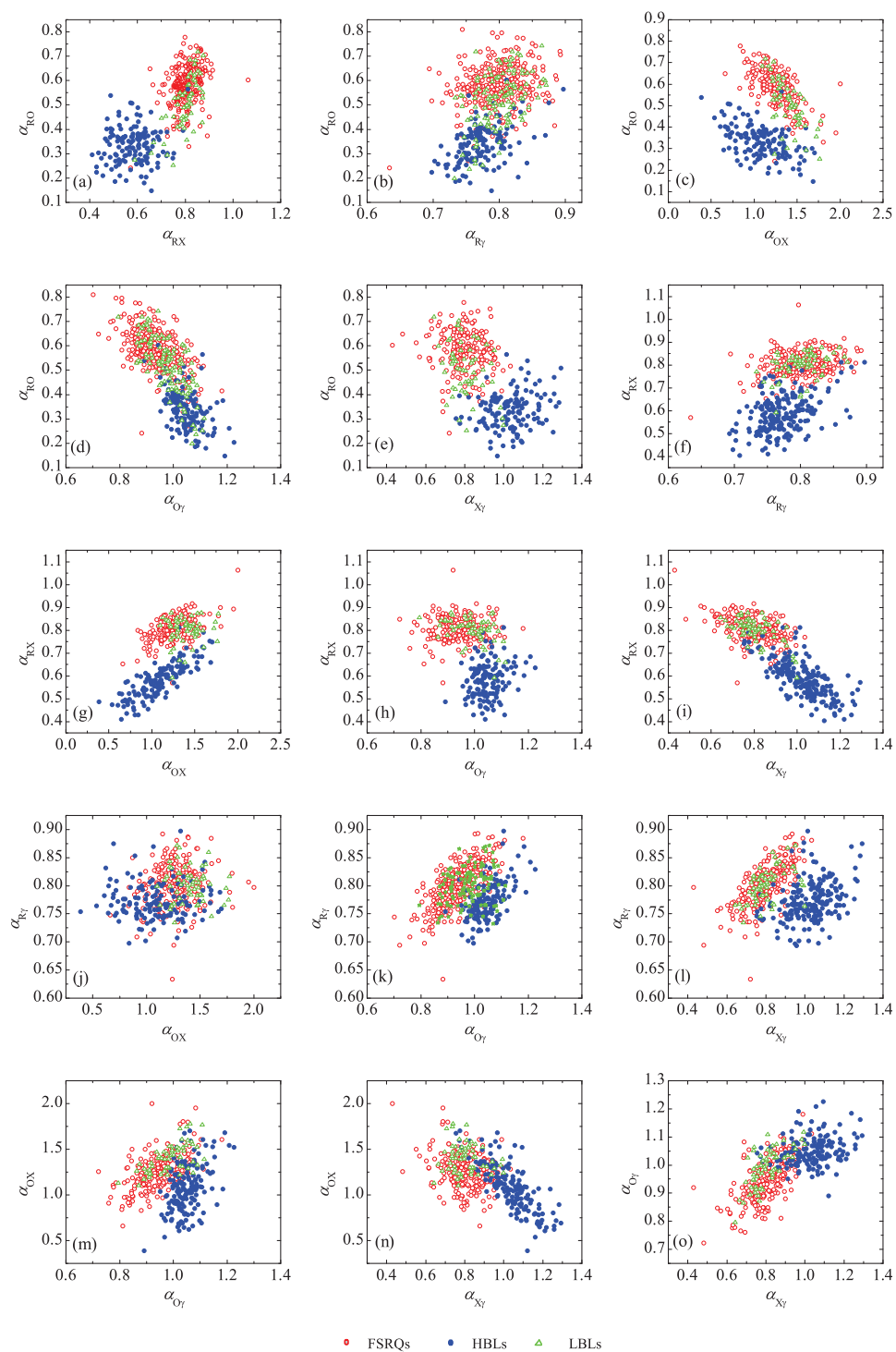


图 1 任意2个有效谱指数之间的关系

Fig. 1 The correlations between any two effective spectral indices

表 2 任意2个有效谱指数之间相关的线性回归结果
Table 2 The linear fitting results for the correlations between any two effective spectral indices

$y - x$	Sam.	$a \pm \Delta a$	$b \pm \Delta b$	r	n	p	RC	ST	SC
$\alpha_{RO} - \alpha_{RX}$	T	-0.14 ± 0.03	0.85 ± 0.04	0.72	470	< 0.0001	P	I	P
	F	0.16 ± 0.08	0.52 ± 0.1	0.33	215	< 0.0001	P		
	B	0.02 ± 0.03	0.55 ± 0.04	0.61	255	< 0.0001	P		
	H	0.29 ± 0.05	0.09 ± 0.08	0.09	137	0.2975	N		
	L	-0.59 ± 0.15	1.37 ± 0.19	0.71	57	< 0.0001	P		
$\alpha_{RO} - \alpha_{R\gamma}$	T	-0.92 ± 0.1	1.78 ± 0.12	0.48	719	< 0.0001	P	I	P
	F	0.18 ± 0.1	0.51 ± 0.12	0.22	336	< 0.0001	P		
	B	-1.21 ± 0.11	2.06 ± 0.15	0.59	383	< 0.0001	P		
	H	-0.51 ± 0.13	1.1 ± 0.17	0.46	157	< 0.0001	P		
	L	-0.86 ± 0.24	1.73 ± 0.29	0.48	120	< 0.0001	P		
$\alpha_{RO} - \alpha_{OX}$	T	0.53 ± 0.03	-0.05 ± 0.03	-0.09	470	0.0514	A	III	A
	F	0.91 ± 0.03	-0.26 ± 0.02	-0.61	215	< 0.0001	A		
	B	0.37 ± 0.03	0.01 ± 0.02	0.01	255	0.8298	N		
	H	0.48 ± 0.02	-0.14 ± 0.02	-0.49	137	< 0.0001	A		
	L	1.13 ± 0.1	-0.45 ± 0.07	-0.65	57	< 0.0001	A		
$\alpha_{RO} - \alpha_{O\gamma}$	T	1.76 ± 0.04	-1.3 ± 0.04	-0.74	719	< 0.0001	A	III	A
	F	1.2 ± 0.05	-0.65 ± 0.05	-0.56	336	< 0.0001	A		
	B	1.76 ± 0.07	-1.32 ± 0.07	-0.69	383	< 0.0001	A		
	H	1.06 ± 0.11	-0.69 ± 0.1	-0.47	157	< 0.0001	A		
	L	1.76 ± 0.11	-1.26 ± 0.11	-0.73	120	< 0.0001	A		
$\alpha_{RO} - \alpha_{X\gamma}$	T	0.93 ± 0.03	-0.52 ± 0.04	-0.54	470	< 0.0001	A	IV	A
	F	0.64 ± 0.05	-0.08 ± 0.06	-0.09	215	0.1994	A		
	B	0.66 ± 0.04	-0.3 ± 0.04	-0.4	255	< 0.0001	A		
	H	0.18 ± 0.06	0.15 ± 0.06	0.22	137	0.0093	P		
	L	0.89 ± 0.14	-0.48 ± 0.17	-0.35	57	0.0075	A		
$\alpha_{RX} - \alpha_{R\gamma}$	T	-0.56 ± 0.09	1.62 ± 0.11	0.5	594	< 0.0001	P	I	P
	F	0.45 ± 0.07	0.44 ± 0.09	0.31	250	< 0.0001	P		
	B	-0.66 ± 0.12	1.69 ± 0.16	0.51	344	< 0.0001	P		
	H	-0.15 ± 0.11	0.96 ± 0.15	0.41	204	< 0.0001	P		
	L	0.23 ± 0.18	0.71 ± 0.23	0.37	63	0.0027	P		

表 2 续
Table 2 Continued

$y - x$	Sam.	$a \pm \Delta a$	$b \pm \Delta b$	r	n	p	RC	ST	SC
$\alpha_{RX} - \alpha_{OX}$	T	0.36 ± 0.02	0.3 ± 0.02	0.62	470	< 0.0001	P	II	P
	F	0.61 ± 0.02	0.15 ± 0.02	0.55	215	< 0.0001	P		
	B	0.25 ± 0.02	0.33 ± 0.02	0.8	255	< 0.0001	P		
	H	0.32 ± 0.02	0.24 ± 0.01	0.83	137	< 0.0001	P		
	L	0.76 ± 0.07	0.03 ± 0.05	0.21	57	0.1258	P		
$\alpha_{RX} - \alpha_{O\gamma}$	T	1.35 ± 0.06	-0.63 ± 0.06	-0.42	470	< 0.0001	A	VI	A
	F	0.77 ± 0.05	0.04 ± 0.05	0.05	215	0.4488	N		
	B	1.18 ± 0.13	-0.5 ± 0.12	-0.25	255	< 0.0001	A		
	H	0.26 ± 0.13	0.31 ± 0.12	0.21	137	0.0117	P		
	L	1.13 ± 0.1	-0.34 ± 0.1	-0.41	57	0.0015	A		
$\alpha_{RX} - \alpha_{X\gamma}$	T	1.35 ± 0.02	-0.71 ± 0.02	-0.84	594	< 0.0001	A	III	A
	F	1.01 ± 0.02	-0.26 ± 0.03	-0.47	250	< 0.0001	A		
	B	1.34 ± 0.02	-0.72 ± 0.02	-0.86	344	< 0.0001	A		
	H	1.14 ± 0.04	-0.54 ± 0.04	-0.71	204	< 0.0001	A		
	L	1.14 ± 0.06	-0.43 ± 0.07	-0.62	63	< 0.0001	A		
$\alpha_{R\gamma} - \alpha_{OX}$	T	0.76 ± 0.01	0.03 ± 0.01	0.17	470	0.0002	P	V	P
	F	0.77 ± 0.02	0.03 ± 0.01	0.13	215	0.0487	P		
	B	0.75 ± 0.01	0.02 ± 0.01	0.2	255	0.0015	P		
	H	0.77 ± 0.01	0 ± 0.01	0	137	0.9616	N		
	L	0.82 ± 0.04	-0.01 ± 0.03	-0.07	57	0.6304	N		
$\alpha_{R\gamma} - \alpha_{O\gamma}$	T	0.68 ± 0.02	0.11 ± 0.02	0.23	719	< 0.0001	P	II	P
	F	0.46 ± 0.02	0.36 ± 0.02	0.69	336	< 0.0001	P		
	B	0.68 ± 0.03	0.1 ± 0.03	0.18	383	0.0005	P		
	H	0.41 ± 0.04	0.34 ± 0.04	0.57	157	< 0.0001	P		
	L	0.68 ± 0.04	0.12 ± 0.04	0.26	120	0.0048	P		
$\alpha_{R\gamma} - \alpha_{X\gamma}$	T	0.78 ± 0.01	0.01 ± 0.01	0.04	594	0.3382	N	II	P
	F	0.59 ± 0.01	0.27 ± 0.02	0.69	250	< 0.0001	P		
	B	0.78 ± 0.01	0 ± 0.01	0.01	344	0.794	N		
	H	0.66 ± 0.02	0.11 ± 0.02	0.34	204	< 0.0001	P		
	L	0.66 ± 0.03	0.18 ± 0.04	0.5	63	< 0.0001	P		

表 2 续
Table 2 Continued

$y - x$	Sam.	$a \pm \Delta a$	$b \pm \Delta b$	r	n	p	RC	ST	SC
$\alpha_{\text{OX}} - \alpha_{\text{O}\gamma}$	T	0.59 ± 0.13	0.66 ± 0.13	0.21	512	< 0.0001	P	I	P
	F	-0.11 ± 0.13	1.44 ± 0.14	0.56	230	< 0.0001	P		
	B	0.49 ± 0.3	0.71 ± 0.29	0.14	282	0.0151	P		
	H	-1.19 ± 0.38	2.16 ± 0.36	0.43	155	< 0.0001	P		
	L	0 ± 0.24	1.41 ± 0.24	0.61	58	< 0.0001	P		
$\alpha_{\text{OX}} - \alpha_{\text{X}\gamma}$	T	2.18 ± 0.05	-1.06 ± 0.06	-0.61	512	< 0.0001	A	III	A
	F	1.71 ± 0.11	-0.57 ± 0.13	-0.28	230	< 0.0001	A		
	B	2.75 ± 0.07	-1.61 ± 0.07	-0.81	282	< 0.0001	A		
	H	3.01 ± 0.13	-1.86 ± 0.12	-0.78	155	< 0.0001	A		
	L	1.6 ± 0.21	-0.25 ± 0.26	-0.13	58	0.3425	A		
$\alpha_{\text{O}\gamma} - \alpha_{\text{X}\gamma}$	T	0.68 ± 0.02	0.36 ± 0.02	0.64	512	< 0.0001	P	II	P
	F	0.53 ± 0.03	0.51 ± 0.04	0.64	230	< 0.0001	P		
	B	0.86 ± 0.02	0.19 ± 0.02	0.46	282	< 0.0001	P		
	H	0.94 ± 0.04	0.11 ± 0.04	0.23	155	0.0043	P		
	L	0.5 ± 0.07	0.61 ± 0.08	0.71	58	< 0.0001	P		

(6)对于T、F、B、L样本, $\alpha_{\text{RO}} - \alpha_{\text{X}\gamma}$ 有反相关或反相关趋势; 对于H样本, $\alpha_{\text{RO}} - \alpha_{\text{X}\gamma}$ 有弱正相关关系;

(7)对于T、B、L样本, $\alpha_{\text{RX}} - \alpha_{\text{O}\gamma}$ 存在反相关; 对于H样本, 其呈弱正相关; 对F样本, 其无相关;

(8)对于T、F、B样本, $\alpha_{\text{R}\gamma} - \alpha_{\text{OX}}$ 存在较弱的正相关; 对于H和L样本, $\alpha_{\text{R}\gamma} - \alpha_{\text{OX}}$ 无相关.

以上这些相关性汇总于表2第8列中. 综上, 除了少数例外, 上述15对关系中, $\alpha_{\text{RO}} - \alpha_{\text{RX}}$, $\alpha_{\text{RO}} - \alpha_{\text{R}\gamma}$, $\alpha_{\text{RX}} - \alpha_{\text{R}\gamma}$, $\alpha_{\text{RX}} - \alpha_{\text{OX}}$, $\alpha_{\text{R}\gamma} - \alpha_{\text{OX}}$, $\alpha_{\text{R}\gamma} - \alpha_{\text{O}\gamma}$, $\alpha_{\text{R}\gamma} - \alpha_{\text{X}\gamma}$, $\alpha_{\text{OX}} - \alpha_{\text{O}\gamma}$ 及 $\alpha_{\text{O}\gamma} - \alpha_{\text{X}\gamma}$ 存在正相关关系; $\alpha_{\text{RO}} - \alpha_{\text{OX}}$, $\alpha_{\text{RO}} - \alpha_{\text{O}\gamma}$, $\alpha_{\text{RO}} - \alpha_{\text{X}\gamma}$, $\alpha_{\text{RX}} - \alpha_{\text{O}\gamma}$, $\alpha_{\text{RX}} - \alpha_{\text{X}\gamma}$ 及 $\alpha_{\text{OX}} - \alpha_{\text{X}\gamma}$ 存在反相关关系.

对于有效谱指数之间的关系, 一些文献用不同的样本进行了研究, 特别是 $\alpha_{\text{RO}} - \alpha_{\text{OX}}$ 的关系讨论较多^[1-3, 6-8, 10-11]. Donato等^[7]讨论了 α_{RO} 与 α_{RX} 、 α_{OX} 和 α_{RX} 之间的关系; Dondi等^[8]讨论了 $\alpha_{\text{RO}} - \alpha_{\text{O}\gamma}$ 、 $\alpha_{\text{RO}} - \alpha_{\text{X}\gamma}$ 的关系; Zheng等^[11]还讨论了 $\alpha_{\text{O}\gamma} - \alpha_{\text{RO}}$ 、 $\alpha_{\text{X}\gamma} - \alpha_{\text{RX}}$ 、 $\alpha_{\text{ir},\text{X}} - \alpha_{\text{R},\text{ir}}$ 、 $\alpha_{\text{O}\gamma} - \alpha_{\text{RO}}$ 的关系, $\alpha_{\text{ir},\text{X}}$ 和 $\alpha_{\text{R},\text{ir}}$ 分别为红外到X-ray与射电到红外的有效谱指数关系. 比较发现, 本文结果与以上文献结果的差异主要体现在相关程度上. 相关程度上的差异应该是由样本量不同所导致, 因此文献所给出的有效谱指数之间的关系存在选择效应. 由于本文所用样本量远大于上述工作所用的样本量, 因此本文结果应有更高的可信度.

4.2 从流量密度随频率的变化看2个有效谱指数的关系

某源在射电、光学、X-ray和 γ -ray波段的流量密度对数值($\lg f_\nu$)与频率对数值($\lg \nu$)之间的关系如图2所示. 根据有效谱指数的定义($\alpha_{ij} = -\lg(f_i/f_j)/\lg(\nu_i/\nu_j)$)可知, 图2中任意2点(R 、 O 、 X 和 G)连线斜率的负值就是该2点所代表频率之间的有效谱指数, 例如, $-k_{RO} = \alpha_{RO}$ 等, 这里 k_{RO} 为图2中 RO 连线的斜率.

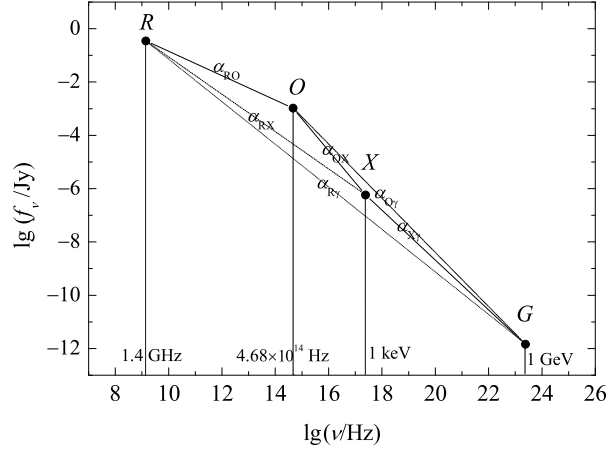


图2 某源在射电1.4 GHz、光学 4.68×10^{14} Hz、X-ray 1 keV及 γ -ray 1 GeV流量密度($\lg f$)与频率($\lg \nu$)的关系

Fig.2 The correlation between flux densities and frequency of a certain source at radio 1.4 GHz, optical 4.68×10^{14} Hz, X-ray 1 keV, and γ -ray 1 GeV

按2个有效谱指数在图2中连线的位置, 从图2中15对有效谱指数各自的2条连线位置总结出6种结构类型如图3所示. $\alpha_{RO} - \alpha_{RX}$ 、 $\alpha_{RO} - \alpha_{R\gamma}$ 、 $\alpha_{RX} - \alpha_{R\gamma}$ 、 $\alpha_{OX} - \alpha_{O\gamma}$ 的关系属于第I类结构(图3 (a)); $\alpha_{RX} - \alpha_{OX}$ 、 $\alpha_{R\gamma} - \alpha_{O\gamma}$ 、 $\alpha_{R\gamma} - \alpha_{X\gamma}$ 、 $\alpha_{O\gamma} - \alpha_{X\gamma}$ 的关系, 属于第II类结构(图3 (b)); $\alpha_{RO} - \alpha_{OX}$ 、 $\alpha_{RO} - \alpha_{O\gamma}$ 、 $\alpha_{RX} - \alpha_{X\gamma}$ 、 $\alpha_{OX} - \alpha_{X\gamma}$ 之间的关系属于第III类结构(图3 (c)); $\alpha_{RO} - \alpha_{X\gamma}$ 的关系属于第IV类结构(图3 (d)); $\alpha_{R\gamma} - \alpha_{OX}$ 的关系属于第V类结构(图3 (e)); $\alpha_{RX} - \alpha_{O\gamma}$ 的关系属于第VI类结构(图3 (f)). 每一对有效谱指数的关系结构类型列于表2的第9列. 对于IV、V和VI的结构类型(图3 (d, e, f)), 如果将2条线上相邻的2点视为1个点, 那么结构IV、V和VI将分别变为结构III、II (或I)和III (见图3 (d, e, f)中的小图). 因此, 这些结构最终被统一为3种类型, 即I、II和III (图3 (a, b, c)).

下面讨论在不同结构类型中2条线斜率, 即2个有效谱指数之间的相关.

对于结构I、II和III (图3 (a, b和c)), A、B和C点的坐标分别为($\lg \nu_A$, $\lg f_{\nu_A}$)、($\lg \nu_B$, $\lg f_{\nu_B}$)和($\lg \nu_C$, $\lg f_{\nu_C}$). 不同的源在相同频率处的流量密度不同, 对于某个blazar样本, 所有源在同一频率下的流量密度有一定的变化范围, 但样本不同这个变化范围也将不同. 也就是说, 不同类型的blazar样本(FSRQ, BL Lac, HBL, LBL)的 $\lg f_{\nu_A}$ (或 $\lg f_{\nu_B}$, 或 $\lg f_{\nu_C}$)在各自的范围内变化. 大量研究表明, blazar多波段的辐射流量密度之间存在正相关关系^[8,18-23]. 这意味着 $\lg f_{\nu_A}$ 、 $\lg f_{\nu_B}$ 和 $\lg f_{\nu_C}$ 中某1个流量增加, 那么其他2个也会相应地增加.

根据以上分析, 下面从数学上分析结构I、II和III (图3 (a, b, c))中2条直线

斜率(2个有效谱指数)之间的变化关系. 结构I (图3 (a)), 当 $\lg f_{\nu_A}$ 增加或减小时, α_{AB} 和 α_{AC} 都将增加或减小, 这表明 α_{AB} 和 α_{AC} 之间存在正相关; 同样, 对于结构II (图3 (b)), α_{CA} 和 α_{BA} 之间存在正相关关系; 对于结构III (图3 (c)), 当 $\lg f_{\nu_A}$ 增加或减小时, α_{BA} 会减小或增加, α_{AC} 会增加或减小, 因此 α_{BA} 和 α_{AC} 之间应存在反相关关系. 根据这种结构类型关系, 15对有效谱指数关系中, $\alpha_{RO} - \alpha_{RX}$, $\alpha_{RO} - \alpha_{R\gamma}$, $\alpha_{RX} - \alpha_{R\gamma}$, $\alpha_{RX} - \alpha_{OX}$, $\alpha_{R\gamma} - \alpha_{OX}$, $\alpha_{R\gamma} - \alpha_{O\gamma}$, $\alpha_{R\gamma} - \alpha_{X\gamma}$, $\alpha_{OX} - \alpha_{O\gamma}$ 及 $\alpha_{O\gamma} - \alpha_{X\gamma}$ 应有正相关关系; $\alpha_{RO} - \alpha_{OX}$, $\alpha_{RO} - \alpha_{O\gamma}$, $\alpha_{RO} - \alpha_{X\gamma}$, $\alpha_{RX} - \alpha_{O\gamma}$, $\alpha_{RX} - \alpha_{X\gamma}$ 及 $\alpha_{OX} - \alpha_{X\gamma}$ 应有反相关关系.

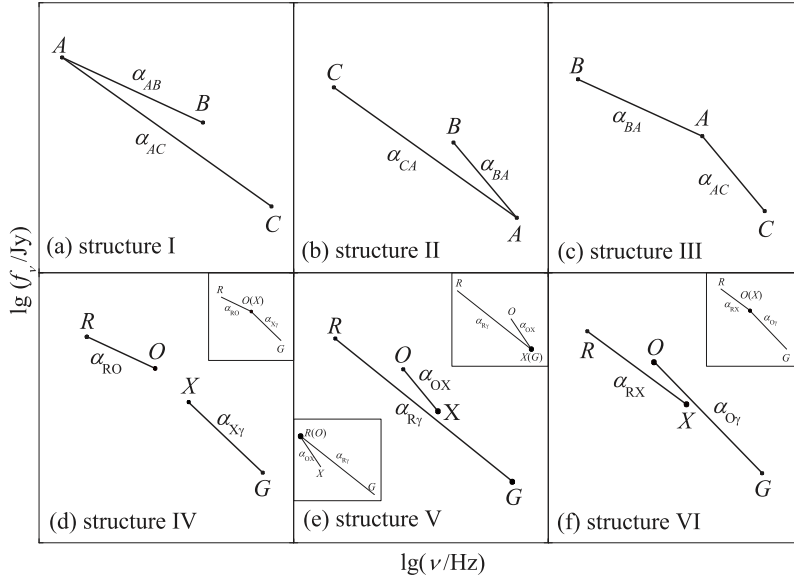


图3 有效谱指数的关系结构

Fig. 3 The relational structure of effective spectral indices

表2的第9列和第10列给出了2个谱指数之间相关性的结构类型及结构类型所指示的相关性, 第8列总结了从线性回归中得到的相关性. 通过比较这两个结果, 除了少数例外, 可以发现这两个结果基本上是一致的. 少数例外主要是总样本、BL Lac样本, 还有HBL样本的少量谱指数之间的相关以及 $\alpha_{R\gamma}$ 与 α_{OX} 之间的相关.

关于总样本及BL Lac样本的例外, 主要是因为这两类样本中都包含有几个子类样本, 从这些样本的谱指数关系的散点图可见, 子类样本FSRQ (LBL)与HBL各自分布方向与这两类样本的分离方向不同, 这种分布方向与分离方向的不同造成了总样本及BL Lac样本的一些谱指数之间的关系减弱或无相关. 如 $\alpha_{RO} - \alpha_{OX}$ (图1 (c)), HBL与FSRQ (LBL)在图中的分布方向都是从左上向右下分布, 但HBL与FSRQ (LBL) 2类之间是从左下向右上分开, 且较明显, 这样就导致了子类样本都有强的反相关, 但总样本及BL Lac样本的 $\alpha_{RO} - \alpha_{OX}$ 却没有相关.

$\alpha_{R\gamma} - \alpha_{OX}$ (图1 (j))的关系结构类型属于V (或I和II), 结构关系表明它们之间应存在正相关. 拟合结果显示, 不同blazar样本仅显示了弱的正相关或根本没有相关. 事实上, 由于R到G的频率差很大($\lg[(\nu_{\gamma}/\nu_R)] = 14.24$), 导致 $\lg f_R$ 或 $\lg f_{\gamma}$ 的变化, 引起 $\alpha_{R\gamma}$ 的变化不明显, 另外, O离X较近($\lg[(\nu_O/\nu_X)] = 2.71$), 小的流量变化就会引起有效谱指

数 α_{OX} 较大的变化, 2者综合作用下, 导致了 $\alpha_{\text{R}\gamma}$ 与 α_{OX} 之间仅存在弱的相关或根本没有相关. 这种有效谱指数两点之间的最大频率差和最小频率差也导致了 $\alpha_{\text{R}\gamma}$ 有最小标准偏差($\sigma = 0.03 - 0.04$)和 α_{OX} 有最大的标准偏差($\sigma = 0.16 - 0.29$)^[24].

HBL样本的 $\alpha_{\text{RO}} - \alpha_{\text{RX}}$ 、 $\alpha_{\text{RO}} - \alpha_{\text{X}\gamma}$ 、 $\alpha_{\text{RX}} - \alpha_{\text{O}\gamma}$ 关系的拟合结果与结构关系不一致, 且有较大的差异. 可能是因为HBL的射电流量变化范围最小、光学流量与X-ray流量的相关性较差以及HBL的射电流量与 γ -ray流量相关性最强所致. 射电和 γ -ray都是强束流, 都有很强的集束效应, HBL的射电与 γ -ray辐射相关性最强暗示HBL的射电和 γ -ray辐射机制高度关联, 那么, 若射电辐射来自同步辐射(SC), 则HBL的 γ -ray辐射应主要来自同步自康普顿辐射(SSC).

4.3 用多波段有效谱指数的关系区分HBL与FSRQ

从图1可以看出, FSRQ与LBL位于几乎相同的区域, 而HBL与FSRQ (LBL)彼此分离, 分别位于不同的区域, 但在不同的有效谱指数关系图中, 彼此分离程度(区分度)不同. 因此, FSRQ与LBL或许有类似的辐射机制, 而HBL的辐射机制应与它们有所区别.

为了弄清在不同有效谱指数关系图中HBL与FSRQ的分离程度(区分度), 我们根据HBL与FSRQ在图中的分布, 统计了各图中HBL与FSRQ分布重叠部分源的数量(m); 计算了任意2个有效谱指数之间的频率范围差($\Delta\nu$); 最后讨论了两类样本的重合度(m/N)与频率范围差($\Delta\nu$)的关系, m 为重叠部分源的数量, N 为FSRQ与HBL的样本量之和. 下面说明两个有效谱指数之间的频率范围差($\Delta\nu$)的计算方法, 以计算 $\alpha_{\text{R}\gamma}$ 与 α_{OX} 的频率范围差为例: 已知 $\nu_{\text{R}} = 1.4 \times 10^9$ Hz、 $\nu_{\gamma} = 2.42 \times 10^{23}$ Hz、 $\nu_{\text{O}} = 4.68 \times 10^{14}$ Hz、 $\nu_{\text{X}} = 2.42 \times 10^{17}$ Hz, 定义 $\Delta\lg\nu(\alpha_{\text{R}\gamma}) = \lg(\nu_{\gamma}/\nu_{\text{R}}) = 14.24$, 同样 $\Delta\lg\nu(\alpha_{\text{OX}}) = \lg(\nu_{\text{X}}/\nu_{\text{O}}) = 2.71$, 则有效谱指数 $\alpha_{\text{R}\gamma}$ 与 α_{OX} 之间的频率范围差 $\Delta\nu(\alpha_{\text{R}\gamma}, \alpha_{\text{OX}}) = \Delta\lg\nu(\alpha_{\text{R}\gamma}) - \Delta\lg\nu(\alpha_{\text{OX}}) = 14.24 - 2.71 = 11.53$.

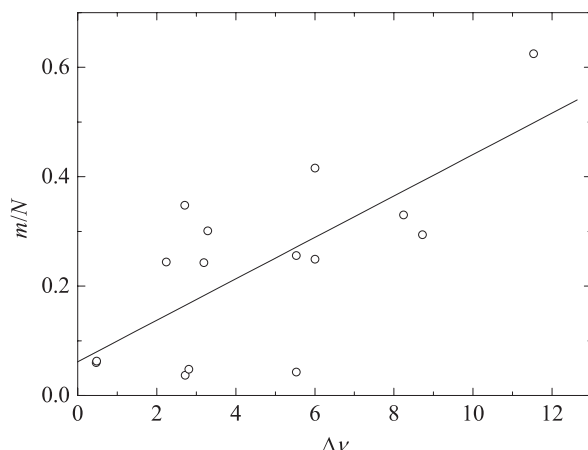
根据以上分析, 得到15对有效谱指数关系的 $m/N - \Delta\nu$ 关系如图4所示. $m/N - \Delta\nu$ 关系的线性拟合结果为相关系数 $r = 0.71$, 机会概率 $p = 0.28\%$. 因此, $m/N - \Delta\nu$ 之间存在正相关关系, 也就是说两个有效谱指数之间的频率范围差越小, HBL与FSRQ在图中的区分度越高. 因此, 应可用合适的有效谱指数关系对HBL和FSRQ进行区分.

5 结论

本文以3FGL为基础样本, 计算了射电到光学、射电到X-ray、射电到 γ -ray、光学到X-ray、光学到 γ -ray和X-ray到 γ -ray的有效谱指数. 讨论了任意2个有效谱指数之间的关系, 得到以下主要结论:

(1)除了少数例外, 6个有效谱指数两两之间的15对关系的拟合结果显示: $\alpha_{\text{RO}} - \alpha_{\text{RX}}$ 、 $\alpha_{\text{RO}} - \alpha_{\text{R}\gamma}$ 、 $\alpha_{\text{RX}} - \alpha_{\text{R}\gamma}$ 、 $\alpha_{\text{RX}} - \alpha_{\text{OX}}$ 、 $\alpha_{\text{R}\gamma} - \alpha_{\text{OX}}$ 、 $\alpha_{\text{R}\gamma} - \alpha_{\text{O}\gamma}$ 、 $\alpha_{\text{R}\gamma} - \alpha_{\text{X}\gamma}$ 、 $\alpha_{\text{OX}} - \alpha_{\text{O}\gamma}$ 及 $\alpha_{\text{O}\gamma} - \alpha_{\text{X}\gamma}$ 存在正相关关系; $\alpha_{\text{RO}} - \alpha_{\text{OX}}$ 、 $\alpha_{\text{RO}} - \alpha_{\text{O}\gamma}$ 、 $\alpha_{\text{RO}} - \alpha_{\text{X}\gamma}$ 、 $\alpha_{\text{RX}} - \alpha_{\text{O}\gamma}$ 、 $\alpha_{\text{RX}} - \alpha_{\text{X}\gamma}$ 及 $\alpha_{\text{OX}} - \alpha_{\text{X}\gamma}$ 存在反相关关系;

(2)根据流量密度的能谱分布给出了任意2个有效谱指数相关的几种结构类型, 每种结构类型指向一种相关关系. 比较发现, 结构类型指示的某2个有效谱指数的相关性与拟合给出的相关性, 除了少数例外, 是一致的;

图 4 m/N 与 $\Delta\nu$ 的关系Fig. 4 The relation between m/N and $\Delta\nu$

(3) HBL的 γ -ray的辐射应主要来自同步自康普顿辐射过程;

(4)在大部分2个有效谱指数之间的相关图中, HBL与FSRQ位于完全分开的区域, 而LBL与FSRQ位于相同的区域. 暗示HBL与FSRQ (LBL)有不同的观测性质, FSRQ与LBL或许有类似的辐射机制;

(5)在有效谱指数之间关系的散点图中, HBL和FSRQ的区分度与两个有效谱指数之间的频率范围差存在反相关关系, 即频率差越小, 区分度越高. 因此, 可寻找合适的两个有效谱指数来区分HBL和FSRQ.

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The Relations of Effective Spectral Indices of Multi-wavebands for Fermi Blazars

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ABSTRACT In this paper, the flux densities at radio (R) 1.4 GHz, optical (O) 4.68×10^{14} Hz, X-ray (X) 1 keV, and γ -ray (γ) 1 GeV are obtained from the available literature for a Fermi blazars sample. The effective spectral indices (α_{RO} , α_{RX} , $\alpha_{R\gamma}$, α_{OX} , $\alpha_{O\gamma}$, and $\alpha_{X\gamma}$) between any two bands are calculated. The correlations between any two spectral indices are investigated for the whole blazars sample and the subclass samples of FSRQs (Flat Spectral Radio Quasar) and BL Lacs (HBLs and LBLs). Results show that: (1) There are close correlations between any two spectral indices for all samples except for HBLs sample and the correlation between α_{OX} and $\alpha_{R\gamma}$. Those relations can be explained by the structure of the spectral energy distribution at four bands. (2) The different subclasses of blazars are located in different areas in the plots of relations of spectral indices. FSRQs and LBLs are located in the same area, while the area of HBLs is different from them. (3) The separation degree (discrimination) between FSRQs (LBLs) and HBLs is different in different plot, and the discrimination is related to the determination of the frequency between two effective spectral indices.

Key words galaxies: active, radiation mechanisms: non-thermal, effective spectral indices: multi-wavebands, methods: statistical

附录

表 3 样本及有效谱指数计算结果

Table 3 Blazars sample and the calculation results of effective spectral indices

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J0001.2-0748	I		0.449 ± 0.004		0.797 ± 0.004		1.019 ± 0.007	
3FGL J0004.7-4740	F	0.880				1.532 ± 0.029	1.059 ± 0.008	0.846 ± 0.014
3FGL J0006.4+3825	F	0.229	0.537 ± 0.008	0.822 ± 0.008	0.829 ± 0.005	1.401 ± 0.029	1.014 ± 0.009	0.839 ± 0.015
3FGL J0008.0+4713	H	0.280		0.706 ± 0.008	0.741 ± 0.002			0.789 ± 0.012
3FGL J0008.6-2340	I	0.147		0.585 ± 0.007	0.810 ± 0.009			1.120 ± 0.022
3FGL J0009.1+0630	L		0.532 ± 0.008		0.807 ± 0.005		0.979 ± 0.009	
3FGL J0013.2-3954	L		0.576 ± 0.008		0.823 ± 0.004		0.980 ± 0.008	
3FGL J0013.9-1853	H	0.095		0.521 ± 0.004	0.791 ± 0.008			1.161 ± 0.019
3FGL J0016.3-0013	F	1.577	0.724 ± 0.008	0.867 ± 0.008	0.810 ± 0.004	1.157 ± 0.029	0.865 ± 0.008	0.733 ± 0.014
3FGL J0017.6-0512	F	0.227	0.486 ± 0.008	0.738 ± 0.013	0.788 ± 0.004	1.250 ± 0.042	0.979 ± 0.008	0.856 ± 0.020
3FGL J0018.4+2947	H	0.100		0.555 ± 0.008	0.800 ± 0.009			1.137 ± 0.024
3FGL J0018.9-8152	H					1.200 ± 0.038	1.094 ± 0.009	1.046 ± 0.017
3FGL J0019.4+2021	L		0.742 ± 0.008		0.865 ± 0.007		0.943 ± 0.012	
3FGL J0021.6-2553	I		0.421 ± 0.026		0.770 ± 0.004		0.991 ± 0.017	
3FGL J0022.1-1855	H		0.262 ± 0.005	0.611 ± 0.014	0.740 ± 0.003	1.328 ± 0.042	1.044 ± 0.006	0.916 ± 0.020
3FGL J0022.5+0608	L		0.619 ± 0.008		0.779 ± 0.002		0.881 ± 0.006	
3FGL J0023.5+4454	F	1.062	0.719 ± 0.008		0.771 ± 0.005		0.804 ± 0.010	
3FGL J0024.4+0350	F	0.545	0.378 ± 0.008		0.743 ± 0.006		0.972 ± 0.011	
3FGL J0030.3-4223	F	0.495				1.212 ± 0.054	0.932 ± 0.017	0.805 ± 0.009
3FGL J0032.3-2852	I	0.324		0.820 ± 0.008	0.829 ± 0.008			0.843 ± 0.021
3FGL J0033.6-1921	H	0.610		0.470 ± 0.004	0.702 ± 0.002			1.020 ± 0.006
3FGL J0035.2+1513	H	0.250	0.190 ± 0.009	0.553 ± 0.008	0.740 ± 0.004	1.293 ± 0.029	1.089 ± 0.008	0.996 ± 0.014
3FGL J0035.9+5949	H	0.086	0.373 ± 0.004	0.644 ± 0.008	0.768 ± 0.002	1.195 ± 0.024	1.018 ± 0.003	0.938 ± 0.012
3FGL J0037.9+1239	H	0.089	0.256 ± 0.008		0.772 ± 0.004		1.100 ± 0.007	
3FGL J0038.0+0012	L	0.740	0.521 ± 0.003		0.786 ± 0.006		0.955 ± 0.009	
3FGL J0038.0-2501	F	0.498	0.506 ± 0.008	0.729 ± 0.009	0.822 ± 0.005	1.184 ± 0.031	1.023 ± 0.009	0.950 ± 0.016
3FGL J0039.1-0939	F	2.102	0.549 ± 0.004		0.773 ± 0.008		0.915 ± 0.014	
3FGL J0041.9+3639	H			0.559 ± 0.008	0.756 ± 0.009			1.026 ± 0.024
3FGL J0042.0+2318	F	1.426	0.718 ± 0.008		0.848 ± 0.006		0.930 ± 0.011	
3FGL J0045.3+2126	H		0.366 ± 0.008	0.630 ± 0.008	0.747 ± 0.003	1.166 ± 0.029	0.988 ± 0.006	0.907 ± 0.012
3FGL J0045.7+1217	I		0.384 ± 0.008		0.774 ± 0.003		1.021 ± 0.007	
3FGL J0048.0+2236	F	1.161	0.418 ± 0.008		0.742 ± 0.003		0.945 ± 0.007	
3FGL J0048.0+3950	H	0.252		0.775 ± 0.008	0.802 ± 0.005			0.838 ± 0.016
3FGL J0049.7+0237	L	1.440	0.608 ± 0.008		0.796 ± 0.004		0.915 ± 0.008	
3FGL J0049.8-5737	F	1.797				1.266 ± 0.045	1.039 ± 0.009	0.936 ± 0.022
3FGL J0050.4-0449	F	0.920	0.548 ± 0.008		0.792 ± 0.005		0.947 ± 0.009	
3FGL J0050.6-0929	I	0.635	0.491 ± 0.010	0.750 ± 0.007	0.796 ± 0.003	1.278 ± 0.023	0.989 ± 0.005	0.859 ± 0.008
3FGL J0051.0-0649	F	1.975	0.647 ± 0.008	0.815 ± 0.008	0.802 ± 0.003	1.157 ± 0.029	0.901 ± 0.007	0.785 ± 0.013
3FGL J0054.8-2455	H		0.297 ± 0.008	0.567 ± 0.008	0.746 ± 0.004	1.121 ± 0.028	1.031 ± 0.007	0.991 ± 0.013
3FGL J0056.3-0935	H	0.103	0.345 ± 0.008	0.638 ± 0.005	0.830 ± 0.005	1.235 ± 0.022	1.138 ± 0.010	1.094 ± 0.014

表 3 续
Table 3 Continued

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J0058.0-3233	L	1.370	0.613 ± 0.008		0.768 ± 0.003		0.866 ± 0.006	
3FGL J0059.2-0152	H	0.144		0.587 ± 0.011	0.779 ± 0.009			1.043 ± 0.025
3FGL J0059.6+0003	F	0.719	0.604 ± 0.025	0.861 ± 0.013	0.887 ± 0.008	1.384 ± 0.065	1.067 ± 0.020	0.923 ± 0.026
3FGL J0105.1-2415	F	1.747	0.614 ± 0.008		0.766 ± 0.004		0.862 ± 0.009	
3FGL J0108.5-0035	F	1.375	0.541 ± 0.002		0.846 ± 0.008		1.041 ± 0.013	
3FGL J0108.7+0134	F	2.099	0.731 ± 0.008	0.864 ± 0.012	0.783 ± 0.001	1.135 ± 0.039	0.817 ± 0.005	0.673 ± 0.016
3FGL J0109.1+1816	H	0.145		0.621 ± 0.008	0.794 ± 0.005			1.031 ± 0.015
3FGL J0109.9-4020	H	0.313		0.557 ± 0.007	0.811 ± 0.008			1.159 ± 0.018
3FGL J0110.2+6806	I	0.290		0.808 ± 0.008	0.844 ± 0.003			0.894 ± 0.012
3FGL J0110.9-1254	H	0.234		0.477 ± 0.005	0.766 ± 0.008			1.163 ± 0.019
3FGL J0111.5+0535	H	0.346		0.563 ± 0.008	0.766 ± 0.009			1.046 ± 0.023
3FGL J0112.1+2245	I	0.265	0.325 ± 0.008	0.733 ± 0.008	0.756 ± 0.001	1.561 ± 0.029	1.030 ± 0.005	0.789 ± 0.011
3FGL J0113.0-3554	F	1.220	0.608 ± 0.008		0.789 ± 0.006		0.903 ± 0.011	
3FGL J0113.4+4948	F	0.389	0.576 ± 0.008	0.809 ± 0.013	0.827 ± 0.004	1.283 ± 0.043	0.986 ± 0.008	0.851 ± 0.020
3FGL J0114.8+1326	I	2.025	0.280 ± 0.003		0.725 ± 0.003		1.007 ± 0.004	
3FGL J0115.7+0356	H		0.422 ± 0.004		0.763 ± 0.003		0.981 ± 0.005	
3FGL J0115.8+2519	H	0.358	0.338 ± 0.004	0.606 ± 0.008	0.742 ± 0.003	1.157 ± 0.025	1.000 ± 0.005	0.929 ± 0.013
3FGL J0116.0-1134	F	0.670	0.653 ± 0.008	0.822 ± 0.012	0.837 ± 0.003	1.168 ± 0.040	0.955 ± 0.007	0.858 ± 0.018
3FGL J0117.8-2113	F	1.490	0.637 ± 0.008		0.773 ± 0.004		0.860 ± 0.008	
3FGL J0118.8-2142	F	1.165	0.645 ± 0.008	0.858 ± 0.008	0.756 ± 0.002	1.293 ± 0.029	0.827 ± 0.006	0.617 ± 0.012
3FGL J0118.9-1457	H	0.115	0.248 ± 0.026	0.510 ± 0.010	0.737 ± 0.007	1.041 ± 0.057	1.047 ± 0.019	1.049 ± 0.019
3FGL J0120.4-2700	I	0.559	0.448 ± 0.008	0.826 ± 0.011	0.803 ± 0.002	1.595 ± 0.037	1.029 ± 0.005	0.773 ± 0.015
3FGL J0122.8+3423	H	0.272	0.403 ± 0.006	0.488 ± 0.008	0.812 ± 0.007	0.660 ± 0.026	1.072 ± 0.012	1.259 ± 0.020
3FGL J0123.7-2312	H	0.404		0.507 ± 0.006	0.749 ± 0.004			1.081 ± 0.012
3FGL J0125.2-0627	I	2.117	0.394 ± 0.005		0.742 ± 0.006		0.963 ± 0.011	
3FGL J0126.1-2227	F	0.720	0.589 ± 0.026	0.868 ± 0.008	0.821 ± 0.004	1.434 ± 0.057	0.967 ± 0.018	0.756 ± 0.015
3FGL J0127.1-0818	L	0.362	0.507 ± 0.008		0.786 ± 0.004		0.962 ± 0.008	
3FGL J0127.9+2551	F	2.358	0.550 ± 0.008	0.784 ± 0.008	0.806 ± 0.010	1.262 ± 0.029	0.968 ± 0.016	0.835 ± 0.025
3FGL J0130.8+1441	F	1.626	0.679 ± 0.003		0.828 ± 0.009		0.923 ± 0.015	
3FGL J0131.2+6120	H			0.404 ± 0.008	0.708 ± 0.003			1.126 ± 0.012
3FGL J0132.6-1655	F	1.020	0.414 ± 0.008	0.863 ± 0.008	0.788 ± 0.002	1.777 ± 0.029	1.026 ± 0.006	0.686 ± 0.012
3FGL J0134.3-3842	F	2.140	0.514 ± 0.008	0.765 ± 0.008	0.818 ± 0.006	1.277 ± 0.029	1.011 ± 0.011	0.891 ± 0.018
3FGL J0136.5+3905	H			0.567 ± 0.008	0.724 ± 0.001			0.939 ± 0.011
3FGL J0137.0+4752	F	0.859	0.700 ± 0.008	0.762 ± 0.006	0.784 ± 0.001	0.888 ± 0.024	0.837 ± 0.005	0.813 ± 0.009
3FGL J0137.6-2430	F	0.838	0.532 ± 0.008	0.775 ± 0.010	0.819 ± 0.003	1.269 ± 0.033	1.001 ± 0.007	0.880 ± 0.015
3FGL J0141.4-0929	L	0.733	0.567 ± 0.023	0.863 ± 0.016	0.811 ± 0.008	1.466 ± 0.029	0.965 ± 0.006	0.739 ± 0.012
3FGL J0145.1-2732	F	1.155	0.561 ± 0.008	0.785 ± 0.006	0.793 ± 0.003	1.240 ± 0.023	0.940 ± 0.006	0.804 ± 0.009
3FGL J0151.6+2205	F	1.320	0.662 ± 0.008		0.829 ± 0.006		0.936 ± 0.011	
3FGL J0152.6+0148	H	0.080		0.646 ± 0.008	0.780 ± 0.004			0.963 ± 0.014
3FGL J0152.8+7517	H			0.592 ± 0.008	0.766 ± 0.007			1.005 ± 0.019
3FGL J0154.0+0824	H	0.681	0.458 ± 0.026		0.780 ± 0.002		0.983 ± 0.017	

表 3 续
Table 3 Continued

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J0157.0-5301	H					0.895 ± 0.017	1.024 ± 0.007	1.082 ± 0.012
3FGL J0157.9-4615	F	2.287				0.873 ± 0.048	0.810 ± 0.009	0.782 ± 0.024
3FGL J0158.6-3931	I		0.338 ± 0.008	0.792 ± 0.008	0.781 ± 0.003	1.718 ± 0.029	1.062 ± 0.007	0.765 ± 0.013
3FGL J0159.4+1046	H	0.195		0.630 ± 0.008	0.755 ± 0.004			0.927 ± 0.014
3FGL J0159.8-2741	I		0.391 ± 0.004	0.725 ± 0.008	0.792 ± 0.005	1.411 ± 0.025	1.048 ± 0.008	0.885 ± 0.016
3FGL J0202.3+0851	F	0.550		0.714 ± 0.008	0.818 ± 0.008			0.959 ± 0.022
3FGL J0202.5+4206	L		0.533 ± 0.008		0.796 ± 0.005		0.962 ± 0.009	
3FGL J0203.6+3043	L	0.761	0.535 ± 0.008		0.745 ± 0.002		0.879 ± 0.006	
3FGL J0204.0+7234	I		0.258 ± 0.008		0.786 ± 0.004		1.120 ± 0.007	
3FGL J0204.8+3212	F	1.466	0.515 ± 0.008	0.817 ± 0.008	0.800 ± 0.006	1.431 ± 0.029	0.980 ± 0.011	0.776 ± 0.018
3FGL J0205.2-1700	F	1.740	0.545 ± 0.008	0.809 ± 0.014	0.795 ± 0.003	1.348 ± 0.044	0.953 ± 0.007	0.775 ± 0.020
3FGL J0206.4-1150	F	1.663	0.557 ± 0.008	0.775 ± 0.008	0.760 ± 0.004	1.219 ± 0.029	0.888 ± 0.008	0.739 ± 0.014
3FGL J0208.6+3522	H	0.318		0.511 ± 0.005	0.741 ± 0.009			1.055 ± 0.021
3FGL J0209.4-5229	H					0.875 ± 0.013	1.022 ± 0.004	1.088 ± 0.007
3FGL J0209.5+4449	H			0.539 ± 0.008	0.771 ± 0.007			1.088 ± 0.019
3FGL J0211.2+1051	I	0.200	0.358 ± 0.008		0.763 ± 0.002		1.021 ± 0.005	
3FGL J0212.8-3504	H	0.393		0.550 ± 0.006	0.747 ± 0.005			1.018 ± 0.014
3FGL J0213.0+2245	H	0.459		0.599 ± 0.008	0.760 ± 0.004			0.981 ± 0.014
3FGL J0214.4+5143	H	0.049	0.262 ± 0.006	0.685 ± 0.008	0.842 ± 0.006	1.545 ± 0.026	1.209 ± 0.011	1.057 ± 0.018
3FGL J0217.0-6635	H					0.938 ± 0.025	1.008 ± 0.008	1.039 ± 0.013
3FGL J0217.1-0833	F	0.607	0.670 ± 0.003		0.839 ± 0.007		0.947 ± 0.012	
3FGL J0217.2+0837	L	1.400	0.251 ± 0.008	0.750 ± 0.008	0.775 ± 0.003	1.765 ± 0.029	1.108 ± 0.006	0.810 ± 0.012
3FGL J0217.5+7349	F	2.367	0.592 ± 0.008	0.804 ± 0.013	0.798 ± 0.004	1.234 ± 0.041	0.929 ± 0.008	0.791 ± 0.020
3FGL J0217.8+0143	F	1.715	0.603 ± 0.008	0.771 ± 0.005	0.762 ± 0.002	1.113 ± 0.022	0.863 ± 0.005	0.750 ± 0.008
3FGL J0221.1+3556	F	0.685	0.778 ± 0.008	0.798 ± 0.011	0.797 ± 0.001	0.838 ± 0.036	0.809 ± 0.005	0.796 ± 0.015
3FGL J0222.1-1616	F	0.698	0.592 ± 0.008	0.861 ± 0.008	0.820 ± 0.005	1.408 ± 0.029	0.964 ± 0.009	0.763 ± 0.015
3FGL J0222.6+4301	H	0.444	0.395 ± 0.008	0.791 ± 0.019	0.784 ± 0.001	1.598 ± 0.059	1.031 ± 0.005	0.774 ± 0.026
3FGL J0222.9-1117	H	0.042		0.614 ± 0.015	0.769 ± 0.007			0.981 ± 0.027
3FGL J0227.2+0201	H	0.457	0.538 ± 0.008	0.487 ± 0.008	0.754 ± 0.004	0.386 ± 0.029	0.891 ± 0.008	1.121 ± 0.014
3FGL J0229.3-3643	F	2.115		0.711 ± 0.007	0.729 ± 0.003			0.754 ± 0.012
3FGL J0230.8+4032	F	1.019	0.584 ± 0.008		0.786 ± 0.003		0.914 ± 0.007	
3FGL J0232.8+2016	H	0.139	0.458 ± 0.008	0.521 ± 0.002	0.800 ± 0.006	0.649 ± 0.016	1.016 ± 0.011	1.183 ± 0.015
3FGL J0236.7-6136	F	0.465				1.186 ± 0.050	0.942 ± 0.006	0.832 ± 0.022
3FGL J0237.5-3603	H	0.411		0.552 ± 0.006	0.764 ± 0.005			1.054 ± 0.014
3FGL J0237.9+2848	F	1.213	0.574 ± 0.008	0.827 ± 0.012	0.777 ± 0.001	1.342 ± 0.041	0.906 ± 0.005	0.708 ± 0.017
3FGL J0238.3-3904	I	0.200		0.687 ± 0.012	0.807 ± 0.007			0.972 ± 0.022
3FGL J0238.4-3117	H	0.232	0.327 ± 0.004	0.567 ± 0.004	0.781 ± 0.003	1.062 ± 0.014	1.070 ± 0.006	1.074 ± 0.010
3FGL J0238.6+1636	L	0.940	0.446 ± 0.008	0.702 ± 0.003	0.757 ± 0.001	1.223 ± 0.019	0.954 ± 0.005	0.832 ± 0.005
3FGL J0242.3+1059	F	2.680	0.695 ± 0.011		0.817 ± 0.007		0.894 ± 0.011	
3FGL J0245.4+2410	F	2.243		0.718 ± 0.014	0.763 ± 0.005			0.826 ± 0.021

表 3 续
Table 3 Continued

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J0253.1-5438	F	0.539	0.524 ± 0.011	0.761 ± 0.011	0.849 ± 0.006	1.244 ± 0.034	1.055 ± 0.010	0.970 ± 0.019
3FGL J0259.5+0746	F	0.893	0.452 ± 0.008	0.900 ± 0.011	0.822 ± 0.004	1.797 ± 0.037	1.054 ± 0.008	0.713 ± 0.018
3FGL J0303.6+4716	I	0.475	0.397 ± 0.011	0.879 ± 0.010	0.812 ± 0.004	1.862 ± 0.029	1.076 ± 0.006	0.720 ± 0.012
3FGL J0303.7-6211	F	1.351	0.661 ± 0.011	0.801 ± 0.014	0.837 ± 0.004	1.088 ± 0.043	0.949 ± 0.007	0.887 ± 0.020
3FGL J0304.3-2836	H					0.721 ± 0.025	1.047 ± 0.019	1.195 ± 0.028
3FGL J0309.0+1029	F	0.863	0.671 ± 0.011	0.775 ± 0.014	0.780 ± 0.004	0.986 ± 0.042	0.849 ± 0.006	0.787 ± 0.018
3FGL J0309.9-6057	F	1.480	0.608 ± 0.011	0.852 ± 0.010	0.792 ± 0.004	1.349 ± 0.029	0.909 ± 0.006	0.710 ± 0.012
3FGL J0312.7+0133	F	0.664	0.560 ± 0.011		0.806 ± 0.004		0.962 ± 0.007	
3FGL J0312.7+3613	H	0.072		0.706 ± 0.010	0.816 ± 0.007			0.966 ± 0.017
3FGL J0316.1-2611	H	0.443				0.863 ± 0.026	0.985 ± 0.008	1.041 ± 0.013
3FGL J0319.8+1847	H	0.190				0.796 ± 0.009	1.046 ± 0.008	1.161 ± 0.012
3FGL J0323.6-0109	I	2.075	0.197 ± 0.003	0.618 ± 0.008	0.733 ± 0.004	1.481 ± 0.024	1.074 ± 0.006	0.890 ± 0.014
3FGL J0325.5+2223	F	2.066	0.582 ± 0.008	0.664 ± 0.005	0.764 ± 0.003	0.832 ± 0.022	0.880 ± 0.007	0.901 ± 0.009
3FGL J0325.6-1648	H	0.291		0.427 ± 0.003	0.743 ± 0.003			1.176 ± 0.008
3FGL J0326.2+0225	H	0.147	0.308 ± 0.008	0.566 ± 0.008	0.774 ± 0.004	1.091 ± 0.029	1.069 ± 0.008	1.059 ± 0.014
3FGL J0334.3-3726	I		0.369 ± 0.005	0.714 ± 0.014	0.764 ± 0.002	1.425 ± 0.044	1.016 ± 0.003	0.833 ± 0.020
3FGL J0334.3-4008	L	1.445	0.499 ± 0.011	0.806 ± 0.016	0.801 ± 0.003	1.432 ± 0.050	0.993 ± 0.005	0.794 ± 0.022
3FGL J0336.5+3210	F	1.259		0.797 ± 0.008	0.828 ± 0.005			0.870 ± 0.016
3FGL J0336.9-1304	F	1.303	0.612 ± 0.008	0.772 ± 0.008	0.806 ± 0.007	1.097 ± 0.029	0.929 ± 0.013	0.853 ± 0.021
3FGL J0336.9-3622	F	1.537		0.811 ± 0.008	0.823 ± 0.007			0.839 ± 0.020
3FGL J0338.1-2443	I	0.251		0.597 ± 0.009	0.822 ± 0.015			1.130 ± 0.036
3FGL J0339.5-0146	F	0.850	0.630 ± 0.008	0.902 ± 0.016	0.815 ± 0.002	1.455 ± 0.050	0.932 ± 0.006	0.696 ± 0.022
3FGL J0340.5-2119	L	0.223	0.529 ± 0.008	0.875 ± 0.008	0.859 ± 0.004	1.580 ± 0.029	1.068 ± 0.008	0.836 ± 0.015
3FGL J0343.2-2534	F	1.419		0.853 ± 0.008	0.795 ± 0.004			0.715 ± 0.014
3FGL J0348.6-2748	F	0.991	0.582 ± 0.008	0.793 ± 0.010	0.840 ± 0.006	1.221 ± 0.034	1.004 ± 0.011	0.906 ± 0.019
3FGL J0348.7-1606	L		0.414 ± 0.008		0.812 ± 0.005		1.064 ± 0.009	
3FGL J0349.2-1158	H	0.185	0.295 ± 0.011	0.410 ± 0.007	0.751 ± 0.007	0.644 ± 0.021	1.039 ± 0.012	1.218 ± 0.017
3FGL J0349.9-2102	F	2.944	0.582 ± 0.008	0.760 ± 0.013	0.755 ± 0.003	1.123 ± 0.043	0.865 ± 0.007	0.748 ± 0.019
3FGL J0353.0-3622	I			0.502 ± 0.009	0.759 ± 0.009			1.111 ± 0.023
3FGL J0401.4+2109	F	0.834	0.644 ± 0.008		0.800 ± 0.006		0.899 ± 0.011	
3FGL J0401.8-3144	F	1.288	0.775 ± 0.008		0.836 ± 0.008		0.875 ± 0.014	
3FGL J0402.1-2618	L	1.920	0.446 ± 0.004		0.779 ± 0.005		0.991 ± 0.009	
3FGL J0403.7-2442	F	0.598	0.604 ± 0.008		0.817 ± 0.008		0.952 ± 0.014	
3FGL J0403.9-3604	F	1.417	0.516 ± 0.008	0.752 ± 0.006	0.764 ± 0.001	1.232 ± 0.023	0.921 ± 0.005	0.781 ± 0.008
3FGL J0405.5-1307	F	0.571	0.720 ± 0.025	0.862 ± 0.011	0.892 ± 0.005	1.150 ± 0.061	1.002 ± 0.018	0.934 ± 0.019
3FGL J0407.1-3825	F	1.285		0.848 ± 0.008	0.790 ± 0.002			0.710 ± 0.012
3FGL J0407.5+0740	L	1.133	0.423 ± 0.008		0.784 ± 0.005		1.012 ± 0.010	
3FGL J0409.8-0358	I		0.426 ± 0.025		0.745 ± 0.004		0.947 ± 0.017	
3FGL J0416.6-1850	F	1.536	0.648 ± 0.008		0.812 ± 0.003		0.916 ± 0.007	
3FGL J0416.8+0104	H	0.287	0.321 ± 0.008	0.555 ± 0.002	0.807 ± 0.005	1.031 ± 0.016	1.116 ± 0.010	1.154 ± 0.012
3FGL J0423.2-0119	F	0.916	0.555 ± 0.008	0.806 ± 0.011	0.804 ± 0.001	1.316 ± 0.037	0.961 ± 0.005	0.801 ± 0.015

表 3 续
Table 3 Continued

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J0424.7+0035	I	0.310	0.269 ± 0.008	0.755 ± 0.009	0.799 ± 0.002	1.743 ± 0.032	1.135 ± 0.006	0.861 ± 0.013
3FGL J0428.6-3756	L	1.105	0.528 ± 0.008	0.770 ± 0.009	0.734 ± 0.001	1.263 ± 0.030	0.865 ± 0.005	0.685 ± 0.012
3FGL J0430.2-2508	I	0.516	0.411 ± 0.004		0.791 ± 0.005		1.034 ± 0.009	
3FGL J0433.6+2905	L	0.970	0.356 ± 0.008	0.807 ± 0.008	0.765 ± 0.002	1.724 ± 0.029	1.025 ± 0.006	0.708 ± 0.012
3FGL J0434.0-2010	L	0.928	0.493 ± 0.004		0.791 ± 0.005		0.980 ± 0.008	
3FGL J0438.3-1258	F	1.276	0.576 ± 0.008		0.823 ± 0.006		0.980 ± 0.012	
3FGL J0440.3-2500	H	0.600		0.515 ± 0.012	0.775 ± 0.010			1.131 ± 0.029
3FGL J0442.6-0017	F	0.844	0.685 ± 0.008	0.836 ± 0.008	0.808 ± 0.002	1.142 ± 0.029	0.886 ± 0.005	0.770 ± 0.011
3FGL J0447.8-2119	F	1.971		0.791 ± 0.008	0.788 ± 0.007			0.784 ± 0.020
3FGL J0448.6-1632	H		0.369 ± 0.004	0.578 ± 0.005	0.767 ± 0.003	1.008 ± 0.016	1.020 ± 0.006	1.025 ± 0.010
3FGL J0449.0+1121	F	1.207	0.559 ± 0.008	0.800 ± 0.008	0.783 ± 0.002	1.291 ± 0.029	0.925 ± 0.006	0.759 ± 0.012
3FGL J0453.2-2808	F	2.559	0.628 ± 0.008	0.748 ± 0.003	0.795 ± 0.002	0.990 ± 0.018	0.901 ± 0.006	0.860 ± 0.006
3FGL J0455.7-4617	F	0.858	0.597 ± 0.018	0.810 ± 0.018	0.824 ± 0.007	1.243 ± 0.047	0.968 ± 0.006	0.843 ± 0.021
3FGL J0457.0+0643	F	0.405	0.593 ± 0.008		0.837 ± 0.007		0.993 ± 0.013	
3FGL J0457.0-2324	F	1.003	0.549 ± 0.008	0.863 ± 0.009	0.760 ± 0.001	1.501 ± 0.031	0.895 ± 0.005	0.620 ± 0.012
3FGL J0501.2-0157	F	2.286	0.706 ± 0.008	0.780 ± 0.002	0.793 ± 0.002	0.931 ± 0.017	0.848 ± 0.006	0.810 ± 0.005
3FGL J0503.5+6538	H		0.412 ± 0.013	0.595 ± 0.008	0.793 ± 0.007	0.966 ± 0.035	1.035 ± 0.014	1.066 ± 0.019
3FGL J0505.3+0459	F	0.954	0.575 ± 0.008	0.767 ± 0.011	0.783 ± 0.002	1.157 ± 0.037	0.914 ± 0.006	0.804 ± 0.016
3FGL J0505.5+0416	H	0.027		0.697 ± 0.008	0.822 ± 0.006			0.994 ± 0.018
3FGL J0507.1-6102	F	1.093		0.809 ± 0.014	0.826 ± 0.007			0.848 ± 0.012
3FGL J0508.0+6736	H	0.314	0.185 ± 0.009	0.505 ± 0.008	0.734 ± 0.002	1.158 ± 0.029	1.082 ± 0.006	1.048 ± 0.012
3FGL J0509.4+0541	I		0.358 ± 0.008	0.834 ± 0.008	0.762 ± 0.001	1.803 ± 0.029	1.018 ± 0.005	0.664 ± 0.011
3FGL J0509.7-0400	H	0.304	0.472 ± 0.003	0.522 ± 0.063	0.832 ± 0.012	0.622 ± 0.190	1.058 ± 0.020	1.257 ± 0.092
3FGL J0510.0+1802	F	0.416	0.644 ± 0.008	0.862 ± 0.008	0.810 ± 0.003	1.306 ± 0.029	0.916 ± 0.007	0.740 ± 0.013
3FGL J0515.3-4557	F	0.194				1.310 ± 0.021	1.090 ± 0.012	0.990 ± 0.018
3FGL J0521.4-1740	F	0.347	0.561 ± 0.008		0.831 ± 0.006		1.002 ± 0.010	
3FGL J0525.3-4558	F	1.479		0.862 ± 0.010	0.868 ± 0.007			0.876 ± 0.019
3FGL J0530.8+1330	F	2.070	0.581 ± 0.008	0.753 ± 0.011	0.780 ± 0.002	1.102 ± 0.036	0.906 ± 0.006	0.817 ± 0.015
3FGL J0532.7+0732	F	1.254	0.602 ± 0.008	1.063 ± 0.008	0.797 ± 0.002	2.002 ± 0.029	0.920 ± 0.005	0.430 ± 0.011
3FGL J0533.2+4822	F	1.162		0.832 ± 0.008	0.755 ± 0.002			0.650 ± 0.012
3FGL J0538.8-4405	L	0.894	0.549 ± 0.008	0.778 ± 0.007	0.765 ± 0.003	1.238 ± 0.016	0.901 ± 0.002	0.746 ± 0.007
3FGL J0540.0-2837	F	3.104	0.619 ± 0.008	0.768 ± 0.008	0.764 ± 0.003	1.071 ± 0.028	0.856 ± 0.007	0.759 ± 0.013
3FGL J0540.5-5416	F	1.185				1.560 ± 0.029	0.980 ± 0.008	0.717 ± 0.014
3FGL J0543.9-5531	H	0.273				0.981 ± 0.018	1.025 ± 0.004	1.045 ± 0.009
3FGL J0550.6-3217	H	0.069	0.509 ± 0.008	0.571 ± 0.002	0.875 ± 0.008	0.694 ± 0.015	1.105 ± 0.013	1.293 ± 0.018
3FGL J0558.1-3838	H	0.302	0.507 ± 0.008	0.576 ± 0.006	0.792 ± 0.004	0.716 ± 0.023	0.971 ± 0.008	1.088 ± 0.012
3FGL J0600.9-3943	F	1.661		0.802 ± 0.008	0.798 ± 0.008			0.792 ± 0.021
3FGL J0607.4+4739	I		0.410 ± 0.008		0.775 ± 0.002		1.007 ± 0.006	
3FGL J0608.0-0835	F	0.872	0.584 ± 0.008	0.867 ± 0.018	0.826 ± 0.003	1.445 ± 0.055	0.980 ± 0.006	0.769 ± 0.025
3FGL J0611.1-6100	F	1.773				1.123 ± 0.029	0.863 ± 0.010	0.746 ± 0.017
3FGL J0612.8+4122	I		0.326 ± 0.008		0.750 ± 0.002		1.018 ± 0.005	

表 3 续
Table 3 Continued

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J0615.4-3116	I			0.814 ± 0.008	0.795 ± 0.005			0.769 ± 0.016
3FGL J0618.0+7819	F	1.430	0.565 ± 0.008	0.779 ± 0.009	0.791 ± 0.006	1.214 ± 0.032	0.934 ± 0.011	0.808 ± 0.019
3FGL J0622.4-2606	H	0.414		0.650 ± 0.007	0.774 ± 0.003			0.945 ± 0.012
3FGL J0625.2+4440	I		0.496 ± 0.008	0.698 ± 0.024	0.779 ± 0.003	1.110 ± 0.073	0.958 ± 0.007	0.889 ± 0.033
3FGL J0626.0-5436	F	2.051				1.034 ± 0.024	0.925 ± 0.015	0.876 ± 0.022
3FGL J0629.4-1959	L	1.724	0.718 ± 0.008	0.854 ± 0.008	0.765 ± 0.002	1.130 ± 0.029	0.795 ± 0.006	0.644 ± 0.011
3FGL J0630.9-2406	H	1.238	0.288 ± 0.004	0.632 ± 0.009	0.735 ± 0.002	1.339 ± 0.028	1.019 ± 0.003	0.876 ± 0.013
3FGL J0634.7-2334	F	1.535	0.797 ± 0.008		0.804 ± 0.006		0.809 ± 0.011	
3FGL J0635.7-7517	F	0.653	0.592 ± 0.008	0.784 ± 0.007	0.863 ± 0.003	1.174 ± 0.026	1.035 ± 0.007	0.972 ± 0.012
3FGL J0638.6+7324	F	1.850	0.581 ± 0.008	0.814 ± 0.024	0.810 ± 0.005	1.290 ± 0.075	0.956 ± 0.009	0.805 ± 0.035
3FGL J0648.1-3045	F	0.455	0.669 ± 0.008	0.908 ± 0.008	0.821 ± 0.004	1.396 ± 0.029	0.918 ± 0.008	0.701 ± 0.014
3FGL J0648.8+1516	H	0.179		0.560 ± 0.002	0.761 ± 0.003			1.037 ± 0.007
3FGL J0648.8-1740	F	1.232	0.577 ± 0.002		0.821 ± 0.006		0.974 ± 0.010	
3FGL J0650.7+2503	H	0.203	0.278 ± 0.008	0.586 ± 0.008	0.765 ± 0.002	1.212 ± 0.029	1.075 ± 0.006	1.012 ± 0.012
3FGL J0654.4+4514	F	0.933	0.656 ± 0.008	0.760 ± 0.008	0.760 ± 0.002	0.971 ± 0.028	0.827 ± 0.006	0.761 ± 0.011
3FGL J0656.4+4232	H	0.059		0.811 ± 0.010	0.862 ± 0.005			0.933 ± 0.015
3FGL J0700.6-6610	I					1.764 ± 0.025	1.041 ± 0.003	0.716 ± 0.011
3FGL J0701.4-4634	F	0.822				1.171 ± 0.029	0.870 ± 0.006	0.733 ± 0.012
3FGL J0710.3+5908	H	0.125	0.489 ± 0.006	0.601 ± 0.008	0.822 ± 0.004	0.826 ± 0.026	1.032 ± 0.007	1.126 ± 0.014
3FGL J0712.6+5033	L	0.502	0.548 ± 0.008	0.798 ± 0.008	0.777 ± 0.003	1.309 ± 0.029	0.922 ± 0.006	0.748 ± 0.012
3FGL J0719.3+3307	F	0.779	0.608 ± 0.004	0.729 ± 0.012	0.736 ± 0.001	0.971 ± 0.036	0.817 ± 0.002	0.746 ± 0.016
3FGL J0721.9+7120	L	0.300	0.293 ± 0.008	0.725 ± 0.006	0.745 ± 0.001	1.606 ± 0.025	1.032 ± 0.005	0.772 ± 0.009
3FGL J0725.2+1425	F	1.038	0.570 ± 0.008		0.770 ± 0.001		0.898 ± 0.005	
3FGL J0730.2-1141	F	1.589		0.900 ± 0.008	0.760 ± 0.001			0.568 ± 0.011
3FGL J0730.5+3307	I	0.112		0.568 ± 0.009	0.728 ± 0.005			0.949 ± 0.016
3FGL J0733.8+4108	I	0.670	0.334 ± 0.003		0.747 ± 0.006		1.009 ± 0.009	
3FGL J0733.8+5021	F	0.720	0.626 ± 0.008		0.836 ± 0.005		0.969 ± 0.010	
3FGL J0738.1+1741	L	0.424	0.489 ± 0.008	0.795 ± 0.007	0.817 ± 0.001	1.416 ± 0.025	1.025 ± 0.005	0.848 ± 0.009
3FGL J0739.4+0137	F	0.189	0.577 ± 0.008	0.767 ± 0.007	0.839 ± 0.002	1.152 ± 0.025	1.005 ± 0.006	0.939 ± 0.010
3FGL J0742.6+5444	F	0.720		0.799 ± 0.008	0.747 ± 0.001			0.676 ± 0.011
3FGL J0744.3+7434	H	0.315	0.367 ± 0.006	0.485 ± 0.003	0.751 ± 0.004	0.720 ± 0.015	0.992 ± 0.007	1.116 ± 0.010
3FGL J0746.4+2540	F	2.979	0.559 ± 0.008	0.740 ± 0.003	0.759 ± 0.006	1.109 ± 0.017	0.886 ± 0.011	0.785 ± 0.015
3FGL J0747.4+0904	H	2.055	0.402 ± 0.003	0.530 ± 0.003	0.755 ± 0.007	0.793 ± 0.008	0.979 ± 0.011	1.063 ± 0.017
3FGL J0748.3+2401	F	0.410	0.624 ± 0.008	0.823 ± 0.012	0.854 ± 0.005	1.229 ± 0.039	1.000 ± 0.009	0.896 ± 0.019
3FGL J0750.6+1232	F	0.889	0.588 ± 0.008	0.772 ± 0.009	0.832 ± 0.004	1.146 ± 0.032	0.986 ± 0.007	0.914 ± 0.015
3FGL J0753.1+5353	L	0.200	0.545 ± 0.008	0.830 ± 0.019	0.840 ± 0.003	1.410 ± 0.059	1.027 ± 0.007	0.854 ± 0.026
3FGL J0754.8+4824	L	0.377	0.451 ± 0.003	0.791 ± 0.008	0.796 ± 0.003	1.485 ± 0.024	1.016 ± 0.004	0.804 ± 0.013
3FGL J0757.0+0956	L	0.266	0.501 ± 0.008	0.769 ± 0.008	0.821 ± 0.002	1.315 ± 0.027	1.025 ± 0.006	0.894 ± 0.011
3FGL J0758.1+1130	F	0.569	0.559 ± 0.003		0.847 ± 0.007		1.030 ± 0.012	
3FGL J0800.9+4401	L	1.072	0.613 ± 0.003		0.796 ± 0.005		0.912 ± 0.008	
3FGL J0805.4+6144	F	3.033	0.657 ± 0.008	0.766 ± 0.008	0.774 ± 0.004	0.987 ± 0.029	0.848 ± 0.008	0.785 ± 0.014

表 3 续
Table 3 Continued

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J0805.4+7534	H	0.121		0.603 ± 0.008	0.754 ± 0.002			0.962 ± 0.012
3FGL J0806.6+5933	H	0.300		0.629 ± 0.008	0.803 ± 0.007			1.042 ± 0.019
3FGL J0807.9+4946	F	1.434	0.626 ± 0.008	0.815 ± 0.019	0.841 ± 0.007	1.198 ± 0.059	0.978 ± 0.013	0.878 ± 0.031
3FGL J0808.2-0751	F	1.837	0.511 ± 0.008	0.869 ± 0.008	0.771 ± 0.001	1.598 ± 0.029	0.936 ± 0.005	0.636 ± 0.011
3FGL J0809.5+4045	F	1.418	0.452 ± 0.008	0.754 ± 0.014	0.823 ± 0.008	1.368 ± 0.046	1.058 ± 0.014	0.918 ± 0.027
3FGL J0809.5+5342	F	2.133	0.539 ± 0.008		0.763 ± 0.005		0.905 ± 0.009	
3FGL J0809.6+3456	H	0.083	0.368 ± 0.003	0.540 ± 0.007	0.853 ± 0.007	0.894 ± 0.021	1.162 ± 0.011	1.283 ± 0.018
3FGL J0809.8+5218	H	0.138	0.389 ± 0.006	0.675 ± 0.008	0.757 ± 0.001	1.258 ± 0.026	0.991 ± 0.004	0.870 ± 0.011
3FGL J0811.3+0146	L	1.148	0.563 ± 0.008		0.781 ± 0.002		0.918 ± 0.006	
3FGL J0812.0+0237	I		0.367 ± 0.003		0.819 ± 0.007		1.107 ± 0.012	
3FGL J0812.9+5555	H	0.383	0.385 ± 0.004		0.771 ± 0.007		1.017 ± 0.011	
3FGL J0814.1-1012	I		0.231 ± 0.004	0.550 ± 0.007	0.728 ± 0.003	1.206 ± 0.022	1.045 ± 0.005	0.973 ± 0.012
3FGL J0814.5+2943	H	1.084	0.379 ± 0.003	0.617 ± 0.008	0.767 ± 0.007	1.104 ± 0.024	1.013 ± 0.012	0.972 ± 0.020
3FGL J0814.7+6428	L	0.239	0.368 ± 0.008		0.747 ± 0.002		0.988 ± 0.006	
3FGL J0816.4-1311	H	0.046	0.366 ± 0.005	0.542 ± 0.004	0.759 ± 0.002	0.904 ± 0.013	1.010 ± 0.004	1.057 ± 0.007
3FGL J0816.7+5739	H	0.054		0.686 ± 0.008	0.775 ± 0.003			0.897 ± 0.012
3FGL J0817.8-0935	I		0.521 ± 0.008		0.804 ± 0.003		0.984 ± 0.007	
3FGL J0818.2+4223	L	0.530	0.622 ± 0.008	0.840 ± 0.025	0.788 ± 0.001	1.284 ± 0.078	0.894 ± 0.005	0.718 ± 0.035
3FGL J0818.8+2751	L	0.393	0.577 ± 0.003		0.822 ± 0.007		0.977 ± 0.011	
3FGL J0820.4+3640	L	0.393		0.804 ± 0.008	0.792 ± 0.006			0.776 ± 0.017
3FGL J0820.9-1258	I	0.074		0.808 ± 0.012	0.888 ± 0.008			0.998 ± 0.025
3FGL J0822.9+4041	F	0.866	0.582 ± 0.003	0.790 ± 0.008	0.808 ± 0.005	1.215 ± 0.024	0.951 ± 0.009	0.832 ± 0.017
3FGL J0824.1+2434	F	1.242	0.583 ± 0.003		0.791 ± 0.006		0.924 ± 0.009	
3FGL J0824.9+3916	F	1.216	0.575 ± 0.008	0.777 ± 0.011	0.844 ± 0.005	1.189 ± 0.037	1.015 ± 0.009	0.936 ± 0.019
3FGL J0824.9+5551	F	1.421	0.609 ± 0.008	0.823 ± 0.006	0.822 ± 0.004	1.259 ± 0.024	0.957 ± 0.008	0.820 ± 0.012
3FGL J0825.9-2230	I	0.911	0.365 ± 0.008	0.727 ± 0.010	0.767 ± 0.002	1.459 ± 0.034	1.020 ± 0.005	0.821 ± 0.014
3FGL J0826.0+0307	L	0.506	0.580 ± 0.008	0.812 ± 0.008	0.871 ± 0.005	1.285 ± 0.029	1.056 ± 0.009	0.952 ± 0.016
3FGL J0828.5+5217	F	0.338	0.594 ± 0.003		0.851 ± 0.008		1.014 ± 0.013	
3FGL J0829.3+0901	F	0.866	0.753 ± 0.004	0.792 ± 0.005	0.850 ± 0.009	0.871 ± 0.017	0.911 ± 0.015	0.929 ± 0.022
3FGL J0830.7+2408	F	0.939	0.468 ± 0.008	0.811 ± 0.017	0.796 ± 0.003	1.510 ± 0.055	1.004 ± 0.007	0.775 ± 0.025
3FGL J0831.9+0430	L	0.174	0.428 ± 0.008	0.872 ± 0.008	0.816 ± 0.002	1.777 ± 0.029	1.063 ± 0.006	0.740 ± 0.011
3FGL J0832.6+4914	L	0.548	0.631 ± 0.003	0.823 ± 0.007	0.843 ± 0.008	1.217 ± 0.021	0.978 ± 0.013	0.870 ± 0.021
3FGL J0834.1+4223	F	0.249	0.430 ± 0.008	0.775 ± 0.008	0.804 ± 0.004	1.478 ± 0.029	1.041 ± 0.008	0.843 ± 0.014
3FGL J0834.7+4403	L	0.475	0.462 ± 0.003		0.815 ± 0.006		1.038 ± 0.010	
3FGL J0835.4+0930	I	0.415	0.445 ± 0.003		0.794 ± 0.007		1.016 ± 0.011	
3FGL J0836.5-2020	F	2.752	0.660 ± 0.008	0.832 ± 0.008	0.819 ± 0.007	1.182 ± 0.029	0.919 ± 0.012	0.801 ± 0.019
3FGL J0839.5+0102	F	1.123	0.578 ± 0.008	0.791 ± 0.008	0.813 ± 0.005	1.226 ± 0.029	0.961 ± 0.009	0.842 ± 0.015
3FGL J0839.6+1803	I	0.280	0.504 ± 0.003	0.839 ± 0.008	0.861 ± 0.007	1.526 ± 0.024	1.088 ± 0.012	0.891 ± 0.020
3FGL J0839.6+3538	L	0.415	0.479 ± 0.003		0.794 ± 0.005		0.995 ± 0.008	
3FGL J0841.4+7053	F	2.218	0.573 ± 0.008	0.761 ± 0.002	0.817 ± 0.003	1.142 ± 0.017	0.972 ± 0.006	0.895 ± 0.006
3FGL J0843.9+5311	I	0.435	0.408 ± 0.003		0.770 ± 0.005		1.000 ± 0.008	

表 3 续
Table 3 Continued

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J0846.7-0651	L		0.301 ± 0.008	0.658 ± 0.007	0.800 ± 0.008	1.386 ± 0.027	1.116 ± 0.013	0.994 ± 0.020
3FGL J0846.9-2336	H	0.061		0.678 ± 0.010	0.788 ± 0.003			0.940 ± 0.015
3FGL J0847.1+1134	H	0.198	0.338 ± 0.003	0.484 ± 0.002	0.776 ± 0.005	0.783 ± 0.002	1.055 ± 0.008	1.178 ± 0.012
3FGL J0849.3+0458	I	1.070	0.441 ± 0.003		0.802 ± 0.005		1.032 ± 0.008	
3FGL J0850.2+3500	I	0.145	0.250 ± 0.003	0.677 ± 0.008	0.794 ± 0.008	1.551 ± 0.024	1.141 ± 0.012	0.956 ± 0.021
3FGL J0850.2-1214	F	0.566	0.398 ± 0.008		0.765 ± 0.002		0.998 ± 0.006	
3FGL J0854.2+4408	I	0.382	0.349 ± 0.003	0.656 ± 0.008	0.832 ± 0.010	1.284 ± 0.024	1.139 ± 0.016	1.073 ± 0.025
3FGL J0854.8+2006	L	0.306	0.345 ± 0.005	0.668 ± 0.003	0.801 ± 0.001	1.324 ± 0.012	1.090 ± 0.003	0.984 ± 0.004
3FGL J0856.5+2057	I	0.539	0.519 ± 0.008		0.801 ± 0.005		0.981 ± 0.009	
3FGL J0856.7-1105	L		0.466 ± 0.008		0.786 ± 0.002		0.988 ± 0.006	
3FGL J0859.1+6219	I	2.065		0.598 ± 0.008	0.719 ± 0.006			0.885 ± 0.019
3FGL J0902.4+2050	I	2.055	0.314 ± 0.026		0.722 ± 0.003		0.980 ± 0.017	
3FGL J0903.1+4649	F	1.462	0.703 ± 0.003	0.851 ± 0.016	0.851 ± 0.006	1.153 ± 0.048	0.945 ± 0.010	0.851 ± 0.026
3FGL J0904.9+2739	F	1.488	0.579 ± 0.003		0.791 ± 0.009		0.925 ± 0.015	
3FGL J0905.5+1358	H	2.065	0.322 ± 0.008		0.767 ± 0.003		1.050 ± 0.007	
3FGL J0906.3-0906	L		0.328 ± 0.005		0.765 ± 0.004		1.044 ± 0.006	
3FGL J0909.0+2310	H	1.184	0.357 ± 0.008	0.690 ± 0.008	0.771 ± 0.005	1.366 ± 0.029	1.033 ± 0.010	0.882 ± 0.017
3FGL J0909.1+0121	F	1.024	0.511 ± 0.025	0.769 ± 0.009	0.763 ± 0.002	1.295 ± 0.059	0.923 ± 0.016	0.755 ± 0.013
3FGL J0909.6+0157	L	1.575	0.492 ± 0.008		0.744 ± 0.004		0.904 ± 0.008	
3FGL J0909.8-0229	F	0.957	0.616 ± 0.026		0.797 ± 0.002		0.912 ± 0.016	
3FGL J0910.5+3329	H	0.354	0.291 ± 0.003	0.686 ± 0.008	0.772 ± 0.003	1.494 ± 0.024	1.077 ± 0.005	0.889 ± 0.013
3FGL J0910.7+3858	L	0.199	0.235 ± 0.004		0.755 ± 0.009		1.085 ± 0.015	
3FGL J0910.9+2248	F	2.661	0.583 ± 0.008	0.706 ± 0.009	0.738 ± 0.005	0.957 ± 0.031	0.836 ± 0.009	0.781 ± 0.016
3FGL J0911.8+3351	L	0.456	0.585 ± 0.002		0.841 ± 0.007		1.003 ± 0.012	
3FGL J0912.2+4126	F	2.563	0.639 ± 0.003	0.761 ± 0.010	0.786 ± 0.007	1.010 ± 0.029	0.879 ± 0.011	0.819 ± 0.021
3FGL J0912.4+2800	H	1.545	0.244 ± 0.011		0.738 ± 0.011		1.052 ± 0.016	
3FGL J0912.7+1556	H	0.212				1.070 ± 0.024	1.145 ± 0.020	1.179 ± 0.031
3FGL J0912.9-2104	H	0.198		0.594 ± 0.004	0.817 ± 0.004			1.123 ± 0.010
3FGL J0915.8+2933	H	0.101	0.370 ± 0.008	0.684 ± 0.008	0.802 ± 0.002	1.324 ± 0.029	1.076 ± 0.006	0.964 ± 0.012
3FGL J0916.3+3857	F	1.267	0.655 ± 0.003	0.882 ± 0.008	0.854 ± 0.007	1.346 ± 0.024	0.980 ± 0.012	0.815 ± 0.020
3FGL J0920.9+4442	F	2.190	0.474 ± 0.008	0.773 ± 0.009	0.758 ± 0.001	1.382 ± 0.030	0.939 ± 0.005	0.738 ± 0.012
3FGL J0921.8+6215	F	1.446	0.659 ± 0.008	0.838 ± 0.003	0.799 ± 0.002	1.202 ± 0.018	0.887 ± 0.006	0.745 ± 0.007
3FGL J0922.4-0529	F	0.974	0.600 ± 0.008	0.811 ± 0.008	0.819 ± 0.005	1.239 ± 0.029	0.958 ± 0.009	0.831 ± 0.015
3FGL J0923.3+4127	F	0.028	0.686 ± 0.008		0.805 ± 0.003		0.880 ± 0.007	
3FGL J0924.0+2816	F	0.744	0.593 ± 0.003		0.804 ± 0.006		0.938 ± 0.009	
3FGL J0924.2+0534	H	0.571	0.270 ± 0.006	0.507 ± 0.009	0.702 ± 0.006	0.993 ± 0.024	0.976 ± 0.009	0.969 ± 0.017
3FGL J0925.6+5959	H	1.575	0.370 ± 0.027	0.574 ± 0.010	0.758 ± 0.009	0.986 ± 0.057	1.004 ± 0.021	1.012 ± 0.022
3FGL J0925.7+3129	L	0.260	0.599 ± 0.003		0.870 ± 0.009		1.042 ± 0.014	
3FGL J0926.3+5409	I	0.850	0.452 ± 0.003		0.778 ± 0.007		0.985 ± 0.012	
3FGL J0927.9-2037	F	0.348	0.481 ± 0.008	0.772 ± 0.006	0.845 ± 0.005	1.366 ± 0.024	1.076 ± 0.009	0.944 ± 0.013
3FGL J0928.5+4048	H	0.830	0.271 ± 0.004	0.619 ± 0.008	0.741 ± 0.008	1.331 ± 0.024	1.039 ± 0.013	0.908 ± 0.022

表 3 续
Table 3 Continued

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J0929.4+5013	I	0.370	0.444 ± 0.008	0.787 ± 0.011	0.819 ± 0.003	1.485 ± 0.036	1.056 ± 0.007	0.863 ± 0.016
3FGL J0930.0+4951	H	0.187	0.352 ± 0.003	0.473 ± 0.008	0.808 ± 0.011	0.719 ± 0.024	1.098 ± 0.019	1.268 ± 0.029
3FGL J0930.2+8612	L		0.491 ± 0.008	0.813 ± 0.008	0.764 ± 0.002	1.470 ± 0.029	0.938 ± 0.006	0.697 ± 0.012
3FGL J0934.1+3933	L	0.044	0.593 ± 0.008		0.812 ± 0.006		0.952 ± 0.011	
3FGL J0937.7+5008	F	0.276	0.574 ± 0.008	0.753 ± 0.008	0.814 ± 0.006	1.118 ± 0.029	0.966 ± 0.010	0.897 ± 0.017
3FGL J0940.9-1337	F	0.551	0.452 ± 0.008		0.802 ± 0.004		1.024 ± 0.009	
3FGL J0941.6+2727	F	1.305	0.514 ± 0.008		0.788 ± 0.006		0.962 ± 0.011	
3FGL J0942.1-0756	L		0.498 ± 0.008		0.821 ± 0.006		1.026 ± 0.011	
3FGL J0945.9+5756	I	0.229	0.404 ± 0.003	0.804 ± 0.008	0.788 ± 0.004	1.623 ± 0.024	1.032 ± 0.006	0.766 ± 0.014
3FGL J0946.2+0103	I	0.577	0.373 ± 0.004	0.560 ± 0.008	0.775 ± 0.011	0.943 ± 0.024	1.030 ± 0.019	1.070 ± 0.029
3FGL J0946.5+1017	F	1.007	0.617 ± 0.003		0.776 ± 0.003		0.877 ± 0.004	
3FGL J0948.6+4041	F	1.249	0.632 ± 0.008	0.875 ± 0.018	0.849 ± 0.006	1.370 ± 0.058	0.987 ± 0.011	0.814 ± 0.029
3FGL J0950.1+4554	I	0.399	0.451 ± 0.003	0.770 ± 0.008	0.778 ± 0.005	1.423 ± 0.024	0.986 ± 0.007	0.789 ± 0.015
3FGL J0953.0-0839	H		0.334 ± 0.004	0.627 ± 0.008	0.751 ± 0.002	1.227 ± 0.024	1.017 ± 0.004	0.923 ± 0.011
3FGL J0954.2+4913	H	0.380	0.285 ± 0.002	0.485 ± 0.007	0.779 ± 0.013	0.895 ± 0.021	1.092 ± 0.020	1.181 ± 0.031
3FGL J0956.6+2515	F	0.708	0.627 ± 0.008	0.780 ± 0.009	0.827 ± 0.003	1.093 ± 0.032	0.954 ± 0.007	0.891 ± 0.015
3FGL J0957.4+4728	F	1.882	0.575 ± 0.008	0.764 ± 0.011	0.811 ± 0.007	1.148 ± 0.037	0.962 ± 0.012	0.877 ± 0.021
3FGL J0957.5-1351	F	1.323	0.471 ± 0.008	0.818 ± 0.008	0.796 ± 0.004	1.526 ± 0.029	1.002 ± 0.008	0.765 ± 0.015
3FGL J0957.6+5523	F	0.899	0.678 ± 0.002	0.871 ± 0.009	0.810 ± 0.001	1.264 ± 0.027	0.893 ± 0.001	0.726 ± 0.012
3FGL J0958.3-0318	H			0.518 ± 0.009	0.768 ± 0.010			1.112 ± 0.026
3FGL J0958.6+6534	L	0.368	0.441 ± 0.008	0.803 ± 0.017	0.813 ± 0.002	1.541 ± 0.053	1.049 ± 0.006	0.826 ± 0.023
3FGL J0959.7+2124	H	0.365	0.402 ± 0.003	0.573 ± 0.008	0.778 ± 0.007	0.925 ± 0.024	1.017 ± 0.011	1.058 ± 0.019
3FGL J1001.0+2913	L	0.558	0.390 ± 0.008	0.836 ± 0.008	0.795 ± 0.004	1.743 ± 0.029	1.051 ± 0.008	0.739 ± 0.014
3FGL J1002.3+2220	H	1.985	0.331 ± 0.006		0.712 ± 0.008		0.953 ± 0.012	
3FGL J1006.7+3453	I	0.612	0.291 ± 0.006	0.534 ± 0.009	0.758 ± 0.010	1.032 ± 0.024	1.055 ± 0.016	1.065 ± 0.025
3FGL J1006.7-2159	F	0.330	0.401 ± 0.008		0.778 ± 0.003		1.018 ± 0.007	
3FGL J1007.4-3334	F	1.837	0.634 ± 0.008		0.802 ± 0.008		0.908 ± 0.014	
3FGL J1007.9+0621	L	1.720	0.444 ± 0.008	0.784 ± 0.008	0.782 ± 0.003	1.477 ± 0.029	0.997 ± 0.007	0.779 ± 0.013
3FGL J1010.2-3120	H	0.143		0.533 ± 0.004	0.795 ± 0.005			1.156 ± 0.012
3FGL J1010.8-0158	F	0.887	0.634 ± 0.016		0.841 ± 0.007		0.972 ± 0.015	
3FGL J1012.2+0631	I	0.727	0.510 ± 0.003	0.981 ± 0.008	0.829 ± 0.005	1.945 ± 0.024	1.032 ± 0.007	0.620 ± 0.015
3FGL J1012.6+2439	F	1.805	0.509 ± 0.003	0.683 ± 0.008	0.714 ± 0.002	1.038 ± 0.024	0.844 ± 0.003	0.756 ± 0.011
3FGL J1012.7+4229	H	0.365	0.462 ± 0.003	0.597 ± 0.008	0.815 ± 0.006	0.872 ± 0.024	1.039 ± 0.009	1.114 ± 0.017
3FGL J1013.5+3440	F	1.414	0.614 ± 0.008	0.799 ± 0.025	0.795 ± 0.005	1.175 ± 0.076	0.910 ± 0.010	0.790 ± 0.036
3FGL J1015.0+4925	H	0.212	0.471 ± 0.007	0.657 ± 0.008	0.765 ± 0.001	1.036 ± 0.027	0.951 ± 0.004	0.913 ± 0.011
3FGL J1016.0+0513	F	1.714	0.615 ± 0.003		0.762 ± 0.002		0.855 ± 0.003	
3FGL J1018.3+3542	F	1.226	0.543 ± 0.025	0.806 ± 0.017	0.833 ± 0.007	1.341 ± 0.072	1.016 ± 0.019	0.869 ± 0.028
3FGL J1018.4-3119	F	0.794	0.533 ± 0.008		0.804 ± 0.005		0.976 ± 0.010	
3FGL J1018.5+0530	F	1.944	0.632 ± 0.008		0.770 ± 0.004		0.858 ± 0.009	
3FGL J1018.8+5913	I	2.025	0.369 ± 0.003	0.775 ± 0.008	0.781 ± 0.005	1.605 ± 0.024	1.043 ± 0.009	0.789 ± 0.017
3FGL J1020.0+6323	L	2.025	0.454 ± 0.025	0.719 ± 0.008	0.768 ± 0.005	1.258 ± 0.057	0.967 ± 0.018	0.835 ± 0.016

表 3 续
Table 3 Continued

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J1022.8-0113	H	2.045		0.490 ± 0.005	0.740 ± 0.004			1.082 ± 0.012
3FGL J1023.1+3952	F	1.254	0.555 ± 0.008	0.803 ± 0.015	0.837 ± 0.006	1.307 ± 0.049	1.016 ± 0.011	0.885 ± 0.026
3FGL J1023.7+3000	I	0.433	0.292 ± 0.004	0.587 ± 0.008	0.751 ± 0.009	1.189 ± 0.024	1.043 ± 0.014	0.977 ± 0.023
3FGL J1023.9-4335	H					1.083 ± 0.025	1.074 ± 0.005	1.070 ± 0.013
3FGL J1025.1+2333	L	0.165	0.404 ± 0.002	0.796 ± 0.008	0.802 ± 0.007	1.596 ± 0.024	1.055 ± 0.011	0.811 ± 0.019
3FGL J1026.4-8542	H		0.514 ± 0.009		0.835 ± 0.005		1.040 ± 0.006	
3FGL J1026.9-1750	H	0.267		0.514 ± 0.008	0.697 ± 0.003			0.949 ± 0.011
3FGL J1027.0+0609	H	0.450	0.363 ± 0.005		0.736 ± 0.007		0.973 ± 0.011	
3FGL J1027.7+6316	I	0.580	0.378 ± 0.003	0.637 ± 0.008	0.767 ± 0.006	1.168 ± 0.024	1.015 ± 0.010	0.946 ± 0.018
3FGL J1028.5-0235	F	0.476	0.495 ± 0.003	0.740 ± 0.007	0.794 ± 0.008	1.240 ± 0.020	0.985 ± 0.013	0.869 ± 0.020
3FGL J1031.2+5053	H	0.361	0.444 ± 0.016	0.474 ± 0.008	0.764 ± 0.003	0.536 ± 0.040	0.967 ± 0.011	1.161 ± 0.013
3FGL J1031.6+6021	F	1.230	0.502 ± 0.002	0.788 ± 0.008	0.779 ± 0.005	1.372 ± 0.024	0.956 ± 0.007	0.768 ± 0.015
3FGL J1032.7+3735	I	0.528	0.422 ± 0.003		0.759 ± 0.003		0.972 ± 0.005	
3FGL J1033.2+4116	F	1.117	0.692 ± 0.008	0.798 ± 0.008	0.786 ± 0.002	1.014 ± 0.029	0.845 ± 0.006	0.768 ± 0.012
3FGL J1033.8+6051	F	1.401	0.703 ± 0.008	0.835 ± 0.018	0.748 ± 0.001	1.105 ± 0.056	0.776 ± 0.005	0.628 ± 0.024
3FGL J1037.0-2934	F	0.312	0.617 ± 0.008	0.820 ± 0.013	0.855 ± 0.005	1.232 ± 0.043	1.005 ± 0.010	0.903 ± 0.022
3FGL J1037.4-3742	F	1.821	0.564 ± 0.008		0.797 ± 0.009		0.945 ± 0.016	
3FGL J1037.5+5711	I	0.830	0.287 ± 0.003	0.653 ± 0.008	0.730 ± 0.002	1.402 ± 0.024	1.012 ± 0.002	0.836 ± 0.011
3FGL J1037.5-2821	F	1.066	0.563 ± 0.004		0.791 ± 0.004		0.935 ± 0.007	
3FGL J1041.8+3901	I	0.208	0.314 ± 0.003	0.661 ± 0.008	0.796 ± 0.009	1.371 ± 0.024	1.103 ± 0.014	0.982 ± 0.023
3FGL J1043.1+2407	F	0.562	0.428 ± 0.008	0.767 ± 0.008	0.805 ± 0.004	1.459 ± 0.029	1.044 ± 0.008	0.857 ± 0.014
3FGL J1044.4+8058	F	1.254	0.610 ± 0.008	0.776 ± 0.010	0.825 ± 0.006	1.112 ± 0.033	0.961 ± 0.011	0.892 ± 0.019
3FGL J1046.9-2531	H	0.254		0.564 ± 0.009	0.765 ± 0.009			1.043 ± 0.023
3FGL J1048.4+7144	F	1.150	0.541 ± 0.008	0.841 ± 0.004	0.772 ± 0.002	1.451 ± 0.019	0.919 ± 0.005	0.678 ± 0.005
3FGL J1048.6+2338	H	0.319	0.276 ± 0.009		0.743 ± 0.005		1.039 ± 0.009	
3FGL J1051.4+3941	I	0.498	0.301 ± 0.004	0.506 ± 0.008	0.760 ± 0.008	0.926 ± 0.024	1.051 ± 0.013	1.107 ± 0.021
3FGL J1051.8+0105	I	0.265	0.369 ± 0.004		0.749 ± 0.006		0.990 ± 0.010	
3FGL J1053.7+4929	H	0.140	0.291 ± 0.002	0.722 ± 0.008	0.792 ± 0.004	1.605 ± 0.024	1.111 ± 0.007	0.888 ± 0.014
3FGL J1054.5+2210	I	2.055	0.364 ± 0.008	0.704 ± 0.008	0.715 ± 0.003	1.397 ± 0.029	0.937 ± 0.006	0.729 ± 0.012
3FGL J1057.3-2341	F	1.125	0.651 ± 0.008		0.779 ± 0.006		0.861 ± 0.010	
3FGL J1057.6-2754	H	0.092		0.621 ± 0.008	0.812 ± 0.008			1.074 ± 0.023
3FGL J1058.1+7010	F	2.492	0.574 ± 0.008		0.763 ± 0.004		0.883 ± 0.009	
3FGL J1058.4+8112	F	0.706	0.524 ± 0.008	0.768 ± 0.017	0.794 ± 0.005	1.265 ± 0.054	0.965 ± 0.009	0.829 ± 0.026
3FGL J1058.5+0133	L	0.890	0.682 ± 0.014	0.843 ± 0.003	0.810 ± 0.001	1.171 ± 0.030	0.891 ± 0.009	0.764 ± 0.005
3FGL J1058.5-8003	L	0.581	0.534 ± 0.027	0.818 ± 0.019	0.786 ± 0.010	1.398 ± 0.028	0.946 ± 0.006	0.741 ± 0.011
3FGL J1058.6+5627	H	0.143	0.301 ± 0.008	0.726 ± 0.008	0.769 ± 0.001	1.592 ± 0.029	1.065 ± 0.005	0.826 ± 0.011
3FGL J1059.9+2056	F	0.392	0.545 ± 0.008		0.809 ± 0.009		0.976 ± 0.015	
3FGL J1100.5+4020	H	0.225	0.275 ± 0.003	0.522 ± 0.008	0.760 ± 0.006	1.027 ± 0.024	1.069 ± 0.010	1.088 ± 0.018
3FGL J1101.5+4106	H	2.065	0.374 ± 0.004	0.618 ± 0.008	0.758 ± 0.008	1.117 ± 0.024	1.003 ± 0.012	0.951 ± 0.021
3FGL J1103.1+1155	F	0.914	0.551 ± 0.002		0.790 ± 0.004		0.941 ± 0.007	
3FGL J1104.3+0730	I	0.630	0.342 ± 0.003		0.766 ± 0.004		1.035 ± 0.007	

表 3 续
Table 3 Continued

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J1104.4+3812	H	0.031	0.263 ± 0.006	0.526 ± 0.003	0.739 ± 0.002	1.060 ± 0.009	1.041 ± 0.003	1.033 ± 0.001
3FGL J1105.9+2814	F	0.844	0.499 ± 0.003		0.773 ± 0.003		0.947 ± 0.005	
3FGL J1107.4-4447	F	1.598	0.598 ± 0.011	0.865 ± 0.010	0.821 ± 0.005	1.407 ± 0.029	0.961 ± 0.008	0.760 ± 0.014
3FGL J1107.5+0223	I	1.082	0.335 ± 0.003		0.734 ± 0.006		0.988 ± 0.009	
3FGL J1107.8+1502	I	0.602	0.373 ± 0.026	0.575 ± 0.008	0.760 ± 0.004	0.987 ± 0.057	1.005 ± 0.017	1.013 ± 0.014
3FGL J1109.4+2411	H	0.482	0.409 ± 0.003		0.781 ± 0.007		1.018 ± 0.011	
3FGL J1109.6+3734	I	0.397	0.231 ± 0.013	0.519 ± 0.012	0.751 ± 0.013	1.109 ± 0.024	1.082 ± 0.019	1.070 ± 0.029
3FGL J1110.0+7134	H			0.672 ± 0.008	0.788 ± 0.005			0.946 ± 0.017
3FGL J1112.4+3449	F	1.956	0.522 ± 0.003		0.748 ± 0.003		0.892 ± 0.004	
3FGL J1112.6+1749	H	0.421	0.344 ± 0.003		0.804 ± 0.017		1.097 ± 0.027	
3FGL J1117.0+2014	H	0.139	0.363 ± 0.010	0.521 ± 0.008	0.770 ± 0.002	0.844 ± 0.031	1.028 ± 0.007	1.111 ± 0.012
3FGL J1117.3+2546	H	0.360	0.206 ± 0.006	0.615 ± 0.009	0.749 ± 0.007	1.451 ± 0.024	1.094 ± 0.012	0.933 ± 0.020
3FGL J1117.7-4632	F	0.713	0.590 ± 0.008	0.812 ± 0.016	0.865 ± 0.005	1.266 ± 0.052	1.040 ± 0.010	0.938 ± 0.025
3FGL J1117.9+5355	H	0.720	0.254 ± 0.004	0.618 ± 0.008	0.719 ± 0.004	1.362 ± 0.024	1.014 ± 0.005	0.857 ± 0.013
3FGL J1119.7-3046	H	0.412		0.500 ± 0.010	0.781 ± 0.013			1.167 ± 0.032
3FGL J1120.8+4212	H	0.124	0.293 ± 0.026	0.553 ± 0.008	0.748 ± 0.003	1.081 ± 0.057	1.036 ± 0.017	1.016 ± 0.013
3FGL J1121.4-0554	F	1.297		0.821 ± 0.008	0.771 ± 0.002			0.702 ± 0.012
3FGL J1123.6+7231	H		0.352 ± 0.026	0.516 ± 0.008	0.797 ± 0.017	0.850 ± 0.057	1.079 ± 0.032	1.182 ± 0.041
3FGL J1124.1+2337	F	1.549	0.672 ± 0.008		0.805 ± 0.005		0.890 ± 0.009	
3FGL J1124.9+4932	H	2.145	0.346 ± 0.004	0.539 ± 0.008	0.754 ± 0.007	0.932 ± 0.024	1.014 ± 0.011	1.050 ± 0.019
3FGL J1125.8-0745	H	0.279		0.576 ± 0.007	0.788 ± 0.008			1.080 ± 0.021
3FGL J1125.9+2007	F	0.133	0.516 ± 0.003		0.870 ± 0.007		1.095 ± 0.011	
3FGL J1127.0-1857	F	1.048	0.649 ± 0.008	0.653 ± 0.005	0.748 ± 0.001	0.660 ± 0.022	0.811 ± 0.005	0.878 ± 0.007
3FGL J1127.8+3618	F	0.884	0.564 ± 0.009		0.745 ± 0.004		0.860 ± 0.007	
3FGL J1128.0+5921	F	1.795	0.591 ± 0.008	0.759 ± 0.013	0.802 ± 0.008	1.101 ± 0.043	0.936 ± 0.014	0.862 ± 0.027
3FGL J1129.0+3705	L	0.445	0.487 ± 0.003		0.779 ± 0.005		0.965 ± 0.009	
3FGL J1129.9-1446	F	1.184	0.742 ± 0.008	0.845 ± 0.008	0.855 ± 0.003	1.055 ± 0.028	0.926 ± 0.007	0.868 ± 0.013
3FGL J1131.1+5810	I	0.360	0.291 ± 0.003	0.747 ± 0.008	0.766 ± 0.004	1.679 ± 0.024	1.068 ± 0.007	0.793 ± 0.015
3FGL J1131.4+3819	F	1.740	0.664 ± 0.008	0.787 ± 0.020	0.813 ± 0.006	1.037 ± 0.064	0.907 ± 0.012	0.848 ± 0.032
3FGL J1132.7+0034	I	1.223	0.491 ± 0.003	0.839 ± 0.008	0.781 ± 0.002	1.550 ± 0.024	0.965 ± 0.004	0.701 ± 0.012
3FGL J1132.8+1015	F	0.540	0.543 ± 0.003	0.824 ± 0.008	0.856 ± 0.009	1.400 ± 0.024	1.056 ± 0.015	0.900 ± 0.024
3FGL J1136.4+3405	F	1.337	0.558 ± 0.008		0.772 ± 0.007		0.908 ± 0.012	
3FGL J1136.6+6736	H	0.136	0.273 ± 0.004	0.540 ± 0.008	0.783 ± 0.004	1.084 ± 0.025	1.107 ± 0.006	1.117 ± 0.014
3FGL J1136.6+7009	H	0.045	0.297 ± 0.005	0.611 ± 0.008	0.817 ± 0.002	1.251 ± 0.025	1.147 ± 0.004	1.100 ± 0.012
3FGL J1136.9+2551	I	0.156	0.230 ± 0.003	0.653 ± 0.008	0.780 ± 0.009	1.517 ± 0.024	1.129 ± 0.015	0.954 ± 0.024
3FGL J1140.4+1529	H	0.244	0.375 ± 0.002	0.602 ± 0.008	0.870 ± 0.016	1.066 ± 0.024	1.185 ± 0.025	1.238 ± 0.038
3FGL J1142.0+1546	L	0.299	0.641 ± 0.008		0.815 ± 0.004		0.923 ± 0.008	
3FGL J1143.0+6123	L	0.475	0.421 ± 0.003	0.785 ± 0.008	0.772 ± 0.003	1.529 ± 0.024	0.994 ± 0.005	0.753 ± 0.013
3FGL J1145.8+4425	F	0.300	0.539 ± 0.002		0.875 ± 0.009		1.088 ± 0.015	
3FGL J1146.8+3958	F	1.089	0.566 ± 0.008		0.747 ± 0.002		0.861 ± 0.005	
3FGL J1147.0-3811	F	1.048	0.554 ± 0.008	0.779 ± 0.003	0.823 ± 0.002	1.239 ± 0.017	0.994 ± 0.006	0.884 ± 0.006

表 3 续
Table 3 Continued

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J1147.8-0725	F	1.342	0.582 ± 0.008	0.831 ± 0.008	0.793 ± 0.003	1.338 ± 0.029	0.927 ± 0.007	0.741 ± 0.013
3FGL J1150.3+2417	I	0.180	0.483 ± 0.008	1.018 ± 0.008	0.826 ± 0.003	2.107 ± 0.029	1.044 ± 0.007	0.563 ± 0.013
3FGL J1150.5+4155	H	1.018	0.258 ± 0.004	0.595 ± 0.008	0.707 ± 0.002	1.284 ± 0.024	0.992 ± 0.003	0.861 ± 0.012
3FGL J1151.4+5858	I	0.118	0.366 ± 0.003	0.743 ± 0.008	0.810 ± 0.003	1.516 ± 0.024	1.092 ± 0.005	0.901 ± 0.013
3FGL J1152.3-0841	F	2.370		0.771 ± 0.016	0.784 ± 0.004			0.803 ± 0.023
3FGL J1153.4+4033	F	0.925	0.706 ± 0.003		0.893 ± 0.008		1.013 ± 0.012	
3FGL J1153.4+4932	F	0.334	0.624 ± 0.003	0.795 ± 0.008	0.822 ± 0.002	1.143 ± 0.024	0.948 ± 0.003	0.861 ± 0.012
3FGL J1154.2-0010	H	0.254	0.293 ± 0.007	0.511 ± 0.008	0.748 ± 0.007	0.957 ± 0.019	1.038 ± 0.010	1.074 ± 0.017
3FGL J1155.9+6136	L	1.525	0.197 ± 0.008		0.732 ± 0.010		1.071 ± 0.016	
3FGL J1158.8+0941	I	0.390	0.388 ± 0.003		0.751 ± 0.004		0.982 ± 0.007	
3FGL J1159.2-2141	F	0.617	0.616 ± 0.008		0.784 ± 0.003		0.891 ± 0.007	
3FGL J1159.5+2914	F	0.725	0.620 ± 0.008	0.799 ± 0.008	0.784 ± 0.001	1.162 ± 0.029	0.889 ± 0.005	0.765 ± 0.011
3FGL J1203.1+6029	I	0.066	0.324 ± 0.005	0.765 ± 0.008	0.804 ± 0.003	1.667 ± 0.026	1.110 ± 0.006	0.859 ± 0.013
3FGL J1203.2+3847	I	0.805	0.333 ± 0.004	0.667 ± 0.008	0.739 ± 0.008	1.351 ± 0.024	0.997 ± 0.013	0.838 ± 0.021
3FGL J1204.0+1144	H	0.296	0.293 ± 0.004	0.590 ± 0.008	0.747 ± 0.006	1.198 ± 0.024	1.036 ± 0.009	0.963 ± 0.017
3FGL J1205.4+0412	F	1.875	0.609 ± 0.004		0.770 ± 0.008		0.871 ± 0.014	
3FGL J1205.8-2636	F	0.789	0.421 ± 0.008	0.812 ± 0.015	0.839 ± 0.004	1.608 ± 0.049	1.103 ± 0.008	0.875 ± 0.023
3FGL J1208.7+5442	F	1.345	0.557 ± 0.003		0.752 ± 0.002		0.876 ± 0.003	
3FGL J1209.4+4119	L	0.377	0.452 ± 0.008	0.752 ± 0.011	0.833 ± 0.005	1.364 ± 0.037	1.074 ± 0.009	0.943 ± 0.019
3FGL J1212.6+5135	H	0.796	0.404 ± 0.004	0.631 ± 0.008	0.767 ± 0.007	1.097 ± 0.025	0.999 ± 0.011	0.954 ± 0.019
3FGL J1213.1-2619	H	0.278	0.236 ± 0.026	0.491 ± 0.009	0.733 ± 0.008	1.007 ± 0.057	1.047 ± 0.020	1.066 ± 0.021
3FGL J1213.7+1306	F	1.139				1.560 ± 0.024	0.979 ± 0.008	0.717 ± 0.016
3FGL J1215.0+5002	I	1.545	0.346 ± 0.003		0.781 ± 0.005		1.058 ± 0.008	
3FGL J1215.1+1658	F	1.132	0.580 ± 0.008	0.796 ± 0.008	0.798 ± 0.005	1.236 ± 0.029	0.936 ± 0.009	0.799 ± 0.015
3FGL J1217.8+3007	H	0.130	0.388 ± 0.024	0.628 ± 0.008	0.767 ± 0.002	1.116 ± 0.053	1.008 ± 0.015	0.959 ± 0.011
3FGL J1218.0-0029	L	0.419	0.545 ± 0.003		0.819 ± 0.005		0.994 ± 0.007	
3FGL J1218.4-0121	L	0.415	0.403 ± 0.004		0.791 ± 0.003		1.037 ± 0.006	
3FGL J1219.7-0314	I	0.299	0.330 ± 0.008	0.581 ± 0.010	0.756 ± 0.005	1.094 ± 0.033	1.027 ± 0.009	0.997 ± 0.017
3FGL J1220.2+3434	L	0.643	0.455 ± 0.008	0.804 ± 0.008	0.811 ± 0.004	1.515 ± 0.029	1.036 ± 0.009	0.820 ± 0.015
3FGL J1221.3+3010	H	0.184	0.372 ± 0.003	0.548 ± 0.008	0.746 ± 0.002	0.907 ± 0.024	0.983 ± 0.003	1.018 ± 0.012
3FGL J1221.4+2814	I	0.103	0.364 ± 0.008	0.742 ± 0.005	0.796 ± 0.002	1.511 ± 0.021	1.070 ± 0.005	0.871 ± 0.007
3FGL J1222.4+0414	F	0.966	0.530 ± 0.008	0.765 ± 0.008	0.799 ± 0.003	1.244 ± 0.029	0.970 ± 0.007	0.846 ± 0.013
3FGL J1222.7+8041	L			0.849 ± 0.026	0.817 ± 0.003			0.773 ± 0.037
3FGL J1224.5+2436	H	0.218	0.275 ± 0.009	0.606 ± 0.007	0.752 ± 0.004	1.280 ± 0.026	1.055 ± 0.008	0.954 ± 0.013
3FGL J1224.5+4957	F	1.064	0.271 ± 0.025		0.753 ± 0.006		1.058 ± 0.019	
3FGL J1224.6+4332	L	1.075	0.671 ± 0.003		0.802 ± 0.005		0.885 ± 0.008	
3FGL J1224.9+2122	F	0.432	0.547 ± 0.003	0.816 ± 0.008	0.761 ± 0.001	1.368 ± 0.024	0.897 ± 0.001	0.685 ± 0.011
3FGL J1226.8+0638	H	1.985	0.234 ± 0.005	0.570 ± 0.009	0.781 ± 0.011	1.255 ± 0.024	1.128 ± 0.018	1.071 ± 0.029
3FGL J1226.9-1329	L	0.456	0.647 ± 0.008		0.785 ± 0.004		0.872 ± 0.008	
3FGL J1228.7+4857	F	1.716	0.568 ± 0.025		0.801 ± 0.005		0.948 ± 0.018	
3FGL J1229.1+0202	F	0.158	0.516 ± 0.003	0.769 ± 0.002	0.881 ± 0.001	1.283 ± 0.004	1.112 ± 0.001	1.035 ± 0.002

表 3 续
Table 3 Continued

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J1230.3+2519	I	0.135	0.315 ± 0.008	0.718 ± 0.008	0.798 ± 0.003	1.539 ± 0.029	1.104 ± 0.007	0.907 ± 0.013
3FGL J1231.5+6414	H	0.163	0.381 ± 0.003	0.602 ± 0.005	0.810 ± 0.007	1.055 ± 0.013	1.083 ± 0.012	1.095 ± 0.018
3FGL J1231.7+2847	I	0.236	0.433 ± 0.003	0.709 ± 0.008	0.760 ± 0.002	1.275 ± 0.024	0.968 ± 0.003	0.830 ± 0.011
3FGL J1231.8+1421	H	0.256				1.195 ± 0.024	1.057 ± 0.010	0.994 ± 0.019
3FGL J1233.7-0145	I	2.145	0.306 ± 0.004		0.695 ± 0.003		0.942 ± 0.005	
3FGL J1236.6+3901	I	0.390	0.401 ± 0.003	0.708 ± 0.008	0.775 ± 0.008	1.336 ± 0.024	1.012 ± 0.013	0.866 ± 0.022
3FGL J1237.9+6258	H	0.297	0.291 ± 0.004	0.547 ± 0.005	0.770 ± 0.008	1.069 ± 0.012	1.074 ± 0.013	1.076 ± 0.020
3FGL J1239.5+0443	F	1.759				1.083 ± 0.029	0.778 ± 0.005	0.640 ± 0.011
3FGL J1241.6-1456	H		0.300 ± 0.009	0.461 ± 0.004	0.754 ± 0.007	0.788 ± 0.021	1.041 ± 0.012	1.155 ± 0.017
3FGL J1241.9+0639	H	0.150	0.361 ± 0.004	0.609 ± 0.008	0.776 ± 0.009	1.117 ± 0.024	1.040 ± 0.015	1.005 ± 0.024
3FGL J1243.1+3627	H	1.065	0.354 ± 0.025	0.581 ± 0.008	0.767 ± 0.002	1.042 ± 0.057	1.028 ± 0.016	1.021 ± 0.012
3FGL J1244.8+5707	I	1.545	0.351 ± 0.002	0.714 ± 0.008	0.780 ± 0.006	1.457 ± 0.024	1.053 ± 0.009	0.871 ± 0.017
3FGL J1246.7-2547	F	0.633	0.557 ± 0.008	0.776 ± 0.011	0.769 ± 0.001	1.221 ± 0.038	0.904 ± 0.005	0.761 ± 0.016
3FGL J1247.0+4421	H	1.812	0.297 ± 0.007	0.507 ± 0.009	0.723 ± 0.007	0.935 ± 0.025	0.994 ± 0.011	1.021 ± 0.020
3FGL J1248.0+5130	I	0.351	0.445 ± 0.003	0.767 ± 0.008	0.816 ± 0.007	1.425 ± 0.024	1.051 ± 0.011	0.883 ± 0.020
3FGL J1248.2+5820	I	0.847	0.308 ± 0.008	0.637 ± 0.004	0.754 ± 0.001	1.307 ± 0.020	1.037 ± 0.005	0.915 ± 0.006
3FGL J1249.7+3705	H			0.595 ± 0.010	0.726 ± 0.006			0.907 ± 0.016
3FGL J1253.2+5300	L	0.445	0.524 ± 0.005	0.818 ± 0.017	0.783 ± 0.002	1.419 ± 0.053	0.947 ± 0.003	0.735 ± 0.024
3FGL J1253.7+0327	H	0.066	0.244 ± 0.002	0.684 ± 0.008	0.799 ± 0.004	1.584 ± 0.024	1.152 ± 0.007	0.957 ± 0.015
3FGL J1254.1+6240	H	0.867	0.339 ± 0.004	0.629 ± 0.008	0.747 ± 0.006	1.224 ± 0.024	1.006 ± 0.010	0.908 ± 0.018
3FGL J1256.1-0547	F	0.536	0.652 ± 0.008	0.744 ± 0.003	0.808 ± 0.001	0.931 ± 0.019	0.906 ± 0.005	0.894 ± 0.005
3FGL J1256.9+3649	H	0.531	0.412 ± 0.003		0.771 ± 0.004		0.999 ± 0.006	
3FGL J1258.0+6120	I	0.224	0.332 ± 0.005		0.755 ± 0.007		1.023 ± 0.012	
3FGL J1258.1+3233	F	0.806	0.560 ± 0.011	0.844 ± 0.010	0.818 ± 0.005	1.423 ± 0.029	0.982 ± 0.008	0.782 ± 0.014
3FGL J1300.2+1416	F	1.109	0.601 ± 0.003	0.823 ± 0.008	0.803 ± 0.005	1.278 ± 0.024	0.932 ± 0.009	0.776 ± 0.017
3FGL J1303.0+2435	L	0.993	0.539 ± 0.003		0.742 ± 0.002		0.870 ± 0.003	
3FGL J1308.7+3545	F	1.055	0.598 ± 0.011	0.764 ± 0.018	0.788 ± 0.005	1.102 ± 0.056	0.908 ± 0.008	0.821 ± 0.026
3FGL J1309.3+4304	H	0.691	0.307 ± 0.008	0.707 ± 0.008	0.739 ± 0.002	1.520 ± 0.029	1.013 ± 0.006	0.784 ± 0.012
3FGL J1309.5+1154	L	0.415	0.638 ± 0.008	0.853 ± 0.008	0.851 ± 0.005	1.290 ± 0.029	0.985 ± 0.009	0.848 ± 0.015
3FGL J1310.2-1159	H	0.140		0.661 ± 0.012	0.816 ± 0.008			1.028 ± 0.024
3FGL J1310.6+3222	F	0.998	0.650 ± 0.008	0.772 ± 0.005	0.803 ± 0.002	1.020 ± 0.022	0.900 ± 0.005	0.846 ± 0.008
3FGL J1310.7+5515	F	0.925				1.035 ± 0.063	0.896 ± 0.012	0.833 ± 0.032
3FGL J1311.0+0036	H	0.002	0.323 ± 0.003	0.642 ± 0.008	0.803 ± 0.014	1.294 ± 0.024	1.108 ± 0.024	1.025 ± 0.036
3FGL J1312.5-2155	H	1.491	0.416 ± 0.004		0.773 ± 0.002		1.000 ± 0.004	
3FGL J1312.8-0424	F	0.825	0.596 ± 0.008	0.791 ± 0.008	0.772 ± 0.003	1.188 ± 0.029	0.883 ± 0.007	0.745 ± 0.013
3FGL J1314.8+2349	I	2.145	0.384 ± 0.011	0.683 ± 0.010	0.758 ± 0.004	1.292 ± 0.029	0.995 ± 0.006	0.861 ± 0.012
3FGL J1316.0-3338	F	1.210	0.564 ± 0.008	0.810 ± 0.008	0.797 ± 0.002	1.311 ± 0.029	0.945 ± 0.006	0.779 ± 0.012
3FGL J1317.8+3429	F	1.055	0.638 ± 0.008	0.825 ± 0.008	0.829 ± 0.007	1.205 ± 0.029	0.951 ± 0.013	0.836 ± 0.020
3FGL J1319.3+1402	H	0.573	0.411 ± 0.003	0.586 ± 0.008	0.820 ± 0.010	0.943 ± 0.024	1.080 ± 0.017	1.142 ± 0.026
3FGL J1321.0+2215	F	0.943	0.625 ± 0.008		0.773 ± 0.003		0.866 ± 0.007	
3FGL J1322.8-0938	F	1.864	0.607 ± 0.008		0.770 ± 0.004		0.873 ± 0.008	

表 3 续
Table 3 Continued

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J1322.9+0435	H	0.224	0.362 ± 0.003	0.599 ± 0.008	0.798 ± 0.008	1.085 ± 0.024	1.076 ± 0.013	1.072 ± 0.022
3FGL J1323.9+1405	I	0.773	0.386 ± 0.004		0.758 ± 0.006		0.995 ± 0.010	
3FGL J1326.1+2931	I	0.431				1.005 ± 0.057	1.032 ± 0.023	1.044 ± 0.026
3FGL J1326.8+2211	F	1.400	0.242 ± 0.011	0.570 ± 0.010	0.634 ± 0.004	1.239 ± 0.029	0.883 ± 0.006	0.721 ± 0.012
3FGL J1327.9+2524	I	2.225	0.297 ± 0.027		0.762 ± 0.015		1.056 ± 0.028	
3FGL J1330.0+4437	I	2.145				1.169 ± 0.024	1.010 ± 0.009	0.939 ± 0.017
3FGL J1331.5+1711	L	0.405	0.614 ± 0.003	0.814 ± 0.008	0.799 ± 0.007	1.222 ± 0.024	0.917 ± 0.011	0.780 ± 0.019
3FGL J1331.8+4718	F	0.669	0.555 ± 0.008	0.803 ± 0.008	0.805 ± 0.005	1.307 ± 0.029	0.963 ± 0.010	0.808 ± 0.017
3FGL J1332.0-0508	F	2.150	0.554 ± 0.008	0.840 ± 0.008	0.726 ± 0.002	1.424 ± 0.029	0.836 ± 0.005	0.570 ± 0.011
3FGL J1332.8+2723	F	2.126	0.576 ± 0.008		0.775 ± 0.005		0.902 ± 0.009	
3FGL J1333.7+5057	F	1.362	0.498 ± 0.008	0.758 ± 0.034	0.736 ± 0.005	1.289 ± 0.103	0.888 ± 0.006	0.706 ± 0.047
3FGL J1335.4-2949	I	0.250		0.494 ± 0.007	0.735 ± 0.006			1.066 ± 0.017
3FGL J1337.6-1257	F	0.539	0.575 ± 0.008	0.806 ± 0.008	0.844 ± 0.003	1.278 ± 0.030	1.015 ± 0.007	0.897 ± 0.013
3FGL J1338.9+6532	F	0.945	0.610 ± 0.008		0.807 ± 0.009		0.931 ± 0.015	
3FGL J1339.0+1153	I	1.589	0.243 ± 0.004		0.714 ± 0.004		1.014 ± 0.007	
3FGL J1339.8-0133	F	1.620	0.494 ± 0.003		0.783 ± 0.007		0.967 ± 0.012	
3FGL J1340.6+4412	H	0.546	0.457 ± 0.008	0.611 ± 0.010	0.796 ± 0.010	0.927 ± 0.024	1.011 ± 0.015	1.049 ± 0.025
3FGL J1341.0+3955	I	0.172				0.944 ± 0.024	1.033 ± 0.013	1.073 ± 0.021
3FGL J1341.5+5517	H	0.207	0.356 ± 0.003	0.667 ± 0.008	0.779 ± 0.007	1.303 ± 0.024	1.048 ± 0.012	0.933 ± 0.020
3FGL J1341.9-2053	F	1.582	0.536 ± 0.008	0.776 ± 0.008	0.776 ± 0.004	1.264 ± 0.029	0.928 ± 0.009	0.776 ± 0.015
3FGL J1343.6+5753	F	0.932	0.511 ± 0.003	0.795 ± 0.008	0.804 ± 0.008	1.377 ± 0.024	0.990 ± 0.013	0.815 ± 0.022
3FGL J1344.2-1724	F	2.490	0.584 ± 0.008	0.782 ± 0.022	0.745 ± 0.002	1.185 ± 0.069	0.848 ± 0.006	0.695 ± 0.031
3FGL J1345.6+4453	F	2.534	0.630 ± 0.003	0.721 ± 0.005	0.709 ± 0.001	0.909 ± 0.016	0.760 ± 0.002	0.693 ± 0.007
3FGL J1345.8+0704	F	1.093	0.565 ± 0.003		0.756 ± 0.003		0.878 ± 0.005	
3FGL J1349.6-1133	F	0.340	0.511 ± 0.008	0.837 ± 0.008	0.804 ± 0.003	1.500 ± 0.029	0.990 ± 0.007	0.759 ± 0.013
3FGL J1350.8+3035	F	0.712	0.596 ± 0.008	0.767 ± 0.008	0.788 ± 0.003	1.114 ± 0.029	0.909 ± 0.007	0.816 ± 0.013
3FGL J1351.1+0030	F	2.084	0.796 ± 0.009		0.790 ± 0.006		0.787 ± 0.011	
3FGL J1351.4+1115	H	1.995	0.371 ± 0.025	0.611 ± 0.008	0.757 ± 0.004	1.100 ± 0.057	1.002 ± 0.018	0.958 ± 0.015
3FGL J1353.1-4414	L	0.050	0.526 ± 0.011	0.756 ± 0.010	0.833 ± 0.006	1.220 ± 0.029	1.026 ± 0.010	0.937 ± 0.016
3FGL J1353.2+1435	L	0.405	0.719 ± 0.011		0.820 ± 0.005		0.884 ± 0.009	
3FGL J1354.5+3705	I	0.384	0.291 ± 0.003		0.752 ± 0.005		1.046 ± 0.009	
3FGL J1355.0-1044	F	0.332		0.748 ± 0.008	0.831 ± 0.004			0.945 ± 0.014
3FGL J1357.5+0125	I	0.219	0.405 ± 0.003	0.657 ± 0.008	0.786 ± 0.006	1.170 ± 0.025	1.028 ± 0.011	0.964 ± 0.019
3FGL J1357.6+7643	F	1.585	0.723 ± 0.008		0.807 ± 0.004		0.860 ± 0.008	
3FGL J1359.0+5544	F	1.014	0.588 ± 0.003		0.759 ± 0.004		0.868 ± 0.006	
3FGL J1359.2+0204	F	1.326	0.529 ± 0.003	0.800 ± 0.013	0.836 ± 0.007	1.354 ± 0.039	1.031 ± 0.011	0.886 ± 0.024
3FGL J1359.9-3746	I	0.334	0.401 ± 0.004		0.782 ± 0.004		1.025 ± 0.007	
3FGL J1404.8+0401	H	0.344	0.272 ± 0.003	0.636 ± 0.004	0.765 ± 0.005	1.381 ± 0.010	1.078 ± 0.007	0.942 ± 0.011
3FGL J1404.8+6554	H	0.363	0.345 ± 0.005	0.572 ± 0.009	0.754 ± 0.006	1.035 ± 0.024	1.014 ± 0.009	1.004 ± 0.017
3FGL J1406.6+1644	H	1.985	0.253 ± 0.005	0.469 ± 0.009	0.750 ± 0.011	0.910 ± 0.024	1.065 ± 0.017	1.135 ± 0.027
3FGL J1408.8-0751	F	1.494		0.839 ± 0.008	0.778 ± 0.003			0.694 ± 0.012

表 3 续
Table 3 Continued

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J1410.4+2821	H	0.522	0.321 ± 0.003	0.641 ± 0.008	0.768 ± 0.006	1.295 ± 0.024	1.052 ± 0.010	0.943 ± 0.018
3FGL J1415.0-1001	F	2.001	0.546 ± 0.008		0.790 ± 0.008		0.943 ± 0.014	
3FGL J1415.2+4832	I	0.496				1.231 ± 0.024	0.985 ± 0.012	0.874 ± 0.021
3FGL J1417.8+2540	H	0.237				0.959 ± 0.026	1.073 ± 0.010	1.124 ± 0.018
3FGL J1418.4-0233	H	2.055	0.242 ± 0.003		0.720 ± 0.002		1.023 ± 0.003	
3FGL J1419.8+3819	F	1.830	0.641 ± 0.008	0.823 ± 0.015	0.803 ± 0.004	1.195 ± 0.047	0.906 ± 0.008	0.776 ± 0.022
3FGL J1419.9+5425	L	0.153	0.438 ± 0.003	0.794 ± 0.007	0.835 ± 0.003	1.523 ± 0.021	1.088 ± 0.004	0.892 ± 0.011
3FGL J1422.4+3227	F	0.682	0.638 ± 0.008	0.802 ± 0.008	0.838 ± 0.009	1.134 ± 0.029	0.964 ± 0.015	0.887 ± 0.024
3FGL J1422.8+5801	H	0.635	0.304 ± 0.004	0.436 ± 0.008	0.747 ± 0.006	0.707 ± 0.024	1.029 ± 0.010	1.174 ± 0.018
3FGL J1424.3+0434	L	0.665	0.539 ± 0.025		0.810 ± 0.006		0.981 ± 0.019	
3FGL J1424.9+3615	I	2.055	0.353 ± 0.003	0.732 ± 0.008	0.746 ± 0.003	1.507 ± 0.024	0.996 ± 0.005	0.766 ± 0.013
3FGL J1426.2+3402	L	1.553	0.274 ± 0.003	0.590 ± 0.003	0.763 ± 0.006	1.237 ± 0.009	1.074 ± 0.010	1.000 ± 0.015
3FGL J1427.0+2347	H	0.160	0.301 ± 0.008	0.753 ± 0.008	0.754 ± 0.001	1.673 ± 0.029	1.042 ± 0.005	0.756 ± 0.011
3FGL J1427.6-3305	L		0.438 ± 0.008		0.752 ± 0.003		0.950 ± 0.006	
3FGL J1427.9-4206	F	1.522	0.538 ± 0.017	0.870 ± 0.013	0.765 ± 0.006	1.546 ± 0.029	0.910 ± 0.005	0.622 ± 0.011
3FGL J1428.5+4240	H	0.129	0.245 ± 0.009	0.428 ± 0.005	0.776 ± 0.005	0.801 ± 0.007	1.112 ± 0.007	1.253 ± 0.009
3FGL J1434.1+4203	F	1.240	0.687 ± 0.008		0.806 ± 0.005		0.882 ± 0.010	
3FGL J1434.6+1951	F	1.382	0.607 ± 0.008		0.819 ± 0.007		0.954 ± 0.013	
3FGL J1435.2+2023	H	0.748	0.603 ± 0.003		0.811 ± 0.006		0.943 ± 0.010	
3FGL J1436.8+2322	F	1.547	0.669 ± 0.008		0.823 ± 0.005		0.920 ± 0.010	
3FGL J1436.8+5639	H	0.150	0.377 ± 0.004	0.606 ± 0.008	0.757 ± 0.004	1.075 ± 0.024	0.998 ± 0.007	0.963 ± 0.015
3FGL J1438.7+3710	F	2.401	0.573 ± 0.008		0.751 ± 0.002		0.864 ± 0.006	
3FGL J1439.2+3931	H	0.344	0.311 ± 0.003	0.537 ± 0.008	0.784 ± 0.005	0.999 ± 0.024	1.085 ± 0.008	1.123 ± 0.016
3FGL J1440.1+4955	L	0.174	0.506 ± 0.025	0.817 ± 0.008	0.794 ± 0.005	1.449 ± 0.057	0.977 ± 0.018	0.763 ± 0.016
3FGL J1440.2-1538	L	0.636	0.711 ± 0.008		0.829 ± 0.005		0.905 ± 0.010	
3FGL J1440.4-3845	H		0.281 ± 0.010	0.449 ± 0.005	0.765 ± 0.007	0.790 ± 0.023	1.071 ± 0.013	1.199 ± 0.018
3FGL J1440.9+0610	H	0.435	0.390 ± 0.003	0.723 ± 0.008	0.764 ± 0.004	1.405 ± 0.024	1.001 ± 0.006	0.819 ± 0.013
3FGL J1442.8+1200	H	0.163	0.323 ± 0.008	0.578 ± 0.010	0.790 ± 0.006	1.100 ± 0.025	1.087 ± 0.008	1.081 ± 0.016
3FGL J1443.9+2502	F	0.062	0.667 ± 0.003		0.820 ± 0.003		0.917 ± 0.005	
3FGL J1444.0-3907	H	0.065		0.580 ± 0.005	0.756 ± 0.002			0.998 ± 0.007
3FGL J1445.0-0328	H		0.327 ± 0.008	0.521 ± 0.007	0.742 ± 0.005	0.912 ± 0.025	1.004 ± 0.009	1.046 ± 0.015
3FGL J1446.1-1628	L		0.691 ± 0.008		0.820 ± 0.006		0.901 ± 0.011	
3FGL J1448.0+3608	H	1.565	0.255 ± 0.004	0.521 ± 0.008	0.722 ± 0.003	1.067 ± 0.024	1.019 ± 0.004	0.997 ± 0.012
3FGL J1450.4+0911	F	2.611	0.591 ± 0.011		0.767 ± 0.006		0.879 ± 0.010	
3FGL J1451.2+6355	H	0.650		0.521 ± 0.005	0.754 ± 0.008			1.074 ± 0.020
3FGL J1454.0+1622	F	1.276	0.515 ± 0.008		0.791 ± 0.007		0.967 ± 0.012	
3FGL J1454.2-3751	F	0.314	0.498 ± 0.008	0.734 ± 0.006	0.845 ± 0.006	1.214 ± 0.024	1.064 ± 0.011	0.996 ± 0.016
3FGL J1454.5+5124	I	1.083	0.449 ± 0.003	0.757 ± 0.008	0.749 ± 0.002	1.388 ± 0.024	0.940 ± 0.003	0.737 ± 0.012
3FGL J1457.4-3539	F	1.424	0.623 ± 0.008	0.798 ± 0.005	0.750 ± 0.001	1.156 ± 0.022	0.830 ± 0.005	0.683 ± 0.007
3FGL J1458.7+3719	L	0.333	0.629 ± 0.008		0.835 ± 0.008		0.966 ± 0.013	
3FGL J1500.6+4750	L	1.059	0.663 ± 0.008		0.816 ± 0.007		0.914 ± 0.013	

表 3 续
Table 3 Continued

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J1500.9+2238	I	0.235	0.160 ± 0.008	0.626 ± 0.005	0.739 ± 0.003	1.573 ± 0.022	1.106 ± 0.007	0.895 ± 0.009
3FGL J1503.7+4759	L	2.193				1.271 ± 0.024	0.912 ± 0.008	0.750 ± 0.015
3FGL J1503.7-1540	H		0.224 ± 0.011	0.429 ± 0.010	0.698 ± 0.005	0.840 ± 0.029	0.996 ± 0.008	1.068 ± 0.014
3FGL J1504.4+1029	F	1.838	0.698 ± 0.008	0.790 ± 0.004	0.739 ± 0.001	0.976 ± 0.019	0.766 ± 0.005	0.671 ± 0.005
3FGL J1506.1+3728	F	0.672	0.777 ± 0.008		0.827 ± 0.003		0.859 ± 0.007	
3FGL J1506.3+4332	I	0.470	0.444 ± 0.003		0.779 ± 0.007		0.991 ± 0.012	
3FGL J1506.6+0811	H	0.376	0.385 ± 0.003	0.665 ± 0.008	0.792 ± 0.005	1.237 ± 0.024	1.050 ± 0.008	0.966 ± 0.016
3FGL J1507.4+1725	H	1.485	0.400 ± 0.003		0.771 ± 0.009		1.007 ± 0.015	
3FGL J1508.6+2709	H	0.270				0.970 ± 0.024	1.069 ± 0.014	1.113 ± 0.023
3FGL J1509.7+5556	H	1.680	0.302 ± 0.026	0.644 ± 0.008	0.751 ± 0.005	1.340 ± 0.057	1.035 ± 0.018	0.897 ± 0.015
3FGL J1510.9-0542	F	1.185		0.899 ± 0.005	0.833 ± 0.003			0.742 ± 0.009
3FGL J1512.2+0202	F	0.220	0.606 ± 0.003	0.850 ± 0.008	0.819 ± 0.002	1.349 ± 0.024	0.955 ± 0.004	0.777 ± 0.012
3FGL J1512.8-0906	F	0.360	0.572 ± 0.002	0.760 ± 0.007	0.752 ± 0.001	1.141 ± 0.019	0.866 ± 0.001	0.741 ± 0.009
3FGL J1513.1-1014	F	1.513	0.525 ± 0.008		0.803 ± 0.008		0.980 ± 0.013	
3FGL J1513.5-3233	F	1.153	0.563 ± 0.008		0.759 ± 0.004		0.884 ± 0.007	
3FGL J1514.1+2940	F	1.629	0.516 ± 0.003		0.773 ± 0.010		0.937 ± 0.017	
3FGL J1514.8+4446	F	0.570	0.413 ± 0.003	0.750 ± 0.008	0.736 ± 0.003	1.441 ± 0.024	0.941 ± 0.005	0.716 ± 0.013
3FGL J1516.7+3648	L	0.435	0.629 ± 0.003		0.822 ± 0.007		0.944 ± 0.011	
3FGL J1516.9+1926	L	1.070	0.513 ± 0.008		0.814 ± 0.008		1.005 ± 0.014	
3FGL J1517.6+6524	H	0.702				1.072 ± 0.029	1.087 ± 0.007	1.094 ± 0.013
3FGL J1517.6-2422	I	0.048	0.409 ± 0.007	0.818 ± 0.011	0.822 ± 0.002	1.650 ± 0.037	1.083 ± 0.005	0.827 ± 0.016
3FGL J1520.8-0348	H		0.302 ± 0.008		0.751 ± 0.003		1.033 ± 0.007	
3FGL J1521.1+5543	I	0.640				1.287 ± 0.057	1.010 ± 0.019	0.884 ± 0.018
3FGL J1521.8+4340	F	2.175	0.522 ± 0.008	0.777 ± 0.008	0.780 ± 0.007	1.298 ± 0.029	0.944 ± 0.012	0.784 ± 0.019
3FGL J1522.1+3144	F	1.487	0.649 ± 0.008	0.848 ± 0.008	0.694 ± 0.001	1.254 ± 0.029	0.722 ± 0.005	0.481 ± 0.011
3FGL J1522.6-2730	L	1.294	0.535 ± 0.008	0.821 ± 0.008	0.793 ± 0.002	1.401 ± 0.029	0.957 ± 0.006	0.756 ± 0.012
3FGL J1531.0+5737	I	1.100	0.442 ± 0.003		0.748 ± 0.005		0.942 ± 0.008	
3FGL J1531.8+4704	H	0.316	0.370 ± 0.003	0.684 ± 0.008	0.772 ± 0.008	1.326 ± 0.024	1.028 ± 0.012	0.893 ± 0.021
3FGL J1532.0+3018	H	0.065	0.332 ± 0.003	0.604 ± 0.008	0.804 ± 0.006	1.161 ± 0.024	1.104 ± 0.010	1.079 ± 0.018
3FGL J1533.2+1852	H	0.307	0.363 ± 0.003	0.521 ± 0.008	0.767 ± 0.007	0.843 ± 0.024	1.023 ± 0.011	1.104 ± 0.019
3FGL J1533.5+3416	H	0.811	0.352 ± 0.003	0.562 ± 0.008	0.776 ± 0.007	0.993 ± 0.024	1.045 ± 0.011	1.069 ± 0.020
3FGL J1534.4+5323	H	0.890	0.362 ± 0.004	0.464 ± 0.008	0.765 ± 0.008	0.672 ± 0.024	1.022 ± 0.014	1.179 ± 0.022
3FGL J1534.5+0128	F	1.425	0.659 ± 0.008	0.803 ± 0.012	0.826 ± 0.006	1.095 ± 0.040	0.932 ± 0.011	0.859 ± 0.022
3FGL J1535.0+3721	H	0.143	0.281 ± 0.003	0.747 ± 0.008	0.759 ± 0.005	1.700 ± 0.024	1.062 ± 0.008	0.775 ± 0.016
3FGL J1535.7+3920	H	0.257	0.310 ± 0.004	0.592 ± 0.008	0.767 ± 0.008	1.168 ± 0.024	1.058 ± 0.012	1.008 ± 0.021
3FGL J1539.5+2746	F	2.084	0.399 ± 0.008	0.723 ± 0.008	0.768 ± 0.003	1.382 ± 0.029	1.003 ± 0.007	0.831 ± 0.013
3FGL J1540.1+8155	H		0.432 ± 0.004	0.604 ± 0.008	0.800 ± 0.004	0.955 ± 0.024	1.034 ± 0.007	1.069 ± 0.014
3FGL J1540.8+1449	L	0.605	0.604 ± 0.008	0.836 ± 0.008	0.867 ± 0.007	1.307 ± 0.029	1.034 ± 0.012	0.911 ± 0.020
3FGL J1542.9+6129	I	0.117	0.368 ± 0.025	0.757 ± 0.008	0.732 ± 0.001	1.549 ± 0.057	0.963 ± 0.016	0.698 ± 0.011
3FGL J1546.6+1812	L	1.005	0.418 ± 0.003		0.763 ± 0.007		0.982 ± 0.011	
3FGL J1548.8-2250	H	0.192		0.560 ± 0.005	0.785 ± 0.004			1.094 ± 0.010

表 3 续
Table 3 Continued

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J1549.4+0237	F	0.414	0.434 ± 0.008	0.810 ± 0.008	0.806 ± 0.003	1.577 ± 0.029	1.041 ± 0.006	0.799 ± 0.012
3FGL J1550.5+0526	F	1.422	0.731 ± 0.008	0.855 ± 0.008	0.829 ± 0.003	1.109 ± 0.029	0.891 ± 0.007	0.792 ± 0.013
3FGL J1552.1+0852	L	1.015	0.428 ± 0.003		0.784 ± 0.006		1.010 ± 0.009	
3FGL J1553.5+1256	F	1.290	0.506 ± 0.008		0.786 ± 0.002		0.963 ± 0.006	
3FGL J1553.5-3118	H		0.329 ± 0.011	0.663 ± 0.010	0.816 ± 0.005	1.343 ± 0.037	1.125 ± 0.010	1.027 ± 0.017
3FGL J1554.4+2010	H	0.222	0.382 ± 0.002	0.603 ± 0.003	0.797 ± 0.007	1.055 ± 0.009	1.061 ± 0.011	1.064 ± 0.016
3FGL J1555.7+1111	H	0.360	0.283 ± 0.002	0.640 ± 0.008	0.749 ± 0.001	1.365 ± 0.024	1.044 ± 0.001	0.899 ± 0.011
3FGL J1558.9+5625	I	0.300	0.470 ± 0.003	0.850 ± 0.008	0.794 ± 0.003	1.625 ± 0.024	1.000 ± 0.005	0.718 ± 0.013
3FGL J1603.7+1106	L	0.143	0.428 ± 0.008		0.813 ± 0.006		1.057 ± 0.011	
3FGL J1604.6+5714	F	0.720	0.550 ± 0.008	0.831 ± 0.008	0.788 ± 0.002	1.404 ± 0.029	0.938 ± 0.006	0.728 ± 0.012
3FGL J1606.1+5630	H	0.450	0.444 ± 0.005	0.555 ± 0.009	0.757 ± 0.008	0.781 ± 0.024	0.957 ± 0.013	1.036 ± 0.021
3FGL J1607.0+1551	F	0.497	0.683 ± 0.003	0.893 ± 0.008	0.796 ± 0.002	1.320 ± 0.024	0.867 ± 0.003	0.663 ± 0.012
3FGL J1608.6+1029	F	1.226	0.628 ± 0.008	0.846 ± 0.008	0.803 ± 0.003	1.292 ± 0.029	0.915 ± 0.007	0.744 ± 0.013
3FGL J1610.6-3956	F	0.518		0.871 ± 0.008	0.812 ± 0.006			0.731 ± 0.017
3FGL J1613.8+3410	F	1.399	0.642 ± 0.008	0.915 ± 0.008	0.866 ± 0.004	1.469 ± 0.029	1.007 ± 0.008	0.798 ± 0.014
3FGL J1615.8+4712	F	0.199	0.542 ± 0.003	0.848 ± 0.008	0.866 ± 0.006	1.474 ± 0.024	1.072 ± 0.010	0.890 ± 0.018
3FGL J1616.4+4631	F	0.952	0.504 ± 0.003		0.774 ± 0.008		0.947 ± 0.013	
3FGL J1616.8+4111	L	0.267		0.685 ± 0.008	0.810 ± 0.007			0.982 ± 0.020
3FGL J1617.7-7717	F	1.710	0.641 ± 0.016	0.887 ± 0.012	0.838 ± 0.006	1.387 ± 0.029	0.963 ± 0.007	0.772 ± 0.013
3FGL J1617.8+5137	F	2.558	0.608 ± 0.003		0.764 ± 0.006		0.863 ± 0.009	
3FGL J1625.0+5651	L	0.415	0.524 ± 0.008		0.836 ± 0.007		1.034 ± 0.013	
3FGL J1625.7-2527	F	0.786	0.621 ± 0.008		0.782 ± 0.001		0.883 ± 0.005	
3FGL J1625.9+4125	F	2.175	0.458 ± 0.003		0.737 ± 0.006		0.914 ± 0.010	
3FGL J1626.0-2951	F	0.815		0.882 ± 0.008	0.813 ± 0.002			0.717 ± 0.012
3FGL J1626.1+3512	H	0.497	0.377 ± 0.003	0.627 ± 0.008	0.800 ± 0.011	1.140 ± 0.024	1.068 ± 0.017	1.036 ± 0.027
3FGL J1630.7+5222	H	1.545	0.379 ± 0.003		0.765 ± 0.003		1.010 ± 0.005	
3FGL J1635.2+3809	F	1.813	0.613 ± 0.008	0.906 ± 0.017	0.756 ± 0.001	1.501 ± 0.054	0.847 ± 0.005	0.552 ± 0.023
3FGL J1637.1+1314	I	1.545				1.200 ± 0.024	0.978 ± 0.012	0.878 ± 0.020
3FGL J1637.7+4715	F	0.735	0.671 ± 0.011	0.843 ± 0.014	0.804 ± 0.004	1.194 ± 0.041	0.888 ± 0.006	0.750 ± 0.018
3FGL J1637.8+7325	H		0.382 ± 0.011	0.580 ± 0.009	0.743 ± 0.009	0.983 ± 0.029	0.972 ± 0.015	0.967 ± 0.023
3FGL J1637.9+5719	F	0.751	0.564 ± 0.008	0.784 ± 0.006	0.851 ± 0.006	1.232 ± 0.024	1.033 ± 0.011	0.943 ± 0.016
3FGL J1639.8+4125	F	0.690	0.487 ± 0.003		0.776 ± 0.007		0.960 ± 0.011	
3FGL J1640.6+3945	F	1.660	0.641 ± 0.008	0.883 ± 0.011	0.765 ± 0.002	1.375 ± 0.036	0.844 ± 0.006	0.604 ± 0.015
3FGL J1641.8-0619	L	1.514	0.628 ± 0.008	0.865 ± 0.008	0.806 ± 0.004	1.348 ± 0.029	0.919 ± 0.008	0.726 ± 0.014
3FGL J1642.9+3950	F	0.593	0.643 ± 0.007	0.849 ± 0.004	0.854 ± 0.002	1.268 ± 0.018	0.987 ± 0.005	0.860 ± 0.007
3FGL J1645.9+6336	F	2.379	0.555 ± 0.008		0.765 ± 0.006		0.898 ± 0.010	
3FGL J1649.4+5238	I	2.055	0.276 ± 0.003		0.728 ± 0.004		1.015 ± 0.006	
3FGL J1650.8+0830	F	1.965	0.501 ± 0.008		0.750 ± 0.006		0.908 ± 0.011	
3FGL J1651.6+7219	H			0.593 ± 0.008	0.786 ± 0.009			1.051 ± 0.023
3FGL J1653.9+3945	H	0.034	0.262 ± 0.005	0.642 ± 0.002	0.808 ± 0.001	1.416 ± 0.009	1.154 ± 0.003	1.035 ± 0.002
3FGL J1656.9+6008	F	0.623	0.557 ± 0.025	0.848 ± 0.008	0.812 ± 0.005	1.438 ± 0.057	0.973 ± 0.018	0.763 ± 0.017

表 3 续
Table 3 Continued

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J1657.7+4807	F	1.669	0.717 ± 0.008	0.782 ± 0.009	0.790 ± 0.002	0.915 ± 0.031	0.837 ± 0.006	0.802 ± 0.013
3FGL J1658.3+6149	I	0.374	0.379 ± 0.003		0.786 ± 0.007		1.046 ± 0.011	
3FGL J1659.4+2631	F	0.793	0.576 ± 0.003		0.843 ± 0.010		1.012 ± 0.017	
3FGL J1700.1+6829	F	0.301	0.595 ± 0.008	0.858 ± 0.012	0.768 ± 0.002	1.393 ± 0.038	0.878 ± 0.005	0.646 ± 0.016
3FGL J1702.6+3116	H	2.075	0.268 ± 0.004	0.549 ± 0.008	0.758 ± 0.009	1.125 ± 0.024	1.069 ± 0.014	1.044 ± 0.023
3FGL J1705.5+7134	H	0.350	0.389 ± 0.003	0.634 ± 0.008	0.782 ± 0.008	1.136 ± 0.024	1.031 ± 0.014	0.984 ± 0.022
3FGL J1709.6+4318	F	1.027	0.582 ± 0.008		0.721 ± 0.001		0.809 ± 0.005	
3FGL J1712.6+2932	H	0.420	0.312 ± 0.003	0.653 ± 0.008	0.781 ± 0.008	1.350 ± 0.024	1.080 ± 0.013	0.958 ± 0.021
3FGL J1715.7+6837	F	0.777	0.542 ± 0.008	0.710 ± 0.003	0.811 ± 0.003	1.054 ± 0.018	0.982 ± 0.007	0.949 ± 0.008
3FGL J1719.2+1744	L	0.137	0.551 ± 0.008	0.874 ± 0.008	0.817 ± 0.003	1.532 ± 0.029	0.986 ± 0.006	0.739 ± 0.012
3FGL J1722.7+6104	F	2.058	0.558 ± 0.011	0.798 ± 0.010	0.771 ± 0.008	1.287 ± 0.029	0.907 ± 0.014	0.735 ± 0.021
3FGL J1723.9+4004	F	1.049		0.799 ± 0.014	0.790 ± 0.003			0.778 ± 0.020
3FGL J1725.0+1152	H	0.018	0.179 ± 0.008	0.628 ± 0.008	0.756 ± 0.002	1.541 ± 0.029	1.121 ± 0.006	0.931 ± 0.012
3FGL J1725.3+5853	I	0.297	0.378 ± 0.003		0.787 ± 0.005		1.047 ± 0.008	
3FGL J1727.1+4531	F	0.717	0.520 ± 0.008	0.844 ± 0.013	0.811 ± 0.002	1.503 ± 0.042	0.996 ± 0.006	0.766 ± 0.019
3FGL J1728.0+1217	F	0.588	0.631 ± 0.008		0.806 ± 0.005		0.916 ± 0.010	
3FGL J1728.3+5013	H	0.055	0.356 ± 0.006	0.606 ± 0.008	0.803 ± 0.003	1.115 ± 0.027	1.087 ± 0.006	1.074 ± 0.013
3FGL J1728.5+0428	F	0.296	0.471 ± 0.008	0.808 ± 0.004	0.820 ± 0.004	1.494 ± 0.019	1.042 ± 0.008	0.838 ± 0.011
3FGL J1733.0-1305	F	0.902	0.737 ± 0.008	0.822 ± 0.009	0.826 ± 0.002	0.994 ± 0.031	0.883 ± 0.005	0.833 ± 0.013
3FGL J1734.3+3858	F	0.976	0.665 ± 0.008	0.855 ± 0.006	0.787 ± 0.002	1.242 ± 0.023	0.864 ± 0.006	0.693 ± 0.009
3FGL J1736.4+0634	F	2.387	0.516 ± 0.008		0.698 ± 0.005		0.813 ± 0.010	
3FGL J1739.4+4955	F	1.545	0.533 ± 0.008	0.796 ± 0.014	0.783 ± 0.003	1.333 ± 0.044	0.942 ± 0.006	0.765 ± 0.019
3FGL J1740.3+4736	F	0.952	0.658 ± 0.008	0.834 ± 0.014	0.866 ± 0.007	1.192 ± 0.046	0.997 ± 0.012	0.909 ± 0.026
3FGL J1740.3+5211	F	1.375	0.489 ± 0.008	0.782 ± 0.009	0.784 ± 0.002	1.379 ± 0.030	0.970 ± 0.006	0.785 ± 0.013
3FGL J1742.2+5947	I	0.400	0.381 ± 0.003	0.835 ± 0.008	0.791 ± 0.005	1.762 ± 0.024	1.051 ± 0.007	0.731 ± 0.015
3FGL J1743.9+1934	H	0.084		0.728 ± 0.010	0.856 ± 0.006			1.033 ± 0.016
3FGL J1744.3-0353	F	1.054	0.551 ± 0.008	0.767 ± 0.011	0.845 ± 0.007	1.208 ± 0.037	1.031 ± 0.012	0.951 ± 0.022
3FGL J1745.4-0754	L		0.489 ± 0.008		0.845 ± 0.005		1.071 ± 0.009	
3FGL J1745.7+3952	H	0.267	0.565 ± 0.008	0.812 ± 0.008	0.897 ± 0.014	1.316 ± 0.029	1.108 ± 0.024	1.014 ± 0.035
3FGL J1748.0+3405	F	2.763	0.510 ± 0.008		0.755 ± 0.004		0.911 ± 0.009	
3FGL J1748.6+7005	L	0.770	0.416 ± 0.008	0.779 ± 0.004	0.782 ± 0.001	1.519 ± 0.019	1.014 ± 0.005	0.786 ± 0.005
3FGL J1749.1+4322	L	0.215	0.684 ± 0.008	0.821 ± 0.017	0.799 ± 0.003	1.099 ± 0.053	0.872 ± 0.007	0.769 ± 0.024
3FGL J1751.5+0939	L	0.322	0.409 ± 0.008	0.769 ± 0.003	0.784 ± 0.002	1.503 ± 0.018	1.021 ± 0.006	0.803 ± 0.005
3FGL J1756.3+5523	H	2.085	0.209 ± 0.005	0.455 ± 0.009	0.722 ± 0.005	0.957 ± 0.024	1.049 ± 0.008	1.090 ± 0.016
3FGL J1756.9+7032	H	0.407	0.417 ± 0.019	0.523 ± 0.007	0.772 ± 0.012	0.735 ± 0.041	0.995 ± 0.022	1.113 ± 0.029
3FGL J1800.5+7827	L	0.680	0.502 ± 0.008	0.826 ± 0.006	0.805 ± 0.001	1.486 ± 0.024	0.997 ± 0.005	0.776 ± 0.008
3FGL J1801.5+4403	F	0.663	0.401 ± 0.008	0.777 ± 0.007	0.826 ± 0.005	1.543 ± 0.027	1.095 ± 0.009	0.892 ± 0.015
3FGL J1806.7+6949	I	0.051	0.461 ± 0.009	0.812 ± 0.003	0.839 ± 0.002	1.526 ± 0.017	1.079 ± 0.005	0.877 ± 0.004
3FGL J1807.8-5011	F	1.606				1.249 ± 0.038	0.952 ± 0.013	0.818 ± 0.023
3FGL J1808.0+4652	L	0.450		0.731 ± 0.008	0.825 ± 0.010			0.953 ± 0.026
3FGL J1813.6+0614	I		0.431 ± 0.008		0.799 ± 0.004		1.032 ± 0.009	

表 3 续
Table 3 Continued

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J1813.6+3143	I	0.117		0.773 ± 0.008	0.791 ± 0.003			0.817 ± 0.013
3FGL J1824.2+5649	L	0.664	0.539 ± 0.008	0.788 ± 0.004	0.810 ± 0.002	1.296 ± 0.020	0.982 ± 0.006	0.840 ± 0.007
3FGL J1829.4+5402	I	0.177		0.710 ± 0.008	0.755 ± 0.004			0.816 ± 0.014
3FGL J1830.1+0617	F	0.745		0.702 ± 0.007	0.789 ± 0.003			0.909 ± 0.012
3FGL J1833.6-2103	F	2.507		0.858 ± 0.012	0.775 ± 0.001			0.661 ± 0.016
3FGL J1838.8+4802	H	0.300		0.675 ± 0.008	0.743 ± 0.003			0.837 ± 0.013
3FGL J1842.8+6810	F	0.472	0.614 ± 0.008	0.799 ± 0.005	0.857 ± 0.007	1.174 ± 0.022	1.010 ± 0.013	0.936 ± 0.018
3FGL J1848.4+3216	F	0.798	0.615 ± 0.008	0.841 ± 0.004	0.772 ± 0.003	1.299 ± 0.019	0.872 ± 0.007	0.679 ± 0.008
3FGL J1848.9+4247	H			0.533 ± 0.008	0.786 ± 0.012			1.133 ± 0.030
3FGL J1849.2+6705	F	0.657	0.532 ± 0.008	0.790 ± 0.006	0.765 ± 0.001	1.317 ± 0.025	0.912 ± 0.005	0.729 ± 0.009
3FGL J1852.4+4856	F	1.250	0.543 ± 0.008		0.753 ± 0.002		0.886 ± 0.006	
3FGL J1903.2+5541	I			0.798 ± 0.008	0.767 ± 0.002			0.725 ± 0.011
3FGL J1911.2-2006	F	1.119	0.676 ± 0.008	0.816 ± 0.003	0.803 ± 0.002	1.102 ± 0.017	0.884 ± 0.006	0.785 ± 0.005
3FGL J1912.9-8008	F	0.500	0.726 ± 0.021		0.818 ± 0.008		0.876 ± 0.006	
3FGL J1917.7-1921	H	0.137	0.389 ± 0.008	0.698 ± 0.007	0.801 ± 0.002	1.327 ± 0.027	1.062 ± 0.006	0.942 ± 0.011
3FGL J1923.5-2104	F	0.874	0.603 ± 0.008	0.846 ± 0.015	0.824 ± 0.002	1.340 ± 0.048	0.965 ± 0.005	0.795 ± 0.021
3FGL J1924.8-2914	F	0.352	0.620 ± 0.008	0.873 ± 0.008	0.885 ± 0.002	1.389 ± 0.030	1.053 ± 0.006	0.901 ± 0.012
3FGL J1927.7+6118	L		0.497 ± 0.008	0.806 ± 0.012	0.806 ± 0.003	1.435 ± 0.039	1.002 ± 0.007	0.806 ± 0.018
3FGL J1931.1+0937	H			0.500 ± 0.008	0.693 ± 0.002			0.957 ± 0.012
3FGL J1932.6-4537	F	0.652	0.539 ± 0.011	0.774 ± 0.014	0.833 ± 0.006	1.252 ± 0.042	1.019 ± 0.010	0.914 ± 0.022
3FGL J1937.0-3956	F	0.965	0.554 ± 0.008	0.786 ± 0.015	0.809 ± 0.004	1.258 ± 0.048	0.971 ± 0.008	0.841 ± 0.022
3FGL J1954.8-1122	F	0.683	0.601 ± 0.008		0.774 ± 0.002		0.883 ± 0.006	
3FGL J1957.0-3234	F	1.242	0.557 ± 0.008		0.808 ± 0.008		0.968 ± 0.014	
3FGL J1958.0-3847	F	0.630	0.560 ± 0.008	0.820 ± 0.014	0.809 ± 0.002	1.349 ± 0.045	0.967 ± 0.006	0.795 ± 0.019
3FGL J1958.2-3011	H	0.119		0.589 ± 0.005	0.817 ± 0.007			1.130 ± 0.018
3FGL J1959.1-4245	F	2.174				0.913 ± 0.024	0.832 ± 0.006	0.796 ± 0.010
3FGL J2000.0+6509	H	0.047	0.323 ± 0.003	0.606 ± 0.008	0.761 ± 0.001	1.184 ± 0.024	1.040 ± 0.002	0.974 ± 0.011
3FGL J2001.0-1750	F	0.652	0.371 ± 0.008	0.726 ± 0.010	0.790 ± 0.003	1.449 ± 0.033	1.056 ± 0.006	0.878 ± 0.014
3FGL J2005.2+7752	L	0.342	0.582 ± 0.008	0.818 ± 0.010	0.822 ± 0.002	1.298 ± 0.034	0.975 ± 0.006	0.828 ± 0.014
3FGL J2007.3+6605	F	1.325	0.682 ± 0.008		0.800 ± 0.005		0.876 ± 0.010	
3FGL J2009.3-4849	H	0.071	0.203 ± 0.011	0.636 ± 0.006	0.829 ± 0.003	1.520 ± 0.018	1.226 ± 0.005	1.094 ± 0.005
3FGL J2010.3+7228	L		0.685 ± 0.008		0.818 ± 0.003		0.902 ± 0.006	
3FGL J2012.0+4629	I		0.405 ± 0.030	0.714 ± 0.008	0.793 ± 0.002	1.343 ± 0.065	1.039 ± 0.019	0.901 ± 0.012
3FGL J2015.2-0138	I		0.611 ± 0.008		0.829 ± 0.004		0.967 ± 0.007	
3FGL J2015.6+3709	F	0.859		0.872 ± 0.008	0.769 ± 0.002			0.627 ± 0.011
3FGL J2022.5+7612	I	0.594	0.497 ± 0.008		0.794 ± 0.003		0.983 ± 0.007	
3FGL J2024.4-3254	F	1.465	0.630 ± 0.008		0.806 ± 0.006		0.918 ± 0.011	
3FGL J2025.6-0736	F	1.388		0.816 ± 0.011	0.769 ± 0.001			0.703 ± 0.015
3FGL J2031.8+1223	L	1.215	0.555 ± 0.008		0.818 ± 0.005		0.985 ± 0.009	
3FGL J2034.3+1155	F	0.607		0.823 ± 0.008	0.811 ± 0.007			0.796 ± 0.019
3FGL J2035.3+1055	F	0.601	0.373 ± 0.008	0.893 ± 0.008	0.807 ± 0.003	1.953 ± 0.029	1.083 ± 0.006	0.689 ± 0.012

表 3 续
Table 3 Continued

name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J2036.8-2830	F	2.308	0.543 ± 0.008		0.727 ± 0.006		0.843 ± 0.011	
3FGL J2039.0-1047	L		0.565 ± 0.025		0.769 ± 0.002		0.899 ± 0.016	
3FGL J2039.5+5217	H	0.053	0.148 ± 0.008	0.659 ± 0.008	0.788 ± 0.011	1.683 ± 0.028	1.191 ± 0.018	0.966 ± 0.027
3FGL J2050.2+0409	L		0.643 ± 0.008		0.835 ± 0.005		0.957 ± 0.010	
3FGL J2055.0+0016	I	0.151	0.343 ± 0.003	0.661 ± 0.008	0.816 ± 0.010	1.311 ± 0.024	1.117 ± 0.016	1.030 ± 0.025
3FGL J2055.2-0019	H	2.085	0.399 ± 0.026	0.494 ± 0.005	0.779 ± 0.007	0.688 ± 0.054	1.020 ± 0.020	1.171 ± 0.018
3FGL J2056.2-4714	F	1.489	0.669 ± 0.018	0.811 ± 0.015	0.783 ± 0.006	1.102 ± 0.038	0.856 ± 0.005	0.745 ± 0.016
3FGL J2110.3-1013	F	2.500	0.563 ± 0.008		0.808 ± 0.007		0.963 ± 0.012	
3FGL J2115.4+2933	F	1.514	0.648 ± 0.008	0.873 ± 0.008	0.792 ± 0.003	1.329 ± 0.029	0.883 ± 0.007	0.681 ± 0.013
3FGL J2116.1+3339	H	0.350		0.742 ± 0.004	0.746 ± 0.002			0.752 ± 0.006
3FGL J2118.4+0013	F	0.463	0.524 ± 0.025		0.829 ± 0.009		1.022 ± 0.021	
3FGL J2121.0+1901	F	2.180		0.819 ± 0.005	0.775 ± 0.002			0.713 ± 0.008
3FGL J2123.6+0533	F	1.941	0.692 ± 0.008	0.818 ± 0.008	0.827 ± 0.006	1.074 ± 0.029	0.912 ± 0.010	0.839 ± 0.017
3FGL J2130.8-2745	H			0.568 ± 0.007	0.783 ± 0.006			1.078 ± 0.016
3FGL J2131.5-0915	H	0.449	0.369 ± 0.008	0.515 ± 0.004	0.752 ± 0.004	0.809 ± 0.019	0.993 ± 0.008	1.077 ± 0.010
3FGL J2131.8-2516	H		0.375 ± 0.009	0.497 ± 0.007	0.737 ± 0.006	0.743 ± 0.025	0.966 ± 0.011	1.067 ± 0.017
3FGL J2134.1-0152	L	1.283	0.703 ± 0.008	0.876 ± 0.006	0.832 ± 0.003	1.230 ± 0.022	0.914 ± 0.007	0.770 ± 0.010
3FGL J2139.4-4235	I					1.684 ± 0.029	1.008 ± 0.005	0.700 ± 0.011
3FGL J2141.7-3734	F	0.423		0.771 ± 0.013	0.823 ± 0.006			0.896 ± 0.023
3FGL J2143.5+1744	F	0.211	0.401 ± 0.008	0.752 ± 0.011	0.778 ± 0.002	1.469 ± 0.037	1.018 ± 0.005	0.814 ± 0.015
3FGL J2144.9-3356	F	1.360	0.533 ± 0.008		0.736 ± 0.003		0.865 ± 0.007	
3FGL J2145.7+0717	I	0.237	0.462 ± 0.003	0.648 ± 0.011	0.787 ± 0.006	1.022 ± 0.033	0.992 ± 0.010	0.978 ± 0.021
3FGL J2146.6-1344	H		0.323 ± 0.009	0.582 ± 0.012	0.744 ± 0.004	1.111 ± 0.039	1.012 ± 0.008	0.967 ± 0.018
3FGL J2146.7-1527	F	0.698	0.532 ± 0.008	0.773 ± 0.012	0.839 ± 0.006	1.264 ± 0.039	1.033 ± 0.011	0.928 ± 0.021
3FGL J2147.2+0929	F	1.113	0.491 ± 0.008	0.816 ± 0.004	0.785 ± 0.002	1.477 ± 0.019	0.972 ± 0.006	0.744 ± 0.006
3FGL J2147.3-7536	F	1.139		0.845 ± 0.010	0.777 ± 0.003			0.684 ± 0.011
3FGL J2149.7+0323	I		0.375 ± 0.005		0.775 ± 0.004		1.030 ± 0.007	
3FGL J2151.6-2744	F	1.485	0.585 ± 0.008	0.714 ± 0.008	0.803 ± 0.007	0.978 ± 0.029	0.941 ± 0.013	0.925 ± 0.021
3FGL J2151.8-3025	F	2.345	0.552 ± 0.008	0.690 ± 0.005	0.801 ± 0.004	0.970 ± 0.021	0.960 ± 0.009	0.955 ± 0.012
3FGL J2152.4+1735	L	0.874	0.575 ± 0.008		0.861 ± 0.008		1.043 ± 0.015	
3FGL J2152.9-0045	H	0.341	0.353 ± 0.004	0.534 ± 0.007	0.768 ± 0.008	0.904 ± 0.019	1.032 ± 0.013	1.090 ± 0.021
3FGL J2154.0-1137	F	1.582	0.565 ± 0.008		0.736 ± 0.004		0.844 ± 0.008	
3FGL J2156.9-0855	I	1.017	0.353 ± 0.003		0.761 ± 0.008		1.020 ± 0.013	
3FGL J2157.5+3126	F	1.486	0.670 ± 0.008	0.822 ± 0.006	0.741 ± 0.001	1.132 ± 0.023	0.786 ± 0.005	0.630 ± 0.008
3FGL J2158.0-1501	F	0.672	0.695 ± 0.008	0.877 ± 0.015	0.860 ± 0.003	1.246 ± 0.049	0.964 ± 0.007	0.837 ± 0.022
3FGL J2158.8-3013	H	0.116	0.210 ± 0.013	0.526 ± 0.002	0.745 ± 0.001	1.170 ± 0.027	1.084 ± 0.008	1.046 ± 0.001
3FGL J2200.2+2139	L		0.566 ± 0.008		0.833 ± 0.009		1.002 ± 0.015	
3FGL J2201.7+5047	F	1.899		0.808 ± 0.008	0.758 ± 0.002			0.689 ± 0.012
3FGL J2202.7+4217	L	0.069	0.580 ± 0.005	0.846 ± 0.008	0.818 ± 0.001	1.387 ± 0.025	0.969 ± 0.003	0.781 ± 0.010
3FGL J2203.4+1725	F	1.075	0.330 ± 0.008	0.815 ± 0.003	0.762 ± 0.002	1.802 ± 0.017	1.036 ± 0.005	0.689 ± 0.004
3FGL J2203.7+3143	F	0.295	0.415 ± 0.008	0.807 ± 0.008	0.884 ± 0.011	1.605 ± 0.029	1.181 ± 0.018	0.990 ± 0.028

表 3 续
Table 3 Continued

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J2204.4+0439	I	0.027	0.550 ± 0.005	0.762 ± 0.011	0.849 ± 0.005	1.185 ± 0.033	1.037 ± 0.008	0.970 ± 0.019
3FGL J2206.9-0031	L	0.335	0.533 ± 0.008		0.794 ± 0.005		0.960 ± 0.009	
3FGL J2207.8-5345	F	1.206	0.707 ± 0.009	0.884 ± 0.016	0.844 ± 0.004	1.242 ± 0.050	0.931 ± 0.007	0.790 ± 0.023
3FGL J2212.0+2355	F	1.125	0.678 ± 0.008	0.854 ± 0.008	0.801 ± 0.003	1.214 ± 0.029	0.879 ± 0.007	0.727 ± 0.013
3FGL J2217.0+2421	L	0.505	0.667 ± 0.008	0.840 ± 0.008	0.816 ± 0.003	1.192 ± 0.029	0.911 ± 0.007	0.783 ± 0.013
3FGL J2219.2+1806	F	1.802	0.577 ± 0.008		0.771 ± 0.006		0.894 ± 0.011	
3FGL J2221.6-5225	H					1.022 ± 0.014	1.062 ± 0.006	1.081 ± 0.009
3FGL J2222.3-3500	F	0.298		0.821 ± 0.013	0.874 ± 0.008			0.946 ± 0.026
3FGL J2225.8-0454	F	1.404	0.480 ± 0.008	0.872 ± 0.015	0.845 ± 0.002	1.672 ± 0.047	1.077 ± 0.006	0.807 ± 0.021
3FGL J2227.8+0040	I	2.145	0.341 ± 0.003		0.753 ± 0.004		1.014 ± 0.007	
3FGL J2229.7-0833	F	1.560	0.574 ± 0.008	0.756 ± 0.005	0.766 ± 0.002	1.127 ± 0.021	0.888 ± 0.006	0.780 ± 0.007
3FGL J2232.5+1143	F	1.037	0.667 ± 0.025	0.844 ± 0.007	0.828 ± 0.001	1.205 ± 0.056	0.931 ± 0.016	0.806 ± 0.010
3FGL J2235.3-4835	F	0.506		0.759 ± 0.008	0.836 ± 0.005			0.942 ± 0.011
3FGL J2236.3+2829	L	0.795	0.594 ± 0.008		0.790 ± 0.002		0.915 ± 0.005	
3FGL J2236.5-1432	L	0.325	0.598 ± 0.008	0.841 ± 0.008	0.767 ± 0.001	1.335 ± 0.029	0.875 ± 0.005	0.667 ± 0.011
3FGL J2237.1-3921	F	0.297	0.545 ± 0.014		0.801 ± 0.004		0.962 ± 0.011	
3FGL J2240.9+4121	L	0.726	0.569 ± 0.008		0.824 ± 0.007		0.985 ± 0.013	
3FGL J2243.4-2541	L	0.774	0.544 ± 0.008	0.825 ± 0.008	0.813 ± 0.002	1.396 ± 0.029	0.984 ± 0.006	0.798 ± 0.012
3FGL J2243.9+2021	H			0.723 ± 0.008	0.742 ± 0.002			0.769 ± 0.011
3FGL J2248.6-3235	F	2.268	0.594 ± 0.008		0.808 ± 0.008		0.944 ± 0.014	
3FGL J2250.1+3825	I	0.119		0.685 ± 0.008	0.783 ± 0.003			0.916 ± 0.013
3FGL J2254.0+1403	I	0.327	0.297 ± 0.004	0.660 ± 0.008	0.729 ± 0.007	1.402 ± 0.024	1.005 ± 0.011	0.825 ± 0.020
3FGL J2254.0+1608	F	0.859	0.449 ± 0.045	0.767 ± 0.003	0.789 ± 0.000	1.415 ± 0.092	1.005 ± 0.028	0.820 ± 0.004
3FGL J2255.1+2411	L		0.337 ± 0.005	0.711 ± 0.008	0.766 ± 0.004	1.479 ± 0.025	1.040 ± 0.006	0.842 ± 0.014
3FGL J2256.7-2011	L		0.553 ± 0.008		0.804 ± 0.003		0.963 ± 0.007	
3FGL J2258.0-2759	F	0.926	0.575 ± 0.008	0.818 ± 0.018	0.789 ± 0.002	1.314 ± 0.057	0.925 ± 0.005	0.749 ± 0.025
3FGL J2258.3-5526	H	0.479				0.897 ± 0.054	1.029 ± 0.020	1.088 ± 0.018
3FGL J2304.6+3704	H			0.523 ± 0.008	0.746 ± 0.004			1.052 ± 0.015
3FGL J2307.4-1208	H			0.517 ± 0.011	0.747 ± 0.009			1.062 ± 0.025
3FGL J2307.7+1449	L	0.503	0.527 ± 0.008		0.763 ± 0.003		0.913 ± 0.007	
3FGL J2311.0+0204	L		0.258 ± 0.008		0.764 ± 0.005		1.082 ± 0.009	
3FGL J2314.0+1443	H	0.163				1.146 ± 0.029	1.023 ± 0.009	0.968 ± 0.016
3FGL J2319.2-4207	H	0.055		0.791 ± 0.015	0.877 ± 0.006			0.995 ± 0.023
3FGL J2321.6+4438	F	1.310	0.686 ± 0.008		0.809 ± 0.009		0.887 ± 0.015	
3FGL J2322.5+3436	H	0.098		0.697 ± 0.008	0.843 ± 0.010			1.043 ± 0.026
3FGL J2323.5-0315	F	1.410	0.602 ± 0.008		0.784 ± 0.002		0.899 ± 0.006	
3FGL J2323.9+4211	H	0.059		0.541 ± 0.009	0.703 ± 0.003			0.925 ± 0.012
3FGL J2324.7-4040	H	0.174				1.088 ± 0.014	1.101 ± 0.005	1.107 ± 0.008
3FGL J2325.2+3957	L			0.816 ± 0.008	0.758 ± 0.002			0.677 ± 0.012
3FGL J2327.7+0941	F	1.843	0.579 ± 0.008	0.756 ± 0.009	0.769 ± 0.003	1.115 ± 0.032	0.890 ± 0.007	0.788 ± 0.014
3FGL J2329.3-4955	F	0.518	0.810 ± 0.011		0.744 ± 0.003		0.702 ± 0.005	

表 3 续
Table 3 Continued

Name	C	z	$\alpha_{RO} \pm \Delta\alpha_{RO}$	$\alpha_{RX} \pm \Delta\alpha_{RX}$	$\alpha_{R\gamma} \pm \Delta\alpha_{R\gamma}$	$\alpha_{OX} \pm \Delta\alpha_{OX}$	$\alpha_{O\gamma} \pm \Delta\alpha_{O\gamma}$	$\alpha_{X\gamma} \pm \Delta\alpha_{X\gamma}$
3FGL J2329.9-4734	F	1.304	0.548 ± 0.011	0.814 ± 0.013	0.873 ± 0.007	1.357 ± 0.040	1.080 ± 0.011	0.954 ± 0.022
3FGL J2330.4-3726	L	0.279	0.466 ± 0.008	0.825 ± 0.008	0.838 ± 0.006	1.554 ± 0.029	1.073 ± 0.012	0.856 ± 0.019
3FGL J2330.5+1104	F	1.489	0.617 ± 0.008	0.855 ± 0.008	0.828 ± 0.006	1.339 ± 0.029	0.962 ± 0.010	0.791 ± 0.017
3FGL J2334.1+0732	F	0.401	0.484 ± 0.008	0.803 ± 0.008	0.825 ± 0.004	1.454 ± 0.029	1.041 ± 0.008	0.855 ± 0.015
3FGL J2334.8+1432	I	0.415	0.411 ± 0.003		0.758 ± 0.003		0.978 ± 0.004	
3FGL J2335.1-0133	F	1.184	0.594 ± 0.025		0.827 ± 0.006		0.975 ± 0.019	
3FGL J2336.5-4116	F	1.406	0.631 ± 0.011		0.793 ± 0.004		0.896 ± 0.007	
3FGL J2338.1-0229	F	1.072	0.605 ± 0.026		0.789 ± 0.003		0.906 ± 0.017	
3FGL J2339.0+2122	I	0.291		0.605 ± 0.008	0.768 ± 0.005			0.992 ± 0.016
3FGL J2340.7+8016	H	0.274		0.617 ± 0.004	0.732 ± 0.002			0.889 ± 0.006
3FGL J2343.6+1551	F	1.446	0.573 ± 0.008		0.783 ± 0.009		0.917 ± 0.015	
3FGL J2343.7+3437	H	0.366		0.551 ± 0.008	0.790 ± 0.007			1.119 ± 0.021
3FGL J2345.2-1554	F	0.621	0.548 ± 0.008	0.796 ± 0.007	0.720 ± 0.001	1.300 ± 0.026	0.829 ± 0.005	0.616 ± 0.009
3FGL J2347.0+5142	H	0.044	0.231 ± 0.005	0.658 ± 0.008	0.792 ± 0.002	1.527 ± 0.026	1.147 ± 0.004	0.976 ± 0.012
3FGL J2348.0-1630	F	0.576	0.592 ± 0.008	0.830 ± 0.011	0.821 ± 0.002	1.315 ± 0.036	0.966 ± 0.006	0.808 ± 0.015
3FGL J2350.4-3004	H	0.224		0.646 ± 0.014	0.767 ± 0.005			0.933 ± 0.022
3FGL J2352.0+1752	H	1.450	0.372 ± 0.026		0.753 ± 0.005		0.995 ± 0.018	
3FGL J2353.6-3037	L	0.737		0.840 ± 0.008	0.823 ± 0.005			0.799 ± 0.016
3FGL J2354.1+4605	F	1.992		0.870 ± 0.008	0.844 ± 0.006			0.807 ± 0.018
3FGL J2357.3-0150	L	0.812	0.643 ± 0.008		0.823 ± 0.007		0.937 ± 0.012	
3FGL J2357.4-1716	H		0.388 ± 0.008	0.489 ± 0.004	0.785 ± 0.006	0.693 ± 0.020	1.035 ± 0.011	1.191 ± 0.015
3FGL J2357.8-5310	F	1.006	0.572 ± 0.011	0.761 ± 0.010	0.833 ± 0.005	1.146 ± 0.029	0.998 ± 0.008	0.932 ± 0.014
3FGL J2358.2-1022	F	1.636	0.570 ± 0.008		0.822 ± 0.008		0.981 ± 0.014	
3FGL J2358.9+3926	F	1.198		0.769 ± 0.003	0.827 ± 0.007			0.907 ± 0.017
3FGL J2359.3-3038	H	0.165	0.402 ± 0.010	0.471 ± 0.003	0.782 ± 0.004	0.608 ± 0.019	1.021 ± 0.009	1.210 ± 0.010
3FGL J2359.5-2052	H	0.096		0.768 ± 0.012	0.862 ± 0.006			0.991 ± 0.021